

A

M E D I C I N A L D I C T I O N A R Y:

INCLUDING

PHYSIC,

CHYMISTRY,

SURGERY,

AND

ANATOMY,

BOTANY,

In all their BRANCHES relative to MEDICINE.

TOGETHER WITH A

HISTORY *of* DRUGS;

An ACCOUNT of their Various

PREPARATIONS, COMBINATIONS, and USES;

AND AN

INTRODUCTORY PREFACE,

1,686

Tracing the PROGRESS of PHYSIC, and explaining the THEORIES which
have principally prevail'd in all Ages of the World.

With COPPER PLATES.

By R. JAMES, M. D.

VOL. III.

*The LORD hath created Medicines out of the Earth, and he that is wise will not
abhor them, Ecclesiasticus, Chap. xxxviii. Verse 4.*

Ἱηλακή, τεχνέων μὲν πασέων ἐς τὴν ἐπιφανείαν.

HIPPOCRATES.

L O N D O N:

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M.DCC.XLV.

N.

N. FOR the Signification of this Letter in the chymical Alphabet, see ALPHABETUM CHYMICUM.

N, in Prescription, imports, Number.

NABIT. Powder'd Sugar-candy, esteemed a good Remedy for the Eyes. *Castellus from Matthæus de Gradibus.*

NACTA. An Apostemation of the Breasts, particularly those of Women. *Rulandus.*

NADUCEM. An uterine Mole. *Castellus from Avicenna.*

NÆVUS. A Mole on the Skin, Wen, or Mother's Mark.

All preternatural Tumors upon the Skin, in the Form of a Wart or Tubercle, are termed Excrescencies; by the *Greeks*, *Acrothymia*; and, when they are born with a Person, *Nævi Materni*, or Marks from the Mother. A large Tumor depending from the Skin is denominated a *Sarcoma*. These appear in every Part of the Body; as the Head, Face, Eye-brows, Neck, Breast, Abdomen, Anus, Arms, and Legs: But the worst, in the Opinion of *Celsus*, are those which arise on the Private Parts. The Size and Figure of them are surprisngly various; and, according to the Remarks and Delineations of several Authors, some are of an enormous Bulk. In Colour, some resemble the Skin, others are black or red; in Shape, they represent Strawberries, Mulberries, Grapes, Figs, Pears, Mice, and various other Figures.

They are to be removed almost in the same Manner as Warts, by Ligature, the Knife, potential or actual Cauteries, as their Size, Situation, Figure, and other Circumstances, with the Habit and Inclination of the Patient, shall require. But if they have a very large Root, as those Warts have, which the *Greeks* call *Myrmecia*, or are near any of the larger Veins or Arteries, or firmly united to any Bones, or have a Tendency to a Cancer, the Surgeon should remove them with great Circumspection; or when the Danger is imminent, leave them untouched, that the Patient may not be exposed to worse Symptoms, or the Hazard of Life. When these Tumors are large, or seated near the larger Veins or Arteries, the Operator should be furnished with Styptics, Bandages, and sometimes actual Cauteries, to stop the Hæmorrhage, especially if they are taken away by Abscission. *Heister. Chirurg.*

NAFDA, and **NASDA**, seem to be Corruptions of **NAPHTHA**.

NAGAM. H. M. The Name of a filiquiferous Tree, which grows plentifully in many of the *East Indian* Islands. The Juice of the Leaves, mixed with the Oil of the *Indian* Nut, dispels periodical Inflations of the Belly, used by way of Ointment.

NAGEMLUS. The Name of a Fish mentioned by *Aldrovandus*.

NAKIR. A violent Flatulence, which passes from one Limb to another, attended with Pain. *Blancard from Schenkiius.*

NALUGN. The Name of a bacciferous Shrub, which grows in *Malabar*, and flowers twice a Year. The Root, taken by way of Decoction, eases Pains of the Stomach, the Colic, and Gripes of the Intestines. A Decoction of the Wood allays Thirst; the Leaves, bruised and torrefied, remove Vertigos, and Weakness of the Head, if apply'd thereto; and a Vapour of the Decoction of the same eases Pains of the Gout; the expressed Juice of the young Leaves, drank, helps Digestion. *Raii Hist. Plant.*

NANA, or **NANAS.** The same as **ANANAS**.

NANDI-ERVATAM. The Name of a small Shrub, which grows in the *East-Indies*; the Whole of which is lactescent. The Juice expressed from it, mix'd with Oil, eases Pains of the Eyes, if the Head is anointed therewith. The Root masticated, and held in the Mouth, eases the Tooth-ach; and the same, boiled in Oil, makes a good Ointment for all Indispositions of the Head, especially Pain; bruised, and taken in Water, it kills Worms; bruised with the Juice of Lemon, and put into the Eyes, it removes Films. *Raii Hist. Plant.*

NAPECA. A Species of Jujube. See **OENOPLIA**.

NAPELLUS. See **ACONITUM**.

NAPHA. Orange-flower Water.

NAPHTHA. Offic. Charl. Foss. 13. Worm. 30. *Aldrov. Mus. Metall.* 388. *Naphtha alba & nigra.* *Kemph. Amoen.* 274. *Pharmacum Medæ quibusdam.*

It is of the Colour of the *Babylonian* Bitumen, of a liquid Consistence, very subject to take Fire, sometimes white, sometimes black; it is seldom or never to be met with in our Shops;

and therefore *Petroleum* commonly supplies its Place. It is a Liquor of an oily Substance, like rectify'd Spirit, very thin, pellucid, very penetrating, and subject to kindle into a Flame: It agrees in Virtues with *Bitumen*. There are some, who, as *Agricola* assures us, are persuaded, that the *Camphora* of the Antients was prepared of *Naphtha* by Sublimation; others there are, who will have it, that *Naphtha* and *Petroleum* are one and the same Substance; but since we are not as yet certain what *Naphtha* is, we shall not venture to determine in the Case. As for *Naphtha*, tho' it has many, and those very considerable, Virtues in Medicine, which *Dioscorides* insists upon at large, yet, at present, we are told by *Kempfer*, that he never knew the *Persians* apply it to any other Use, than to temper their Vernish. *Dale.*

PETROLEUM. Offic. Worm. Mus. 30. Charl. Foss. 14. *Petroleum Oleum Petræ.* *Schrod.* 3. 514. *Petroleum Oleum de Saxo, Naphtha, Oleum Petræ.* *Mont. Exot.* 12. *Petroleum sive Oleum Terræ.* *Ind. Med.* 91. *Bitumen liquidum, Oleo simile, quod innatat lacubus.* *Kentm.* 26. *Naphtha sive Petroleum.* *Geof. Laet. Ed. Angl.* 133. *Oleum Petræ vulgò.* **OIL OF PETER, or ROCK-OIL.**

It is a fat liquid Substance, of a black Colour, and a strong Smell. There are two Kinds of it; one native, which flows out of Rocks and Stones; and the other artificial, which is distilled from Charcoal and Fossils. Of the native, they reckon at *Paris* two Sorts:

1. *Petroleum rubrum sive Gabianum.* *Ind. Med.* 90. *An Petroleum rufum Schroderi?*

2. *Petroleum flavum seu Italicum.* *Ind. Med.* ibid.

The *Bitumen*, or *Petroleum Gabianum*, is esteemed an Antihysteric; and, also, good for the Tooth-ach: It heats and dries, consists of fine Parts, is a Digestive and Resolvent, and beneficial to the nervous System. *Schroder.* *Petroleum* is of different Colours, but the white is the best. *Dale.*

The *Naphtha* of *Dioscorides*, or *Petroleum* of the Shops, is a subtle, inflammable, mineral Oil, with a fragrant bituminous Smell, of different Colours, either white, yellow, red, or black. Different Names are given it by Authors: The *Babylonians* gave the Name of *Naphtha* to an Oil either black or white, which flowed from some Fountains near *Babylon*. It was likewise called *The Oil of Medea*; because she is said to have burnt *Creon's* Daughter to Death, by anointing her with this Oil. It had the Name of *Petroleum*, because it distils from Rocks. By *Myrepsus* it is termed *Allicola*; by others, *The Oil of St. Barbarus the Abbot*, *The Oil of St. Catharine*, or *The Holy Oil*. The Word *Naphtha* comes from a Greek Verb, which signifies, to light, or kindle.

There are few Countries in which this Oil is not to be found. In the Island of *Samos* a Kind of it is gathered, called by the Inhabitants by a Name which signifies *Oleum Terræ*; and it is in great Esteem among the *Indians*. In *Italy*, near *Modena*, the Oil is gathered from Springs and Wells; and, indeed, this whole Duchy abounds with it, especially a Place called *Frumetto*. The Inhabitants dig Wells to the Depth of thirty or forty Feet, till the oily Spring is found; and there it is always mixed with the Water. The Wells dug at the Foot of the Hill furnish a large Quantity of very red Oil; those near the Top, a white Oil, but in smaller Quantities. There is another Rock in the same Country near the *Apennine* Hills, where there is a perpetual Spring of Water, on which this Oil swims, of a yellow Colour, and in so great Quantities, that twice a Week they gather six Pounds at a time. *Petroleum* is found likewise in *France*; and particularly in *Britany*, near *Beriers*, a red Oil, mixed with Water, flows from the Crannies of some Rocks, which is collected with great Care, being no way inferior to the rest in Virtue. There is another such Fountain near *Clermont*, in *Auvergne*.

Petroleum easily takes Fire; and it is the Custom in many Places, to burn it in Lamps, instead of common Oil. It is plentifully stored with fine volatile Parts, which easily evaporate, and are so greedy of Fire, that if a lighted Torch, or any other flaming Body, be held in the Wells or Fountains of *Petroleum*, the exhaling Effluvia very often take Fire. It is difficultly mixed with Spirit of Wine. By Distillation, it yields an oily Liquor, something more pellucid than before; but it loses a great deal of its native Smell, and gives a more languid and fuliginous Flame. A small Quantity of a yellowish Magma remains at the Bottom of the Alembic; therefore it is evident, that *Petroleum* is not meliorated by Distillation. The best *Petroleum* is reckoned that which is fresh-gathered, of a subtle, bituminous

bituminous Smell, white, and pellucid; next to that is the yellow; then the red; but the black is accounted the most impure of all.

Dioscorides commends it in Suffusions, and Dimness of the Eyes. The *Petroleum* of *Britany* is given, a few Drops at a time, with great Success, in what is called a Suffocation of the Uterus, and to kill Worms in Children. It is proper in a Suppression of the Menstrues, taken in the Quantity of twenty-five Drops, or the Region of the Pubes being anointed with it. In a Palsy, accompanied with cold Pains in the nervous Parts, the Part affected is anointed with it. *C. Lusitanus* commends the Use of it in stopping the Progress of a Scirrhus, made up in the following Liniment:

Take Oil of Myrtle, and of Nutmegs, each half an Ounce; the Fat of any Beast of Burden, two Ounces; Petroleum, three Ounces: Mix them together.

NAPO-BRASSICA. A Name for the *Brassica*, *Radice Napiformi*.

NAPTA. The same as *NAPHTHA*. It is, also, a Name for a Sort of Tumor, otherwise called *NATA*, or *NATTA*.

NAPUS. See *BUNIAS*.

NAPY. Mustard.

NAR. Fire. *Rulandus*.

NARCAPTHON, or **NASCAPTHON**, *νάρκαπθον*, or *νάρκαπθον*. An aromatic Bark. See *CASCARILLA*.

NARCE, *νάρκη*. A Torpor, Stupor, or Dulness of Sensation; or a Dulness, or Hebetation, of the Senses. It, also, imports a Stupefaction of the Senses by Medicines, in order to render a Person less sensible of Pain.

NARCISSO-COLCHICUM. A Name for a Species of *Lilio-narcissus*, remarkable for nothing but the Beauty of its Flower; called by *Boerhaave*, *Lilio-narcissus*, *luteus*, *autumnalis*, *minor*.

NARCISSO-LEUCOIMUM.

The Characters are;

The Flower is, for the most part, composed of six Leaves, in form of a Lily, which are sometimes equal, and sometimes unequal and pendulous: The Empalement becomes a roundish Fruit, which is divided into three Cells, and full of roundish Seeds: To which may be added, It hath a bulbous Root.

Boerhaave mentions six Species of this Plant, none of which have any particular Medicinal Virtues ascribed to them at present, that I know of.

NARCISSUS.

The Characters are;

The Flower is naked and narrow, and tubulous in its lower Part, but hexapetaloid above, and expanded into the Form of a Star; in its Centre it bears a floral Crown, shaped like a Bell, or a Tube, and is furnished with six Stamina; it grows either on the uppermost Part of the Ovary, which is divided into three Parts, and contained within the Crown in those which bear a Tube instead of a Crown; or else it grows on the highest Part of a long Tube, in those which have a Bell instead of a Crown. The End of the Pedicle bears an Ovary, which, in those that bear one Flower on one Stalk, is covered with one long Tube, resembling a membranaceous vaginal Calyx; but in those which produce several Flowers, in manner of an Umbella, this Vagina covers the lowest Parts of the Pedicles, leaving the Ovaries naked. The Ovary passes into a triangular oblong Fruit, containing roundish Seeds.

Botanic Authors mention a great many Species of *Narcissus*, which are only remarkable for the Beauty of their Flower; *Boerhaave* mentions forty-seven.

The officinal *Narcissus* is thus distinguished;

NARCISSUS. Offic. *Narcissus medio-luteus*. Ger. 110. Emac. 124. *Narcissus medio-luteus vulgaris*. Park. Parad. 74. Raii Hist. 2. 1135. Synop. 3. 371. *Narcissus pallidus circulo luteo*. C. B. P. 51. Tourn. Inst. 154. *Narcissus medio-luteus cum aliquot floribus*. J. B. 2. 604. **COMMON PALE DAFFODIL**, or **PRIMROSE PEERLESS**.

It grows on Banks, and in Meadows, and flowers in April. The Root, which is the Part used in Medicine, being taken either in Meat or Drink, is an Emetic. It is of Service in Ambusions, conglutinates the divided Nerves, is effectual in Luxations of the Malleoli, and inveterate Pains of the Joints; removes cutaneous Blemishes in the Face, and the Vitiligo; cleanses foul Ulcers, breaks Abscesses, and draws out Splinters from the Body. Dale from *Dioscorides*.

NARCOSIS. A Stupefaction, from *νάρκη*. Torpor, Stupor, or Numbness.

NARCOTICA, *ναρκατικά* (*νάρκατα*), from *νάρκη*, to affect with a Stupor, or Torpor, Narcotics, are soporiferous Medicines, which induce a Stupefaction.

Soporifics, in Greek, are called *νάρκωσις*, *Hypnotics*, *δρεσνός*, *Anodynes*; if they be of a potent Nature, they take the Name of *Narcotics*, or *Stupefactives*; and are such Kinds of Remedies, as by their subtle, noxious, and deleterious Exhalations,

diminish, or quite destroy, the Sense and Motion of the solid Parts. Among *Soporifics*, the most eminent are those which are usually prepared for medicinal Uses, of the whole Poppy, especially *Opium*, which by the Antients was called *Lacryma Papaveris*, (the Tear of the Poppy) and *Meconium*, which is the Extract of the Poppy, made by Boiling. In the Class of Stupefactives, which are of a violent Nature, are all such Remedies as are prepared of the *Mandragoras*, *Hypocyanus*, *Stramonium*, and *Datura*: Stupefactives and Soporifics are, not without good Reason, reckoned amongst Poisons, since they exert their noxious Influence in a short Space of Time, when taken in a small Quantity; and a Quantity a little larger than ordinary proves mortal. Besides, their principal Operation is on the most noble Parts of the Body, which are the Origins of Sense and Motion; and, moreover, they act by means of an Element quite opposite to Nature, a noisome sulphureous Vapour, by which they diminish to a considerable Degree, or quite destroy, the Sense and Motion of the motive Fibres.

The Operation of stupefactive Poisons is different from that of Caustics: These latter, with their highly acrimonious and penetrating Salts, excite preternatural and violent Motions; the other, by their sulphureous Vapour, retard or stop those Motions and Sensations, which principally belong to the nervous Membranes; and by that means render the Circulation of the Blood more languid, and the Excretions, slower and more imperfect.

The Life of the human Body, and the Integrity of its Functions, consists in the due Tone of the Solids, and the free and equable Motion of the Fluids: The first depends on their moderate and equable Systole and Diastole, or their Contraction and Dilatation; the other in a proper Temperament, Quantity, and Ventilation of the Blood. Whatever, therefore, in a speedy and effectual Manner destroys that due Tone of the Solids, and disturbs the equable Motion of the Fluids, is naturally qualify'd to subvert all the Functions of the animated Body; and, if it works such an Effect in a violent Manner, it may be justly called Poison. And when Soporifics and Narcotics, in too great a measure, diminish the Motions, and injure the Tone, of the solid Parts, or render the Circulation of the Blood more languid and imperfect, they are highly destructive to Nature.

We are assured by undoubted Experience, that the Effects of Opiates and Narcotics, especially when taken in an immoderate Quantity, are a weak, low, and small Pulse, a Strangeness and Difficulty of Breathing, a soporous Indisposition, and Heaviness of the Head, a Dulness of the Senses, and oftentimes a Deliriousness, attended with a Diminution of Appetite, Costiveness, a Badness of Digestion, and a remarkable Decay of Strength. All these Symptoms proceed from no other Cause than a too slow Progress, or Stagnation, of the Blood and Fluids; for since the Motion of the Fluids depends only on the Tone, Strength, and systolic and diastolic Motions, of the solid Parts, it plainly appears, that the animal Spirit, that Fluid of the Brain, which directs and regulates the Motion of the Fluids, is primarily and preternaturally affected by these Remedies.

The Elements by which *Narcotics* operate, are of an highly volatile and penetrating Nature, since they so deeply insinuate themselves like a Vapour into the Pores of the Membranes and Nerves, and, by contaminating that most pure and moveable Fluid, deprive, by little and little, the Solids of their Tone and Motion.

That the Elements by which *Narcotics* exert their Force, are extremely volatile and penetrating, may be proved by several Arguments: First, their Virulence is almost intirely destroy'd by long and vehement Boiling. Secondly, if they are apply'd in Ointments or Epithems to the Head, or other nervous Parts, as the Soles of the Feet, the Palms of the Hands, or only received by way of Smelling, they induce a Sleepiness. *Dioscorides* affirms *Opium* to be soporiferous by Smell alone. And *Plutarch*, in his *Sympliciacs*, relates, that the Vapours proceeding from the Poppy have, for want of due Caution, proved fatal to those who have gather'd the Juice. And, thirdly, it is found by manifold chymical Experiments, that there are no better Correctives of their Virulence than *Acids*, such as Juice of Quinces or Citrons, Wine-vinegar, or Spirit of Vitriol, which have a mighty Influence in fixing the volatile Sulphur; and *Opium* is well known to lose its Virtue by being roasted on an heated Plate. All Narcotics and Hypnotics exhale a strong, and malignant kind of Vapour, as we are assured by the Smell, which is a manifest Indication of an ungrateful Sulphur contained in them.

Narcotics act on the nervous Membranes of the Stomach and Intestines, principally by means of a vaporous and fetid Sulphur. For, as the Stomach and Intestines first and immediately feel the Force and Efficacy of Remedies, they are so much the more liable to suffer from the Influence of Medicines, which are of a stronger and more penetrating Nature than ordinary. *Opium*, or any other Narcotic, after it is taken, and be-

gins to be dissolved by the internal Heat and Moisture, diffuses its noxious Vapours, which being received into the Pores of the nervous Membranes, the Fluid, on which their Tone and Motion depend, loses its Nature: Hence the Sensation, and, also, the peristaltic Motion, of the Intestines become more languid: For if a strong Smell, as in the Case of Hysterics, received up the Nostrils, such, for Instance, as proceeds from burnt Feathers, or Asa-foetida, has so sudden an Effect in composing the turbulent and disorderly Motions in the nervous and membranous System; and if, on the contrary, a sweet-smelling Vapour has the Force of immediately disturbing the whole Frame of the Muscles by violent Spasms; why may not the foul and noisome Exhalations of Narcotics, by contaminating a Fluid of consummate Activity, as well injure, or put a Stop to, its Motion? But those things which act on the Nerves, are most speedy in their Effects, because their Influence is immediately diffused over the whole nervous System. An Opiate, as soon as taken, or before it is out of the Stomach, very soon causes an Inclination to sleep, and Relief from Pain in distant Parts; and Opiates, most of all, exert their Influence on the Nerves, by virtue of which, those racking Pains which are incident to the Intestines, are remitted in a Moment, being succeeded by a Nausea, Loathing of Food, and, if there be sufficient Strength, by Vomiting.

Narcotics have, also, a mighty Influence on the Membranes of the Brain, where, by greatly diminishing the Spring and Systole of the Arteries, which are furnish'd with very thin Membranes, they cause Stagnation of their Blood therein, with Distentions of the Vessels of the Head; by which means they induce a Torpor, Drowsiness, Deliriousness, with frightful and troublesome Dreams.

There is nothing in the Nature of Things, that will render a wise and intelligent Person a Fool, and stupid, so soon as a Narcotic. That the Datura has such an Effect, is well known; and that the Solanum Furiosum, and its Berries, will suddenly render a Man of sound Sense a Maniac, is confirmed by many Observations in *Matthioli, Comment. in Dioscorid. Wierus de Praestigio, Mercurialis de Venenis*, and *Lobelius in Adversariis Stirpium*. To these we may add the following Observation of our own: A certain Person labouring under an Haemoptoe, having, thro' want of Care, taken too large a Dose of a Medicine containing a good Quantity of the Seeds of Henbane, was deprived of all Sense and Memory, and continued waking for some Days. And something like this happened from Pills of Houndstongue, given in too large a Dose to repress Vomiting. Even an external Application of Henbane may procure Madness, as *Platerus* assures us, on the Testimony of *Rondeletius*; and the pernicious Effects of these Kinds of Remedies were not unknown to the Antients. Hence *Caelius Aurelianus, Lib. 1. Cap. 4.* says, "They soon become delirious, who take the Papaver, Mandragoras, or Hyoscyamus, inwardly; but their Pulse at such times is very slow." And *Helmont, Lib. 1. de Lithiasi*, says very justly of Opium, "That they are guilty of a very great Error, who endeavour to cure a Mania with Opiates, since every Opiate is mad in itself;" and, in another Place, "Narcotics will hardly procure Sleep to mad Persons, tho' given in a quadruple Dose, but will increase the Madness." To this Purpose, also, is *Obs. 78. Dec. 11. M. N. C.* of a Person labouring under a Dysentery, who was made delirious with a Clyster of a Pint of a Decoction of Hyoscyamus, and continued in that State for six Weeks.

Narcotics, or stupefactive Remedies, were always very much suspected, by the wisest Physicians among the Antients, in the Cure of Diseases, on account of their deleterious Quality. For a Proof hereof, we shall give a few Testimonies selected from innumerable others. *Galen* was always very fearful of exhibiting Opium; and, *Lib. 3. de Medicam. Composi. Cap. 10.* he says, that "Living Bodies suffer something like Mortification, from the Use of every Remedy composed of Opium, Hyoscyamus, and Mandragoras." The next I shall quote, is *Celsus*, who, *Lib. 3. Cap. 18.* pronounces, that, "If Sleep must be procured by Medicines, Moderation is necessary in exhibiting them, lest we should never be able to rouse the Person from the Sleep into which we have cast him." And, *Lib. 5. Cap. 25.* he says, "To use Anodynes, without urgent Necessity, is a wrong Step; for they are a violent kind of Medicines, and hurtful to the Stomach." But the Effects are worse, which *Scribonius Largus, Compos. 106. Cap. 48.* enumerates: "Opium, says he, taken, induces Heaviness of the Head, Refrigeration and Lividness of the Limbs, and cold Sweats, besides a Difficulty of Respiration, Stupidity, and Loss of Reason." *Trallian, Lib. 3. Cap. 5.* writes, that a certain Person, by the sole Use of Opium, had lost his Voice and Senses in such a manner, that he could never afterwards be recovered. Nor must we omit *Aetius*, who very well describes the pernicious Effects of Opiates in the following Manner: "Opiates, says he, never cure the Diseases themselves on which

"the Pains attend; but, by inducing a Stupor and Dulness of Sensation on the Parts, procure a kind of Rest to the Pains." And, in another Place, to the same Purpose, he says, that "They cause indeed an immediate Cessation of the Pain, but preserve the Cause thereof inwardly, and, in a little time afterwards, induce Faintings and Death, or long and incurable Disorders." And, to speak the Truth, so sudden and pernicious have been the Effects which Physicians of all Ages have recorded from the Use of Narcotics, that they are by no means to pass unregarded, but to be esteemed as an Evidence of some very active and latent Principle, which has Power to hurt; for which Reason Physicians ought to be the more careful and circumspect in the Use of these Kinds of Remedies.

Tho' much Mischief and Danger may be the natural Effects of Narcotics, so that they may be esteem'd not far remov'd from the Nature of Poisons, Physicians, however, both antient and modern, have at all times experienced great Benefit from hypnotic Anodynes, especially in violent Pains and Fluxes; for what greater Benefit can we receive, than to be delivered from intolerable Pains? Besides, such is the Nature of Pain, that, if it be of any long Continuance, it either weakens the Powers of the Mind and Body to such a Degree, as to render a Dis-ease, otherwise favourable, eventually mortal; or else brings Death of itself. Whoever therefore shall be so happy as to know how to remove those Pains, and avert so great Dangers, most certainly confers an extraordinary Benefit, and administers I had almost said divine Consolation to the miserable Patient. And, therefore, if you consult the most antient Compositions, of which *Scribonius Largus* has principally made his Collection, or *Celsus*, you will find many Prescriptions against Pains and Fluxes, of which Opium is commonly the Basis. For an Example, we may take that celebrated Antidote of *Cassius*, described by *Scrib. Largus, No. 120.* mentioned, also, by *Celsus, Lib. 6. Cap. 14.*; the Theriaca Andromachi, Mithridate, Aurea Alexandrina, [see its Composition under the Article ALEXANDRI ANTIDOTUS AUREA] the Reques Nicolai, the Triphera magna Nicolai, and Philonium, with an infinite Number of modern Preparations, enough to fill a Volume with their bare Titles, are but Corrections of Opium, and Compositions which have for their Basis Opium, celebrated by some as an universal Remedy; and some endeavour to extract a Panacea from it. It were indeed heartily to be wish'd, that some eminent Physicians had not been so profuse in their Encomiums on this Remedy, since none has been so freely, and with Impunity, abused, to the Destruction of Mankind, especially in our Times; on which Subject, *Stablius, de Imposturis Opii*, deserves to be consulted. I cannot avoid taking the Opportunity here to remark, that there is a Custom too prevalent in our Times, when we would repress an Haemorrhage, or alleviate a Pain, of exhibiting Pills of Houndstongue, which, having a Mixture of Opium, and Seed of Henbane, and often leaving behind them an extraordinary Stupor of the Head, ought to be used with the greatest Caution; and never, but when milder Remedies will not answer the Intention; nor then, if the Body be very weak.

In Disorders of the Stomach and Intestines, all things which induce a Stupor, are very cautiously, or never at all, to be exhibited, because no Kind of Medicines is so pernicious and injurious to the Tone and Motion of the nervous Parts.

To preserve Health, and prevent Diseases, nothing is so effectual, as to maintain the Tone, Strength, and Motion, of what they call the *Primæ Viæ*, or first Passages, because that most salutary Excretion which is performed by Stool, and discharges the Sordes, which are the Recrements remaining after Digestion, or are collected from all Parts of the Body, depends chiefly thereon. Where this Evacuation is suppressed, or else performed after a slow and remiss Manner, a Deluge of vicious Humours is soon collected, and becomes the Cause, as well as Fomenter, of Diseases. Now there is nothing which so effectually diminishes the peristaltic Motion of the Intestines, and suppresses intestinal Excretion, as Sedatives and Anodynes; the Truth of which is attested by Experience: For as all Remedies, especially those which are of a drastic Quality, exert their Efficacy first and principally upon the Stomach and Intestines.

It is very dangerous to administer Opiates and Anodynes, where the Stomach and Intestines are inclining to an Inflammation and Sphacelus, or where an extraordinary Impurity of the Humours disposes them to a Corruption.

That a firm Rest and Stagnation of the Blood in the Vessels, which are productive of an Inflammation, will end in a sphacelous Putrefaction, unless seasonably discussed, is not to be questioned. Whenever, therefore, these Parts, I mean the Stomach and Intestines, labour under violent Pains or Spasms, and the Body is infirm or impure, an Inflammation is justly to be apprehended. 'Tis, therefore, the Business of every prudent Physician, in a Dysentery, an Iliac Passion, a spasmodic Colic, and

and a violent Cardialgia, diligently to consider, not only the Strength of the Patient, but, also, the various Stages of the Distemper, and the Disposition of the Humours, before he exhibits Medicines of a sedative Quality; otherwise, instead of affording seasonable Relief, he procures the Death of the Patient. Thus, some of the best practical Authors inform us, that mortal Symptoms have forthwith been produced by Opiates taken internally, or injected by way of Clyster. Instances of this Kind occur in *Thonnerus*, in *Observat. Lib. 3. Cap. 5. Waldschmidtus*, in *Dissect. de Noxa Opii*; *Tillingius*, de *Opio*; *Sennertus*, *Lib. 6. Praxios*, P. 3. *Cap. 1.* and *Marcellus Donatus*, in *Hist. Med. Mirabil.*

Since Medicines of a sedative and stupefying Quality so effectually destroy and impair the Strength of the Intestines, hence 'tis obvious, that nothing has a more effectual Tendency both to produce and cherish hypochondriac Disorders, than a frequent Use of such Medicines. That the hypochondriac Disorder arises from continual Inflations and Spasms of the Stomach and Intestines, which are of a nervous Nature, and that it is the Effect of a Suppression of the Discharge by Stool, and the large Congestion of peccant Humours arising from that Circumstance, are things so certain, that they cannot be doubted of. Since, therefore, Medicines of this Kind, by producing Costiveness, weaken the Strength and Force of the Intestines, hence nothing can be more prejudicial in this Disorder; and I myself have often observed, that the immoderate Use of Opiates and Astringents in checking Diarrhoeas, Dysenteries, and intermittent Fevers, has produced a violent hypochondriac Disorder, in Women called *Hysterics*, which generally afflicted the Patient during the remaining Part of his Life; and, if a Physician, by the frequent Use of Anodynes, checks the Pain, and other Symptoms, accompanying this Disorder, he by that means alleviates them for a time, but lays a Foundation for their recurring with greater Violence.

Sedative Medicines, especially those of the somniferous and stupefying Kind, are, also, injurious to the Head, and increase the Disorders incident to it; because, by rendering the Motion and Pulsation of the carotid Arteries, which consist of slender Coats, more languid, they occasion a slow Circulation of the Blood through the Head. Hence the Stagnations of Blood there produced generate formidable Disorders. In order to keep the Head free from Diseases, 'tis of the last Importance to preserve the Tone of the Membranes of the Brain, and the due Circulation of the Blood through its Vessels. Now nothing is more injurious to the nervous Coats of the Brain, than all vaporous, fetid, and strong-smelling Substances, since, by their means, their Tone and Strength is diminished, the systaltic and elastic Force of the small Arteries impaired, and consequently the Circulation of the Blood through the Head, rendered slower: And this slow Circulation is succeeded by a Secretion of the serous Humour, which lays a Foundation for the most considerable Disorders of the Head, such as a Palsy, an Abolition of Memory, an Aphony, a Difficulty of Hearing, lethargic Disorders, Hemiplegies, and fixed Pains, or, in consequence of the too great Distention of the Vessels of the Brain, by the infarcted Blood; Melancholy, which is frequently accompanied with a palpable Depravation of Fancy, an imaginary Appearance of Spectres, terrible Dreams, and a Madness, which easily degenerates into Fury. These vaporous and stupefying Medicines have an uncommon Tendency, not only to generate, but, also, to support and cherish, these Disorders; and, by the incautious Use of them, I have frequently observed wild Disorders of the Head converted into Misfortunes of a more terrible Kind; an Head-ach, for Instance, transformed into a Lethargy; an Hemicrania, into Stupidity; a Palsy, into an Apoplexy; a Vertigo, into an Epilepsy; and a Difficulty of Hearing, into a confirmed Deafness.

As Anodynes and Opiates are so unfriendly to the Membranes of the Brain and Intestines by diminishing their Tone and Strength, so Children, and old Persons, ought in a particular manner to abstain from the Use of them; first, because they retard the Discharge by Stool; and, secondly, because they weaken the nervous System and Membranes; two Circumstances highly prejudicial, because the Disorders principally incident to these Ages arise either from Costiveness, or a Weakness of the Brain and Nerves.

'Tis certain from Experience, that, by a liberal Use of Anodynes, Children contract a Dulness of Genius and Memory, which lasts for a considerable Time; for a violent Injury done to the tender Structure of their Brain is not easily repaired. For this Reason, *Stalpart Vander-Wiel*, in *Cent. 1. Obs. 42.* justly orders, "That Women and Nurses, should not, when the Children committed to their Care are first affected with Pain and Uneasiness, forthwith exhibit Anodynes; since, tho' they do not generally, by that means, destroy them, they yet often weaken their Brain and Nerves to such

"a Degree, as to induce violent Tremors, Falsies, and Stupidity." Of the same Opinion is *Dr. Willis*, who, in *Pharm. Rat. P. 1.* informs us, that, by Medicines of this Kind, he knew some seized with Slowness of Genius, and Stupidity, and others, with Dotage.

Anodynes and Opiates are highly injurious to Persons naturally weak; to those whose Strength is impaired either by Age or Diseases; to those whose Pulse is languid, whose vital Motions are defective, or whose Fluids have a Tendency to Corruption. It ought to be a constant Rule in Practice, never to exhibit strong Sedatives, where the Strength is small, and the Pulse, which is always lessen'd by Opiates, already weak. Opiates and Anodynes are scarcely ever useful, when the Viscera are infarcted, and their Tone destroyed, as in chronical Disorders. Nor are such Medicines to be exhibited in Cases where the Blood and Humours are highly impure, as in caco-chymic and scorbutic Habits, in which the immoderate Use of Opiates, in order to remove Pains or Spasms, proves mortal, because it quickly induces a Sphacelus. When violent Pain has greatly diminish'd the Strength, or a profuse Sweat been excited, these Medicines should be sparingly used, left a Palsy, or some other nervous Disorder, should be induced. For this Reason, 'tis far more expedient to use Opiates and Anodynes in the Beginnings of Diseases, when the Strength is entire, than when it is exhausted by the long-continued Shock of the Disorder.

As the two principal Indications for stopping Pain are its Violence, and the Hardness and Strength of the Pulse, so, when these happen, an Hypnotic may be used, especially when the Pain proceeds from an external Cause, such as Worms, the Stone, the Eruption of a Tooth, the Puncture of a Tendon or Nerve, a Division of the Nails by some sharp Instrument, or the thrusting a Nail deep into the Sole of the Foot; which not only frequently induces a terrible Train of Symptoms, but, also, sometimes proves mortal.

As, in all Cases, mild and safe Remedies are preferable to those of a more dangerous and drastic Nature, so, in mitigating Pain, we are never to have recourse to strong Anodynes, provided those of a mild and gentle Kind prove sufficient: Among these we may justly reckon anodyne Sulphur prepared from Vitriol; Spiritus Nitri Dulcis duly prepared; among vegetable Substances, Saffron, and Nutmeg; of fragrant Substances, Musk and Amber; and, of Shop Preparations, the Oils of Chamomile and Yarrow. To this Class, also, belongs Opium depurated with Rain-water, and corrected by a due Addition of Analeptics, Purgatives, or Alexipharmics. *F. Hoffman.*

NARDINUM Unguentum, Ointment of Nard, is prepared either with an Addition of the Leaf of the Malabathrum, or without it: Generally, however, it is mixed with *Oleum Balaninum*, or *Omphacinum*, inspissated with an Addition of *Schoenanth*; and, in order to give it a Fragrancy, there are added Costus, Amomum, Nard, Myrrh, and Balsamum. The best is what is of a thin Substance, without Acrimony, and smelling like dry Nard, or Amomum.

It is of an attenuating, acrimonious, and deterfive Quality, and has a Virtue of rarefying the Humours; it is liquid, and falls short of a strigentitious Consistence, without a Mixture of Rosin. There is a baser Sort of *Nardinum Unguentum*, prepared of *Oleum Omphacinum*, the *Juncus odoratus*, *Calamus*, *Costus*, and *Nard*. *Dioscorides*, *Lib. 1. Cap. 75.*

NARDUS.

NARDUS CELTICA. *Offic. J. B. 5. 205. Ger. 919. Emac. 1079. Raii Hist. 1. 391. Nardus Celtica Dioscoridis. C. B. 165. Nardus sive Spica Celtica. Park. 117. CELTIC SPIKENARD.*

This small Plant has a long slender Root, which creeps among the Moss upon the Surface of the Earth, divided into several Branches, full of very small Fibres, of a strong aromatic Smell, when dry; from the Heads of these Roots spring a few small narrow Leaves, broadest at the End, and round-pointed, of a yellowish-green Colour, and growing of a yellow Colour at the End of Summer; from among these arise small Stalks, scarce a Span high, having two small Leaves set opposite at a Joint; and, on the Top, a few little white monopetalous Flowers. It grows in the Alpine Countries, between Italy and Germany; and flowers in August. The Root is principally used.

Celtic Nard is heating and attenuating, accounted alexipharmic and sudorific, and good against malignant Distempers, and all Kinds of Poisons. It opens Obstructions of the Liver and Spleen; provokes Urine, and the Menfes; and is an Ingredient in the Theriaca and Mithridate. *Miller's Bot. Off.*

The Plant is a Drier, and has the same Virtues as the Indian Spikenard; but is more effectual in provoking Urine, strengthening the Stomach, and discussing Flatulencies; outwardly, it is an Ingredient in the Composition of Malagmas and Ointments. *Schroder.* The Hungarians frequently use it in Lotions.

tions of the Head; as it agrees in Genus, and external Appearance, with *Valerian*, so it seems to us to agree with it in Virtues. *Raii H. P.*

NARDUS INDICA, & SPICA NARDI. Offic. *Nardus Indica*. Ger. 921. Emac. 1080. *Raii Hist.* 2. 1910. *Nardus Indica vulgaris*. J. B. 3. *Nardus Indica sive Spica Nardi*. Park. Theat. 1595. *Nardus Indica, quæ Spica, Spica Nardi, & Spica Indica Officinarum*. C. B. P. 13. Theat. 194. **INDIAN SPIKENARD.**

This is the Head of a Root, consisting of Spikes of a reddish-brown, or iron Colour, from an Inch and an half, to two or three Inches long, and about a Finger thick, made up of fine slender Fibres, matted close together; and seem to be nothing but the Remains of the Fibres of the old decayed Stalks, having small stringy Roots at the Bottom, about as thick as a Packthread. The whole Spike has a strong aromatic Smell, and a warm bitterish Taste. It is not known what Plant this belongs to; but it is supposed by the best Judges, to be the Head of the Root of an *Indian Cyperus*. It grows in some Parts of the *East-Indies*.

Spikenard is reckoned to be stronger, and more prevalent, than the *Celtic Nard*, being heating, opening, alexipharmic, and good against all contagious Distempers, and venomous Bites; and is of great Service against Stoppages of the Womb. It is put in a pretty large Quantity into Mithridate and *Venice Treacle*. *Miller's Bot. Off.*

The *Nardus Indica* is the Root of a Plant of the *East-Indies*. What look like the Filaments of the Root, are not properly such, but the Remains of the decayed Leaves. It is a very good Attenuant, is used in Colics, and promotes Sweat. It is an Ingredient in many Electuaries, and other Compositions, used externally; such as the Oil and Ointment of Spikenard. *Galen* relates, that he cured an Emperor of the Colic in his Stomach, by rubbing that Region with this Ointment. This Spikenard may be given inwardly, from half a Dram to a Dram; and, in Infusion, from half an Ounce to an Ounce and half. *Geoffroy*.

I am of Opinion, says *Ray*, with *J. Baubine, Garcias*, and other skilful Botanists, whatever *Anguillara* and others have said to the contrary, that our Spikenard of the Shops is the true and genuine *Indian Nard* of the Antients. *Garcias* assures us, that there are not different Species of *Nard*; for he knew but one, and that grew near the River *Ganges* on a Mountain, one Side of which faces the East, and the other the West, which look towards *Syria*; a Country separated from *India* by a vast Tract of Land: Nor is one Plant better than another, or has a Spike considerably longer than another. Nor can it be infer'd, from the vast Price at which *Pliny* tells us, *Lib. 12. Cap. 12.* it was sold in ancient Times, that our *Nard* is not genuine; for the *Indies* are now more open and known, than they were in the Time of *Pliny*; and Spices are imported among us in greater Plenty, and less adulterated, than they were in his Days, since the Navigation to *India*, round the Coasts of *Africa*, has been discovered; and, consequently, these Drugs are sold much cheaper.

It is a great Question among the Learned, what Part of the *Nard* we ought to reckon the *σάχυν*, or Spike; some will have it to be the Root, others deny it; of the former Opinion was *Galen* in *Antid. 14.* where he says, ὁ Ἀνδρομάχου Ἰνδὴν νάρδος, &c. "*Andromachus* orders for an Ingredient *India Nard*, which we call *Spikenard*, from its Resemblance to Spikes, tho' it be a Root." To this the others oppose the Authority of *Dioscorides*, who says, that it has several Spikes proceeding from the same Root, both leafy ones, and such as consist of a Complication of Fibres. The Truth is, that the little Stalks, beset with Multitudes of capillaceous Leaves, are called *Spikes*, which, tho' they seem to be Roots, are not really such, but have under them small Roots or Fibres, by which the Plant attracts Nourishment; and these *Dioscorides* calls *Roots*, and distinguishes them from the Stalks. It is certain, however, that this Plant produces Stalks, which have their Tops adorned with Spikes or Panicles, after the Manner of Grasses, or Plants resembling them.

The *Nards* of *Dioscorides* are heating and drying, and provoke Urine; for which Reasons, they stop a Looseness, being taken inwardly; and stop uterine Fluxes, being used as a Pessary. Taken in cold Water, they remove a Nausea and Cardiognus, and relieve such as are oppressed with Flatulencies, or labour under the *Icterus*, or hepatic or nephritic Disorders. Boiled in Water, and an Infusion prepared thereof, they remove an Inflammation of the Uterus. They repress the superfluous Humours in the Eyelids, by astringing and condensing their Edges. The Powder thereof, sprinkled on moist and sweaty Bodies, takes off their rank Smell. *Nard* is an Ingredient, also, in Antidotes. Reduced to an impalpable Powder, then made with Wine into Troches, to be reposit in a new Vessel not pitched, they enter the Composition of ophthalmic Medicines. *Raii Hist. Plant.*

NARDUS MONTANA. Offic. Ger. 920. Emac. 1079. *Nardus montana tuberosa*. Park. 116. *Nardus montana radice olivari*. C. B. 165. *Raii Hist.* 1. 392. *Valeriana Nardus dicta radice olivari*. Hist. Oxon. 3. 103. **MOUNTAIN SPIKE-NARD.**

This is the Root of a Species of *Valerian*, which grows in the Mountains of *Leon* in *Spain*; but we are not certain what the Antients called by this Name. It is not much used in Physic; but its Virtues are like those of the *Nardus Celtica*, and *Nardus Indica*. *Geoffroy*.

It has the same Virtues, according to *Dioscorides*, and serves for all the same Purposes, as the *Celtic Nard*.

NARDOSTACHYS. Spikenard. *Paulus Aegin. Lib. 7. Cap. 3.*

NAREGAM, a common Name for two Species of *Indian Lemon-tree*; the first of which,

Mal-Naregam, is a Sort of Dwarf Lemon-tree, which grows in *Zeilon* and *Malabar*.

The Leaves of this Tree, boiled in Oil, and applied to the Head, ease the Pains thereof; and their Juice is reckoned an excellent Errhine for purging the Head. The expressed Juice of the Fruit cures that endemial Cachexy, the *Pitao*; and, of the Root, are prepared antispasmodic Pills. This Fruit differs from a Lemon, only in having but one Seed.

The other Species is the

Tsjeron-Katou-Naregam, which is distinguished by its small Fruit; this grows in mountainous Places throughout *Malabar*, especially about *Candenate*, and has always Flowers and Fruit upon it.

The Leaves are accounted a present Remedy for the Epilepsy. The Root provokes to Stool, drives out Sweat, and cures the Colic and Cardialgia. The dry'd Fruit strengthens the Stomach, and restores the injured Fermentation of the Stomach; it is, also, a potent Preservative against the Contagion of the Small-pox, and malignant Fevers; and is esteemed an excellent Antidote against several Sorts of Poison. *Raii Hist. Plant.*

NARES. The Nostrils.

Among the various Disorders incident to the Nostrils, none are of greater Importance than Hæmorrhages, which arise from a copious Conveyance of Blood to the Head; in consequence of which, the small Arteries in the *Tunica Pituitaria* are preternaturally filled, and their Extremities, being too much distended, are at last opened, and discharge their contained Blood.

Such is the Fabric of the Nostrils, that they are easily subject to Eruptions of Blood; for, in their internal Parts, the Blood-vessels divided, into highly minute Parcels, are copiously distributed through that Coat which covers the *Vomer*, the *Osse Spongiosa*, and the ethmoidal Bones, and are, at the same time, externally covered with a very slender Membrane. Hence, when the Blood is copiously convey'd to the Nostrils, it is with Difficulty returned through their small Veins, but easily stops in the minute Arteries, distends their Extremities, bursts them, and produces an Hæmorrhage. It, also, sometimes happens, that this Blood elevates the Extremities of these minute Arteries into small Aneurisms, which afterwards prove the Occasion of a copious Dropping of Blood.

That in Hæmorrhages of the Nose there is a copious and violent Afflux of the Blood and Humours to the Head and Nostrils, is sufficiently obvious from the violent Motion of the Heart and Arteries, the strong Pulse, especially in the Neck and Temples, the Sense of Weight in the Head, the Redness of the Face, the Swelling of the Face and whole Head, a Driness and Heat of the internal Nostrils.

The principal Cause of this Congestion is the unequal Progress of the Blood, especially through the Ducts of the external Parts, whether conveying Arteries, or returning Veins: By which means it happens, that the Blood is too scantily conveyed to some Parts, and too copiously to others, where it breaks the Vessels, and discharges itself.

Whatever therefore contributes to produce such an unequal Motion of the Blood, in a proportionable Degree, excites Hæmorrhages. Now all Hæmorrhages, and more especially that from the Nostrils, are generally accompany'd or preceded by a Stricture of the Skin and external Parts, a Detumescence of the Vessels, an Horripilation, a Refrigeration, Costiveness, a Retention of the Flatulencies, Rumbings in the Abdomen, Lassitude of the Limbs, and Pains of the Belly. Hence 'tis obvious, that the Cause of this unequal Circulation of the Blood is a certain Stricture of the Fibres, and most minute Vessels, especially in the Extremities; for when, by means of this spasmodic Stricture, the Vessels, especially such as return the Blood, Lymph, or any other Humours, as, also, the excretory Ducts of the Skin, through which, according to the Laws of Nature, the serous Part of the Blood ought to be eliminated, are compressed, the Blood regurgitates to the large internal Vessels, by which means a greater and quicker Con-

traction of the Heart and Arteries is produced, and the Blood itself more powerfully convey'd to the weak Parts, especially where its Congestion and Deposition lay a Foundation for Hæmorrhages, and other Disorders.

From what has been said, we may easily conceive how other Causes concur to produce Hæmorrhages, or Discharges of Blood from the Nostrils; for the Reason is obvious, why those who abound in Blood and Humours, indulge themselves in Rest, and a sedentary Life; are voracious; and live in a delicate manner, and, at the same time, incautiously expose their Bodies, especially their Feet, to the Cold, whilst they are discomposed by unusual Commotions, either of Body or Mind, take such things as exagitate the Blood; such as Aromatics, spirituous Substances, Ales, Wines, hot and volatile Medicines, or use too hot Baths, are subject to Hæmorrhages from the Nose; because, in such Patients, the equable Circulation of the Blood is everywhere intercepted, and cannot be equally distributed to all the Parts, through the minute infarcted Vessels; but, by acting too forcibly on the Parts thus disposed, makes an Eruption.

Nor is it an hard Task to assign a Reason, why these Hæmorrhages appear in certain Constitutions of the Atmosphere; for 'tis certain from Experience, that, especially in the Spring and Autumn, about the Equinoxes, many Persons, even advanced in Years, are subject to Hæmorrhages of the Nose, which afford them great Relief; for then the State of the Air is very unequal, and frequently changes from cold to hot, and from dry to moist: Now, since, by this frequent Vicissitude, the Tone of the Skin is weakened, and consequently Perspiration impaired, it is not to be wonder'd at, if the ordinary Course of the Blood is disturbed, and a Foundation for Hæmorrhages laid.

The same Reason is to be assigned, why Hæmorrhages from the Nose are sometimes epidemical, when a moist Constitution of the Air, when the Winds blow from the South and North, is suddenly succeeded by a dry and elastic State of the Atmosphere; for by this means the Exhalation of the Moisture through the Pores of the Skin is disturbed, the serous Part of the Blood is increased, and returned in a larger Quantity to the Heart and large Vessels; by which means their systaltic Motion is render'd strong, and the Impulse of the Fluids more brisk, but at the same time more unequal.

Nor is it more difficult to understand, why rheumatic, arthritic, and nephritic Patients, as, also, such as are subject to sciatic Pains, are often subject to Hæmorrhages from the Nose; for these Disorders are produced by spasmodic Motions and Strictures, by which the Circulation of the Blood being rendered unequal, preternatural Collections and Eruptions of it happen in other Parts. Hence *Hippocrates*, in *Lib. 2. de Prædict.* orders the Physician to ask adult Patients, afflicted with rheumatic or sciatic Pains, whether, in their Infancy, or Youth, they have been subject to Hæmorrhages from the Nose.

A Suppression of the Menfes, especially in young and pregnant Women, of the Lochia in Women after Labour, and of the hæmorrhoidal Discharge in Men, frequently produces a Regurgitation of the Blood, the Consequence of which is an Hæmorrhage from the Nose; for no other Reason, than that by the Spasms, with which Hæmorrhages are generally accompanied, the equable Motion of the Blood is destroyed, and the Blood, with an Impetus, forced to the Parts destined for Excretion, where, being denied a Passage, it rushes to any other Parts, and produces an Hæmorrhage.

It also frequently happens, that, in those especially who are of a tender spongy Habit of Body, inclined to Hæmorrhages, an Hæmorrhage of the Nose accompanies Fevers, especially that Kind called a *Synocha*; succeeds those of the Quartan Kind; and precedes the Eruption of exanthematous Disorders, the Measles, and Small-pox. This Phenomenon is owing to nothing but the violent spasmodic Strictures of the nervous Parts; for that these Disorders are attended with such Strictures, is sufficiently obvious from what generally precedes them, that is, a Discharge of thin Urine, Costiveness, Horripilation upon exposing the Skin to the slightest Air, Refrigeration, Inquietudes, and Anxieties, till the Head becoming afflicted with Pain, and the Face red and inflated, the Blood at last makes an Eruption.

'Tis, also, to be observed, that Hæmorrhages from the Nose are very frequent in those who have any large Member mutilated, or amputated; for, after such Misfortunes, the same Quantity of Blood and Chyle remains in the Body, whilst at the same time the Space, in which the Humours were before diffused, is lessen'd: Hence the Blood stagnates in the minute Vessels, and produces irregular Motions towards other Parts.

There is another Cause of the unequal Motion of the Blood, besides Spasms, that is, Infarctions and Obstructions of the sanguiferous Viscera, such as the Liver and Spleen; for, when an Obstruction happens here to the Passage of the Blood thro' the Vessels communicating with these Viscera, its Motion and

Impetus are convey'd to other Parts, and frequently to the superior Parts and Head: Hence it happens, that inveterate Scurvies, Dropsies, and Cachexies, sometimes bring on fatal Hæmorrhages. Thus *Hippocrates*, in his *Treatise de Prædict.* informs us, that Infarctions of the Spleen are accompany'd with Hæmorrhages.

Such Hæmorrhages, produced by various concurring Causes, are discharged either from the Right or Left Nostril, rarely from both; and differ in Quantity, according to the greater or smaller Afflux and Congestion of the Blood to the Head; for sometimes only a few Drops, and at other times a few Ounces, are discharged; and sometimes so copious an Effusion of Blood continues for some Hours, that the Quantity discharged amounts to five or six Pints.

Hæmorrhages of the Nose are in some Patients long, and in others short, and in some more frequent than in others. Thus, they are more frequent in Children, and young Persons, than in Adults, and those far advanced in Age. Men are likewise more subject to Hæmorrhages of this Kind, than Women; since these latter have the redundant Blood evacuated every Month by the Vessels of the Uterus. Hæmorrhages of the Nose are, also, large, and frequent in Persons of a spongy Habit of Body, furnished with small and numerous Vessels: But 'tis otherwise in lean Persons, whose Vessels are large, tho' this Species of Hæmorrhage, when happening to such, is generally very profuse.

'Tis, also, observable, that they who in their Infancy have a copious Discharge of mucid and serous Matter from the Ears, Nostrils, and Eyes, are, after the Years of Puberty, subject to Hæmorrhages of the Nose. 'Tis, also, certain from Experience, that such Hæmorrhages are sometimes hereditary, and convey'd from Parents to their Children. 'Tis equally certain, that no Hæmorrhage more easily returns, than that from the Nostrils, which sometimes recurs every Day, or within a few Hours.

Now, all habitual and frequent Hæmorrhages indicate a certain Weakness of Nature, that is, such a Structure of the Parts of the Body, as favours a slow and unequable Circulation of the Blood: These Hæmorrhages are, however, highly salutary, especially in spongy Bodies, where Stagnations, and other Disorders, are dreaded: Nor in practical Authors are there Instances wanting of Vertigos, Dimness of Sight, violent Head-achs, a Phrenitis, Convulsions, and Epilepsies, terminated by Hæmorrhages of the Nose: Whereas, on the contrary, *Hippocrates*, almost every-where, and especially in his *Prædict.* and *Coacæ Prænotiones*, informs us, that Vertigos, Apoplexies, Epilepsies, Convulsions, Ringings of the Ears, with Difficulty of Hearing, and a Gutta Serena, are produced by a preposterous Suppression of Hæmorrhages from the Nose.

Those Hæmorrhages from the Nose are generally critical and salutary, which, in that Species of Fever called *Synocha*, happen on the semicritical Day, that is, between the third and the fourth Day, or on the critical Day itself, which is the seventh, since they terminate these Fevers, which generally arise from a Plethora.

'Tis not only observed by *Hippocrates*, but, also, confirmed by Experience, that those who in their Childhood have been subject to frequent Hæmorrhages from the Nose, in their Youth readily fall into violent Disorders of the Breast, such as Spittings of Blood, Pleurisies, Peripneumonies, and a Phthisis; and are, when advanced to Men, subject to the hæmorrhoidal Discharge, rheumatic, arthritic, ichiadic, nephritic, and colic Pains.

Violent and enormous Hæmorrhages from the Nose, when arising from excessive Spasms of the internal Parts, and succeeded by Refrigerations of the Extremities, and Deliquiums, generally terminate in Death. This I had an Opportunity of observing in a Woman, in whom, when dead, the Carotids were preternaturally distended, and as large again as in their due State; whilst at the same time the inferior Portion of the Colon was greatly constricted.

Hæmorrhages accompanying exanthematous or malignant Fevers, where the Strength is much impaired, by destroying the Strength still more, by diminishing the Course of the Blood to the Surface of the Body, and lessening the Expulsion of the peccant Matter, are therefore highly dangerous. In chroical Disorders, also, where the Viscera are destroy'd, Eruptions of Blood prove mortal; for which Reason Hæmorrhages from the Nose generally are fatal to dropsical and cachectic Patients.

THE CURE.

When a violent Hæmorrhage threatens Danger, and too much impairs the Strength, the Assistance of a Physician becomes necessary. The principal Intentions of Cure are, after discovering the genuine Causes, to remove them by proper Measures.

When, therefore, a Redundance of the Blood and Humours, together with their expansive Force and Turgescence, hinders their free and equal Passage through the minute Vessels, and produces enormous Hæmorrhages, which principally happens in young Persons in the Spring, after violent Exercise, or the Use of such spirituous things as throw the Blood into preternatural Commotions, besides Venesection, which diverts the Course of the Blood from the Head, Preparations of Nitre are, above all other things, efficacious for checking the Orgasm of the Humours, and relaxing the spasmodic Stricture of the Parts. Thus *Paracelsus*, and *Hildanus*, in all Hæmorrhages, used purified Nitre with great Success: And *Rruerius*, in his *Praxis* and *Observationes*, greatly extols this Medicine for stopping all Hæmorrhages. Of similar, tho' somewhat inferior Efficacy, are Acids, whether of the mild Kind, obtain'd from the Vegetable Kingdom, such as the Juices of Lemons and Barberries, the Water and Juice of Wood-forrel, or of the more strong and powerful Kind obtain'd from the Mineral Kingdom, such as the Phlegm or Spirit of Vitriol diluted, or the Tincture of Roses, and Flowers of the Daisy, prepared with Water of Wood-forrel and Spirit of Vitriol, and drank with Spring-water; the Efficacy of which is, also, very great in checking the intestine and elastic Force of the Blood.

But, because in these dangerous Hæmorrhages there is generally a certain spasmodic Stricture of the nervous Parts, which is soon succeeded by an unequal Motion of the Fluids, besides the Preparations of Nitre already recommended, we must have recourse to gentle Anodynes, such as Preparations of Poppies, the Water for Instance, the Extract, or the Syrup of wild Poppies, the Syrup of white Poppies, and Emulsions prepared of the Four cold Seeds, the Seeds of white Poppies, and the Waters of the Flowers of the *Egyptian Thorn*, Elder, the Lime-tree, Meadow-sweet, common Chamomile, and Primroses. But, when a violent Impetus of the Solids continues obstinately, we must have recourse to more efficacious Remedies, and exhibit a few Grains of the *Pilulæ de Cynoglossio*: Camphire, also, on account of the sulphureous Exhalations it diffuses, produces a sedative Effect, especially when mixed with Nitre, or diaphoretic Antimony, and exhibited in a small Dose, such a Powder is of very singular Efficacy, especially when any exanthematous Matter proves the Cause of the Hæmorrhage, which it frequently does. But, among all the various Medicines proper for stopping Hæmorrhages, whether from the Nose, or any other Part, none is more safe and efficacious, than the anodyne mineral Liquor, which is saturated with the anodyne Sulphur of Vitriol; and which either alone, or rather with the Powder of Nitre, drank in Spring-water, forthwith checks the violent Orgasm of the Blood.

Besides, when the Disorder is violent, we must divert the Impetus of the Blood from the superior Parts to others: For this Purpose, Venesection in the inferior Parts is to be used. Then we are to prescribe temperate Baths for the Feet, and putting the Hands in warm Water; by which the Fibres are relaxed, the Tone of the vascular Parts remitted, and consequently the excessive Flux of the Blood to the superior Parts prevented.

Besides, as that acrid bilious Matter, which is often the Cause of Flatulencies and Spasms, is, especially in hypochondriac Patients, the Occasion of immediate Hæmorrhages; in order to make a Derivation, nothing is more proper than such things as gently purge the Intestines. These, as they are exhibited internally, ought not only to be mild, but, also, possessed of a corroborative Quality, such as Preparations of Rhubarb, Powder of Rhubarb in Substance mixed with some Grains of Nitre and Sal Polychrestum, or Raisins impregnated with Rhubarb. The same Intention is, also, answered by emollient, carminative, temperate, and oleous Clysters, which soothe the Spasms, and carry off the Flatulencies of the Intestines.

The Afflux of the Blood to the Head may be prevented, and the weaken'd Parts corroborated, by applying Refrigerants, mixed with Discutients, to the Forehead, Nostrils, and Neck. Of this Kind, the most efficacious is an Epithem, prepared of Vinegar of Roses, Vinegar of Rue, Nitre, Camphire, and the Oil of Rose-wood, which may be, also, drawn up the Nostrils.

They who are subject to frequent and violent Hæmorrhages from the Nose, ought, in order to prevent their Return, to be very careful in preserving their whole Bodies, and especially their Feet and Heads, from the Cold, lest Perspiration should be hinder'd, which as it greatly contributes to all other Hæmorrhages, so in a particular manner to this from the Nose; since by this means, a Redundance of Blood, and impure Humours, is generated. 'Tis therefore expedient in such a Case, besides great Temperance, to promote this Excretion by Exercise, and Infusions of Pauls Betony, and the Tops of Yarrow.

They who in their Infancy have been subject to frequent

Hæmorrhages, if these afterwards cease, and Venesection is neglected, ought carefully to abstain from violent Exercise, and loud Crying or Speaking. I have, also, observed Hæmorrhages, in School-masters, succeeded by almost incurable Disorders of the Head, such as a continual Ringing of the Ears, a Head-ach, and Palsy.

But, after violent Hæmorrhages, we are, above all things, to guard against exposing the Body or Head to the Cold, as, also, against Frights: For, by a Neglect of this Kind, we frequently observe a violent Torpor, Stupor, and Oppression, Pain of the Head, accompany'd with a Pain of the Eyes, a Dimness of Sight, a Vertigo, an intolerable Weakness of the whole Body, and Danger of an Apoplexy; for the more the Blood is exhausted from the Body, the more carefully we are to guard against such things as repel it from the external to the internal Parts.

For this Reason, through the whole Course of profuse Hæmorrhages, we are to be very cautious both of snuffing up the Nostrils, and applying externally by way of Epithems, cold and astringent Substances; since by the unskilful Use of these, the Nostrils being obstructed, the Force of the Blood is derived either to the Aspera Arteria and Lungs, and endangers a Suffocation; or to the internal Parts of the Brain, and lays a Foundation for an Apoplexy. It is better and more expedient not to use those external Applications till Baths for the Feet have been used, the Body render'd soluble by Clysters, and Venesection in the Foot, if necessary, has been performed.

Hæmorrhages arising from a Redundance of Blood, an Omision of custom'd Venesection, a Suppression of the Menstrues, the Lochia, or hæmorrhoidal Discharge, are more salutary than dangerous; for which Reason they ought not to be forcibly stopp'd. But if they are immoderate, besides the deriving Remedies already mentioned, Corals mixed with the *Species de Hyacintho* and Nitre, may be exhibited in a proper Quantity of Citron-juice.

We must, also, be careful not suddenly to stop these Hæmorrhages when returning at certain Periods, either by internal Medicines, or external Applications; for by this means we frequently observe Lethargies and Apoplexies produced in old Persons.

I have known Hæmorrhages of the Nose cured by drinking two or three Quarts of Spring-water every Day, provided the Surface of the Body is kept duly warm, especially in choleric and bilious Patients, and in Cases where there is an intense Orgasm of the sulphureous Parts, which is by this means excellently alleviated, and a gentle Sweat, for the most part, happily excited. For which Reason 'tis proper, that those who are subject to immoderate and frequent Hæmorrhages, should use pure Spring-water for their common Drink.

In symptomatic Hæmorrhages, and those accompanying exanthematous Disorders, Measles, Small-pox, Scorbutic Purple Fever, and Petechiæ, it is not expedient to exhibit any other Medicines, than such as, by moderating the intense Heat, may gently promote Perspiration. For this Purpose,

Take of the Water of Chamomile-flowers, four Ounces; distill'd Vinegar, one Ounce; of Crabs-eyes, and Diascordium, each one Dram; of Nitre, one Scruple; and of the Syrup of wild Poppies, a sufficient Quantity; make into a Mixture: Of which, let the Patient take two Spoonfuls every two Hours, and keep himself moderately warm in Bed; and, if the Disorder is malignant, a Powder compos'd of diaphoretic Antimony, depurated Nitre, and Camphire, is to be exhibited.

They who in their Infancy and Youth have been subject to frequent Hæmorrhages, which afterwards stop, are very often afflicted with Disorders of the Head, Eyes, and Ears, a Swelling of the Parotid Glands, or with an Epilepsy or Phrenitis, either of the idiopathic or symptomatic Kind. In this Case, if the Head, and its Vessels, are turgid with Blood, the Nostrils are by some external Artifice to be stimulated to a Discharge of Blood; and this is most generally done by thrusting a Quill, a Straw, or a Scarificator, into the Nostrils. The same Piece of Practice is, also, highly beneficial, when in synochous and sanguine Fevers there is a violent Impetus of the Blood to the Head, which produces terrible Symptoms, unless it be discharged.

Impetuous Hæmorrhages, arising from violent Commotions of Mind, require a peculiar Treatment; for, if they are produced by Anger, antispasmodic nitrous Powders, successively exhibited in pure cold Water, are highly beneficial; but, if they arise from excessive Sorrow, Diaphoretics mix'd with Antispasmodics, or the anodyne mineral Liquor, mix'd with a fourth Part of the Spiritus Buffii, and used with a moderately diaphoretic Regimen, are sufficient to produce a Cure.

When Patients of cachectic Habits labour under Hæmorrhages, Preparations of Rhubarb, variously and frequently ex-

hibited, whether alone, or mixed with digestive Salts, are, from Experience, found to be preferable to all other Medicines. But, when the Viscera are affected with a scorbutic Taint, the Cure is most properly attempted by Whey, interposing, at the same time, Preparations of Rhubarb. *Fredric Hoffman.*

A POLYPUS OF THE NOSE.

The internal Parts of the Nose, as well as other Parts of the Body, are often subject to fleshy Excrecencies, call'd Polypuses, tho' they seldom have more Feet or Roots than one. This Disorder is, by some, call'd Sarcoma; and, by others, Hyperfarcoma. But these Caruncles are of various Sizes and Consistencies; sometimes soft, and capable of Elongation, when drawn; sometimes, tho' very seldom, hard, and, as it were, rigid; sometimes white, and sometimes of a pale-red Colour: At first, they are, for the most part, small; but, in Process of Time, they increase, some slower, some faster; so that I have seen some, in three or four Days, hang out of the Nose: Tho' they are generally free from Pain, yet sometimes they are attended with Pain and Hardness, become livid, and incline to a Cancer. Some are confin'd to the Nose, others hang down to the Lips; some fill, greatly expand, and enormously dilate the Nose; some appear as one Caruncle, with an equal Surface; others like a Cluster. Some, again, grow backwards thro' the Aperture, by which the Breath descends from the Nose to the Fauces, and are visible behind the Uvula; and then occasion not only a great Difficulty of Speaking and Swallowing, but likewise of Breathing, and almost strangle the Patient. Sometimes they expand themselves both through the Nose, and through the Fauces, though both Nostrils are seldom obstructed by them. The Polypus, as we have already observed, has generally but one Root, and that slender; sometimes, indeed, it is thick, and furnished with large Veins; however, as it appears now-and-then with many Roots, the Antients seem to have derived the Name from thence. This Excrecence often proceeds from the inferior or middle Part of the Nose, and sometimes from the posterior and upper Part, and even from the Sinuses of the Cranium and Os Ethmoides; but it is, in general, formed in and from the pituitary Membrane, and particularly by an Obstruction of one or more of its Glands; which, being gradually increased by noxious Humours, fills the Nose, or hangs down below it; and, consequently, it seems nothing more, than a morbid Expansion and Elongation of the Glands, and that spongy Membrane. But, in my Opinion, the Sarcoma Nasi is of a very different Nature; for a Polypus is generally soft, and hangs like a Fig, by a slender or thick Root, as by a Stalk; whilst the Sarcoma is sometimes soft, sometimes hard, and fixed upon a large, firm, and immoveable Basis.

From the preceding Account of the Nature and Disposition of a Polypus, we cannot be at a Loss for the Diagnostic and Causes of it. And first, a white, redish, soft Polypus, without Pain, is of a mild Nature: On the contrary, that is dangerous, which is painful, hard, livid, or black, or discharges a Pus, or acrid and fetid Humours; for such tend to a Cancer. The Causes are often latent and internal, though it is sometimes produced by external Violence. By a latent Cause, we mean an Inspissation of corrupt and glutinous Blood in the small Vessels and Glands of the pituitary Membrane; for that soft and spongy Membrane may be easily distended by a Congestion of noxious Humours. The external Causes may be violent Falls or Blows, too frequent an Introduction of the Finger into the Nose, an Irritation of the pituitary Membrane, and too strong sternutatory Powders. Lastly, the manifest internal Causes are frequent Catarrhs, a Defluxion, Ulcers of the Nose, or too profuse Hæmorrhages. A Sarcoma proceeds from much the same Causes; and both are sometimes attended with a Spina Ventosa, and Caries of the Bones of the Nose: Instances of which have sometimes occurred to me.

The Cure is easier, and the Danger less, when the Polypus is of a favourable Kind; as when it is not seated very far in the Nose, when it has a slender Root, and hangs loosely, or when it is capable of Elongation, and lastly, when the Patient is of a good Habit: On the contrary, when it is inaccessible, has a thick Root, and is incapable of Elongation, the Removal is more difficult, especially if the Patient is afflicted with a scorbutic or venereal Disorder at the same time. The Danger of the Cure is likewise increased, by the Difficulty of suppressing the profuse Hæmorrhage, which attends the Extirpation or Evulsion of a Polypus, especially if it is fixed on a deep and large Basis. If it tends to a Cancer, that is, if it becomes hard, livid, and painful, which is very common, it is safest to palliate the Disorder by Lenitives; for it is as dangerous to irritate this, as other Cancers. In like manner, when the Polypus is inaccessible, or arises from a Spina Ventosa, as I have seen a large one, it is hardly possible, after a Removal, to prevent its sprouting again, unless the Spina Ventosa be first cured.

Further, if it extends to the Fauces, Speech, Deglutition, and even Respiration, are sometimes hinder'd, as *Celsus* observes; and the Cure is extremely difficult. Lastly, when it fills both Nostrils, the Cure is very difficult, because generally it proceeds from some worse Disorder. These Observations are equally true, with regard to a Sarcoma, especially if the Bones of the Nose are affected with a Spina Ventosa.

The Cure of a Polypus cannot be reasonably expected from any thing but a total Removal, which may be accomplished by caustic Medicines, or proper Instruments; and this, either all at once, or at different times. The first may be applied when the Excrecence is soft and small, or short and large, with this Caution, that the Caustic may not corrode the sound Parts of the Nose. Among the mild corrosive Medicines proper for this Purpose, the most celebrated are Powder of Savin, burnt Alum, red Precipitate, white Vitriol, and Hermodactyl-root, either alone or mixed with Honey, or some digestive Ointment, laid on the Polypus with a Tent; or, if it is seated externally, without a Tent, by which, slight ones are sometimes removed. *Potterius* says, the Powder of Heliotropium, or Scorpionwort, introduced into the Nose with Cotton, twice a Day, will remove a Polypus very readily, and with little Pain; but we are left in the Dark as to the particular Species of Heliotropium, or Scorpionwort, proper for this Use. *Rulandus* recommends a Mercurial Water, with which he affirms he has cured a Polypus, by wetting it every Morning and Evening. To this Class, also, belong the Unguentum Ægyptiacum, the Unguentum fuscum of *Wurtzen*, the Oil of Tartar per Deliquium, the Essence of Savin, and particularly an Essence prepared of Sublimate Mercury and Spirit of Wine, with which *Wedelius* informs us he cured a certain Polypus. According to *Nuck*, in *Operat. Chirurg. Cap. de Polypo*, great Service is done in Polypuses by Lime-water, especially if, after mixing a Grain or two of Sublimate Mercury with it, it is made into a phagedenic Water. The same End is, also, answered by precipitate Mercury, upon which some Spirit of Wine has been deflagrated; by Water saturated with Sal Ammoniac; and, if we may believe *Musitanus*, by the acid Spirit of Sal Ammoniac. If these prove ineffectual, then stronger Remedies must be applied; such as the Lapis Causticus, or Infernalis, Sublimate Mercury, the Arcanum Corallinum, and others of a like Nature; but these should be mixed with Honey, or Basilicon, and laid on with great Care, that they may not corrode the sound Parts; and, if the Polypus lies concealed in the Nose, a small Portion of the Medicine should be introduced by a Quill, or some other Tube. Of equal Virtue in removing a mild Polypus, are the Spirit or Oil of Vitriol, Aqua-fortis, and Butter of Antimony, when applied with a Feather or Pledget: Whatever is eroded must, at every Dressing, be removed by Scissars, or a Pair of Forceps. *Thibaut* followed this Method: He laid two Plaisters between the Polypus and sound Part, for the Preservation of the latter; then he carefully applied to the former Butter of Antimony, with a Tent or Pledget; and next, to prevent too deep a Penetration, he washed it off with warm Water. By this Method *Garengot* affirms that he performed the Operation in a Moment; but this Author does not tell us, whether he applied the Caustic more than once, tho' I am persuaded it must be frequently repeated; for a single Application will hardly produce the desired Effect.

But, in general, Instruments are preferable to Caustics; and this Operation may be performed by various Methods. Before the Operation the Patient should be prepared, and then seated opposite to the Light, an Assistant reclining his Head backwards, and securing it with his Hands. When this is done, the Surgeon may choose either of the following Methods, which seems to him best suited to the Circumstances of the Case. We shall begin first with the Method described by *Celsus*: "The Polypus, says he, should be separated from the Bone by a sharp Instrument, in the Shape of a *Sphtha*, taking care not to wound the Cartilage beneath it, which would be difficult to cure. After the Separation it must be extracted with a Steel Hook; then, to suppress the Hæmorrhage, the Cavities of the Nose should be filled up with a Pledget, or some folded Lint moistened with a proper Medicine: After the Suppression of the Hæmorrhage, the Ulcer must be deterged with Lint. When it is cleansed, the Cicatrix must be formed by injecting proper Medicines, till the Cure is completed." The Method proposed by *Ægineta* is not very different from this. He orders the Patient to be placed against the Light, the Surgeon to open and dilate his Nose with his Left Hand, whilst, with his Right, he extirpates the Polypus circularly, with a sharp Spatula, made for that Purpose, in the Shape of a Myrtle-leaf; applying the Edge of the Instrument to that Part where it adheres to the Nose, then, turning the Instrument, to extract it with the Handle. To induce a Cicatrix, he uses leaden Pipes. We discover the whole Polypus to be removed, first by the Sight, then by the Voice, and Freedom of Respiration thro' the Nose. *Albu-*

Paulus advises to extract the Polypus out of the Nose with a Steel Hook or Forceps, and then remove as much as can be reached by Incision; and this to be repeated till the Whole is taken off. If the Excrescence cannot be totally removed, *Paulus* and *Albucasis* order a pretty thick Piece of Linen, like a Cord, full of Knots, at a Finger's-breadth, or less, from each other, to be tied to the Remains, and transmitted from the Nose to the Palate; then to be drawn out of the Mouth, which may be done with Forceps. The two Ends of this Cord, one hanging from the Nose, the other from the Mouth, should be drawn backwards and forwards, till the Remains of the Polypus are destroyed; for which Purpose the Cord should be dipt in Unguentum *Ægyptiacum*. *Fabricius ab Aquapendente* rejects these Methods, and endeavours to establish one of his own, which is performed by a sharp Forceps. These he gently introduces into the Nose, to the Root of the Polypus; and with them both extirpates and extracts the Whole, or as much as he can reach. This he justly prefers to all others, and says, if the Whole cannot be removed at once, it may be repeated, till nothing remains. If the Wound bleeds plentifully, which is not very common, he orders the Hæmorrhage to be suppressed with red Wine alone, or mixed with Alum. *Sennertus* and *Glandorp* followed this Practice, and I myself have known it succeed often.

There are many other Methods of curing a Polypus. Thus *Marc. Aurel. Severinus* has found from Experience, that a recent Polypus may be extirpated by repeated Puncturation, or Scarification, with a Knife or Lancet. Some recommend the actual Cautery; but others reject it, as attended with violent Pain, and Hazard of injuring the sound Parts. Some prefer the falciform Knife of *Glandorp*, represented by *Andreas a Cruce*, as the properest Instrument to cut the Excrescence, which is to be duly extracted with an Hook, or Ligature, made upon it before the Incision. *Mesue* removes a Polypus hanging out of the Nose by a slender Root, with a Pair of Scissars; but, if it descends to the Fauces, he draws it forward with a Pair of Forceps, and amputates it near the Root with red-hot Scissars. Others esteem a Separation by Ligature as the safest Method, because this is not attended with any profuse Hæmorrhage. For this Reason *Glandorp* passes a strong waxed Thread of Silk round the Root, ties it in a Knot, and cuts off the Caruncle near the Ligature. This may be more commodiously performed, by first extracting the Polypus sufficiently out of the Nose with the Forceps, *Tab. XL. Fig. 9. or 10.* but this must be done gently, to prevent a Rupture of any Part of it, before a Ligature is applied. The Thread must be left, till it is digested off spontaneously. Thus we avoid an Hæmorrhage, which, especially after Evulsion, is often large enough to destroy the Patient. The Polypus, after the Ligature is applied, may remain entire, till it falls off spontaneously with the Thread; which Piece of Practice I have sometimes used. But, if it does not decay by the first Ligature, it will be proper on the second and third Day to renew it: Thus I cured a noble Lady in four Days, without any Pain, or Profusion of Blood.

This Lady was above seventy, in all other respects well, and had before been subject to frequent Hæmorrhages of the Nose; which being suppressed by cold Water, she at length perceived a fleshy Caruncle growing in her Left Nostril, which not only filled, but distended her Nose to an indecent Size, so that she could hardly breathe thro' it. After having consulted many Surgeons and Physicians, who applied Caustics to no Purpose, (for what they consumed one Day, grew again the following) she applied to me. Upon examining her I found a Polypus, of a Colour somewhat ruddy, about the Size and Shape of a Damson; Part of which hung out of the Nose, whilst the greater Part was concealed within, and distended the Nostrils enormously. It could not be extracted, on account of the Rigidity and Shortness of its Root; but, upon a more accurate Examination with a Probe, I perceived it grew from the middle and lateral Part of the Nose. As the Lady and her Friends disapproved of Excision, or Evulsion, and as Caustics had been applied without Success, I considered whether it was not possible to relieve the Patient by Ligature. But here occurred a Difficulty; for the Polypus was seated deep in the Nose, and filled up its Cavity, so that I was at a Loss how to convey the Thread round the Basis: However, while the Patient was preparing, I contrived the Instrument represented (*Tab. XL. Fig. 12.*); and used it with Success. I transmitted a double strong Thread of Silk through the Aperture B, at the crooked End; and, seating the Patient opposite to the Light, I elevated and distended the Pinna Nasi with my Left Hand; then, taking the Handle A in my Right Hand, I cautiously conveyed the End upwards between the Pinna and Polypus, till I found it was above the Root, which, by the external Side of the Nose, appeared to be about the Middle. After this, turning the Handle upwards, I brought the Apex, which is obtuse, left it should hurt the Nose, into View; then took hold of the

Thread, and extracted the End of it out of the Nose: I next depressed the Handle gently, and at length drew out the whole Instrument, leaving the Thread behind round the Root; then tied it in a double Knot. Next Day I repeated it, and again the third Day, and drew the String somewhat tighter; thus the Polypus became hard and black. On the fourth Day, when I pulled the Excrescence and String a little, to see whether it was loosened, the Polypus, to the great Surprise of the Patient and Spectators, separated, without any Pain or Hæmorrhage. The Nose afterwards recovered its natural Shape, and the Patient breathed freely through it.

But, when the Polypus is seated very deep in the Nose, or grows from the Sinuses of the Cranium, this Method will prove ineffectual, as it is impossible to extirpate it totally. For this Purpose the Surgeon, according to *Pigraus*, should have a blunt Forceps, called a *Crow's Bill*, either like that (*Tab. XL. Fig. 9.*) from *Palsyn*, or rather that (*Fig. 10.*) with a perforated Beak A A, to hold the Polypus firmly, and gently twist and extend it, till the Root breaks, and it is extracted. If the Polypus hangs down behind the Uvula to the Fauces, and cannot be held by the Forceps, and removed with the Scissars, the only Method is to twist and extract it gently with the curve Forceps, (*Tab. XL. Fig. 11.*) or with the Stone Forceps, (*Tab. XLIX. Fig. 6.*) being, at the same time, very careful not to take hold of, pinch, lacerate, or wound, the Uvula; though *Petit*, for the easier Extraction of a large and dangerous Polypus, cut the Velum Pendulum Palati in two Places. When a Polypus extends into the Nose and Fauces at the same time, the anterior Part must be first removed.

When the Hæmorrhage is inconsiderable, it may be permitted till it ceases voluntarily, or is suppressed by snuffing up red Wine alone, or red Wine impregnated with Alum; but, when it is profuse, the Patient should snuff up some highly rectified Spirit of Wine, Vinegar, acid Juice of Pomgranates, some styptic Liquor, or any Water or Powder, adapted to suppress the Bleeding of Wounds, and fill his Nose with Lint. If this miscarries, he should dip the Lint in the Medicines already recommended, and secure it with a Thread, so that it may be extracted, if necessary.

Le Dran has proposed a peculiar Method for stopping the Flux of Blood. He introduced a crooked Forceps, very plain and perforated in the Beaks, through the Nose to the Fauces, with his Left fore Finger; to the End of which he joins several Threads, in such a manner, that they may be easily separated; these he puts into the Mouth, and conveys them behind the Uvula, till he can reach the Knot, which is necessary at one End, with the Forceps; he then extracts the Forceps, drawing one End of the Thread out of the Nose, while the other hangs out of the Mouth. This Seton ought to be long enough, and two thick Bundles of Lint, the first dry, the other dipt in styptic Liquor, must be fastened about two Hands-breadth from the End. He next draws the Seton thro' the Nose, so that the first Dossil expels the Blood, lodged in the posterior Part, through the fore Part of the Nose; and the other, about a Thumb's-breadth from the former, closes the posterior Part, and prevents the Blood from flowing into the Fauces, which is very inconvenient to the Patient when he coughs; and, if the anterior Part of the Nose is filled with Lint, dipt in any styptic Liquor, upon reaching the Part whence the Blood issues, the Veins will be constricted, and the Hæmorrhage suppressed.

Paulus Albucasis, and others of the Antients, drew a Cord, full of Knots, backwards and forwards, through the Nose; not so much with an Intention to suppress the Flux of Blood, as to take off the Remains of the Polypus: This Cord they dipt sometimes in the Unguentum *Ægyptiacum*. And though this Method is, by many, rejected as cruel, and ineffectual, *Le Dran* renewed it, in a Case where the Root of the Polypus adhered to the lowest Part of the Nose above the Palate, and the back Part near the Vomer, and could not be removed by any other Means. He therefore passed his Seton, without Knots, through the Nose, in the preceding Method, and dipt it in suppurating Medicines, which he continued for twenty Days, till the Root was consumed by Suppuration, and the Patient restored to a Freedom of Breathing: At last he used Desiccatives; and thus cured his Patient within the Space of a Month.

Garengot, and others, in case of a Polypus whose Root cannot well be found, advise to open the Nostrils with a Knife, according to the Practice of *Hippocrates*, and *Guido de Cauliaco*, who afterwards cauterized the Root. *Celsus* likewise recommended this Method for an Ozena. But, for my Part, I would rather dissuade from this Practice, both on account of the violent Pain, and unseemly Cicatrix attending it; besides, the Polypus may sometimes sprout again, as I have seen, and *Hutten* relates. However, when an Incision is necessary, it should be made in the Sulcus of the Nose, near the Cheek, that the Cicatrix may be less unsightly.

To heal the Wound, and prevent a Return of the Polypus, the Patient should snuff up his Nose, several times in a Day, Spirit of Wine, mixed with Honey of Roses; or some Lime-water may be snuffed up, or injected by a Syringe; or rather the Nostril should be filled with Lint, dipt in it; and this is to be continued for several Days. If we see any Remains of the Polypus, they must be removed with a Forceps, or taken off with a little of the Unguentum *Ægyptiacum*, mixed with the preceding Injection, or sometimes cautiously touched with the Lapis Infernalis. If the Nose is exactly filled at every Dressing with Lint for some Days or Weeks, there will be very little Danger of a Return; though the Patient, during the whole Cure, ought not only to observe a proper Regimen, but, also, to take proper internal Remedies to correct his Blood, particularly Purgatives, Mercurial Pills, a Decoction of the Woods, and the like; nor must he neglect Bleeding, if he is plethoric.

When the Polypus tends to a Cancer, it must neither be irritated with Caustics, nor Instruments; but rather mitigated by gentle Medicines and Diet, specified under the Article Cancer.

Lastly, a Sarcoma in the Nose is to be treated with the Cathartic Remedies above recommended, with the Addition of proper internal Medicines. If these fail, the Disorder may be deemed incurable, especially if it proceeds from an obstinate Spina Ventosa. For the Observations of various Authors, see *Glandorp*, in his Treatise on a Polypus, and two very remarkable Observations in *Le Dran*, *Obs.* 6. and 7.

AN OZÆNA.

The Nose is sometimes so exulcerated, as to discharge a fetid Odour with Pieces of corrupted Bones: This is termed an Ozæna, or foul malignant Ulcer of the Nose; and may be easily distinguished from those Ulcerations which have no Fætor, and proceed from Catarrhs, or the Inclemency of the Air, and are soon cured by Ointment of Cerufs, or any other Medicine of a like Nature. An Ozæna is generally more violent and foul, when attended with a Caries in the Bones: For, at first, the internal Coat of the Nose only is ulcerated, but it extends itself insensibly into the slender Bones, and often into the Sinuses of the Cranium, and the Ossa Maxillaria, and excites a malignant Caries.

It generally arises from an obstinate Catarrh, or some other Disorder of the Nose, especially when the Blood is affected with the Scurvy, or Venereal Disease; but sometimes from acrid Substances, drawn into the Nose with the Air, and corroding its Membrane, as strong sternutatory Powders; and sometimes it proceeds from, or is joined with, a Polypus.

The Signs of an Ozæna are discoverable from what has been already mentioned; but, for the Event, the Cure is certainly difficult, because the Bones, especially the Ossa Spongiosa, are surprisngly tender, and not sufficiently exposed to View; in consequence of which, the Part affected cannot be properly cleansed. For this Reason the Disorder spreads, and, at length, corrodes the Septum, and other Bones of the Nose, in such a Manner, that the external Part is deformed, and the Faculty of Speech and Respiration injured. Some have thought an Ozæna a sufficient Plea for a Divorce.

The Cure should be undertaken by external, but more particularly by such internal Medicines as correct the Blood, as Antivenereals, of which Mercurials and Decoctions of the Woods are the Principal. The Patient, likewise, must be ordered to use a Diet moderate and light, neither strong nor high-seasoned. When the Case is Venereal, the best Remedy is a Salvation.

Externally must be applied the usual Remedies for deterring Ulcers, as the *Aqua Viridis* of *Hartman* snuffed up the Nose, or rubbed on with a Pencil, or injected or introduced with Tents, or Linen Rags rolled up. I have sometimes used a Mixture of Lime-water and Mercurius dulcis with Success. *Mayern* and *Fallopious* recommend, in this Case, temperate Alum-water, a Decoction of Savin, and Scordium; in which, when the Disorder is violent, about an Ounce of the Unguentum *Fuscum Wurtzii* is to be dissolved. In Cases of this Nature, great Benefit is, also, produced by frequent Injections of a Liquor prepared of the same Unguentum *Wurtzii*, or the Unguentum *Ægyptiacum*, mixed with Honey of Roses, and Spirit of Wine. Tents, also, prepared of the Unguentum *Fuscum Wurtzii*, and the Addition of a small Quantity of white Vitriol, may be put up the Nostrils, till the Ulcer is cleansed, and the fœtid Matter, and the fetid Smell, removed. The Steam of Cinnabar thrown upon live Coals, and cautiously admitted into the Nostrils, is, by some, said to contribute greatly to the Cure of an Ozæna. But, at the same time, these Medicines are to be persisted in, till the Flux of the corrupt Matter, and the fetid Smell, be entirely removed.

If a Caries accompanies an Ozæna, the only remaining Hope of Cure is from a preceding Separation of the carious

Bone. But we know not how to extirpate a Caries of the Ossa Spongiosa, since neither the Cautery, nor Euphorbium, nor any other Remedy, but what have been directed, can be safely applied. However, the Surgeon may securely use the above-mentioned deterring Medicines, for some Weeks or Months, till the Bone is exfoliated. If, in the mean time, any Pieces are loose, he may extract them with the Forceps, to ease the Patient, and prevent an Increase of the Caries; but if, in consequence of their Bulk, they cannot be extracted entire, he may divide them with Scissars, as I have done; and they will fall off spontaneously, or be easily drawn out. After this, the Remedies must be continued, till the whole corrupt Matter and Stench is removed.

Drake has mentioned a new Kind of Ozæna, and a peculiar Method of treating it: He says, it is sometimes seated in the Sinus Maxillaris, and there discovers itself by a Discharge of corrupted Matter, attended with a disagreeable Smell from the Nose, upon inclining the Head to the sound Side; for in that Posture the Matter, latent in the maxillary Sinus, is propelled through the Foramen of the Maxilla. But as this, or any other known Method, is insufficient to evacuate the corrupted Matter from this Sinus, this Species is frequently incurable, and destroys the Patient. *Drake*, therefore, has given us a true Description of the Disorder, and a proper Method of treating it. He orders one of the Dentes Molares, on the affected Side, next to the Sinus, to be drawn; and then to break through the Socket into the Sinus, with a Probe, or some other pointed Instrument (*Tab.* XXVIII. *Fig.* 2.): This, he says, may be done without any Difficulty, as the Bone is eroded, or, at least, decayed by the corrupted Matter. Thus the Matter will not only discharge itself spontaneously through this Passage, but the Sinus may be cleaned by proper Injections, and not only cleaned, but healed likewise, by frequent Applications of balsamic Medicines; such as the Elixir Proprietatis, and the Tincture of Myrrh and Aloes, either alone, or mixed with Honey of Roses, or the Decoctions of Scordium or Savin. When the Medicine is injected, it must be retained there by a Tent introduc'd into the Aperture: Upon discharging the Injection, another Tent, fastened to a Thread, must be introduc'd, to prevent the Passage from closing, before the Ulcer is cleansed. The Excellency of this Practice is confirmed by Experience; and it is observable, that the Jaw-bone is sometimes so much eroded, that it comes away with the Tooth; so that an Aperture to the Sinus is formed without any Instrument, and nothing more is required, than to apply Purgatives and Balsamics, till the Parts are conglutinated.

OF ARTIFICIAL NOSES.

The Method of curing Noses violently wounded, either with Instruments or Bites, so that some Part of them still adheres to the Face, is already specified under the Article *CAPUT*. But, with respect to the Method of cutting a Nose from some fleshy Part of the Body, and with that supplying the Defect of an entire Nose, we have yet said nothing; for though *Talicozius* has written professedly on this Subject, in a Treatise intitled *Chirurgia curatorum per Infectionem*, and illustrated it with many Figures; yet our modern Surgeons, since what he proposed has not been confirmed by later Experiments, think it impracticable. When the Nose, therefore, is entirely lost, we supply the Defect by an artificial Nose of Wood or Silver, (unless the real Nose can be replaced by Suture or Plaisters) which may be painted of the natural Colour, and furnished with proper Springs and Screws, so as to unite it with the remaining Part of the Nose. *Roonbuisen*, in his *Observ. Chirurg.* 24. mentions a Nose slit longitudinally, and cured by Suture.

OF OPENING THE NOSTRILS PRETERNATURALLY CLOSED.

I have never yet, in any surgical Writings, met with an Instance of a Nose preternaturally concreted, and cured by a Surgeon; but Experience assures me, that such Accidents happen, and are curable. A poor Infant, of about three Years old, was brought to me, who, for want of Care in the Small-pox, had been violently ulcerated all over his Face, especially his Nose and Lips, so that his Nostrils were closed, his upper Lip reflected back, and united to them, as in *Tab.* XL. *Fig.* 14. *Litt.* A A. The Right Nostril was entirely stopt, and the Left so far contracted, as to deny Admission to the Head of a small Pin: Whence he was frequently troubled with so difficult a Respiration in Sleep, that his Parents were in perpetual Fear of Suffocation.

I treated him in the following Manner: I placed his Head opposite to the Light, and ordered some Assistants to secure his Hands and Legs; then separated the upper Lip from the Nose with a Knife; after this, with a smaller Knife, I opened both Nostrils to their natural Size; then introduced a Probe (*Tab.* XXII.

Lett.

Leti. K.) to examine the Openings of the superior Part; and, finding one not sufficiently divided, I enlarged the Aperture. After permitting them to bleed a little, I introduc'd a thick Linnen Tent into each Nostril, both to suppress the Hæmorrhage, and prevent the Uniting of the Aperture. To replace the upper Lip, I applied some Lint, with a Plaister, and an oblong narrow Compress, under the Nose, to keep down the Lip; then bound it with the four-headed Bandage, as for an Hare-lip. This I continued for several Days; only afterwards the Tents were dipt in Spirits of Wine. Thus, for eight Days, the Apertures of the Nose remained sufficiently large and open.

But the Mother, imagining the Child to be perfectly cured, removed the Tents, and neglected bringing him to me. The Consequence was, his Nostrils were again concreted, and, after some time, would hardly admit a small Probe. Upon her Return I opened them, as before; and, after the Use of Tents for eight Days, kept them open, by inserting marginated leaden Pipes (*Tab. XL. Fig. 15. and 16.*) till they were of a proper Dimension, and the Wound was healed.

I performed another Cure of this Kind upon a Girl; and, as her Disorder proceeded from the Small-pox, I treated her in the same Manner. Since that I have met with a third, when, instead of leaden Pipes, which are easily compressed, and changed from their elliptic Form, I used some made of Brass. It is necessary to observe, that the Nostrils ought to be kept open for a considerable time, otherwise they will soon contract, though they appear to be very large. *Heister Chirurg.*

NARIFUSORIA. Medicines which are instil'd in the Nostrils.

NARTEX, *νάρτης.* The **FERULA**; which see.

NARWAL. A Name for the Unicorn Fish. See **UNICORNU.**

NASA. The same as **NATA.**

NASALE. An Errhine.

NASCALE. A Sort of Pessary, made of Wool, or Cotton, like a Pledget, to be introduced into the Vagina, when impregnated with proper Oil, Unguents, or Juices.

NASCAPHTHON. See **NARCAPHTHON.**

NASITAS. A Speaking thro' the Nose.

NASTURTIIUM.

The Characters are;

It resembles, in all respects, the *Thlaspi*, or Mithridate Mustard, with a less foliaceous Margin, and multifid Leaves, to distinguish it.

Boerhaave mentions eleven Species of this Plant; which are,
1. *Nasturtium*; sylvestre; Dalechampii. *Lugd.* 655. *Thlaspi umbellatum*, *Nasturtii folio*, *Monspeliacum*. *C. B. P.* 106.

2. *Nasturtium*; hortense; vulgatum. *C. B. P.* 103. *Tourn. Inst.* 213. *Boerb. Ind. A.* 2. 8. *Nasturtium hortense*. *Offic. Ger.* 194. *Emac.* 250. *Park. Parad.* 500. *Raii Hist.* 1. 825. *Nasturtium vulgare*. *J. B.* 2. 912. **GARDEN-CRESSSES.**

This Cress has a small white stringy Root, from which spring many finely laciniated winged Leaves, three or four Inches long, of a pleasant, hot, biting Taste; the Stalks about a Foot high, smooth, and round; the Leaves which grow on them are less cut in, and have larger and broader Lacinizæ. The Flowers are small, of four white Leaves, set together in Tufts on the Top of the Stalk, and are succeeded by little round Seed-vessels, flat on one Side, containing red, round Seed. It is sown every Year in Gardens, and flowers in May. The Leaves and Seed are used.

The Leaves are much used in the Spring as a Sallad-herb, their warming Quality being useful to correct the Coldness of others mixed with them; they are good for the Scurvy and Dropsy, as also for the Palsy and Lethargy. A Cataplasim of the Leaves, with Hogs-lard, cures Scald-heads. The Seed, likewise, helps the Scurvy and Dropsy, and Swelling of the Spleen, and opens Obstructions in the Female Sex. *Miller's Bot. Off.*

The Herb, but especially the Seeds, are hot and acrimonious; whence they are attenuating, absterfive, and aperitive. They are of principal Service in Tumors of the Spleen, Obstructions of the Menses, and expelling the dead Fœtus; they cut the tartarous Mucilage of the Lungs, and are good for the Scurvy; the Seed is commonly used to expel the Measles. Externally it is used in Apophlegmatisms, Errhines, and Phoenigms [a kind of drawing Plaisters, exciting a Redness of the Skin, whence they have their Name; for *φαινός*, *Phœnicus*, signifies red]. Bruised, or parched, and mixed with the Fat of an Hog, it cures the Scurf, and scabby Sores of the Head, and other Parts, being anointed therewith. *Schröder.*

It is of general Use in Seasonings and Sauces, and is commonly eaten in Spring and Summer, with Lettuce and other Herbs, season'd with Oil, Salt, and Vinegar; it tempers the Coldness of Lettuce, warms the Stomach with its Heat, and promotes Concoction. The Dutch frequently eat Cresses, with Bread and Butter, in May; they find it good for that

troublesome Disorder the Scurvy, nor is it less effectual in that Disease, than *Cochlearia*, (Scurvy-grass) or *Nasturtium aquaticum* (Water-cresses.) In comatous or lethargic Affections nothing has been found more effectual than *Nasturtium*, either boiled, or in Sallads, as *Forestus* observes, *Observ. Med. Lib.* 10. *Obs.* 39. *S. Paulus* observes from *Paracelsus*, that nothing is so present and effectual a Remedy for the foul and crusty Scabs and Sores of Children, as Garden-cresses, bruised or fried in Hog's Fat; for in four and twenty Hours they make the Crusts fall off; and, if the Use of them be continued for any considerable time, make a perfect Cure; as he found by Experience. *Raii H. P.* p. 825.

3. *Nasturtium*; hortense; crispum. *C. B. P.* 104.

4. *Nasturtium*; hortense; latifolium. *C. B. P.* 104. *Prod.* 43.

5. *Nasturtium*; sylvestre; folio *Osyridis*. *C. B. P.* 105. *Thlaspi angustifolium*, *Fuchsi*, *Nasturtium sylvestre*. *J. B.* 2. 914.

6. *Nasturtium*; sylvestre; capsulis cristatis. See **AMBROSIA CAMPESTRIS.**

7. *Nasturtium*; sylvestre; tenuissimè incisum; fructu minore. *T.* 214. *Iberis*, *Nasturtii folio*. *C. B. P.* 97.

8. *Nasturtium*; pumilum; vernum. *C. B. P.* 105. *M. H.* 2. 301. *Cardamine*, *pumilla*, *saxatilis*, *montana*, *Sisymbrium*. *Col.* 1. 273.

9. *Nasturtium*; sylvestre. *Clus. Hist.* 423.

10. *Nasturtium*; pumilum; incanum; foliis tantum circa radicem. *Bot. Monsp.*

11. *Nasturtium*; pumilum; vernum; supinum. *Bot. Monsp. Boerb. Ind. alt. Plant.*

It is called *Nasturtium*, quasi *Nasi Tormentum*, the Torment of the Nose, because it has such an Acrimony, that the Smell of the Seed bruised provokes Sneezing.

It has an antiscorbutic, oleous, and saline Quality: With this Plant have I cured a radicated Dropsy, proceeding from a cold Cause; but, in this Case, the Viscera were not affected. An Ounce of the expressed Juice, together with a dry Diet, are very proper in this Disease; in the Winter Season I use the Seeds. This Herb liquefies the Blood, and renders it acrimonious; whence it is proper, where there is a Coldness and Viscidity; but in hot Distempers it is Poison. It quite eradicates pituitous Diseases, is a good Pectoral for old Persons, where Phlegm hinders Respiration, and is good in hysteric, hypochondriac, and scorbutic Cases. The Leaves newly bruised, and mixed with Ferment, heat, and excite a Redness of the Skin, and even a Blister, if their Application be continued for a considerable time, where it meets with a sweet viscid Phlegm, and none but cold Humours, with an extreme Laxness of the Acid, in all which Cases it is highly serviceable. The Seeds, by a singular Property, are effectual in Hernias, whether internally or externally used. *Hist. Plant. adscript. Boerb.*

NASTURTIIUM is, also, a Name for several Sorts of **SISYMBRIUM**; which see.

NASTURTIIUM INDICUM.

We have already taken notice of the **NASTURTIIUM INDICUM** under the Article **ACRIVIOLEA**.

The *Acriviola*. *Boerb. Ind.* 244. *Viola Indica scandens*, *Nasturtii sapore & odore, flore flavo*. *Horm. Hort. Lugd. Bat.* 628. *Viola acris Americana sive Acriviola folio peltato minor & vulgaris*. *Pluk. Almag.* 388. *Cardaminum minus & vulgare*. *Tourn. Inst.* 430. *Pelon Mexicquiliti seu Pelon Chili, sive Nasturtium Peruvianum*. *Hern.* 161. **INDIAN CRESS**, is a Native of Peru, but frequently cultivated with us in Gardens, and flowers during the whole Summer. The Flower is serviceable in a Weakness, or Pain, of the Stomach, proceeding from Cold and Flatulences; it is an Ingredient in Sallads, and mixed with other Greens. *Dale.* A Person worthy of Credit, and just returned from America, communicated to me, as an extraordinary Secret, a Remedy against a stubborn and malignant Itch, and for recent Wounds; which was an excellent Oil, prepared of *Nasturtium Indicum*, by simple Infusion. *Raii H. P.* p. 487.

The *Acriviola maxima odorata*. *Boerb. Ind. A.* 244. *Cardaminum ampliori folio & majori flore*. *Tourn. Inst.* 430. *Cardaminum majus*. *Rupp. Flor. Jen.* 230. *Viola Indica scandens*, *Nasturtii maxima odorata*. *Hern. Hort. Lugd. Bat.* 629. *Viola acris Americana sive Acriviola folio peltato maxima, flore odorato elegantiori*. *Pluk. Almag.* 388. **THE GREAT, or SWEET INDIAN CRESS.**

It is cultivated with us in Gardens, and flowers in Summer; the Virtues and Uses are the same as those of the former, or common *Nasturtium Indicum*.

Nasturtium Orientale. A Name for the *Thlaspi*; *spicatum*; *Perficum*; *perfoliatum*, *marinum*; *foliis inferioribus tenuiter incisis*; *superioribus a caule Perfoliatæ modo penetratis*.

Nasturtium pratense. See **CARDAMINE.**

Nasturtium,

Nasturtium, sylvestre, Eruca affinis. A Name for the *Sinapi*; *Hispanicum*; *folio Glaucii vislaticii.*
NASUS. The Nose.

The Parts of which the Nose consists, may be divided two different Ways; from their Situation, into internal and external Parts; and, from their Structure, into hard and soft Parts.

The external Parts are the Root of the Nose, the Arch, the Back, or Spine of the Nose, the Sides of the Nose, or of the Arch, the Tip of the Nose, the Alæ, the external Nares, and the Part under the Septum.

The internal Parts are the internal Nares, the Septum Narium, the Circumvolutions, the Conchæ superiores, the Conchæ inferiores, the posterior Openings of the internal Nares, the Sinus Frontales, Sinus Maxillares, Sinus Sphenoidales, the Ductus Lachrymales, and Ductus Palatini.

The firm or hard Parts are mostly bony, and the rest cartilaginous, as the Os Frontis, Os Ethmoides, Os Sphenoides, Offa Maxillaria, Offa Nasi, Offa Unguis, Offa Palati, Vomer, Conchæ Inferiores, and the Cartilages. To these we may add the Periosteum and Perichondrium, as Parts belonging to the Bones and Cartilages.

The soft Parts are the Integuments, Muscles, Sacculus Lachrymalis, Membrana Pituitaria, Vessels, Nerves, and Hairs of the Nares. The bony Parts have been all explained under the Article *CAPUT*; therefore I need only set down here their Distribution and Disposition, for the Formation of some of the principal Parts. The Septum is formed by the descending Laminae of the Os Ethmoides, and by the Vomer; and it is placed in the Groove framed by the Cristæ of the Offa Maxillaria, and rising Edges of the Offa Palati. The Back of the Nose is formed by the Offa Nasi, and the Sides by the superior Apophyses of the Offa Maxillaria.

The internal Nares, or the two Cavities of the Nose, comprehend the whole Space between the external Nares, and posterior Openings, immediately above the Arch of the Palate, from whence these Cavities reach upward as far as the Lamina Cribrosa of the Os Ethmoides; where they communicate forward with the Sinus Frontales, and backward with the Sinus Sphenoidales. Laterally these Cavities are bounded on the Inside by the Septum Narium; and on the Outside, or that next the Cheeks, by the Conchæ, between which they communicate with the Sinus Maxillares.

The particular Situation of these Cavities deserves our Attention. The Bottom of them runs directly backward, so that a straight and pretty large Stilet may easily be passed from the external Nares, under the great Apophysis of the Occipital Bone. The Openings of the Maxillary Sinuses are nearly opposite to the upper Edge of the Offa Malarum; the Opening of the Frontal Sinuses are more or less opposite to, and between the Pulleys or Rings of the *Musculi Trochleares*; and by these Marks the Situation of all the other Parts may be determined.

The inferior Portion of the external Nose is composed of several Cartilages, which are commonly five in Number, and of a pretty regular Figure. The rest are only additional, smaller, more irregular, and the Number of them more uncertain. Of the five ordinary Cartilages, one is situated in the Middle; the other four laterally. The middle Cartilage is the most considerable, and supports the rest, being connected immediately to the bony Parts; but the other four are connected to the middle Cartilage, and to each other, by means of Ligaments.

The principal Cartilage of the Nose consists of three Parts, one middle, and two lateral. The middle Portion is a broad cartilaginous Lamina, joined by a kind of Symphysis to the anterior Edge of the middle Lamina of the Os Ethmoides, to the anterior Edge of the Vomer, and to the anterior Part of the Groove formed by the Offa Maxillaria, as far as the Nasal Spines of these Bones. This Lamina completes the *Septum Narium*, and indeed forms the principal Part of it.

The lateral Portions are oblique and narrow, suited to the corresponding Parts of the bony Arch. Where they join the middle Lamina, a superficial Groove is observable, which makes them sometimes appear like two distinct Pieces, separated from the Lamina, tho' they are really continuous. This shallow Groove terminates below by a small Crista.

The lateral Cartilages are two, on each Side of the inferior Part of the Lamina, one anterior, the other posterior. The two anterior Cartilages are very much bent forward, and form what is called *The Tip of the Nose*; the Space between their incurvated Extremities being commonly filled with a kind of fatty Substance. The two posterior Cartilages form the Alæ of the Nares, being pretty broad, and of an irregular Figure.

The Spaces left between some Portions of the anterior and posterior Cartilages, those between the posterior Cartilages, and the neighbouring Parts of the Offa Maxillaria, and, lastly, those between these four lateral Cartilages and the prin-

cipal Lamina, vary in different Subjects, and are filled by small additional Cartilages, the Number, Size and Figure of which, are as variable as the Interstices in which they lie.

The *Subseptum*, or Portion under the *Septum Narium*, is a Pillar of Fat, applied to the inferior Edge of the cartilaginous Partition, in form of a soft moveable Appendix. The Thickness of the *Ala Narium*, and especially that of the lower Edges, is not to be ascribed to the Cartilages, which are very thin, but to the same Kind of solid Fat, with which these Cartilages are covered. The great Cartilage is immoveable by reason of its firm Connection to the bony Parts of the Nose; but the lateral Cartilages are moveable, because of their ligamentary Connections; and they are moved in different Manners by the Muscles belonging to them.

The external Nose is cover'd by the common Integuments, the Skin, Epidermis, and Fat. These which cover the Tip of the Nose, and Alæ Narium, are a great Number of glandular Bodies, called *Glandulae Sebaceæ* by Morgagni, the Contents of which may easily be squeezed out by the Fingers. All these bony and cartilaginous Parts have likewise the common *Periosteum*, or *Perichondrium*.

Six Muscles are commonly reckon'd to belong to the Nose; two *Recti*, called, also, *Pyramidales*, or *Triangulares*; two *Obliqui*, or *Laterales*; and two *Transversi*, or *Myrtiformes*. In very muscular Bodies there are likewise some supernumerary Muscles, or small *Accessorii*. The Nose may, also, be moved in some measure by the Muscles of the Lips, which, in many Cases, become Assistants to the proper Muscles of this Organ.

The *Musculus Pyramidalis*, or Anterior on each Side, is inserted by one Extremity in the *Synarthrosis* of the Os Frontis, and Offa Nasi, where its fleshy Fibres mix with those of the *Musculi Frontales*, and *Superciliares*. It is very flat, and runs down on the Side of the Nose, increasing gradually in Breadth, and terminating by an Aponeurosis, which represents the Basis of a Pyramid, and is inserted in the moveable Cartilage, which forms the Ala of the Nares.

The oblique or lateral Muscle is a thin fleshy Plain, lying on the Side of the former, and in some Subjects appearing to form one broad Muscle with it. This is probably the Reason why the anterior Muscle has been termed *Triangularis*. The lateral Muscle is fixed by its upper Extremity to the *Apophysis Nasalis* of the Os Maxillare, below its Articulation with the Os Frontis, and sometimes a little lower than the Middle of the inner Edge of the Orbit. From thence it runs toward the Ala Narium, and is inserted in the moveable Cartilage, near the Os Maxillare, being covered laterally by a Portion of the neighbouring Muscle of the upper Lip, with which, in some Subjects, it appears to be confounded.

The transverse or inferior Muscle, called, also, *Myrtiformis*, is inserted by one End in the Os Maxillare, near the lower Edge of the Orbit, much about the Place which answers to the Extremity of the Socket of the *Dens Caninus* on the same Side. Thence it runs almost transversely upward, and is fixed in the lateral Cartilages of the Nose, over which, in some Subjects, it seems to run to the Alæ of the great Cartilage, and to be inserted there.

The first two Pairs of these Muscles raise and dilate the Alæ of the Nares, when they act; and at the same time raise the upper Lip, by reason of their Connection with the Muscles of that Part. They likewise wrinkle the Skin on the Sides of the Nose.

The *Membrana Pituitaria* is that which lines the whole internal Nares, the Cellular Convolutions, the Conchæ, the Sides of the *Septum Narium*, and, by an uninterrupted Continuation, the inner Surface of the Sinus Frontales and Maxillares, and of the Ductus Lachrymales, Palatini, and Sphenoidales. It is likewise continued down from the Nares to the Pharynx, *Septum Palati*, &c.

It is termed *Pituitaria*, because, through the greatest Part of its large Extent, it serves to separate from the arterial Blood a mucilaginous Lymph, called *Pituita* by the Antients; which in the natural State is pretty liquid; but it is subject to very great Changes, becoming sometimes glutinous, or snotty, and sometimes limpid; neither is it separated in equal Quantities thro' the whole Membrane.

When we carefully examine this Membrane, it appears to be of a different Structure in different Parts. Near the Edge of the external Nares it is very thin, appearing to be the Skin and Epidermis in a degenerated State. All the other Parts of it, in general, are spongy, and of different Thicknesses. The thickest Parts are those on the *Septum Narium*, on the whole lower Portion of the internal Nares, and on the Conchæ; and, if we make a small Hole in it at any of these Places, and then blow through a Pipe, we discover a very large cellular Substance. In the Sinuses it appears to be of a more slender Texture.

On the Side next the Periosteum and Perichondrium it is plentifully stored with small Glands, the excretory Ducts of which

which are very long near the Septum Narium, and their Orifices very visible; and, by applying a Pipe to any of those Orifices, the Ducts may be blown up almost through their whole Extent; but, in order to this, the Parts must first be very well cleaned, and washed in luke-warm Water.

In these Places especially, we likewise discover a very fine villous Substance, when the Parts are examin'd in clear Water. *Riclanus* made use of this Method in examining small Fœtuses.

The frontal, maxillary, and sphenoidal Sinuses open into the internal Nares, but in different Manners. The frontal Sinuses open from above downward, answering to the Infundibula of the Os Ethmoides, described under the Article *CAPUT*. The Sphenoidales open forwards, opposite to the posterior Orifices of the Nares; and the Maxillares open a little higher, between the two Conchæ. Therefore the Sinus Frontales discharge themselves most readily when we stand or sit; and the Sphenoidales when the Head is inclined forward.

The Sinus Maxillares cannot be emptied wholly, or both at the same time, in any one Situation. Their Opening, which in some Subjects is single, in others double, lies exactly between the two Conchæ, about the middle of their Depth; so that when the Head is held strait, or inclined forward or backward, they can only be half emptied; but, when we lie on one Side, the Sinus of the opposite Side may be wholly emptied, the other remaining full.

It is proper to observe here the whole Extent of the maxillary Sinus. Below, there is but a very thin Partition between it and the Dentes Molares, the Roots of which, in some Subjects, perforate that Septum. Above, there is only a very thin, transparent Lamina, between the Orbit and the Sinus. Backward, above the Tuberosity of the Os Maxillare, the Sides of the Sinus are very thin, especially at the Place which lies before the Root of the Apophysis Pterygoïdes; through which the inferior maxillary Nerve sends down a Ramus to the Foramen Palatinum Posterius, commonly called *Gustatorium*. Inward, or toward the Conchæ Narium, the bony Part of the Sinus is also very thin.

The lachrymal Sacculus is an oblong membranous Bag, into which the serous Fluid is discharged from the Eye, through the Puncta Lachrymalia, and from which the same Fluid passes to the lower Part of the internal Nares. It is situated in a bony Groove and Canal; formed partly by the Apophysis Nafalis of the Os Maxillare and Os Unguis, partly by the same Os Maxillare and lower Part of the Os Unguis, and partly by this lower Portion of the Os Unguis, and a small superior Portion of the Conchæ Narium inferior. This Groove and Canal are the bony lachrymal Duct, of which see what is said under the Article *CAPUT*.

I have an Observation or two to add concerning the Situation of this bony Duct. It runs down a little Way obliquely backward, toward the lower and lateral Part of the internal Nares on each Side, where its lower Extremity opens on one Side of the Sinus Maxillares, under the inferior Concha, nearly at the Place from which a perpendicular Line would fall in the Interstice between the second and third Dentes Molares. The upper Part of this Duct is only an Half-canal or Groove; the lower is a complete Canal, narrower than the former.

The Sacculus Lachrymalis may be divided into a superior or orbitary Portion, and an inferior or nasal Portion. The orbitary Portion fills the whole bony Groove, being situated immediately behind the middle Tendon of the Musculus Orbicularis. About One-fourth of its Length is above this Tendon, and the rest below. The nasal Portion lies in the bony Canal of the Nose, being narrower and shorter than the former.

The orbitary Portion is disposed at its upper Extremity, much in the manner of an Intestinum Cæcum; and, at the lower Extremity, is continued with the Portio nalis. Towards the internal Angle of the Eye, behind the Tendon of the orbicular Muscle, it is perforated by a small short Canal, formed by the Union of the lachrymal Ducts.

The nasal Portion, having reached the lower Part of the bony Duct, under the inferior Concha, terminates in a small, flat, membranous Bag, the Bottom of which is perforated by a round Opening, as I have always found it upon a careful Examination, but which, at first Sight, appears oblong.

I used to attribute this Difference to the Force, which I was obliged to use in separating the Concha inferior, in order to see this Opening, which I have often found more backward than the Middle of the Bag, at the Extremity of this Portion; and, therefore, when I would either see or shew this Opening in its natural State, I do not separate the inferior Concha, but cut it gently with a sharp Knife, or with Scissars. If a transverse Line be drawn between the lower Part of the Nose, and Os Maxillare, and another Line be drawn directly upward, opposite to the third Dens Molaris, or opposite to the second and third, these two Lines will intersect each other nearly, at the lower Extremity of this Sacculus.

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I have sometimes found the upper Extremity of this Bag divided into an anterior and posterior Part, by a kind of Valvula connivens lying in the anterior Portion; a little lower than the Tendon of the Musculus orbicularis. The small common Canal of the two lachrymal Ducts opens in the posterior Portion, and consequently behind the Valve.

The Substance of this Sacculus is something spongy or cellular, and pretty thick, being strongly united, by its convex Side, to the Periosteum of the bony Canal, which may be very distinctly shewn. This Substance seems to be made up of two Laminæ, joined together by a spongy Membrane, the outermost of which is that which I have mentioned; the other appears to be glandulous, and is, in some Subjects, loose and pliable, which I look upon as a Disease.

The Ductus Incisorii or Naso-palatini, of *Steno*, are two Canals, which go from the Bottom of the internal Nares cross the Arch of the Palate, and open behind the first or largest Dentes Incisorii. Their two Orifices may be distinctly seen in the Skeleton, at the lower Part of the nasal Fossæ, on the anterior and lateral Sides of the Cristæ maxillares; and we may likewise perceive their oblique Passage through the maxillary Bones; and, lastly, their inferior Orifices, in a small Cavity, or Fossula, called *Foramen Palatinum anterius*. In fresh Subjects they are not so apparent, especially in human Subjects; for in Sheep and Oxen they are easily discoverable.

Santorini, in his anatomical Observations, has described those in the human Body in a very pretty Manner; and has given us his Method of discovering them, which is nearly the same with mine. Instead of dividing the Head into two equal lateral Parts, I always direct the Saw a little towards one Side; to preserve the Septum Narium entire, as well as that of the Sinus Frontales, Sinus Sphenoidales, and Ductus Incisorii; and, on the other Side, to preserve the Conchæ, and Cells of the Os Ethmoides. For this Purpose I use a fine Saw, made of the Spring of a Watch.

By this Method I shew, on that Side from which all the Septa have been saw'd off, the intire Conchæ, their convex Sides, the particular Thickness of the Membrana Pituitaria on their lower Edges, the Orifice or Orifices of the Sinus Maxillaris, the Situation of the Orifice of the Sinus Sphenoidales, the communicating Ducts that go between the Sinus Frontales and the Ethmoidal Cells and Interstices between the two Conchæ; and the Structure of the posterior Openings of the Nares. I can, also, shew, at the same time, the Orifice of the Eustachian Tube, behind the posterior Opening of the Nares, and the Communication of the Nose with the Mouth.

On the same Side I afterwards separate gradually, with a very sharp Knife, or with narrow sharp-pointed Scissars, the Superior or Ethmoidal Concha, without doing any Violence to the neighbouring Parts; and then I can shew, on the Parts covered by that Concha, a little oblong or oval Fossula, which runs down obliquely from before backward; at the posterior and lower Extremity of which, there is an Orifice of about a Quarter of an Inch Diameter, which opens into the Maxillary Sinus; and another at the anterior or superior Extremity, which opens into the Frontal Sinus.

Immediately behind this Fossula there are two Openings, one into the Sinus Frontales, the other into the Ethmoidal Cellulæ of the Os Frontis. I shew, likewise, in the posterior Part of the Os Ethmoides, at least two Openings, by which the Cells of that Bone communicate with each other. All this is very different from what we see in the Skeleton, or even when these Parts are deprived of their Membranes; neither is the Structure always the same in fresh Subjects; for in some I have observed, a little before and above the Opening of the Maxillary Sinus, two small Grooves, which united in their Passage to the Frontal Sinuses, the uppermost Groove being a little contorted.

In the next Place I remove the Concha Inferior, or Maxillaris, in the same Manner, and with the same Precautions; and then I observe, at the Distance of about a Quarter of an Inch from the anterior Extremity of this Concha, a small Opening, the Diameter of which is not above the twelfth Part of an Inch, and it is turned obliquely backward. It seems to be the Extremity of a Duct of the same Diameter; but, when it is slit with sharp-pointed Scissars, we discover a flat oval Cavity, the Diameter of which is a Quarter of an Inch in Length, and lies in the same Direction with the Septum Narium.

This oval Cavity is the lower Extremity of the Sacculus Lachrymalis, which, consequently, is only contracted between this inferior Cavity and the orbitary Portion. Within this narrow or contracted Portion we see, likewise, the Opening of a blind Duct, which runs obliquely backward and upward, about a Quarter of an Inch; but I do not know precisely where it terminates, nor for what it is designed.

The Arteries of all these Parts come from the external Carotid. Those of the external Parts of the Nose are, in general, Branches

Branches and Ramifications of the Arteria Maxillaris externa, or Angularis, and of the Temporalis; and the Arteries of the internal Parts are Branches and Ramifications of the Maxillaris Interna. The Veins are, almost in the same manner, Branches and Ramifications of the external Jugular; and they communicate with the orbicular Sinus, and, by that means, with the Sinuses of the Dura Mater, and with the internal Jugulars.

The principal Nerves belonging to the Nose are Filaments of the Nervi Olfactorii, which run down through the Holes of the transverse Lamina of the Os Ethmoides, and are distributed to the common Membrane of the internal Nares, especially to the villous Portions thereof. The inner Branch of the orbicular or ophthalmic Nerve sends a Filament through the internal anterior orbicular Hole into the Cranium, which comes out again in Company with one of the Filaments of the olfactory Nerve through the Ethmoidal Lamina.

This internal Branch advances afterwards toward the Os Unguis, and is distributed partly to the Sacculus Lachrymalis, partly to the upper Portion of the Musculus Pyramidalis, and of the Integuments of the Nose. The suborbicular Nerve, which is a Branch of the Maxillaris superior, having passed through the Inferior orbicular Hole, sends Filaments to the lateral external Parts of the Nose. Another Branch of the superior Maxillary Nerve goes to the posterior Opening of the Nares, being spent on the Conchæ, and other internal Parts of the Nose.

The Nose is the Organ of Smelling, by means of the villous Portion of the internal Membranes, to which the olfactory Nerves are principally distributed. It is likewise of Use in Respiration; and the mucilaginous Fluid, spread over the whole pituitary Membrane, prevents the Air from drying that Membrane, and so rendering it incapable of being affected. The Nose serves, likewise, to regulate and modify the Voice; and to this the Sinuses, also, contribute. The Sacculus Lachrymalis receives the Serum from the Eyes, and discharges it upon the Palate, whence the greatest Part of it runs to the Pharynx. *Winslow, Sect. 10. N^o 315.*

NATA, NATTA, NASA, NASDA, or NAPTA. All these import a Species of Tumor, or Wen, which grows on many Parts of the Body, arising from a narrow Base, and spreading like a Fig.

NATARON. The same as NATRON.

NATATIO. There are a few chronical Disorders, in which Swimming is proper; for which Reason it is rarely prescribed. It is only used in the Summer, and renders Persons leaner, promotes Perspiration, heats, attenuates, and renders those who use it less obnoxious to Injuries. Swimming in the Sea is beneficial to those who labour under Dropsies, Itches, exanthematous Disorders, an Elephantiasis, or Defluxions of the Legs, or any other Parts of the Body. It is, also, beneficial to those who reap no Benefit from their Aliments. Swimming, not only in the Sea, but, also, any-where else, is injurious to the Head; and Swimming in fresh Waters produces the above-mentioned Effects, in a very faint and languid Manner; for which Reason it is, for the most part, to be avoided: For, if one continues long in fresh Water, the Nerves are injured, not only by its Cold, but, also, by its Moisture. Swimming in Water naturally hot is incommodious, because it fills the Vessels of the Body; and Swimming in Water artificially heated, is still more prejudicial: Besides, a Person ought never to swim, either in the Sea, or any other Water, till he has moderately anointed the Body, and warmed it by Friction. He, also, ought to throw himself from an Eminence into the Water. *Oribas. Lib. 6. Cap. 27.*

NATES. The Buttocks. Two Protuberances of the Brain are, also, called by this Name.

NATRIX. The Name of a Serpent. See HYDRUS.

NATRON. The Nitre of the Antients is very different from ours. Our Nitre is inflammable, and shoots into Crystals, Strias, and Spears; such a Nitre was wholly unknown to the Antients: Nor is it certain when this artificial Nitre of ours was invented. It is not to be doubted, but the Invention of it very much conduced, and gave occasion, to that of Gunpowder. The Difference between our Nitre, and that of the Antients, consists in the following Particulars.

1. The Nitre of the Antients was a native Fossile, dug out of the Earth, not pure indeed, but got by Lixivation from the Earth; ours is artificial, and owes its Generation to the Air. Hence appears the Mistake of those who affirm, that some Sorts of Beer are brew'd of nitrous Waters, which is commonly said of the Beer of *Servefs* and *Numburgh*.

2. The Nitre of the Antients was of an alkaline and absterfive Nature, so that it might well serve instead of Pot-ashes, for the making of Glass, or Soap. It was produced in *Egypt*, and called *Natron*. And now, at present, they dig, at *Smyrna*, an Earth, that is purely alkaline, which comes to *Paris* in great Quantities, and is used instead of Pot-ash. *Clusius de*

Exotic. Lib. 2. writes, that the Nitre of the Antients is so common at *Cairo*, that ten Pounds of it will hardly yield a Meyden (three Half-pence). They use it for several Purposes; for they incrust Vessels with it; and, mixed with the Pods of *Acacia*, it serves to dry Leather. *Bellonius, Lib. 2.* writes, that the Nitre of the Antients is very rarely found amongst us; and confidently asserts, that there is not a Grain of that Nitre in *Europe*; but that in *Egypt* there is nothing more cheap and common. Our Nitre is a savoury Salt, neither acid nor alkaline, but of a middle Kind; for it cannot be brought to an Effervescence, neither with an Acid nor Alkali.

3. The Nitre of the Antients was not combustible and inflammable, like ours, and, consequently, of no Use in making Gunpowder. This Difference being supposed, it plainly follows, that what we find in ancient Writings, as those of *Hippocrates, Pliny, Dioscorides, Galen*, and others, of Nitre, and its Virtues, is not to be understood of our common Nitre, but of a native alkaline Salt.

But though *Bellonius* denies, that there is a Grain of this alkaline Salt, or Nitre of the Antients, to be found in *Europe*, I am of Opinion, that though we have not so great Quantities of nitrous alkaline Salt in the Earth of *European* Countries, as in that of *Egypt*, yet, that a purely alkaline fixed Salt may be produced from the Bowels of the Earth, with all the Properties of Pot-ashes, or Salt of Tartar, or Nitre of the Antients; which is sufficiently proved by medicinal Springs, Baths, and Waters. For a very pure alkaline Salt is extracted out of many of them; for Instance, the *Selteran* and *Antonian* Waters, and in *Bohemia* those of *Buckfuerling* and *Wildungen*, which yield a very pure Sal Alkali, as do the *Caroline* and *Emsen* Baths; as the Springs of *Schwabach* and *Egra* produce an Alkali, and with it a Salt of a middle Kind. So that I think it can no longer be doubted, but that our Earth contains a fixed alkaline Salt, which is imbibed and carried off by the Waters. This Consideration will, also, serve to confute the vulgar Notion of our modern Chymists, that fixed Sal Alkali was the mere Product of Art, and obtained by Fire; nor could be extracted otherwise than from the Vegetable Kingdom, by way of reducing Vegetables to Ashes. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 1.*

NATTA. See NATA.

NATURALIA. The Pudenda.

NAVICULARE Os, or NAVIFORME. The Name of a Bone in the Foot, called, also, *Cymbiforme*. See CRUS.

NAVIGATIO. Sailing. This is considered as an Exercise, under the Article FIBRA; which see.

NAUSEA, *vauria*, from *vauis*, a Ship. This is properly the Sickness which People perceive upon Sailing. But it is used to express all Sorts of Sickness, and Propensities to vomit. See PYRETOS.

NAUSIOSIS, *vauisiosis*. The same as NAUSEA.

NAUTEA, says *Nonius Marcellus*, is Water contained in Skins or Leather, or rather Water taken from the Ship's Hold, so call'd a *Nantis*, "from Seamen." But *Mercurialis* rather approves the Definition of it given by *Paulus in Festus*, who says, that *Nautea* is an Herb with black Grains, used by Leather-dressers, and taking its Name, a *Nave*, "from a Ship," because it excites a Nausea, the T being changed into an S. Again, *Labeo Com. Juris Pontific.* quoted by *Festus*, says, that *Nautea* was a red Substance, with which they dy'd some of the sacerdotal Vestments. What was the *Nautea* (supposing it an Herb, which is the general Opinion) used by the Leather-dressers, or Tanners, and qualified to excite a Nausea, does not appear; for they use nothing of that Kind, except the *Bryonia alba*, whose Fruit, as *Dioscorides* says, is used in taking off the Hair from Skins: This indeed is proper to excite Vomiting, and the *Bryonia nigra* has the very same Effects, only in a lower Degree; and this is supposed by *Hadrianus Junius* to be the *Nautea* of *Festus*. Some of the Lexicographers take the *Anagyris* to be the *Nautea*; and probably enough, if we regard only its emetic Quality. *Rhodius* thinks it most likely to be the *Vitis nigra*, or *Uva Taminia*, as *Pliny* says it is commonly called, *Lib. 23. Cap. 1.* which was, also, the Opinion, he says, of two very learned Men, *Avantius* and *Schipanus*; and is further confirm'd by what *Oribasius* says of the *Uva Taminia*, *Med. Coll. Lib. 7. Cap. 26.* that it purges by Vomit. *Rhodius, Not. ad Scrib. Largum, N^o 180.*

NAUTIA. The same as NAUSEA.

NAUTICUS Musculus. A Name for the *Tibialis Posterior*.

NAUTILUS. The Name of a Shell-fish, said to be aperitive. *Lemery des Drogues.*

NAXIA COS. The Name of a sort of Whetstone, mentioned by *Galen*, in his Treatise de *Simp. Facultat.*

NEAPOLITA, *νεαπολίτης*. The Name of a Topical Medicine, describ'd by *Aetnaeus*, *L. 6. C. 8. de Meth. Medendi*, where it is recommended for the Gout and Sciatica.

NEAPOLITANUM

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NEAPOLITANUM UNGUENTUM is an Ointment thus prepar'd :

Take of Lard, wash'd with the Juice of Sage, one Pound ; Quicksilver, passed through Leather, four Ounces ; Oil of Bays, Chamomile, and Worms, of each two Ounces ; Oil of Spike, one Ounce and an half ; Spirits of Wine, one Ounce ; Wax, two Ounces ; Turpentine, wash'd with the Juice of Elecampane, three Ounces ; the Powder of Groundpine and Sage, of each two Drams : Mix, and make into an Ointment.

NEAPOLITANUS MORBUS is the Venereal Disease.

NEASTRUM. An obscure Word, coin'd by Paracelsus, but not very intelligible.

This, however, is his own Explication. *Neastrum* est Com-motio Elementorum et Elementatorum ; & est Agitatio facta in illis omnibus, quæ ab Elementis descendunt. Divisio fit in Locustas. Quo cadit ibi sese exeret.

Pars nonnulla in Corpore adhæret Neastro Ignis, quædam æris, nonnulla Aquæ, aliqua Terræ. Secundum hoc scire debet Medicus, quando vel paroxysmet, vel minus. Nam in suis Elementis cognoscuntur illæ.

Est enim Natura congenita, quæ ita in Yliado consistit. Et qua Ratione *Neastra* alia erumpunt, ac se produnt : eadem hoc quoque, nec a corporeo desistit, quamdiu Elementum ip-sius illud tenet ; & est contrarius Morbis in Elementis & in Corpore.

NEBULA. A Disorder of the Eye. See OCLUSUS.

NEBULGEN. A Salt generated by the Moisture of the Clouds falling upon Stones in the Fields, and indurated by the Heat of the Sun. *Rulandus*.

NECESSARIÆ RES are the Non-naturals.

NECHIASCH. An obscure Term of Paracelsus. It is said he means by it, saline, corrosive, and corroding Particles.

NECROCOMICA. Prodiges portending some great Event. *Rulandus*.

NECROLIUM. A Remedy capable of averting Death, and preserving Life.

NECROSIS, νεκρωσις. A Mortification.

NECTAR, νectar. The Antients fabled this to be the Drink of the Gods. Hence many Sorts of Liquors have been called by this Name ; one of which was prepar'd of Must, boil'd away to one half, with an Addition of one Sextary of Honey to fix of the Must : This was directed to be stop'd close up, and set in the Shade. *Dioscorides*, L. 5. C. 66. describes a Wine, which he calls νεκταρικὴ οἶνος, which is only Wine impregnated with the Root of *Helenium*, which, he says, some call *Nectarion*. *Galen* mentions several Compositions, to which he gives the Epithet *Nectarius* ; as an Antidote described in his *Treatise de Comp. M. S. L. Cap. 7. L. 8. an Ec'egma, L. 9. C. 4. and a Collyrium, L. 4. C. 7. of the same Work.*

NEDEON. An obscure Word in Paracelsus, which is said to import a specific or essential Property, or Virtue, of every natural Body.

NEDUM-SCHETTL H. M. The Name of a bacciferous Shrub, which grows in the *East-Indies*, of which, boiled in Oil, an Ointment is made, said to be of Service in pruriginous Disorders.

NEDYIA, νδυια. The Intestines, or the abdominal Viscera.

NEDYS, νδυς. The Belly, or Abdomen, or the Stomach.

NEDYUSA, νδυυσα. An Epithet for Thirst, importing its being violent, or intense. *Hippocrates in Coac.*

NEFRENDDES. This properly signifies sucking Pigs ; but it is applied to young Children, or old People, who have no Teeth.

NEGUNDO MAS. A Name for the *Vitex* ; trifolia ; minor ; Indica ; serrata.

NEGUNDO FOEMINA. A Name for the *Vitex* ; trifolia ; minor ; Indica ; rotundifolia.

NELERA, νεληρα, of νεληρα. The lower Part of the Belly.

NEIEM-EL-SALIB. Alpini, J. B. Bontii. *Græmen dactylon Egyptiacum*. C. B. Park. EGYPTIAN COCKS-FOOT-GRASS. It is a slender Sort of Grass, with white, geniculated, and creeping Roots. The Branches are geniculated, and adorned with four Spikes, which represent the perfect Figures of a Cross ; whence the *Egyptians* call it *Neiem-el-Salib*, that is, *Græmen Crucis*, the *Grass of the Cross*, or *grass-Grass*.

The Seeds, which are very minute, and like those of common Grass, are very much used by all those who are afflicted with the Stone in the Kidneys, or Bladder, being esteemed a good Lithontriptic for dissolving stony Concretions in the Bladder, which is a Distemper very familiar, and, in a manner,

NEP

endemic in *Egypt*. The Women make very great Use of the Root in Decoctions for their Children, when seized with the Small-pox, or Measles ; and, also, for themselves, when labouring under a Suppression of the Menstrues. Some regard a Decoction of the Seeds, moderately bruised, as a great Secret, and a choice Remedy for promoting the exanthematous Eruptions, which we call *Peticulæ*, or *Petechiæ*, in pestilential Fevers. The whole Herb, but especially the Root, are much employ'd, also, in the Cure of Wounds and Ulcers. The Root is said to be cold and dry, and of very fine Parts, tho' the Decoction thereof is very commonly used to provoke Sweat. *Raii H. P.*

NEILON, νεῖλον. The Name of a *Malagma*, describ'd by *Paulus Aegineta*, Lib. 7. Cap. 18.

NELI-POULI. See BILIMBI.

NENEMIA, νηνεμία. Serenity or Calmness of the Air. *Hippocrates*.

NENUFAR, or NENUPHAR. See LEUCO-NYM-PHÆA.

NENUFARENI. Imaginary Spirits, which, according to the Adepts, inhabit the Air.

NEPA. A Crab ; or, according to *Aldrovandus*, a Scorpion.

NEPA, in Botany, is a Name for the *Genista-spartium* ; majus ; brevioribus aculeis.

NEPENTHES, νηπενθής, from νη, importing Negation, and πένθος, Morning, is a Medicine highly celebrated by *Homer*, *Odyss. A. Vers. 220. & Seq.* and expounded in *Diodorus Siculus*, Lib. 1. ad Finem, ἡ ἐγγυῖς καὶ λύπη φάρμακον, "a Remedy for Anger and Sorrow." The Poet attributes so great Virtues to the *Nepenthes*, that whoever should take it mixed with Wine, could not be sensible of Grief for that whole Day, tho' his Father or Mother were to die, or his Brother, or dearest Friend, were to have their Throats cut before his Face. *Homer* says, that *Helena* received the *Nepenthes* in *Egypt*, from *Polydamna*, the Wife of *Thenis*. *Diodorus* illustrates this Place of the Poet, and assures us, that the Women of the *Egyptian Thebes*, called, also, *Diospolis*, had still the Use of this efficacious Remedy in his Time ; and that it was reported it could be found no-where but in Possession of the Inhabitants of *Diospolis*. *Schultz. Hist. Med.*

NEPETA. A Name for the *Cataria* ; angustifolia ; major ; and for the *Cataria* ; angustifolia major, flore cæruleo-purpurascens.

NEPETELLA. A Name for the *Cataria* ; minor ; vulgaris.

NEPHELOIDES, νεφελοειδής. An Epithet, in *Hippocrates*, for Urine, importing cloudy.

NEPHRIDION, νεφρίδιον. The Fat of the Kidneys. *Hippocrates*, Lib. 2. de Mulierum Morbis.

NEPHRITICUM LIGNUM. See BALANUS MYR-PSICA.

NEPHRITICUS, from νεφρός, a Kidney. Belonging to the Kidneys. It is used with respect to Disorders of these ; or to Medicines adapted to their Cure.

NEPHRITICUS LAPIS. Offic. Charlt. Foss. 33. Schrod. 329. Worm. 95. Boet. 259. De Laet. 81. *Lapis Indicus Nephriticus*. *Aldrov. Mus. Metall. 706. Lapis Nephriticus*. *Calc. Mus. 333. Mont. Exot. 14. THE NEPHRITIC STONE. Dale.*

It is a Stone very much variegated with green and other Colours, as white, yellow, blue, and black, but still with a greenish Cast : It is imported from *America*, but is, also, found in some Parts of *Spain* and *Bohemia*.

It is worn as an Amulet against Pains in the Stomach and Kidneys.

NEPHRITIS. An Inflammation of the Kidneys.

That the Kidneys labour under a true Inflammation, may be known from the burning, pungent, intense, and inflammatory Pain of the Part, where the Kidneys are situated ; from the acute continual Fever, with which such an Inflammation is accompanied ; from the small Quantity of Urine, which is highly red and deep-colour'd, or, in the Height of the Disorder, aqueous ; the Stupor of the adjacent Leg ; the Pain of the Groin and contiguous Testicle ; the Pain of the Ilium ; the Vomiting of Bile, and the continual Eructations.

Such an Inflammation may be produced by all the general Causes of an Inflammation applied to the Kidneys, such as, first, whatever hinders the Extremities of the Arteries from transmitting their Fluids ; a Wound, for Instance, a Contusion, an Abscess, a Tumor, a long-continued Defluxion ; a strong Effort of the Body, or a small Stone. Secondly, whatever hinders the Conveyance of the Urine into the Pelvis, Ureters, and Bladder, such as Causes similar to those already enumerated, applied to these Parts. Thirdly, such Causes as forcibly convey the thicker Parts of the Blood into the urinary Ducts ;

Running,

Running, for Instance; long and violent Riding, excessive Heat, an Effort of the Body, a Plethora, acrid Diuretics, and Poisons. And, fourthly, a long-continued spasmodic Contraction of all those Vessels.

When these Vessels are seized with a violent Inflammation, they are often so constricted, that no Urine can be discharged; or, if a small Quantity is evacuated, it is pellucid, thin, and aqueous, which is a very bad Sign; and the Nerves cohering to these Vessels, and lying contiguous to them, being often irritated, Pains and Convulsions are produced in the Stomach, Mesentery, Intestines, and Uterus. Hence arise Eructations, Nauseas, Vomiting, Fluxes, Iliac Passions, Retentions of the Urine, Stupor and Immobility of the Legs, and a preternatural Heat of the Loins.

Such an Inflammation is cur'd when Nature is benign, and the Disease favourable. First, by Resolution. Secondly, by a copious, red, and thick Urine, continually discharged before the seventh, or, at most, the fourteenth Day of the Disease. And, thirdly, by a copious Discharge from the hæmorrhoidal Veins, in the Beginning of the Disorder.

The Disorder, when the Inflammation is known to be present, by its peculiar Signs before enumerated, is to be cured, first, by the general Remedies appropriated to the Cure of all Inflammations; such as Venesection, Revulsion, and Dilution. Secondly, by mild, emollient, and antiphlogistic Decoctions, drank in large Quantities. Thus:

Take of the recent Leaves of Chervil, Brook-lime, and Pellitory of the Wall, each two Handfuls; of the Roots of Wood-sorrel, Succory, and Burdock, each two Ounces; of red Chiches, an Ounce and an half; of the bruised Seeds of white Poppy, and Ladies-thistle, each four Drams. Boil in three Pints of Water for half an Hour, and let the Patient take two Ounces of the Decoction every Quarter of an Hour.

Or,

Take of the Roots of Grass, six Ounces; of bruised Melon-seeds, an Ounce and an half; and of Liquorice, one Ounce. Boil in three Pints of Water, and let the Patient use the Decoction in the same Manner, and for the same Purposes, with the former.

Thirdly, this Species of the Disorder is cured by Clysters, Fomentations, and Baths, prepared of the above-mentioned Ingredients. And, fourthly, by mild and moist Aliments, by Rest, by avoiding lying too warm in Bed, and especially lying on the Back.

If the Pains and Convulsions are excessively violent, Opiates are beneficial.

The excessive Vomiting, with which this Disorder is accompanied, is to be relieved by a frequent Exhibition of tepid Water, edulcorated with Honey.

And, by this Method alone, a Nephritis, arising from a Stone impacted in the Ureters or Kidneys, may be safely cured.

The Remedies, most conducive to the Cure of this Species of a Nephritis, are Agrimony, Vervain-mallow, Ladies-mantle, Marsh-mallows, Brook-lime, the lesser Daisy, middle Censuud, Chervil, wild Carrot, Dandelion, Fennel, Liquorice, Strawberries, Grass, Rupturewort, Lettice, Harts-tongue, English Mercury, Moneywort, white Lilly, Rest-harrow, Pellitory of the Wall, Arse-smart, Scabious, Golden-rod, and Nettles, *Fernelius's* Syrup of Marsh-mallows, Syrup of Maiden-hair, Syrup of Succory with Rhubarb, Syrup of white Poppies, Syrup of wild Poppies, and Syrup of Violets, Sal Ammoniac, Sal Gemmæ, and Sea Salt.

If the Causes of the Nephritis are so strong and powerful, that the Disorder can neither be removed by Resolution, nor any other Method, but is protracted beyond the seventh Day, an Abscess is to be dreaded, the Formation of which may be known from a Remission of the Pain, which is succeeded by a Pulsation, a frequently returning Horror, a Weight and Stupor of the Part. That an Abscess is already form'd, is obvious, from the former Signs having preceded, from the Pulsation, Heat, and Tension in the Part, and from the purulent, fetid, and apparently saline and putrescent Urine. As soon as we are certain, that the Abscess is form'd, we are first to use powerfully maturing and emollient Medicines; then, when the Urine appears purulent, we must exhibit Diuretics, consisting of pure medicated Waters, Whey, and other Liquors of a like Nature, using at the same time Balsamics.

But, if this Suppuration should continue for a long time, the whole Kidney, being consumed, forms a kind of Bag, of no Use; and, in this Case, a *Tabes Renalis* is frequently present.

If a Scirrhus is form'd here, there arises an incurable Palsy, or Lameness of the subjacent Leg. Hence, also, are frequently produced a slow Consumption, and a Dropsy.

But if a small Quantity of the inflammatory Matter remains coagulated in the minute Follicle of the Urine, it forms a kind of Basis, or Ground-work, to which the fabulous Matter of the Urine gradually adhering forms a Stone in the Kidneys, which is by degrees augmented.

A Nephritis, also, sometimes degenerates into a Gangrene, as is obvious from the Violence of the Cause and Symptoms; the Want of Relief by Remedies; and the sudden Remission of the Pain, without any apparent Cause, accompanied with a cold Sweat, a weak and intermitting Pulse, a Hiccup, either no Discharge of Urine at all, or an Evacuation of such as is livid, black, full of Hairs, fetid, and rendered unseemly by brown or black Caruncles; and a sudden and considerable Loss of Strength. In this Case no Measures are of any Service, either for the Relief or Safety of the Patient.

From what has been said 'tis obvious, that there are almost an infinite Number of various Species of a Phrenitis; that their different Causes are as numerous; that one of these Causes is the Stone; and that, at the same time, all these different Species are to be cured almost in the same Manner. Hence we understand the Crisis of a Nephritis, and why this Disorder so often happens in Fevers. Hence, also, we are enabled to know and cure an Ichury, arising from a Fault of the Kidneys or Ureters. *Boerhaave Aphor.*

NEPHROMETRÆ, νεφρομετράς. The Muscles of the Loins, call'd *Psoæ*. *Ruffus Ephesus, de Appellat. Corp. Human. L. 1. C. 30.*

NEPHROS, νεφρός. A Kidney.

NEPHROTOMIA. See **LITHOTOMIA**.

NEPONES. The same as **BARONES**.

NEPTA. A Name for the **ASPHALTUS**. *Oribasius, in Collect. Medicinal. L. 11.*

NERE. The Name of a Pastil in *Paulus Aegineta, L. 7. C. 12.*

NERITA. A Sea Shell-fish, of which there are many Sorts, which are esteem'd a good Food to increase the seminal Juices. The Shell is said to be aperitive. *Lemery des Drogues.*

NERIUM.

The Characters are;

The greater and lesser Branches are divided and subdivided by threes, and the Leaves, also, grow three together. The Calyx is small, tubulous, and quinquefid; the Flower monopetalous, and, as it were, Funnel-shap'd, with a wide Margin, which is deeply cut into five wide and large Segments; at the Centre of the Division grow five Lobes, as in the *Lychnis*, *Caryophyllus*, and *Apocynum*; the Stamina are five in Number. The Ovary in the Centre of the Calyx becomes a polish'd Fruit, almost cylindrical, consisting of two Capsules, which, when ripe, part asunder, and containing downy Seeds.

Boerhaave mentions five Species of this Plant; which are,

1. *Nerium*; floribus rubescentibus. *C. B. P. 464. Tourn. Inf. 605. Boerb. Ind. A. 316. Nerium. Offic. Ger. 1220. Nerium sive Oleander. Ger. Emac. 1046. Nerium sive Rhododendron, flore rubro. J. B. 2. 140. Oleander sive Laurus Rosea. Park. Theat. 1469. OLEANDER vulgo. Herm. Cat. ROSE-BAY.*

It grows in Maritime Places, and by Rivers, as *Dioscorides* says, which is confirmed by Experience. The same Author and *Pliny* tell us, that the Flowers and Leaves are Poison to Mules, Asses, Dogs, and many other Quadrupeds; but that, on the contrary, they are alexipharmic to Man, and are good against the Bites of Serpents, being taken in Wine, and especially with an Addition of Rue; that weak Animals, as Sheep and Goats, if they drink Water in which the Leaves have been macerated, die. But *Galen*, who deserves more to be credited, says, that the *Nerion*, used outwardly, has a digestive Virtue; but, taken inwardly, is pernicious and poisonous, not only to Men, but most Brutes.

J. Bodæus a Stapel says, that this Shrub is called *Nerion*, from the privative Particle *νῆ*, and *ἔραμαι*, to love, as much as to say, a Plant which deserves not to be loved: Others write, that it has its Name from the Nymphs *Nereides*; others again derive it *ἐν τῇ νῆ πᾶν*, from not flowing, because, being drank, it suddenly deprives the Fluids of their Motion, and causes an intolerable Oppression; for there is an Intumescence of the Belly, which is succeeded by an Inflammation of the whole Body, and a total Consumption of the Humidities. It is, also, called *Rhododaphne*, from its Flower being like a Rose, and its Leaves like those of the Bay-tree; and *Rhododendron*, because sometimes it grows to the Bigness of a little Tree, and has a Flower like a Rose.

It is carefully cultivated in our Gardens, for the Beauty of its Flowers, and its perpetual Verdure. *Raii Hist. Plant.* p. 1767.

2. *Nerium*, floribus; albis. *C. B. P.* 464. *Nerium frue Rhododendron*, flore albo. *J. B.* 2. 141.

This agrees in Virtues with the former.

3. *Nerium*, Indicum, angustifolium, floribus odoratis, simplicibus. *H. L.* 447.

4. *Nerium*, Indicum, latifolium, floribus plenis, odoratis, *H. L.* 447. 449.

5. *Nerium*, Indicum, latifolium, flore variegato, odorato, pleno. *H. A.* 1. 45. *Boerb. Ind. alt. Plant. Vol. 1.* p. 316.

It is called *Nerium*, from *neros* (neros), humid; because it grows in humid Places. The Plant itself has a Force which is insuperable; for its Juice excites so great and violent an Inflammation, as immediately to put a Stop to Deglutition; and, if it be received into the Stomach, that Part is rendered incapable of retaining any thing, the pernicious Drug exerting its Force, and purging both upwards and downwards. *Nerium*, in Qualities, resembles the *Apocynum*. The third, fourth, and fifth Species have a very sweet Smell; but when I handled and examined them one Morning, upon an empty Stomach, in a close Chamber, I felt a Numbness coming upon me by degrees, with a Pain in the Head; which makes me believe, that something poisonous belongs to the Smell, though there is no Danger, if it be received in the open Air, as you may find upon Trial. Antidotes against its Poison are Vinegar, and all Acids. *Hist. Plant. adscript. Boerhaav.*

NERONIANA. An Epithet for Venesection, when more Veins than one are opened on the same Day.

NERVALIA Ossa. The same as ARCUALIA OSSA.

NERVI. The Nerves.

All the Nerves of the human Body come, originally, from the Cerebrum, or Cerebellum, by means of the Medulla Oblongata, or Medulla Spinalis: They go out in Bundles regularly disposed in Pairs, like so many distinct Trunks; which are afterwards divided into Branches, Ramifications, and Filaments.

The Nerves of the Medulla Oblongata go out, for the most part, thro' the Basis of the Cranium, at Holes situated according to their Disposition; those of the Medulla Spinalis pass thro' the lateral Foramina of all the Vertebrae, and through the great anterior Foramina of the Os Sacrum.

We commonly reckon ten Pairs of these Fasciculi, or nervous Trunks, to the Medulla Oblongata; nine of which go out separately, through particular Holes of the Basis Cranii; and the tenth, which arises from the Extremity of that Medulla, passes through the great occipital Foramen.

The Trunks from the spinal Marrow are twenty-four Pairs, and may, in general, be termed *Nervi vertebrales*, or *Intervertebrales*: Seven of them are called *Cervical Nerves*, twelve *Dorsal* or *Costal*, being true Intercoastal Nerves, and five *Lumbar*; to which must be added, five or six Pairs, that pass out through the Os Sacrum.

Before I enter upon the particular Distribution of all these Nerves, and the Course of their Branches, Ramifications, and Filaments, I think it proper to give a general Idea of them in the following Table.

The Nerves of the Medulla Oblongata are these:

First Pair; *Nervi Olfactorii*.

Second Pair; *Nervi Optici*.

Third Pair; *Nervi Motores Oculorum*, *Oculares Communes*, *Musculares Communes*, *Oculo-musculares Communes*.

Fourth Pair; *Nervi Trochleares*, *Musculares Obliqui Superiores*, vulgo *Pathetici*.

Fifth Pair; *Nervi Innominati Trigemini*. The subordinate Trunks of this Pair are, three on each Side; the *Nervus Orbitarius*, *Maxillaris Superior*, and *Maxillaris Inferior*.

Sixth Pair; *Nervi Motores Externi*, *Oculares Externi*, *Musculares Externi*, *Oculo-musculares Externi*.

Seventh Pair; *Nervi Auditorii*, which are two on each Side; one called *Portio Mollis Nervi Auditorii*; the other, *Portio Dura*, to which I give the Name of *Nervus Sympatheticus Minor*.

Eighth Pair; *Par Vagum Minus*, which I call *Nervi Sympathetici Medii*.

Ninth Pair; *Nervi Hypoglossi*, vulgo *Gustatorii*, vel *Linguales*.

Tenth Pair; *Nervi Suboccipitales*.

The Nerves of the Medulla Spinalis are these:

One Pair, called *Nervi Accessorii* of the eighth Pair, from the Medulla Oblongata.

One Pair, commonly called *Nervi Intercoastales*, which I name *Nervi Sympathetici Majores*.

Seven Pairs of *Nervi Cervicales*, or *Intervertebrales Colli*.

Twelve Pairs of *Nervi Dorsales*, *Costales*, *Intercoastales Veri*, or *Intervertebrales Dorsi*.

Five Pairs of *Nervi Lumbares*, or *Intervertebrales Lumborum*.

Five or Six Pairs of *Nervi Sacri*.

Two *Nervi Diaphragmatici*, each formed by a Trunk of the second, third, and fourth Pairs of the cervical Nerves.

Nervi Brachiales of each Side, formed by the fifth, sixth, and seventh Pairs of Cervical Nerves, and by the first Pair of the Dorsales.

From these Nerves, Six Branches arise on each Side:

Nervus Musculo-cutaneus.

Nervus Medianus.

Nervus Cubitalis.

Nervus Cutaneus Internus.

Nervus Radialis.

Nervus Axillaris, five *Articularis*.

Nervi Crurales of each Side, formed by the first, second, and third Pairs of the *Nervi Lumbares*; and partly by the fourth and fifth.

Each of these Nerves is divided into three Portions; which are,

Nervus Femoris Cruralis, five *Cruralis Superior*.

Nervus Tibiae Cruralis, five *Cruralis Tibialis*.

Nervus Cruralis Pedis, five *Cruralis Pedialis*.

Nervi Sciatici, each formed by the Trunks of the last two Pairs of the *Nervi Lumbares*, and by the three or four following Pairs of the *Nervi Sacri*.

The principal Division of each of these Nerves produces the following:

Nervus Sciatico-cruralis.

Nervus Sciatico-popliteus.

Nervus Sciatico-tibialis.

Nervus Sciatico-peroneus.

Nervus Plantaris Internus.

Nervus Plantaris Externus.

I refer the Subdivisions of the *Nervi Innominati*, or of the fifth Pair, and those of the three *Nervi Sympathetici*, to the particular Description; in which I shall trace the Branches, Ramifications, and even the most remarkable Filaments, all the Way, to where they enter the Muscles, Viscera, Organs, &c.

NERVI OLFACTORII.

The first Pair of Nerves of the Medulla Oblongata, or *Nervi Olfactorii*, formerly named *Processus Mammillares*, arise by medullary Fibres, anteriorly and exteriorly from the Eminence of the Cerebrum, called *Corpora Striata*, between the anterior and middle Lobes.

They run forward toward the Os Ethmoides, on each Side of the Crista Galli, in form of medullary Ropes, having a very slender Consistence; and in this Course they receive some medullary Fibres from the anterior Lobes of the Cerebrum.

They are at first very thin; but, as they advance, they grow gradually larger and softer; and, having reached the Sides of the Crista, without any Communication between them, they send off a great Number of Filaments, which run through the Holes of the Lamina Cribrosa.

In their Passage through these Foramina, they are accompanied and invested by the same Number of small Productions from the two Laminæ of the Dura Mater as by particular Vaginæ; and they are afterwards distributed by an Infinity of small Filaments, to the Membrane which lines all the internal Parts of the Nose.

Each olfactory Nerve communicates, by particular Filaments, with some Branches of the *Nervi Ophthalmici*, and *Maxillaris Superior*.

NERVI OPTICI.

The Optic Nerves arise from the Eminences of the Cerebrum, called *Thalami Nervorum Opticorum*; and, being first of all incurvated outward, they afterwards approach each other, as they run over the Sella Sphenoidalis of the Basis Cranii; at which Place they unite a little, and afterwards separate again in their Passage to the Foramina Optica, to the Orbits and Globe of the Eyes.

This Union of the Optic Nerves is on the anterior Part of the Glandula Pituitaria, and is of a very singular Kind. See CAPUT.

NERVI MOTORES OCULORUM COMMUNES.

The third Pair of Nerves, commonly called *Motores Oculorum*, arise immediately before the Border of the anterior Edge of the great transverse Protuberance, ordinarily termed the *Processus Annularis* of the Medulla Oblongata.

Each Nerve perforates the Dura Mater, behind the lateral Parts of the posterior Apophyses of the Sella Sphenoidalis; and afterwards runs along the upper Part of the Sinus Cavernosus of the

the Dura Mater, on one Side the Curvature of the Carotid Artery, to the superior Orbitary, or sphenoidal Fissure; from thence it passes into the Orbit, and divides into four Branches, one superior, one internal, and two inferior, one of which is long, the other short.

The superior Branch goes off as soon as the Trunk enters the sphenoidal Fissure, and runs directly to the lower Side of the Musculus Rectus superior of the Globe of the Eye.

Having reached the Middle of that Muscle, or thereabout, it sends up a Branch to the Levator Palpebræ Superioris, and, when this Branch goes off nearer the sphenoidal Fissure, it may be looked upon as the second superior principal Branch of the Motor Oculi.

The other three Branches go off at some Distance from the superior Branch: The internal Branch is distributed to the Musculus Rectus Internus of the Eye, the short inferior Branch to the Rectus Inferior; and the long inferior Branch, to the Obliquus Inferior, into the Substance of which it penetrates, after having run along the Rectus Inferior.

Besides these four or five Branches, there is a small short Branch, which arises most commonly from that which goes to the Musculus Obliquus Inferior; and it forms a small lenticular Ganglion, that detaches several very fine Filaments round the Optic Nerve.

The Filaments of the Ganglion perforate the Tunica Sclerotica of the Eye, and then run between this Coat and the Choroides, all the Way to the Iris, where they are distributed by very fine Ramifications.

The small lenticular Ganglion produces likewise other nervous Filaments, which communicate with the Ramus Internus, or Nafalis of the Orbitary Nerve.

NERVI TROCHLEARES.

The fourth Pair of Nerves of the Medulla Oblongata, or Nervi Trochleares, are long and small, arising behind the Eminences called *Nates*, from the lateral Part of the medullary Expansion, which lies above the Passage between the third and fourth Ventricles of the Brain.

From thence they go on each Side to the Edge of the Fold, formed by the Dura Mater, on the Extremity of the Apophysis Petrofa, behind the Sella Sphenoidalis, that is, by the anterior Portions of the Septum Transversum.

There each Nerve perforates the Edge of the Fold above the Passage of the Nerve of the third Pair, and more backward and outward; afterwards it runs in the Duplicature of that Fold, on one Side of the Nerve of the third Pair, along the upper Part of the Sinus Cavernosus, and passes into the Orbit thro' the Sphenoidal Fissure, and into the Musculus Trochlearis. Its Course is oblique over the other Nerves, and neighbouring Muscles; and it sends off small Filaments on each side, appearing to communicate with the first Branch of the fifth Pair, or Nervus Ophthalmicus.

NERVI TRIGEMINI.

The fifth Pair of Nerves is very large, and they rise anteriorly from the lateral Parts of the transverse Protuberance of the Medulla Oblongata, by a great Number of Filaments closely united together, which afterwards form two large flat Trunks, one on each Side. Each Trunk runs toward the Apex of the neighbouring Os Petrosum, where it perforates the Dura Mater, a little below the Edge of the Extremity or anterior Portion of the Septum Transversum of the Brain.

Having detached some Filaments to the Apex of the Apophysis Petrofa, or to a kind of sesamoide Bone, which is often found near this Apex, it enters the Sinus Cavernosus; and, having sent some other Filaments to the Dura Mater, it expands in the Sinus, and forms a kind of Plexus, or flat irregular Ganglion.

Afterwards the Trunk is divided into three large Branches, more or less flated, which run through the Sinus Cavernosus, being closely connected to the spongy Filaments thereof, and bathed in the venous Blood which it contains. These three Branches are disposed laterally on one vertical Plain, and separate after the manner of a Goose's Foot.

The first Branch, commonly called Nervus Ophthalmicus Willisii, is the smallest and longest of the three, and enters the Orbit through the Sphenoidal Fissure; for which Reason I name it Nervus Orbitarius.

The second, or middle Branch, called also Nervus Maxillaris superior, passes through the superior maxillary Foramen of the Os Sphenoides.

The third, or inferior Branch, called likewise Nervus Maxillaris inferior goes down through the Foramen Ovale or Maxillare inferius of the Sphenoidal Bone. The two maxillary Nerves are united at their Origin; for which Reason, some Anatomists have divided the large Trunk into two principal Branches; and the second of these Branches into two others.

NERVUS ORBITARIUS, vulgo OPHTHALMICUS.

The Orbitary or Ophthalmic Nerve, which is the first Branch of the fifth Pair, as soon as it enters the Orbit through the Sphenoidal Fissure, is divided into three Branches, one superior or frontal, one internal or nasal, and one external or lachrymal; and before its Entry it sometimes gives, and sometimes receives, communicating Branches: It communicates by a Filament or two, with the Nerve of the sixth Pair, and with the Nerve commonly called Intercostalis.

The Ramus Superior or Frontalis, which might be termed Nervus Superciliaris, is the most considerable of the three, and runs along the superior Part of the Orbit, close to the Membrane which lines it, sending Filaments to the Fat which surrounds the Globe of the Eye, to the neighbouring Membranes, and to the Musculus Levator Palpebræ.

Afterwards it passes through the Foramen Superciliare, and, being divided toward each Side, it is spent in the neighbouring Portions of the Musculus Frontalis, Orbicularis, and Integuments, communicating with a neighbouring Branch of the Portio Dura of the Auditory Nerve.

The Ramus Internus, or Nafalis, of the Orbitary Nerve; runs toward the Nose; and near its Origin sends off a Filament, which communicates with the small lenticular Ganglion, already mentioned.

This Filament comes sometimes from the Trunk of the Orbitary Nerve before the Division, and adheres to the internal Branch all the Way, to where the Mater Communis is divided.

This Nasal Branch runs first of all obliquely over the Optic Nerve, and under the two muscular Levatores, giving off some Filaments to the nearest Parts of these Muscles: Afterwards it runs between the Musculus Rectus Internus, and Obliquus Major, along the Inside of the Orbit; and, in its Passage, sends a small Filament through the Internal orbitary Hole; of which hereafter.

From thence it passes over the Musculus Rectus Internus, to the great or internal Angle of the Eye, where it is distributed to the neighbouring Parts; that is, to the Caruncula and Sacculus Lachrymalis, to the nearest Portions of the Musculus Orbicularis, Superciliaris Pyramidalis Nasi, and to the Integuments.

The small lateral Filament which it sends through the Orbitary Hole, returns into the Cranium, running up from before, backward, on one Side of the Os Cribrosum; and, having reached the fore Part of the Duplicature of the Dura Mater, it joins the Filaments of the Olfactory Nerve, or the Lamina Cribrosa, together with which it passes through the anterior Holes of that Lamina, and is distributed to the Nose.

The Ramus Externus, or Lachrymalis, goes chiefly to the Glandula Lachrymalis, upon which it is distributed, and from whence it has its Name. It seems sometimes to be a Branch from the Ramus Frontalis, and it often arises from the Orbitary Nerve more posteriorly than the other Branches: It adheres closely to the Dura Mater, and runs obliquely along the Inside of the Orbit, on the Musculus Rectus Externus, to the Glandula Lachrymalis.

Before it reaches the Gland, it sends a small Branch to the external lateral Part of the Orbit, which is sometimes lost in the Diploë of the Cranium, and sometimes perforates the neighbouring Part, either of the Os Frontis; or the Os Malæ, &c. sending Filaments to the nearest Portions of the Musculus Temporalis, Orbicularis Palpebrarum, Masseter, &c. and of the Integuments; and it likewise gives Filaments to the Fat, and Membrana Conjunctiva of the Eye.

NERVUS MAXILLARIS SUPERIOR.

The Superior Maxillary Nerve, the second Branch of the fifth Pair, goes out of the Cranium between the Foramen Ovale, and Fissure of the Os Sphenoidale, passing through the Foramen Rotundum, or Maxillare Superius of the same Bone.

Immediately after its Passage, it sends a Filament to the Outside of the Orbit, which, having perforated the Os Malæ, is distributed to the Parts which cover that Bone, communicates with a neighbouring Branch of the Portio Dura of the Auditory Nerve; and sends small Filaments to the Fat in the lower Part of the Orbit.

Soon afterwards it is divided into three Branches, the first of which I name Suborbitarius; the second, Palatinus; and the third, Spheno-palatinus; which last is sometimes only a Branch of the first; but still the common Division may be obtained.

The suborbitary Branch is the most considerable of the three: It runs in the Canal of the inferior Portion of the Orbit, and goes out by the exterior orbitary Hole, which is sometimes double.

In this Passage it sends downward, through the Holes of the Canal, small Filaments, which enter the Sinus Maxillaris, and are distributed to the Membrana Pituitaria in that Sinus,

Sinus, to the Substance of the Bone, to the Alveoli, to the anterior Dentes Molares, and to the Dentes Canini and Incisores.

As it enters the Canal, it sometimes gives off a Filament to the Posterior Molares; and among all these Filaments there is at least one, which runs along the upper Side of the Arch of the Palate, to the Union of the *Os Maxillare*.

This Branch, having passed out of the bony Canal through the Foramen Suborbitarium Anterius, is distributed to the *Musculus Orbicularis Palpebrarum*, to the neighbouring Muscles of the Nose and Lips, and to the Integuments; communicating with a Branch of the *Portio Dura* of the Auditory Nerve.

The *Ramus Palatinus* of the Superior Maxillary Nerve runs down before the *Pterygoide Apophyses* of the *Os Sphenoides*, in the Canal formed by the *Os Maxillare*, and the *Os Palati*; and, having passed out of that Canal, through the Foramen Palatinum Posterius, it is distributed by several Filaments to the glandular Coat of the Palate, to the *Septum Palati*, and Muscles belonging to that Part. Some of these Filaments go as far as the Foramen Palatinum Anterius or Incisurum.

As it runs down in the Canal, it is, at first, a little bent, and then sends Filaments to the *Musculus Pterygoideus Externus*, to the *Peristaphylini*, and to the Arch of the Pharynx: It likewise sends other Filaments through the small Holes in the posterior Part or Tubercle of the *Os Maxillare*, to the *Sinus Maxillaris*, and posterior Dentes Molares.

The *Ramus Spheno-palatinus* passes through the bony Hole of the same Name, and is distributed to the *Musculus Pterygoideus Internus*, to the posterior Parts of the Nares, to the neighbouring *Sinus Sphenoidales*, and to the *Tuba Eustachiana*.

It likewise sends a Filament thro' the Foramen Pterygoideum, which perforates the Root of the *Apophysis Pterygoidea* from behind forwards, and joins the *Nervus Maxillaris Inferior*.

NERVUS MAXILLARIS INFERIOR.

The inferior Maxillary Nerve, the third Branch of the fifth Pair, is larger at its Origin than the other two: It goes out of the Cranium by the Foramen Ovale of the Sphenoidal Bone, and runs between the two *Musculi Pterygoidei*, below the great Sinus of the lower Jaw, where it enters the bony Canal of that Jaw.

As soon as it leaves the Cranium, it sends off four principal Branches; and, before it enters the Canal of the lower Jaw, it gives off another to the Tongue: The four first Branches arise very near each other, so that the Size of this Nerve decreases very much between the *Musculi Pterygoidei*.

The first Branch of this Trunk runs up to the Temporal Muscle, on the Inside of which it is distributed, and also between its Fibres.

The second Branch runs behind the Condyle of the lower Jaw, where it divides into two Filaments, which run from within, outward; and communicate with the neighbouring Branch of the *Portio Dura* of the Auditory Nerve, behind the Outside of the Condyle.

At the Origin of these two Filaments, it sends off a small Branch, which runs up before the external Ear toward the Temples, giving Filaments to the *Concha* of the Ear in its Passage.

The Branch of this Trunk passes between the two *Apophyses* of the lower Jaw, perforates the lower Part of the temporal Muscle, and gives it several Filaments.

Afterwards it bends downwards upon the *Musculus Masseter*, to which it is chiefly distributed, giving Filaments to the neighbouring Integuments, and communicating with the *Portio Dura* of the Auditory Nerve, on the Side of the *Os Malæ*. It terminates by Filaments which go to the *Musculus Buccinator*, to the Muscles of the under Lip, and to the Integuments of these Parts.

The fourth Branch of the Trunk of the Inferior Maxillary Nerve is often no more than a Ramification of the third Branch, which goes off near its Origin. It passes over the *Musculus Pterygoideus Externus*, to which it gives Filaments, and is distributed to the *Pterygoideus Internus*, and to the nearest Portion of the Temporalis.

It is likewise distributed to the *Musculus Buccinator*, to the Glands of the Mouth, and Muscles of the Lips; sometimes it sends off a Filament, which runs up upon the *Concha* of the external Ear.

Besides these four Branches, several small Filaments go off on each side, one of which runs to the Foramen Pterygoideum, where it joins a Filament of the *Nervus Maxillaris Superior*, and then continues its Course to the Membrane, which covers the Vomer and neighbouring Parts of the Internal Nares.

The Branch that goes to the Tongue, which may be termed *Nervus Lingualis*, or *Hypoglossus minor*, to distinguish it from the *Hypoglossus major*, which belongs to the ninth Pair, is detached from the *Maxillaris Inferior*, as it passes between the *Musculi Pterygoidei*, and sometimes a little sooner.

It is a very considerable Branch, and sometimes nearly as large as the Trunk, which it accompanies between the two Muscles already mentioned; and, leaving it a little above the Canal of the lower Jaw, it runs over the *Pterygoideus Internus*, and gives it some Filaments.

This *Ramus Lingualis*, a little after its Origin, communicates with the Trunk by a short collateral Branch; which is sometimes plexiform. At this Place it sustains a particular Filament, which, according to the common Opinion, arises from it, and goes to the internal Ear.

This particular Filament of the *Nervus Lingualis* is supposed by Anatomists to be a Recurrent, which runs up backward through the Tympanum, and joins the *Portio Dura* of the Auditory Nerve; but as the Angle which it makes with the small *Nervus Lingualis*, is very acute, and turned forward; there is more Reason to think, that it comes from the internal Ear to that Nerve.

Afterwards this Lingual Branch passes under the lateral Part of the Tongue, and over the *Glandula Sublingualis*, giving Filaments to the neighbourhood Portions of the Muscles of the Tongue, and to those of the *Os Hyoides*, and Pharynx.

Having communicated, by several Filaments, with the Extremities of the Nerve of the ninth Pair, or *Lingualis major*, it enters the Substance of the Tongue, and terminates near its Apex or Point.

Lastly, the inferior maxillary Nerve, before it enters the Canal of the lower Jaw, sends Filaments to the neighbouring Portions of the *Musculus Pterygoideus Internus*, *Digastricus*, &c. It likewise detaches a Filament or two along the *Periosteum*, to be distributed to the *Musculus Mylo-hyoidæus*, and *Glandula Sublingualis*. The Marks of these Filaments often appear upon the Bone, all the Way from their Origin; and sometimes they pass through a small entire bony Canal, lying on the Surface of the Inside of the Bone.

After the inferior maxillary Nerve enters the Canal of the lower Jaw, it runs under the Alveoli, and distributes Filaments to each Tooth, all the Way to the Hole near the Chin, where it sends another Branch forward into the Diploë, which is distributed to the other Teeth, that lie between that Hole and the Symphysis of the Chin.

NERVI MOTORES EXTERNI.

The *Motores Externi*, which make up the sixth Pair of Nerves from the Head, are smaller, but yet a little larger than those of the fourth Pair. They arise from the Union of the *Medulla Oblongata* between the great transverse Protuberance, and the *Corpora Olivaria*; whence they advance to the *Dura Mater*, and enter it on the Extremity of the Production of the *Os Occipitis* behind, and a little on one Side of the Symphysis of that Bone, with the *Os Sphenoides*.

Each of these Nerves runs afterwards in the cavernous Duplication of the *Dura Mater*, on one Side of the Bottom of the *Sella Sphenoidalis*, and of the Carotid Artery, to which it adheres very closely; and it there communicates with a Branch of the fifth Pair, by one or two short Filaments, as has been already said in the Description of the Orbital Nerve.

Immediately after and behind this Communication, the Motor Externus sends down a Filament, which at first appears to run from before, backward, like a Recurrent; and presently enters the large bony Canal of the *Apophysis Petrosea*, on one Side of the internal carotid Artery.

This nervous Filament, which is sometimes double, is commonly taken for the Root or Origin of the celebrated intercostal Nerve, which I term *Sympatheticus major*; but, as it makes an acute Angle in an opposite Direction, with the Nerve of the sixth Pair, it seems rather to run up with the Carotid Artery, and to join that Nerve, than to arise from it.

The Nerve of the sixth Pair, which I have sometimes seen double, or split into two Parts, before it enters the *Dura Mater*, passes afterwards thro' the Sphenoidal or superior Orbital Fissure, to the *Musculus Rectus Externus* of the Globe of the Eye.

NERVI AUDITORII.

The Nerves of the seventh Pair, termed *Auditorii*, arise from the lateral and posterior Part of the great transverse Protuberance of the *Medulla oblongata*. Each of these Nerves is double, or consists of two Ropes, which accompany each other very closely to the Foramen Auditorium Internum of the *Apophysis Petrosea*.

One of these Ropes is small, solid, and anterior, being called the *Portio Dura*; the other less solid and posterior, called *Portio Mollis*. Both these Portions are particularly described under the Article *AURIS*.

NERVI SYMPATHETICI MEDII.

The Nerves of the eighth Pair, called by the Antients *Par Vagum*, and which I have named *Nervi Sympathetici Medii*, arise from the posterior Part of the *Medulla Oblongata*, from the

the great transverse Protuberance, and from the anterior Part of the Corpora Olivaria, by several separate Filaments, which are afterwards collected in a Fasciculus, that runs toward the anterior Part of the Foramen Lacerum of the Basis Cranii, where it perforates the Dura Mater, immediately before the Extremity of the great lateral Sinus.

The Passage of this Nerve is divided from that of the Sinus, by a small membranous Septum of the Dura Mater, and by the little bony Prominences of the Foramen Lacerum, mentioned in the Description of the Skeleton.

This great Fasciculus does not penetrate the Dura Mater through a single Opening, and as one Rope; for several of the anterior Filaments form a particular Portion, divided from the main Body by a very thin membranous Septum.

The Filaments, which compose the large Portion, when carefully examined, seem to perforate the Dura Mater separately, by small Holes or Pores, which lie very near each other.

Tho' these two Portions go out separately, they are looked upon as a common Trunk; and the small Portion is looked upon as a Branch of the great one, which lies behind the other; and is esteemed the true Trunk of this eighth Nerve.

As this Trunk goes out, it receives backward a small nervous Rope, which runs up laterally from the spinal Canal; and, passing thro' the great occipital Hole, on the Dura Mater, joins this Trunk. This small Rope is termed *Nervus Accessorius Obvius Paris*, or *Nervus Spinalis*.

As the two Portions pass through the Dura Mater and Foramen Lacerum, they are closely united together, and communicate by Filaments, which increase the Size of the small Portion. The large Portion communicates likewise with the *Nervus Accessorius*, to which it is strongly connected during this Passage.

The small or anterior Portion, having passed out of the Cranium, separates from the large one, as a Branch from a Trunk; and from thence it has been called *the first Branch of the eighth Pair*. It is bent in form of an Arch; and, passing interiorly on the Side of the Digastric Muscle, it supplies the Musculi Genio-Hyoidei, those near the Basis of the Tongue, and those of the Pharynx.

About two Fingers-breadth from where it leaves the Cranium, this Portion sends backward one Branch, which is bent in the same Direction, like an inverted Arch, and detaches from its convex Side at least three Filaments. The first, which is sometimes double, communicates with the Trunk of this eighth Pair, on one Side of the Ganglion of the intercostal or great sympathetic Nerve. The second joins the *Nervus Accessorius*, and the third goes to the Pharynx.

Afterwards this small Portion goes to the Tongue, where it communicates with the Extremities of the small *Nervus Hypoglossus*, or *Ramus Lingualis* of the inferior Maxillary Nerve, and with those of the great *Hypoglossus*, or Nerve of the ninth Pair.

The large Portion of the eighth Pair, or middle Sympathetic Nerve, adhering by one Side to the first Ganglion of the Sympatheticus Maximus, and by the other to the *Hypoglossus major*, to both which it gives communicating Filaments, sends off, a little below the small Portion, another smaller Branch, which goes by several Filaments to the Pharynx.

A little below, on one Side of the Union of the eighth Pair with the ninth, this Portion, or Trunk, forms a Ganglion, and gives off a third Branch, which runs before the internal Carotid Artery to the Larynx, Musculi Laryngis, Glandulae Thyroides, and Muscles of the Os Hyoides.

This third Branch passes between the Cornu of the Os Hyoides, and the Ala of the Cartilago Thyroides; and, running in between that Cartilage and the Cartilago Cricoides, it communicates with the Extremities of the *Nervus Recurrens*.

Afterwards the large Trunk runs down on the fore Side of the first Ganglion of the *Nervus Sympatheticus Maximus*, along the anterior vertebral Muscles of the Neck, by the Side of the Carotid Artery, and behind the internal Jugular Vein; being accompanied by the intercostal Nerve, as far as the last Vertebra of the Neck.

Through all this Course, this Trunk is invested by a kind of cellular, filamentous, or membranous Vagina, common to it with the internal Carotid Artery, the internal Jugular Vein, and the great Sympathetic Nerve. In its Passage it gives small Branches to the neighbouring Parts, to the Pharynx, Oesophagus, and to the Carotid Artery and Jugular Vein. One of these small Branches, in its Course downward, joins a small Branch of the second Cervical Pair, and is distributed to the Glandula Thyroides.

The Trunk having reached as low as the Larynx, and Glandula Thyroides, sends out a Branch; which, running down on the fore Side of the internal Carotid Artery, joins a

Filament from the second Ganglion of the Intercostal Nerve, with which it runs to the Plexus Pulmonaris.

Afterwards, both Trunks of the Nerves of the eighth Pair enter the Thorax, before the Origin of the Subclavian Arteries, which they cross, and run behind the Lungs to the Oesophagus. At this Place there is some Difference in the Distribution of the two Trunks, which, in every other respect, is pretty much the same.

As the Right Trunk passes before the Subclavian Artery, it sends off a considerable Branch, which bends backward under the Artery, and runs up on one Side of the *Aspera Arteria*; to which, and to the Oesophagus, it sends Filaments as high as the Larynx. This Branch is called *Nervus Recurrens*.

This recurrent Nerve, having reached the Larynx, sends Branches to the Muscles thereof, to the Pharynx and Glandula Thyroides. Then it runs in behind the Cornua of the Cartilago Thyroides, where it joins the Extremity of the third Branch of the Trunk of this eighth Pair.

The Right Trunk, having given off the Recurrent of the same Side, runs down on one Side of the *Aspera Arteria*, and behind the Origin of the Right Lung, where it adheres to the Oesophagus, and in this Course it sends out several Branches.

The uppermost Branches run on the fore Side of the lower Extremity of the *Aspera Arteria* and Bronchia, and are all united to Filaments of the great Sympathetic Nerve, before the Bifurcation of the Trachea, and likewise to the Ramifications of the same Nerve from the other Side. The other Branches which the Trunk sends off, as it runs down behind the Bronchia and Lungs, unite with the Filaments of the great Sympathetic Nerve.

The Left Trunk of the Eighth Pair is ramified in the Thorax, much in the same manner with that of the Right Side, with this Difference only, that the Left Recurrent Nerve goes out lower than the Right; for it passes below the great Curvature of the Aorta, and behind the Ductus or Ligamentum Arteriosum, and afterwards runs up on one Side of the Trachea Arteria to the Larynx, much in the same manner with the other.

This Difference in the going off of the two Recurrents is the Reason why the Left Trunk does not run down so far as the Right, and the Left Recurrent gives off some of the Branches, which answer to those which come from the Trunk itself on the Right Side.

Immediately after the Origin of the Left Recurrent, the Left Trunk sends down a Branch, which goes partly to the Plexus Pulmonaris, and partly to the Oesophagus and Aorta.

These reciprocal Ramifications of both Trunks of the Eighth Pair, and their mutual Communications with the Filaments of the Intercostal or great Sympathetic Nerve, form particular Intertextures called *Plexus*; the most considerable of which are those called *Plexus Cardiacus*, and *Plexus Pulmonaris*.

The *Plexus Cardiacus* is formed above the Lungs, on the fore Side of the Bronchia, and produces a great Number of Filaments; some of which go to the Pericardium, and the rest go through it, round the great Vessels to be distributed to the Heart.

The *Plexus Pulmonaris* is composed of the following Ramifications, which the two Trunks send off, as they run down behind the Lungs. Some of the Filaments detached from thence run above the Bronchia at their Origin; but the greatest Part run below, being distributed along with them through the whole Lungs.

Besides these *Plexus*, the two Trunks give off Ramifications to the Parts near which they pass; such as the posterior Part of the Mediastinum, Oesophagus, and Aorta; and by all these Ramifications the Trunks are gradually diminished.

After having sent off the two *Plexus*, these Trunks change in a very remarkable manner. The Trunk on the Right Side runs insensibly backward, as it descends, and that on the Left Side forward, in the same manner.

In their Passage they send several Filaments forward and backward to the Oesophagus, which unite at different Distances, both with the Filaments from the same Trunk, and with the like Filaments from the Trunk on the other Side, and the posterior Filaments from the Left Trunk are in some Subjects more considerable than the anterior ones from the Right Trunk.

These repeated Divisions and Re-unions, which represent a kind of *Plexus*, cause the original Trunks to degenerate, in some measure, into two particular Ropes, one anterior, the other posterior, which are called *Nervi Stomachici*.

The posterior Stomachic Nerve arises principally from the Right Trunk, and the anterior from the Left Trunk; and, accordingly, the posterior Rope is oftentimes much stronger than the anterior, because of the Difference between the Filaments of which each of them consist.

These two stomachic Ropes pass along with the Extremity of the Oesophagus, through the Opening in the small Muscle of the Diaphragm, and are distributed on the Stomach. The anterior Rope is spread on the upper, or, as it is commonly call'd, *The fore Side*, and the posterior on the lower, or back Side.

The Ramifications of both Ropes communicate with each other, and form particular Intertextures principally near the upper Orifice of the Stomach, and along the small Curvature, all the Way to the Pylorus; by all which a kind of Plexus is formed, call'd *Coronarius Stomachicus*.

This Coronary Plexus, thus formed, sends off near its Origin two small Ropes: one of which seems to come principally from the great anterior stomachic Rope, the other from the posterior Rope. These two small Ropes unite near the Trunk of the Hepatic Artery, which having accompanied for a little Way, they are divided into two very short Branches.

These two Branches run presently afterwards to the Right and Left Hands, immediately above the transverse Rope, which forms the Communication between the Semilunar Ganglions of the two great sympathetic Nerves; and they terminate by uniting this Rope in a triangular Form.

In this manner end the Nerves of the eighth Pair, or the Sympatheticus Medius of each Side, by contributing, together with the Sympatheticus Maximus, to the Formation of several Plexus in the Abdomen, which are ascribed principally to the last-named Nerve. Among these are the Plexus Hepaticus, Splenicus, Mesenterici, and even the Renales.

We see likewise, that these two great Pairs of Nerves have a perpetual Correspondence through all the Viscera of the Abdomen, as well as in the Thorax.

NERVI ACCESSORII OCTAVI PAIRIS.

The Nervi Accessorii of the eighth Pair arise by several Filaments from both Sides of the Medulla Spinalis of the Neck, sometimes higher, and sometimes lower. Each of them runs up between the two nervous Planes, which come out from the spinal Marrow, to form the Vertebral Nerves; and they gradually increase in their Course upwards by means of several Filaments, which they receive from the posterior nervous Planes.

Having reached above the first Vertebra, each Nerve is fix'd to the back Side of the Ganglion of the Nervus Suboccipitalis, or that of the tenth Pair; and, having, at the upper Part of this Adhesion, received two Filaments from the posterior Portion of the Medulla, they part from the Ganglion, and continue their Course upward. I have sometimes found these two Filaments without any Communication with the Ganglion, or with the anterior Plane; so that they seem rather to belong to the Nervus Accessorius, than to the Suboccipitalis.

They enter the Cranium by the great Occipital Foramen; and, having communicated with the Origin of the Suboccipitalis, or Nerves of the tenth Pair, and with the great Hypoglossi or ninth Pair, they return out of the Cranium with the Nerves of the eighth Pair, or Sympathetici Medii, with which they communicate in their common Passage through the Cranium.

As soon as they get without the Cranium, each of them gives off a considerable Branch, which divides into two. One is very short, and immediately joins the Trunk of the eighth Pair; the other, which is longer, joins the small Portion, or first Branch, which goes to the Tongue. They likewise communicate with the great Hypoglossus and Sympatheticus on each Side. Afterwards the Nervus Accessorius runs backward, and, perforating the Musculus Sterno-mastoidæus, runs to the Trapezius, on which it is distributed, and terminates after having supplied the Rhomboides. In this Course it communicates with the first three Pairs of the Cervical Nerves, and gives Branches to the Glands of the Neck, to the Musculus Angularis of the Scapula, the Complexus, the Occipitalis, and to the Integuments.

NERVI HYPOGLOSSI EXTERNI SIVE MAJORES.

The ninth Pair of Nerves, as they are commonly call'd, or the Par Linguale, arises on each Side, between the Corpora Pyramidalia and Olivaria by several small Filaments, which, uniting together, form ordinarily two small Ropes on each Side. These two Ropes perforate the Dura Mater by two small separate Holes, and afterwards soon unite in one Trunk on each Side, which goes out of the Cranium, by the anterior Condylode Hole of the Os Occipitis.

As soon as they leave the Cranium, each Trunk adheres very closely to the Outside of the Trunk of the eighth Pair, and to that of the tenth. Thence each Nerve passes on the fore Side of the large Ganglion of the Sympatheticus Maximus, and runs between the internal Jugular Vein, and the neighbouring Carotid Artery, and then to the Tongue on one Side of the Digastric Muscle.

In its Passage between the Jugular and Carotid, it sends down a Branch to the Jugular Glands, Musculus Cutaneus, &c. and behind the first Ganglion of the Intercostalis it detaches another, which runs down, till it joins the Nerve of the Eighth Pair, or Sympatheticus Medius. A little afterwards it gives off a third to the Musculus Omo-hyoidæus, Sterno-hyoidæus, and to the small Muscles of the Larynx.

Afterwards this Trunk of the ninth Pair bends near the Angle of the lower Jaw, and runs forward between the Musculus Cerato-basio-glossus, and Mylo-hyoidæus, under the Genio-glossus, to all which Muscles it gives Filaments; and it is afterwards lost in the Tongue, communicating with the Filament of the Ramus Lingualis of the Inferior Maxillary Nerve, and with the Branch of the same Name, belonging to the eighth Pair.

Before it bends near the Angle of the lower Jaw, a little below the Apophysis Styloides of the Os Temporis, it communicates with the first Cervical Pair, and then sends a small Branch to the Larynx, and another more considerable one, which runs down behind the Musculus Sterno-mastoidæus, on the anterior Muscles of the Neck, and communicates with the first and second Vertebral Pairs.

This last Branch communicates likewise with the Portio Dura of the Auditory Nerve, and with the following Vertebral Pairs; after which it terminates principally in the Musculus Sterno-hyoidæus, and Sterno-thyroidæus.

NERVI SUBOCCIPITALES.

The Suboccipital Nerves, or those of the Tenth Pair, arise a little lower, and more laterally, than the former, at the Extremity of the Medulla Oblongata, opposite to the posterior Part of the Condylode Apophyses of the Os Occipitis.

They come on each Side from the anterior Part of the Medulla, by a single Plane of small Filaments, and communicate by some collateral Filaments, with the first Cervical Pair, before they pierce the Dura Mater.

They pierce the Dura Mater directly outward, opposite to their Origin, at the same Place where the Vertebral Arteries perforate it inwards; both going, in a manner, through the same Holes, and the Nerves lying below the Arteries.

Afterwards they run down in the Duplication of the Dura Mater, and emerge again under the Edge of the great Occipital Foramen, crossing the Elongation or Occipital Funnel of that Membrane.

Having passed out of the Cranium, each of them runs to the posterior Notch of the superior oblique Apophysis of the first Vertebra of the Neck, in which it runs from behind forward, in Company with the Vertebral Artery, which lies above it in the same Notch.

Where it leaves this Notch, it forms a Ganglion, and gives Filaments to the Musculi Recti and Obliqui of the Head, besides one which runs down in the transverse Foramina of the Vertebrae of the Neck, along the Blood-vessels which lie there.

Having formed this Ganglion, and sent off these Filaments, it turns forward and downward over the transverse Apophysis of the first Vertebra, forming a sort of Arch with an ascending Branch of the first Cervical Pair.

This Arch surrounds the fore Part of the transverse Apophysis; and has several Communications with the first Ganglion of the great sympathetic Nerve, and by its convex Side adheres very closely to those of the eighth and ninth Pairs.

The superior Part of this Arch or Ganglion sends up a considerable Nerve, which is increased by the Addition of a short Branch belonging to the first Cervical Pair, and, running upward and backward on the convex Side of the Os Occipitis, is distributed to the superior and lateral Parts of the Head, by several Ramifications. This Branch is termed Nervus Occipitalis.

These Suboccipital Nerves have this in common with the other Nerves of the Medulla Oblongata, that each arises only by one anterior Fasciculus of Filaments, without any posterior Fasciculus, as in the Vertebral Nerves. We sometimes observe, indeed, a small posterior single Filament on each Side, but this seems rather to belong to the Nervus Accessorius of the eighth Pair, than to the tenth.

The particular Description of the Course, Division, and great Extent of the Nervi Sympathetici Maximi, commonly called Intercostales, will come in most properly after that of all the Vertebral Nerves.

THE VERTEBRAL NERVES IN GENERAL.

The Vertebral Nerves are all those which arise from the Medulla Spinalis, and go out from the great Canal of the Spine, thro' the lateral Foramina, formed by the corresponding Notches in the Vertebrae.

The original Trunk of each Vertebral Nerve arises commonly by two flat Fasciculi of medullary or nervous Filaments, one anterior,

anterior, the other posterior. These two Fasciculi, on each Side, run towards each other, and perforate laterally the Production of the Dura Mater; after which they presently unite in a kind of Ganglion, from which the Trunk is produced.

I reckon the Vertebral Nerves by Pairs, in the common manner, beginning with those which pass between the first and second Vertebra. This Enumeration agrees with that of the Vertebrae themselves; there being seven Pairs of Vertebral Nerves belonging to the Neck, termed Cervicales; twelve to the Back, called Dorsales; five to the Loins, named Lumbares; and five or six to the Os Sacrum, called Sacri.

This Distribution is fixed chiefly by the Dorsal Nerves, called Costales; for there is exactly the same Number of these Nerves as of Ribs, and the first Pair of costal Nerves passes between the first and second Vertebrae of the Back.

FIRST PAIR OF CERVICAL NERVES.

The first Pair of Cervical Nerves passes between the first and second Vertebra of the Neck; lying more backward than the subsequent Pairs, and having larger Ganglions.

The Trunk of each of these Nerves sends out anteriorly a small Branch, which runs up on the fore Side of the transverse Apophysis of the first Vertebra, and forms a communicating Arch with the small descending Branch of the Nervus Suboccipitalis of the same Side, already mentioned; and consequently communicates likewise with the great sympathetic Nerve.

Posteriorly it sends out a considerable Branch, which is soon increased by a communicating Branch from the second Cervical Pair. This Branch communicates, also, with the Suboccipitalis, and afterwards passes between the Musculus Complexus, and Rectus minor posterior of the Head; and bending backward, is distributed to the other small posterior Muscles of the Head, and to the Splenius, Complexus, and Trapezius. It passes next over these Muscles to the Occiput, where it is ramified backward, upward and forward, to the Musculus Occipitalis and Temporalis of the same Side.

It likewise gives off a Filament, which, dividing into two, sends up one Portion to the Musculus Sterno-mastoidæus, round the Nervus Accessorius Octavi Paris, or Sympatheticus Medius; and, running afterwards behind that Muscle, it is distributed to the Splenius.

The other Portion of this Filament runs downward, and, bending in a particular manner, communicates with the second Cervical Pair, and with the Sympatheticus major. It likewise sends smaller Filaments to the anterior Muscles of the Head and Neck, and to the Sterno-mastoidæus and Splenius.

One of these small Filaments communicates with the great Nervus Lingualis, or ninth Pair from the Brain, and goes to the Musculus Sterno-hyoidæus, Thyro-hyoidæus, and Thyroide Glands.

SECOND PAIR OF CERVICAL NERVES.

The second Cervical Pair passes between the second and third Vertebra of the Neck; and, as it goes out, communicates, forward, with the great Ganglion of the Sympatheticus maximus, upward with the first Cervical Pair, and downward with the third.

Afterwards the Trunk on each Side is divided into several Branches; but, from the Place of its Union with the first Pair, it sends off, first of all, one Filament, and then another from where it joins the third Pair.

Lower down, these two Filaments unite into one, which runs down along the internal Jugular Vein; and then, forming a considerable Arch, runs up along the Carotid Artery, as high as the Parotid Gland, where it joins and communicates with the Trunk of the ninth Pair of the Medulla Oblongata. A Filament is detached from the Curvature or Arch, which is spent on the Musculus Coraco-hyoidæus, Sterno-hyoidæus, and Sterno-thyroidæus.

Opposite to the Sterno-mastoidæus, the Trunk sends off a Branch, which, behind that Muscle, communicates with the Nervus Accessorius of the eighth Pair, after the manner of a Plexus.

This Branch runs afterwards behind the Musculus Splenius; perforates the upper Portion of the Trapezius between the great Occipital Nerve, and the Ear; and ascends to the lateral Part of the Occiput, where it communicates with its Fellow from the other Side. It is distributed on each Side to the Muscles just mentioned, and to the Angularis Scapulae.

The Trunk of this second Cervical Pair sends down other Branches to the middle Part of the Musculus Trapezius, Sterno-mastoidæus, and neighbouring Vertebral Muscles; and sometimes we observe a Communication backward, between this Trunk, and the third Cervical Pair.

Having given off these Branches, this Trunk advances toward the posterior Edge of the middle Portion of the Sterno-mastoidæus, upon which it bends from behind forward, sending

out several Branches. The first Branch runs downward and backward, and is distributed by several Branches to the Musculus Scalenus, Transversalis Colli, &c.

The second Branch communicates with the third Cervical Pair, at the Place where this Pair produces the Diaphragmatic Nerve, to the Formation of which it contributes. The third Branch is only a Filament, which, running upward, communicates with one or two Filaments of the inferior Branch of the Portio Dura Nervi Auditorii.

The Extremity of this Curvature on the fore Side of the Sterno-mastoidæus, is divided into two Branches, one of which runs upward, the other downward. The superior Branch ascends on this Muscle, to the lower Part of the Ear, sending one Branch behind the Ear, and another to the Parotid Gland, where it joins the Trunk of the Portio Dura of the auditory Nerve, and runs up on the fore Side of the Ear.

The inferior Branch runs from behind forward, to be ramified on the Musculus Cutaneus, and distributed to the Integuments of the Throat, in which it is lost near the Larynx; having first given Branches to the Musculi Sterno-hyoidæi. It likewise communicates with a descending Branch of the Portio Dura, and with another of the ninth Pair from the Brain.

Near its Origin this inferior Branch sends down a Ramification on the back Side of the Sterno-mastoidæus, gives other Branches to the Jugular Glands, to the Fat and Integuments of the lateral and lower Part of the Neck, and passes before the middle Portion of the Clavicula, below which it is lost in the lateral Integuments of the Thorax.

THIRD PAIR OF CERVICAL NERVES.

The third Cervical Pair passes between the third and fourth Vertebrae of the Neck, and communicates upward with the second Pair, downward with the fourth, and forward with the great sympathetic Nerve, and with a Filament from the ninth Pair of the Medulla Oblongata. It communicates, likewise, with the Nervus Accessorius of the Sympatheticus Medius, by a Filament, which goes to the Musculus Trapezius.

Each Trunk of this third Pair sends several Branches to the anterior, posterior, and lateral Parts of the Neck, that is, to the Muscles, Glands, Membranes, Fat, and Skin, all the Way to the neighbouring upper Parts of the Thorax and Shoulder.

Among the posterior Branches, there is one which goes to the Musculus Supra-spinatus, and, passing over the Notch in the superior Costa of the Scapula, gives Filaments to the Extremity of the Omo-hyoidæus; and another small one, in its Passage to the Musculus Trapezius, communicates with a Filament of the Nervus Accessorius of the eighth Pair.

Of the middle Branches, some go to the Jugular Glands, to the Musculi Subclavii, to the neighbouring Portions of the Pectoralis, Deltoideus, and Trapezius, and to the Integuments of those Parts.

Among the anterior Branches, there is one, which, being strengthened by a Branch from the second Cervical Pair, unites lower down with another Branch of the fourth Pair, and thus forms the Nervus Diaphragmaticus.

This Diaphragmatic Nerve runs on the fore Side of the Musculus Scalenus, and enters the Thorax behind the anterior Extremity of the Clavicula, receiving, immediately afterwards, a Filament from the first Dorsal Pair, and communicating with the great Sympatheticus. It runs down obliquely forward, before the Subclavian Artery, and on one Side of the Nervus Sympatheticus medius, near the Origin of the Recurrent.

In the Thorax this Diaphragmatic Nerve runs down immediately before the Origin or Root of the Lung, along one Side of the Pericardium, to which it adheres very closely, and then running a little backward, it soon enters the Diaphragm.

It is distributed by numerous Ramifications on the great Muscle of that Organ, sending likewise some Filaments of the lower Portion, by which it communicates with the great Sympathetic Nerve, and with the neighbouring Plexus of the Abdomen.

The Right Diaphragmatic Nerve runs along the Vena Cava superior, and on that Account appears to be situated more anteriorly than the Left.

This Left Diaphragmatic Nerve lies, first of all, a little backward, toward the Trunk of the Aorta, and afterwards runs in a longer Course than the Right, being bent in order to pass by that Portion of the Pericardium which answers to the Apex of the Heart; for which Reason it is longer than the Right. Thence it is bent backward, and distributed to the Diaphragm in the same manner as the other.

THE LAST FOUR PAIRS OF CERVICAL NERVES IN GENERAL.

The last four Pairs of Cervical Nerves pass between the Portions of the Musculus Scalenus, being, in general, larger than the

the three former. They are united by their Trunks, and, together with the communicating Branch of the third Pair, and Trunk of the first Dorsal Pair, they form a very large Plexus, which is, in a manner, inclosed in a membranous Vagina, and produces six considerable Ropes, like so many particular Trunks, which are distributed to the upper Extremity, and go by the general Name of the Nervi Brachiales.

THE BRACHIAL NERVES IN GENERAL.

The Brachial Nerves consist of six Ropes on each Side; and in 1697. *Du Verney* gave to five of them the following Names: Nervus Musculo-cutaneus, five Cutaneus externus, Medianus, Cubitalis, Cutaneus Internus, and Radialis, taking for a Branch of the Radialis that Nerve which I look upon as the sixth principal Rope, and which I name Axillaris or Articularis.

These six Ropes do not rise separately; and their Origin is so complicated, that it is not easy to determine it; but, in general, it seems, that each of the five Vertebral Pairs, which form the great Plexus, contributes to the Formation of each Brachial Rope.

Four of these Nerves arise anteriorly from the great Plexus, and these are the Musculo-cutaneus, Medianus, Cubitalis, and Cutaneus internus; and the other two, the Radialis, and Axillaris, arise posteriorly.

The five Vertebral Pairs form the large Plexus in the following manner: The fourth and fifth Cervical Pairs, about an Inch or more after they go out, unite into one common Trunk. The seventh Cervical and first Dorsal Pair unite likewise into one Trunk, very near their Origin. The sixth Cervical Pair runs singly, for a considerable Space, between the two other Trunks; and afterwards is increased by a communicating Portion, which it receives from each of them.

These five large Vertebral Nerves, on each Side, thus mingled, interwoven, and complicated, divide again, and are disposed in a quite different manner from what is ordinary, forming the six Brachial Ropes, as follows:

The Nervus Musculo-cutaneus is formed by the Union of the fourth and fifth Cervical Pairs, and by their collateral Communication with the third and sixth Pairs.

The Medianus comes on one Side, from the Union of the sixth Cervical Pair with the fourth and fifth, and on the other from the Union of the seventh Pair with the first Dorsalis. These two Unions form an acute Angle, the Apex of which produces the Median Nerve.

The Cubitalis goes out from the Union of the seventh Cervical with the first Dorsal Pair, a little nearer the lower Side of the Angle of the Medianus.

The Cutaneus internus arises in the same manner.

The Radialis is the largest of the six, and goes out from the Apex of another nervous Angle, the upper Side of which is formed by the Union of the Trunks of the fourth, fifth, and sixth Pairs; and the lower Side by the Union of the seventh Cervicalis, and first Dorsalis.

The Axillaris goes out close to the Radialis, chiefly from the upper Side of the nervous Angle, and it communicates with all the rest.

Besides the great Brachial Nerves, several small Branches go out from each of the last four Pairs, which may most properly be now described.

FOURTH PAIR OF CERVICAL NERVES.

The fourth Cervical Pair passes between the fourth and fifth Vertebrae of the Neck, and communicates above with the third Pair, below with the fifth, and forward with the great Sympathetic.

It sends several Branches to the Musculus Scalenus, Angularis Scapulae, Rhomboides, Trapezius, and Pectoralis major; and likewise gives off a Filament, which contributes to the Formation of the Nervus Diaphragmaticus. Afterwards it advances a Finger's-breadth without any Ramification, and joins the Trunk of the fifth Cervical Pair.

At the Place of this Union, or a little before, it gives out a pretty considerable Branch, which, having sent a Filament to the Musculus Subscapularis, passes through the small Notch in the superior Costa of the Scapula, and gives other Filaments to the Supra-spinatus. This Branch runs afterwards under the last named Muscles, and under the Acromium, to the Infra-spinatus, and Teres minor.

FIFTH PAIR OF CERVICAL NERVES.

The fifth Cervical Pair passes between the fifth and sixth Vertebrae of the Neck, communicating with the fourth and sixth Pairs, and with the great Sympathetic.

Afterwards each Trunk sends forward a Branch, which, uniting with a like Branch from the sixth Pair, is distributed to the Musculus Scalenus, to the Surface of the Pectoralis major, and to the neighbouring Integuments. This Trunk sends off, likewise, near its Origin, another Branch, which runs down behind the Origin of the sixth Pair, from which it receives a

small communicating Filament. Being thus strengthened, it runs down on the Outside of the Thorax, and is distributed to the Muscles there; passing first under the two Pectorales, and then between the Serratus major, and Subscapularis.

Afterwards continuing its Course downwards, it reaches the anterior, middle, and almost the lower Part of the Latissimus Dorsi, at the third false Rib; and terminates in this Muscle, and in the Integuments.

THE LAST TWO PAIRS OF CERVICAL NERVES.

The sixth and seventh Cervical Pairs, having passed in the common manner, under the sixth and seventh Vertebrae of the Neck, and having communicated with the other Nerves near them, send several Filaments to the neighbouring Parts.

The Branch of the sixth Pair, which unites anteriorly with a like Branch of the fifth Pair, to be distributed on the Thorax, sends down a Filament, which, together with another common to the seventh Cervical, and first Dorsal Pair, forms a kind of Arch, under which the axillary Artery passes.

All these Nerves give Filaments to the neighbouring Integuments; and some go likewise to the Axillary Glands.

NERVUS MUSCULO-CUTANEUS.

The Musculo-cutaneous Nerve, which naturally lies on one Side of the Cutaneus Internus, arises from the Union of the fourth and fifth Cervical Pairs, and partakes of their lateral Communication with the third and sixth Pairs.

Having reached the upper Extremity of the Musculus Coracobrachialis, it perforates it obliquely from above downward, and gives it several Filaments. Afterwards it runs down on the Arm behind, and under the Biceps, to both Portions of which it gives Branches.

Having got from behind the Biceps, it runs from within, outward, between the lower Extremity of that Muscle, and of the Brachialis, which it likewise supplies. In the Fold of the Arm it reaches the Skin immediately behind the Vena Mediana, and there it becomes a true Nervus Cutaneus. Thence, it runs along between the Supinator Longus, and the Integuments, on the Inside of the Cephalic Vein, all the Way to the Thumb.

It is distributed to the Integuments on the fore Side of the Carpus, to those of the Thumb, and of the convex Part of the Hand. Before it reaches the Wrist, it passes over the Cephalic Vein, and communicates, at the Thumb, with a Branch of the Radial Nerve.

NERVUS MEDIANUS.

The Nervus Medianus lies between the Musculo-cutaneus and Cubitalis. It arises from the Union of three Branches, one belonging to the sixth Cervical Pair, one to the seventh, and one to the first Dorsalis. In some Subjects it is formed by the Union of two principal Branches, one of which comes from the Union of the first Dorsalis with the last Cervicalis, the other from the Union of the fourth, fifth, and sixth Cervicalis.

It runs down on the Arm, along with the Brachial Artery, under the inner Edge of the Biceps, having first past behind the inferior Insertion of the Coracobrachialis, and reaches the Fold of the Arm between the lower Extremity of the Musculus Brachialis and Pronator Teres; giving Filaments in its Passage to all these Muscles on both Sides.

It passes behind the Ramus Medianus of the Basilic Vein, as it approaches the inner Condyle; and then runs backward cross the Pronator Teres, and downward between the Perforatus and Perforans, to which it gives Ramifications.

Below the Pronator Teres, it sends off a particular Branch, which runs along the Interosseous Ligament, behind the Pronator Quadratus, all the Way to the Wrist, giving Filaments to that Muscle.

Afterwards, having detached some cutaneous Ramifications, the Trunk passes under the internal transverse Ligament of the Carpus, to the Palm of the Hand, where it sends off numerous Branches to the Musculus Thenar, and Anti-thenar, two to the lateral concave Parts of the Thumb, two to those of the Index, two to those of the middle Finger, and one to the nearest Side of the Ring-finger, after having communicated with a Branch of the Cubital Nerve. These Branches go all the Way to the Ends of the Fingers, supplying the Integuments, Ligaments, and Tendons.

NERVUS CUBITALIS.

The Cubital Nerve arises from the Union of the seventh Cervical with the first Dorsal Pair; and communicates with the lower Root of the Median Vein.

It runs down on the Inside of the Arm, along the Musculus Anconaeus Maximus, between the Brachial Artery, and the Basilic Vein, sending off only small Filaments to the neighbouring Muscles and Integuments.

It runs in between the inner Condyle of the Os Humeri and the Olecranon, where it is covered only by a kind of Ligament, and by the common Integuments; and this is what makes Strokes upon the Elbow so painful, even all the Way to the little Finger, where this Nerve ends.

Afterwards it runs down on the Musculus Ulnaris Internus, giving Filaments to the neighbouring Muscles, to the Pronator Quadratus, and Integuments; and, at the lower Extremity of the Ulna it is divided into two Branches, one large, the other small.

The large Branch, which may be reckoned the Continuation of the Trunk, passes on one Side of the Os Pisiforme, under the great transverse Ligament of the Carpus, to that Part of the Palm of the Hand which answers to the last two Fingers, where it gives some Filaments to the Integuments and Ligaments of the Carpus.

Afterwards it divides into three particular Branches, one of which forms a kind of Arch, being distributed to the neighbouring small Muscles of the Thumb, and to the Interossei; the second is bifurcated, and goes to the corresponding lateral concave Parts of the ring and little Fingers; and the third goes to the opposite lateral Part of the little Finger, and to the neighbouring Muscles.

The small Branch is turned outward behind the Tendon of the Ulnaris Externus, and goes to that Part of the Back of the Hand, which answers to the last two Fingers. It is distributed to the lateral convex Parts of these two Fingers, much in the same manner as the other Branch to the lateral concave Parts. It likewise supplies the Musculus Hypothenar, Metacarpus, and the Integuments, and communicates with a Branch of the Nervus Medianus.

NERVUS CUTANEUS INTERNUS.

The internal Cutaneous Nerve is very small, and arises from the Union of the seventh Cervical, and first Dorsal Pairs, but chiefly from the latter. It runs over the other Brachial Nerves, and passes down on the Inside of the Arm, between the Muscles and Integuments.

It divides first into two Branches, which accompany each other very closely, as far as the inner Condyle, on one Side of the Vena Basilica, being covered by the Ramus Medianus of that Vein.

One of these Branches runs down under the Integuments which cover the Musculus Radialis Internus, and Ulnaris Gracilis; and is afterwards ramified on the Skin which covers the Wrist, and Beginning of the Palm of the Hand.

The other Branch runs a little more backward along the Integuments which cover the Musculus Ulnaris Internus and Ulna, upon which it is ramified all the Way to the little Finger.

NERVUS RADIALIS.

The Radial Nerve, so called, because it accompanies the Radius, and the Radial Artery, arises from the Union of three compound Branches, one of which comes from the united Trunks of the fourth and fifth Cervical Pairs; the second from the single Trunk of the sixth Pair; and the third from the united Trunks of the seventh Cervical, and first Dorsal Pairs.

The Trunk of this Nerve lies deeper than the rest: First, it runs from before backward, bending round the Os Humeri, between the Musculi Anconæi, and that Bone.

This Curvature is oblique and contorted, answering to the Impression observable on the Bone; and above it the Radial Nerve gives Branches to the three Anconæi, especially to the Longus and Externus. Afterwards it turns from behind forward, between the Anconæus externus and the Brachialis.

It sends off, from the Curvature or Arch, some cutaneous Branches, the most considerable of which goes to the external Condyle of the Os Humeri, and is distributed to all the Integuments which cover the Radius on the fore and outer Sides, and to those which cover the exterior Parts of the Carpus, and Back of the Hand, all the Way to the Thumb.

At the Fold of the Arm, the Radial Nerve turns outward, and runs down between the lower Extremity of the Musculus Brachialis, and upper Extremity of the Supinator Longus, giving Branches to these and the neighbouring Muscles.

Having reached the Extremity of the Radius, it divides into two, or rather sends off a large Branch, which passes between the Radius and Supinator Longus, below the middle of the Bone, where it runs in between the Supinator Longus and Radialis.

This Branch accompanies the external Radial Artery, near the Integuments; and, having got to the lower Part of the Radius, it is distributed into three Branches, to the convex lateral Parts of three Fingers and an half.

One Branch goes to the internal lateral Part of the Thumb, and to the Integuments. The second is divided into two for

the external lateral Part of the Thumb, and anterior lateral Part of the Index; giving Filaments in its Passage to the Integuments of the Metacarpal Bones. The third Branch is divided into several lesser Ramifications, which go to the posterior lateral Parts of the Index, to both Sides of the middle Finger, and to the anterior lateral Part of the Ring-finger. Through all this Course this Branch supplies the Integuments, and interosseous Muscles.

The Trunk, or largest Branch, of the Radial Nerve passes between the upper Extremity of the Radius and Musculus Supinator Brevis; and in its Passage supplies this Muscle, the Anconæus minimus, Supinator longus, and Radialis externus.

Afterwards it is lost in the Extensor Digitorum communis, and in the Muscles of the Carpus and Thumb, having first communicated with a Branch of the Musculo-cutaneous Nerve.

NERVUS AXILLARIS.

The Axillary or Articular Nerve arises from the last two Cervical Pairs, and sometimes seems to be no more than a large Branch of the Nervus Radialis. It runs in the Hollow of the Axilla, behind the Head of the Os Humeri, between the Musculus Teres major & minor; and turns from within outward and backward, round the Neck of that Bone, running between the Articulation and the upper Extremity of the Anconæus Longus, to the Deltoides.

It is divided into several Branches, which go mostly to the upper and lower Parts of the Deltoides, upon which they are ramified, supplying in their Passage the Subscapularis, the upper Extremity of the Anconæus longus, Teres major and minor, and Supra-spinatus. It likewise gives some Nerves to the Latissimus Dorsi, and Anconæus Externus.

NERVI DORSALES, SIVE COSTALES.

The Dorsal or Costal Nerves consist of twelve Pairs, and they deserve more justly to be called Intercostales, than the great Sympathetic Nerve, to which that Name has been commonly given.

They have this in common with each other, that as soon as they leave the Vertebrae of the Back, before they begin to accompany the Ribs, they send out two Filaments anteriorly, which communicate with the great Sympathetic Nerve, and several Filaments backward to the Vertebral, and other Muscles.

Each of these twelve Pairs is numbered from the Vertebra, under which it goes out; thus the first Pair is that which passes under the first Vertebra of the Back, and so of the rest.

The first Pair enters the Composition of the Nervi Brachiales, and together with the second Pair sends off the Rami Thoracici.

The seven superior Pairs run along the under Sides of the true Ribs, all the Way to the Sternum; being distributed to the Intercostal Muscles, which they perforate likewise from within outward, to go to the Serratus major, Pectorales, and external Integuments.

The seventh Pair, having reached the cartilaginous Portion of the seventh true Rib, runs down to the broad Muscle of the Abdomen, to which it is distributed.

The lowest five Pairs leave the Extremities of the false Ribs, and go to the Muscles of the Abdomen.

The eleventh Pair gives, likewise, some Filaments to the Diaphragm; and then runs in between the Musculi Transversales and the Peritonæum.

The twelfth is distributed to the Transversales and Obliqui Interni.

All these Nerves send numerous Ramifications through the Muscles to the Integuments which form the cutaneous Nerves of the Thorax, of the upper two Regions of the Abdomen, and of the superior Portion of the Loins.

NERVI LUMBARES.

All the five Pairs of Lumbar Nerves send Filaments backward to the Vertebral Muscles; communicate with each other, and with the great Sympatheticus, on each Side; and are covered by the Psoas Muscle.

The Branches which communicate with the great Sympathetic Nerve are long, because they advance forward a considerable Way on the Bodies of the Vertebrae Lumbares.

The Lumbar Nerves are denominated from the Vertebrae under which they pass.

FIRST PAIR OF LUMBAR NERVES.

The first Pair passes between the first and second Vertebrae of the Loins, and each receives a communicating Branch from the last Dorsal Pair, and gives out another to the second Lumbar Pair, or to a Branch of it.

Each Trunk communicates with the great Sympatheticus, by a pretty long Branch; and afterwards gives out three Branches, one

one posterior, and two anterior, of which one is external and large, the other internal and small.

The posterior Branch perforates the *Musculus Quadratus Lumborum*, and runs in between the back Parts of the oblique Muscles of the Abdomen, pierces the *Obliquus externus*, and is distributed to the Skin, all the Way to the Clunes. This Branch supplies, also, the Vertebral Muscles, and *Sacro-lumbaris*.

The external and anterior Branch perforates the upper Extremity of the *Musculus Psoas* obliquely outward, passes over the *Quadratus Lumborum*, and runs along the Crista of the *Os Ilium*, to the anterior Spine of that Bone.

It gives Filaments to the abdominal Muscles, and supplies the *Fascia Lata*, neighbouring Integuments, and those of the anterior Part of the Outside of the Thigh, and the inguinal Glands.

The internal anterior Branch perforates the *Psoas* almost at the same Place with the former, but a little more forward; and then passes over the *Musculus Iliacus*, to the Beginning of the *Ligamentum Fallopii*, where it unites with the other anterior Branch; and by this Union forms a Nerve, which runs along that Ligament, and along the Inside of the *Aponeurosis* of the *Obliquus Externus*, all the Way to the Opening, commonly called the Ring of that Muscle.

This Nerve goes out by that Opening, and afterwards divides into several cutaneous Filaments, which go to the Pubis and Integuments of the Parts of Generation in both Sexes. It likewise supplies the spermatic Ropes, and those vascular Ropes, falsely called the round Ligaments.

Besides these Branches, the Trunk of this first Pair, near its Union with the second, sends out two small Branches, closely united together, which run down behind the *Psoas* Muscle, over one tendinous Insertion of the small Muscle of the Diaphragm, in the third Vertebra of the Loins, and communicate with the great sympathetic Nerve.

These two Branches accompany each other in this manner; all the Way to the *Ligamentum Fallopii*, whence one goes to the Testicles along with the spermatic Vessels; the other passes under the Ligament to the Skin and Glands of the Inguen.

At the Place of this Division, the Trunk sends a Branch directly downward, which joins the second Lumbar Pair, or rather a Branch of it; and afterwards contributes to the Formation of the large Rope, termed *Nervus Cruralis*.

SECOND PAIR OF LUMBAR NERVES.

The Trunks of the second Pair of Lumbar Nerves go out between the second and third Vertebra of the Loins; and, having communicated with the first Pair, and with the great sympathetic Nerve, each Trunk gives off several small Filaments to the neighbouring Parts of the *Musculus Psoas*, and a large Branch backward, to the *Quadratus Lumborum*, *Sacro-lumbaris*, *Longissimus Dorsi*, and neighbouring Vertebral Muscles; the *Quadratus* having first been perforated by it.

Afterwards the Trunk sends out a small Branch, which, near its Origin, joins a descending Branch of the first Pair already mentioned. Being thus strengthened, it perforates the Head of the *Psoas*, runs along that whole Muscle to the Fissure of the *Obliquus externus*, and is distributed to the Inguinal Glands, to the Fat and Scrotum in Males, and, in Females, to the Labia.

The same Trunk sends out two other Branches, which accompany each other, and, likewise, a small Branch between the Origins of these two, which goes to the upper Part of the *Psoas*. These two Branches perforate the *Psoas* in different Places, and afterwards, continuing still near each other, they pass under the upper Part of the *Ligamentum Fallopii*, and so go out of the Abdomen.

As they go out, they unite, and form one Nerve, which is distributed by several Branches to the Inguinal Glands, the *Aponeurosis Cruralis*, and Integuments of the fore Part of the Thigh, all the Way to the Knee.

Some of these Branches unite with those of the *Nervus Cruralis*; some are distributed to the Integuments on the Inside of the Thigh; and one accompanies the Crural Artery, over one Branch of which it runs in Form of an Arch.

This Trunk sends out oftentimes another Branch, which unites with one from the third, and one from the fourth Pairs, into a particular Rope, which, passing to the Obturator Muscles, is named *Nervus Obturator*.

Afterwards this Trunk runs downward, and, having given a Branch to the middle Portion of the *Psoas* Muscle, joins the Trunk of the third Pair, and contributes to the Formation of the Crural Nerve.

THIRD PAIR OF LUMBAR NERVES.

The Trunks of the third Pair of Lumbar Nerves go out between the third and fourth Vertebrae of the Loins. Each Trunk

communicates, above, with the second Pair; before, with the great sympathetic Nerve; and, below, joins the Trunk of the fourth Pair. It sends a considerable Branch backward, between the transverse Apophyses, which goes to the Vertebral and other neighbouring Muscles.

Before it unites with the fourth Pair, it sends a considerable Branch downward, and, having received a communicating Branch from the second Pair, unites with one from the fourth Pair, and forms the *Obturator Nerve*.

It deraches, likewise, another large Branch, which runs down between the *Musculus Iliacus*, and *Psoas*, and joins the Crural Rope on the Outside of the lower Part of the Muscle last named. It may be reckoned a sort of *Nervus Accessorius* to the Cruralis.

As the Trunk runs along the *Psoas*, it gives off Filaments both to that, and to the Iliac Muscle; and sends down a Branch, which passes under the *Ligamentum Fallopii* to the *Musculus Pectineus*; and, lastly, having joined a Branch of the second Pair, it unites with the fourth Pair, to form the *Nervus Cruralis*.

FOURTH PAIR OF LUMBAR NERVES.

The Trunks of the fourth Pair of Lumbar Nerves go out between the fourth and fifth Vertebrae of the Loins; and each communicates, above, with the third Pair, and, before, with the great sympathetic Nerve, of tentimes by two Filaments.

Each Trunk sends Branches backwards, to the Vertebral and neighbouring Muscles; and afterwards completes the Formation of the *Nervus Cruralis*, together with the other Portions of the Lumbar Nerves.

From the same Place it sends off a considerable Branch, which, joining a Branch from the third Pair, and one from the second, forms the *Nervus Obturator*.

The remaining Part of the Trunk joins the fifth Pair of Lumbar Nerves.

NERVUS OBTURATOR.

The Obturator Nerve, formed in the Manner already described, runs along the inner lateral Part of the *Psoas* Muscle to the Pelvis, and goes out of the Abdomen, at the upper Part of the Obturator Muscles, and Foramen Ovale of the *Os Innominatum*.

As it goes out, it supplies the *Musculi Obturatores*, and *Pectineus*, and is afterwards distributed by three principal Branches to all the Portions of the Triceps; and sends other Branches between these Portions, to the *Gracilis Internus*.

FIFTH PAIR OF LUMBAR NERVES.

The fifth Pair of Lumbar Nerves passes between the last Vertebra of the Loins, and *Os Sacrum*; each Trunk communicating, above, with the fourth Pair, and, before, with the great sympathetic Nerve. It sends Branches backward to the Vertebral and neighbouring Muscles, and even to the Glutæi; and, as it bends forwards, it sends a small Branches to the Crural Nerve.

Afterwards the Trunk runs down on the Symphysis of the *Os Sacrum* with the *Os Ilium*, enters the Pelvis, and, having received a communicating Branch from the fourth Lumbar Pair, joins the *Nervi Sacri*, with which it forms a Plexus, that produces the *Nervus Sciaticus*, the largest Nerve of the human Body, which is distributed to the lower Extremity.

NERVI SACRI.

The *Nervi Sacri* are those which come from the *Os Sacrum*, the principal of which pass through the anterior Holes of that Bone, the rest through the lateral Notches, at the Extremity of that Bone, and in the *Os Coccygis*.

These Nerves are reckoned likewise by Pairs, of which there are commonly six; four passing through the great anterior Holes, and two below them. This Number is increased, when there are five Pairs of great Holes, and some Filaments pass, likewise, through the posterior Holes.

The first Pair is very large; all the rest diminish gradually, and the last is very small.

Those which pass through the great Holes, unite together as soon as they enter the Pelvis; and, together with the fifth Lumbar Pair, form the great Plexus for the Sciatic Nerve. They likewise send Branches backward, through the Membranes of the posterior Holes, to the neighbouring Integuments.

The Trunks, thus united, and interwoven with each other, give off other small Branches, besides the great sciatic Trunk; and it will be proper to describe the most considerable of these Branches, together with the inferior *Nervi Sacri*, before we begin with the Ramifications of the great *Sciaticus*.

This Disposition resembles very much that of the last four Cervical Pairs, and first Dorsalis, which are not only interwoven together,

together, to form the Brachial Nerves, but likewise send off many Branches from their Origin.

From this Intertexture of the Nervi Sacri, especially from the second Pair, a Branch goes out to the Vesiculæ Seminales, Prostate Gland, Uterus, Tubæ Fallopiæ, &c. Another Branch goes principally from the fourth Pair, partly to Places just named, and partly to the Bladder, and Intestinum Rectum.

The same Intertexture, and principally the third Pair, united in some Subjects with the second, in others with the fourth, and sometimes with both, produces a Branch, which goes out of the Pelvis over the Ligamentum Fallopii, passes on the Inside of the Tuberosity, and inner Part of the Os Ischium; and is distributed to the Corpus Cavernosum, to the Muscles thereof in both Sexes, to the neighbouring Parts of Generation, and to the Sphincters of the Anus.

The last two Pairs of Nervi Sacri are very small. That which goes out immediately below the great Foramina, runs from behind forward, on each Side, between the Extremity of the Os Sacrum, and Ligament of the Os Coccygis; being distributed chiefly to the Muscles of the Anus, and neighbouring Integuments.

The next, or last Pair of Nervi Sacri, runs down almost directly from the Extremity of the Canal of the Os Sacrum, and is likewise distributed to the Anus and Integuments.

From the Extremity of the Plexus of all the Nervi Sacri, immediately before the Formation of the great Sciatic Rope, a Branch goes out to the Glutæus Medius and Minimus. Another goes out posteriorly, which is distributed partly to the Muscles of the Corpus Cavernosum, and partly to the Glutæus Maximus, and neighbouring Integuments, by several Filaments, which reach as far as the Ham.

NERVUS CRURALIS.

The crural Nerve, formed by the complicated Union of the Trunks of the first, second, and third Pairs of Lumbar Nerves, and of a Portion of the fourth, sometimes increased by a Branch of the fifth Pair, passes under the Ligamentum Fallopii; and goes out of the Abdomen, on the Outside of the Crural Artery, which lies between this Nerve and the Crural Vein.

As it goes out, it is divided into several Branches, some of which are detached from its Union with the Ramus Accessorius of the third Pair, but the greatest Number goes from the Trunk itself.

The Branches which go from its Union with the Nervus Accessorius, run down on the fore Side of the Thigh; and, having reached the Middle of the Musculus Sartorius, they follow its Course, and are spent on the Integuments of the fore and inner Parts of the Knee.

The most anterior Branch passes on the Fascia Lata, or Aponeurosis Cruralis, forming cutaneous Nerves all the Way to the Knee.

The internal Branch runs along the Tendon of the Sartorius, in the same Manner, all the Way to its Insertion in the Tibia, where they are spent on the Integuments; and some of them go to the inner Ankle, and convex Part of the Foot.

Afterwards the crural Rope divides into a great Number of Branches, which, in their Course downward, are distributed to the anterior Muscles, the Rectus, Vasti, and Cruralis; giving Ramifications in their Passage to the Triceps, Sartorius, Gracilis Internus, and Semi-tendinosus.

It likewise gives off a Branch, which runs down interiorly between the Sartorius and Triceps, in the same Course with the Crural Vessels, as far as the Middle of the Thigh.

Afterwards it runs near the Integuments, behind the Sartorius, to which it gives several Filaments, and continues this Course all the Way to the Insertion of that Muscle.

Having reached the Tibia, it lies near the Vena Saphena, and follows the same Course with it, as far as the inner Ankle, where it detaches a great Number of cutaneous Filaments.

Lastly, it ends by Ramifications, on the inner and upper Part of the Foot; where one of the most anterior Ramifications adheres very closely to the Saphena.

NERVUS SCIATICUS.

The great sciatic Nerve, being formed, as has been already said, or, as it sometimes happens, from the last two Pairs of the Lumbares, and first three Pairs of the Sacri, runs obliquely backward, under the great Sinus of the Os Ilium, and under the Musculus Pyriformis.

It goes this Way, out of the Pelvis, passing between the Pyriformis, and superior Gemellus; and then running on the fore Side of the first of these Muscles, and presently afterwards behind the two Gemelli, and Quadratus Femoris, it gives Filaments to each of them.

It runs down, in the next Place, between the Tuberculum Ischii, and the great Trochanter, along the inner and posterior Part of the Thigh, between the Musculus Biceps, and Semi-

nervosus, as far as the Hollow of the Poples, a little nearer to the internal Condyle, than to the external, giving Ramifications in its Passage to all these Muscles, and to the Triceps, and diminishing gradually in Size, as it descends.

As it goes out of the Pelvis, it gives out a Branch, which passes between the Portions of the Ligamentum Sciaticum, to the Anus, Perinæum, Parts of Generation, &c. And this Branch joins a Ramification, from the third Pair of the Nervi Sacri, which goes to the same Parts.

As it passes between the Tuberosity of the Ischium, and the great Trochanter, it produces two Branches, one of which is spent on the Glutæus Maximus; the other divides into two, for the other two Glutæi.

Below the great Trochanter, where it may be termed Nervus Sciatico-cruralis, it sends back a Branch, which runs down with the sciatic Vein, and is distributed to the Integuments, as low as the Middle of the Calf of the Leg, and sometimes lower toward the outer Ankle.

The sciatic Nerve, having reached the Ham, is commonly called Nervus Popliteus, and begins to be divided into two Branches, which run, at first, very close to each other, between the Extremities of the Biceps, and Semi-nervosus; and afterwards separate gradually, passing behind the Condyles of the Os Femoris, between the superior Extremities of the Gastrocnemii.

The innermost of these two Branches is very large; the outermost not so large. They are distributed to the whole Leg, and through this Course, they may be termed Nervi Sciatico-tibiales.

The large Branch of the Sciatico-cruralis, or Cruralis Internus, which may likewise be termed Popliteus Internus, runs down behind the Musculus Popliteus, on one Side of the Tibialis Gracilis, commonly called Plantaris; and between the two Gastrocnemii.

Afterwards it pierces the upper Extremity of the Soleus, and runs down between this Muscle, and the great Flexors of the Toes, to the lower Extremity of the Tibia, near the inner Ankle.

In its Passage, it sends small Branches to the Joint of the Knee; to the Gastrocnemius Internus, to the other Muscles last mentioned, and to the Integuments all the Way down.

Besides these small Branches, it sends off another more considerable Branch towards its upper Part; from which one Filament goes to the Tibialis Posticus; another perforates the Interosseous Ligament, and is distributed to the upper Part of the Tibialis Anticus.

Soon after this, it detaches, externally, a long Branch, which runs down on the back Side of the Leg, between the Integuments, and external Gastrocnemius, on one Side of the Vena Sciatica, or Saphena externa.

This long Ramification joins a Branch of the Sciaticus externus minor, sends off Filaments toward each Side, through its whole Course; and having supplied the Tendon of Achilles, passes behind, and under the outer Ankle.

This Branch passes afterwards on the Outside of the Foot, where it is distributed to the Integuments, and neighbouring Muscles, and terminates on both Sides of the little Toe; and on the Outside of the next Toe.

The large sciatic Branch, or Sciatico-tibialis, having given off these different Ramifications, passes behind the inner Ankle, through a particular annular Ligament, and runs downward to the great lateral Sinus of the Os Calcis, passing first between that Bone, and the Musculus Thenar; and then between it, and the posterior Insertion of the Flexor Digitorum Brevis.

At this Place, having first sent small Filaments to the neighbouring Parts, it divides into two Branches, named Nervi Plantares, one internal and large, the other external.

The Nervus Plantaris Internus is distributed to the Foot, much in the same manner as the Radial Nerve to the Hand. It runs first along the Inside of the Sole of the Foot, and sends Filaments to the Thenar, Flexor Digitorum Brevis; and to the Musculus Lumbricalium Accessorius.

Afterwards it sends out four Branches to the lateral Concave, or lower Parts of the first three Toes; and to the nearest lateral Part of the fourth Toe. The first Branch goes to the Inside of the great Toe. The second divides into two, for the corresponding Sides of the great Toe, and the second. The third, being bifurcated in the same Manner, goes to the second and third Toes; and the fourth, to the third and fourth Toes.

These Nerves communicate on each Side, at the Extremities of the Toes; and, in their Passage, give Filaments to the Musculi Lumbricales, Interossei, and the neighbouring Ligaments and Integuments.

The external Plantaris passes between the Musculus Lumbricalium, Accessorius, and the Flexor Digitorum Brevis, giving Filaments to these Muscles, to the Interossei, and to the Hypothenar Minimi Digiti; and afterwards it divides into two Branches.

The first Branch runs in the Interstice between the two last Toes; and being divided, goes to the corresponding lateral Parts of both. The other Branch goes to the inferior, external, lateral Part of the little Toe.

During this Course, the external Nervus Plantaris supplies the Aponeurosis Plantaris and the Ligaments and Integuments, in the same manner as the rest.

The small sciatic Branch, or Sciaticus externus, called, likewise, Sciatico-peroneus, runs outward over the Head of the Fibula, and is divided into several Branches, of which three or four are considerable, one posterior, one superior and anterior, one internal and anterior, and one external and anterior.

The posterior Branch runs down between the Integuments and the Fibula, as low as the outer Ankle, and terminates in the Outside of the Foot, having detached several cutaneous Filaments in its Passage.

About the Middle of the Fibula, it sends out a small Branch, which joins another Branch, from the large or tibial Branch of the sciatic Nerve; and is distributed together with it, as was before observed.

The posterior Branch of the small sciatic Branch, having reached the outer Ankle, runs up a little Way on the Foot, towards the Root of the fourth Toe, where it divides into two smaller Ramifications.

One of these Ramifications divides into two others, for the corresponding lateral Parts of the third and fourth Toes; the other goes to the external, lateral Part of the fourth Toe, where it joins a Branch of the external Nervus Plantaris, which is distributed to the last two Toes.

After having sent off the posterior Branch, the small sciatic Branch runs outward over the Head of the Fibula; and, having given some Filaments to the Gastrocnemii and Soleus, it runs across the upper Extremity of the Peroneus Posticus, from behind forward.

Afterward it passes between the Bone and the Muscle last named, and sends several Filaments forward to the neighbouring Parts; and then produces three or four Branches already mentioned, which are distributed in the following Manner.

The superior and anterior Branch runs a little transversely between the Head of the Fibula, and the upper Extremity of the Extensor Digitorum longus; and, having given Filaments to this Muscle, and to the Extensor Pollicis longus, it is distributed to the upper Extremity of the Tibialis Anticus, giving Filaments to the neighbouring Integuments.

The inner anterior Branch runs down on the fore Side of the interosseous Ligament, between the Extensor Pollicis Longus, and Tibialis Anticus, giving Filaments to each of these Muscles.

It passes afterwards under the annular Ligament of the Extensor Muscles, behind the Extensor Pollicis, to the upper Part of the Foot, under the Extensor Digitorum Brevis. In its Passage it gives Filaments to that Muscle, and to the first superior Interossei.

Having communicated, by a Filament, with the external anterior Branch, it is spent on the corresponding lateral Parts of the first two Toes.

The external anterior Branch of the small sciatic Branch runs down betwixt the Fibula and the Peroneus Longus, and then between the Peroneus Medius, and Extensor Digitorum Longus; to which, and to the neighbouring Ligaments, it gives Filaments all the Way to the upper Side of the Foot.

In this Course, having run along about two third Parts of the Leg; and having reached the great, annular Ligament, it runs forward, and toward the Integuments, being there divided into two Portions; one of which goes to the great Toe; the other to the last Toes.

The first Portion of this Branch gives a Nerve to the internal, lateral Part of the great Toe, and is afterwards distributed to the neighbouring Integuments, on the convex Side of the Foot; and, lastly, to the corresponding lateral Parts of the great and second Toes.

The other Portion, which goes to the last Toes, is, first of all, joined to a Filament of the first Portion; and afterwards to another, from the internal anterior Branch.

After this Union, they are presently divided, and distributed to the last two Toes, and to the Integuments. One Filament, arising from this Union, joins a Branch belonging to the great sciatic Branch.

Nervi Sympathetici Maximi, vulgo Interco-stales.

It is the common Opinion, that each of the great sympathetic Nerves begins by a Filament from the sixth Pair, belonging to the Medulla Oblongata, and by two Filaments from the fifth Pair; and that these Filaments, at first, compose a very small Nerve, which runs backward to go out of the Cranium, through the bony Canal of the Apophysis Petrosa, and increases gradually in its Course downward.

But, having examined attentively the pretended Origin of these

Filaments, they seem to me, rather to ascend from the Basis of the Cranium, with the internal Carotid; and to run from behind forward, to join the fifth and sixth Pairs; and I find the Angle formed by this Union to be turned forward; and, withal, so very acute, that these Nerves cannot be looked upon as Recurrents.

As I have ever found this Angle disposed the same Way, in all the Subjects which I have dissected; I have always been of Opinion, that what had been taken for the original Root, and descending Stem, of the Nerve called Interco-stalis, was really an ascending Branch thereof; which, as it enters the Cranium, is divided into Filaments, by which it becomes closely united with the two Pairs already named.

The Observation, communicated to the Royal Academy, by Dr. Petit, concerning the different Size of the Portions of the sixth Pair, appears to be indisputable, he having found this Nerve larger on the fore Part, between the Filament of the supposed Interco-stal, and the Orbit, than on the back Part, between the same Filament, and the Origin of the sixth Pair; and his Experiments, concerning the real Co-operation of this Nerve in Vision, farther confirm his Observation.

These Nerves, as I have said, are commonly called Interco-stales, though this Name does not agree, either with their Situation, or with the Extent of their Course. Therefore, I believe, the Name of Sympathetici Majores, or Maximi, will be more proper, because of their frequent Communications with almost all the other principal Nerves of the Body.

The Situation of these two Nerves, in general, is on the lateral Parts of the whole twenty-four Vertebrae, immediately before the Roots of the transverse Apophyses; and, likewise, on the lateral Parts of the Inside of the Os Sacrum.

Through this large Extent, they appear like two Ropes divided; and, in a manner, intersected, at different Distances, by a great Number of Gangliform Tubercles; by means of which, they communicate backward, with the Ganglions of the Medulla Spinalis, by short collateral Filaments; and produce, forward, all their particular Ramifications.

These Ganglions differ in Size, Colour, and Consistence; and may be looked upon as so many Origins, or Germinal, dispersed through this great Pair of Nerves; and, consequently, as so many little Brains.

We shall consider these Ganglions in the same Manner as we did the Vertebral Nerves, as divided into Cervicalia, Dorsalia, Lumbaria, and Sacra, without pretending to determine the Number contained in each Class.

The first Cervical Ganglion is the most considerable in Size, but not in Consistence, representing a soft oblong Tumor, of the Figure of an Olive, and situated longitudinally before the Root of the transverse Apophyses of the first three Vertebrae, immediately behind the Pharynx.

It produces, from its superior Extremity, a small soft Nerve, which runs up with the internal Carotid Artery, of the same Side, into the bony Canal of the Apophysis Petrosa.

At its Entry into this Canal, it is divided into several plexiform Filaments, which, at that Place, surround the Carotid Artery, and accompany all the Incurvations thereof, till it enters the Cranium. They adhere very closely to the Artery; and both they, and their Trunks, are very tender, having oftentimes neither the Colour nor Consistence of nervous Filaments; for they are redish, and sometimes, in a manner, mucilaginous. We must not mistake, for these plexiform Filaments, some lacerated Portions of the Dura Mater, which line this bony Canal.

Among these Filaments, there are two or three principal ones, which appear to be only a simple Division of the Trunk; and which, as they enter the Cranium, unite again into a small Trunk, more solid than the former. The small superior Trunk is immediately afterwards divided into Filaments, one of which is united to the Nerve of the sixth Pair; the rest join the fifth Pair, as has been already said. The Filament, which goes to the sixth Pair, is commonly single; but I have sometimes found it double, or divided all the Way to the Union.

Immediately below the inferior Orifice of the bony Canal of the Apophysis Petrosa, and thence all the Way down to the occipital Condyle, on the same Side, or to the Top of the first Ganglion, the small ascending Trunk is a little stronger, and not altogether so soft, as it is in the Canal.

The first Cervical Ganglion is of a middle Consistence, and adheres very closely to the Trunk of the eighth Pair, or Nervus Sympatheticus Medius, by numerous, small, communicating Filaments.

It likewise communicates on both Sides, by short Branches, with the ninth and tenth Pairs of Nerves, of the Medulla Oblongata; with the first, second, and sometimes the third Cervical Pairs; and also with that Branch, which the eighth Pair sends to the Pharynx.

In its Passage, it gives Filaments to the Pharynx, to the small neighbouring Muscles, and to the Carotid Artery, from which it receives very fine capillary Vessels, which are plainly visible in Inflammation.

Inflammations; and seem to form a curious Net-work, with the nervous Filaments.

Lastly, it sends downward a very long nervous Filament, which runs in the Thorax, and joins other Filaments, of which hereafter.

This Ganglion terminates below, in a small Rope or Trunk, which runs down on the anterior vertebral Muscles of the Neck, in the same Course with the eighth Pair, and the Carotid Artery of the same Side; to both which it is connected by membranous Expansions, as by a kind of Vagina, all the Way to the last Vertebra of the Neck. In this Course, the descending Trunk communicates on the outer, or back Side, with the third, fourth, fifth, and often with the sixth Cervical Pairs, by short Branches, more or less oblique; by which it seems to be gradually increased in Size.

At the Places of these Communications we observe small Ganglions in this Trunk; which, however, in some Subjects, are scarcely perceptible; and it is very difficult to determine, by which Extremity these Branches arise, and by which they are inserted.

On the inner, or fore Side, this Trunk gives off two or three Filaments, which run obliquely downward, toward the Aspera Arteria, into the Thorax. Another Filament goes off, below the first Cervical Ganglion, which passes on the fore Side of the Carotid Artery, and joins a Filament of the eighth Pair, with which it forms a small distinct Rope.

This small Rope runs before the Subclavian Vein, and, lower down, joins another Filament, which arises behind the Subclavian Artery, and runs down in the Manner hereafter to be explained, sending off Filaments in its Passage to the Oesophagus, and neighbouring Parts.

The Trunk, having reached as far as the last Vertebra of the Neck, forms a small Ganglion, called Ganglion Cervicale infimum, which is pretty solid, and sometimes double.

Presents afterwards, the Trunk turns from within outward, towards the Root of the first Rib, behind the Subclavian Artery, where it forms a pretty large Ganglion, which is the first of the Thoracica, or Dorsalia.

These two last-mentioned Ganglions are very near each other, being separated only by a very short Portion of the Trunk, which is sometimes double, and forms a kind of small Plexus, behind the Subclavian Artery.

From the fore Part of the lowest Cervical Ganglion, a small nervous Rope goes out, which runs before the Subclavian Artery, bends immediately downward, and ends in the Top of the first Dorsal Ganglion, forming, by this Course, a sort of nervous Arch, which incloses the Subclavian Artery.

These two Ganglions communicate by short Branches, more or less oblique, with the neighbouring Vertebral Nerves, that is, with the sixth and seventh Cervical Pairs; and sometimes with the fourth, by a long descending Filament. The first Dorsal Ganglion, communicates, likewise, with the first Dorsal Pair of Nerves.

The lower Cervical, and sometimes the first Dorsal Ganglion, sends down a communicating Filament, to the recurrent Nerve of the eighth Pair; and from this Union a Filament is detached, which passes behind the common Trunk of the Axillary and Carotid Arteries, joins another Filament from the eighth Pair, and contributes to the Formation of the Plexus Pulmonaris.

From the small plexiform Portion of the Trunk, which joins the last Cervical, and first Dorsal Ganglions, behind the Subclavian Artery, a particular Filament goes out, which unites the small Trunk, common to the great Sympatheticus, and to the eighth Pair, and runs down before the Subclavian Artery; and, together with this Filament, composes the Plexus Cardiacus.

On the Right Side, this Filament runs down to the Right Ventricle of the Heart, and then between the Aorta, and Arteria Pulmonaris, where it communicates with some Filaments, from the Left Recurrent of the eighth Pair.

On the Left Side, a Filament goes out from the last Cervical, and another from the first Dorsal, or Thoracic Ganglion, which unite together, to form a kind of Arch; in which, however, nothing is contained.

From this Arch, a Nerve goes out, which runs down between the Curvature of the Aorta, and the Left Branch of the pulmonary Artery, where it communicates with a Filament of the eighth Pair, and forms a gangliform Plexus, with the like communicating and united Filaments from the Right Side.

From this gangliform Plexus, which may be looked upon as the Origin of the Plexus Cardiacus Superior, a great Number of Filaments run down, over the Trunks of the great Blood-vessels, and over the Auricles and Ventricles of the Heart.

The chief of these Filaments run in the cellular Substance, behind the Aorta, or between that and the Trunk of the pulmonary Artery, where they are divided into a great many small Nerves, which run before and behind the Aorta, to the Basis and Auricles of the Heart.

The Filaments that run down from the Trunk itself, between the first and last Cervical Ganglions, are united and interwoven in the Thorax with the Filaments common to the last Cervical and first Dorsal Ganglions; and thus contribute to the Formation of the Plexus Cardiacus, and some Part of the Plexus Pulmonaris.

The long Filament of the first Cervical Ganglion contributes, likewise, to these Plexus. It runs along the Inside of the Trunk, and then unites with the Filaments of the last Cervical Ganglion, the first Dorsal Ganglion, and the great Recurrent Nerve.

From all these Conjunctions, a particular Nerve is formed in some Subjects, which meets like a Rope from the other Side behind the Aorta; and forms, together with that, a kind of subordinate Trunk about a Finger's-breadth in Length, which sends out, on all Sides, several Filaments, that are distributed to the neighbouring Parts.

From the first Dorsal Ganglion, the Trunk runs down on the fore Side of the Heads and Necks of all the Ribs, over the articular Ligaments, by which they are ty'd to the Vertebrae. On the last false Rib, it bends a little toward the Bodies of the Vertebrae.

In this Course, the Trunk forms a small Ganglion between each Rib, and communicates backward by two short Filaments, more or less oblique, with the corresponding Dorsal, or Costal Nerves.

Of these two communicating Filaments, one is more oblique, and often smaller than the other; one runs backward, towards the nearest Ganglion of the Costal Nerve; the other runs forward on the Head of the Rib, to the Trunk of the great Sympathetic Nerve; and, for this Reason, one of these Filaments appears to be more anterior, and longer, than the other.

Having reached about Half-way between its Entry into the Thorax and the last Vertebra of the Back, this Trunk sends commonly five Branches obliquely downward on the lateral, and a little toward the anterior Part of the Bodies of the Vertebrae.

The first four Branches come commonly from the fifth, sixth, seventh, and eighth Thoracic Ganglions, and the fifth arises from several of the following Ganglions. The first is the longest, and the last the thickest.

All these Branches approach each other gradually in their Descent, as far as the last Vertebra of the Back, where they unite into one large, short, collateral Rope, which pierces the upper lateral Part of the lower Muscle of the Diaphragm, sending some Filaments to the upper Side.

Having got below the Diaphragm, and given off some Filaments to the lower Side of that Muscle, this great Trunk produces, behind the Glandulae Renales, a kind of irregular Ganglion, of a curve oblong Figure, called, *Ganglion sive Plexus Semilunaris*.

The convex Side of this semilunar Plexus, or Ganglion, is turned obliquely backward and downward; the concave Side forward and upward, one of its Cornua being turned upward, the other forward; so that the inferior Cornua of the two Ganglions on each Side are turned toward each other.

These Ganglions, on each Side, communicate together, behind the Stomach on the Coeliac Artery, and likewise with the eighth Pair, or Nervus Sympatheticus Medius, principally by means of the Nervus Stomachicus posterior, belonging to that Pair.

From the reciprocal Communication of these two Semilunar Ganglions, a kind of middle Plexus is formed, which partly surrounds the Coeliac Artery, and is partly spent on the Mesocolon.

The Semilunar Ganglion, on the Right Side, together with a large Portion of the Plexus Coeliacus, and some Filaments of the Plexus Stomachicus, forms a particular Intertexture, called Plexus Hepaticus.

This hepatic Plexus, having communicated with some Filaments of the diaphragmatic Nerve, produces several Filaments, which surround the hepatic Artery, and Vena Portae, in form of a reticular Vagina, and accompany the Branches of these Vessels thro' the whole Substance of the Liver. The hepatic Plexus supplies, likewise, the Vesicula Felleis, Ductus Biliaris, Duodenum, Pancreas, and Glandulae Renales.

The Left Semilunar Ganglion, formed by the anterior or collateral Trunk of the Left Side, produces several Branches, which form the Plexus Splenicus, nearly in the same manner as has been already mentioned.

This Plexus Splenicus, having communicated with the Hepaticus, and, by the Intervention of the Plexus Stomachicus, with the eighth Pair, surrounds the Splenic Artery, supplies the Pancreas, and is distributed to the Spleen.

This Left Ganglion is sometimes accompany'd by another, which gives Filaments to the Spleen.

Each semilunar Ganglion sends Branches from its convex Side, which, being joined to the Filaments of the first Lumbar Ganglions, form an Intertexture, called Plexus Renalis, which surrounds the Renal Artery; is distributed to the Kidneys, and Glandulae Renales; and sends out a Filament, which accompanies the spermatic Vessels.

This Renal Plexus concurs, likewise, with the Semilunar Ganglion in the Formation of the great mesenteric Plexus; and communicates, by several Filaments, with the Plexus Coronarius Stomachicus.

The Right Renal Plexus communicates particularly with the Plexus Hepaticus, and the Left with the Splenicus; and each of them, by two Filaments, with the true Trunk on the Side of the first two Vertebrae of the Loins. This Portion of the principal Trunk is commonly called the inferior Rope of the intercostal Nerve.

The Right and Left Semilunar Ganglions send nervous Fasciculi to each other, which, by a particular Intertexture, form a kind of flat Ganglion, or Plexus, immediately under the Diaphragm, before the Articulation of the last Vertebra of the Back with the first of the Loins.

From this plexiform Union, called commonly Plexus Solaris, several Filaments are detached in a radiated manner to the Mesocolon, and Mesentery; and some of them go, likewise, to the Diaphragm. A great Number of other Filaments go, likewise, from it, which, with the Ramifications thereof, form a kind of nervous Capsula, or Vagina, round the superior mesenteric Artery, and round all its Ramifications on the Intestines, and supply the mesenteric Glands. This is termed Plexus Mesentericus superior, which comes principally from the Filaments of the Plexus Hepaticus and Renalis of the Right Semilunar Ganglion.

The superior mesenteric Plexus sends down from its Origin, along the Aorta, and behind the descending Portion of the Mesocolon between the superior and inferior mesenteric Arteries, several Filaments, or nervous Fasciculi, differently interwoven, from which a nervous Vagina is, likewise, formed, that surrounds the inferior mesenteric Artery, and its Ramifications on the Intestines. This has been named Plexus Mesentericus inferior.

The descending nervous Fasciculi, between the two mesenteric Arteries, which may be named Mesenterici Posteriores, receive some communicating Filaments from both Plexus Renales; and, likewise, communicate with the Trunk of the great sympathetic Nerve, by Filaments which run down obliquely from the Lumbar Ganglions. Afterwards they detach a Filament on each Side, which accompanies the spermatic Vessels.

The Fasciculi Mesenterici Posteriores, having produced the Plexus Mesentericus inferior, send other Filaments downward, over the Extremities of the Aorta, behind the inferior Curvature of the Colon.

These inferior Fasciculi, or Filaments, adhere strongly to the neighbouring Parts of the Peritonæum, and, together with other Filaments from both Sides of the Trunk, form a third Plexus, which may be called Infra-mesentericus, or Hypogastricus.

This hypogastric Plexus, at the Extremity of the last Curvature of the Colon, on the fore Side of the last Vertebra of the Loins, is divided into two flat Ganglions, which surround the Beginning of the Intestinum Rectum backward, to which they are afterwards distributed, and, also, to the Bladder, and to the spermatic Vessels; and, having communicated by lateral Filaments with each Trunk of the great sympathetic Nerve, they send Filaments to all the Parts contained in the Pelvis.

The Trunk of the great sympathetic Nerve, having detached the five Branches, which form the collateral Rope, becomes much smaller; and, having reached the eleventh Vertebra of the Back, it approaches the collateral Trunk, and perforates the inferior Muscle of the Diaphragm.

Afterwards it runs more forward on the Bodies of the Vertebrae, and increases by the Addition of Filaments, from the last two Dorsal Pairs of Nerves.

It runs down between the Psoas, and neighbouring Tendons of the small Muscle of the Diaphragm, on the lateral Parts of the Vertebrae Lumbares, and anterior Side of the Os Sacrum.

At this Place the Right and Left sympathetic Trunks approach each other, and at the Extremity of the Os Sacrum they form a Communication, in the manner of an inverted Arch.

In its Passage, each Trunk receives commonly two Filaments from each Ganglion of the Nervi Lumbares and Sacri; and likewise forms small Ganglions between each Vertebra, which send some Filaments to the neighbouring Parts, and others which communicate with the Fasciculi of the Plexus Mesenterici.

The Pairs of Filaments which come from the first two or three Lumbar Ganglions, run a little downward, but the following run gradually upward; and it ought to be observed, that capillary Blood-vessels are discernible between and upon the Filaments of each Pair.

The inverted Arch, or inferior Union, of the two Trunks gives off, together with the two lowest Nervi Sacri, several Filaments to the Rectum, Anus, and Muscles of the Coccyx.

Lastly, the great sympathetic Nerve, from the first Vertebra of the Neck to the Extremity of the Os Sacrum, communicates by Filaments with all the Vertebral Nerves, as has been already said; but it must be observed, that in the Thorax these communicating Filaments are very small and slender, where the sympathetic Trunk is largest; and that, below the Diaphragm, they are stronger, because there the Trunk diminishes, especially on

the Os Sacrum, where it is very small. The same thing is to be observed concerning the Ganglions of the Trunk, the first Cervical Ganglion only excepted. See SPIRITUS.

NERVINUS. Nervine, or nervous.

NESIS, νῆσις. From νῆω, to accumulate; an Accumulation of Humours, inducing a Disease. Hippocrates de Locis in Homine.

NESTIS, νῆσις. The Intestinum Jejunum. Ruffus Ephef. de Appellat. Patt. Corp. Human. Lib. 1. Cap. 27.

NET, or NETA. The same as GALIA MOSCHATA. N. Myrepsus, Sect. 10. Cap. 73.

NETOPON, νῆτωπον, according to Hesybius, is an Ointment composed of many Ingredients, and is otherwise called νῆλωπιον, Netopion. Foetus says it was a fragrant and costly Ointment, consisting of a Mixture of many Kinds of Spices; such were the Ointments in Use among the delicate Roman Ladies; for Instance, the Unguentum spicatum, foliatum, Comagenum, and Sufinum. We find frequent Mention made of νῆτωπον, in Hippocrates's Books of Womens Diseases, where it is prescribed, among other sweet-scented Things, in Affections of the Uterus. And, in the fifth and seventh Books of the Epidemics, we read, that Netopon was infused into the Ears, for the Cure of Deafness; for which Purpose was used, in the same manner, Amaracinum, the best Sort of Nardinum, and other Sorts of Oils, which were qualified, by their Tenuity and Heat, for cutting and discussing the gross and viscous Humours, which were the Occasion of the Disorder. Νῆτωπον seems to be the same which Erotian calls νῆωτον, Neopon, and expounds by Oil of bitter Almonds; but νῆωτον no-where occurs in Hippocrates, and we ought, doubtless, to read νῆτωπον, or νῆλωπιον (Metopion); for Metopion is frequently put for Oil of Almonds, as well as for Unguentum Egyptianum.

NEUR., νῦρεϊς. A Name for the Poterion, a Species of TRAGACANTHA. Dioscorides, Lib. 3. Cap. 17.

NEUROCHONDRODES, νῦρεγχοῦνδρῶδες, from νῦρεγ, a Nerve; and χόνδρῶς, a Cartilage. An Epithet for a Ligament partly cartilaginous, and partly membranous.

NEURODES. Nervous.

NEUROLOGIA. A Description of the Nerves.

NEUROMETERES. The same as NEPHROMETERES.

NEURON, νῦρεν. A Nerve. The Signification of the Word Nerve is extended, by the ancient Physicians, to all those Bodies which are exanguious, white, and void of Cavities. To this Purpose are the Words of Galen, Com. 1. in 6 Epid. τεία γὰρ εἰσι γένη, &c. "There are in Animals three Sorts of similar Bodies, which appear to be exanguious, and void of Cavity, one proceeding from the Bones, another from the Brain and Spinal Marrow, and a third from the Muscles: The first is usually called by Hippocrates (νῦρεσιν) (Syndesmos, a Ligament); the second νῦρεν (Neuron) and τόνος (Tonus), and the last τένων (Tenon, a Tendon). But some call them all Nerves, on account of that Similitude which, as I said, there is between them, giving to the first Sort the Epithet of (νῦρεσιν), (ligatory), to the second, those of αἰσθητικῶν (aisthetikos, sensory) and προαιρετικῶν (proaireticos, voluntary, or subservient to the Will in Motion); and the last they comprehend under the Word ἀνερδιστικῶν (Aponerostis)."

NEUROTICA. Nervous Medicines. Blancard.

NEUROTOMIA. An anatomical Dissection of the Nerves.

NEUROTOMUS. A Person who dissects the Nerves.

NEUROTOTOS, νῦρεσσι τῶς, from νῦρεν, a Nerve, and τῖσιν, to wound. A Person who labours under a Wound or Puncture of a Nerve.

NEUTER. Neutral. As neutral Salts have of late acquired a considerable Reputation in Medicine, and as they are not commonly understood, it will be of some Importance, in this Place, to specify their Nature, and medicinal Virtues.

As Salts of various Kinds are the principal Foundations of Diseases, so there are no Medicines of greater Efficacy, both in preventing and curing Diseases, than Salts; some of which contribute to produce salutary Effects in one manner, and others in another. But, among all the various Salts in Nature, none are more safe and efficacious, than neutral Salts, which are, also, possessed of a cathartic Quality.

Neutral Salts are those compounded of an alkaline Salt, or Earth, and an acid Salt, in such a manner as that the one does not predominate over the other: Now as alkaline and acid Salts, when separate, are of so strong a Taste and Quality, as often to approach to a corrosive Nature; so, when mixed in a due Proportion with each other, they are, by the mutual Allision and Conflict of their Parts, so corrected, as, not only with respect to Taste, but, also, all their other Qualities, to become a Salt of a middle Nature, highly innocent in itself, and friendly to the human Constitution. Perfectly neutral Salts, therefore, are such as produce no Degree of Effervescence, but are perfectly saturated, upon the Affusion of any acid or alkaline Liquor. The most considerable and efficacious Salts of this kind are, among the native Salts, common Salt, Nitre, Aphronitum, and those Salts which are, by boiling, obtained from some medicinal and acidulated Springs. The most considerable Salts of the neutral

Kind, prepared by Art, are the Arcanum Duplicatum, antimoniated Nitre, Glauber's Salt, and vitriolated Tartar, in all which there is no Effervescence produced by the Affusion either of an acid or an alkaline Liquor, unless the Acid is very strong and penetrating, such as Oil of Vitriol, which, when poured upon common Salt, or even upon Nitre, not only produces a violent Ebullition, but, also, raises a large Quantity of a subtile white Vapour from the common Salt, and one of a redish Colour from the Nitre; but such a Phenomenon is hardly ever produced by a gentler Acid, such as Spirit of Salt, Spirit of Vitriol, Vinegar, or Lemon-juice.

From what has been said, we may justly conclude, that neither Tartar, which is obtained from the Vegetable Kingdom, nor Alum or Vitriol, which are produced in the Mineral Kingdom, are properly to be classed among the neutral Salts; since the latter of these, upon the Affusion of any alkaline Liquor, whether of a mild or more drastic Quality, are forthwith put into a violent Commotion, and raised in Bubbles; a manifest Proof, that an acid Salt predominates in them, and that this Salt is not intimately mixed with the metallic or earthy Alkali; for such ought to be the Nature and Qualities of neutral Salts, that their component Parts being intimately united with each other, they may not be easily precipitated, upon the Affusion of an alkaline Liquor; for which Reason, neither Salt of Silver, nor Sugar of Lead, are, strictly and properly, neutral Salts. Neutral Salts, also, differ among themselves, since, in some, the Union of the alkaline and acid Principles is more close and intimate than in others.

Those in which this Union is highly close and intimate, are such as cannot be easily destroyed, such as all Salts prepared of an alkaline Principle, and the Acid of Vitriol; of which Kind are the Neutral Salts of mineral Waters, the Arcanum Duplicatum, vitriolated Tartar, the Salt prepared of Quick-lime, and the Acid of Vitriol, or Salt, as, also, common Salt and Nitre. But those Salts in which the Union of the acid and alkaline Principles is less intimate, and their Cohesion less firm, are such as are compounded of a gentle Acid, and an alkaline Earth; among the Number of which are the Salt of Coral, the Salt of Crabs-eyes, Tartarus Tartarizatus, and the Terra Foliatæ Tartari; all which, by means of a strong Acid, have their Parts easily resolved and precipitated.

Having premised these things, we now come to shew by conclusive and satisfactory Arguments, that Salts of a temperate and neutral Nature are not only of all others the most salutary, but, also, the safest, and most efficacious, both for preventing and curing some of the Disorders incident to the human Body.

First, then, in the Juices of all Animals, when in a sound and natural State, there is neither a pure acid nor alkaline Salt, either of a fixed or volatile Nature, but only Salts of a neutral Kind: Thus there is never a pure Acid to be found, either in the Blood or Lymph, which, however, was formerly asserted by Physicians ignorant of Chymistry. Nor, even in a morbid and preternatural State, is there any such pure Acid to be obtained from the Fluids of the Body, by any means whatever: Hence it is obvious not only how absurd, but, also, how dangerous, the Hypothesis of those is, who, some Centuries ago, boldly affirmed, that an Acid was the Cause of all Diseases; for which Reason they not only banished all Acids from Medicine, but, also, asserted, that the principal Intentions of all Remedies were either to destroy the Acidity or Viscidity of the human Fluids.

It is not, indeed, to be denied, that partly by means of the Aliments, and things taken into the Stomach, especially when remaining long there, crude and acid Juices are generated in the Primæ Viæ, which, being of a Quality unfriendly to Nature, for various Reasons excite violent Disorders, and not only produce, but, also, increase, the Symptoms; for which Reason, in Cases of this Nature, such Medicines as correct and temperate Acids, afford the most speedy and efficacious Relief: Yet it does not follow from this, that these acid Juices are, in an entire and unchanged State, as to their Texture, conveyed to the Mass of Blood, or mixed with the textual Fluids: But they are rather to be looked upon as foreign and morbid Humours in the Primæ Viæ, especially when they are not corrected by the digestive Powers, and the Admixture of other Liquors; for, though the Stomach can well enough bear a mild Acid, which, by its gentle Stimulus, not only creates an Appetite, but, also, promotes the Dissolution of the Aliments, yet a pure Acid is highly offensive to all the other Parts of the Body, both of the fluid and solid Kind; for an Acid so inspissates and coagulates the Fluids, as to retard their Circulation, and remarkably injures the solid Parts, especially those of the nervous and fibrous Kind, by its stimulating, corroding, or even constricting Quality.

For this Reason it is wisely ordered by bountiful Nature, that when the Aliments are dissolved in the Stomach, and expelled thence, there is forthwith poured upon them a Liquor, which, by its mild, sulphureous, and somewhat alkaline Nature, corrects the foreign Acid contained in them, and renders it friendly to the Veins, and all the other Parts of the Body: This Purpose is, also, greatly promoted by the lymphatic Juices, convey'd from the

Pancreas, and other Glands: Nor is a pure alkaline Salt, either of a fixed or volatile Kind, ever to be found in the Juices of Animals, especially when in a natural State. The Bile, that useful Liquor, justly accounted the most natural and efficacious Medicine of Animals, so nearly approaches to an alkaline Nature, that it corrects Acidity. But there can be no pure Alkali obtained from the human Fluids, because it produces an Effervescence with no Acids, unless highly strong and drastic; and even in this Case the Ebullition is not to be ascribed to an alkaline, but rather to a sulphureous and oleous Principle, because both expressed and distilled Oils are observed to excite an intense and hot Effervescence with any strong Spirit, such as Oil of Vitriol, or the Spiritus Nitri Fumans, prepared in the manner directed by Hoffman.

Nor is there any Alkali, either of a fixed or volatile Nature, to be obtained without the Help of Fire, either from the Blood, the Milk, the Chyle, the Lymph, the Excrements, the Sweat, or Urine of Animals, in a sound and natural State: But if a volatile alkaline Matter is exhaled from the Juices, or if a manifest alkaline Quality is observed, either in the Excrements, the Bile, or the Urine, it is a certain Sign of a Corruption or Putrefaction. But, in a sound and natural State, the excrementitious Salts are rather of the neutral Kind, and composed of a fixed or volatile acid and alkaline Salt, as is obvious from the saline Taste of the Urine. But the neutral Salts of the human Body incline most to the Nature of Sal Ammoniac, by reason of the Composition of the volatile, alkaline, and urinous Salt, with the Acid; for if Quick-lime, or any alkaline Salt, is mixed with inspissated Urine, it forthwith diffuses the Smell of a volatile Salt. Besides, the Salt contained in the Urine is of a tartareous Nature, compounded of an acid and an oleous earthy Principle; as is sufficiently obvious, partly from the Inspissation of the Urine, and partly from that Tartar which adheres to the Sides and Bottoms of the Chamber-pots used by hypochondriac and scorbutic Patients.

Besides, the salutary Quality of neutral Salts is obvious from this, that they produce no Change nor Commotion in any of the animal Juices, which, we find, is quickly done by other acid or alkaline Salts, whether of a fixed or volatile Nature; for if, with any Quantity of human Blood, taken from a Vein, any acid Liquor is poured, such as Spirit of Salt, or Vitriol, a Solution of Salt, which is excessively acid, or a Solution of Alum or Vitriol, the Colour and Consistence of the Blood are destroyed, whilst the redish-purple Colour is changed into one of a livid and unseemly Kind, and the Blood, before thin and fluid, is coagulated; and the same Effect is generally produced by these Liquors, when mixed with the Lymph, the Serum, the Chyle, Milk, or the Whites of Eggs. It is, also, certain from the Experiments made in order to illustrate the Transfusion of Blood, that by injecting acid Liquors into the Vein, by means of a Syringe, the Death of the Animal was very soon produced, and the Blood found coagulated in the larger Vessels. When, also, we pour into Blood newly taken from the Veins any alkaline Liquor, such as Oil of Tartar per Deliquium, or well saturated Spirit of Sal Ammoniac, we observe a no less considerable Change in the Blood, since its natural purple Colour is heightened, and render'd nearer to that of Scarlet, and its Consistence becomes more fluid.

These alkaline Substances, in like manner, when mixed with Milk, Serum, or the Whites of Eggs, render them more fluid; and though the intensely red Colour, and preternatural Fluidity, induced in the Blood by alkaline Substances, are not destructive of its progressive and circulatory Motion through the numberless small Vessels of the human Body, yet a pure Alkali, exhibited in a pretty large Dose, effectually destroys and inverts the vital Crasis, and due Mixture, of the Mass of Blood, as is obvious from injecting alkaline Liquors into the Veins of Animals, since, by this means, mortal Convulsions are brought on, an Effect never produced by neutral Salts, which are of such a Nature as to induce no Change in the Texture, and Mixture of the Blood, and vital Fluids. For if a Solution of common Salt and Sal Ammoniac, or of the Arcanum Duplicatum, the Terra Foliatæ Tartari, or antimoniated Nitre, is mixed with the human Blood, or Milk, it produces no Change in them. That Nitre, which is, also, a neutral Salt, is not prejudicial to the Mixture and vital Motions of the Blood, is, among other Circumstances, sufficiently obvious from the Experiments of Malpighi, in his Book de Polypo Cordis, since, by injecting six Drams of Nitre dissolved, into the jugular Vein of a strong Dog, there was no Alteration or Change observed; except a preternaturally copious Discharge of Urine.

But, among all the Classes of neutral Salts, none is better suited, or more friendly, to the human Body, than common Salt, whether obtained from the Sea, Fountains, or the Earth. Neither human Creatures, nor many other Animals, can be without this Species of Salt, because it not only seasons their Aliments, but, also, contributes to their better Digestion, or intimate Resolution. Nor is common Salt admitted into the Mixture of the vital Fluids, but ought again to be totally expelled thro'

thro' proper Eminentories, since, when left in the Body, it proves prejudicial to the Texture of the slender Fibres, by vellicating and corroding which, it produces various Misfortunes. When used, however, with Aliments, it produces several happy Effects, besides those already mentioned; for, by gently stimulating the moving Fibres, and the excretory Ducts composed of them, it not only accelerates the Motion of the Blood and Humours, by which means their grosser Parts are excellently triturated, and better mixed with the more fluid Parts; but, also, promotes the salutary Secretions, and the necessary Excretions, of other superfluous Substances, by means of which the Salt itself is, also, more happily eliminated from the Body.

Among the neutral Salts highly salutary and friendly to the human Body, we may justly reckon Sugar, which, when duly used, is not so offensive to the Blood as is generally thought, though it is not proper in all Diseases, nor for particular Persons at all Seasons. But that it is daily used to a kind of Excess by some, who, instead of being injured by it, live in a sound and perfect State of Health, is certain from daily Experience; for Sugar is a sweet and mild Salt, which is far from being unfriendly to the Mixture of the Fluids, both because it corrects acid and bilious Humours, and, by lubricating the Primæ Viæ, and gently stimulating the intestinal Fibres, renders the Body more soluble. Besides, another Advantage may arise from the Use of Sugar among Aliments; for it is known, that all Oils, and pinguious Substances, are incapable of uniting with Water; but this Union is excellently produced by the Addition of Sugar, as is obvious from this Experiment: Oil of Cinnamon does not mix with Water, but falls to the Bottom; but if a few Drops of it are previously mixed with Sugar, and then put into Water, upon agitating them together, we forthwith perceive an intimate Conjunction of the Oil and Water, so that by this Method an extemporaneous Cinnamon-water may be prepared. Since, therefore, human Creatures often eat large Quantities of Fat, which are with Difficulty resolved, and converted into a lacteal Juice, by means of Water; yet that this Effect may be produced by means of Sugar, and sweet Substances, is sufficiently obvious, since there is no more speedy and effectual manner of fattening Geese and Capons, than by mixing Sugar with their Aliments. This, in my Opinion, is, also, proved, by adding Sugar to Cream, by which means the Separation of the buttery Part from the others is prevented.

As neutral Salts, used among Aliments, are of singular Efficacy in preserving Health, so, as Medicines, they are highly efficacious in the Cure of Diseases. And, since this is the Point we principally intend to prove, we shall, for the sake of Perspicuity, distinguish neutral Salts into two Classes, that is, those which are produced naturally, and those prepared by Art. Among the Salts, therefore, spontaneously produced by Nature, besides common Salt, we reckon the essential Salts, by a proper Encheiræsis, obtained from the Juices of most Plants; and the most considerable of which approach to the Nature and Mixture of that Tartar-like Preparation composed of an acid and an alkaline Earth, together with an Intermixture of sulphureous Particles; and it is highly probable, that the medicinal Virtues of Plants are derived from this neutral Salt they contain; for it is certain from Experience, that such Vegetables as, by a due Encheiræsis, yield the largest Quantity of neutral Salts, are far superior, in Virtue and Efficacy, to such as yield a smaller Quantity.

The most considerable Herbs belonging to this Class are such as are appropriated to the Cure of Wounds, and the Purification of the Blood; the most considerable of which are Paul's Betony, Scordium, Carduus Benedictus, Dead-nettle, Yarrow, Colts-foot, Plantain, Ground-ivy, Borrage, Bugloss, the lesser Centaury, Fumitory, Winter-green, Daisies, Chamomile-flowers, Wormwood, Brook-lime, Bears-breech, Water-creffes, German-der, Ladies-mantle, Middle Confound, Spleenwort, and Scabious; the Juices, Decoctions, and Infusions of which produce the most surprising and salutary Effects in the most violent chronic Diseases arising from Obstructions, Infarctions, or Corruptions of the Viscera, or Obstructions of the Eminentories, and excretory Ducts. And these happy Effects are owing to nothing but the neutral Salt contained in these Herbs, and which is partly of a tartarous, and partly of a nitrous Quality. Hence, by reason of the large Quantity of this neutral Salt, the Extracts of these Herbs cannot be easily preserved dry, and without dissolving, in the open Air; which is, also, observable in essential Salt, or the Terra Foliated Tartari, and in that Salt which is obtained from the Acid of Rhenish Wine, and the Oil of Tartar mixed, after due Insipissation. By reason, also, of this large Quantity of neutral Salt of a tartarous Nature, these Plants, by burning, also, yield a considerable Quantity of an alkaline fixed Salt; for as the Tartar of Wine, or Nitre, is, by Calcination, changed into an alkaline fixed Salt, so we are of Opinion, that this alkaline fixed Salt, which, by burning, we obtain from these Plants, derives its Origin from the neutral tartarous Salt they contain.

Among the most salutary neutral Salts spontaneously produced without any artificial Mixture of an acid and alkaline Salt, we may justly reckon Nitre, which is generated by sulphureous, pinguious, and alkaline Earths, by the Fæces and Excrements

of Animals in a State of Putrefaction, as, also, by Ashes, Quick-lime, and putrid Earths, when long exposed to the Sun and Rain, by imbibing, as it were, and attracting the universal Acid of the Atmosphere. And so surprising are the Virtues of this Medicine, that the Healing Art would be very imperfect without it; for Nitre is a Salt of a Quality so friendly to Nature, that, except when exhibited in too large Doses, it not only produces no Misfortunes, but is, also, of all other the most efficacious and instantaneous Remedy for preventing and removing those violent Disorders, which arise from a Redundance of Bile, a violent Ebullition, or preternatural Heat, of the Blood and Humours. For this Reason Lord Verulam, in his *Historia Vita & Mortis*, affirmed, that a Scruple of Nitre, frequently exhibited for a Dose, greatly contributed to the Protraction of Life: And, if any Medicine deserve the Title of Universal, common Water and Nitre certainly are so; for if the Body is to be rendered soluble, and a Discharge of the Urine promoted, or if, in a State of preternatural Heat, Pain, and Spasms, the Transpiration is to be rendered freer, these Effects are excellently produced by means of Nitre. Besides, if the Intention is to correct and mitigate that caustic and virulent Acrimony of the bilious Humours, which lays a Foundation for Choleræ, Diarrhœas, Dysenteries, immoderate Vomitings, Nauseas, bilious and burning Fevers, and violent Inflammations of the Stomach and Intestines, no Medicine in Nature produces either more salutary or more instantaneous Effects than Nitre. If the internal Parts are so seized with an Inflammation, as to be, in some measure, scorched, and if, in consequence of this, the most fluid Parts of the Blood are carried off, the Patient's Strength is impaired, and an insatiable Thirst, together with continual Watchings, brought on, Nitre, mixed with other proper Medicines, is an Ingredient of the highest Efficacy, and contributes in an uncommon Degree to the Cure; for, among all the safe and genuine Refrigerants appropriated to the Extinction of febrile and inflammatory Heats, we find none in Nature comparable to Nitre. If a preternatural Spissitude of the Humours, which lays a Foundation for Obstructions of the Vessels, and polypose Concretions, is to be resolved, the Effect is by no Medicine to be more effectually produced than by Nitre, which is by no means possessed of a Power of coagulating the human Juices, which some Men of Skill and Learning have asserted, in Opposition to the Evidence of Sense; since a Solution of depurated Nitre with Water, added to a Portion of coagulated and blackish-coloured Blood, renders it both more fluid, and of a finer Colour; for the darkish-black Colour is changed into a beautiful red, approaching that of scarlet. And, as Nitre is possessed of a peculiar Virtue of colliquating the Serum and Lymph, it moistens such Parts as are dry, softens such as are hard, and, by colliquating the tenacious Humours, removes Obstructions.

Besides, such is the Efficacy of Nitre as to prevent saline and tartarous Concretions in the Kidneys, Bladder, and other Parts. This is not only certain from Experience, but, also, confirmed by the Authorities of judicious Physicians. Thus *Renatus, de Medicamentis Chymicis*, affirms, that Patients afflicted with the Stone or Dysury, whether adult, or young, weak, or robust, are greatly relieved by the Use of Nitre; and asserts, that if a due Dose of it is taken every fourteen Days, it is impossible there should ever be any Sand generated in the Kidneys. *Timæus*, also, gives an Account of a certain Man, who, by the long-continued Use of prepared Nitre, was perfectly freed from the Stone. And *Grulingius*, in *Observat. de Calculo*, uses these Words: "It is sufficiently well known, that Sal Prunellæ is an excellent Remedy, both for preventing and curing the "Gravel."

What violent spasmodic and flatulent Symptoms, productive of uncommon Misfortunes through the whole Body, arise from a Stagnation of the Blood in the Vessels of the Stomach and Intestines, is sufficiently obvious from the deplorable Condition of hypochondriac and hysterical Patients. But I frankly confess, that among all the Medicines allotted for these Purposes, I know none so effectual in removing the Spasms, dissolving the Flatulences, and allaying the Severity of the Pains, as Nitre. For which Reason its Use in the spasmodic or convulsive Colic cannot be too highly extolled. If, in consequence of violent Pain and Spasms, Transpiration, Sweat, or a Discharge of the Urine, are obstructed, if the Patient is costive, or if the salutary Excretions of Blood, whether from the hæmorrhoidal Veins, or the Uterus in Child-bed Women, are defective, Nitre, duly exhibited, allays the Pains and Spasms, and, by this means, rendering the small Ducts pervious, restores these salutary Evacuations. But since, by these violent and spasmodic Strictures of the Vessels and Viscera, the free Circulation of the Blood is hindered, and the Humours conveyed to other remote Parts, with a greater Motion and Impetus, by which means the Vessels, distended by too copious a Congestion, are ruptured, and immoderate Effusions of Blood happen, hence Spittings of Blood, immoderate Discharges of Blood from the Nose, Uterus, or hæmorrhoidal Veins, or a Discharge of bloody Urine, draw their Origins.

In Cases of this Nature the most effectual Medicines are those of the nitrous Kind, which, by removing the Spasms, without any subsequent Constriction, restore the free Circulation of the Blood, and stop these immoderate and excessive Evacuations. Among all the Physicians of the preceding Age, none made more frequent Use of Nitre than *Riverius*, who, in stopping Hæmorrhages, exhibited it with uncommon Success. Thus, in an immoderate Flux of the Lochia, he, in *Cent. 1. Obs. 26.* highly extols the Use of Nitre. In an immoderate Discharge of the Menstrues he recommends it, in *Cent. 1. Obs. 94.* In a Spitting of Blood he orders it, in *Cent. 1. Obs. 82.* And in Hæmorrhages, accompanied with malignant Fevers, he prescribes Nitre, in *Cent. 1. Obs. 18.* After *Riverius*, *Mynsicht* always thought the medicinal Virtues of Nitre of the greatest Importance, as is obvious from his *Armamentarium Chymicum*, in which there are various excellent Compositions, the Basis of which is Nitre.

To the Class of neutral Salts, also, belongs Aphronitrum, which was not unknown to the Antients, and especially to *Pliny*. This Substance drops from the Tops of stony Caves, becomes concentered, and is the joint Offspring of that acid universal Salt which the Air contains, and of a gypseo-calcareous Earth. It is a Salt of a somewhat bitterish Taste, but fixed, and capable of sustaining the Force of the Fire, since it is neither fused, takes Fire, nor is evaporated by its means. Large Quantities of this Substance are not only produced in the *Devil's Cave*, near *Jena*, but, also, great abundance of it is often found in subterraneous Passages, especially those cut thro' Rocks. It is certain from Experience, that this Salt, which resembles that of *Epsom*, is not only of an inciding and diuretic, but, also, when exhibited in large Doses, of a cathartic Quality.

As common Salt is highly salutary among Aliments, so its Use is not to be entirely banished from Medicine. It is sufficiently known of what Efficacy it is in rendering the Body soluble, and procuring a Discharge of the Fæces, when added to Clysters, in which one Dram of it proves more effectual than a whole Ounce of any other Aperient. When taken internally, also, in a pretty large Quantity, among Aliments, it renders the Body soluble: For this Purpose the Eating salt Herrings is very proper. Neither are we very certain, whether common Salt is not frequently the principal Ingredient in some mineral and medicinal Springs, celebrated for cathartic Virtues. About forty Years ago, at *Hornhusen*, in the Principality of *Halberstadt*, some medicinal Waters were discovered, to which there was a great Resort of Sick. I, being Physician in Ordinary at these Springs, upon instituting a chymical Analysis of the Waters, found that they contained nothing but common Salt, and another Sal fæsum, like the Arcanum Duplicatum. The former of these in Crystallization retained a cubical, and the latter an hexagonal Figure. But the Weight of the common Salt far exceeded that of the other. Three or four Pints of these Waters, drank, rendered the Body gently soluble, and procured a considerable Number of Stools. They, also, increased a languid Appetite, and, by inciding the thick and viscid Humours of the Stomach, excellently contributed to Digestion, and rendered the Body brisk and agile. They were, also, in a particular manner, possessed of an anthelmintic Virtue, since, along with the Fæces, they evacuated large Quantities of Worms of all Kinds, and especially those called Ascarides. The external Use of them not only dissipated Tumors, but, also, cured the Itch, and inveterate Ulcers. About thirty Years ago, not far from the City of *Stassfurt*, there appeared a medicinal Spring, the Waters of which purged very briskly, and were possessed of almost the same Virtues with the former; and, upon making a chymical Analysis of these Waters, I could obtain nothing but common Salt.

But, as these Springs did not continue for any considerable Time, we now come to consider those, which, for many Ages, have been celebrated for their medicinal Virtues, and which derive their Efficacy principally from common Salt. Of this Kind are the Springs of *Wiesbaden*, long ago mentioned by *Tacitus*; and though, till a few Years ago, these were only used externally, yet their medicinal Use is highly proper and efficacious in Inflammations of the Viscera, Loss of Appetite, Flatulences, and Costiveness. They are, also, highly beneficial in the Cure of those Disorders, which sometimes succeed Abortions, and hard Labours. Having, with great Accuracy, instituted a chymical Analysis of these Waters, which were of themselves highly light and subtle, I could obtain nothing but a genuine common Salt, mixed with a certain alkaline Salt, which not only discovered itself by its Taste, and cubic Crystals, but, also, upon an Admixture of Oil of Vitriol, sent up a copious Smoke, of an highly penetrating Smell, like that commonly arising from Sal Ammoniac.

Among the neutral Salts of the native and salutary Kind, we may, also, class those for the most part contained in all the hot and cold medicinal Springs of *Germany*, and from which these celebrated Waters derive their principal Virtues. The Antients foolishly derived the Virtues of medicinal Springs from the various Earths, Minerals, and Metals they supposed them to contain, without so much as making mention of one of the Prin-

ciples they really contained. But it is still more surprising, that many, even of the Moderns, should still maintain, that cold medicinal Springs are impregnated with a vitriolic Salt, and contain a very strong Acid; whereas it is obvious, that they contain an alkaline Salt, since they produce an Effervescence with all Acids, and afford a neutral Salt. And even many of these Waters, after Evaporation, leave an highly pure Salt; and, when poured into Milk, are so far from coagulating it, that they render it more fluid. And though most of the hot and cold medicinal Springs have, in some Degree, a vitriolic Taste, yet their medicinal Virtues, and Efficacy in the Cure of Diseases, by no means depend upon their vitriolic Salt; for, when they are but a little warmed, they immediately lose this Taste, and no longer acquire a dark-purple Colour from a Mixture of Galls; which is a manifest Proof, that the chalybeate, or vitriolic Parts they contain are not only small in Quantity, but, also, of a volatile Nature.

It is much more certain, that, if we except that spirituous aereo-ethereal, penetrating, and subtle Principle, which is the Cause of the sparkling Bubbles, the principal Elements and Ingredients both of hot and cold medicinal Springs are either fixed alkaline Salts, or those of a neutral Kind, approaching nearly to the Nature of *Glauber's Salt*, or vitriolated Tartar; and it is owing to these Salts, that these Waters are so efficacious in inciding viscid Humours, removing Obstructions, correcting Acidities in the Primæ Viæ, and promoting all the Excretions, especially those by Stool and Urine. It is, therefore, obvious, that the Ingredients of these Springs are of so innocent a Nature, and so divested of every drastic Quality, that their Waters may be drank without any Dread of Danger; so that those Physicians are not only deceived themselves, but, also, grossly impose upon others, who, by specious Arguments, drawn from the Dread of Danger, and the violent Operation, dissuade Patients, capable of having their Lives saved by this very means, from the Use of these salutary Waters. From what has been said, we may perceive how efficacious both neutral and alkaline Salts must be in the Cure of obstinate chronical Disorders, if they are diluted with a sufficient Quantity of Water, used with a due Regimen, and exhibited at proper Seasons.

It is, also, worth our Observation, with respect to the native Salts of mineral Waters, that these Springs, which, besides an alkaline Salt, contain large Quantities of neutral Salts, are far more cathartic than those which only contain a large Quantity of alkaline Salt. And this is the Reason why, among almost all the hot medicinal Springs in *Europe*, there are none more purgative than the *Caroline Waters*; whereas those of *Embsen*, which contain a pure alkaline Salt, are but a very weak and languid Purgative; for the *Caroline Waters*, besides an alkaline and saline earthy Principle, also, contain a neutral Salt, compounded of the alkaline Salt, and the Acid of Sulphur. For from that Salt of the *Caroline Waters*, left after Evaporation, by the Addition of the Powder of Charcoal, and Fusion by Fire, a Liver of Sulphur is obtained; and from this Liver of Sulphur the Tincture of Sulphur may be extracted with Spirit of Wine; and, by boiling it with Water, the Milk of Sulphur is precipitated. This Regeneration of common Sulphur from this Salt, sufficiently demonstrates the Presence of a neutral Salt, formed by the Acid of Vitriol or Sulphur; since, without this Salt, common and inflammable Sulphur could not be regenerated. Besides, this Salt of the *Caroline Springs*, though of a considerably alkaline Taste, is not, however, like other alkaline Salts, colliquated in the open Air; which is owing to the mineral Acid with which it is joined.

Among all the cold medicinal Springs in *Germany*, hardly any are more purgative than those of *Egra*; for five or six Pints of them, drank, sometimes procure six or eight Stools, without any Uneasiness; whereas the same Quantity of those of *Pyrmont* procure only three or four. But the *Selteran* and *Antonian Springs*, as, also, those of *Wildungen*, *Elstera*, and *Buchen* in *Bohemia*, are only faint and languid Purgatives, but rather promote a Discharge of the Urine. This Diversity of Effects in these medicinal Springs is only to be accounted for from the Presence of a larger Quantity of neutral Salt in some, than is to be found in others; for, by a due Boiling and Inspissation of the Waters of *Egra*, a large Quantity of neutral Salt is obtained, half an Ounce of which, exhibited in a proper aqueous Vehicle, purges very briskly; and this Salt is sold very cheap at *Egra*. The Springs of *Schwalbac*, besides their subtle Waters, contain not only an aereal and subtle Principle, but, also, an alkaline Salt, and one of the neutral Kind; for which Reason, they are, also, of a pretty purgative Quality, of which, however, the *Antonian*, *Selteran*, and some other Springs, are destitute, because, by Boiling and Inspissation, they only yield a pure alkaline Salt. Some time ago I discovered an extemporaneous Method of rendering these alkaline Waters sufficiently cathartic, and not only of the same Taste, but, also, of the same Virtues with those of *Egra*, by only adding to them a proper Quantity of the Spirit of Vitriol, which, by incorporating with their alkaline Salt, forms a neutral Salt, resembling vitriolated Tartar.

Not only in *Germany*, but, also, in other Parts of *Europe*, such as *France* and *England*, there are cold medicinal Springs remarkable for their cathartic Virtue, and from which a neutral Salt may be, also, obtained by boiling: Among these the most celebrated in *England* are those at *Epsom*, which, by means of the bitterish Sal falfum they contain, are an excellent Purgative. This Circumstance prompted the celebrated Dr. *Grew* to obtain by boiling, from these Waters, a neutral Salt of a bitterish Taste, and a purgative Quality. This Gentleman, also, wrote a small Treatise on the Nature and Virtues of that Salt. Some time ago I procured some of this Salt genuine and unadulterated from *England*, and was told, that a Pint of the Water hardly yielded half a Dram of the Salt. I, also, mixed this Salt with the Powder of Charcoal, and fused it; upon which I obtained a sulphureous Mass of a purple Colour, and which bore a great Resemblance to the Liver of Sulphur.

Dr. *Grew* informs us, that this Salt, when genuine, is never destitute of a cathartic Quality. 'Tis said to be an efficacious Remedy in many violent Distempers, without producing any other Disorder, if it is duly exhibited. 'Tis the mildest of almost all other Purgatives, does not throw the Humours into Commotions, and never produces Sickness, Deliquiums, and Gripes. The Use of this Salt is recommended in Disorders of the Stomach, such as Cardialgias, immoderate Vomiting, and hypochondriacal Disorders arising from an hot Cause. 'Tis, also, commended in Diseases of the Intestines and lower Belly, in the Colic, the Gravel, Disorders arising from Worms, an Heat and Suppression of Urine, the Jaundice, and the hysteric Passion. 'Tis, besides, highly beneficial in Disorders of the Head, and successfully exhibited in Cephalalgias, Vertigos, Deliriums, and Inflammations of the Eyes. It may be exhibited in Spring-water, or any other pure Water; as, also, in Barley-water, or Water-gruel, or Whey: It may be, also, boiled a little in Water, and season'd with Mace; half an Ounce, or a whole Ounce, of the Salt may be added to two or three Pints of the Water.

Some Years ago, when I resided at the *Toplitz* Springs, in order to investigate their Natures, upon making an accurate chymical Examination of the *Sedlitz* Waters, about two Miles distant from *Toplitz*, I obtained a Salt of a bitterish Taste, and cathartic Quality, in every respect like that of *Epsom*, only with this Difference, that one Pint of the Water by Evaporation yielded a Dram and half of the Salt: The Water from which this Salt is obtain'd is so bitter, that the Tongue can hardly endure it; for it is far bitterer than the Salt itself. Six Drams of the Salt purge briskly, and the same Effect is produced by four Pints of the Water. And, as I lately had a very considerable Quantity of the *Caroline* Salt sent me by Mr. *Gorelli*, I fused some Part of it, with an equal Quantity of the Powder of Charcoal, in an ignited Crucible; by which means I obtained a Liver of Sulphur, of a disagreeable sulphureous Smell, and a purple Colour; from which, by means of highly rectified Spirit of Wine, I extracted the true Tincture of Sulphur of a golden Colour.

Some time ago there was, also, inscribed to Dr. *Gorelli*, an epistolary Dissertation concerning the lately discover'd cathartic Salt in the Mines of *Hungary*, by Dr. *Herman*, who, in the subterraneous Passages of *Newhausel*, found a white, bitterish, and highly tender Salt, adhering to the Sides of the Rocks, in Form and Taste like the cathartic *Epsom* Salt, and which, when taken in a pretty large Dose, procured several Stools. He afterwards, also, found another Salt of the same Nature and Virtues, white like Snow, and of a bitterish Taste, adhering to the Sides of the Passages in the largest of the Mines. And since with this Salt, by means of the Salt of Tartar, and Powder of Charcoal, he produced a true mineral Sulphur, 'tis not to be doubted but it is of the same Nature with the *Epsom* or *Sedlitz* Salts. The Generation of this cathartic mineral Salt, which is partly found moist in the Springs, and partly dry, adhering to the Rocks, seems to agree pretty much with that of the Aphronitrum, which is coagulated by the sulphureous Principle of the Air, in stony, calcareous, and gypseous Earth, as its Matrix, and is found in large Quantities in the Cavities of the Mountains about *Jena*; and with respect to its Form, Taste, and Virtue, both in the Fire, and in the human Body, does not differ from the *Epsom*, *Sedlitz*, and *Hungarian* Salts, but only in this, that, being of the native fossil Kind, it is generated of a sulphureous and subterraneous Acid adhering to alkaline Earths, which in those Places are found in great abundance. This is, also, obvious, because from the *Epsom*, *Sedlitz*, and *Hungarian* Salts, a certain stony Earth is partly precipitated by an Alkali, and may be partly obtained by a second Solution and Depuration of this Salt with Water.

From what has been said, we may be convinced of the Efficacy of native neutral Salts, which are partly moist, and partly dry, in the Cure of Diseases; and that, when taken in large Doses, they are, besides other Virtues, possessed of a

cathartic Quality, by means of which they powerfully, but safely and easily, eliminate the Fæces. But we now pass from the native neutral Salts, to those of the pharmaceutic and chymical Kind, with an Intention to inquire, whether the same cathartic and medicinal Qualities are, also, to be found in them. That chymical Salt, then, which is prepared of the Acid of mineral Sulphur mixed with an alkaline Salt, approaches very nearly to the Nature of that neutral Salt, which the medicinal Springs contain; for which Reason similar Effects may be justly expected from it. But as that specific Acid, which is the principal Ingredient in mineral Sulphur, is, also, contain'd in other Minerals, such as Vitriol and Alum, so there are various Methods of preparing this Salt, in each of which its Virtues and Efficacy remain the same; for there is one Salt prepared of Nitre and Vitriol, and consequently may be obtain'd from the Residuum of Aqua-fortis, and is call'd, *Vitriolated Nitre*, which *Mynsicht* call'd *The Arcanum Duplicatum*, because it was formed of these two Salts, and formerly look'd upon as a Secret at the Court of *Gottorp*, since *Frederic* Prince of *Holstein* purchased the Method of preparing it at the Price of five hundred Imperials. But this Salt may be prepared in a far more compendious Method, if, after the Nitre is reduced to an Alkali, or fixed, the Spirit of Vitriol is poured upon it Drop by Drop, to the just Point of Saturation, that is, till it is rendered a neutral Salt. And certainly this Method is far safer than the former, because the Vitriol, which is an Ingredient in the Aqua-fortis, often partakes of Copper, which must be duly separated by repeated Calcinations, otherwise the *Arcanum Duplicatum*, if more of it than one Scruple is exhibited, will excite a Vomiting.

But because the Salt of Tartar fix'd, and duly calcin'd, differs very little in its Nature and Virtues from fix'd Nitre, some are of Opinion, that the same Remedy, which in the Shops is call'd *Vitriolated Tartar*, may be prepared of Salt of Tartar, and Spirit of Vitriol; and *Tachenius* thinks, that it may be made of Vitriol, and an alkaline Salt. And since the Spirit extracted from mineral Sulphur is not in reality different from Spirit of Vitriol, and since in Antimony there is a large Quantity of pure mineral Sulphur, so the Chymists know how to prepare the *Arcanum Duplicatum*, either of Nitre and Sulphur, or of Nitre and Antimony. The former Preparation they call *Sal Polychrestum*, which they make by a previous Calcination of equal Portions of Nitre and Sulphur in a Crucible. But the latter Medicinè is obtain'd from diaphoretic Antimony, made with three Parts of Nitre, and one Part of Antimony, by dissolving and crystallizing the Nitre. And this Preparation is in the Shops generally call'd *Antimoniated Nitre*; for, if Nitre is burned with Sulphur, an highly volatile Acid is exhaled from the Nitre; and the more fixed Acid of the Sulphur, by uniting itself more closely with the alkaline Salt of the Nitre, constitutes a neutral Salt of a somewhat bitterish Taste, and of a detergent and laxative Quality. Besides, as the Acid of Alum does not differ from the Acid of Vitriol, and that of Sulphur, but is of a like Nature and Quality, hence the same Medicine may be commodiously prepared of Alum with a fixed alkaline Salt, well mixed and united with Salt of Tartar, or Pot-ash.

From what has been said, we may justly infer, that the *Arcanum Duplicatum*, prepared of the Residuum of Aqua-fortis, Vitriolated Nitre, prepared of fixed Nitre, and the Spirit of Vitriol, Vitriolated Tartar, antimoniated Nitre, *Sal Polychrestum*, and the purgative Salt of Alum, invented by *Keilingsius*, a Physician of *Isleben*, and described by *Hoffman* in his *Glavis Schroederiana*, because their Ingredients are not of different Natures, are therefore of the same medicinal Virtues; and that, in the Cure of Diseases, the one may very properly be used as a Succedaneum to another; for all of these, exhibited in a moderate Dose in some proper Vehicle, incide and dissolve viscid Humours, and, by stimulating the excretory Duets, not only preserve the Body soluble, but, also, promote a Discharge of the Urine: But when they are exhibited in a larger Dose, half an Ounce for Instance, or more, in a due Quantity of some aqueous Vehicle, they operate in the same manner with cold medicinal Waters, by procuring five or six Stools. For this Reason, when there is a Necessity for a Purgative, which operates without producing any Ebullition of the Blood, any spasmodic Contraction of the intestinal Fibres, any Virulence or Exacerbation of the vital Motions, these Salts are commodiously exhibited in a pretty liberal Dose. But, in a smaller Dose, any one of them mix'd with Nitre, Salt of Tartar, or Crabs-eyes, affords an aperient and detergent Salt, of singular Efficacy in Medicine, and which may with uncommon Success be exhibited in all intermittent Fevers, hypochondriacal Disorders, the Stone, the Asthma, the flatulent Colic, Costiveness, a Jaundice, and a Cachexy.

The *Sal Mirabile* of *Glauber*, by him so much commended, not only for its Use in chymical Preparations, but, also, for its

its medicinal Virtues, of a neutral Nature, and compounded of a strong Acid of Vitriol, and common Salt, or Sal Gemmae, whilst the penetrating Acid of Vitriol attacks the alkaline and earthy Salt, and Principle of which the common Salt consists, and, by uniting itself with it, constitutes a neutral Salt, whilst the acid Spirit of Salt is evaporated. This Salt, which is of a considerably bitterish Taste, and an excellent stomachic and aperient Medicine, is purgative, when exhibited in pretty large Doses. This Salt was by Glauber call'd *Mirabile*, or *Wonderful*, because, if equal Quantities of it, and the Filings of any Metal, are mix'd with half the Quantity of Powder of Charcoal, and treated with a fusory Fire, he imagin'd, that, by this means, Sulphur might be extracted from any Metal, whilst the dephlegmated Spirit of Wine, poured upon it, extracts a sulphureous Tincture. But that Glauber err'd in this, is sufficiently obvious, because, without the Addition of any Metal, a sulphureous Mass like the Liver of Sulphur, from which a true mineral Sulphur may be extracted, may be obtain'd from this Salt alone, and the Powder of Charcoal, if a small Quantity of alkaline Salt is only added, as Stahl has shewn by various Experiments; for by this means the Sulphur, which is compounded of the peculiar Acid contain'd in the Sulphur, and a phlogistic combustible Principle, is only regenerated; as Mr. Boyle obtained a perfect common Sulphur from the Oils of Vitriol and Turpentine; and I myself obtain'd the same by Distillation, from Opium, and Oil of Vitriol.

But since Glauber's Salt consists of the same Ingredients with the above-mentioned neutral Salts, such as the Arcanum Duplicatum, and others of a like Kind, that is, of the Acid of Sulphur and Vitriol, and an alkaline fixed Salt, like that contained in common Salt, (for by Spirit of Salt, and Salt of Tartar, a perfect common Salt is formed) hence we may justly conclude, that artificial Sulphur may be produced from all these Salts, treated with Salt of Tartar, and an Addition of the Powder of Charcoal, for the sake of Fusion; and as the same Thing happens in the *Epsom* Salt, that of *Egra*, that of *Sedlitz*, the native Salt of *Hungary*, and the Salt obtained from the *Caroline Springs*, hence we may justly infer, that all these Salts, both natural and artificial, as they are of the same Nature, and consist of the same Ingredients, must nearly agree in their Effects, and Medicinal Virtues.

We now come to consider that neutral Salt, which is sold at a low Price, for *Epsom* Salt; and is imported to *Germany* from *England*, in great Quantities. That this Medicine is no genuine Extract from the *Epsom* Waters, we may readily conclude from the small Quantity of Salt these Waters contain, and the low Price at which the spurious Salt is sold. From repeated Experience, however, I am so far from condemning this Salt, that I extol and commend it for its aperient and purgative Qualities. This Salt is artificially produced, and not unlike that of Glauber, which is, also, some times sold for *Epsom* Salt; but because Glauber's Salt is sold at a great Price, in comparison of that of *Epsom* Salt, 'tis not to be doubted but the latter is prepared of cheaper Ingredients than the former, though in the same manner; for, as *Lentilius*, in *Miscell. Nat. Curios. Cent. 3. and 4.* justly observes, some of the Chymists in *England* prepare *Epsom* Salt of the Caput Mortuum of Vitriol, or Vitriol well calcin'd, and the Lixivium remaining in the Boiling of Salt, and which, besides common Salt, also, contains an earthy alkaline Salt. This Salt I treated with a calcining Fire, and the Addition of Powder of Charcoal; by which means it was not fused, but, by means of a brisker Fire, almost the Whole of it was evaporated, and filled the Chamber with a fetid Vapour, like that of common Sulphur. But, by an Addition of Salt of Tartar, I obtained a Liver of Sulphur from it. From which Circumstance 'tis certain, that this Salt is generated of the Acid of Sulphur contained in the Vitriol joined with the Earth of the Alkaline, or Sea Salt. See SAL.

Having treated of those Salts which are generated of the Acid of Sulphur, and an alkaline Salt, we now come to consider the Nature of some other Salts used in Medicine: Among these are Sal Ammoniac, which is generated of the volatile Salt of Urine, or Soot, and Sea Salt; and which, by the Addition of the volatile urinous Principle, is of a far more acrimonious and penetrating Nature, and, for that Reason, highly efficacious in attenuating and resolving viscid and tenacious Humours in the Primæ Viæ. And *Muys*, a celebrated *Dutch* Physician, in a particular Treatise, affirms, That Intermittent Fevers of all Kinds may be infallibly cured by this Salt, if it is exhibited in due Quantities, and at proper Times. But I am of Opinion, that this Remedy is far better suited to robust Patients, such as the *Dutch* generally are, than to Persons of delicate and tender Constitutions.

Of the same Nature and Virtues is the digestive Salt of *Sylvius*, which that Physician frequently used, in order to destroy viscid Crudities, quicken the Appetite, and remove Intermittent Fe-

vers: And this Salt is prepared of the Residuum of the Spirit of Sal Ammoniac prepared with Salt of Tartar, by Elixivation with Water. 'Tis, also, certain from Experience, that these Salts, when exhibited in a pretty large Dose, are highly purgative: But I would advise Practitioners, never to prescribe large Doses of them; since, unless their acrid Spicula are, in some measure, sheathed up by viscid and tenacious Particles in the Body, and unless they are diluted with a sufficient Quantity of Liquor, they may easily destroy the villous Contexture of the Glands and Intestines. There are, also, used in Medicine neutral Salts prepared of Tartar, as, also, of Vinegar and Salts, or alkaline Substances. Of this Kind is the Tartarus Tartaratus, the *Sal Essentielle*, or the Terra Foliate Tartari, a Solution of Crabs-eyes, the Salt of Coral, and of Mother of Pearl; all which Salts were in former Times highly esteemed, especially by *Tachenius*, who sold the Terra Foliate Tartari, mixed with a Solution of Crabs-eyes, for the fixed Salt of Vipers, by which means he acquired immense Riches. The Salts of this Kind have this Advantage peculiar to themselves, that, in consequence of the great Subtlety of their saline Parts, they penetrate more effectually into the Mass of Blood than other Salts, and powerfully evacuate the peccant Humours by Urine.

We have already shewn, that almost all the neutral Salts, especially those of a bitterish Taste, are possessed of a very considerable and powerful purgative Quality; and we affirm, that they produce this Effect by stimulating the nervous and muscular Coats of the Intestines, and by that means increasing their peristaltic Motion. It may by some be objected, that by many Medicines not only destitute of a saline and bitterish Taste, but, also, entirely insipid, the Intestines are, also, powerfully stimulated to a Discharge of their Contents, as well as by these Salts, as we observe in the *Magnesia Alba*, an highly fine, insipid, and whitish Powder, apparently destitute of every stimulating Quality: But the *Magnesia Alba* does not produce this Effect, in consequence of the earthy and alkaline Principle of which it consists; but because this Medicine not only produces a violent Effervescence with any Acid, but is dissolved by it, and in the Solution acquires a more saline bitterish Taste than that of any other earthy Alkali, whether Crabs-eyes, Shells, or Egg-shells. From this Circumstance we may conclude, that the *Magnesia Alba* only proves purgative, when, being dissolved by the Acid in the Primæ Viæ, it is converted into a neutral Salt; and this is confirmed by Experience, since hypochondriac Patients are excellently purged by it; but not those whose Stomachs are full of a thick and viscid Phlegm.

From what has been said, I think 'tis obvious, that neutral Salts are of great Efficacy in the Cure of Diseases, possessed of an aperient and detergent Quality, capable of promoting all the Excretions, and, when exhibited in large Doses, of a cathartic Quality. 'Tis, also, sufficiently obvious, that Salts of this Kind are, of all others, the most salutary, and so friendly to Nature, that the Physician can neither practise successfully without them, nor easily produce any bad Effects by using them. But I foresee, that many Objections may be made to this Doctrine, since both Experience, and accurate Observation, convince us, that those Medicines which are highly acid, as, also, volatile, urinous, and fixed alkaline Remedies, are so far from being unsalutary and unfriendly to the Constitution, that they may be said to be the most safe of any. But to this I answer, that neither acid nor alkaline Medicines, whether of the fix'd or volatile Kind, ever produce a salutary Effect, unless by the internal Disposition of the Humours, especially those lodged in the Primæ Viæ, they are converted into a neutral Salt, and by that means render'd friendly to the solid as well as fluid Parts of the human Body.

For this Reason, when a large Quantity of Bile, especially of an alkaline and oleous Kind, is collected, and becomes stagnant, in the Flexure of the Duodenum, strongly affects the nervous System, and by that means often produces bilious Vomiting, Nausea, Loss of Appetite, hectic Heats, Cephalalgias, and an insatiable Thirst, then acidulated Liquors, such as Julaps, Refrigerants, or other acid mineral Spirits edulcorated, are of singular Service. Besides, when an intense febrile Heat, arising from a violent intestine Motion of the sulphureous Parts of the Blood, by destroying its temperate and due Texture, exhausts the Body, and impairs the Strength, Acids are, in such Cases, more beneficial than neutral Salts, alkaline Substances, or any other Remedies, because they are capable of fixing and subduing the sulphureous Particles, by whose Motion the Heat is produced. In malignant Disorders arising from a Putrefaction of the Humours, more Relief is to be expected from Acids than from any other Remedies, because a Putrefaction not only generates an Alkali, but, also, proceeds from a large Quantity of it: And, when this Alkali is corrected and subdued by an Acid, the Putrefaction is forthwith stoppt. In inveterate Scurvies, and arthritic Disorders, large Quantities of Salts are generated in the Mass of Blood, which approach more nearly

to an alkaline and lixivious, than to a neutral Nature. Hence the Blood of such Persons, when taken from the Veins, appears thin and florid, and their Urine is, for the most part, highly red, saline, and lixivious. And Experience teaches us, that, in such Cases, more happy Effects are often produced by temperate Acids, than by alkaline, urinous, and volatile Medicines, or those of an hot and spirituous Nature.

Those Medicines which abound with an alkaline Salt, whether of the fix'd or volatile Kind, are by no means to be promiscuously and indiscriminately used, tho' they are of singular Service, when prudently exhibited; for when a Redundance of acid Humours is lodged in the Primæ Viæ, and excites violent Symptoms, as we observe in hypochondriac, hysteric, and melancholic Patients, such as Corrosions of the Stomach and Intestines, Anxieties, Inflations of the Stomach attended with a Cardialgia, Coughs accompanied with Pain of the Stomach, Cephalalgias, excessive Costiveness, or preternatural Looseness, accompanied with a Tenesmus, in these Cases, certainly, earthy Alkalines, and especially Crabs-eyes, prepared Shells, or Oil of Tartar *per Deliquium* alone, will produce more happy Effects, than any other Medicines, because by absorbing the Acid they convert it into a neutral Salt, which is afterwards easily carried through the excretory Ducts, without exciting any violent Symptom. But if there is rather a Defect than a Redundance of Acid in the Primæ Viæ, and if these are full of viscid and tenacious Humours, alkaline earthy Substances, taken in large Quantities, are highly prejudicial; for since they are not dissolved, they rather, by uniting with the earthy and slimy Particles, augment the Quantity of the Phlegm, and by that means destroy the Appetite, load the Stomach, obstruct the Mouths of the lacteal Vessels, and render the Patient costive. *Hoffman.*

NEUTHA. A Pellicle covering the Eyes, or Ears, or the whole Face of a Child in the Birth.

NHAMBÍ, *Brasilensis*, Marggr. An acrimonious Plant with a naked Flower, and a ligneous, geniculated Stalk, which creeps like Purslane, and takes Root from Place to Place by its Fibres: The Leaves, chewed, have a pungent Taste, like Mustard, or Nasturtium.

The Leaves, or Seeds, rubbed upon the Top of a Bubo, speedily remove it. An Ounce and an half of the Seeds, drank in Wine, are an excellent Remedy against the Wounds inflicted by any venomous Animals whatever; or the Decoction of the like Quantity of its Seeds may be drank with an equal Quantity of Wine. The Herb itself is generally boiled with Fish, and is very proper for that Purpose. *Raii Hist. Plant.*

NHANDU seu *Piper caudatum*, Marcg. Pison.

This is a small Shrub, which is produced in some Woods of *Brasil*, and bears a Species of Karkins, full of round blackish Seeds, as large as those of the Poppy, and of an acrid Taste like that of the best Oriental Pepper.

The Leaves of this Plant cure Ulcers of the Legs: Its Root is beneficial in Apostems; and, as both are very strong, they are proper for Baths in cold Disorders, even after they are dried, and kept for a considerable Time. A Decoction of the Roots and Suckers dissolves and incises thick and viscid Humours, and cures a Dropsy of the Feet. *Raii Hist. Plant.*

NHUA *Brasilensis*, Marcgrav. L. 3. C. 4. Otherwise called *Prunifera Brasilensis, fructu rotundo albescens.*

When the Fruit is ripe, it falls off, is gathered and eaten by the Inhabitants of those Countries in which the Tree is produced; but I find no medicinal Virtues ascribed to it. *Raii Hist. Plant.*

NICARION. The Name of a Collyrium, described by *Aetius, Tetrabib. 2. Serm. 4. Cap. 113.*

NICCOLUS. The Name of a Gem, to which some superstitious Virtues are ascribed. *Castellus* from *Chioccus*.

NICEPHORI PASTILLUS. The Name of a Troche described by *N. Myrepsus, Sect. 41. Cap. 29.*

NICODEMI OLEUM. The Oil of *Nicodemus*.

Take of the Seeds or Tops of St. John's-wort, and old Turpentine, each one Pound; Litharge, six Drams; Hepatic, Aloes, and Tutty, of each three Drams; of Saffron, one Ounce, of White-wine, four Pounds; and of old Oil, two Pounds: Let them digest together in the Sun for a sufficient time; then boil, and strain off the Oil. *Old College Dispensatory.*

NICOLAI EMPLASTRUM. The Name of a Plaister described by *Paulus Aegineta, Lib. 7. Cap. 17.*

NICOLAUS MYREPSUS. This Author, says *Dr. Freind*, was the last of the Greek Writers, if we may reckon such an impure Style, as he uses, Greek; who, indeed, has taken the Pains to collect together, by way of Dispensatory, the several compound Medicines, which we find dispersed in the Greek and Arabian Writers. It is very certain, that *Myrepsus* compiled this Work before 1300. for not only *Petrus de Abano*, the famous Conciliator, who died in 1316. but *M. Sylvaticus* and *F. Pedemontanus*, both Physicians to Robert King of Sicily, and who

wrote very early in his Reign, which began in 1310. by Name refer to several Receipts, which we find in him.

The Works of this Author, which relate to the Composition of Medicines, and are divided into forty-eight Sections, were never published in Greek; but were translated into Latin, and illustrated with Notes, by *Leonardus Fuchsius*. This Translation, though none of the most correct, has, however, undergone several Editions; one, for Instance, at *Basil*, in the Year 1549. *Fol.* another at *Lyons*, in 1550. *Octav.* another at *Frankfort*, in 1626. *Octav.* another among the *Medica Artis Principes* of *Stephens*, in 1567. *Fol.* and another at *Noremberg*, in 1658. *Octav.* with a Preface, by *Johannes Hartmannus Beyerus*, which is the best Edition of all hitherto extant. *Fabr. Bibl. Græc.*

NICON, or NINORS, Barbarous Names for Hellebore. *Castellus.*

NICOTIANA.

The Characters are;

The Root is annual; the Calyx is either long and tubulous, and so divided into five long and acute Segments, or else short and wide, and then divided into five Segments, which are obtuse. The Flower is monopetalous, Funnel-shaped, and cut either into five deep and acute Segments, which expand like a Star, or into five short and obtuse ones; and is furnished with five Stamina. The Fruit is membranaceous, oblong, or roundish, and divided by an Interclosure into two Capsulæ, or Cells.

Boerhaave mentions four Species of this Plant; which are,

1. *Nicotiana*; major; latifolia. *C. B. P.* 169. *Tourn. Inst.* 117. *Boerb. Ind. ali.* 230. *Nicotiana*, *Petum*, *Tabacum*. *Offic. Nicotiana major, five Tabacum majus.* *J. B.* 3. 629. *Tabacco latifolium.* *Park. Parad.* 363. *Raii Hist.* 1. 717. *Tabacum, Nicotiana.* *Chab.* 526. *Petum five Tabacum.* *Pison.* 206. *Hyoscyamus Peruvianus.* *Ger.* 285. *Emac.* 357. **TOBACCO.** *Dale.*

Tobacco has very large, broad, softish, and clammy green Leaves, two Feet long, and sharp-pointed at the Ends; the Stalk is about as thick as one's Thumb, round, and somewhat hairy, beset alternately with the like, but smaller, Leaves, without Footstalks. The Flowers grow on the Tops of the Stalks, of a pale-red Colour, in Shape of long hollow Tubes, with the Brims spread out into five Segments. The Seed-vessels are long and round-pointed, divided into two Parts, full of a great Number of very small brown Seeds. It is sown in the Spring, and flowers in July and August. The Leaves are used.

Much has been said upon this Plant, by several Authors, particular Treatises having been wrote about it. The green Leaves are used only in Oils and Ointments, and are accounted good for Wounds, Ulcers, Inflammations, Tumors, Piles, and the King's Evil. The dried Leaves are a strong Emetic, but ought to be used with the utmost Caution, by reason of their violent Working; chewed in the Mouth, it evacuates a great deal of Phlegm, as well as smoked in a Pipe, in which vast Quantities are consumed, the greatest Part by way of Amusement, though some commend it as an Helper of Digestion. Many extol it as a Preservative against the Plague; but *Rivinus* says, that, in the Plague of *Leipsic*, several died, who were great Smokers of Tobacco. The distilled Oil is of a poisonous Nature; a Drop of it, taken inwardly, will destroy a Cat: It is sometimes put into an hollow Tooth, to cure the Tooth-ach. A Decoction of the Leaves helps the Itch, and other cutaneous Distempers; the Dust destroys Fleas, Lice, and other troublesome Vermin, the Dealers in Tobacco being seldom troubled with them. *Miller's Bot. Off.*

Tobacco, beat well with Vinegar or Brandy, into a Mash, and applied in a Linen Rag on the Stomach, occasions strong Vomiting, and has sometimes very good Effects in removing hard Tumors of the Hypochondria. I know two Instances of its making a complete Cure: One is, of an old Man, who, by sleeping in the open Air, while the Serenadas, or Night-dews, fell, was taken, in the *West-Indies*, with a Numbness of his whole Body, which soon was followed with Purging and Vomiting; and these going off, he had all the Symptoms of Jaundice, and Hardness, and Pain, under the short Ribs of the Left Side. The Pain went off in a few Days, but the Tumor increased. After he had used Variety of Medicines, for five Years, to remove this Disease, a Sea Surgeon applied a Poulrice of Tobacco, disguised with Green Tea, Sugar, and Cochineal, upon the Epigastrium and Hypochondria. After this Application had been made four or five Hours, he vomited a great deal of purulent Matter. When the Poulrice was taken away, the Vomiting ceased. He continued to apply this Mash once a Day for a Month, and was perfectly cured. The other Example is of a Boy, who was cured, much in the same manner, of an hard indolent Tumor of the Left Hypochondrium.

The Man had six Ounces of Tobacco in his Poulrice; the Boy had only one; and the Quantity must always be regulated by the Age of the Patient. *Mr. John Stedman*, from the *Medical Essays*, Vol. 2.

As *Nicolaus Monardus*, in his *Simpl. Med. Histor. Cap. 14.* has given a fuller and more ample Account of Tobacco, than any other Botanist, we shall, as briefly as possible, exhibit his Sentiments, with respect to this Plant.

Its true Name, therefore, among the *Indians*, is *Picelt*; for it was called Tobacco, by the *Spaniards*, from a certain Island of that Name, in which it is produced in great Quantities.

It rises to a great Height, so as sometimes to equal the *Malus Assyria*, commonly called the Lemon-tree: Its Trunk is straight, with many large Ramifications springing out from it: Its Leaf is almost like that of the *Malus Assyria*, but larger, of a faint-green Colour, like that of the Leaf of the sharp-pointed Dock; and somewhat hairy, as the whole Plant itself is: On the Extremities of its Branches it bears a Flower, resembling a small Bell, of a whitish Colour, and in the Middle somewhat inclined to that of a Purple: When this Flower falls off, it is succeeded by a Fruit, resembling the Heads of the black Poppy, and in which a small Seed, of a blackish and cineritious Colour, is contained. Its Root is divided into many Branches, is of a woody Contexture within, of the Colour of Saffron, and of a bitter Taste: Its Bark is easily taken off; but we know of no medicinal Virtues ascribed to it.

It grows in most Parts of the *Indies*, but thrives best in moist and shady Places, where the Soil is light and uncultivated: It may be planted at all Seasons of the Year; but, when it appears above-ground, is to be carefully preserved from Cold: It is a great Ornament to Walls, because, like the Citron-tree, it retains its Verdure through the whole Year.

This Plant was formerly used by the *Indians*, especially the Inhabitants of *New Spain*, for curing Wounds; and first, when it was imported into *Spain*, it was more used for adorning Gardens, than admired for its medicinal Virtues: But now the Scene is changed, and the Plant become far more famous on the latter than on the former Account; for it is of an heating, resolvent, cleansing, and somewhat astringent Virtue.

Its Leaves, if applied warm, and frequently renewed, are an efficacious Remedy in Cephalalgias, and Hemicranias arising from a cold Cause, or Flatulencies, as, also, in a Stiffness of the Neck, or Tetanus, and in Pains of the whole Body, arising from the same Causes. Some anoint the Part affected with Oil of Orange-flowers, before the Application of these Leaves.

By cleansing the Teeth affected with a Linen Cloth, dipt in the Juice of Tobacco, and wrapping up the Leaf, in form of a Peel, to be put into their Cavities, Tooth-achs are not only removed, but, also, the spreading of the Corruption prevented.

A Decoction of the Leaves with Water, and a Linctus prepared of this Decoction, are beneficial in Disorders of the Breast, inveterate Coughs, Asthmas, and other Disorders arising from a cold Cause. A Syrup prepared of Sugar, and a Decoction of the Leaves, promotes the Expectoration of putrid Humours: The Smoke, also, of Tobacco is sometimes beneficial to asthmatic Patients, but necessary Evacuations must be previously made, if the State of the Patients will admit of it.

The Leaves, if heated under the Ashes, and frequently applied to the Stomach, before the Ashes are wiped off, are beneficial to those who labour under Chilness and Flatulences. Others, after anointing their Hands with Oil, rub the Leaves between them, and apply them to the Region of the Stomach, for the same Purpose. The Leaves triturated with a little Vinegar, and applied for a considerable time, are beneficial in Obstructions and Scirrhuses of the Stomach and Spleen; but over these Leaves there is a Linen Cloth dipt in the warm Juice of Tobacco, to be daily applied. If Tobacco cannot be had, Snuff may be mixed with any common aperient Ointment, with which the Part obstructed, or swelled, is to be for a considerable time anointed.

The *Indian Women* greatly extol Tobacco in Crudities of the Stomach, whether in Children or Adults; for they first anoint the Abdomen with Lamp-oil, and, heating the Leaves under the Ashes, apply some of them to the Region of the Stomach, and others to the Back, in that Part most contiguous to the Stomach; by which means the Crudities are concocted, and the Body rendered soluble, if the Application is repeated, as often as is necessary. A small Quantity of the Juice of Tobacco, boiled with Sugar, expels flat and round Worms from the Intestines. But, in this Case, the Leaves, when triturated, are to be applied to the Navel, and a Clyster is to be injected.

The Leaves, when heated in the manner already mention'd, and applied as hot as the Patient can possibly bear, afford great Relief in nephritic and flatulent Pains: They are, also, a proper Ingredient in Clysters, Fomentations, and Plaisters, designed for certain Purposes.

When render'd sufficiently hot, and applied to the Navel, and Region of the Uterus, these Leaves afford present Relief in Suffocations of the Matrix; and, if a Deliquium should ensue, the Smoke of them is to be blown into the Nostrils; by which means the Patient will be blown with recovered. This Piece of Practice is so common among the *Indian Women*, that, for this Purpose, they preserve and highly esteem Leaves of Tobacco. Some of them, before the Application of these Leaves, apply fragrant Substances to the Navel, the most considerable of which are Tacamahac, Oil of liquid Amber, Balm of Gilead, Carana, or a Plaister made of all these, and wore constantly on the Navel.

In Pains of the Joints, arising from cold Humours; or, at least, such as are not very hot, the warm Leaves of Tobacco are efficaciously applied, or a Linen Cloth dipt in the warm Juice; for these resolve and digest the Humours: For which Reason the warm Leaves are successfully applied to cedematous Tumors, previously washed with warm Tobacco-juice.

It is certain from Experience, that Chilblanes are cured by rubbing them three or four times with Tobacco-leaves, and then washing the Hands or Feet with warm Water and Salt.

Some have found from Experience, that they resist the Poison with which the Canibals tinge their Arrows; whereas, before, it was customary to sprinkle Sublimate in the Wounds inflicted by that means. For this Purpose, the expressed Juice is to be poured into the Wounds, and the triturated Leaves afterwards applied.

When applied to poisonous and pestilential Carbuncles, the Leaves induce a Crust, and promote a Cure: They are, also, a present Remedy for the Stings and Bites of poisonous Animals.

When applied to recent Wounds, they stop the Effusion of Blood, and conglutinate them; but, if the Wounds are considerably large, their Lips are to be brought into Contact; after which the Juice of Tobacco is to be poured upon them, and the triturated Leaves applied, and secured upon the Wounds: On the remaining Days, the same Method of Dressing is to be used, and a proper Regimen observed.

Nicolaus Monardus informs us, that he knew a Man afflicted with Ulcers of the Nose, which discharged a Sanies seemingly of a contagious Quality: By his Advice, the Patient dropt Tobacco-juice into his Nostrils; after the second Instillation of this Liquor, a large Quantity of Worms fell out of his Nostrils, then a smaller Quantity, and, a few Days after, the Ulcer was cured, though the corroded Parts were not restored. Rubbing Impetigos, and scald Heads, with the Leaves, also, proves beneficial. *Nicol. Monardus*.

Smoking Tobacco produces a Discharge of Phlegm, and dries Catarrhs: Hence, by evacuating the Glands of the Mouth and Fauces, it proves beneficial in a Tooth-ach, and Stuffing of the Head; but, as it is heating and drying, it is so far from being useful, that it is rather hurtful, to Persons of hot, bilious, and lean Constitutions; which, says *Mr. Ray*, I myself have experienced, except when afflicted with a Tooth-ach, or when the Fauces were turgid with Humours.

Some condemn Smoking: Thus *Caspar Hoffman* informs us, that he was told by the Soldiers, who had lived for some time in *Holland*, that they saw the internal Parts of the Cranium of Malefactors black, when their Heads were dissected; and that he was informed by a certain Soldier, who served in the last War against *Bohemia*, that all the *Englishmen* slain had their Craniums in a like Condition, because the *Hollanders* and *English* are much addicted to the Smoking of Tobacco. The same, says *Mr. Ray*, was asserted to me by *Mr. Boucharet*, an Apothecary of *London*.

But if these Facts were true, which, however, I have some Reason to doubt, yet it does not hence follow, that Smoking is prejudicial; since there are many Persons, who have smoked copiously every Day, for many Years, remain sound and healthy to an extreme old Age, without ever sustaining any Injury, but rather reaping Advantage, from that Practice; for, in some, it strengthens the Stomach, and promotes the Concoction of the Aliments; in others it renders the Body gently soluble; and others use it for the sake of Amusement, without either Injury or Benefit.

According to *Hernandez*, taking Snuff renders the Person, who uses it, less sensible of Blows, or any kind of Punishment, augments the Courage, and makes Persons more fit for enduring Labour and Fatigue: But it is not to be used to Excess.

The green Leaves of Tobacco, bruised and applied, alleviate Gout Pains, and are of a narcotic Quality. The Juice, also, of Tobacco, or the green Leaves, applied, remove the Heat, and cure the Pustules, excited by Nettles.

Joan. Torrentius, in his Notes upon *Fernandez*, gives us a singular Method of purging the Brain, which he received from a Capuchin, who asserted, that by its means he had freed many from the Gout.

As much of the dried Leaves of Tobacco are to be taken, as may be contained in a Walnut-shell; and, compressing the Tobacco with the Fingers, it is to be put into a Piece of clean Linen, or Silk, wrapt up into a Nodulus, as large as an Hazel-nut, and bound hard with a Thread. This Nodulus is put into the Mouth, and, by means of the Tongue, applied to the Palate for half an Hour: Upon which a tenacious Phlegm is immediately discharged, so tough as to hang from the Mouth like a Thread. And though by this means a slight Vertigo is produced, yet it is soon removed, and is entirely inoffensive, unless the Brain is of an highly warm Nature.

Some, in consequence of the narcotic Quality of Tobacco, affirm that it is of a cold Quality; but that it is hot, is sufficiently obvious.

obvious from its resinous grateful Smell, its Acrimony, by which it heats the Fauces, and its vomiting almost as powerfully as Hellebore, as is certain from the Experience of many: Betides, according to *Joan. Torrentius*, there is no Narcotic as yet known, which is not of an hot Quality.

The Use of the Water, distilled from the green Leaves of Tobacco, powerfully removes Stones firmly lodged in the Kidneys. *Chefneau ex Zacut. Lib. 2. Prax. Mirand. Obs. 66. ex Collectaneis D. Hulse.*

Tobacco sufficiently calcined in a Crucible, and put into the Cavities of the affected Teeth, immediately removes the Tooth-ach, as I myself, says Mr. *Chefneau*, have frequently experienced.

A Drop or two of the Oil of Tobacco, put upon the Tongue of a Cat, or any other Animal, quickly kill it. But *Francis Rhedi* observes, that all Animals are not killed by this Oil, and that all the Animals it produces this Effect upon, are not equally soon destroyed by it; because there are great Differences between various Tobaccos, and between the several Animals on which this Oil acts. Dr. *Tancred Robinson*.

Surgeons sometimes use this Oil, in order to induce a Torpor, when they amputate Limbs. Dr. *Palmer, de Diæticis D. Hartmanni.*

I recommend the Use of Tobacco in the Plague; for, by its means, I myself was freed from that Misfortune; and almost all the Houses, both of *London*, and *Nimwegen* in *Gelderland*, where Tobacco was sold, were free from the Conragion, though the Inhabitants of the adjacent Houses were infected. *Diemerbroeck de Peste, ex Adversariis D. Tancred Robinson.*

In order to cure a Palsy, infuse the green Leaves of Tobacco in Malmsey-wine; and, after Sweating, rub the paralytic Parts with this Wine, which is preferable to all other external Medicines. *Hartmannus*. This was communicated to me by the ingenious Dr. *Edward Hulse*.

Anton. Recchus informs us, that the Smoke of Tobacco, blown into the Uterus, in a Suffocation of that Part, in a Difficulty of Breathing, Strainings about the Præcordia, and Syncope, produces very happy and instantaneous Effects. *Ex Excerptis D. Hulse.*

The Leaves of Tobacco, rubbed on the Hand, or a Piece of Paper, or Linen, produce a beautiful green Colour. *D. Meret. in Not. ad Anton. Neri.*

An Instance of a violent Vomiting, constantly produced by sprinkling Snuff upon a contused and lacerated Thigh, is found in *Ephem. German. An. 12. Obs. 108.*

I once saw a Gentleman of Distinction so fat, that he could neither move from Place to Place, nor sit on Horseback, without immediately falling asleep; but he soon became able to do both, being restored to his natural Size by chewing Tobacco, as he himself assured me; for this Plant is beneficial for phlegmatic and cold Constitutions. *Borelli, Cent. 2. Obs. 11.*

But chewing Tobacco has not always the same Effect on all Persons; for I know a Gentleman preternaturally fat, who was render'd no leaner by its Use; but he told me, that his Teeth, which were formerly loose, were fixed by that means.

I knew three robust young Men freed from Dysenteries, by drinking a Decoction of Tobacco, which by its violent Operation totally evacuated the Cause of the Disorder, and produced the Effects of an Anodyne and Narcotic. *Diemerbroeck, Obs. Medic. Obs. 19.* But though, in these Patients, this Medicine produced salutary Effects, yet I think it hardly advisable, promiscuously to exhibit a Decoction of Tobacco to all dysenteric Patients, because it operates very violently, both by Vomit and Stool.

Willis recommends the Use of Tobacco in Camps, because by its means the Scarcity of Provision may be supplied, and the Men render'd less sensible of Fatigue and Danger: It is, likewise, efficacious, not only in preventing, but, also, in curing some of the Disorders which most generally rage in Camps, such as Colics, Diarrhoeas, Ulcers, and Pains of the Head and Joints. *Raii Hist. Plant.*

The various Abuses of Tobacco are so numerous, that it would be too tedious to enumerate them all. The Curious, however, may consult *Simon Pauli de Abusu Tabaci.*

The Cases, also, in which this Plant is proper and improper, are so various and perplexing, that great Skill and Judgment are requisite, to determine when it is to be used, and when not.

It is, however, universally granted, that an excessive Use of this Plant, or any of its Preparations, never fails to be productive of bad Effects. But as the precise Quantity proper for each Constitution cannot be determined, so this Excess can only be estimated by the Effects produced by it; so that it seems to be a kind of Absurdity, to lay down general Rules, either with respect to the Use or Abuse of Tobacco.

2. *Nicotiana*; major; angustifolia. C. B. P. 170. *Nicotiana* five *Tabacum*, folio angustiore. J. B. 3. 630. *Hyoscyami Peruviani altera*. Icon. Dod. p. 452.

3. *Nicotiana*; minor. C. B. P. 170. *Tourn. Inst. 117. Boerb. Ind. A. 230. Petum Rivini. Rupp. Flor. Jen. 19. Petum Anglicanum. Pharm. Bat. 161. Tobacco Anglicum. Park. Theat. 711. Priapeia quibusdam, Nicotiana minor. J. B. 3. 630. Chab. 527*

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(*Figura transposita*). *Raii Hist. 1. 715. Hyoscyamus luteus. Germin. 284. Emac. 256. Hyoscyamus, flore luteo. Rivin. Irr. Mon. 103. ENGLISH TOBACCO.*

This is a lower and smaller Plant than the first, the Stalks are round and hairy, two or three Feet high. The lower Leaves are pretty large, oval, and round-pointed, and clammy in handling; they are much less than the first; those which grow on the Stalks, are smaller, set on alternately. The Flowers are hollow, and Cup-fashion'd, with the Brim cut into five Parts, of a yellowish-green Colour, set in hairy Calyces. The Seed is rather bigger than the first Sort, growing in a Seed-vessel, which, by some Persons, is compared to the Glans of the Penis, whence it is sometimes called *Priapeia*: It is sown in Gardens, flowering in July and August.

This Tobacco is not so much used as the first Sort, as being believed to have less Strength and Virtue, though it is too frequently sold by the Herb-women for that, being, as I suppose more easily propagated; the Leaves of this they, also, usually sell for those of *Mandragora*, in the *Unguentum Populeon*. *Miller's Bot. Off.*

4. *Nicotiana*; minor; foliis angustioribus amplioribus. *Vaill. Boerb. Ind. alt. Plant.*

NIDOR. The Smell of burnt animal Substances. Hence Eructations, which have a Savour like putresc'd Flesh, are call'd *nidoros*.

NIENGHALA. A Name for the *Methonica*; *Malabarorum*.

NIGELLA.

The Characters are;

The Root is annual; the Leaves are capillaceous; the Calyx generally consists of five very thin, and very branched small Leaves, which expand in form of a Star. The Flower is rosaceous, pentapetalous, or polypetalous, and furnished with numerous short Stamina, from the joining of the Placenta and Ovary, a Multitude of Corpuscles interposing, in the Form of a monopetalous, anomalous, and bilabiated Floscule. The Ovary, which adheres to the Placenta, consists of many Pods furnished with a crooked Tube; and becomes at last a membranaceous, roundish, or oblong Fruit, consisting of many Capsules, or Cells, horned at the Top, and full of numerous Seeds.

Boerhaave mentions ten Species of this Plant; which are,

1. *Nigella*; arvensis; cornuta. C. B. P. 145. *Raii Hist. 2. 1070. Tourn. Inst. 258. Boerb. Ind. A. 283. Melanthium. Offic. Melanthium sylvestre five arvense. J. B. 3. 202. Nigella arvensis. Park. Theat. 1376. WILD FENNEL-FLOWER.*

The Seed of this Plant is used to dissolve the viscous Matters, which, gathering in the Sinuses of the Head, produce Catarrhs. For this Purpose, infuse a Pugil of Marjoram-leaves in a Glass of White-wine; and add a Dram of *Nigella* Seeds; strain the Whole thro' a Linen Cloth, and snuff the Wine strongly up the Nose. For the Colic, a Pisan is made of the Tops of Chamomile, Melilot, and *Nigella* Seeds. The essential Oil has the same Virtues: It is very incisive and expectorating. The Infusion of the same Seeds, in Wine, is diuretic, and provokes the Menfes. *Martyn's Tournesfort.*

2. *Nigella*; latifolia; flore majore; simplici; cœruleo. C. B. P. 145. *Prodr. 75. Melanthium, Hispanicum, majus. H. Eyst. Æst. o. 2. F. 12. Fig. 1.*

3. *Nigella*; angustifolia; flore majore, simplici, cœruleo. C. B. P. 145. *Melanthium, capite & folio majore. J. B. 3. 207.*

4. *Melanthium*; flore majore, pleno, cœruleo. C. B. P. 145. *Melanthium, capite vel calice, & flore majore, pleno. J. B. 3. 208.*

5. *Nigella*; flore minore, simplici, candido. C. B. P. 145. *Raii Hist. 1071. Tourn. Inst. 258. Boerb. Ind. A. 283. Nigella, Gith. Offic. Nigella Romana five sativa. Park. Theat. 1375. Melanthium. Ger. 924. Emac. 1084. Melanthium calyce & flore minore, semine nigro. J. B. 3. 208. FENNEL-FLOWER.*

This Plant has a small sticky Root, which perishes every Year, after ripening the Seed. The Stalk arises to be a Foot and an half, or two Feet high, hollow, branch'd, and chanel'd, having several finely lacinated Leaves, pretty much resembling those of Lark-spurs, set alternately on them. The Flowers grow on the End of the Branches, of five small white, sharp-pointed Leaves apiece, with several Stamina in the Middle; and are succeeded by oblong, round, horn'd Heads, having on their Tops five or six crooked Horns; the Seed is black, and somewhat sweet; it is sown in Gardens; and flowers in June and July. The Seed only is used.

It is accounted heating and drying, and serviceable, as an Er-rhine, to discharge tough mucous Phlegm from the Head, and recover the lost Sense of Smelling; it is said, also, to provoke Urine, and to help Tertian and Quartan Agues; but it is seldom used. *Miller's Bot. Off.*

The Seed of *Nigella* is principally used in Medicine; as, for Instance, in resolving and expectorating the Mucilage of the Lungs, for increasing Milk, for provoking Urine, and the Menfes, and against the Bites of venomous Animals; it is esteemed in Quartan and Quotidian Fevers. Outwardly, it is of frequent Use in Cucuphas, Epithems, and the like Applications for easing the Head-ach, and drying up of Rheums. *Schreder.*

[K*]

The

The Root has a peculiar Property of stopping Hemorrhages, being chewed in the Mouth, and intruded into the Nostrils. The Seeds afford an Oil by Expression, which many ignorant Apothecaries, by a pernicious Error, make use of instead of Oil of Nard. The green Seeds abound with an excrementitious Humidity, and therefore are not taken inwardly with Safety, as *Tragus* observes. For this Reason, says *C. Hoffman*, they are to be carefully dry'd, after washing, as well as the Seeds of Caraways and *Melanthium*: On the same account, they are rather used parched, than crude, in Catarrhs, and Colds, in which Cases they are of admirable Service, when parched or burnt. In such Disorders, I recommend the following Nodulus.

Take Seeds of *Nigella* parched, Tobacco, *Styrax Calamita*, each one Scruple; Ambergrise, two Grains: Mix them, and tie them up in a fine red Linen Cloth, to be held to the Nostrils at Intervals. *S. Pauli*.

For Loss of Smelling, take of Roman *Nigella*, a sufficient Quantity: Reduce it to Powder, and work it with old Oil in a Mortar. Let the Patient, with his Head held backward, and his Mouth full of Water, receive this Liquor into his Nostrils, drawing up his Breath. *Galen*.

For a noble Lady, very subject to a Coryza, I prescribed the following Nodulus.

Take Seeds of *Nigella* parched, half an Ounce; *Abelmosch*, Leaves of Caraways and Marjoram, each two Drams; *Styrax Calamita*, Tobacco, each one Dram; Ambergrise, seven Grains: Mix them, and tie them up into a Nodulus.

By the Use of this Remedy, the Lady preserved herself, for the future, free from all manner of Catarrhs and Coryzas, to which she was before very subject. *S. Pauli*.

The Flowers of *Nigella*, tho' of a Sky-blue, yet rub'd with the Hands on Paper, or Linen, dye them of a beautiful green Colour. *Raii Hist. Plant*.

6. *Nigella*; *Orientalis*, flore flavo; semine alato, plano. *T. Cor.* 19.

7. *Nigella*; *Cretica*. *C. B. P.* 146. *Prodr.* 75. *M. H.* 3. 515.

8. *Nigella*; *Cretica*; latifolia; odorata. *Park. Theat.* 1376. *M. H.* 3. 515.

9. *Nigella*; peregrina; flore multiplici. *H. Eyf. Æst.* o. 2. *F. 16. Fig. 1.*

10. *Nigella*; flore minore. *Boerb. Ind. alt. Plant.* Vol. 1. p. 283.

It is called *Nigella*, quasi *Nigrella*, from the black Colour of its Seeds; it is, also, named *Melanthium*, that is to say, Black-flower, tho' its Flowers are not black; and *Melasperrum*, that is, Black-seed.

The Virtues of this Plant are aperitive, incisive, resolvent, and heating. It is recommended for the Stone in the Kidneys, and is of excellent Use in intermitting Fevers, and for destroying Worms, the Quantity of two Ounces thereof being boiled in Wine. The Plant is aninephritic and carminative, whence, boiled in Wine, it cures the Colic; the Seeds increase Milk, and promote Excretion by Stool, are of an acrimonious Quality, and are said to stimulate to Venery. *Hist. Plant. adscript. Boerhaav.*

NIGELLA CRETICA. A Name for the *Garidella*; *foliis tenuissime divis.*

NIGELLASTRUM. A Name for the *Lychnis*; *segetum*, major; and for the *Caridella*; *foliis tenuissime divis.*

NIGER MORBUS. See **MORBUS NIGER.**

NIHIL ALBUM, & GRISEUM. See **CADMIA.**

NIIR NOTSJIL *Malabarensis*. *H. M.* Otherwise call'd, *Bacifera Malabarica fructu oblongo, tetracocco, calyculato.*

It is a little low Tree, or rather a Shrub, about six Feet in Height, growing in watry Places, and by the Banks of Rivers. The Leaves dry'd and pulveriz'd, and then exhibited every Day with Sugar, in an Infusion of Rice, are said to cure the Lues Venerea. Of the Leaves, boiled and baked in the Yolk of an Egg, is prepared a Cataplasm, which they believe to be of great Service, when apply'd to the Venereal Buboec of the Groin; of the Leaves and Roots boiled in Water, is prepared a Bath, which is supposed to have an extraordinary Effect in the Phrensy, Mania, and other cephalic Affections; and of the Root boiled in Oil, they prepare a Liniment against the Gout. *Raii H. P.*

NIIR-PONGELION. *H. M.* Otherwise call'd, *Arbor siliquosa Indica siliquis longis contortis, in quatuor Cellulas per longum divisus.*

It grows to the Height of about ten Feet, and is not unlike a Pear-tree; it delights in a moist and muddy Soil.

The Fruits are delicious Food to the Parrots; of the Branches and Root, they make Fishing-nets, which are preserved in the redish Decoction of the Bark; of the Seeds of the Fruit bruised, with dry'd Ginger, and the Root or Fruit of *Pavetta*, and the Washings of Rice, is prepared an excellent Liniment for spasmodic Affections, which the *Malabarians* call *Paddavenera*. *Raii Hist. Plant.*

NIL. See **ANIL**, and **INDIGO.**

NIL ARABUM. A Name for the *Convolvulus*; *caeruleus*; *hederaceus*; *feu trifolius.*

NILA HUMMATU. A Name for the second and third Species of the *Datura Malabarica*; the first, which is the *Nila hummatu*, *Datura Malabarica secunda Species*, *Hort. Mal.* differs little from the *Stramonium majus album*; which see described under **STRAMONIUM.**

This Species grows in sundry Places, and flowers all the Year, but principally in the rainy Season.

The Decoction is good for Pains in the Limbs, or for an Induration thereof, contracted in washing the Body. The Plant, or the Root, boiled in Oil, are good to anoint the Body, under a cold Fever; the Leaves, bruised with Lime, are of Service for anointing the Body, when affected with an Itching. The Decoction of the Leaves and Fruits in Oil mitigates Pains of the Body, being anointed therewith; and the Fruits bruised, the Seeds being taken out, are apply'd with very good Success to Impostumes and Carbuncles. The Seeds, too freely taken, induce a Sopor, and endanger Life. This Plant is of greater Virtue than the *Datura Malabarica Hummatu dicta prima Species*; which see under **STRAMONIUM.** The other Species, under this Name, is the

Mudela-nila-hummatu, Datura Malabarica tertia Species. This differs from the former only in the Duplication or Triplication of its Flowers growing one within another. *Raii H. P.*

NILAMMON. The Name of a Collyrium, described by *Aetius*, *Tetrab.* 2. *Serm.* 3. *Cap.* 105.

NILEI COLLYRIUM. The Name of a Collyrium in *Celsus*, *Lib.* 6. *Cap.* 6.

NILEI EPITHEMA. The Name of an Epithem mentioned by *Aetius*, *Tetrab.* 3. *Serm.* 1. *Cap.* 17.

NILI COLLYRIUM. The same as the **NILEI COLLYRIUM.** *Aetius*, *Tetrab.* 2. *Serm.* 3. *Cap.* 108.

NILIACUM, νιλιακν. An Epithet for the best Sort of Honey; that is, *Attic Honey.*

NILICA-MARAM. *H. M.* Otherwise called, *Acacia foliis Malabarica fructu rotundo, semine triangulo.* *D. Syen.* An *Myrobalanos Emblica*? A kind of Indian Plum.

The tender Leaves, or the dry'd Fruit, pulverized, and exhibited in the thick acid Milk, called *Tayr*, is good for the dysenteric Flux; the Decoction of the same is given with Success in an hot Fever; boiled with Sugar, and taken, they cure the Vertigo; the distilled Water of the Fruit is proper to be drank for a preternatural Heat of the Liver. *Raii H. P.*

NIMBO ACOSTÆ, seu Aria Bepou. *H. M. P.* 4. *T.* 52. p. 107. *Arbor Indica Fraxino similis, Olea fructu.* *C. B.* *Nimbo folio & fructu Olea.* *J. B.* t. 1. l. 6. *C. 8.* *Azedarach floribus albis sempervirens.* *Herman.* A tall Tree growing in the Island of *Zeylan*, and other Countries of the *East Indies*; it resembles an Ash, and bears a Fruit like an Olive, from which they express an Oil, which the Painters use in staining their Cottons. Of the Leaves boiled in Water, they prepare a Bath, which is of Service for driving out the Small-pox, and mitigating Pains of the Joints; of the same, dry'd and pulveriz'd, and mix'd with the expressed Oil of the Fruit, is prepared an Ointment, which is used with Success in anointing such Parts as are affected with Pains, Spasms, or Convulsions; and cures Wounds, Punctures, and Contractions of the Nerves. The Juice of the Leaves, taken either alone, or in Wine, Water, or Cock-broth, or apply'd to the Navel, either alone, or with a little Ox-gall, or Vinegar of Aloes, is of extraordinary Service for expelling all Kinds of Worms; for which Reason it is a most familiar and salutary Remedy to all the Inhabitants of *Malabar*, because they are very subject to Worms. *Garcias* and *Acosta* compare this Tree to the Ash, for Bigness, and external Appearance at a Distance, tho' its Leaves are unlike those of the Ash. *Raii H. P.*

Karibepou seu Nimbo altera. *H. M. P.* 4. *T.* 53. p. 109.

This is a very tall and beautiful Tree, always green, and bearing Flowers and Fruit twice in a Year; it grows in several Parts of *Malabar*. From the Fruit is expressed an Oil; of the tender Leaves, bruised and boiled in Oil, is prepared a Cataplasm, which heals the Bites of Serpents, and other venomous Animals, being apply'd to the injur'd Part; of the same, boiled with the Leaves of the *Aria Bepou*, is prepared an Apozem, which is very serviceable in pestilential Fevers, and other malignant Diseases; the Root, taken any manner of Way, purges by Stool. *Raii H. P.*

NINZIN. A Name for the **GINSENG**; which see.

NIOPON, νιωπον. This Word occurs in *Erotian*, and is thought to be a Mistake for **NETOPON, νητωπον.**

NIRUALA. *H. M.* *Pomifera Indica trifolia, fructu Prunifor-mi caudato.* *Tapia Brasiliensium similis.* *D. Comelin.* A Tree of a vast Bigness, and thirty Feet in Height, and growing in rocky and sandy Places, and particularly in the Provinces of *Mangati*; and *Poigu*, in *Malabar*, on the Banks of Rivers.

The Juice of the Leaves, received in Linen, and apply'd to the Groin, provokes Urine. The Leaves bruised, and with Salt, Camphire, and the Dung of a Cat, reduced into the Form of a Cataplasm, and apply'd to the same Parts, produce the same Effect. The Bark, macerated in Water, and with Ginger and Long-pepper, boil'd in Cows-milk, and Oil of Sesamum, to the

Consumption

Consumption of the Liquor, makes an excellent Liniment for the drying up of cold Humours. The Seed boiled in an Infusion of Rice, and then bruised, and with fresh Butter reduced to a Cataplasm, effectually mollifies and ripens Abscesses. *Raii Hist. Plant.*

NIRURI. H. M. *An Frutex Indicus baccifer Vitis Ida secundæ Clusii Foliis, Breyn.?* An Indian bacciferous Shrub, seven or eight Feet in Height, growing in sandy Places.

The Root, bruised, and apply'd in the Form of a Cake, is effectual for Inflations of the Belly, or Tumefactions of any Part. The Leaves, bruised, and apply'd with sour Milk, serve to ripen Abscesses; which Purpose is, also, promoted by washing them with warm Water, in which the Leaves and Bark have been bruised. Under this Head, *Ray* reduces the

Katou Nirouri, H. M. which is a low Shrub, much like the former, growing in moist and sandy Places about *Cochin*, in the *East Indies*, and having always Leaves, Flowers, and Fruit upon it.

Of the Leaves boiled in common Water, is prepared a Gargarism for the Cure of putrid and corroded Gums, and for fastening loose Teeth. Of the Leaves boiled with the Fruit, Bark, and Root, is prepared a Bath for the Gout. The Bark of the Root, boiled with Long-pepper and Ginger, makes a Drink, which is said to be highly serviceable for strengthening the Stomach, and for cutting and attenuating pituitous Humours. *Raii Hist. Plant.*

NISI, or NINSI, according to *Blancaid*, imports GINSING.

NISSOLIA. Crimson Grafs-vetch.

The Characters are;

It resembles the *Lathyrus* in every thing, except that the Leaves stand single, and have no Tendrils, but are much like the Leaves of the *Genista Sagittalis*.

Boerhaave mentions but one Sort of this Plant; which is, *Nissolia vulgaris. T. 656. Lathyrus, sylvestris, minor. C. B. P. 344. Catanance, leguminosa, quorundam. J. B. 2. 309. Ervum sylvestre. Dod. p. 529. Boerb. Ind. alt. Plant. Vol. 2. p. 25.*

NISUS. The Sparrow-hawk. See *ACCIPITER*.

NITEDULA. The same as *CICENDELA*; which see.

NITTALIA. The Name of a Star, in *Paracelsus*, which he whimsically represents, as having the same Influence as Salt of Vitriol.

NITRIALES. All Things capable of reducing to a Calx, as Nitre, Sulphur, &c. *Rulandus.*

NITRUM. Nitre.

'Tis certain, that the Nitre of the Antients was different from ours, which being inflammable, and form'd into Crystals, *Striae*, and a kind of Spears, was absolutely unknown to them. Tho' the precise Time in which this artificial Nitre of ours was invented, cannot be positively determined, yet it is not to be doubted, but its Invention laid a Foundation for discovering Gunpowder. There is a very considerable Difference between the Nitre of the Antients, and that of the Moderns. For,

1. The Nitre of the Antients is a native Fossile dug out of the Earth, though not pure, since it must be afterwards elutriated; whereas ours is an artificial Substance produced by the Air. Hence those are mistaken, who affirm, that some Malt Liquors are prepared with nitrous Waters.

2. The Nitre of the Antients is of an alkaline absterfive Quality; for which Reason it may commodiously be used as a Succedaneum for Pot-ash, in making Glass or Soap. It is produced in *Egypt*, where it is called *Natron*. At *Smyrna* there is, also, a pure alkaline Earth found, which, when boiled, affords an alkaline Salt, exported to other Countries in large Quantities. And *Carolus Clusius, de Exotic. Lib. 2. Observatione Bellon. Cap. 13.* informs us, that in *Grand Cairo* the Nitre of the Antients is so common, that large Quantities of it are sold at a very inconsiderable Price. The *Egyptians* apply this Substance to various Uses, since they coat their Vessels with it, and dress their Leather with a Mixture of it, and the Pods of the *Egyptian Thorn*. But *Bellonius, in Lib. 2. Observat. Cap. 21.* informs us, that the Nitre of the Antients is very rare among us; and confidently affirms, that the smallest Quantity of it is not produced in *Europe*, tho' 'tis very common and cheap in *Egypt*. But our Nitre is a *Sal salsum*, neither of the acid, nor of the alkaline, but of the neutral Kind, since it neither produces an Effervescence with acid nor alkaline Substances.

3. The Nitre of the Antients was not combustible and inflammable like ours; for which Reason it was by no means proper for preparing Gunpowder. Considering these Differences, 'tis sufficiently obvious, that when *Hippocrates* and *Pliny, Dioscorides* and *Galen*, treat of Nitre and its Virtues, they do not mean our common Nitre, but a native alkaline Salt.

But tho' *Bellonius* affirms, that none of the Nitre of the Antients is produced in *Europe*, yet I am of Opinion, that tho' it is not, in this Quarter of the World, produced in such large Quantities, as in *Egypt*, yet there is even here produced, in the Bowels of the Earth, a pure fixed alkaline Salt, in every respect similar to Pot-ash, Salt of Tartar, or the Nitre of the Antients, as is sufficiently obvious from our medicinal Springs, hot Baths, and mineral Waters, from many of which an highly pure alkaline fix'd Salt may be obtain'd by boiling. Hence appears the Falshood

of the common Opinion of the modern Chymists, who affirm that a fixed alkaline Salt is only the Product of Art, or of the Fire, and cannot be obtained, but from Vegetables burnt to Ashes.

Our Nitre is artificially prepared of two Elements or Principles, one of which is the highly simple, universal, acid, and primogenial Salt contained in the Air, and the other an alkaline sulphureous, and pinguious Earth, which like a Matrix, or Loadstone, attracts the universal Acid lodg'd in the Air. Nor are Earths of every Kind, when exposed to the free and open Air, fit for generating Nitre, but only such as are of an alkaline Nature, and contain a pinguious and sulphureous Substance. Hence we find, that the Earths, left after the burning of Houses, are of all others the most proper for generating Nitre. The same holds true of calcareous Substances; when, for Instance, Mud, Earth, or Clay, is mix'd with Lime, and exposed to the free Air, the Salt of Nitre easily breaks thro' it like Froth. Quicklime, also, the Ashes of Wood, or of Soap-boilers, as yet turgid with an alkaline Salt, greatly contribute to the Production of Nitre, when mix'd with Earth.

The Earth proper for generating Nitre must not only be alkaline, but, also, pinguious and sulphureous; nay, a volatile alkaline Principle is necessary for this Purpose. Hence all Putrefaction contributes to the Generation of Nitre in Sands. For this Reason nothing in Nature so powerfully promotes the Generation of Nitre, as dunging the Land with the Excrements and Urine of Animals. Hence those who prepare Nitre, diligently dig up, and preserve the old and squalid Earth in Sheepfolds, Stables, and other Places where Animals are kept. They, also, carefully collect the Earth dug up about Bog-houses, which being impregnated with the Salt and Sulphur of the human Excrements, is, for that Reason, highly proper for producing Nitre.

They, also, chuse pinguious Earths of Church-yards, Ponds, Marshes, and Walls, built of a pinguious Earth, and putrefied Straw, especially their Surfaces taken off for about the Depth of a Finger's-length, because these, being long exposed to the Sun and Air, have conceived a nitrous Salt, discoverable by the acrid and bitterish Taste. Hence it follows, that the more Putrefaction and volatile sulphureous Salt can be convey'd to Earths, the more proper they are for producing Nitre.

Earths, in order to yield a large Quantity of Nitre, must be managed in the following manner: They are to be made up in Heaps, which are to be frequently watered or sprinkled with the Urine of Animals; by which means, and the free Passage of the Air thro' them, they soon contract a nitrous Salt. But 'tis to be observed, that neither a too intense Heat of the Sun, especially such as burns the Earths, nor too pinching a Cold, nor too moist an Atmosphere, and especially rainy Weather, but rather a temperate windy Air, accompany'd with serene Weather, especially in the Spring or Autumn, and in the Night-time, favour the Production of Nitre. The Heat of the Sun is, indeed, serviceable in drying the Earths from which the Nitre has been before extracted, but does not at all contribute to its Generation.

Nor is its Generation promoted by intense Cold, Southerly or Westerly Winds; but Winds blowing from the Easterly or Northerly Quarters bring the primogenial ethereal Acid. The Elaboration of Nitre does by no means succeed under excessive Rains, which wash it out of the Earths.

'Tis, also, to be observed, that from Waters impregnated with a nitrous Salt, by Elixivation, there cannot be obtained any true Nitre, which is inflammable, and forms itself into Crystals, without the Addition of Ashes, in which there is an alkaline Salt, an Admixture of Quicklime, or that Lixivium, which in boiling remains after the Crystallization; for if the Lixivium, drawn from nitrous Earths, is boiled by itself, a saline Magma is only obtain'd, which neither runs into dry, much less inflammable Crystals, nor is easily dried, but is easily dissolv'd in the Air, especially when moist and humid. Hence we may reasonably conclude, that the inflammable Salt of Nitre is compounded of an acid Salt, a fixed Alkali, and a sulphureous Principle.

And as neutral Salts are easily formed into Crystals; so, on the contrary, neither acid nor alkaline Salts, nor sulphureous acid Substances, mix'd with alkaline Earth, of which Kind this Lixivium, extracted from nitrous Earths, seems to be, are disposed to Crystallization.

But that there is in Nitre such a fixed Alkali, is sufficiently obvious, not only from its Generation, already described, but, also, from this, that Powder of Charcoal alone, added to Nitre, fus'd in a Crucible, converts it into a pure alkaline Salt, commonly called Fix'd Nitre, tho' it is not, in reality, different from Salt of Tartar, or any other alkaline Salt; as, also, from this Circumstance, that if this alkaline Salt is again combined with acid Spirit of Nitre, or Aqua-fortis, the Nitre is forthwith regenerated.

Earths impregnated with a nitrous Salt, of which Nitre is prepared, are not only to be found in *Europe*, but 'tis, also, certain, that an inflammable Nitre may be prepared every-where, because the Matter, or Matrix of Nitre, which is Earth, rendered alkaline and sulphureous by Putrefaction, may be had every-where. Neither is it to be doubted, but that primogenial and universal Acid,

Acid, which is formed into a nitrous Salt with the alkaline sulphureous Earth, is contained in the Atmosphere, where-ever it extends.

And, 'tis certain, that not only in the *Indies*, which are hot, but, also, in *Muscovy*, which is a cold Climate, a large Quantity of Nitre is prepared, which is better than the *German* Nitre, and far more fit for preparing Gun-powder. The *Indian* Soil favours the Generation of Nitre, because, for several Months, no Rains fall to wash and carry off the nitrous Salt from the Earth. But, in the Northerly Climates, the Air is not only serene, but its elastic and expansive Portion compressed and condensed by the Cold; for nitrous Salt seems not only to be compounded of an acid, sulphureous, and alkaline Principle, but, also, the Air, condensed into Water, seems to be a principal Ingredient in it; for there is scarce any Salt, such as common Salt, Vitriol, and Alum, which has not, for an Ingredient, an aqueous Principle, call'd Phlegm, and which, in Distillation, is copiously yielded. Hence 'tis not to be doubted, but nitrous Salt has, for Ingredients, both an aqueous, and an aerial Principle, which is principally concealed under a sulphureous Substance.

This may be confirmed by various considerable Proofs; for 'tis surprising, that since no Flame can subsist without the immediate Access and Action of the Air, nitrous Salt should, when most closely shut up from this Fluid, send forth a conspicuous Flame. Hence the Reason is obvious, why in Northerly Countries, and by means of Northerly Winds, a larger Quantity of Nitre is produced, than where the Air is either too much rarefied; or too moist. 'Tis well known to the Preparers of Nitre, that more of this Substance is form'd in its Matrixes in the Night-time, than during the Day, under the Heat of the Sun.

Besides, the Inflammability, and highly-expansive Rarefaction, observed in kindled Nitre, and which increase the Impetus of the Fire and Flame, seem to me to be derived from the aqueous and aerial Particles, inclos'd within the Pores of the pinguious, sulphureous, and saline Parts, which, by means of the Fire, suddenly acquire the highest Degree of Rarefaction and Expansion, and are discharged, as it were, in Wind, just as in an *Æolipyle*, in which Water, when included and rarefied by Fire, is totally discharged in the Form of a dry Wind, with a considerable Noise, thro' a narrow Hole; and this cold Wind, arising from the hot Water, surprisingly augments the Force and Impetus of Flame. Hence Nitre may be justly called an aerial Salt, because it is not only produced by the Air, but, also, because that Fluid, condensed into Moisture, is intimately mixed with it.

Nitre contains various heterogeneous, saline, and earthy Parts, from which it ought to be separated and purified; for, besides its terrestrious, pinguious, and sulphureous Parts, it contains a pure common Salt, or even an Alum, from which, however, the pure and inflammable nitrous Salt ought to be separated; for these foreign Admixtures not only hinder its Deflagration, but, also, diminish its Impetus and Expansion. For this Reason all the Nitre sold in the Shops is to be duly depurated; before it is used for pyrotechnical, chymical, or medicinal Purposes.

This Depuration is to be made in the following manner: The Nitre is to be dissolved by boiling it in a Kettle, with a Quantity of Water sufficient to render it fluid. Then the Lixivium is to be strain'd, and, in a close Vessel, lodged in some cool Place; by which means, on the Surface, and at the Sides of the Vessel, long pyramidal Striae, like so many Rays, are formed, from the Circumference to the Centre, which are to be taken out and dry'd by the Heat of the Sun. Then the remaining lixivial Liquor is to be again boiled by a gentle Heat, strained, and again set by for a second Crystallization. Thus a considerable Quantity of Nitre will be again concreted about the Bottom and Sides of the Vessel, and this Method is to be repeated three times; and, last of all, the Lixivium, which contains no more Nitre, is to be inspissated by farther Boiling; by which means a common Salt, highly similar to Sea-salt in its Taste, cubical Figure, and Properties, is concreted, and subsides to the Bottom; and the Remainder of the inspissated Lixivium is coagulated into a Mass of a bitterish Taste, of a brownish Colour, and which has many earthy, pinguious, and sulphureous Particles mix'd with it. This is the most proper Method of depurating Nitre.

The Goodness, therefore, of Nitre differs much, according to the Quantity of impure, saline, and earthy Matter mix'd with it. Some Countries, also, produce purer Nitre than others. The *Indian* and *Muscovy* Nitres are reckoned best, because an hundred Pounds of them, under a depuratory Crystallization, lose only seven Pounds; and that of *Poland*, fifteen Pounds. But the Nitre prepared in the Principality of *Halberstadt*, and the Duchy of *Magdeburg*, loses twenty-five Pounds, before it is fit for making Gunpowder. 'Tis, also, to be observ'd; that all Nitres, if duly and thoroughly depurated and freed from their Sordes, are possess'd of the same Virtues, and produce the same Effects. Hence some depurate and crystallize it several times; and, that it may be the purer, mix Wine-vinegar in the Water, in which it is to be dissolved; for, as there is but one common Salt, so there is but one Nitre in Nature; but the Difference of both depends upon the different Quantities and Qualities of the Sordes, and impure Substances, with which they are mix'd.

But it is, in a particular Manner, worth our Consideration, whence, or by what means, the common Salt, which is generally every-where associated with Nitre, is produced. Many Chymists are of Opinion, that it is produced by the Urine of such Animals as eat common Salt, because the Preparers of Nitre often pour the Urine of such Animals upon the Earths design'd for this Purpose. But this Hypothesis, to me, seems incumbered with various Difficulties; for, first, Animals rarely eat Salt; and Urine is, also, rarely sprinkled on Walls, and the Heaps of nitrous Earth. Secondly, from the Urine of human Creatures, who use large Quantities of Salt, a Salt in every respect like common Salt, can by no means be obtained; for common Salt, taken with the Aliments, and mix'd with the various Particles of the Juices in the Stomach and Intestines, and with the Blood and Serum in the Vessels, is so chang'd, and its Crasis so dissolv'd, that it can hardly be again obtained genuine and unadulterated from the Excrements of Animals.

For this Reason it seems highly probable, that the common Salt, contained in Nitre, is, also, produced by the universal Acid of the Air, and a certain specific Earth such as is contain'd in common Salt; for, as Alum, Vitriol, Nitre, and a neutral sulphureous Salt, such as that extracted from Pot-ash, long exposed to the Air, require a peculiar earthy Matrix, in which the highly simple and universal Acid of the Air, which is determined to no particular Form, may insinuate itself, by the Presence of which, and the insipid Part of the Air, they revive, and are regenerated; so, also, if in nitrous Earth such a specific Earth of common Salt is contained, it is no Wonder, if, being impregnated by the universal Acid of the Air, it should be transform'd into common Salt. But even this Salt differs from the common Salt we eat: First, with respect to its greater Acrimony. Secondly, with respect to its Solidity: And, thirdly, in this, that by an Affusion of Oil of Vitriol, after an Effervescence, it not only sends forth a Smoke, penetrating like that of common Salt, but, also, ungrateful and disagreeable, like that of Aqua-fortis: So that, by this Method, an Aqua Regia, compounded of the Spirit of Nitre, and capable of dissolving Gold, may be obtained by Distillation.

'Tis, also, observable, that common Salt, which, in Crystallization, retains a cubical Figure, in the Beginning of the Preparation of Nitre, subsides and falls to the Bottom of the Lixivium extracted from nitrous Earths, Ashes, and Quick-lime, when inspissated; but, in its Depuration by Water, it remains in the last Lixivium, by boiling of which it is, at last, form'd into Crystals. But a large Quantity of Water must not be used in the Depuration; otherwise the common Salt, which is heavier than the Nitre, will be first precipitated, and carry'd to the Bottom. For we must observe, that Salts of different Natures, when dissolved in an aqueous Menstruum, are easily separated from each other, and mutually united by Crystallization: Thus, the Particles of common Salt run together, and form a Body of a cubical Figure; whereas the Particles of Nitre, when united, constitute a Body of a pyramidal Form.

The essential Characters and Properties, by which Nitre is distinguish'd from other Salts, are these following.

1. Nitre is, by the Force of Fire, easily fus'd in a Crucible without flaming; but, as soon as an oleous sulphureous Substance, capable of flaming, is added to it, it takes Flame, and produces an Explosion; which Effect happens not only by the Addition of common Sulphur; of Antimony, which abounds with Sulphur; of Charcoal; of Tartar, which abounds with Oil; of some Parts of Animals, the Blood or Bones, for Instance; but, also, by the Addition of Metals impregnated with Sulphur, such as Tin, Iron, and Zink; as also, by an Addition of Sal Ammoniac, which from the Urine receives a certain oleous and sulphureous Principle.

2. Nitre, mix'd and distill'd with a vitriolic Salt, or the Acid of Vitriol, yields an highly volatile acid Spirit, of an ungrateful Smell, and yellowish Colour, as appears in the Preparation of *Hoffman's Spiritus Fumans*, or *Aqua-fortis*; and, because all Clay contains some Quantity of a vitriolic Salt, hence, if three Parts of Nitre are mix'd with one Part of Clay, form'd into small Balls, and dried, the Nitre by Distillation yields its Acid Spirit in the Form of a red Vapour; and, because the acid of Alum is of the same Nature with that contain'd in Vitriol, hence, in Conjunction with Alum, as well as with Vitriol, an acid Spirit, or Aqua-fortis, may be distill'd from Nitre. It must, also, be observ'd, that no other Acid, except one of the vitriolic Kind, can by any means extract the Acid of Nitre, since a very fix'd and strong Acid, such as that contain'd in Vitriol and Alum, is requir'd for that Purpose.

3. Nitre, fus'd in a Crucible, is almost totally converted into an alkaline Salt; and this Effect is first produc'd by mixing equal Quantities of Tartar and Nitre, and putting them into an ignited Crucible; by which means the *black Flux-powder*, commonly us'd by Workers of Metals, in separating their Metals from adventitious Mixtures, is produc'd. Nitre is, also, converted into an highly pure Alkali, when it is mix'd and detonated with Powder of Charcoal; and by a strong Calcination it becomes an highly caustic Salt, of a Sky-colour, and this is call'd Fix'd Nitre. 'Tis, also,

worth our Observation, that the Whole of Nitre may be converted into a caustic Alkali, of an highly acrid Taste, and which, by pouring Water upon it, becomes intensely hot, when mix'd with an equal Quantity of Regulus of Antimony, and melted together to a Mass, in a red-hot Crucible. The same Phenomenon is said to be produc'd with Zink and Tin.

4. Nitre is a Salt of so singular a Quality, that there is none like it in Nature; for it not only cools the Tongue, when applied to it; but, also, the whole Body, when taken internally; and, when put into Water, augments its Coldness.

5. A Solution of Nitre, put into Blood coagulated, and become black after it is taken from the Veins, not only renders it more fluid, but, also, procures it a florid and beautiful red Colour; an Effect not to be expected from any other neutral Salt. By this Experiment, we may, in some measure, account for its Operations, and refrigerating Effect, on the human Body; for Nitre is a Salt, which, by means of its aerial Principle, of an elastic and expansive Quality, allays and stops the tumultuous and exorbitant Motion of the Æther in the Blood and Humours, which, when confin'd, becomes more violent: And to this aerial Principle we are to ascribe the Fluidity, and florid Colour, which Nitre communicates to the Blood: Nitre, also, by procuring a greater Fluidity to the Humours, removes Stagnations and Obstructions, and opens the Pores of the Skin, thro' which the hot and fiery Particles are exhal'd: And as Nitre stimulates the Ducts and Glands to a more copious Secretion of Lymph, hence it moistens the Body, and relaxes and softens Parts spasmodically constricted.

6. Nitre, when detonated with Sulphur, or any other inflammable Substance, is totally carried off in Smoke; by which means, the whole Crasis, and, as it were, the Substance of Nitre, which consists of an acid and alkaline Salt, together with a pinguious and sulphureous Substance, is totally destroy'd; for Gunpowder, kindled in a rubulated Retort, is neither transform'd into an acid Spirit, nor an alkaline Salt, but yields a somewhat acid Phlegm.

7. 'Tis, also, a Property peculiar to Nitre, that, when put into a Crucible, expos'd to a calcining Fire, with Regulus of Antimony, Zink, Bismuth, Arsenic, Regulus of Cobalt, Tin, and Lead, it converts them to a Calx; by which means the purer Metals, such as Gold and Silver, are separated from them. For this Reason, the most expeditious way of separating Gold dispers'd in Antimony, is to calcine and fuse it with Nitre, whereas 'tis a tedious and laborious Task to separate its reguline and antimonial Parts by the Force of intense Fire; and as these Minerals are, in a great measure, virulent, so, when calcined with Nitre, they not only lose their deleterious Qualities; but partly become salutary Medicines.

8. 'Tis sufficiently known to Chymists, that Aqua-fortis dissolves Silver, but not Gold; but it has not as yet been adverted to, that Aqua-fortis, distill'd by Abstraction from common Nitre, does not dissolve Silver, but converts it to a Calx; whereas it quickly attacks and dissolves Gold. This will perhaps seem strange to him, who considers that Aqua-fortis is the Off-spring of Nitre, and, in every respect, agrees with the acid Spirit of Nitre; but his Surprise will cease, when he reflects, that in undepurated Nitre there is a large Quantity of common Salt, which must be separated by Art; and considers that Aqua-fortis, drawn off common Salt, becomes an Aqua-regia, capable of dissolving Gold; for, if Aqua-fortis is even ten times drawn off depurated Nitre, its Virtues will not be alter'd by common Salt; but, if common Salt is mixed with the Nitre, the Aqua-fortis attacks and disentangles it; by which means an highly subtil Spirit of Salt ascends, and this Spirit, in consequence of its highly penetrating Subtily, enters the most minute Pores of Gold, and, by means of the elastic Sulphur of the Nitre, destroys the Cohesion of its constituent Parts.

9. 'Tis, also, to be observed, that if Spirit of Nitre, or Aqua-fortis, are in a due Proportion drawn off common Salt, there remains in the Bottom a Salt, which deflagrates like Nitre; for the Acid of Nitre intimately associates itself with the alkaline Earth of common Salt, and with it is converted into Nitre, from which it expels the Spirit of Salt.

Tho' Substances highly volatile enter the Composition of Nitre, it is nevertheless of a very fix'd Nature. The Volatility of its Principles is sufficiently obvious from the Account before given of its Generation, whilst, on the other hand, its fix'd Nature is evinc'd from this, that it remains fus'd over a Fire for some Hours, without any Diminution of either Weight or Bulk; neither is its Texture alter'd by Flame, tho' a Change is soon produc'd in it by the Addition of a small Quantity of ignited sulphureous Earth.

Tho' an highly volatile and corrosive acid Spirit, as also a very caustic fix'd alkaline Salt, may be prepared from Nitre; yet it is possess'd of a singular Power of removing the septic, and consequently the virulent and corrosive Qualities of almost all Substances, and rendering them propitious, temperate, and salutary. The violent and emetic Virtues of Regulus and Sulphur of Antimony are sufficiently known; and 'tis certain, that by the Addition of a due Quantity of Nitre, and the Assistance of Fire, both these may be converted into mild, temperate,

and gently diaphoretic Medicines. That most of the Insects, which, by means of their highly acrid Salt, excite Blisters, are excellently corrected by Powder of Nitre, intimately mix'd with them, is certain from Experience: Thus Cantharides, and other Substances of a like Nature, may be safely exhibited even in delicate Constitutions, in order to remove a Difficulty of Urine, provided due regard be had to the Causes of the Disorder, and a small Quantity of Camphire, which powerfully resists Inflammation, is added. Some Purgatives are so highly drastic, that, when imprudently exhibited, they raise violent Commotions in the nervous System, and often excite an Inflammation in the Coats of the Stomach: Of this kind are Gamboge, Scammony, Resin of Jalap, Coloquintida, Elettarium, and Spurge; which two last excite Blisters, when applied externally. Now the caustic Quality of all these is greatly impair'd, by being mixed with any nitrous Salt; and, if there is any genuine and efficacious Corrector of Purgatives, which guards the tender Membranes against Heat, Spasms, and Inflammations, 'tis certainly Nitre. Aloes, which is otherwise of a laxative and balsamic Quality, has by its subtil acid Salt been frequently observ'd to excite Hæmorrhages; but it is render'd more benign and propitious, by a proper Admixture of Nitre. The Bile, in consequence of its deterfiv and bitter Quality, is a balsamic and natural Medicine, without which no Animal can long remain sound, and in a due State: Now, if the Bile is vitiated by a Congestion of acrid Sordes retain'd in the Humours, it acts like Poison by irritating the nervous System, and producing preternatural Heat, Anxiety, Inquietudes, enormous Evacuations, and intense Pain: Now, in order to correct this peccant State of the Bile, no Medicine is more efficacious than Nitre.

As Nitre is a powerful Cooler, when internally exhibited; so there is no more effectual Antifebrile, no Medicine which either so soon, or so safely, corrects the febrile Heat, and removes the woeful Train of Symptoms produc'd by it. Accordingly *Angelus Sala*, in *Myrotech. Sect. 5.* informs us that in Quoridian and chronical Tertian Fevers, as also, in that Species of Fever call'd the *putrid Hemitriticus*, Nitre is us'd with wonderful Success; for when the Patients are properly purg'd before, and kept in a moderately warm Place, the Exhibition of Nitre twice or thrice two or three Hours before the Paroxysm, gives such a Change to the State of the Disorder, that Health soon succeeds: And, as all other Refrigerants, the most considerable of which are acid, inspissate and coagulate the human Juices, so, on the contrary, Nitre rather attenuates and renders the whole Mass of Humours more fluid: Hence we understand why it is highly efficacious in extinguishing the Heat of the Body, and why no Salt is more friendly to the Constitution than Nitre. Upon injecting various Liquors into the Veins of Animals, it has been found, that several of them have been kill'd both by acid and alkaline Injections, only with this Difference, that the Acids produced too great a Coagulation, and the Alkalis too great a Fluidity, of the Humours: But *Malpighi*, in *Tract. de Polypo Cordis*, Tom. 2. informs us, that he injected a Solution of six Ounces of Nitre into the jugular Veins of a strong Dog, without producing any other Change, than a preternaturally copious Discharge of Urine. Hence we may justly conclude, that Nitre is excellently suited, and highly friendly, to the Crasis of the Blood: For this Reason *Ld. Bacon*, in his *Histor. Vita & Mortis*, affirms, that a Scruple of Nitre frequently exhibited for a Dose contributes greatly to the Prolongation of Life. Besides, Nitre seems to have a kind of formal Existence in the human Blood, which, when dried, reduc'd to a Powder, and thrown upon live Coals, produces a kind of Ebullition like that of Nitre.

Nitre, also, prevents Putrefaction in Substances subject to Corruption; and tho' common Salt is highly efficacious for this Purpose, yet 'tis doubted, whether Nitre is not preferable to it in preserving Bodies. Thus Blood, taken from the human Veins, may, by an Admixture of a Solution of Nitre, be for a long time preserv'd fluid and beautiful, without any Putrefaction. Besides, 'tis sufficiently known, that Flesh either by means of Nitre alone, or Nitre mix'd with common Salt, for a long Time retains a beautiful red Colour, even after boiling; the Reason of which seems to be, that this Salt exalts the red and beautiful Colour of the Remainder of Blood contained in the minute Vessels of such Flesh. Hence 'tis obvious, that Nitre resists the Putrefaction, which is often form'd in the *Primæ Viæ*, and diffuses itself thro' the whole Body; and may for this Reason be exhibited with Success in putrid Fevers, and Disorders of Children arising from Worms.

Nitre, taken internally, powerfully promotes the Excretions by Stool, Urine, and Sweat: One Ounce of depurated Nitre, dissolv'd in Water, renders the Body soluble, and procures some Stools, tho' it answers these Intentions better, when mix'd with a proper Quantity of the laxative Decoctions of Tamarinds, Sena-leaves, and Manna. When the Fluids are to be deriv'd to the inferior Parts of the Body, especially in Fevers, Nitre is highly efficacious. Among all the Clafs of Diuretics, none is better calculated for quickly removing Obstructions of the urinary Ducts, rendering the Discharge of the

the Urine free, and dissolving calculous Concretions, than Nitre. *Penotus*, in his *Treatise de Medicament. Chym.* affirms, that, if a proper Dose of Nitre is taken once every Fortnight, it never suffers the Generation of Sand in the Kidneys, either in Patients subject to calculous Concretions, or Dysurics, whether adult or young, robust or delicate. *Timaeus*, in *Consil. Consult.* 3. informs us, that he heard of a certain Man's being perfectly cur'd of the Gravel, by a long-protracted Use of prepar'd Nitre; and *Grulingius*, in *Observ. de Calculo*, informs us, that Sal Prunellæ is not only an excellent Preservative against, but, also, an efficacious Cure for a Nephritis; and I have found from Experience, that an Emulsion of various Seeds, invigorated with Nitre, is with great Success exhibited for alleviating Nephritic Pains: A proper Exhibition of Nitre renders Perspiration more free and liberal, in Patients afflicted with immoderate Watchings, Thirst, and intolerable Heat, because it corrects the Heat of the Blood, and checks the hot intestine Commotion of the Fluids; by which means every thing in the Constitution is rendered calm, the preternaturally constricted Parts are relaxed, and consequently the Blood is freely convey'd to the Emunctories of the Skin. In Practice we daily observe, that the precipitating nitrous Powders excellently promote Sweat, in all Inflammations; but in languid, cold, and cachectic Constitutions, the moving Force of whose Muscles is impair'd, a Diaphoresis must be excited by more hot and active Medicines.

Nitre, is also, an excellent Carminative: The Disorders arising from Flatulencies, stagnating, and pent up, in the Intestines, sometimes spasmodically constricted, are sufficiently obvious to Practitioners; for which Reason they ought to be dissipated and expel'd with all Expedition: For this Purpose I have found no Medicine more effectual and successful than Nitre, either alone, or mix'd with Carminatives; since, by its means, a Discharge of Wind by the Anus is procur'd, the Flatulencies discover themselves by their Fluctuation and Noise, and are happily eliminated with a Noise, which is in my Opinion, principally owing to a Solution and Relaxation of the constricted intestinal Fibres: For which Reason it is justly commended in spasmodic Colics, especially that of the bilious Kind, on which the Antients bestow'd the Epithet *hot*. But, above all other Medicines, Nitre affords the most considerable Relief to hypochondriac and hysteric Patients, since it is excellently calculated for removing the Spasms and Flatulencies, which are the Cause of all the Symptoms incident to such Patients.

But one of the most considerable and important Virtues of Nitre is, that by which it resists Inflammations; for no Disorder is more injurious to the animal Oeconomy than Inflammations, which in very acute Diseases generally destroy the Patient; since, when they seize the Stomach, they produce Anxieties and Inquietudes; when they affect the Meninges, a Pain of the Head, a Phrenitis, or Convulsions; and when the Lungs, a Danger of Suffocation: When an Inflammation happens in other Parts, a preternatural Heat of the internal, and an excessive Coldness of the external Parts is produc'd; whilst, in the mean time, Inflammations of the sanguiferous Viscera easily degenerate into Abscesses or Gangrenes. In order, therefore, to cure the inflam'd Part, Nitre, either alone, or mix'd with a little Camphire, and other bezoardic Substances, is, of all other things, the most efficacious; so that, if salutary Effects are not produc'd by it, the Cure may be justly despair'd of. In Practice I have long us'd such a Powder with uncommon Success, and found that in Pleuritis, a Phrenitis, a Peripneumony, an Angina, an Inflammation of the Oesophagus and Stomach, and an Erysipelas, a frequent Exhibition of it has, in a great measure, remov'd the Heat, the Pain, the Thirst, and Watchings, by exciting a gentle Moisture all over the Body, which was before dry and parched: When mix'd with other proper Ingredients, and applied externally, it also affords Relief to inflam'd Parts: Thus camphorated Spirit of Wine so dexterously prepar'd, as not to be precipitated by an Affusion of Water, when mix'd with a Solution of Nitre, and a due Quantity of distill'd Vinegar, discusses an Erysipelas, and removes an intense Head-ach.

Besides, Nitre is one of the most considerable of those Medicines calculated for the Cure of Spasms and Constrictions, the Misfortunes excited by which, in the nervous Parts of the human Body, are sufficiently apparent to those who are blest with a Knowledge of Diseases, and their various Causes: At least, 'tis certain, that enormous Hæmorrhages sometimes arise from no other Cause, than an Inequality of the Circulation of the Blood; since the Vessels, which in some Parts are smaller than in others, being spasmodically constricted, the Blood is impetuously convey'd to the adjacent Vessels, and their Ramifications; by too much distending which, and opening their Orifices, violent Hæmorrhages are often produc'd: By this means, Spittings of Blood, Hæmorrhages of the Nose, excessive Evacuations from the hæmorrhoidal Veins, Bloody Urine, and immoderate Discharges of Blood from the Uterus, are produc'd. In the Cure of these Disorders, the most ra-

tional Method of proceeding is, to relax the spasmodically constricted Parts, and restore a free and easy Circulation of the Humours thro' the Vessels. This Intention, as we learn from Experience, is excellently answer'd by Nitre, which in these Disorders is highly extol'd by the most judicious practical Physicians. Thus *Riverius*, in *Cent. 1. Obs. 94.* extols it in an immoderate Discharge of the Lochia; in *Cent. 1. Obs. 96.* in an excessive Evacuation of the Menes; in *Cent. 1. Obs. 94.* in a Spitting of Blood; in *Cent. 1. Obs. 83.* in Hæmorrhages attended with a malignant Fever; and, in *Cent. 2. Obs. 81.* he recommends it for these and similar Purposes. And as Spasms are frequently the Causes of a Suppression of the usual Evacuations of Blood from the Uterus in Women; since its constricted Parts resist the Impulse of the Blood to the uterine Vessels, hence 'tis obvious, that Nitre in such a Case affords singular Relief; for which Reason *Riverius*, in *Cent. 1. Obs. 80.* recommends it in a Suppression of the Lochia; and *Grulingius*, in *Obs. 50.* in a Diminution of the menstrual Discharge. As Pains are often the Off-spring of Spasms, so those terrible Pains, which generally accompany the Excretion of Stones which affect the Intestines, and are taken for a colical Indisposition, or which seize the Pericranium, are happily remov'd by the Use of Nitre: And *Welschius*, in *Cent. 2. Curat. ult.* informs us, that by Nitre alone, a large Number of Soldiers in the Hungarian Camp were freed from an Epidemical Cephalalgia.

Though these Things are obvious in Practice, and confirmed by Experience, it is, nevertheless, an additional Satisfaction to the Mind, to know the Reason why, and the Manner in which, Nitre produces these Effects in the human Body.

Though it is, certainly, a difficult Task to know and demonstrate the Virtues of Medicines, yet this Difficulty ought not to make us despair in our Pursuit, but rather animate our Courage in the painful and glorious Research; for Experience, supported by Reason and Judgment, in the Exhibition and Application of Medicines, are the two things on which the Truth and Certainty of Physic depend. We shall, therefore, endeavour to deduce the various Effects of Nitre from one common Principle or Source. The principal Virtue, then, of Nitre is, to refrigerate and extinguish the preternatural Heat of the Blood. Now it is not only certain, but agreed upon by Physicians, that all Heat in the Body is produced by a turbulent intestine Motion of the Particles of the Blood, especially its sulphureous Parts, round their Axis; so that the brisker and greater this Motion is, the greater is the Attrition produced by the Pressure of the Blood, by means of the Heart, Arteries, and fibrous Parts of the Body; and the greater the Attrition, the greater the Heat must, of course, be. Whoever, therefore, knows how to stop this intestine Motion, must, of course, know how to remove the preternatural Heat. This Motion is stop'd, when the Particles of the Blood cease to move around their Axes, and proceed in streight Lines, which, according to the modern Philosophy, is the Cause of Cold. This is sufficiently proved from contracting the Mouth very narrow, and blowing quickly; which produces a Sensation of Cold, whereas, when the Breath is gently emitted, a Sense of Heat is excited: And I am of Opinion, that this artificial Cold is not so much owing to any material Principle, as to a particular Direction of Motion in the Particles; and this seems to be demonstrated by the curious Conversion of Water into Ice, in the middle of Summer, by means of Nitre, common Salt, and Sal Ammoniac.

But that there is such a Motion in Nitre, or that the Motion of its Parts, when disengaged by Heat, is rectilinear, may be proved from various Circumstances. That Nitre is elastic and expansive, is sufficiently certain from Gunpowder, whose Virtues can only be deduced from this Quality; for this Powder is of so elastic and expansive a Nature, as to force Objects from itself to a certain unlimited Circumference. Besides, that Nitre is possessed of such a Quality, is sufficiently obvious from its Mixture with coagulated Blood, which, by its means, is forthwith resolv'd, becomes fluid, and assumes a red and florid Colour. To this elastic Expansion of Nitre it is, also, owing, that, when mixed with Spring-water, it sensibly augments its Coldness. Hence it is agreeable to Reason, and our Conceptions of Things, that Nitre, taken internally, by producing such an Expansion in the Fluids, diminishes the hot and intestine Commotion of the Parts of the Blood and Humours. And this Effect it produces not only by diminishing the Agitation and Effervescence of the acrid Bile with other Juices in the Primæ Viæ, but, also, by correcting the exorbitant Heat and Commotion of the Parts of the Blood in the Heart and Lungs. When this hot and intestine Motion is allayed, the Fibres, before constricted by the Heat, are relaxed, the Mouths of the cutaneous Emunctories opened, and Perspiration rendered freer: So that the active and sulphureous Parts, retained in the Body, exhale; by which means the Heat and Thirst are allayed, the Spasms removed, the Pain alleviated, and both the Excrements and Flatulencies freely evacuated from the Intestines. Besides, when the Heat, which consumes the Moisture of the Body, is mitigated, this Moisture is afterwards retained, and softens and relaxes the Parts before constricted; so that Nitre not only refrigerates, but moistens.

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We have, also, observed, that Nitre preserves Bodies from Putrefaction, which it powerfully resists. This Effect is, also, produced by the expansive Quality of Nitre, which extinguishes the intestine Motion, which dissolves the Union of the Parts of which the Body is composed, and in which the Force and Cause of Putrefaction consist: So that in the Preservation of Bodies Nitre produces an Effect analogous to that of Cold.

We now come to inquire into the Cause of that singular Virtue, by which Nitre corrects and subdues the caustic and drastic Qualities of some Medicines, as we have already observed with respect to drastic Purgatives, Insects abounding with an acrid Salt, and Minerals of a deleterious Quality, the drastic Force of all which is so corrected by Nitre, that the Physician needs no longer dread their dangerous Consequences. The Reason of this seems to be, that all virulent Substances, by an highly penetrating and active Motion of their minute and subtile Parts, irritate, lancinate, and corrode, the tense Nerves, and delicate tender Fibres. Now the more numerous, and the more closely united, such Particles are, the more forcibly they exert their Power; and, on the contrary, the more they are divided, the more of their Force they lose. It is confirmed by Experience, that not only all Caustics, whether acid or alkaline, but, also, Sublimate itself, than which there is no stronger Poison, lose their deleterious Quality, when only exhibited in a sufficient Quantity of Water. In like manner, when Nitre, calcined with Regulus of Antimony, does, by its resolvent and expansive Quality, separate the antimonial Particles from each other in the Fire, dissolve their close Union, and, by dividing them, render them more subtile, an innocent, mild, and diaphoretic Quality is conveyed to them. But this Division of the Parts must be sufficient; for which Reason two or three Parts of the Nitre are requisite to one of the Antimony; for, if the Quantity of Nitre is too small, the Calx of the Antimony will, in some measure, excite a Nausea and Vomiting. This diaphoretic Calx, when duly prepared, and fused with an equal Quantity of Nitre, and Powder of Charcoal, immediately resumes its virulent Quality, because its Parts, which were formerly divided, are now collected, and closely united. Nor is it improbable, that Nitre, when mixed with drastic Purgatives, and Vesicatories, acts by dividing and separating their Particles.

From what has been said, it is sufficiently obvious, that Nitre is an excellent Corrector of all drastic Substances, and, consequently, of singular Service in the Practice of Physic. Thus, it is commodiously mixed with Emetics, Purgatives, Diuretics, and Sudorifics of the drastic Kind: For which Reason an highly safe Vomit may be prepared by mixing two Grains of emetic Tartar with twelve Grains of the Powder of Crabs-eyes, and three Grains of the Powder of Nitre. Very safe purging Pills, proper in various Cases, may be prepared by adding six Grains of Nitre to the *Pilula Avicennae*, and the *Extractum Panchymagogum Crollii*, of each ten Grains. A valuable Diuretic may be, also, prepared, by adding some Grains of purified Nitre to Millepedes, and Crabs-eyes, of each ten Grains. If twelve Grains of Bezoardic Mineral are mixed with one Grain of Camphire, and with volatile Salt of Hartshorn, and Nitre, each four Grains, we have a very safe and efficacious Sudorific. If we desire a safe Mercurial Medicine for removing Coagulations of the Lymph, and Infarctions of the Glands, take prepared Cinnabar of any Kind, whether native, or Cinnabar of Antimony, and mix with a due Quantity of Nitre, and other precipitating Substances. And this is a valuable and safe Remedy in chronical Disorders. We, also, use, with singular Benefit, Nitre and Cinnabar with those Sedatives, the principal Ingredient of which is Opium, such as the *Theriaca Coelestis*, *Laudanum Opiatum*, and the *Pilula Cynoglossae*; since, by this means, their narcotic Quality is much corrected. *F. Hoffman.*

THE EXAMINATION OF NITRE.

1. Put Nitre into a clean Crucible, and fuse it with a gentle Fire, without Fulmination: It remains melted like pure Water, without changing its Nature, and scarce losing any thing by Exhalation. It passes through the Crucible, but does not grow alkaline, or become sharper; and, when poured out, it presently becomes solid; and never, when thus melted, takes Flame, nor ignites; whence it is falsely called an inflammable Salt. And yet, while it remains thus fused, if any combustible Matter be thrown into it, it immediately takes Flame, whence it came to be called Inflammable; but, when taken internally, it cools the Body more than any other Salt.

2. Put a Solution of the purest Nitre, in Water, into separate Glass Vessels, and pour successively to them different Acids; and the Liquors will be found to make no Ebullition, nor to grow warm, opaque, or turbid. To another Parcel of the same pour pure Oil of Tartar *per Deliquium*; whereupon the Liquor will grow opaque and muddy, and soon depose a large Sediment at the Bottom; from whence the Liquor being decanted, it will no longer grow troubled by the Addition of fresh Alkali. Nearly the same Thing happens upon the Addition of a volatile Alkali. And this is the true Nature of Nitre.

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Hence it appears, that Nitre is neither alkaline, nor acid, nor of itself inflammable; but of all Salts the most easily fused in the Fire.

THE REFINEMENT AND CRYSTALLIZATION OF NITRE.

1. Dissolve common Nitre in six times its Quantity of boiling Water; strain the hot Lixivium quick; put it into a clean cylindrical Vessel; and exhale it over a clear Fire, to a Pellicle: Set it in a cool Place with clean Sticks a-cross the Vessel; there will presently be formed long, prismatic, hexagonal, transparent Crystals. Collect these, and put them into an earthen Colander, that the Liquor may drain from them; afterwards dry the Nitre in the open Air.

2. Dissolve Nitre in eight times its Quantity of boiling Water; filtre the Lixivium; then drop therein some pure Oil of Tartar; mix them well; then drop in more, and continue to do thus, till the Liquor appears no more disturbed. Boil the Lixivium for a single Minute; strain it hot to make it perfectly clear; exhale to a Pellicle; pour it out into a clean cylindrical Vessel, with little Sticks laid a-cross, and let it stand in a quiet Place; prismatic Crystals, like the former, will thus be formed. No Experiment shews, that any Alkali here adheres to the Crystals of Nitre, which is thus made pure; nor does it appear, that any Method can afford it purer.

3. Let the Lixivium that remains after this first Crystallization, be diluted with an equal Quantity of fair Water; then boil for a Moment, filtre hot, inspissate to a Pellicle, and set in a cold Place, as before: It will thus shoot into Crystals of pure Nitre, which are to be dried as above. The remaining Lixivium, being again treated in the same manner, and again set to crystallize, yields more of them. And now the remaining Liquor, which is far and sharp, will afford no more Crystals, and dries with great Difficulty; and this happens not only when Alkali has been used in the refining, but, also, when nothing but pure Nitre was added. This last Remainder is a peculiar and very saline Fluid, that long remains fixed in the Fire.

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1. By this means an excellent Nitre is procured for Medicinal Uses, being very light, of a particular bitterish Taste, and, when taken into the Body, it easily dissolves therein; wonderfully cools and thins the Blood, giving a florid Colour thereto; and checking the Inclinations to Venery. It is changed in the Body, not being unalterable therein, like Sea-salt, but turning into the human Salt. If the moist or solid Parts of Animals be salted with this Nitre, they are thereby kept extremely red, and free from Putrefaction: Whence, in all inflammatory Distempers, attended with an inflammatory Condensation of the Blood, this Salt proves excellently attenuating, and, at the same time, no way offends by any violent Acrimony, nor proves prejudicial by its Weight. It does not occasion Thirst, and prevents the Salt of the Body from turning alkaline, and the Oil from putrefying; and, on this account, it may properly be called an Antiphlogistic Salt.

2. Here we see an Example of that Operation usually called the Crystallization of Salts, which is a Collection of saline Principles, of the same Species, into particular Glebes, or Shoots, always of the same Figure, and peculiar to each particular Salt. This Depuration depends upon the Law of Nature; whereby the Parts of different Salts, being diluted in Water, and brought to a certain Proportion in respect of the Water, begin to acquire a Faculty of uniting their own particular Parts together, more than of uniting with the Water, or any other Salts: Whence they repel both the Water, and other Salts. And thus those Salts always begin to come first together, when several Kinds are mixed, which require most Water to keep them dissolved; for thus these associate first, and repel from them the other saline Parts, that remain fluid in less Water; so that, if any Salts could be resolved in one and the same Proportion of Water, it would be extremely difficult to separate and distinguish them, which is now easily and certainly performed. And thus Nitre is perfectly separated from Sea-salt, and Sea-salt from Salt of Tartar. For, when Nitre is thoroughly purified from Sea-salt by Crystallization, it affords an acid Spirit by Distillation, which dissolves Silver, but will not touch Gold; whereas, if a little Sea-salt remained with the Nitre, it would afford an Aqua-regia, not an Aqua-fortis. The same Nitre, being dissolved in Water, and purified with the Addition of fixed Alkali, by the bare Crystallization, throws off all the Alkali; for in Distillation it is converted into an acid Spirit, which would not be such, if any fixed Alkali adhered to the Nitre. Whence we may observe a wonderful attractive and repelling Power, in this Action of Crystallization.

3. If these Crystals are well prepared, they always appear transparent, and of their own exact particular Figure; and so long as they appear thus, they always consist of the Salt and Water, united

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united in a certain Method and Proportion. This appears from hence, that if these Crystals be put into a clean Glass, covered with an Alembic-head, and heated by the Fire, they yield a pure Water; but, at the same time, presently grow white, opaque, and, losing their Figure, fall into a Powder of no particular Figure. But if this Powder be again dissolv'd in Water, inspissated, and crystallized, the same Form and Transparency return. Whence this ought to be considered by those who write about the Figure of the saline Principle. Nitre, thus purified, remains dry in the Air, and does not easily run by the Moisture thereof.

NITRE CHANGED TO ALCALI, WITH TARTAR AND FIRE.

Take six Ounces of pure dry Nitre, reduced to Powder; and the same Quantity of pure, dry, and pulveriz'd Cream of Tartar: Mix them together in a Mortar, and again dry the Powder thoroughly. Put an Ounce of this Powder into a clean and dry Bell-metal Mortar, first well heated; and apply thereto a little Bit of burning Coal: The whole Mixture will then instantly deflagrate, with a violent Noise, scattering many Sparks abroad, dispersing a strong-smelling Fume, and leaving behind a white Mass, somewhat greenish in several Parts. As soon as the Deflagration is over, throw half an Ounce of the same Powder upon the burning Mass; and this, also, will deflagrate as the former, but quicker, because of the greater Heat. Continue thus, till the whole Mass is deflagrated, and leaves behind a white, greenish, uniform Mass, except a few small Parts up-and-down, which have not sufficiently felt the Fire. These, therefore, should be carefully separated from the Mass: And hence it would be better, if only a small Quantity were deflagrated at once, because the Fire would be thus more equably applied thereto.

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Hence it appears, that Nitre, which, of itself, is not inflammable, according to the first Process, yet, being mixed with Tartar, which is oily, it immediately takes Fire, with a violent Agitation, like Gunpowder, upon the Application of a live Coal; and that the manifestly acid Salt, made by a Mixture of Nitre and Tartar, is, at once, by a sudden, single, inflaming Action of the Fire, turned into Alkali; of which, a little before, there appeared no Sign, either in the Nitre, or the Tartar. Nor is there hitherto known any Method so sudden of producing a strong fixed Alkali, from a Mixture of Salts that are not alkaline; but, on the contrary, giving manifest Signs of a predominating Acid. For the Salt, thus produced, is a sharp, fixed, and strong Alkali in all its Effects, and almost in every chymical, medicinal, and physical Operation. It, however, differs somewhat from other fixed Alkalies, as yielding, when Oil of Vitriol is poured upon it, a certain acid Spirit, that plainly appears by its Scent to be Spirit of Nitre; which shews, that some true Nitre still remains in this Alkali, but the Quantity of this Acid is small. We have here, therefore, an excellent Method of expeditiously preparing a fixed Alkali, whenever it is wanted. And this sudden Change of Nitre into Alkali will not appear strange to him who knows, that no Nitre is obtained in Europe without the Assistance of fixed Salt, which is found in the Ashes of burnt Wood. Lastly, the Salt, thus prepared, readily runs in the Air.

NITRE TURNED TO AN ALCALI, WITH LIVE COALS.

Fill a strong and large Crucible with very dry powdered Nitre, laid in light; set the Crucible firm in the Furnace, and surround it with burning Coals, at a Distance; then gradually bring them nearer, that the Crucible, with the Nitre it contains, may be thus heated equably, to prevent bursting. When all is now thoroughly hot, apply as strong a Fire as is necessary to make the Nitre run like Water: Then take a little Piece of Wood-coal, thoroughly ignited, and put it gently into the melted Nitre, now at Rest; the Coal (not the Nitre) will thus instantly take Flame with an hissing Noise, and move over the whole Surface of the melted Nitre, with a brisk Motion, till it is consumed, and the Flame extinguished, so as to leave the Nitre melted, as before it was thrown in. Now, throw in another Bit of live Coal, as before, and the same Phenomena ensue. Continue repeating the Operation, till, at length, the Nitre remains fixed with the same Degree of Fire, so as to flow no longer, nor give Flame to the Coal thrown in, which, at length, will always prove the Case. This State may be known to approach, when the Nitre begins to lose its Fluidity, and the Coal leaps briskly about, and sometimes flies out of the Crucible. At this Time, therefore, the Fire should be a little increased. When the Coal ceases to flame any longer, let all cool, and there will remain in the Crucible a Mass with an hollow Part on its Top, where the last burning Coal had rested: This Mass is solid, ponderous, of a Colour

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between white and green, fiery, alkaline, and presently runs in the Air: Therefore, while yet very hot, let it be presently taken out, by breaking the Crucible, and put into a clean Glass, to be carefully stopp'd.

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1. Here the Eye perceives, that Nitre will not take Flame with a burning Coal; and that, between the inflammable Matter of the Coal, and the melted Coal, there arises a great Motion of Impulse, and Repulse; for, when the live Coal, that flew about in the Crucible, is consumed, the Nitre immediately remains without any visible Motion, and does not appear on Flame, till, by the Addition of a fresh Coal, the same Motion is renewed; and, therefore, the Consumption of the Coal is hastened by the melted Nitre, which it would otherwise consume much slower. And this accelerating Action of the Fire upon the combustible Matter seems to increase the Deflagration; and, therefore, that the Effect of Nitre upon Combustible Bodies, by means of Fire, is no more than this violent repulsive Motion, whereby the Coal, if somewhat large, is driven from the Nitre with an explosive Force; after which, the whole Nitre remains calm, and at Rest.
2. The Ashes of the fixed vegetable Coal, after the Deflagration, here turn into a fixed Alkali, which very easily relents in the Air; but this Alkali here produced is much larger than would be afforded by the burnt vegetable Matter, and must, also, proceed from the changed Nitre. This is another Method of converting Nitre into an Alkali: The Alkali thus produced is very difficult to keep dry, but presently relents in the Air, and runs into a strong, fiery, alkaline Liquor, leaving a large Quantity of Ashes behind. But if the Salt, as soon as prepared, be dissolved in Rain-water, and directly strained, and the Fæces, remaining in the Strainer, be washed so long, in Changes of Water, till they retain no Salt, they become insipid, when dried. And, if the several Solutions be evaporated to the Consistence of the Oil of Tartar *per Deliquium*, a Liquor like that will be obtained. And these pure Ashes, being weighed, will shew how much of each remained after the Deflagration, and, consequently, how much Salt of the burnt vegetable Coal might contribute to the making of this Alkali. Hence, also, may be known, how much the Nitre contributed to its Production. This Preparation is commonly called Alcalized, or Fixed Nitre.

SAL PRUNELLÆ, FROM NITRE.

1. Take Nitre, purified according to the second Process; melt it at the Fire, in a clean Crucible; and, as soon as melted, pour it out in Cakes upon a clean Marble; and keep them, under the Title of *Sal Prunellæ*, for Medicinal Use.
2. Dissolve this Nitre in clear Rain-water, wherein red Poppy-flowers have first been infused warm, so as to give a beautiful Tincture, which is to be filtered; inspissate the Solution, and let it shoot into Crystals, in the common Method. These, being dried, are another Kind of *Sal Prunellæ*, or crystal Mineral; formerly held a Secret, as an infallible Antiphlogistic.
3. Melt four Ounces of pure Nitre in a clean Crucible, and throw a Scruple of the Flowers of Sulphur thereon; there will instantly arise a great Flame, like Lightning, which, when the Sulphur is entirely consumed, directly goes out of itself. This being three or four times repeated, and the Nitre poured out into Molds, so as to form little Cakes, is another medicated *Sal Prunellæ*.

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The Nitre, thus prepared, entirely agrees, in Virtue and Use, with that of the second Process; which I rather prefer, as the Trouble of the present Process seems unnecessary, and refined Nitre every way answers the Purpose. Hence we see, that melted Nitre, though perfectly at Rest in the Fire, has the same Effect upon inflammable Sulphur, as it before had on the ignited Coal; that is, to make it deflagrate quicker and stronger; and hence the Discovery of Gunpowder, which is prepared from Nitre, Sulphur, and Coal. This present Preparation has obtained the Name of *Sal Prunellæ* from the Germans, who observing that a certain kind of epidemical Camp Fever, attended with a dangerous black Quinsy, which they call *Die braune*, was happily cured by the Use of this Powder, they, thence, called it by that Name. For the same Reason they gave the same Appellation to the Plant Self-heal, or *Prunella*, because this cures the same Distemper. The Salt, thus prepared, is never alkaline.

SAL POLYCHRESTUS.

1. Melt pure Nitre in a Crucible, and throw a little pure Sulphur thereon, not exceeding a Scruple at a time; it will deflagrate,

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deflagrate, as in the preceding Process: Continue throwing on the same Quantity after each Deflagration, till at length as much Sulphur is used as there was Nitre; towards the End of the Operation, the Sulphur thrown in does not flame so violently, nor so brightly, as before. Keep the Crucible still in the Fire, in the State of Ignition, for an Hour; the Salt will appear redish up-and-down, but otherwise of a grey Colour: If immediately after the Deflagration, with an equal Quantity of Sulphur, the Salt be taken out, without any farther Application of Fire, it has always appeared to me, upon Examination, to have perfectly the same Efficacy as the former.

2. Or take equal Parts of pure dry Nitre, and Flowers of Sulphur; grind them to fine Powder, and heat it carefully; then throw two Scruples thereof at once into an ignited Crucible, while it remains in the Fire; a violent Deflagration will immediately arise; which being over, throw the like Quantity to the Remainder, and this will deflagrate as the former. Continue thus, till all the Powder be thrown in; there will now remain at the Bottom of the Crucible, a Salt extremely like the former.

3. Dissolve the Salt, thus prepared, in five times its Quantity of hot Water, in a Glass Vessel; strain it while it is hot; inspissate it to Driness; it will be of a white Colour, of a bitterish, sulphureous, warm Taste, and of the same Nature with the Salt sometimes found in hot mineral Waters: It is neither Acid, nor Alkali, but consisting of Nitre, and some Proportion of Sulphur, changed by the Fire.

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Sulphur, therefore, which consists of the Acid of Vitriol, and Oil, united together, has here the greatest Part of its Oil consumed in the Flame with the Nitre; and its acid Part, now, perhaps, somewhat changed by the Fire, along with some Part of its Oil, intimately mixed among the Nitre, now, also, changed by the same, so as to produce a neutral fossil Salt in the Fire. Whence we see, that Nitre, which, when fired with a vegetable Coal, was converted into a fixed Alkali, is here, with Sulphur, changed into a fixed Salt, that is not alkaline, tho' it had so long, and so strongly, been deflagrated with Sulphur. Physicians, especially those of *Paris*, having thoroughly experienced the Virtues of this Salt, called it *Polychrestus*, because of its various Effects, and proving successful in many different Diseases. If taken upon an empty Stomach, by a Person in Health, in the Quantity of two Drams, diluted with twenty times its Quantity of Water, the Person walking gently after it, and drinking four or six Ounces of new Whey, for three or four times, it sometimes proves gently vomiting, oftener purgative, but always diuretic and sudorific, so often as it is determined to operate that Way, by Heat, Motion, and Sudorifics. It cuts cold viscous Phlegm, resolves in dense Inflammations of the Blood, opens the Passages, corrects the Bile, when tending to Putrefaction, excites it, when languid, and stimulates it with Gentleness and Safety. Hence, being prudently given in chronic and acute Distempers, it proves curative: It almost certainly cures inveterate Tertians, without any Danger of Relapse, or without obstructing the Viscera: It securely cures Quartans, by gradually resolving the sluggish Matter thereof; and, therefore, has deservedly obtained the Name of the Salt of many Virtues. If a little Sal Ammoniac be thrown into melted Liquor, it takes Fire; and, if saturated by repeated Addition, it affords a wonderful Salt, that deserves to be examined, on account of its particular Nature.

GLAUBER'S SPIRIT OF NITRE.

Put eighteen Ounces of pure dry Nitre, reduced to an impalpable Powder, into a clean Glass Retort, and pour thereon six Ounces of pure, and highly rectified, Oil of Vitriol: Immediately place the Retort in a Sand-furnace, and apply a large Glass Receiver; luting the Juncture with a Mixture of Lime-clay, and a little Sand. There will presently arise an Heat, and a red Fume; apply a moderate Fire, and the Receiver will soon be full of red Fumes, and a Liquor begin to drop gradually. Increase the Fire to the utmost that Sand will give; and then let all spontaneously cool. As soon as the Retort is a little cold, separate the Receiver, and have at hand a strong dry Glass, with a narrow Neck, fitted with a slender Funnel; pour the Liquor into a Bottle, through the Funnel, under a Chimney, to prevent the red Fume from any way coming to the Lungs; for it is sharp, fiery, incredibly volatile, and diffusive: As soon as the Spirit is in, exactly stop the Mouth of the containing Glass, with a Glass Stopper; in like manner, stop the Receiver, and set it by for the same Use; it will remain for many Weeks filled with a red Vapour, in continual Motion. The Liquor in the Glass will appear of a Gold-colour, with a red Vapour always appearing in the empty Part above, even for Years,

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as I have found by Experience; and, if at any time open'd, a volatile, copious, red Vapour immediately flies out. The Operation is best performed in the cold Winter-season.

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Oil of Vitriol can scarce touch Nitre, but there immediately arises a violently acid, sharp, fiery, volatile Spirit, that is perfectly nitrous, and has all the same Effects as common Aquafortis, and, with fixed Alkali, returns to true Nitre again. It is impossible to obtain more Spirit from this Nitre, by the Addition of less or more Oil of Vitriol, whatever Degree of a Sand-heat be used. All the Nitre, therefore, is not changed from fixed to volatile, from solid to fluid, from mild to sharp, from white to red, from neutral to acid, and from unactive to a moveable or restless Liquor. This Liquor is the true Spirit of Nitre, as appears by its Smell, Taste, Colour, red Fumes, Effects, and its Power of regenerating Nitre again. It contains nothing of the Oil of Vitriol employed, as appears from certain Experiments: The other Part of the Nitre, therefore, which is not render'd volatile by this Operation, unites with the Oil of Vitriol, fixes therewith, and becomes a white dense Salt, neither acid, nor alkaline, but neutral; and of a new Kind, somewhat resembling the Tartarum Vitriolatum. Upon considering this, some eminent Chymists have supposed, that Nitre, in its Origin, was made of a fixed alkaline Salt, and the proper Spirit of Nitre, such as is here produced; and mixed together to a perfect Saturation. But as Oil of Vitriol is a much stronger Acid, than Spirit of Nitre; when that comes to be mixed with the Nitre, they imagine, that the fixed alkaline Part of the Nitre attracts the acid Oil of Vitriol, so that the two here unite into a Salt, consisting of the Alkali of Nitre, and the Oil of Vitriol, while the pure Acid of the Nitre, now set free, by the Oil of Vitriol, from the Alkali that detained it before, remains a pure, red, volatile Acid, of its own peculiar Nature. Hence they attribute this whole Action to the bare Separation of the Parts pre-existing in this Form before, and not produced afresh by the Action of the Fire. This Explanation seems very plausible, and countenanced by other Experiments, particularly in the two next Processes but one. But if we consider the Origin of Nitre from Animals, and fixed Alkali, it seems difficult to find a Principle in them, any way resembling such an acid Spirit, as is here prepared; especially since the most diligent Inquirers into Nature cannot find any perfect Nitre spontaneously generated. Certainly there is no Instance of any natural Acid like that here obtained; we must, therefore, abide by our Experiments, and beware of hasty Conclusions. There is no known Method, either of Art or Nature, for obtaining a stronger, or a purer, Spirit of Nitre than this; whence we shall always use this Spirit for the future, in those Operations that require it. *Glauber* was the first who discovered this Art, which he held as a Secret, and sold the Production at an extraordinary Price, but at length divulged the Method; to him are we therefore obliged for so excellent an Invention. And hence we have an Intimation, what Numbers of new, useful, and excellent Discoveries might be made, by applying one Body to another, and afterwards working upon them with Fire. The present Experiment is one of the noblest that Chymistry has produced.

GLAUBER'S DULCIFIED SPIRIT OF NITRE.

1. Put into a tall Bolt-head eight Parts of pure Alcohol, prepared without Alkali; let fall into it only a few Drops, at once, of *Glauber's* strong Spirit of Nitre; then leave off, and shake the two Liquors well together, that they may perfectly mix; afterwards drop in more; shake as before: And thus proceed carefully, till an eighth Part of the Spirit of Nitre be added, in proportion to the Alcohol; observing, after each time, to shake the Glass thoroughly. Afterwards digest the Liquors for some time, and then distil twice or thrice over in a Retort: Thus a true dulcified Spirit of Nitre will be obtained.

2. If common Spirit of Nitre, and common Spirit of Wine, were here used, they would not thus afford so noble and balsamic a Spirit, on account of the Water they each of them contain.

3. I have often experienced, and shewn, the dangerous Effects that may arise upon mixing large Quantities of Alcohol, and strong Spirit of Nitre, together: For, if to two Drams of *Glauber's* Spirit of Nitre, contained in a Bolt-head, there be at once added six or seven Drams of Alcohol, there will arise a violent Heat, Ebullition, and Vapour; and all the Liquor suddenly escape out of the Glass, though it were ever so high, and this with great Danger of Suffocation, if it should touch the Lungs; and in this manner I have lost both the Liquors. The excellent Doctor *Slare* has more Observations to the same Purpose, in the *Philosophical Transactions*.

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REMARKS.

Upon thus mixing together Alcohol, and Spirit of Nitre, there immediately arises a fragrant Smell, like that of Southernwood; there is, also, observed an high Degree of Effervescence betwixt this volatile Acid, and pure subtile Oil, without the least Interposition of an Alkali: And yet the Effervescence is almost fiery; so that, if a lighted Candle were applied to the Vapour, the Inside of the Glass would appear of Flame, and the whole instantly burst in a dangerous manner. The oftener these two Liquors are digested and distilled together, the more exactly they unite, and thus afford a perfectly acid and oily Salt, which has an actual preservative, balsamic, detergent, dissolving Virtue, and prevents the Putrefaction of the Bile. Being properly diluted, and prudently used, it presently gives a beautiful Whiteness to the Teeth; but, if imprudently used, destroys them: It restores the Appetite, if depraved by a mucous Phlegm, or corrupt Bile; or if the Cause proceeds from a Weakness of the Stomach: It is a great Carminative; it is recommended as a Preservative against the Stone, and even as a Solvent for it: It was formerly the famous Lithontriptic of *Sylvius*, held at so dear a Price. It promotes Sweat, provokes Urine, allays Thirst, corrects a ferid Breath, and has particular Virtues in the Scurvy. It is conveniently taken upon an empty Stomach to twenty or thirty Drops in Wine, Mead, or Beer.

THE REGENERATION OF NITRE.

1. Take an Ounce of dry fixed Nitre, made according to the third, or fourth Process; dissolve it in eight times its Quantity of Water, and filtre the Solution. Pour the Liquor hot into a clean, heated, large Glass, with a narrow Neck; drop thereto, successively, a few Drops of *Glauber's* strong Spirit of Nitre. The falling in of each Drop suddenly occasions a great Effervescence; shake the Glass so long as this continues; then drop in more, as before; and continue thus, till the Effervescence begins to abate; after which add only a single Drop at a time, and strongly shake the hot Liquor. Proceed thus, carefully, till no more Effervescence appears: The Liquor will be transparent, and certain long and crystalline Shoots will begin to be form'd therein. It has no Scent; the Taste is somewhat bitterish, and perfectly nitrous. Dilute the Liquor a little more, boil it for a Moment, strain it hot, evaporate to a Pellicle, and actual Crystals of Nitre will shoot. Strain the remaining Liquor; inspissate, and crystallize, as before; thus more true Nitre will be obtained.
2. If any other pure fixed Alkali, prepared from Tartar, or Pot-ash, be used in this Experiment, instead of fixed Nitre, the Success will be in every respect the same, and no Difference be found in the Nitre produced.

REMARKS.

The illustrious Mr. *Boyle* conceived so highly of this Experiment, that he thought proper to write a Treatise upon it: And truly it is one of the most capital Discoveries in Chymistry; as shewing how, from the strongest and most corrosive Acid and Alkali, immediately to produce, by a bare proportional Mixture, a neutral, mild; cooling Salt, in no respect corrosive. Here an highly odorous and volatile Acid is, in an Instant, attracted into a fixed Alkali, with the Loss of all its Odour and Volatility, so as to bear a Fire of Fusion, without any remaining Volatility: Whence we may easily understand the great attractive Force there is betwixt Acid and Alkali. At the Instant of this Conflict, a Quantity of elastic and highly expansive Air arises, which is only generated in the Action of the Attraction, and ceases when that is over: Whence Air seems to be struck out of the Bodies of the Acid and Alkali in the Collision: Hence this Action seems to be an Attraction, not a Repulsion; and, perhaps, the violent and sudden Motion arises from the Expulsion and Breaking-out of the Air, while the Alkali and the Acid are closely uniting. Here we see, likewise, a subtile liquid Acid again forms a firm, solid, saline Body with an Alkali; and that the Alkali, which would before run spontaneously in the Air, and the Acid, of the Nitre, scarcely by any other means to be render'd solid, afford a Salt, upon uniting, which, when dry, will remain firm in the Air, and even acquire a solid Form, or shoot into Crystals in Water. Here again we see, that an Alkali may be determined by an Acid, into that kind of Salt which afforded the Acid. Hence Alkali appears a kind of unimpregnated or Female Body, to be impregnated by an Acid, which acts as the Male, with respect thereto, and generates its own Kind, or preserves its Species; and, therefore, the indifferent Nature of Alkali is determined by the Acid. And hence, again, it appears, that the last Principles of Nitre may consist of any fixed Alkali, saturated with the acid Spirit of Nitre; and, therefore, that the Nature thereof, the Figure, and other Properties, may be

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owing to a Conjunction of them both. But whether all Nitre originally proceeded from this Acid, before pre-existing of itself, and united with a fixed Alkali, in like manner pre-existing by itself, I cannot say; and very much question. But that Nitre may be made in this manner, and, also, that it may be procured from Earth, impregnated with the dissolved Parts of Animals, and the saline Parts of Vegetables, as, also, with Quick-lime, I certainly know; and this is sufficient for me.

NITRE REGENERATED IN AN UNFIXED STATE.

1. Into a capacious Glass, with a narrow Neck, put three Ounces of pure volatile alkaline Salt; dilute it with six times its Quantity of fair Water; and, when dissolved, drop in a Quantity of pure Spirit of Nitre; an Effervescence will arise like that of the preceding Process. Continue in the same manner as there directed, till the Point of Saturation be exactly hit; soon after which, oblong, saline, prismatic, eight-sided Crystals will shoot, exactly like Nitre.
2. Again, dilute this compound Liquor, with twice its Quantity of Water; filtre; exhale to a Pellicle, over a gentle Fire; and set the Whole in a cold Place; and nitrous Crystals will be formed. Prosecute the Operation, till all the Salt be shot, which will appear in the Form of scentless Crystals of Nitre. These Crystals easily melt in the Fire, but at the same time fly off, not remaining fixed like Nitre: They make a Flame with all inflammable Matters, like true Nitre; and, with Oil of Vitriol, afford a Spirit like true Nitre. Hence they are true Nitre, but semivolatile.

REMARKS.

This is an excellent Experiment, and teaches the several Particulars explained under the last Process; to which we may add, that here, from two of the most odorous Bodies, there arises a perfectly inodorous Salt; from two violent Caustics, an exceeding cool and mild Salt; from two very volatile Bodies, a Salt that is not volatile, except with a considerable Heat. Here the volatile Alkali, of itself indifferent, is, by a saturating Acid, turned into a particular Salt, of the Nature of the Acid employed, which thus regenerates the Body that produced it: Hence we see, that the Volatility of a Salt depends upon the Alkali contributing to its Composition; which Alkali if fixed, the Salt is fixed; if volatile, the Salt is volatile: And that the Nature of the Salt produced depends upon the Acid mixed therein. Hence we have the Method of procuring a volatile Nitre; the Discovery of which has exercised the Labour and Industry of the Chymists of all Ages. The Virtues of the semivolatile Liquor, thus prepared, as far as I could observe, are of the same Kind with those of common Nitre, or the fixed regenerated Kind, though more gentle; and differ only, as the Virtues of Sea-salt differ from those of Sal Ammoniac.

GLAUBER'S ALCAHEST.

Put the alkaline Salt, prepared according to the fourth Process, in a glazed Dish; and expose it to the open Air, in a cold quiet Place, free from Dust; it will soon begin to run: Pour off what is dissolved into a clean Glass. Again, expose the Remainder to the open Air, and repeat the Operation, till the whole Salt is run into a Liquor. Much Ashes will remain behind; but the Liquor, when strained, becomes clear, alkaline, and thick, like Oil of Tartar per Deliquium.

REMARKS.

This is that famous Liquor of the Chymists, boasted as so great a Secret by its Inventor *Glauber*, who put it off for the true Alcahest; but Secrets once revealed are sighted, and this seems to be the Case here. By all the Experiments I have made, I could never discover any thing particular, and which I did not, also, find in Oil of Tartar per Deliquium, in whatever Case I applied it; but *Glauber's* Alcahest is prepared with more Difficulty, obtained in less Quantity, and comes dearer; and hence, perhaps, pleases better.

NITRUM NITRATUM.

To eight Ounces of the Lixivium of pure Nitre, put thirty Drops of the strongest Spirit of Nitre; evaporate to a Pellicle, and crystallize after the common manner: Perfect nitrous Crystals will be thus obtained, but of an acid Taste.

REMARKS.

This Process serves to shew how certain Salts may be united, which the Acids themselves afford, into the Form of a compound Salt; and, by adding more or less of the Spirit, the Salt may be made more or less acid; but the more acid it is made, with the more Difficulty it afterwards dries, and keeps dry; being thus always subject to run in the Air. The Nitre, thus

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thus prepared, is advantageously used in burning Fevers, attended with a dry, foul Tongue, and Thirst.

VEGETATING NITRE.

If, in the Preparation of *Glauber's Spirit of Nitre*, there are taken four Parts of Nitre, and one of Oil of Vitriol, and, after all the Spirit is entirely driven off, the white Salt, remaining perfectly dry in the Retort, be left in the open Air, its Surface will soon begin to be covered with a thick long Down, as if it grew; which Phenomenon I do not remember to have observed in other Salts. But if the Salt be dissolved in Water, strained and evaporated to Dryness, in a cylindrical Glass, then kept exposed to the open Air, its upper Surface will often appear thick-set with a kind of actual little branching Plants; all which dissolve away, upon the Application of Heat, so as to leave the Surface even; but upon exposing the Vessel to the open Air, in a quiet Place, they have grown up, as before; thus several times exhibiting the Resuscitation of Plants, as it were, from their own Ashes, of which some of the Chymists have formed so many Fables; and I have sometimes suspected the thing might, perhaps, be done by these means.

REMARKS.

This curious Experiment shews, that the great Disposition which Nitre has to crystallize, affords an Opportunity of imagining a kind of artificial Vegetation, such as some over-credulous Artists have feigned, but never, I conceive, exhibited under the Title of vegetable Resuscitation.

SPIRIT OF NITRE WITH BOLE.

1. Take a Pound and an half of purified Nitre, reduced to Powder; and four Pounds and an half of common red Bole: Mix them well together; put the Mixture into an earthen long Neck, so as not to rise into the Neck thereof, as the long Neck lies horizontal in the Furnace: Let two of these long Necks be used at once, and lute on their Receivers; apply a gentle Fire, at first, to warm the Matters, and increase a little every Quarter of an Hour, till, by degrees, the Furnace and Vessels become thoroughly hot. A moist Vapour will now begin to come into the Receiver; increase the Fire so far, by degrees, in the Space of half an Hour, till the Vapour comes over redish; and gradually raise the Heat, till the Vapour comes over perfectly red. Continue thus for three Hours; at length raise the Fire so high, till the long Necks grow red-hot, so that the ignited Matter may, in the long Necks, be perceived through the Glass Receivers; and keep the Fire up to this Height for two Hours: Then let all cool; and, as soon as the Necks of the long Necks are cooled, take off the Receivers, with Care to avoid the Fume: Pour the distilled Liquor through a Funnel into a Glass Vessel, which, being exactly fitted with a Glass Stopper, is to be set in a cold Place. This will be a very strong, acid, sharp, and caustic Spirit of Nitre, exhaling very red Fumes, like *Glauber's Spirit of Nitre*, but is never so strong. When the Distillation has been well performed, I have had of this Spirit, nine Sixteenths, in respect of the Nitre employed.
2. The Bole, remaining behind, still retains a Taste of the Nitre. I have boiled the Whole of it in a large Proportion of Water, strained the hot Liquor, and repeated the Boiling with fresh Water, till it would fetch out nothing more: Then, boiling all the strained Lixiviums, which were now clear, and of a nitrous Taste, I evaporated them to a small Quantity, of the Thickness of Milk; it had a Taste not very sharp, but lixivious, as if somewhat alkaline; and, examining it by putting Acids thereto, I found it, in some measure, alkaline, a little changed from the former Nature of Nitre, and yet not true Alkali.
3. Great Care is to be taken in this Operation, that the Coals thrown into the Furnace, during the Distillation, are first thoroughly heated; otherwise they would break the long Necks by the Coldness suddenly driven out of them by the Fire. Hence, Care, also, should be taken upon opening the Door of the Furnace, to feed the Fire, lest the cold Air, entering in too suddenly, should crack the Vessels; and be cautious, likewise, lest, upon opening the Door of the Furnace, the Flame should violently burst out into the Face of the Operator, or be received with the Air into the Lungs.
4. Pure Nitre, by itself, in a Glass Retort, and a Sand-heat, melts long before the Glass; and, when heated so as to melt, it receives no more Heat by increasing the Fire; and, tho' long kept in this State, it affords no acid Spirit, but remains fixed, without considerably exhaling. And if long detained thus in an *Hessian* Retort, and the Fire be violent,

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the Salt, at length, passes through the Pores of the earthen Vessel, without sending any acid Spirit into the Receiver; but is at length almost lost, by transuding through the Vessel.

5. Nitre, mixed with thrice its Quantity of Bole, Brick, or Tobacco-pipe-clay, reduced to Powder, then put into a Crucible, and set in the Fire, does not melt, but fume; affords an acid Vapour; and thus, in a short time, evaporates its greatest Part into the Air.

REMARKS.

1. Hence it is plain, that the Fire, acting upon Nitre, while it is prevented from melting, by the Interposition of thrice its Quantity of a Matter that will not flow in the Fire, has a very different Effect, and heats much more strongly, than when the Salt flows in the Fire; and, therefore, cannot be farther changed thereby. The Change is effected, by rendering a fixed Substance volatile, a mild one sharp, changing a Solid into a Fluid, and a neutral Body into a violent Acid; all which can only be obtained, by preventing the Fusion of the Salt, as, in the seventh Process, we did, by means of Oil of Vitriol, in a Sand-heat. But whether, in the Spirit thus prepared, there is not, also, some Liquor proceeding from the Bole, has been much questioned; principally, because the Bole, once employed in this Operation, is said to be incapable of serving again; for that the Spirit of Nitre cannot hence be obtained. But, certainly, the Spirit of Nitre prepared with the Oil of Vitriol, and that with the Calx of Vitriol, under the Name of *Aqua-fortis*, and that with calcined Alum, are alike to this, almost without the least Difference; and yet no Bole was employed in their Production. Let the Experiments, therefore, of each Side of the Question, be collected; a longer Time will shew what a short one cannot.
2. Again, some discerning Chymists among the Moderns suppose Nitre to be made up of Alkali, and a particular nitrous Acid, as we explained in the seventh, ninth, and tenth Processes. The incomparable M. *Homburg* has, by a laborious Experiment, and a subtle Calculation, here determined the Proportion of the Alkali to the Acid, to be as four hundred and eighty to an hundred and eighty-three. But here, by Distillation, nine Sixteenths of Acid are obtained, in respect of the Nitre, and yet scarce any Alkali is obtained from the Remainder; whence it certainly appears, that this Acid proceeds from the Nitre, as changed by the Fire, and not by a Separation of the Acid, and the Alkali, pre-existing in the Compound before the Operation; so that the wonderful Action of the Fire here performs what is otherwise effected by the Oil of Vitriol. Since, therefore, true Nitre is never found spontaneous in Nature, and its Spirit never without the Assistance of Oil of Vitriol or Fire, while the Salt is prevented from melting, we conceive that the acid Spirit of Nitre no-where existed in Nature, before the Discovery of the Method of procuring Nitre, and drawing a Spirit from it; so far, we mean, as can be known from chymical Experiments. Thus it was impossible both for Art and Nature to make Gunpowder before the Discovery of Nitre, though even all other natural Things were known, except Nitre alone.
3. But when the red Colcothar of Vitriol, or calcined Alum, is mixed with Nitre in a certain Proportion, so as to hinder from melting in the Fire, and, consequently, fit it to sustain a greater Heat; it thus, also, affords an acid Spirit in red Fumes, in every respect resembling the true Spirit of Nitre, of the present Process, and in a large Quantity. We are here to consider, that the Colcothar, and burnt Alum, conceal a large Quantity of a very strong Acid, called Oil of Vitriol, or Spirit of Alum; and these Acids, being actuated by the Fire, enter the Nitre, separate its Spirit, substitute themselves in its Place, and thus leave, for a Remainder, a *Caput mortuum*, containing that called the *Panacea duplicata*, which is considerably like the Salt produced in the making of *Glauber's Spirit of Nitre*; and this is the Origin of all the *Aqua-fortis*, whose Production entirely depends upon the Reason above assigned, in the seventh Process. This Transmigration of saline acid Spirits is a wonderful Operation, while one of them, possessing the Place of another, drives the former out, and thus appears to produce unexpected Transmutations. By what we can hitherto learn, Oil of Sulphur made by the Bell, and Oil of Alum, are perfectly the same Acid; having all of them this Property, that they separate all the other known Acids from the Bodies that hold them, render them perfectly volatile, possess the Places thereof, and, driving out the former acid Spirits, form, with the Remainder, a new Body, of its own particular Nature, according to that of this stronger Acid. *Aqua-fortis* is a mere Spirit of Nitre; Colcothar can, by no Violence of Fire, though ever so long continued, be deprived of all its Acid: Hence the *Caput Mortuum* of Vitriol and Alum abound with a strong Acid, which the Fire cannot drive over; this Acid is attracted by the other Part of the Nitre,

Nitre, which cannot be converted into Acid; and, uniting with this Part by the Force of the Fire, makes a new kind of Salt, and sends over all the volatile acid Spirit, in the Form of Aqua-fortis. But they who promise, by the Art of Chymistry, to convert the whole Body of Nitre by Distillation, into the Spirit of Nitre, by a true Change of the Whole, so as from a Pound of Nitre to procure a Pound of Spirit, assert a Thing, which to me, seems perfectly impossible, and contrary to the Nature of the Art. I have made various Experiments to assure me of this Truth.

The Spirit of Nitre, of the present Process, *Glauber's Spirit of Nitre*, and the common Aqua-fortis, well prepared; afford a nitrous Acid, distinguished by its red Fumes from all other Acids; and always discovers itself by means of these Fumes, and its particular Odour. When mixed with fixed Alkali, they regenerate a true Nitre.

FREDERIC HOFFMAN'S FUMING SPIRIT OF NITRE.

In Chymical Authors, there is frequent Mention made of Flame, produced by a Mixture of certain Liquors. Thus *Becher*, in his *Physica Subterranea*, tells us, that Oil of Vitriol, mixed with Oil of Turpentine, excites an intense Heat, attended with Flame; but any one will, upon trying the Experiment, find that it is not so, even though the strongest Oil of Vitriol should be used. An Experiment of the like Kind is mentioned by *Olaus Borrichius*, in *Act. Hassnien. An. 1671. Obs. 71.* in which two Liquors, cold to the Touch, when mixed together, produce a Flame. The Experiment is this:

Take of recent-drawn Spirit of Venice Turpentine, after it is cold, four Ounces; put these in a large Glass, and pour to them six Ounces of recent and generous, but cold Aqua-fortis. Then, agitating the Vessel, leave the Liquor exposed to the open Air; and, in half an Hour's time, thick Clouds of Smoke, and a conspicuous Flame, breaking out at the Mouth of the Glass, will be perceived.

Though I frequently tried this Experiment, by mixing strong Aqua-fortis with Spirit or Oil of Turpentine, I only observed an Ebullition, which was, indeed, intensely hot, and accompanied with a large Quantity of Smoke, but would never flame. But that the Authority of *Borrichius* is not, even in this Assertion, to be doubted of, is sufficiently obvious, from the following Considerations.

Some more than twenty Years ago, having mixed and distilled the best Oil of Vitriol with common Salt, according to *Glauber's* Method; and, instead of common Salt, distilling the same Oil with pure and dry Nitre, by means of a gentle Fire from a Glass Retort, placed in Sand, I obtained a Spirit of a yellowish-red Colour, which smoked strongly; and, by means of its Subtility, could hardly be confined within the Vessel.

With this Spirit I made various Experiments, mixing it with highly rectified Spirit of Wine, and distilled Oils; upon which there happened a violent Ebullition, accompanied with an intense Heat, and a large Quantity of red and fetid Smoke breaking from the Vessel. Afterwards, pouring it upon a very small Quantity of common Oil of Cloves, casually left in a Glass, there was first an Effervescence produced, and then a small Flame, which only lasted for a Moment. Some Days after, I endeavoured to shew the same Experiment to some Lovers of Chymical Discoveries; but the Effect did not answer my Expectation, without Doubt, because the Glass was not sufficiently covered, but only closed with Wax, which was almost totally consumed by the Spirit. I, therefore, took care that the Spirit should be again distilled, and put into a Glass, which I stopped with a smooth Glass Stopper, that the smoking and penetrating Volatility might be the more effectually preserved. By this means, the Experiment succeeded happily, since a clear and transparent Flame, hardly attended with any Smoke, arose every time this Spirit was poured upon Oil of Cloves.

The Account of this Experiment happening to reach *Leipfic* and *Berlin*, the same Year, two celebrated Men, *Leibnitz* and *Tschirnhausen*, paid me a Visit, and were struck with Surprise, upon seeing the Experiment performed. But, in the *Acta Eruditorum*, I afterwards read, that *Dr. Slare*, of the Royal Society in England, sent Word from *Paris*, that *Mr. Homberg* prepared a Spirit, which, when mixed with aromatic and Asiatic Oils, produced a transparent and conspicuous Flame. This Experiment was, also, afterwards mentioned by *Dr. Slare*, in the Royal Society, and described in their Transactions. Notwithstanding this, I can safely affirm, that, without any Instruction, I was casually the Inventor of this Experiment. For this Reason the illustrious *Leibnitz*, in his *Theodicaea*, calls this Spirit, *Spiritus Hoffmanni*, and thinks that some of my Disciples had revealed it at *Paris*. Perhaps, also, at one and the same time, this Discovery was made in different Countries; but I am far from aspiring after any Praise on this Account, since the Discovery is rather curious than useful, and only tends to illustrate the Generation of Flame.

It is prepared in the following Manner;

Take of well-depurated Nitre, such as that of *Russia*, which is free from common Salt, half a Pound; this we render sufficiently dry, in a gentle Heat. Afterwards, we pour upon it, in a Glass Retort, an equal Quantity of highly-rectified Oil of Vitriol; and, distilling by a gentle Sand-heat, we, in a few Hours, obtain this highly volatile and sulphureous Spirit.

If the Nitre is not sufficiently dried, or if it is impure, and contaminated by saline or earthy Parts, a very strong Spirit is at first yielded, which is to be separated; for that which comes over with the Phlegm, is less fit for this Purpose, though, at the same time, it is very useful for making the *Spiritus Nitri Dulcis*. 'Tis, also, to be observed, that this Spirit is always more penetrating and strong, when it is conveyed into the Receiver, not of a redish, but of a yellowish Colour, because the former indicates, that the Nitre is mixed with many heterogeneous Parts.

In the Retort, there subsides a Salt, compacted into an highly solid Form, of a very white Colour, and of a convex Figure, which it receives from the concave Part of the Retort. This Salt is of an highly aqueous Taste, and not without the greatest Difficulty to be dissolved by an aqueous Menstruum. But 'tis surprising, that, by so gentle a Sand-heat, these two Salts, Vitriol and Nitre, which cannot be, without Difficulty, fused by a strong Fire, should be colligated into one highly solid Mass, which, without Doubt, is to be ascribed to these igneous Spirits, excited by the mutual Union of these two Bodies, by means of which, the intimate Union, Mixture, and Colligation, of all the Parts was produced.

With this Spirit I have made various Experiments, by mixing it with distilled Oils; and 'tis observable, that this Spirit, when mixed with the heaviest Oils, such as those of Cloves, Cinnamon, and Sassafras-wood, quickly, and in a Moment, produced a transparent Flame, almost without any visible Smoke. When a small Quantity of this Spirit was mixed with Spirit of Turpentine, in a narrow-bottomed Glass, I observed, that a strong and very hot Smoke, but no Flame, was produced. But if an Ounce of each Liquor is put into a wide-mouthed Glass, and the Mixture shaken, a violent Flame will be produced.

From this Experiment, therefore, duly made, I was convinced that we ought to judge more favourably of the Experiment of *Borrichius*; and that we were not to doubt of its Truth, if the Cautions he lays down are observed, that is, if the Aqua-fortis is recent and generous; and if some Ounces of both Liquors are mixed in a large Vessel. And as this smoking and inflammable Spirit is nothing but a generous, and easily distilled Aqua-fortis, as is obvious from its Colour, Smell, and Virtues, 'tis not to be doubted, but Aqua-fortis, prepared in the common Manner from Nitre and Vitriol, provided the first and strongest of it is set apart, and kept in close Vessels, may produce a similar Effect. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 3.*

If there is any highly penetrating and corrosive Liquor, which insinuating itself into all Bodies, corrodes, dissolves, destroys, and changes their Crasis and Mixture, it is certainly the highly acid and concentrated Spirit of Nitre, deprived of all its Phlegm, rendered inflammable, and totally volatile, and by the Application of which, Excrescences, Warts, and preternatural Tumors of the human Body, may be commodiously destroyed and eradicated. Notwithstanding these Circumstances, this Spirit, by the Addition of the volatile Salt of Sal Ammoniac, or Salt of Tartar, is, after its Effervescence, totally deprived of its corrosive Quality, since the Mixture degenerates into a nitrous Salt; which, when dissolved in Water, affords a powerfully diuretic Liquor, excellent for provoking Urine, in serous and cachectic Disorders: Besides, the corrosive Quality of this Spirit is excellently corrected by mixing eight Parts of highly rectified Spirit of Wine with one Part of it; and distilling from an Alembic, by means of a Sand-heat: By which means, there is yielded a Spirit of a fragrant Smell, an acrid penetrating Taste, entirely free from a corrosive Quality, excellently adapted for dissolving and resolving viscid Humours, and, consequently, carminative. This dulcified Spirit, in consequence of the vaporous Sulphur it contains, is, also, possessed of an anodyne and sedative Virtue, highly efficacious in Pains and Spasms; for which Reason it is of far more Use in Practice, than the common *Spiritus Nitri Dulcis*.

The Reason of the Process is this, that highly rectified Spirit of Wine is nothing but a very subtle Oil, intimately mixed with Phlegm; for which Reason, it is united, and intimately mixed with this corrosive Spirit, and both of them, when united, form a Mixture of a third Nature, which, when dissolved in the inflammable Spirit, comes over the Helm, and constitutes the dulcified Spirit of Nitre. But 'tis to be observed, that at least five, six, or eight Parts of the rectified Spirit of Wine, ought to be added to one Part of this Spirit; for if only two or three Parts of the former were used, a violent Conflict would be produced, and the corroding acid Quality of the latter, not totally

totally destroy'd: But, in the Preparation of this Spirit, it is to be observ'd, that the Spirit of Wine is not to be poured into the corrosive Spirit; otherwise a violent Conflict is produc'd, accompanied with a thick red Smoke, which is prejudicial to the Health of the By-standers, and sometimes succeeded by the breaking of the Glass. But when the corrosive Spirit is in small Quantities, and gradually mix'd with the Spirit of Wine, all these Disadvantages are prevented.

This dulcified Spirit, when poured into a Silver Spoon, and set on Flame, leaves behind it a greenish Spot on the Spoon, which is a Proof of an acidulated subtiler nitrous Salt: In such a Case, 'tis, therefore, expedient to dulcify this Spirit more, and augment its Virtue, by pouring into it a proper Quantity of the vinous Spirit of Sal Ammoniac: When the Acid of this Spirit is thus corrected, it no longer leaves any Spot upon the Spoon, and its anodyne and sedative Virtues are at the same time rather augmented.

This dulcified Spirit of Nitre differs from the common Sort sold in the Shops, since the former is of a far more penetrating Taste and Smell, and consequently more efficacious. They also differ with respect to the Preparation, since that of the Shops is prepared with Aqua-fortis; and mine with a duly dephlegmated Spirit, impregnated with a vitriolic and highly concentrated Sulphur: My Spirit produces a violent Conflict and Effervescence with highly rectified Spirit of Wine; but the common dulcified Spirit of Nitre none at all: Hence it also happens, that there is not an intimate Union of the Acid of Nitre with the oleous Parts contained in the rectified Spirit of Wine, which happens in my highly concentrated Spirit. In the Preparation of my Spirit, nothing remains in the Cucurbit, but all the Fluid ascends; whereas, in the Preparation of the common *Spiritus Nitri dulcis*, the acid and corrosive Liquor of the Nitre remains after Distillation.

My dulcified Spirit of Nitre, by the Addition of a proper Quantity of the Salt of Tartar, loses almost all its acid Acrimony, and may for this Reason be commodiously mix'd with common Water, for Drink in burning Fevers: Thus, if two Drams of it are mix'd with about two Pints of Spring-water, they make a Drink which powerfully allays Thirst, provokes Urine, and procures Sleep. In Inflammations of the Fauces, especially such as attend Quinsies, nothing affords more immediate Relief, than this Spirit mix'd with Sugar, and a small Quantity of the Spirit of Camphire, diluted in common Water, and us'd as a Gargarism. Sugar itself, also, swallowed in a small Quantity, affords Relief in Inflammations of the Fauces.

This dulcified Spirit of Nitre, when mix'd in a small Quantity with rectified volatile Spirit of Hartshorn, acquires a bezoardic and diaphoretic Virtue; for which Reason it is highly beneficial in all malignant Fevers, where Sweating is necessary, *Hoffman, Obs. Phys. Chym. Lib. 2. Obs. 4.*

NIX. Snow.

The higher Water rises in the Air, the farther its Parts recede, and the colder it grows; for, in all the habitable Parts of the Globe, the Heat is the greatest, *ceteris paribus*, on the Surface of the Earth; and a freezing Cold is constantly found on the Tops of the highest Mountains, which are covered with Snow, even in the torrid Zone, and the Increase of the Cold is in proportion to the Altitude. Hence the Water, rising to the freezing Height, must necessarily be turned to Ice, unless all its Particles should separate, so as not to touch each other; but, if the Particles should come into Contact, they must begin to freeze into small icy Flakes, floating in the Air. If they should happen to dash against the Surface of any Bodies in their Way, they would constitute a fine Hoar-frost, that would otherwise scarce be perceivable. Whence, therefore, there is a Space in the Atmosphere, concentric with the Earth, where the Water of the Air, when it arrives and unites, is constantly turned to Ice. It is, however, probable, that this Water, being at first little united, can seldom freeze, but remains floating about in its separate Particles, till some Cause happening to unite them, it is then turned into Ice.

The Water of the Air, in Space assigned, growing heavier by a large Quantity coming under less Surface, and being now frozen, it immediately begins to fall downwards into Spaces fuller of Water; where, joining with other aqueous Particles, it gradually forms larger Masses of Snow or Hail; and as there are many different Causes, that may make these Particles of Water, which were dispersed in the upper Air, suddenly unite in large Quantities, it is easy to understand how these Collections, coming into the freezing Height of the Atmosphere, may presently form considerable Masses of Snow or Hail.

Snow-water is found to be the lightest of all Rain-waters; and therefore Snow-water, received at a great Height from the Earth, is the purer and freer of gross ponderous Parts; and if a long-continued sharp Frost shall, at a great Height, convert Water to Snow, after a long-continued clear and dry Season, the Snow, thus formed, will be of the purest Kind, especially if no Wind has disturbed the Air, or intermixed any foreign volatile Particles with it. Thus, if, in these Circumstances, Snow should fall upon a barren sandy Mountain, in a Desert far

remote from any inhabited Place, and the Snow should lie deep; if the upper Part be now carefully collected, it will thus be obtained, as pure as possible; for there can scarcely be contain'd in it either Salt, Oil, or other foreign Substance; so that the Water procured by melting this Snow will greatly differ from all other Water, and be extremely pure, unchangeable, or capable of being kept for Years, as an excellent Remedy against Inflammations of the Eyes.

The ancient Alchymists have said, that from such pure Snow there may, by a secret Art, be obtain'd a very red Substance, that by the Force of Fire may be intimately buried and concealed therein. *Boerhaave Chymistry.*

NIX FUMANS. Quicklime.

The white Flowers of Regulus of Antimony are, also, call'd Antimonial Snow.

NIXIA. A Word coin'd from *Nixus*, a Labour-pain, and importing much the same as the *Lucina* of the Antients.

NOAS. Brass, or Copper, *Rulandus.*

NOCASIT. A Sieve, or perforated Vessel. *Rulandus.*

NOCHAT. Copper. *Rulandus.*

NOCTAMBULO. A Person who walks in his Sleep.

NOCTILUCA. The Glow-worm. See *CICENDULA*. Phosphorus is, also, call'd by this Name, because it shines in the dark, or by Night.

NOCTISURGIUM. Walking in the Sleep.

NOCTUA. The Barn or white Owl. The same as *ALUCO*; which see.

The Flesh, Fat, and Gull, are used. The Flesh cures the Palsy, *Plin.* and melancholy Persons, and the like, *Rabbi Moys.* The Ashes of the Bird, burnt entire with the Feathers, being introduced into the Throat, have an admirable Effect in opening and breaking the Impostume of the Quinsy. The Gall absterges Specks in the Eye, and the Fat sharpens the Sight. *Schroder.*

NOCTUINI OCULI. Grey Eyes.

NODOSA, knotted, in Surgery, is an Epithet for a sort of Suture; see *SUTURA*: And for various Bandages; see *FASCIA*. The Gout, also, when it forms Knots at the Articulations, is call'd *knotted*.

NODULUS, in Pharmacy, is a Knot tied on a Rag, including some medicinal Ingredient, or Ingredients, with which the Liquor this *Nodulus* is suspended in, is intended to be impregnated. It, also, imports a Bag, in which Ingredients are included, in order to be suspended in a Diet-drink, or medicated Wine.

NODUS. A Node. A Disease of the Bones. See *Os*.

NOELA-TALI, *H. M.* or *Indian* Barberry-tree with an Orange-leaf. It is a Tree of a moderate Size, grows everywhere in *Malabar*, is always green, and bears a Fruit like our Barberries. Of the Bark of this Tree they make Ropes, as we do of Hemp. The Fruit is esteemed delicious and refrigerating in an high Degree, as are Barberries. The Leaves are accounted an Antidote against the Bite of the Snake, which the *Malabarians* call *Heretimandel*, whose Poison does not cause immediate Death, but an universal Corruption of the Flesh, which putrefies, and falls off; and the Patient, after suffering much Misery, at last yields to Death, unless prevented by the Use of a Drink prepared of a Decoction of those Leaves with the salted Fruit of *Mango* in Water. *Raii H. P.*

NOERA. The Cover of an Alembic, or Vessel for Distillation. *Rulandus.*

NOLA-ILY. A Species of *Bambu* Cane, growing in *Malabar*.

NOLI ME TANGERE. In *English*, Touch me not. A sort of corrosive Ulcer, thus call'd, because it is exasperated by Medicines.

In Botany, *Noli me tangere* is a Species of *Balsamina*.

NOME, *νῆμα*, from *νῆμα*, to eat away. A phagedenic Ulcer.

NONUS HUMERI MUSCULUS PLACENTINI, is the *Teres Minor*.

NORA. Lime, or any Salt, or Nitre. *Rulandus.*

NOSI. See *NEGUNDO*.

NOSOCOMIUM, *νοσοκομῖον*, from *νόσος*, a Disease, and *κομῖον*, to take care of. An Hospital.

NOSOCOMOS, of the same Derivation as the preceding Word. One who takes care of the Sick.

NOSODOCHIUM, *νοσοδοχεῖον*, from *νόσος*, a Disease, and *δοχεῖον*, to take. An Hospital.

NOSOLOGIA. Nosology; that is, an Explication of Diseases.

NOSOS, *νόσος*, a Disease.

NOSTER. This is frequently us'd by spagirical Writers, as an Epithet for their Gold, their Silver, or any other Substance; by which they would insinuate, that it is not the same as what they mean by the Word, but something peculiar to themselves, which is freed from the Elements, and of an Astral Nature.

NOSTOCH. A Name for the *COELIFOLIUM*; which see.

NOTHOS, *ribea*. Spurious; thus the spurious Ribs are call'd
 COSTE NOTHE.
 NOTIÆUS, *variatus*. An Epithet for the spinal Marrow,
 from *notus*, the Back.
 NOVACULA, in Surgery, is a Knife.
 NOVALE, in *Paracelsus*, is a Prodigy, or Portent.
 NUBA, signifies a Species of Manna, or Celestial Dew, of a
 rosy Colour: Or it imports Brass. *Rulandus*.
 NUBES, or NUBECULA. A Cloud in the Urine. A Disorder
 of the Eye is, also, thus call'd, which is the same as ALBUGO.
 NUCAMENTA. Catkins.
 NUCES & NARBADOES, a Name for the Palma; *Ame-*
ricana, *Geffypii folio*.
 NUCHA. The Back of the Neck, properly the Region
 upon the first Vertebra of the Back.
 NUCIOSITAS. The same as MYOPIA. *Blancard*.
 NUCIPERSICA. The Nectarine.
 NUCISTA. The Nutmeg.
 NUCLEUS. A Kernel.
 NUCULA TERRESTRIS. See BULBOCASTANUM.
 NUHAR. Copper. *Rulandus*.
 NUMENIUS. The Name of a Bird, the same as AR-

QUATA.
 NUMMULARIA.

The Characters are;
 The Leaves are orbicular and conjugated; the Calyx is
 quinquefid, inclosing a seminal Vessel, and consisting of five
 long slender Segments, which expand themselves in form of a
 Star. The Flower is monopetalous, rotated, quinquefid, be-
 ing cut even to the Nail, or Unguis, and furnished with five
 Stamina, which, arising from the Circumference of the Base
 of the Flower, grow together into one, in proceeding from
 the Wings of the Leaves. The Placenta is seated in the Bot-
 tom of the Calyx, and on it grows the Ovary, which becomes a
 round Vessel closely lodged within the Calyx, and shooting forth
 a long Tube.

Boerhaave mentions two Species of this; which are;

1. Nummularia; Lutea; major. C. B. p. 309. *Boerb. Ind. a.*
 205. Nummularia. Offic. Ger. 505. Emac. 630. *Raii Hist.* 2.
 1099. Synop. 3. 238. Nummularia vulgaris. Park. Theat. 555.
 Nummularia supina five Nummularia Officinarum. Rupp. Flor.
 Jen. 14. Nummularia five Centimorbia. J. B. '3. 378. *Lyfimachia*
humifusa, folio rotundiore, flore luteo. Tourn. Inst. 141. MO-

NEYWORT.
Fuchsius's Figure of this, under the Name of Centimorbia,
 represents the *Anagallis lutea nemorum*, Pin. much better than
 the Money-wort; for *Pena* and *Lobel* observ'd these two
 Plants differed principally in their Leaves, which, in the yellow
Anagallis, are a little longer, and more pointed. *J. Bauhine*
 took the Flowers of the Money-wort to be pentapetalous, but
 they are plainly monopetalous.

Its Leaves are fourish, styptic, and give a deep-red Tincture
 to blue Paper: The Acid abounds in the Money-wort,
 and produces with the Earth an aluminous Salt, involved in a
 little Oil, so that 'tis very astringent and vulnerary. *Camerarius*
 affirms, that, being boiled with Milk, it is good for the Scurvy.
Tragus advises to boil it with Wine and Honey, and to give
 the Decoction to drink to those that have an Ulcer in the
 Lungs: The same Author commends it in the Dysentery, Loss
 of Blood, and the Whites. *Fuchsius* prescribes the Herb, applied
 as a Cataplasm, to dry up Ulcers. *Matthiolus* says it is very
 good for Ruptures in Children. *Martyn's Tournefort*.

It is one of the principal Vulneraries; the Flowers and Leaves,
 bruised and apply'd, are effectual in conglutinating all kinds of
 Wounds and Ulcers; the same, taken in Wine, cure Dysente-
 ries, and Weaknesses, Fluxes, and Humidities of the Belly;
 they are also good for vomiting of Blood, uterine Fluxes, and
 all Wounds or Ulcers of the inward Parts, and especially of the
 Lungs. *Raii H. P.*

2. Nummularia; rubra. J. B. 3. 371. *Lyfimachia, humifusa,*
folio rotundiore, flore purpurascete. T. 141. *Boerb. Ind. alt.*
Plant. Vol. 1.

It is called Nummularia, from Nummus, Money, because its
 Leaves are orbicular, like Pieces of Money; it is also named
 Centimorbia, from centum, an hundred, and Morbus, a Disease;
 that is to say, a Plant which cures a hundred Diseases.

The Juice of the Herb is like that of *Beccabunga*; for it has
 a saponaceous, aromatic, and balsamic Taste: Hence it has the
 same Virtues. It has an Acrimony, which is not ungrateful;
 mix'd with somewhat aromatic, and of an astringent acid Taste.
 Hence, it works the same Effect as *Cochlearia*, mixed with
Acetosa, which we use when we are apprehensive of spitting of
 Blood. For this Reason it is proper in all sorts of Scurvy,
 where the Humours are to be render'd more fluid without
 danger of too great a Resolution, or Tension; for Instance, in
 an excessive Flux of the Menfes, where a total Stop would be
 succeeded by an Inflammation; and yet the immoderate Eva-
 cuation requires to be restrained, for which Purpose this Herb
 is very proper. A Decoction of the Leaves, in Wine sweeten'd

with Honey, is good for Ulcers of the Lungs, the Fluor Albus,
 Diarrhoea, Dysentery, Asthma, Spitting of Blood, Hæmorrhoids,
 and the dry Coughs of Infants: The Powder of the Leaves is
 good for an Hernia in Infants; and the Leaves, bruised, and ap-
 plied in the Form of a Cataplasm, cleanse and dry up fetid
 Ulcers. This Plant resists Putrefaction, generates Pus, is corro-
 borative, and cures many Diseases. For the Arthritis, Podagra,
 Scurvy, Dropsy, and Jaundice, take an Ounce or two of the
 Juice in the Morning fasting; it is opening, and purges by Stool
 and Urine. *Hist. Plant. adscript. Boerhaav.*

NUSIADAT. Ammoniac. *Rulandus*. I suppose he means *Sal*
Ammoniac.

NUSTUM, in *Paracelsus*, is the Cream of Milk; or the
 Cream-like Substance, which swims on the Top of Urine.

NUTRICATIO. Nutrition.

NUX	{	AVELLANA.	{	See	AVELLANA.
		BEUIBA.			BEUIBA NUX.
		BEN.			BALANUS MYREPSICA.
		INDICA.			PALMA; INDICA; COCCYGERA; ANGULOSA.

NUX JUGLANS.

The Characters are,

The Leaves are pinnated, and grow to one common Rib,
 which terminates in an odd Leaf. The Flowers are male, and
 all amentaceous, consisting of six thick, green, small Leaves,
 growing to one Pedicle, in form of a Calyx. From the spa-
 cious Bottom of these Leaves arise numerous Stamina, which
 are collected, as it were, into a Cluster; a Multitude of which
 Clusters, growing to one long Axis, form the floriferous Tail,
 or Catkin, in a separate Part of the Plant. The Ovary, in
 another Part of the same Plant, is roundish, furnished with a
 bifid Tube, and divided into wide, rough, fimbriated, and reflexed
 Segments; and becomes a Fruit, which, under a pulposus Cortex,
 contains an osseous and bivalve Shell, inclosing a fat pulposus
 Kernel, divided into four Parts by coriaceous Interclousures.

Boerhaave mentions five Species of this; which are,

1. Nux Juglans, five Regia, vulgaris. C. B. P. 417. *Tourn.*
Inst. 501. *Boerb. Ind. a.* 2. 175. Nux Juglans. Offic. Ger. 1252.
 Emac. 1440. *Raii Hist.* 2. 1376. Synop. 3. 438. J. B. 1. 241.
 Nux Juglans vulgaris. Park. Theat. 1413. *Juglans five Nux*
Regia. Merc. Bot. 1. 44. *Phyl. Brit.* 62. THE WALNUT-

TREE.
 This is usually a large-spreading Tree, with a strait smooth
 Body, a whitish Bark, and a firm solid Wood; it bears large-
 winged Leaves, of a yellow-green Colour, of a pretty strong
 aromatic Smell; they consist usually of seven oval Pinnæ,
 whereof the two next the Stalk are the least, and the odd one
 at the End the largest; the Catkins come out early in the
 Spring, being loose and yellow. The Nuts grow two, three or
 four together, upon short Foot-stalks, being each covered with
 a green juicy thick Peel, having under it an hard wrinkled
 Shell, which parts in two, inclosing a Kernel, consisting of
 several white Lobes, of a pleasant sweet Taste, included in a
 thin bitter Skin.

The Walnut-tree is planted in Walks, Parks, and Fields;
 the Nuts are ripe in September. The Bark of the Tree, the
 green Peel, the Nuts, and the Shells, are used.

The Bark is a strong Emetic, either green, or dried and
 powder'd: The green Nuts are cordial, alexipharmac, of great
 Use in all contagious malignant Distempers, and the Plague
 itself; They are one of the principal Ingredients in Treacle-
 water. The Nuts preserv'd are stomachic, and good to be
 eaten in a Morning, to prevent Infection in the time of pesti-
 lential Distempers: Two or three Ounces of the Oil, express'd
 from the ripe Kernels, is a very good Medicine for the Stone
 and Gravel. The Shells, powder'd and burnt, are accounted
 restraining, though but seldom used. *Miller's Bor. Offic.*

Of the Virtues of this Plant *Dioscorides* and *Pliny* speak as
 follows: Walnuts, eaten as Food, are difficult of Digestion,
 hurtful to the Stomach, generate Bile, cause Head-achs, are bad
 for a Cough, [*Pliny* writes thus of dry Walnuts, which are of
 a more unctuous Nature; for the fresh, he says, are more plea-
 sant] and of Use, eaten fasting, to provoke Vomiting [Instead
 of this, *Pliny* says, they are prejudicial to those who vomit on
 an empty Stomach, and are only proper in a Tenesmus by
 attracting Phlegm]. Eaten beforehand with Figs and Rue, they
 resist Poison; and subdue it, if taken afterwards. *Pliny* adds,
 that they are effectual in the Quinsy, being used with Rue and
 Oil. The free and plentiful eating of them expels the broad
 Worm: Mixed with a little Honey and Rue, they are apply'd
 to Inflammations of the Breasts, Abscesses, and Luxations; and
 with Honey, Salt, and an Onion, they cure the Bittings of Men
 or Dogs. Burnt with their Calyx, or outer Peel, and apply'd
 to the Navel, they ease the Gripes. The Shell, burnt and tritu-
 rated in Wine and Oil, procures a comely Head of Hair to
 Children, the Part being anointed therewith, and cures an Alo-
 pecia: The Kernel within it, being bruied, and applied in Wine,
 stops the Menfes. The Kernels of very old Nuts, being chewed,
 and applied to Gangrenes, Carbuncles, an Ægilops, or Alopecia,
 are

are a present Remedy. They are mixed with Garlick, and, as *Pliny* says, with Onions, to correct their Acrimony.

The outer Peel of Walnuts is good for the Lichen and Dysentery; and the Leaves, bruised in Vinegar, ease Pains in the Ears. The Antidote of *Miskridates*, which was found written with his own Hand, consisted of two dry'd Walnuts, as many Figs, and twenty Leaves of Rue bruised together, with a Grain of Salt. He who takes this Remedy fasting, can be hurt by no Poison during that Day. *Pliny*.

The Walnut, says *Galen*, is easier of Digestion than the Filberd, and more grateful to the Stomach; and especially when it is eaten with dry'd Figs. This must be understood of the fresh Nut; for, when it is dry, it passes into a pinguious Juice quite unfit to be eaten. The expressed Juice of the outer Peel, either crude, or boiled in Honey to give it a Consistence, being used as a Gargarism, was experienced by *Galen* to be very effectual in a Relaxation of the Uvula, or an Inflammation of the Throat and Tonsils, by virtue of its astringent Quality, in Conjunction with its Fineness of Parts.

Green or fresh Walnuts provoke to Stool. *Galen*, *Aetius*. Old and dry ones are rather binding; they are well concocted in a cold Stomach, but in an hot one are converted into Bile. The inner Bark of the Tree, being dry'd, is a strong Emetic; the Iuli, or Caskins, are a more gentle one.

Walnuts have a singular Quality of provoking the Menfes, when supressed, and all other Medicines fail. They are macerated in Water, till the Kernel may be stripped of their Membranes; after which they are macerated in Aqua-vitæ for two Days; and then two or three of them are exhibited in the Morning fasting, for ten Days together, before the time of the menstrual Flux. The Juice of the Root is said to be a violent Purge, and not fit to be given to any but those of robust Habits.

The distilled Water of immature or green Walnuts is recommended for many Purposes, particularly for dissolving concremented Blood, for Wounds, and hot Ulcers, and for a pestilential Carbuncle, being apply'd outwardly; the Water of Walnut-leaves is effectual for the same Disorders: But *J. Bauhine* justly doubts whether the Water of Walnuts be refrigerating, and consequently proper for a Carbuncle.

Walnuts eaten after Fish are supposed to promote their Digestion, according to that Verse of the *Schola Salernitana*.

Post pisces nux sit, post carnes caseus esto.

"After Fish eat Walnuts, after Flesh Cheese." It is certain, that they resist poisonous Infections, being eaten in Food; for which Reason, in pestilential Times, all sorts of People from the highest to the lowest, both in Town and Country, roast them, and eat them in the Morning fasting.

Green Walnuts gather'd in May or June, before their Shells harden, and preserved in Sugar, are good for the Stomach; and we have observed, that green and immature Walnuts, taken entire with their outer Coat and Shell, and candy'd with Sugar, or, as the Fashion is, boiled in sugared Water, till they become tender, and afterwards put into the same Water, first boiled to the Consistence of a Syrup, that they might be preserved, being taken to the Number of two or three in the Evening after Food, gently provoke to Stool. The Decoction of outer Peels of Walnuts, being poured on the Ground, attracts Worms from their Holes to the Surface. *Tragus* writes, that some dry the outer Peel, and, reducing it to Powder, use it instead of Pepper for seasoning of Meats, to which some, for the better Relish, add Powder of Sage-leaves.

Walnuts bruised, heated, and pressed, yield an Oil, which some use for Gangrenes, Carbuncles, *Ægilops*, and Ulcers of the Nerves. The same, infus'd into the Ears, cures Deafness, and is good for hot Pains, the affected Part being anointed therewith. But *Matthiolus* says, it is of no Use in Medicine, but in great Request for burning in Lamps, because it is more durable than Oil of Olives. It is preferred, also, by Painters, before Linseed-oil, because this latter, when mixed with Cerufs, in Length of Time, changes Colour, whereas the other preserves it immurable. But the same Author in another Place says, that it is a potent Discusser of Flatulencies, and is very serviceable in Affections of the Colon proceeding from Wind. *Aetius* ascribes the same Virtues to it, as to Oil of Almonds; and adds, that it is particularly serviceable to Gilders and Enamelers; for it dries and preserves the Work for a long time.

The *Isca*, *Isnai*, in *Paulus*, are spongy Bodies, (I suppose he means *Fungi*) growing on Oaks and Walnut-trees, and most in Use among the Barbarians. The same Author says, that the Antients made use of them among other Cauteries, in inveterate Defluxions on the Stomach, and hydropical Cases. The Manner of employing these *Isca* in cauterizing is thus describ'd by *Celsus Aurelianus*: Having made the ligneous *Fungi* narrow or slender, as well in the upper, as in the lower Part, [it would be more convenient to have them wide in the lower Part, that they might stand the better on the Skin] they set them upon the affected Place; and, kindling them at the Top, suffer them to burn, till they are reduced to Ashes, and fall off of themselves. The *Turks*, in Imitation of this Method, at this Day

take a well-dry'd Branch of Vine, and, applying it to the diseased Part, set Fire to its Top. The Walnut-tree, wounded in the Beginning of the Spring, before it puts forth Leaves, discharges a Liquor, which flows in great Plenty, but is not so sweet as that of the Birch-tree.

Juglans is thought by some, as *Macrobius* says, to be derived a *juvando*, from helping or benefiting, and *Glans*, a Nut; importing, that it is a beneficial Nut; but it was doubtless so called, as implying the same as *Jovis Glans*, the Nut of *Jupiter*: Thus is *Juglans* derived from *Joviglans*, in the same manner as *Jupiter* from *Jovipater*. For, as we say, *Marspiter*, and *Diespiter*; so, also, we say, *Jovipater*, or *Jovispater*; where *Jovis* is the antient nominative Case.

The *Juglans* however is not the *Διὸς Βάλανος*, *Glans Jovis*, of *Theophrastus*, which is rather the Chestnut-tree, but, as some will have it, the *Nux Persica*, or, as others, the *Nux Euboica* of the same Author. The *Juglans* is called *Nux Basilica Regia* by *Dioscorides* and *Galen*, and *Persica* and *Basilica* by *Pliny*. The Walnut, it is agreed, says *Pliny*, *Lib. 15. Cap. 22.* was called *Caryon* [καρυὸν from καρύς, the Head] from an Heaviness or Oppression of the Head, which it occasions by its strong Smell. *Raii H. P.*

2. *Nux Juglans*; fructu maximo. C. B. P. 417.
3. *Nux Juglans*; fructu tenero, & fragili putamine. C. B. P. 417.
4. *Nux Juglans*; fructu serotino. C. B. P. 417.
5. *Nux Juglans*; Virginiana, nigra. H. L. 452. *Boerb. Ind. als. Plant. Vol. 2.*

Nux Moschata. Offic. Ger. 1353. Park. Theat. 1600. *Raii Hist. 2. 1522.* *Nux Moschata rotunda, sive Femina*. Ger. Emac. 1536. *Nux Moschata fructu rotundo*. C. B. P. 407. *Nux Moschata, Nux Myristica, Nucista*. Mont. Exot. *Nux Aromatica*. J. B. 1. 265. *Pala. Pis. Mant. A. 173.* THE NUTMEG-TREE.

This is the Fruit of a Tree, which grows principally in *Banda*, an Island in the *East Indies*; it is about as big as a Pear-tree, with fragrant Leaves, like those of the Peach-tree, but broader, and not serrated about the Edges; it bears yellowish five-leaved Flowers, which are succeeded by Fruit, in Bigness and Shape, like small Peaches, whose outside Covering is soft and juicy, like that of a Walnut; under which lies the Mace, firmly sticking to the hard woody Shell, that includes what we call the Nutmeg, which is of an oval Shape, brown, and somewhat rough on the Outside, and wrinkled, and whitish, and marbled with red Veins within, of a most pleasant aromatic Smell and Taste: The best are firm and weighly, and, being pierced by a Needle or Pin, emit an oleous Substance. *Miller's Bot. Off.*

It is the Opinion of some, among whom is *C. Bauhine*, that what the Moderns call *Nux Moschata*, or *Myristica*, was unknown to the Antients. *J. Bauhine*, and *Gallandinus*, fancy it to be the *Comacum* of *Theophrastus*, and the *Cinnamum* and *Caryopos* of *Pliny*; and *J. Bauhine* conjectures it to be the *Chrysobalanos* of *Galen*.

C. Bauhine makes three Species of this Tree: The first is the *Nux Moschata fructu rotundo*. C. B. *Muscata rotunda sive Femina*. Ger. *Nux aromatica Femina*. J. B. The Female Nutmeg-tree.

This Tree grows spontaneously, and in vast Plenty, in the Island *Banda*, and no-where else, if we may believe *Piso*. Some make *Banda* to be one of the *Molucca* Islands; but most make it a distinct Island. It is situated near the Equator, and extended from North to South in a curve Direction, being almost of the Figure of an Horseshoe, three Leagues in Length, and one in Breadth. The Tree is long-liv'd, always green, and flowering, and loaded with Nuts, some riper than others; and yields its Fruit twice, and sometimes thrice in a Year. The first Harvest is in *August* and *September*, the second about *March*, and the third happens in this, or that Month, as the Weather proves more or less favourable. The Nuts must not be gathered before they are thoroughly ripe, otherwise they are less durable: When gathered, they are stripped of their outer Shell, and dry'd first in the Sun; after which the Mace is taken off, and then the Kernels, which we call the Nuts, are washed with Lime, which is their only Preservative against Corruption, and all external Injuries, and fit to be transported by long Voyages into all Parts of the World. The best are of a Sad-red, inclining to an Ash-colour, and intermixed with whitish Strize.

The Fruit is devoured by several Sorts of Birds, but especially by a small and white Kind of Pigeon, which, when the outer Shell gapes, being allured by the Sweetness of the Mace, seizes upon it together with the Nut, and swallow it whole, never desisting till they are thoroughly glutted: These Nuts are afterwards voided by the Birds entire, and being pre-macerated with the Heat of the Crow, soon bud forth. But the Trees thence arising, as being of too hasty Growth, are easily subject to Corruption, and bear a Fruit which is much less esteemed, than that of the others, and therefore, neglected by the Inhabitants, except the Mace which they use in adulterating the better Sort. *Clusius* says, that the Mace is, at first, of so beautiful a Red, as to strike the Eye with Admiration; but, being exposed to the Air, loses its Beauty by

by degrees, and at length contracts a yellowish Colour. The second Species is the

Nux Moschata fructu oblongo. C. B. Myristica oblonga sive Mas. Ger. Nux Aromatica. J. B. Pala Mesfiri Moluccensisibus. The Male Nutmeg-tree.

It is not called *Male* on account of its superior Excellency and Virtues, as tho' Nature had made it bigger and longer, on purpose to shew its Eminence in Worth; for, as *Piso* says, the Case is quite otherwise, since the Nuts of this Tree do not so much exceed those of the other in Bulk, as they are surpassed by them in their aromatic Virtue, and all the Qualities which belong to the genuine and more noble Kind of Nutmeg. But the common People give it the Title of *Male*, not for any Reason, but from a superstitious Opinion, that the oblong Nut, eaten by Men, is a potent Stimulus and Strengtheners to Venery. As for the Mace, tho' it be, also, of a very beautiful Colour, it is of so weak Virtues, that it is of no Value where it grows, and the Tree itself is neglected, as wild and degenerate.

This Tree is described to have longer, thicker, and more fibrous Leaves, than the other: The Nuts are larger, and not only oblong, but almost square, and grow not from the Interstices of the Branches, as the others, but out of the Tops, three or four together, like Walnuts; the Mace, also, when dry'd, is of a more beautiful Colour.

Nutmegs are somewhat astringent, stomachic, cephalic, and uterine; they discuss Flatulencies; promote Concoction; correct a stinking Breath; enliven the Foetus; and relieve under a Lipothymy, and Palpitation of the Heart; alleviate Disorders of the Spleen; stop a Looseness and Vomiting; provoke Urine; and sharpen the Sight. *Aetius* writes, that they are bad for the Lungs. They may justly be recommended in a Dysentery, and other Kinds of Fluxes, since they possess all those Qualities, which are necessary for subduing those Disorders. Their oily Substance defends the Intestines from Abrasions by acrid Humours, and mitigates Pains; their aromatic Quality, consisting in an aereal Spirit, penetrates the noble Parts, and highly corroborates them; and their terrestrial Part astringes and dries up Ulcers, and induces a Cicatrix. *Hildan. de Dysent.*

The *Brachmans* use candy'd Nutmegs for all cold Diseases of the Brain, the Palsy, and other nervous and uterine Affections; they are, also, esteemed cordial. Nutmegs candy'd, or preserv'd in Sugar, have now, for a long time, been imported among us, and served up at rich and plentiful Tables among other Sweetmeats; and some of a more delicate Palate are pleased only with the exterior green Coat, or Peel; and prefer it, while quite immature, to the Nut itself, both on account of its Fragrancy, and its grateful Taste, which is accompany'd with an Astringency, that is very agreeable to the Stomach. Experience, however, has taught us, that such Delicacies are not without their Inconvenience, whether the Peel be eaten alone, or together with its inclosed Nut. For they are endued with a narcotic Quality, and that to a considerable Degree, by virtue of which, if too freely or frequently used, they may induce soporose or comatous Disorders. Hence we are told, by *Tavernier*, with an Air of Probability, that, when the Nutmegs begin to ripen, the Birds of Paradise, so called, who are very greedy of those Fruits, fly in great Flocks to the *Moluccas*, as the Thrushes, in the time of Vintage, into *France*. But they frequently pay dear for their delicious Fare; for, being seized with a Vertigo, they fall to the Ground, as in a drunken Fit, and have their Legs eaten, in a short time, by the Ants.

That the Nuts themselves, when dry'd and used immoderately, are possess'd of the same Quality, is obvious from a Case told by *Lobelius*, who informs us, that he was called to *England*, in order to attend a pregnant Lady of Distinction, who, by greedily eating twelve Nutmegs, as if they had been as much Bread, was seized with a kind of Delirium, or rather Intoxication; but, after sufficient Rest and Sleep, she recovered by means of Repellents applied to her Head.

Tachenius, in his Book *de Morborum Principe*, informs us, that the Wound of a certain Soldier was soon consolidated by the internal Use of Nutmeg. *Le Fevre* and *Wedelius*, also, commend this Fruit for the Consolidation of Wounds. *John Bauhine*, when travelling on the *Apennine* Mountains, having greedily drank a Draught of cold Water, was suddenly seized with violent Pains in his Bladder, accompany'd with Flatulencies, and a Tumor of the Scrotum, tho' without any previous or subsequent Hernia. When his Pain was so intense, that he imagined he should have dy'd on the Mountain, his Fellow-traveller, *Oswald Gabelkover*, gave him some Nutmegs, by eating four of which, he was instantaneously freed from his Pains.

According to *Ettmuller*, Nutmegs chew'd and swallowed are an excellent Remedy for a Palsy of the Parts subservient to Deglutition.

From recent Nutmegs, bruised and heated in a Pan, an Oil is expressed, which is highly beneficial in many Diseases. Thus, for Instance, when exhibited in some warm Liquor, it removes Gripes, and nephritic Pains. When apply'd by way of Ointment to the umbilical Region of Children, it removes Gripes. Long-continued Pains of the Nerves and Joints are remov'd by

anointing the Parts affected with it; and, if the Temples are anointed with it, it gently induces Sleep.

A great many of the modern Botanists, probably induced by the Resemblance of the Names, confound the *Macis*, which is the second Covering of the Nutmeg, with the Mace of the *Greeks*, whereas these are widely different from each other; for the Mace is the Bark of a Root produced in *Malabar*, of a cold and earthy Nature, and for that Reason appropriated to the stopping of Fluxes. The *Macis*, or Mace, on the contrary, is the Covering of the *Indian* Nut, of an highly aromatic Nature, and possess'd of a great Degree of spirituous Heat; for which Reason it is generally used against cold Disorders, and those produc'd by Poison. Before the Mace is perfectly ripe, and as yet of a beautiful scarlet Colour, it is commonly preserv'd with Salt and Vinegar by the *Indians*, and presented as the first Dish, in order to excite an Appetite for the subsequent Repast. But, after the Mace is ripe, it is taken off the Nutmeg, dry'd in the Sun, and carefully preserv'd. Its Smell is always grateful, but, when 'tis recent, 'tis in a particular manner agreeable. Its Taste is a kind of Mixture between Bitter and Sweet, and leaves a sort of Dryness in the Mouth behind it. The same Virtues with those of the Nutmeg are ascribed to it; but, because its Parts are more small and minute, it is thought to operate more effectually, and to be possess'd of a more penetrating Quality.

Tho' Mace yields a smaller Quantity of Oil than Nutmeg; yet that of the former is preferable to that of the latter, and is more commended in Disorders of the Nerves, and other cold Distempers; and, which is still more surprising, *Cronenburgius* informs us, that it cures the Gout, if the Part affected is anointed with it.

In order to expel Wind, shut up in the Uterus, take a sound Nutmeg; cut it into four Parts; throw one of them upon live Coals, and let the Patient receive the Smoke through a Funnel, into the Uterus. Let this Method be repeated three times. *Hartman* cured a young Woman at *Bonn*, upon the *Rhine*, by this Method. *Dr. Hulse*.

Nux Myristica major spuria Malabarica. Panem palka. H. M. Arvellana Indica genus oblongum. Clus. Nux Indica oblonga intrinsecus similis Nuci Moschatae. J. B. Palma cujus Fructus oblongus Fausel similis. C. B. Male Palmam vocat. Areca sive Avelana Indica versicoloris genus oblongum. Park.

This Tree grows every-where in the Woods of *Malabar*; and bears ripe Fruit once or twice every Year, that is, in the Months of *June*, or in *December*, and *January*. It, also, bears Fruit for a long time.

Tho' these Nuts are of no Use in Medicine, yet the *Turkish* and *Jewish* Merchants mix them with Nutmegs, and their Mace with genuine Mace, in order to impose upon those who purchase those Commodities: From these Nuts, and their Mace, they, also, express the Oil, and mix it with the true Oil of Nutmeg.

Nux PISTACIA. The Pistachio. See *TEREBINTHUS*; *Indica*; *Theophrasti*.

Nux VIRGINIANA. Offic. Prunifera vel Nucifera seu Nuciprunifera Arbor Americana praeclara, angustis Lauri foliis late virentibus, Mastichen odoratum fundens. Pluk. Almag. 307. Phytog. 217. Fig. f. 5. Cat. Jam. 180. Sloan. Hist. 1. 40. Raii Dendr. 44. THE VIRGINIA NUT. MASTICH OF LIGON. Dale.

It has smooth and shining Leaves, like those of the Bay-tree; and differs from other pruniferous Trees in its Fruit, which is small, turbinated, and contains but a little Pulp. It grows every-where in the Island of *Barbadoes*.

The Part in Use is the Fruit, which is nearly of the Shape and Size of the Kernel of a Filbert, smooth, of a brown Colour, with an Eye near one End, and containing an hard Stone, which incloses a white, globular Kernel, of a bitterish Taste, and aromatic Smell.

It potently opens Obstructions, depurates the whole Mass of Blood, and corrects a scorbutic and bad Habit of Body, by impregnating the vital Liquor, the Blood, with those volatile Salts, which exalt it from its low and vapid State to a more pure and spirituous one; and, by that means, preserve it from Stagnation: It, also, clears the Skin of Spots, and all other Defecations. *Marl. Obs.*

Nux VOMICA. Offic. Ger. 1362. Emac. 1546. Park. Theat. 1601. Raii Hist. 2. 1814. Nux Vomica, Nux Metella. Mont. Exot. 10. Nux Vomica in Officinis. C. B. P. 511. Nux Vomica vulgo Officinarum, compressa, hirsuta. J. B. 1. 339. Caniram. Hort. Mal. 1. 67. Tab. 37. Malus Malabarica fructu corticofo, amaricante semine plano compresso. D. Syen. Raii Hist. 2. 1661. Solanum arboreum Indicum maximum foliis Oenophia, sive Napaea majoribus, fructu rotundo, rubro, semine orbiculari compresso maximis; Nucis Vomicae & Lignum Colubrinum Officinarum ferens. Breyn. Prodr. 2. 92. Commel. Flor. Mal. 249. Malus Indica venenata amara nucleis argenteis compressis orbiculatis; Ghodhakadura; Nux Vomica Officinar. Herm. Mus. Zeylan. 41. VOMIC-NUTS. Dale.

These are flat round Seeds, about the Bigness of a Silver Groat in Circumference, somewhat thick, and a little concave on the one Side, and convex a little on the other, of a greyish Colour, and a little downy on the Outside, but hard and horny within: They are the Seeds of a large round Fruit, growing in *Malabar*, upon an arborescent

rescent Solanum, having Leaves like the white Jujube, with Flowers in small Umbels, which is the *Lignum Colubrinum terribilem Acoftæ* of Parkinson. *Miller's Bot. Off.*

It is improperly called *Nux Vomica*, since it does not excite Vomiting. Some have erroneously thought it a Root, others a Fungus; but, by the Description, it appears to be a Fruit, though whether of a Tree, or an Herb, is uncertain. Some will have the *Metel* of the *Arabians* to be the same with the *Nux Vomica*; but their Descriptions do not agree.

The *Nux Vomica* is narcotic, virulent, and even worse than Opium. Reduced to Powder, and given in Food, it kills Dogs and Cats: Instances of which you have in *Gesner* and *J. Bauhine*; to which we shall add what *Dr. Hulse* communicated to us, taken from the Observations of *Antonius de Hude*. I gave two of these Nuts, says he, cut small, and mixed with Bread and Butter, to a Dog, who greedily eat them: Half an Hour afterwards he filled himself with boiled Bones and Cartilages; but in half an Hour more he was seized with an universal Trembling, and ran about from Place to Place, could not stand without Support, and his Legs were stiff, and affected with Convulsions. At the End of the third Half-hour he fell down as dead, and soon after began to fetch his Breath very short; and, with Assistance, got upon his Legs: He seemed to shiver at the least Noise, and to fetch his Breath the shorter: In this State he lived out the fourth Half-hour, and at last died suddenly. In dissecting the Carcase I made the following Observations: The Stomach was very full of Food, mixed with Bits of the Nuts, which did not seem to have undergone any Alteration, except that they were softer, which was, also, the State of a Bit of Nut that had lain, during the same time, in hot Water. The Stomach, Oesophagus, and Intestines, were in their natural Constitution; the lacteal Vessels in the Mesentery were turgid with Chyle, the Lungs were redder than usual, and the Ventricles and Auricles of the Heart were more tumid than they ought to appear. After dissecting the Right Ventricle of the Heart, on straining the *Vena Cava ascendens & descendens*, there flowed out a great Quantity of Blood, which immediately coagulated in the Cavity of the Thorax; about the Brain nothing preternatural could be observed. A Cat, after taking a Nut, which had been macerated for some time in Water, and in part decorticated, was affected with the same Symptoms as the Dog before-mentioned, as was, also, another Dog, which had only eat up the Reliques which the Cat had left. I had no Opportunity to ascertain the just Quantity of the Dose required for killing an Animal; but, from what I have observed, I am inclined to think, that this virulent Nut exerts its Influence, chiefly, in infecting the Fluid which irrigates the Brain and Nerves; for to such a Cause may be easily ascribed the Restlessness, Rigor, Convulsions, Horror, Trembling, and irregular Respiration. The fore-mentioned Symptoms deter me from making Experiments with this Nut on human Creatures, though some pronounce it noxious to Brutes, and not to Men: But let them say what they please, I cannot in the least doubt, but that it will have the same destructive Effects on Man, as on other Animals: On Birds, it is certain, it has the same pernicious Influence as on Beasts; for the People of our Country are wont to lay Bits of Flesh, sprinkled over with the Powder of this Nut, as Baits for Crows, Rooks, and other mischievous Birds, and so destroy them. *Adolphus Orco*, in *Pharm.* tells us, that *Julius Alexandrinus* wrote to him, that the *Nux Vomica* ought utterly to be discarded, and not admitted into any Composition, because it would always be deleterious, and prejudicial to the human Nature, under what Shape soever, and could never be render'd beneficial to the same. I am mightily pleased, says *J. Bauhine*, with that very learned Gentleman's Opinion; nor did I ever find any Person who could assure us from his own Experience, that any laudable Effects were produced by the Use of these Nuts. Upon these Considerations, our later Physicians, in their Dispensatories, have justly omitted it in their Descriptions of the *Electuarium de Ovo*. The *Nux Vomica* is reduced to Powder by rasping, and not by pounding in a Mortar, because of its horny Substance. *Raii Hist. Plant.*

NYALEL. H. M. *An Sambucus Indica Bontii? Arbor bac-cifera racemosa, Fructu corticofo, dipyreno.* It rises to the Height of forty Feet, and grows in *Malabar*. The Fruit is esteemed a Delicacy; the Kernels, bruised with fresh Ginger, and Sugar added thereto, provoke to Stool. Of the Juice of the unripe Fruit with Sugar is prepared a Syrup, which is very serviceable in the Cough, Asthma, and other Affections of the Thorax. *Raii Hist. Plant.*

NYCTALOPS, *νυκταλῶψ*, from *νύξ*, Night, and *ὄψ*, an Eye, or so called, as being *τῆς νυκτὸς ὁπλὸς ὤπι*, *captus Oculis Noctæ*, (blind by Night) according to *Paulus* and *Aetius*, is one who sees not at all by Night, and but obscurely at Sun-setting. Such an one, they say, in *Latin* is called *Luscitiosus*, or *Nuscitiosus*; but *Luscitiosus* is one who sees but little through some Defect of the Eye, and sees better in the Evening than at Noon. *Varro* calls these *Lusciosi*, who see not in the Evening; and *Noctius*, by the same Name, those who see not by Candle-light; and *Pliny*, *Lib. 28. Cap. 11.* calls those *Lusciosi*, which the Greeks call *νυκταλῶπες* (*Nyctalopes*); and these, *Lib. 8. Cap. 50.* he de-

scribes as seeing in the Day-time, but not by Night, or by Twilight: The same Signification is given to the Word *Nyctalops*, by *Galen*, in his *Exegesis*, and by *Aetius*, *Meth. Med. Lib. 2. Cap. 7.* where he says, also, that this Disorder is generated by a Collection of thin Humours, which in the Day-time is prevented by the copious Appulse of the Light, but at Night casts a Mist before the Sight.

In a contrary Sense to the foregoing, *Hippocrates* calls those *νυκταλῶπες*, *Nyctalopes*, who see best by Night, and worst by Day; and this Sense of the Word is, also, taken, notice of by *Aetius*, when he says they are, also, called *Nyctalopes*, who see pretty well by Night, but worse by Day, and by Moon-light nothing at all; but this Disorder, he assures us, is very rare, but the other common enough. The Author of the *Definitiones Medicæ* lays, that "A *Nyctalops* is an Affection of the Eyes, without a manifest Cause, in which the Patient sees nothing in the Day-time, but sees in the Night." And the Author of the *Tagoge* comprehends both Significations, where he tells us, "They are called *Nyctalopes* who see but obscurely in the Day-time; but more clearly at Sun-setting, and at Night best of all; or, on the contrary, they are such as see but little by Day, and in the Evening, and at Night, nothing at all." *Foesius*.

NYCTERIS, *νυκτερίς*. The Bat.

NYGMA, *νύγμα*, a Puncture, from *νύσσω*, to prick.

NYPHÆ.

Galen, and other antient anatomical Writers, sometimes call the Clitoris, and sometimes the Hymen, by the Name of *Nympha*; but what the Moderns call *Nympha*, *Crista Clitoridis*, or, as they may, also, be termed, *Ala Minores sive Internæ*, are two prominent Folds of the inner Skin of the greater external *Alæ*, reaching from the Præputium of the Clitoris to the two Sides of the great Orifice of the Uterus: They begin very narrow, and, having increased in Breadth, in their Course downward, they are again contracted at their lower Extremity.

They are of a spongy Substance, intermixed with Glands, several of which may be perceived by the naked Eye. Their Situation is oblique, their upper Extremities lying near each other, and the lower at a much greater Distance. In married Women they are more or less flaccid and decayed. *Winslow's Anatomy, Sect. 8.*

THE METHOD OF TREATING THE NYMPHÆ, WHEN TOO LARGE.

The Nymphæ are sometimes so large, as not only to hang without the Labia Pudendi, but, likewise, to prove troublesome in Walking, Sitting, and even in Coition. In this Case, let the Patient be laid on her Back, with her Legs distended, and the Labia Pudendorum open'd: Then let the Operator, with his Left Hand, take hold of the Nymphæ one after another, and with a Pair of Scissars, cut off as much as may be necessary, taking care to be provided with Strychns for preventing an Hæmorrhage, and Medicines for relieving the Patient from fainting. The Wound may be afterwards dressed with some vulnerary Balsam, and easily healed in the common Method. *Solingen*, in his *Obs. 80. de Morb. Mulier.* gives us a Case, in which the Nymphæ were extirpated, after they had begun to be affected with a Mor-tification.

NYMPHÆA.

The Characters are;

It has a great perennial Root, which grows in the Bottom of Rivers; the Leaves are thick, fungous, and mostly orbicular. The Calyx consists of five floscular Leaves, disposed in form of a Rose. The Flower is rosaceous, consisting of many small, yellow, stiff Petals, expanded like a Rose; within these are situated a vast Number of Stamina, which arise from the circular and outwardly curve joining of the Ovary and Placenta. The Fruit is globular, unceolated, multicapsular, like that of the Poppy, and contains many small oblong Seeds.

Boerhaave mentions two Species of this Plant; which are,

1. *Nymphæa; lutea*; major. *C. B. P. 193. Tourn. Inst. 261. Boerb. Ind. alt. 281. Park. Theat. 1252. Nymphæa lutea. Offic. Ger. 672. Emac. 819. J. B. 2. 771. Raii Hist. 2. 1319. Synop. 3. 368. YELLOW WATER-LILY. Dale.*

The yellow Water-lily pretty much resembles the white, in its manner of Growth; only the Leaves are somewhat longer, lying, also, on the Top of the Water: The principal Difference is in the Flower, which in this is yellow, and less than the white, made of five round Leaves, with several Chives in the Middle, of the same Colour. The Seed-vessel is large, resembling a Bottle, with a Crown like the Head of a Poppy; growing on the Top, full of Seed, which is larger than the white: This grows in the same Places with the white, and is much more frequent.

It is much of the Nature of the white, but is accounted the weaker of the two: It is, also, cooling and anodyne, and good in delirious Fevers, and for the Heat and Sharpness of Urine. *Miller's Bot. Off.*

2. *Nymphæa; lutea*; minor; magno flore. *C. B. P. 193; Boerb. Ind. alt. Plant.*

Nymphæa alba. A Name for the *Leuconymphæa*.

Nymphæa, alba, minor. A Name for the *Leuconymphæa*; *minor.*
Nymphæa, minor, lutea. A Name for the *Micronymphæa*,
quæ Nymphæa lutea, minor, parvo flore.
Nymphæa flore minimo. A Name for the *Microleuconymphæa*,
quæ Nymphæa; alba; minima.
Nymphæa, lutea, minor, flore fimbriato. A Name for the
Nymphoides; aquis innatans.
 It is called *Nymphæa*, because it lives in Waters, where the
 Nymphs are feigned by the Poets to inhabit.
 The Plant is of a nitrous, paregoric, aperitive, moistening,
 refrigerating, and somewhat narcotic Quality. The Juice is
 drank in Inflammations of the Kidneys and Bladder. Of the
 Flowers is prepared an Oil, which has the same Virtues as Oil
 of Olives, or Oil of Roses. The Leaves bruised make an ex-
 cellent Cataplasm for inflamed Parts; and a Decoction of the
 Roots and Flowers is beneficial in burning Fevers, by refrige-
 rating; and the more, if the same Remedy be applied to the
 Soals of the Feet, and the Groins. Of the expressed Juice of
 the Stalks, Leaves, and Fruit, boiled, is prepared a Syrup,
 which is a most efficacious Remedy for a Gonorrhœa, and not
 the less proper when the Disorder is attended with an immoderate
 Heat; for it was always a celebrated Medicine for Heat of
 Urine. This Syrup partakes somewhat of a narcotic Quality,
 and is, therefore, extolled as a Specific in want of Sleep; it,
 also, prevents nocturnal Pollutions, and extinguishes Thirst.
Hist. Plant. adscript. Boerhaav.

NYPHÆA, also, imports a preternatural Excrecence of
 the *Nymphæa*.
NYMPHODOTI PASTILLUS. The Name of a Pastil,
 described by *Paulus Ægineta*, L. 7. C. 12.
NYMPHOIDES.
 The Characters are;
 It is in all respects like the *Nymphæa*, except that its Flower
 is monopetalous and robated, and its Fruit oblong, compressed,
 soft and unicapular.
Boerhaave mentions one sort of this, which is,
Nymphoides; aquis innatans. T. 153. *Nymphæa, lutea, minor,*
flore fimbriato. C. B. P. 194. J. B. 3. 772. *Nymphæa, alba,*
minor. Lugd. 1009. *Boerb. Ind. alt. Plant.*
 It is called *Nymphoides* from its near Resemblance to the
Nymphæa, both in Form and Virtues; it is of singular Efficacy
 in Hæmorrhages. *Hist. Plant. adscript. Boerhaav.*
NYMPHOMANIA. The same as *FUROR UTERINUS*.
NYMPHOTOMIA, νυμφοτομία. A Section of the *Clitoris*
 when too large; for by the Antients the *Clitoris* was called
Nympha.
NYSADIR. Sal Ammoniac.
NYSTAGMOS, νυσταγμός. A Winking, or Twinkling
 with the Eyes; such as happens when People are excessively
 sleepy.
NYXIS, νύξις. A Puncture.

O.

O B L

O. For the Signification of O in the chymical Alphabet, see ALPHABETUM CHYMICUM. O is the Character for Alum; and three o.° is the Character for Oil.

OBELÆA, ὀβελία, from ὀβελός, a Dart. An Epithet for the Sagittal Suture of the Skull.

OBELCHERA. A Cucurbit. *Rulandus.*

OBELISCOTHECA. Dwarf American Sun-flower.

The Characters are;

It hath radiated Flowers, having many Florets, which are fertile, but the Half-florets are barren. The Placenta is commonly conical, and filled with chaffy Empalements, which appear folded up, in each of which is an Ovary, which is shaped like an Obelisk reversed, having an hollow Base. These Parts are contained in one common Flower-cup, which is deeply cut into several Segments, and expands in form of a Star. The Leaves are placed alternately.

The Species are;

1. *Obeliscotheca integrifolia*, radio aureo, umbone atro-rubente. *Hort. Elth.*
2. *Obeliscotheca daronici folio*, radio purpureo, umbone atro-rubente.

These are American Plants, the first being brought from Virginia, and the other from Carolina; but they are of no Use in Medicine that I know. *Miller's Dict.*

OBESITAS. Fatness, or Corpulence. The Causes of Obesity are already consider'd under the Article *FIBRA*, whence the proper Methods of Cure may, likewise, be collected. It is remarkable, that for one corpulent Person in France, Holland, or Spain, there is a hundred in England and Holland. This I apprehend arises more from the habitual Use of new and feculent Malt-liquors, in which the oleous Part is not sufficiently attenuated, than to any Difference in the Climate, or Degrees of Perspiration. Corpulence is said to be reduc'd by a frequent Use of Camphire. Cyder is esteem'd a proper Liquor to prevent exorbitant Fatness.

OBLATÆ Purgantes are figur'd cathartic Cakes, made of fine Flowers, Sugar, and purging Ingredients. They are much the same as *HOLIPPÆ*.

OBLIQUUS. A Name for several Muscles, two Pair of which, the *Obliqui Ascendentes*, and *Descendentes*, belong to the Abdomen, and are described under that Article.

OBLIQUUS SUPERIOR SIVE MINOR.

This Muscle is situated laterally between the Occiput and

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first Vertebra, being nearly of the same Figure with the two Recti. It is fixed to the End of the transverse Apophysis of the first Vertebra; whence it runs upward, and very obliquely backward; and is inserted in the transverse Line of the Os Occipitis, almost at an equal Distance from the Crista and Mastoide Apophysis, between the Rectus major, and Complexus minor, which covers it a little.

The *Obliqui Superiores*, and the two Recti Postici, turn the Head a little backward on the first Vertebra of the Neck; and they can neither act otherwise, nor separately.

OBLIQUUS INFERIOR SIVE MAJOR.

It is situated in a contrary Direction to the *Obliquus Superior*, between the first and second Vertebra of the Neck, resembling that Muscle in every thing but the Size. It is fix'd below to one Branch of the bifurcated Spinal Apophysis of the second Vertebra, near the Insertion of the Rectus major; whence it runs obliquely upward and outward, and is inserted in the End of the transverse Apophysis of the first Vertebra under the lower Insertion of the *Obliquus superior*.

The *Obliqui inferiores*, or majores, are true Rotators of the Head, by turning the first Vertebra upon the Odontoide Apophysis of the second; all which alternate Motions the Head follows, without being hindered in the Motions forward and backward, in any Degree of Rotation. These oblique Muscles cannot perform any other Motions, being only Assistants to the Splenii and Sterno-mastoidæi. The *Obliqui minores* can have no Share therein, they being limited to the Inflexion backward. The Obliquity of their Direction which may have deceived some Anatomists, seems only to be contrived to make way for the Insertions of the *Complexi minores*. *Winsl. Anat.*

OBOLUS, ὀβολός. A Weight, six of which make a Dram; it is equal to about nine Grains.

OBRIZUM, or *OBRYZUM.* Pure Gold, perfectly refin'd and purg'd from all heterogeneous Mixture.

OBSIDIANA, as *Pliny* expresses it, in *Genere Vitri numerantur*, "are reckon'd a Species of Glass." So called, it seems, from their Resemblance to a Stone, which one *Obsidius* discover'd in Ethiopia, of a very black Colour, and sometimes pellucid, of a muddy Water, and reflecting from the Walls, where it is placed on a Shade instead of an Image.

Pliny, also, informs us, that *Obsidianum* was a sort of Colour with which Vessels were incrust'd, or glaz'd; probably a kind of Smalt. Hence the Name is apply'd by *Libavius*, to Glass of Antimony.

OBSTETRICATIO. Midwifry.

A Labour is said to be difficult, when the Infant is not brought into the World in the usual Time, that is, in an Hour or two; but for certain Causes is retain'd longer than ordinary, and cannot be brought away without Difficulty, and the greatest Care and Diligence. The most direct and immediate Causes of Accidents of this Kind are, first, a bad Conformation of the Body, as in deformed Women; and especially when the Bones of the Pelvis, the *Os Coccygis*, and the *Os Sacrum* in particular, are preternaturally form'd; by which means the Pelvis is frequently render'd so narrow, as not to admit the Hands. Secondly, the Age of the Patient; when for Instance, Women are either too young and tender, or too old, especially in their first Labour. Thirdly, when timorous, they are too delicate, or abound too much in Blood. Fourthly, when their Labour is too much hasten'd, before Nature concurs, and offers her Assistance; or when the Waters are either too soon discharged, or too long retained. Fifthly, when the Patients, not before accusom'd to such Circumstances, refuse to assist their genuine and legitimate Pains by their own Efforts. Or, lastly, when the Situation and Posture of the Fœtus is preternatural. The more of these Causes concur, the more difficult the Labour generally is. But when a Physician is call'd to a Woman in Labour, or at least under Pains resembling those of Labour, he ought, above all things, to inquire, whether she has gone her full Time, which is nine Months; and whether the Mouth of her Womb is as yet open or shut; for if the true and legitimate Time of Labour is not as yet arriv'd, if no Member of the Infant presents itself, if the Patient is not seized with her genuine Pains, and if the Mouth of the Womb is not as yet open, we ought not only to abstain from attempting her Relief by the Hand, but, also, from the Exhibition of such Medicines as provoke Labour. We are rather to endeavour, that the Patient be kept in a State of Rest, or be laid in a Bed. The skilful Physician ought, also, to prescribe proper internal Medicines, accommodated to the Variety of her Symptoms, and calculated for the Removal of the spurious Pains, which are often in due time succeeded by a genuine and legitimate Labour; for it often happens, that Women procure not only their own, but, also, the Death of the Fœtus, whilst either by their own Imprudence, the Instigations of unskilful Midwives and Nurses, or the Uneasiness of spurious Pains, they attempt the Expulsion of the Fœtus before the due time. But when the due Time of Gestation is elaps'd, and consequently the proper Time for Labour arriv'd, when the genuine Pains, or such as are propagated from the Loins down to the Pubes, are perceived, when the Limbs tremble in consequence of the Violence of the Pain; when the Patient is seized with a perpetual Tenesmus; when the Mouth of the Womb is sufficiently dilated, the Method of discovering which is represented in *Tab. LIV. Fig. 1.* the Midwife is carefully and skilfully to perform the several Functions belonging to her Office, either in a Bed, or a particular Chair contrived for that Purpose. When notwithstanding all these Circumstances, and the due Increase of the Pains, the Labour does not succeed happily, we are to have recourse to more efficacious Methods: But before we specify these, we must observe that the Women of *France*, and several other Nations, are deliver'd in Bed, whereas those of *Germany* are deliver'd in a peculiar Chair, represented in *Tab. LIV. Fig. 14.* which Method *Heister* thinks preferable to the other, for several Reasons; especially because their Feet being on the Ground, their Back at the posterior Part of the Chair A; their Buttocks on the transverse Seat C, so excavated that the *Os Coccygis* may commodiously yield, and their Hands holding the Handles D, D, they can make far stronger Efforts, and the Midwife and Assistants have far better Access, and Opportunity of doing their respective Duties. In some Places, where these particular Chairs are not to be had, 'tis customary to fix two common Seats of an equal Height so together, that there may remain six or eight Inches between them. One Buttock of the Woman in Labour is to be placed on each of these Stools, whilst her Anus and Pudenda correspond to the Interstice between them, by which means the *Os Coccygis*, and the *Os Sacrum*, are free from Compression, and easily yield to the Passage of the Fœtus. 'Tis become customary in *Germany*, among the common People, to place the Patient on the Knee of some robust Woman, who, holding her firm in their Arms, supplies the Place of a Chair contriv'd for that Purpose.

The Postures of parturient Women are different in different Countries, and in different Parts of the same Country, but there is no general Rule to be laid down, because some Postures suit some Women, and others do better in another Situation: Besides, one Posture is more commodious than another, as the Child happens to be situated, or as the Uterus happens to be placed obliquely towards the Spina Dorsi, too much forwards, or too much inclining to the Right or Left Side.

The usual way amongst common Midwives is to place the Woman upon another's Lap, with her Feet upon two Chairs, placed one on each Side, whilst the Person that delivers her, sits before the Woman upon a low Chair.

Others, again, especially in the Country, place the Woman upon her Knees and Hands, or Elbows, or else bending forwards against a Table, or something solid, and deliver her backwards.

The best Practitioners seem to think it most commodious to deliver a Woman in, or rather upon, a Bed, lying on one Side with the Thighs and Legs bent towards the Belly, with a large hard Pillow betwixt the Thighs, to keep them asunder.

In *France* it is the Custom to deliver a Woman in a Pallet-bed; but *La Motte* finds fault with them for being too low: His Method is, to lay the Woman upon a common Bed, either across or otherwise, taking care to have it made in such a manner, that it shall lie upon a Slope from the Woman's Head, downwards, and making a Depressure, or kind of Trench, under the Anus, that nothing there may hinder the Birth of the Child: Mean time he places a Cloth four-double, just under the Region of the Kidneys; divides the Knees to a Distance from each other; places two Women, one on each Side, to hold the Knees with one Hand, and to sustain the above-mentioned Cloth, when necessary; the Woman's Heels are to be placed near the Buttocks, and must rest against something solid, the Bedstead, for Instance, or something else, set there on Purpose; the Woman must hold something fixed in both her Hands to hinder her from raising herself, and retiring during the time of the Pains, or when the Child is in the Passage; or else the Woman must be kept from Motion, by another Person's Hands laid upon each Shoulder.

La Motte orders a Cloth to be thrown over the Woman's Knees for Decency, and to prevent Cold.

A double Cloth must, also, be placed under the Woman to receive whatever is discharged from the Uterus; and a woollen Cloth must be in Readiness to receive the Child.

La Motte is of Opinion, that the surest Way to succour a Woman in a long and difficult Labour, is to confine her to no constrain'd Situation, but to let her walk, sit, or lie in Bed, just as she finds it easy to her, till such times as the Waters are flow'd off, the Pains begin to be strong, and the Child advances.

It is often a great Relief to a Woman to have the lower Parts a little elevated by means of the doubled Napkin placed under the Region of the Kidneys, during the Pains.

La Motte tells us, that some Women will have no Pains in Bed, or lying, or even sitting, but will have them very strong as soon as they get up: This is true, as also *vice versa*.

The same Author gives an Instance of a Woman being deliver'd in the following Posture, which he seems very much to approve, when the Child is pretty far advanc'd in the Passage.

Another Woman was placed in an easy Chair, with the Back close to the Wall, and her Legs pretty much asunder; upon this Woman's Lap the parturient Woman was placed, with two more Women to support her under the Arms, and two more to sustain the Feet, and elevate the Knees, and keep them asunder.

When a Woman has not sufficient Pains, in one Posture, to bring the Child, all others must be tried.

La Motte does not approve of laying a Woman in her own Bed.

But it is, above all things, necessary, that Midwives or Physicians, attending Women in Labour, should be perfectly acquainted with the Mouth of the Womb, either from Anatomy, or from *Tab. XVII. Fig. 3.* at 5. or at *Fig. 2.* Letter L, in *Tab. L.* or at *Fig. 1.* Letter C, in *Tab. LIV.* It must, also, be adverted to, that the Womb, especially in pregnant Women, is, except in the Time of Labour, so close shut, that it will scarcely admit the Point of one's little Finger, till the genuine Pains approach. But when these come on, it gradually dilates itself, so as at first to admit one Finger, and afterwards several; and in this Aperture of the Uterus are perceived the Membranes including the Fœtus, resembling a Bladder distended with Water; and often some Part of the Fœtus, through these Membranes, enters the Mouth of the Uterus, or is so contiguous to it, as to be perceived by the Fingers. By these Circumstances the Delivery is known to be at Hand, and is so much the nearer, in proportion as the Mouth of the Womb is dilated. But that the Midwife or Physician who acts in that Quality, may, with Judgment, discover the State of the Mouth of the Womb, they are gently to introduce their fore and middle Fingers, or at least the middle Finger, anointed with Oil, up the Vagina of the pregnant Woman, as far as the Mouth of the Womb, (see *Tab. LIV. Fig. 1.*) in order to discover whether its Mouth is closed or open, much or little dilated; by which means they may, at the same time, discover whether the Delivery is near or not, whether the Mouth of the Womb corresponds directly to the Vagina, as in *Fig. 1.* or inclines to some Side; and consequently

frequently whether the Situation of the Uterus is direct, which is the Sign of an happy Delivery, or whether it is more or less oblique; as, also, whether the Head, the Foot, the Arm, or any other Part, attempts its Exit; from which Circumstances an easy or difficult Labour may, with the greatest Certainty, be prognosticated, as we are informed by *Deventer*, *Van Hoorn*, and *Widemannia*. In making our Searches of this Kind, we must observe, never to make any Attempts, except in the Intervals of the Pains, which are the most proper Times for discovering what we want to know.

Before I proceed to difficult and unnatural Births, it will be necessary to take notice of some things relative to a natural Labour, both for the Instruction of those who intend to be Practitioners in this way, and for the general Information of parturient Women, who are frequently greater Sufferers in the most easy Labours, by unskilful Conduct, than the Circumstances require.

When a pregnant Woman approaches near the Term of her Delivery, she is attentive to every Variation of her State and Condition. Nor can she be blamed for this Caution, since she is most deeply interested in her own Fate, and is to act the most considerable and important Part in the Labour. Upon the first Approaches of Pain, a Sense of Danger prompts her to implore the Assistance, either of a Physician, or the Midwife. These, before they make any Attempts for her Delivery, ought carefully to inquire into the Nature of her Pains, because these may be either false and spurious, or of the genuine and legitimate Kind.

False Pains are such as neither proceed from the Uterus, nor bear downwards; but they draw their Origin either from Wind or Bile lodg'd in the Intestines, as is obvious from the Rumbling of the abdominal Viscera, and the Tenesmus or Inclination to go to Stool. Any violent Commotion, a Fit of Passion, or a Coldness of the Body, succeeded by a Paroxysm of a Fever, are Circumstances capable of exciting Pains, which, however violent, are not productive of a Delivery; for which Reason they are called false or spurious Pains.

True and genuine Pains, on the contrary, beginning in the Region of the Loins, extend themselves to that of the Uterus, render the Pulse more full, frequent, and elevated. They, also, produce an unusual Redness of the Countenance, because the Blood, being, by their means, more agitated and heated, is of course more quickly and copiously conveyed to the Face. These Pains remit and resume their Force at certain Intervals; but the succeeding Pain is always more severe than that which preceded, till at last they grow so strong as to terminate in the Birth of the Child.

Women who have not before born Children, very readily mistake the Nature of these Pains; but such as have, are sufficiently capable of distinguishing the true from the false and spurious Pains; and a Woman, upon the Approach of her first Labour, is excusable in taking her Pains for a Paroxysm of the Colic.

With respect to Pains, sometimes Women feel considerable Pains in their Bellies, for some Months before Labour. In these Cases, *La Motte* says, Purges are not necessary; and recommends Clysters of Whey only, with a Pupil of green Anise, (*Anis vert*) boil'd in it.

At the Approach of Labour, a Woman feels generally, for some Hours, and frequently for some Days, Pains in the Loins and Belly, which either do not bear downwards at all, or but very little. These they usually call *Grinding Pains*, which are very troublesome and fatiguing, but, however, of great Service; for they contribute to the gradual Dilatation of the Mouth of the Womb, promote by degrees the Formation of the Waters, bring the Child to a due Situation for the Birth, lubricate the Passages by expressing from the Womb an emollient and mucilaginous Fluid, and perhaps bear no small Part in loosening the Cohesion of the Placenta with the internal Surface of the Womb, in such a manner, that its Discharge may immediately follow the Birth of the Child.

A Midwife ought to be extremely cautious of putting a Woman upon Labour too soon; for every Pain that a pregnant Woman feels in her Belly, or Loins, must not be taken for Labour, even tho' the Head of the Child may be felt; because these Pains are not true ones, unless accompany'd with a Discharge of slimy Matter from the Uterus, and unless the Waters are formed.

In case of such Pains as these, the Woman must be kept easy and quiet, and the rest must be left to Nature.

In case these Pains are very troublesome, they are to be taken off by proper Clysters, and made of emollient and carminative Ingredients. *La Motte* recommends one of half Whey, and half Barley-water, wherein Agrimony and Mullein have been boiled, with an Addition of a Spoonful of Honey, and a few Aniseeds.

A Woman may have these spurious Pains for many Days, before 'tis necessary to give her any Assistance; and 'tis extremely wrong of a Midwife, to fatigue the Woman, by putting her upon Labour, and more so, to be perpetually touching the Parts.

La Motte asserts, That all sorts of Pains, in any Part of the Body whatever, are to be regarded in the last Days of Gestation; because they are frequently succeeded by, or accompany, true Labour-pains: Of this he gives two Instances; in one of which, an excessive Pain was felt in the Side; in the other, the Pain was in the Thigh, and the Woman was delivered in half an Hour, and the Pain entirely ceased.

Women so ill, that they seem deprived of all their Senses, whilst in Labour, have often a Motion with their Arms, Lips, or of the lower Parts; from which the Midwife may guess at their being in Labour.

Labour-pains often cease for a little time after the Waters flow off, but soon return again; however, the Author above quoted gives an Instance of their ceasing, and never returning at all. He was called in the third Day, and, upon Examination, found the Orifice of the Womb closed, but very easy to be dilated: Upon introducing his Hand, he found a dead Child presenting the Back, which he brought away by the Feet.

Labour-pains will sometimes continue for eight or ten Days, or more, by Intervals, before they become strong enough to bring the Child into the World.

La Motte, *Obs.* 374. gives the Case of a Lady at her full Term, who was in the Evening seized with Labour-pains: The Mouth of the Womb was dilated to the Bigness of a Crown-piece, and the Membrane began to be formed; but in half an Hour's time the Pains ceased till the next Evening, when they again returned; and then the Mouth of the Womb was very much dilated, and the Membranes seemed ready to break; but the Pains decreased by little and little, and again entirely left her. The Morning following she was seized with an excessive Pain in her Leg, from the Ankle to the Knee; which the Author judged not to be a Symptom of Labour, and therefore embrocated the Part with warm Brandy, and wrapt it up in a warm Napkin; upon which the Lady went to sleep, and waked without Pain. She continued in this manner thirty-five Days perfectly easy, and then the Labour-pains returning with Violence sufficient to break the Membranes, the Child was found to present with the Feet, and one Hand, which the Author brought away by the Feet, not without much Difficulty; for the Child was extremely large, and so strong, that he was obliged to make use of both his Hands to bring the Feet, not being able to fix the Feet in one Hand, the Child withdrawing one when he seized the other. This Child presented right, when the Lady was first of all seized with Labour; but, the last time, it presented wrong.

The Signs which happen a few Days before the Delivery, are the following: Some uncommon Pains are perceived in the Loins; the Mother observes the Prominence of the superior Part of the Abdomen sunk, as it were, and depressed to the lower Region; She cannot walk with that Ease and Freedom she did before; she is seized with a preternatural Inclination to discharge her Urine frequently; and a viscid Matter descends from the Uterus, in order to moisten and lubricate the Vagina, or Passage through which the Foetus is to come into the World.

These general Signs are, in proportion as the Labour approaches, succeeded by others; such as, an universal Trembling of the Body, but more especially of the Thighs and Legs, which are seized with Shivering. This, however, does not, like that preceding Fevers, arise from Cold. The Mother also, sometimes vomits; a Circumstance which surprises the By-standers, who are ignorant, that 'tis highly beneficial in this Case, because 'tis a Sign, that the Infant, situated in a natural Posture, pushes with its Feet against the Bottom of the Stomach, in making Efforts to find a Passage into the World. When the viscid Matter, discharged from the Uterus, appears tinged with Blood, 'tis a Sign, that the Delivery is not far off, tho' we are obliged to wait a longer, or a shorter time before it happens.

The Operator, who, before this, must not fatigue the Mother with superfluous handling the Parts, as most Midwives generally do, must now touch her, in order to discover the State in which the Mouth of the Uterus is; and that he may be able to form a judicious Prognostic with respect to the Time of the Delivery. If he finds the Mouth of the Uterus dilated, and the Membrane thrust into it, like a large Gut full of Water; 'tis a Sign, that the Waters are forming, and thus pushed forward by the Head of the Foetus, which is soon to follow them. Lastly, when, during a violent Shock of Pain, produced by the Efforts of the Infant, this Membrane breaks, and the Waters are discharged, we may be assured, that the Delivery is at no great Distance.

As a Physician cannot ascertain, that the Measures he orders to be taken with one Woman in Labour, will exactly suit the Case and Circumstances of another, who may be in a quite different Condition; so he cannot, in the very Nature of the Thing, reduce his Precepts and Directions to one general Rule, the following of which might indeed prove beneficial to one, but hurtful and pernicious to others. He must therefore distinguish himself from the common Herd of Midwives, who often tread in a beaten Path, and practise always in one manner, without Distinction, and without knowing what Consequences it may produce.

The first Step to be taken by the Operator is, carefully to interrogate the Woman with respect to every Circumstance which has the least Tendency to make him acquainted with her State and Condition. He must carefully advert to every Answer she makes, and guard against discovering the least Degree of Astonishment, even tho' she should recount Circumstances which give him Reason to suspect a difficult Labour. If from the Bulk of the Abdomen he conjectures, that two Children are lodged in the Uterus, or that the Posture of the Foetus is bad and unnatural, he must not declare his Sentiments, because he may do that in due time afterwards. Instead of discovering himself to be under the Influence of Dread or Terror, he must assume a gay Behaviour, and assure the Mother and By-standers, that the Event will be happy and successful.

He must by no means pass too decisive a Sentence with respect to the Delivery; for I have known Women, who have been told, that they would be deliver'd at such a particular Hour, become intolerably impatient after that Hour was past. The Moments, at any rate, seem long and tedious to the Patient; but much more so, when her Pain continues beyond the Period foretold for its End. 'Tis more prudent to specify a longer Time for this Purpose, than in all Probability it really requires, since, in this Case, one or other of these two Circumstances must happen; either the Mother goes to the Time prefixed, or she is delivered before it: If she is not delivered, she has no Occasion to be impatient, since the Time fixed for her Relief is not yet arrived. If, on the contrary, she should be delivered before it comes, she is inclined to imagine, that the Assistance of the Operator has exempted her from some Hours of Pain, which she must otherwise have gone through.

Mauriceau, for a Patient in this Situation, orders a Clyster, Venesection, and Aliments of easy Digestion; such as Jelly-broths, fresh Eggs, and a Toast and Wine with Sugar. At the same time he forbids the Use of all Wines, Ratafia, and every thing of an heating Nature: But, as, in some Cases, we ought to abstain from what he orders, and, in others, to do what he forbids, we must inquire when we are, and when we are not, to follow his Advice.

He assigns two Reasons for his prescribing a Clyster; which are, first, in order to evacuate the gross Faeces indurated in the Rectum, and which might, by means of their Hardness, obstruct the free Passage of the Infant. The second is, that, by straining to discharge the Clyster, Efforts capable of bringing on the Delivery are excited: But he forgets a third, which is, that the Contents of the large Intestines must be evacuated, lest, being pressed upon by the Head of the Infant, they should be discharged during the Labour; a Circumstance which not only sometimes happens, but, also, brings along with it very considerable Disadvantages.

But these Reasons cease, if the Mother has had a Stool the same Day; for, since the Faeces are evacuated, they can neither incommode the Infant, be discharged during the Labour, nor produce Efforts necessary to a Delivery; so that a Clyster must, in the Nature of the Thing, be superfluous and useless, in Cases where there are no Faeces in the large Intestines: Besides, *Mauriceau*, in several Passages, forbids the promoting the Labour too hastily. Now, as Clysters have a Tendency to produce that Effect, they ought not to be used, except in Cases of absolute Necessity, which cannot possibly occur in natural Labours, of which we now speak.

Tho' Venesection is sometimes of singular Advantage in particular Labours, yet its Propriety must be indicated by some Symptom; but, in a natural Labour, no Circumstance points out its absolute Necessity. *Mauriceau*, however, warmly recommends it, affirming that we may safely empty the Veins of a Woman whose Labour is near; because, having the Infant no longer to nourish, she has no Occasion for so large a Quantity of Blood as she had before. But this Reason is too general and unlimited, to be taken in a literal and unrestrained Sense. If the Patient is sanguine, plethoric, or has not been blooded for a considerable time before, his Advice may be followed, and Venesection may be proper enough: But if the Mother is weak, delicate, or has eaten little during her Pregnancy her Strength and Blood must be carefully preserved. Neither have we any Reason to dread either those violent Hæmorrhages,

which soon prove mortal, or too copious Purgation incident to Mothers of strong and robust Constitutions, or who during their Gestation have eaten liberally. And if those Patients, for whom we judge Venesection improper, should happen to have a small Redundance of Blood in their Veins; Nature is able to rid herself of it by the subsequent Purgations.

If a Woman should happen to be seized with Pains soon after Dinner or Supper, we must give her no more Aliments; on the contrary, it were to be wished, that her Stomach was empty, because, in consequence of that Circumstance, it would be less stimulated to vomit. Some Women, in this Situation, are so much afraid of Hunger, that they imagine they should die, if they wanted Aliments for four Hours. The Operator is reduced to a Necessity of humouring these, not in order to give them any additional Strength, as they themselves idly imagine, but in order to satisfy their inordinate and importunate Cravings: But it would be far better, if the Mother was delivered without her taking any Aliments; I mean, in a natural Labour, which does not exceed seven or eight Hours; but, if it should happen to be protracted longer, the Patient's Strength must be supported by proper Jellies or Jelly-broths.

Wines, spirituous Liquors, and all kinds of hot Compositions, are expressly forbid by *Mauriceau*. I must indeed agree with him, that a Woman in Labour, whose Pulse is elevated, whose Countenance is inflamed by the Violence of her Pains, or whose Throat is overheated by her Groans and Cries, must not use such Substances as have a Tendency to render her Blood hotter, and consequently augment her Symptoms. Ptisan, or simple Water, are far more proper, in order to refresh her, and lubricate her Throat.

As different Women are, during their Labours, accustomed to different Liquors, such as Harthorn-water, Rosa Solis, Divine Waters, as they are called; Decoctions of Sugar and Cinnamon in Wine, or Wine alone; the Operator, if he cannot intirely banish their Use, is, at least, to lessen their Quantity as much as he possibly can.

As different Women are, also, accustomed to have themselves delivered in different Positions and Situations, some standing, others in a Chair, others on their Knees, others on a Matras before the Fire, and others in Bed, the Operator is obliged to gratify their several Humours, since, on these Occasions, their peevish Obstinacy is generally proof against the Remonstrances of Reason, and the Suggestions of good Sense.

Before the Labour comes on, the Operator must be previously furnished with whatever will be necessary; as Cloths, Thread to tie the Navel-string, and Scissars to cut it: When all this Apparatus is at hand, he is patiently to wait the Increase of the Pains, and, during their Intervals, to entertain the By-standers with some agreeable Conversation, carefully avoiding the Mention of difficult Labours, putting a favourable Construction upon every Circumstance, and affirming that all the Symptoms prognosticate an happy Delivery.

When the Pains are augmented to such a Degree, that the Mother can neither walk, nor sit, without the greatest Uneasiness, the Delivery is to be attempted in what Posture the Surgeon thinks most commodious.

Mauriceau orders the Patient not to be delivered, till the Waters are discharged; but, in my Opinion, this is delaying too long. 'Tis true, some Women have a great many Pains after the Eruption of the Waters before their Delivery; but 'tis at the same time equally certain, that others are delivered during the same Pain which evacuates the Waters. For this Reason, I think, we ought not to delay so long, lest the Waters being discharged, and the Mother in an erect Posture, the Infant, which is soon to follow these Waters, should fall on the Floor; a Circumstance which may be attended with fatal Consequences.

Tho' the Operator ought never to touch a Woman more frequently than is absolutely necessary for making a Prognostic, and forming a probable Judgment with respect to the Time of the Delivery; yet, as some Women think themselves ill used, when they are not often touched, he is often obliged to comply with this absurd Piece of Practice, rather to gratify the Imagination of the Mother, than afford her any Relief.

As some Women cry as violently on the Approach of their first Pains, as they might be supposed to do in the Height of their last, the Operator must suggest to them, that they render their State worse by that means; and that the giving a proper Check to their Cries, till they had real Occasion for them, would be a Circumstance of great Advantage.

Every time the Operator thinks it necessary to touch the Patient, he must convey a small Portion of Butter into the Vagina, in order to anoint the Mouth of the Uterus; that, by this means, it may dilate itself with the greater Ease and Expedition; for the Length or Shortness of the Labours bear a Proportion to the Time it requires to open and dilate itself sufficiently.

The Oils and Butter may facilitate the Dilatation of the Mouth of the Uterus, yet the Head of the Fœtus contributes more powerfully to the Production of this Effect, since, at every Pain, it pushes against it, and at last, so dilates it as to find a free Passage for itself: The stronger the Infant is, the more powerful Efforts it makes to come into the World; and this is the Reason why, as some imagine, Women pregnant with Male Children are generally more expeditiously delivered, than those whose Off-spring proves of the other Sex.

Women who have had frequent Opportunities of attending Labours, are so firmly persuaded of this, that, when they see a Labour protracted, they never fail to pronounce, that the Child will be a Girl. In a word, 'tis established as a kind of general Rule, that Boys force their Way into the World much sooner than Girls, tho' in some Cases it happens otherwise: When, for Instance, the Boy, having a large Head, and broad Shoulders, cannot make its Way through the Mouth of the Womb, which is not as yet sufficiently dilated. In this Case we must wait, till, by the redoubled Efforts of the Fœtus, it is opened sufficiently, and yields a free Passage to the struggling Infant.

Every Effort of the Infant produces a Pain, which bears a direct Proportion to the Strength or Faintness of that Effort; for which Reason severe and violent Pains are often wished for, because they contribute more powerfully to the Delivery, than such as are faint and languid.

Some Women, at every Pain, endeavour to bear downwards, with an Intention to forward the Delivery; but as these Attempts fatigue them, and impair their Strength to no manner of Purpose, the Operator is to advise them to reserve their Efforts, till the last Pains come on, when they may be employ'd to more Advantage.

As 'tis the Mouth of the Womb which retards the Delivery, the principal Intention of the Surgeon ought to be its Dilatation, by anointing it now-and-then, and turning one of his Fingers in it, taking care, at the same time, not to impair it in any manner.

In proportion as the Mouth of the Uterus is dilated, 'tis filled with a Membrane distended with those Waters in which the Infant swims, and which are thus driven forwards by the Head of the Fœtus. We must not, like some Midwives, break this Membrane with our Nails, in order to evacuate the Waters, which, among other Uses, are destined for the Lubrication of the Passage; for, if these should be discharged too soon, the Delivery would of course be rendered more difficult, since the Parts must by that means be drier: We must, therefore, wait the spontaneous Evacuation of the Waters, by the Efforts of the Infant, who, generally, very soon follows them.

When the Waters are thus evacuated, the Operator perceives the Head of the Infant advancing, and bearing directly on the Mouth of the Womb, where it, on some Occasions, remains for a short time, in consequence of the Resistance with which it meets. Sometimes the Head of a Fœtus, whose Sutures are not as yet formed, assumes a more oblong Figure in the Mouth of the Womb, in order to facilitate the Delivery. At last, the Infant, by its reiterated Efforts, which are now more violent, because it has now more Liberty to extend itself, so dilates the Mouth of the Uterus, as to enter the Vagina.

Tho' this be a Circumstance of great Importance, yet the Delivery is not, by its means, absolutely accomplished, since there is sometimes a considerable Resistance made by the external Orifice, the Caruncles, the Nymphæ, and Lips of which, with Difficulty, yield to the Passage of the Fœtus. The Head of the Infant, in this Case, presents itself, and is seen; but cannot be disengaged without the Assistance of the Operator, who, with both Hands passed between the Head of the Fœtus, and the Lips of the Pudenda, is to dilate the latter; then, conveying his Fingers below the Jaws of the Infant, he is to extract it.

But the Extraction of the Head is not enough; the Shoulders, which are sometimes with great Difficulty disengaged, must necessarily follow. The Operator must not for this Purpose draw the Head with too great Violence, since by that means, he might separate it from the Body; he must, therefore, draw it gently to the Right, in order to disengage one Shoulder; and then to the Left, to free the other. If these Measures should not succeed, he must pass two of his Fingers along the Neck of the Infant, to one of the Arm-pits, and disengage one of the Shoulders, and then the other, in the same manner. Thus, when the Shoulders are brought out, the rest of the Body will easily follow.

The Operator must neither draw the Infant too quickly, nor extract it totally, till he has observ'd, whether the Navel-string is twisted about its Neck, or any other Part of its Body; in which Case he might, by Precipitation and Rashness, either break the Navel-string, or draw down the Secundines, which,

not being as yet sufficiently disengaged, might bring along with them the Bottom of the Uterus, to which they adhere.

When the Infant is brought alive into the World, it must be laid upon its Side, both that it may breathe more freely, and have its Face kept out of the Waters, &c. discharged during the Delivery.

The Birth and Life of the Infant may be known from its Cries as soon as it is born. From the Strength or Faintness of these, some Women pretend to decide, whether the Fœtus is a Boy, or a Girl; but this is an highly fallacious Circumstance, since Girls are frequently capable of crying as loud as Boys.

After the Child is born, two Steps remain to be taken, which are to tie the Navel-string, and bring away the Secundines, or After-birth. Some order the Navel string to be tied immediately after the Delivery, whilst others maintain, that the Secundines ought to be brought away first. The Abettors of these two Opinions advance peculiar Reasons for their respective Practices. But, in my Opinion, before doing either the one, or the other, we ought to examine, whether there is not another Child in the Womb; and, if there should, it is to be brought into the World before any Attempts are made to bring away the Secundines. That another still remains in the Uterus, may be known, if, after the Birth of the one, the Abdomen continues large, or the Mother is seized with Pains; or, if, upon the Touch, the Operator perceives a Membrane distended with Water, presenting itself to the Mouth of the Uterus. But when there is no Probability, that there is more than one, we are with all Expedition to attempt the bringing away of the Secundines.

Some Authors would have this done as soon as the Infant is born; and this was the Opinion and Practice of *Mauriceau*, who apprehends, that, during the Time employ'd in tying the Navel-string, the Mouth of the Womb is contracted, and by that means, the Extraction of the Secundines render'd more difficult; whereas, when 'tis taken away immediately after the Fœtus, the Uterus has not Time to contract itself; in consequence of which Circumstance, it may be more easily and expeditiously brought away afterwards.

Those, on the other hand, who order the Navel-string to be tied first, among whom *Clement* is one, think, that 'tis so much better, the sooner the Infant is taken from its Mother, and put into the Hands of the Assistants, in order to be cleansed, and have every other thing done, which its tender and helpless State requires.

They endeavour to give an additional Sanction to this Piece of Practice, by alleging, that the longer the Tying of the Navel-string is defer'd, the more Blood is convey'd from the Fœtus to the Placenta by means of the Umbilical Arteries; that by tying the Navel-string the Course of this Blood is obstructed, so that it remains with the Fœtus; and that allowing the Infant to cry near its Mother, is a Circumstance which might move her Compassion too strongly, and by that means retard the Elimination of the Secundines.

As these celebrated Authors furnish us with pretty plausible and specious Reasons, to support and authorize their different Practices, we shall, without condemning either, endeavour to keep a due Medium, and bring them as near to an Accommodation as we possibly can. When, therefore, the Infant is brought into the World, and laid upon its Side, the Operator is gently to pass his Hand along the Navel-string; and, if he does not find the Secundines adhering to the Womb, he is to attempt their Extraction before the Navel-string is tied. But if, in consequence of their strong Adhesion, he should not be able to bring them speedily away, he is to tie the Navel-string, cut it, and deliver the Infant to the Assistants; after which, he is to make the most proper and skilful Attempts he possibly can to bring away the Secundines.

When the Infant is disengaged from the Navel-string, which now hangs out of the Vagina, it is, in bringing away the After-birth, of great Service to the Operator, who must twist it about two or three Fingers of his Left Hand; then, passing his Right Hand up the Vagina, he must, with his Thumb and fore Finger, hold the Navel-string as near the Secundines as he possibly can; and, if, on drawing the Navel-string gently, he perceives the After-birth advancing gradually, there is some Hope, that he may soon bring it away. If, on the contrary, he perceives that it does not in the least yield to his Attempts, 'tis a Sign, that it as yet adheres too strongly to the Uterus. In this Case he must draw the Navel-string sometimes to the Right, and sometimes to the Left, in order gradually to disengage the Secundines. But this must be done gently, and without the least Degree of Violence.

The Operator must of Necessity implore the Aid, not only of the Nurse, who, after applying one of her Hands to the Region of the Uterus, is gently to press it, by passing her Hand several times from the Navel to the Os Pubis, but, also, of the Mother, who is to blow into one of her Hands flut, as if she

she was blowing into a Bottle; to retain her Breath, that the Breast being full of Air, the Diaphragm, and, consequently the Bottom of the Uterus, may by that means be push'd downwards, to make the same Efforts as if she was discharging her Excrements, and to put her Finger in her Throat, in order to excite a Vomiting. As all these seemingly trifling Circumstances are often productive of happy Effects, they are by no means to be neglected.

If, notwithstanding all these Measures, the After-birth cannot be brought away, the Operator must not lose his Patience, since 'tis sometimes half an Hour, and sometimes several Hours, before it is discharged. In those Mothers whose Blood is gross and thick, who have eaten liberally, and had but little Exercise, the After-birth is with most Difficulty brought away, because it adheres strongly to the Womb.

If through Inadvertence, or a Want of due Patience, the Navel-string should be too strongly pull'd, three Misfortunes might possibly ensue; for, first, it might be broken, a Circumstance, which would render the Extraction of the After-birth very difficult. Secondly, by separating the After-birth with too much Haste and Precipitation from the Uterus, an Hæmorrhage might be produced, in consequence of a Rupture of the Vessels of the Womb. Thirdly, if the After-birth, which adheres to the Uterus, was pull'd too forcibly, it might bring along with it the Bottom of the Womb, a Falling down of which often occasions the Death of the Mother.

A skilful Operator avoids all these Mistakes, and gains his Point by Dexterity and Patience. When the Mother is completely delivered, the After-birth must be laid in some Vessel, in order to be examined by the By-standers, lest, if any Misfortune should afterwards befall the Mother, it should be attributed to a Portion of the After-birth remaining in the Uterus.

As soon as the Woman is delivered, the Pudenda are to be covered with a moderately warm Cloth consisting of several Folds: She is to be ordered to bring her Thighs together, and stretch out her Legs: She is, also, to be kept very warm in Bed, and left for some time in a State of Repose, which is a grateful Alternative for her former Pain and Fatigue.

If the Operator suspects, that the Parts have been too much distended, or injured, by the Largeness of the Infant, especially in a Woman's first Labour, he must apply to them a Cataplasm made with Eggs, and Oil of Nuts, mix'd together, and spread upon Lint, over which a large warm Cloth is to be apply'd for its more commodious Retention.

A great many Women use to take Syrup of Maiden-hair, Oil of sweet Almonds, and Orange-juice, of which they make a Draught, to be taken soon after their Delivery, thinking by this means to alleviate their After-pains, and facilitate the Discharge of the Lochia: Others take Jelly-broths prepared of a Piece of Beef, Mutton, a Partridge, and Leeks. I should prefer these Jelly-broths to the former Draught, since the Patient requires something to support and strengthen, rather than to disgust and pall her Appetite.

Some Authors order, that the Mother should not be allow'd to sleep for a considerable time after her Delivery; but I believe this Advice is supported on no better Foundation, than that which directs a Person not to sleep after Venesection.

The Difficulty started above by the French Writers, relative to tying the Navel-string, and bringing away the After-birth, may be very easily obviated; for a third Person, the Nurse, for Example, may tie the Navel-string, and separate the Child from the Mother, whilst the Operator brings away the After-birth. But as this is sometimes attended with great Difficulty, and as Authors do not all agree together in the manner of doing it, the following Directions may possibly be of some Use to the Practitioner.

The *Secundines* are those Parts, which, after the Birth of the Child, are discharged, as it were, by a second Birth: These consist of the Navel-string, the Membranes, or the Chorion and Amnion, by which the Fœtus was surrounded in the Womb, and, lastly, the Placenta; these are what we call the *After-birth*. When the Placenta is excluded, the others generally accompany it, tho' sometimes, after its Exclusion, a Part of the Membranes may continue adhering to the Uterus, and, by Putrefaction, produce very terrible Symptoms. The *Secundines*, immediately after the Birth of the Child, generally come away spontaneously, or by the Assistance of proper Efforts made by the Mother. 'Tis, however, in some Cases, highly expedient to disengage and extract them with the greatest Caution and Circumspection: When, for Instance, they do not follow the Child, either on account of their uncommon Largeness, or their strong Adhesion to the Uterus; or when, in consequence of the Breaking of the Navel-string, the *Placenta*, with its annex'd Membranes, remains in the Uterus; for, unless these be extracted with all possible Expedition, 'tis to be dreaded, lest the Mouth of the Uterus should close, and render their Extraction either highly difficult, or absolutely impossible; in which Case they putrefy in the Womb, excite violent Pains,

malignant Fevers, copious Hæmorrhages, and, as a great many Authors inform us, Death itself. Some Physicians, I know, maintain, that the Extraction of the *Secundines* by the Hand is superfluous, since they either come away spontaneously soon after the Fœtus, or, when putrefied, are expelled a few Days, or, sometimes, a few Weeks after. But I think the Advice of those more safe and rational, who, unless the *Secundines* naturally follow the Fœtus, with *Hippocrates*, *Celsus*, and many of the Moderns, order them to be forthwith extracted by the Hand. I am induced to declare in favour of this Practice, not only by Observations of others, but, also, by Cases which have occur'd to myself, where the Mothers, in consequence of the *Secundines* being left in the Womb, have been subjected to violent Pains, malignant Fevers, copious Hæmorrhages, and even to Death itself. Unless, therefore, this Practice is contra-indicated by some Circumstance of uncommon Importance, the Mother is not to be suffer'd to quit her Posture, till all the *Secundines* are extracted, because any Part of them, left behind, generally produces the most terrible Consequences. This must be done with the greatest Expedition, and immediately after the Birth of the Child, lest the Mouth of the Womb closing should prevent the ready Introduction of the Hand, and, by that means, render the Work very difficult, if not entirely impracticable. When, therefore, the *Secundines* do not immediately follow the Child, the Right Hand is forthwith to be passed along the Navel-string into the Womb, where the Placenta is to be laid hold of, and extracted. But, if it should happen to adhere pretty strongly to the Womb, the Navel-string is to be cut, and tied near the Navel of the Fœtus. Then the Part of the Navel-string adhering to the Placenta is to be twisted about the Fingers of the Left Hand, whilst the Right is to be passed along it, and applied to the Placenta. See *Tab. LIV. Fig. 13.* which must be gently pulled by the Navel-string, till, being separated from the Uterus, it may be easily extracted. If by these Measures the End cannot be obtained, the Abdomen of the Mother is to be gently rubbed by the Hand of an Assistant, and she is to be ordered, by coughing, and repeated Efforts, as in the Birth of the Fœtus, to attempt the Expulsion of the After-birth; by which means they are often happily disengaged from the Womb, and excluded. But, in drawing the Navel-string and Placenta, great Care and Moderation are necessary, lest, by doing it with too much Force, the Womb, as it sometimes happens by the Impudence of Midwives, should be drawn along with it, and the Life of the Mother exposed to the most imminent Danger. When the Placenta is extracted, the Hand is again to be passed into the Womb, in order to remove Concretions of Blood, or the Remains of the *Secundines*, if there should be any, because, by leaving these, violent Pains, and dangerous Hæmorrhages, are excited. The Hand, also, is to be kept shut for some time in the Uterus, till it gradually contracts itself in an equable manner about it, since by these Precautions various Misfortunes, which would otherwise befall the Patient, are often prevented.

These are the Rules laid down by late practical Authors; but I must remark, that the second Introduction of the Hand is utterly superfluous, provided the After-birth is brought away entire by the first: Nor is it in the least necessary to keep the Hand shut in the Womb, till it contracts.

When by these means the Adhesion of the Placenta to the Womb cannot be surmounted, 'tis necessary, by gently passing the Fingers between them, to disengage the one from the other; which, as Experience teaches, may be done with no great Difficulty, especially if any Part of it is already freed from the Womb, whilst the Thumb is fixed at the Root of the Navel-string, or Centre of the Placenta, and the other Fingers passed between the disengaged Part of it and the Womb; by which means it may be gradually more and more disengaged, till at last a total Separation renders its Extraction easy. But, when all the Parts of the Placenta adhere firmly to the Womb, the Case is far more difficult: We are, however, to endeavour by the Fingers, especially the fore and middle Fingers, first gradually to disengage some Part of its Edges from the Womb; and, when the Whole is disengaged, to extract it in the manner already directed. But if, in consequence of a strong Adhesion, this cannot be done, the Placenta is to be perforated in the Middle, and gradually disengaged by that means. But all these Measures must be taken with the greatest Caution, lest, by the Nails of the Fingers, or the Violence of the Pulling, the Womb should be injured, or forcibly extracted along with the *Secundines*; for we know from Experience, that Cases sometimes occur, in which the Extraction cannot be performed without the Application of considerable Strength; and *Paré* mentions a Case, in which the *Secundines* could not possibly be extracted by any Art. Misfortunes of this Kind, especially when the Placenta is forcibly torn from the Uterus, generally prove mortal to the Mother. Unless, therefore, they can, without great Force and Violence, be disengaged; it seems,

more expedient, for some time, to abstain from manual Operation, and rather to seek Relief from forcing Medicines, the most powerful of which are, the Powder of the dried Liver and Bile of an Eel, or Myrrh and Borax reduced to a Powder, and frequently exhibited to the Patient in Penny-royal, or Cinnamon-water, or aloetic Pills, or some other Medicines of a like Nature; to which we may add a strong Clyster, or Suppository, to stimulate the Anus, or a sternutatory Powder, which was long ago recommended by *Hippocrates*. When these Steps are taken, it is more prudent to commit the rest of the Work to Nature, than forcibly to tear away the Placenta, perhaps, strongly adhering to the Womb; by which means the Uterus may be violently dilacerated, and the Mother exposed to terrible Calamities, and, perhaps, to Death, as many Authors have observed. The like Care and Caution are to be observed, when, by the Ignorance of the Midwife, the Mouth of the Womb is suffered to close so far, that the Hand cannot have Access to extract the Secundines.

When the Navel-string, either by the Rashness of the Midwife, its own Weakness, or its Putrefaction, especially when the Foetus has remain'd dead for a considerable time in the Womb, happens to be broken, especially near the Placenta, so that it can no longer be a Guide and Direction to the After-birth, it is, especially when strongly adhering, with great Difficulty found, because by the Touch alone it cannot easily be distinguished from the Womb, which by an unskilful Hand may be laid hold of, and injured, instead of the Placenta. The After-birth is, therefore, by the Touch to be carefully distinguished from the Womb. When some Part of the Navel-string as yet remains of the Placenta, the former is to be laid hold of, and the latter gently extracted by it; but, when it is wholly broken off, the Placenta is to be distinguish'd from the Womb by its vascular and uneven Substance, in which are perceived Blood-vessels, like those presented in *Tab. LIV. Fig. 13*. When the Placenta is thus found, it is, by moving the Hand sometimes one Way, and sometimes another, to be gently separated from the Womb, and extracted; which may be more commodiously done, if the Operator, with his other Hand, gently compresses that Side of the Abdomen which is hard, prominent, and contains the Placenta; or he may order this to be done by an Assistant. We must here observe, that tho' *Deventer*, and some others, affirm, that the Placenta is always lodged in the Bottom of the Womb; yet *de Graaf*, *Slevogtius*, *Hoorn*, *Brunner*, and *Heister*, have found the contrary: For which Reason, if it is not found in the Bottom, it is to be sought for in the Sides, the posterior or anterior Parts, and, when found, disengaged and extracted. When 'tis taken away, we are carefully to examine, whether 'tis entire, or whether any Part of it is left: If this latter Circumstance should happen, the Part left is to be sought for, and carefully extracted, together with the concremented Blood.

Ruyfch, a celebrated Physician at *Amsterdam*, in a small Book wrote for that Purpose, maintain'd, that an artificial Separation of the Placenta, when it did not follow the Hand, drawing gently, was by no means to be attempted, but left to the Efforts of Nature, and the Assistance of a certain orbicular Muscle in the Bottom of the Uterus, destined for this Purpose. This Author affirms, that by a long Course of Experience he had been taught, that unlucky Consequences were always produced by introducing the Hand into the Womb, in order to separate the Placenta from it; and that many Women, on whom this Operation had been perform'd, were destroy'd by it; whereas almost all those Women, in whom the Secundines adhering firmly, had been left to the Efforts of Nature, happily recovered, and had the Placenta, together with its Appendages, expelled. He, therefore, advises the Practitioner never to make a rash Attempt of this Kind. But as I myself, says *Heister*, and other skilful Operators and Midwives, have known many Patients destroy'd by leaving the Secundines in the Uterus, so I am, says he, persuaded, that *Ruyfch* does not, as some imagine, forbid every Extraction of the Secundines, but only a forcible and violent one, as is obvious from his *Advers. Anatom. Dec. 2*. Those Secundines, therefore, which require the Assistance of Art to disengage and extract them, are not to be left in the Uterus: But when they cannot be extracted without uncommon Violence, which is rarely the Case, or when the Mother is seized with Convulsions, they are to be left to Nature, and the Patient is to be treated with proper Medicines; for the Operator, when he can do no Service, is carefully to avoid doing any Injury; and in Process of Time the Secundines may be spontaneously and happily expel'd, Instances of which have occurred to a great many Practitioners. *Leporinus* wrote a Treatise in *High Dutch* on purpose to contradict the above-quoted Doctrine of *Ruyfch*: *Cobausen*, also, opposes the Sentiments of *Ruyfch*, with respect to deferring the Extraction of the Secundines.

If, after the Birth of one Child, there should remain another,

or more, in the Womb, the Secundines of the first are by no means to be extracted, till all the Infants are brought into the World; for I and others, says *Heister*, have been experimentally taught, that by a Neglect of this Caution violent Hæmorrhages have been brought on, not only mortal to the remaining Infants, but, to the Mother.

When from the Neglect of a seasonable Extraction the Secundines are become putrefied, we must take proper Measures to prevent the Corruption of the Womb at the same time. If, therefore, the Secundines cannot be extracted with the Hand, the Womb is to be preserved from Putrefaction, by frequently injecting every Day, by means of such a Syringe, as those represented in *Tab. XXVII. Fig. 12. 13*. and some vulnerary Decoction, such as that, for Instance, which is prepared of Agri-mony, Germander, or Wormwood, with the Addition of a certain Quantity of the Honey of Roses, and Elixir Proprietatis; acrid Clysters must, also, be injected; and these Measures must be persisted in, till no corrupted and heterogeneous Matter is perceived to remain in the Womb. Such Medicines must at the same time be used, as have a Tendency to prevent Putrefaction, and expel the Secundines.

When the Placenta, in consequence of a spasmodic Constriction of the Uterus, is retained, as it were, in a kind of Bag; Instances of which are recorded by some modern Authors; this Case is found very difficult, especially to Practitioners ignorant of this Circumstance, who may possibly conclude, that the Secundines are entirely wanting. But such Operators as are acquainted with Cases of this Nature, take the Navel-string for their Guide; pass their Hand along it; and when they have reached the Mouth of this Bag, which shuts like the Mouth of the Womb immediately before the Birth, they introduce first one or two Fingers, and then the others, formed in the Figure of a Cone, into the Mouth of it, which, by expanding their Fingers, they dilate, till the whole Hand can have Access; and then laying hold of the Placenta, they extract it with due Care and Circumspection. The Reader who desires a Variety of Observations, with respect to the Retention of the Secundines, may consult *Mauriceau*, *La Motte*, and *Cobausen*. *Heister. Chirurg.*

When 'tis not possible to introduce the Hand into the Womb, in order to bring away the Placenta, by reason of the ill Conformation of the Bones, which form the Pelvis, *La Motte* advises to draw gently at the Umbilical Cord, and at the same time to make the Woman bear down strongly, to shut her Hand, and blow in it, and to put her Finger down her Throat, and make herself reach.

The same Author affirms, that the Mouth of the Womb never obstructs the Introduction of an Hand, provided the Bones of the Pelvis will admit of it.

He, also, gives an Instance where the Hand could not be introduced, because the Bones which form the Pelvis, lay too near each other; and the Umbilical Cord breaking, he was obliged to leave the Expulsion thereof to Nature; and it came away three Days after, and the Woman did well.

This Author seems to have a very bad Opinion of forcing Medicines, when the Placenta stays behind, or a dead Child; and advises to trust to Nature.

After the Placenta has remain'd a Day, or longer, in the Womb, it may frequently be separated and brought away by introducing four Fingers only. *La Motte*.

La Motte affirms, contrary to the common Opinion, that the longer the Placenta has remain'd in the Womb, the more easily is the Mouth of the Womb dilated, the Parts being relaxed by the continual Humidity of what is discharged.

When a redish Serosity, inclining to black, is discharged from the Womb, accompanied with violent After-pains, 'tis a certain Sign, that a Portion of the Placenta, or Membranes, remain in the Womb, and then a Finger, or two, or more must be introduced, as it seems necessary, and the remaining Parts must be brought away.

La Motte once met with a Placenta, that was not one third so thick as usual, but membranous like an empty Bladder, and attached to all the internal Circumference of the Womb, as others are to the Bottom.

MISCELLANEOUS OBSERVATIONS.

When the Uneasiness about the Loins, and the other Circumstances mention'd above, change into true Labour-pains, they press strongly on the lower Part of the Belly, and terminate at the Uterus and Vagina; mean time the Pains grow stronger, and all the other Accidents above-mention'd increase, as the Head of the Child sinks lower into the Pelvis, and advances in the Passage; and then the Woman perceives frequent Motions for a Stool, and to make Water, without being able to do either.

Whilst the Woman is in Labour, she must, from time to time, be admonish'd to draw in her Breath leisurely, and not on a sudden, for fear of the Child's receding when she inspires.

If the Woman is weary of a constrain'd Posture, she may, betwixt the Pains, be at Liberty to ease herself, by laying her Legs strait, or somewhat altering her Posture.

Nobody must be suffered to whisper in the Room, on any account whatever.

La Motte gives several Instances of Delivery being retarded by Accidents seemingly inconsiderable: As, by somebody whispering in the Room, which, giving the Woman Apprehensions of great Danger, has thrown off the Pains for many Hours. He, also, gives an History of a Lady, whose Pains ceased, upon some Apprehensions she had, lest any thing should be indecently exposed to his View, whilst he was laying her. And, he tells us of another, whose Pains entirely ceas'd, upon a Person's being in the Room, whom she did not care to have there; and which did not return, till she left the Room.

Nothing retards the Birth of a Child more, than violent Screaming, during the Pain; and, besides, it causes an Hoarseness, great Heat of the Lungs, and Pain in the Head. The Woman must, therefore, keep her Mouth shut, and force downwards, as much as she can.

In a Labour, it is seldom of any Service, to be frequently touching the Parts, and endeavouring to dilate the Mouth of the Womb, by rounding the Child's Head, with the Fingers. On the contrary, it may, and often does, do Mischief, by inflaming the Parts, and making them swell, especially in a long Labour. *La Motte*.

The last quoted Author will not allow, that the first Labour is more difficult than any of the rest.

He, also, says, that the Potion so much boasted of by *Mauriceau* for promoting Delivery, made of an Infusion of Sena, and the Juice of a Seville Orange, is so far from doing good, that it does a great deal of Harm.

He recommends Broth, as the very best thing that can be given to a Woman in Labour, provided she can drink it without vomiting it up again. The best thing, next to this, he says, is a Toast and Wine.

He gives an Instance of a Woman in Labour, whose Child was well situated, and far advanced in the Passage; but her Pains were slow and weak. The Midwife, through Haste, had imprudently broke the Membranes. He gave her some Nourishment, and put her to Bed, where she lay from Ten at Night, till Five in the Morning; and then, her Pains augmenting with Violence, she was soon delivered.

He gives several Instances of the Waters flowing off several Weeks, and even Months, before Delivery; notwithstanding which the Woman has gone out her Time, and been delivered of a living Child. Hence he takes Occasion to caution against delivering a Woman too soon, before Nature declares the Labour, and is ready for the Expulsion of the Child.

Tho' in the Beginning of a Labour all Circumstances seem favourable, and to promise a speedy and safe Delivery, yet it is not always certain, that the End will be answerable to so happy a Beginning, many Circumstances intervening, which may cause a long and difficult Labour, and which cannot at first be foreseen.

La Motte says, that at certain Seasons a great Number of Women will die after being well delivered, and without any Accident ensuing, tho' of a good Constitution, and that without any apparent Cause; and this he attributes to the epidemical Influence of the Air.

This Author is very much against Swathing a Woman during her Lying-in; for, he says, if it is done never so little too tight, it may cause a Suppression of the Lochia, insupportable Pains, Restlessness, Want of Sleep, Nauseas, Cough, Belchings, Vapours, and Oppression, which soon go off after the Bandage is relax'd, or taken away.

The Moment the Head of the Child is born, the Midwife should apply both Hands flat, one on each Side upon the Ears, and take the Advantage of the Pain that brings it so far, to bring the rest into the World. *La Motte*.

La Motte tells us, that he was never in any Pain about the Length of a Labour, provided the Membranes were not broke, nor the Waters run off; and says, he scarcely ever broke them, unless he was obliged to do it by some dangerous Accident happening in the Beginning, or unless there were some strong Reasons to apprehend it. And he advises all Midwives to follow his Advice, and wait with Patience, till the Membranes break, by the Force of the Pains.

When the Waters run off at the first Pains, and leave the Parts dry, it causes the Woman a great deal of Trouble, especially if the Pains happen to be slight, and so distant, that they serve more to weaken the Woman, than to promote the Birth.

In such a difficult Case, *La Motte* advises Patience, and by no means to fatigue the Woman, but to give her now-and-then some Nourishment easy of Digestion, as Broths, or a Toast and Wine, that, by keeping up her Strength and Spirits, she may be enabled to wait for, and support Pains, sufficient to bring

the Child into the World; and, when such come on, the Defect of the Waters is to be supplied by Unctions. If the Waters continue dribbling, 'tis a certain Sign of a tedious Labour.

A Woman's Pains are never strong, so long as the Waters continue dribbling; but always grow stronger, when that stops; and then the Labour generally comes forwards. *Giffard*.

The Method of letting off the Waters, when the Membranes are too strong to be broke by Pains, is to perforate them with a pointed Probe, introduced carefully along the Hand, or betwixt the Fingers.

La Motte is of Opinion, that the Waters should seldom or never be let off, by breaking the Membranes, unless when the Child is born coiled (as 'tis called); and then, if the Membranes are not broke, the Child will be suffocated. When the Membranes precede the Head of the Child, in the manner above-mentioned, they make an Appearance, as if a Bladder, with a little Water in it, hung out of the Vagina.

It often happens, that, immediately after the Waters are run off, the Pains cease for some time; which is an Happiness to the Midwife, when the Child presents wrong, or the Hand is to be introduced into the Uterus upon any Occasion; because, during a Pain, 'tis neither proper nor convenient to do it.

When black and thick Waters are discharged from the Uterus, 'tis caused by the Meconium diluted in a Portion of the Waters; and is a certain Sign, that the Child presents in some unnatural and constrained Posture. *La Motte*.

Sometimes the Waters will be discharged in great Quantities, in the eighth, seventh, sixth, and even fifth Months of Pregnancy; of which *La Motte* gives many Instances, and takes Occasion from hence to caution against attempting the Delivery too soon, before Nature declares itself ready; for, notwithstanding this Discharge of Waters, a Woman may go out her full Time.

La Motte, *Obs.* 334. gives the History of a Case, where a great Quantity of Waters were discharged suddenly from the Womb, without any Pain, about the End of the seventh Month, the Woman being extremely big. Upon touching, he found the Os Internum dilated enough to admit of the Introduction of one Finger with Ease; and found the Child in its Membranes entire, and no Deficiency of Waters. He advised a little Rest, and the Woman in a Day's time was very well, and about her Business, and went out her full Time. This was a true Hydrops Uteri. Hence the Author takes Occasion to caution against delivering a Woman too soon, without Necessity.

He farther remarks, that, when there are great Quantities of Waters, the Children, tho' moderately large, are born either very weak, or dead; that the Umbilical Cord is very large but weak, and subject to break or separate from the Placenta at its Root. The Placenta, also, is very large, and easy to separate from the Uterus.

If the Umbilical Cord is tied too near the Child's Belly, an Inflammation may ensue; if too far off, an Omphacele. If the Ligature is too slack, the Blood may escape through it; if too tight, it may cut through the Navel-string, and cause a fatal Hemorrhage.

If, by any Accident, the Umbilical Cord is broke off pretty near the Belly, so as not to admit of a Ligature, *La Motte* advises to lay a little Button, or Pledgit, of Lint upon it, upon that a Plaister of Diapalma, then a Compress, and proper Bandage to retain it, till the Place is cicatrized, which sometimes does not happen in seven or eight Months.

The Umbilical Cord should be tied about two Inches from the true Navel.

OF THE TOUCH.

With respect to the Touch, *La Motte* is of Opinion, that it is in vain to touch a Woman in the extreme Violence of her Pain, because at that time the Waters are pushed downwards with so great Violence, and such Quantities, that it is impossible to know any thing certain with regard to the Situation of the Child: We are, therefore, to wait till the Pain is entirely over, or at least, considerably abated.

Deventer is of Opinion, that the Woman should be touched before the Pain begins; for then the Membranes, which contain the Waters, are lax, and therefore the Situation of the Child may be easily discovered; but then the Hand is not immediately to be withdrawn, but to be kept in the Vagina during the whole Pain, and even after it is over; for, during the Violence of the Pain, we may perceive, whether the Child keeps constantly presenting towards the Orifice, in what Form the Waters are disposed, whether long and slender, or flat and broad, whether the Pains are violent, or less sharp; and, when the Pains are over, we may easily perceive, whether the Pains have profited, or not, that is, whether they have made the Child sink lower. But, during the Touch, Care is to be taken, lest the Membranes, which contain the Waters, should be broke by too rough handling, especially when they are much distended by the Vehemence of the Pains.

A modern Author lays it down as a Rule, that the Situation of the Child is to be examined into during the Violence of the Pains. If he means before the Membranes are broke, the above-mention'd Writers seem to have more Reason on their Side.

The Uses of the Touch are many; for by this are known, 1. Whether a Woman is with Child or not; for some affirm, that, in the first two Months after Impregnation, the Womb is closely shut, and hence appears in the Vagina to the Touch more acuminate, hard, and more solid; but this Hardness does not appear like that of a Scirrhus, from which it is easily distinguished. *Mauriceau* compares the Mouth of an impregnated Womb to the Mouth of a Puppy just whelped, and says, that it is exactly shut, and a little longer than before.

Deventer is of Opinion, that it requires a great deal of Practice to judge of Impregnation by the Touch; and even then a Man may be mistaken.

However, as the Time of Gestation proceeds, the Orifice of the Womb grows shorter, more flat, and thin; and it is observable, that, in Women who have had frequent easy Labours, the Mouth of the Womb is so flat, soft, and attenuated, that often in the sixth, or seventh Month it opens, and the Child may be perceived to move within the Membranes.

The Mouth of the Womb, as the Woman advances in her Pregnancy, through the Extension of the Womb, diminishes in all its Proportions, that, when the Woman comes near her Reckoning, it is perfectly flat, and almost equal with the Globe of the Womb; so that it becomes like a small Circle, a little thick at its Entry, where the Garland is made at the Time of Labour. *Mauriceau*.

Dionis is of Opinion, that one may know the very Time, and even the very Day, that a Woman will fall in Labour, by the Touch. This Author says, that the internal Orifice, which has preserved its Thickness and Solidity during the first Months of Gestation, begins in the later Months to extend itself, and grow flat; and, in proportion as the Time of Delivery approaches, its Bigness diminishes, inasmuch that, at last, it is only to be distinguished from the Body of the Womb by a small Protuberance, which makes the Garland in the Time of Labour. He gives us an Instance of a Midwife at the *Hôtel Dieu*, who touched thirty-five Women one Afternoon, and foretold exactly which would come first, which next, and so of the rest in Order.

2. The next thing to be learned from the Touch, is, whether the Time of Delivery is near at hand, or at a Distance; and, in order to judge of this, if we consider what has been said before, it will appear, that the more thin, soft, and flat, the Mouth of the Womb is, the nearer is the Time of Delivery.

The Mouth of the Womb is, in some Women, so dilated before Labour comes on, that two or three Pains at most are sufficient to bring the Child into the World. In others, again, whose Child is ill situated, and especially in those who are robust, advanced in Years, and with Child for the first time, the Mouth is so strongly closed, that it requires very strong Pains in order to open it: And hence we take a Prognostic of an hard and difficult Labour.

This Mouth is very different in Women of an advanced Age, big of the first Child, robust, and used to labour, from what it is in a tender young Woman, that has never suffered any Fatigue, and that has been tenderly brought up.

It is farther to be observed, that the Orifice of a Womb, which lies obliquely, has a very different Appearance from one that lies straight. The Orifice of a Womb, in a direct Situation, sinks lower into the Pelvis, and may easily be felt all round with the Fingers; on the contrary, the Orifice of an oblique Womb lies so high, that it sometimes can be scarcely touched at all; or, if it lies within Reach, only one half of it can be touched.

3. Again, we know by the Touch, whether the Pains with which a Woman is seized are genuine or not; and the Knowledge of this is of a good deal of Consequence to the Woman; because, on the one hand, it is very imprudent to retard genuine Pains; on the other, when the Colic, or Gripes, or spurious Pains, are mistaken for genuine Labour, it may endanger the Life both of the Woman and the Child, to endeavour to promote them by propelling Medicines, or otherwise.

If the Woman is seized with Pains about the seventh Month, or at any time before the ninth complete, they are rather to be suspected as not genuine, and of consequence not to be promoted; but if, even before the seventh Month, true Labour declares itself, it is not to be retarded, but assisted.

Genuine Pains, therefore, are easily to be distinguished by the Touch; for, if the Pains are spurious, the Mouth of the Womb will be closer shut, as soon as the Pain is over; and, on the contrary, if the Pains are genuine, the Mouth will be more dilated and relaxed, when the Pain is gone; and therefore the Mouth must be felt before, during, and after the Pain.

4. We discover by the Touch, whether a Woman in Labour will have an easy or difficult Time; for if the lower Part of the Womb, together with the Head of the Child, is sunk into the Pelvis, in such a manner as to be easily felt, as if entering into the Vagina, without being obliged to introduce the Fingers a great Way into the Body, then an easy Labour is to be expected.

Again, if the Mouth of the Womb is perceived to be thin, soft, and very much dilated, and by its Opening the Head of the Child is felt to present first to the Birth, without either the Arm, or Umbilical Cord appearing, it is a certain Sign of an easy Labour, which nothing can hinder, but the Want of sufficient Pains.

Lastly, if the Waters are formed very broad and flat, an happy Delivery is soon to be expected.

On the contrary, if the Mouth of the Womb is at a Distance very little, if at all, dilated, pointed, thick, and hard, and the Waters contracted lengthways, a difficult Labour is to be expected.

5. We learn, again, by the Touch, whether the Child is well or ill situated. The Situation of the Child is to be examined into, by the two first Fingers well anointed with Butter, Oil, or Lard: The Right or Left-hand is to be made use of according to the Convenience of the Midwife; for the Position of the Woman, and Situation of the Child, sometimes render the Right, and sometimes the Left-hand, most commodious.

With two Fingers we are better able to take Measure of the Bulk and Condition of any Part we have a mind to examine, than with one; and hence, by introducing two Fingers, we are better enabled to judge of the Mouth of the Womb when shut; and, when open, how much it is dilated; as, also, how, and in what manner, the Head, or other Parts, present.

Care must be taken, that the Nails are pared short and smooth, without any Angles.

The Fingers must be passed directly through the Vagina, rather tending downwards than upwards, till they are passed the Bones; and then they are to be turned upwards towards the Navel, where they will meet with the Womb.

It is to be observed, that the Chin of a Child, that is rightly situated, is inclined towards its own Breast, and the Vertex is placed in the Middle of the Mouth of the Womb, or else comes farther into the Vagina; but, in order to perceive this distinctly, it is necessary, that the Mouth should be open enough to admit of at least one or two Fingers.

When the Mouth of the Womb is very much dilated, the Head of the Child comes a good deal more forwards than the Margin of the Mouth; and then the Fingers cannot be introduced farther than betwixt the Margin of the Mouth, and the Head of the Child.

The Buttocks, Knees, or Elbow, also, appear round, when they present to the Orifice, but may be easily distinguished from the Head; for the Globe of the Head is much more broad and flat than either the Knee or Elbow, and is much harder than the Buttocks: Besides, the Head may be distinguished by that soft Membrane which lies betwixt the Bones, and is called the *Fontanella*.

It is of a good deal of Consequence to distinguish the Head from the Buttocks, Knee, Elbow, Hands, Feet, Umbilical Cord, and Placenta, before the Membranes are broke, or the Waters flow'd off; and a Neglect or Error of this Kind is sometimes attended with very ill Consequences.

Some Women are easy to be touched, others very difficult. The first have generally very easy Labours; because, in them, the Head of the Child is sunk into the Pelvis, and points directly to the Birth; in the others, an ill Position of the Womb, or bad Situation of the Child, or both, generally render the Labour difficult.

In order to distinguish well the Position of the Womb, it must be observed, that, when the Womb is in a direct Situation, the Vertex of the Child falls down of its own Accord into the Cavity of the Pelvis, and the Mouth of the Womb is easily felt at the Extremity of the Vagina; but if the Child is well-situated, and, at the same time, the Mouth of the Womb, with the Head of the Child, is placed very much backwards towards the Os Sacrum and Vertebrae, it is a certain Sign, that the Body of the Womb is not in a direct Situation, but hangs too forwards, as it frequently happens in Women whose Bellies are large, and hang very much down: And hence it comes to pass, that the Mouth is touched with Difficulty, being thrown towards the Intestinum Rectum, and Os Coccygis.

On the other hand, if the Mouth of the Womb is thrown forwards against the Os Pubis and Bladder, and for that Reason cannot slide down into the Pelvis, we may be certain, that the Body of the Womb lies too far backwards towards the Vertebrae of the Loins; and for that Reason is not in a direct Position.

But if the Mouth of the Womb, and Head of the Child, are felt very much on the Left-side towards the Os Ilium, we may be sure, that the Body of the Womb has an oblique Position, that is, lies too much on the Right Side. In the same manner, if the Mouth of the Womb, and Head of the Child, are perceived inclining to the Right Os Ilium, the Body of the Womb has certainly an oblique Position, and lies too much on the Left-side.

In the four last-named Positions of the Womb, the Woman is touched with some Difficulty: The Mouth of the Womb lying out of the Way, and at a Distance, a difficult Labour is to be expected.

6. By the Touch we, also, learn what is to be done, in order to assist the Mother and Infant, during a difficult Labour.

7. We are taught by the Touch, whether a Woman should be delivered before the Time of Gestation is complete, or not.

It frequently happens, that before the common Period a Woman is seized with violent Floodings, attended with Faintings and Convulsions. This is caused by a Fall, a Blow, Concussion, or some Injury, or else by violent Passions of the Mind, as Fear, or Sorrow. In this Case, the whole Placenta, or a Part of it, is detached from the Womb, and the Woman must continue to flood, so long as the Womb is kept distended with its Contents: The only Remedy, therefore, is to deliver the Woman immediately, no Medicines being of the least Efficacy in this Case.

However, this Hæmorrhage must be distinguished from the menstrual Flux, which some Women suffer for the five or six first Months of their Pregnancy, and sometimes longer; and it must, also, be distinguished from another Evacuation of Blood, to which some Women, especially those who are plethoric, are subject; which sometimes happens suddenly, and in considerable Quantities, without any ill Consequences attending.

The menstrual Flux proceeds leisurely, without any other Pains than such as are common upon the like Occasion, when a Woman is not with Child.

The other extraordinary Flux, tho' more sudden and abundant; yet, by proper Care and Remedies, ceases in a few Days, sometimes Hours.

But those Floodings which destroy the Woman without an immediate Delivery, break out suddenly, and in abundance, and flow without Intermission; except that sometimes they seem to abate, when the clotted Blood forms an Obstruction, which is only temporary: Upon this Occasion, the Mouth of the Womb will be found by the Touch to be somewhat open, and the Secundines, if entirely detached from the Womb, will be felt lying upon the Orifice, and then the Delivery is as much as possible to be hastened; and, tho' the Secundines cannot be felt, yet it is possible they may be detached from the Womb: Therefore, if Medicines have no Effect, if the Flux is continued, and if Faintings and Convulsions increase, it is absolutely necessary to deliver the Woman immediately, without any regard to the Age of the Fœtus, or the Time of Gestation; nor are we to wait for Labour-pains, because few Women in this Condition have any, or at least, any that are sufficient to expel the Fœtus. Therefore one Finger is first to be introduced into the Uterus, then two, and so by degrees the whole Hand. The Fingers are sometimes to be extended lengthways, and joined; sometimes to be bent and expanded, in order to dilate the Orifice. Then, if the Membranes present first, they must be perforated with the Fingers; after which, the Child is to be brought away by the Feet, and the Afterbirth to be fetched away as soon as possible. In case the Placenta should present first at the Orifice, that must be perforated in the same manner as the Membranes. See ABORTUS.

At the time of Labour, when the Mouth of the Womb lies very high, or very far backwards, so as not to be felt by the Fingers, the whole Hand should be passed to make a proper Examination by the Touch: There is no great Difficulty in doing this, especially when the Woman has had Children before. Giffard.

La Motte says, that, when the Waters are in a small Quantity, the Situation of the Child may be discovered by the Touch during the Pain; but, when they are in great Quantities, the best Time to touch the Woman is, when the Pain is just gone off.

Hippocrates, in his Treatise de Natura Muliebri, informs us, that, if the Mouth of the Womb is grown hard, I suppose he means scirrhus, it may be perceived by the Touch; and, in another Passage, he says, it feels rough.

In another Part of the same Work, he takes notice, that, in a Dropsy of the Womb, the Mouth thereof feels thin, and is scarcely perceptible.

When a Physician is call'd to a Woman in Labour, he ought, above all things, carefully to inquire of the Midwife, what the particular Posture of the Fœtus is; whether natural, or unna-

tural. The most natural Posture of the Infant is generally thought to be that, in which it presents with its Head turned downwards in such a manner, that its Face lies towards the Intestinum Rectum, its Occiput towards the Bladder, its Feet towards the Bottom of the Womb, and its Vertex, or Bregma, directly opposite to the Mouth of the Womb, as in Tab. LIV. Fig. 2. All other Postures and Attitudes are accounted unnatural. There are two of these, however, which, tho' strictly speaking, they are not natural, yet approach very near to it, and may, without any great Impropriety, come under that Denomination, since in them the Infant is born alive spontaneously, and with far less Assistance than is requisite in other difficult Labours. One of these is, when the Fœtus presents with its Feet first; and the Infants brought into the World in this manner, are call'd *Agrippæ*, because a celebrated Roman of that Name was born in this Posture, as is represented in Fig. 3. The other Posture, which approaches pretty nearly to that which is natural, is when the Nates, or Buttocks, present themselves to the Mouth of the Uterus, and the Infant endeavours to force its Passage from the Womb, with its Body almost doubled, as in Fig. 4. But these two Postures are not always attended with equally happy and successful Labours; for if the Delivery should not be carefully promoted by some skilful Hand, but the Infant should be retain'd in the narrow Passage for a considerable time, it must in Process of Time die, in consequence of the strong Compression made both upon itself, and the Navel-string. However, when the Feet present first, the Infant may not only be more easily preserved, but, also, if the Work is duly gone about, more commodiously and speedily extracted, especially with the Help of a skilful Assistant. And, to speak my Mind freely, I am of Opinion, that, when other Circumstances are favourable, this Posture is highly commodious for the Operator, because in it he has an excellent Opportunity of relieving the Mother, as will appear from what follows. But, if the Infant should present in another, and a less favourable Posture, a great Variety of which daily occurs, such as those exhibited in Fig. 5. 6. 7. 8. 9. 10. 11. 12. the Delivery may not only be difficult, and sometimes unpracticable, but, also, the Lives of the Mother and Fœtus exposed to palpable Danger, without the skilful Attempts of a judicious Assistant. See AGRIPPÆ.

With respect to the Situation and Posture of the Infant in the Uterus, unless 'tis indicated by the Prominence of the Hand, the Foot, or some other Part, we must get Information from the Midwife; and, lest she, in consequence of her Ignorance, which is sometimes surprisingly great, should give an unjust and fallacious Representation, we are, in the manner already directed, to introduce a few of our Fingers, or, if the Mouth of the Womb is sufficiently dilated, the whole Hand, in order to make this Discovery. But this is to be done when the Pains remit. If the Head is contiguous to the Mouth of the Womb, which is to be carefully distinguished from other Parts, and if the Infant is, by the Hand or Fingers, found to be in a due and natural Situation, and the Labour, at the same time, does not succeed happily, we are from these Circumstances to conclude, that there is some Fault in the Mother; such as a Redundance of Blood, Weakness, or Narrowness, an Obstruction, or a Swelling of the Parts, an oblique Situation of the Uterus, or some other Imperfection; or, if neither of these should be the Case with the Mother, we are to conclude, that the difficult Labour proceeds from something preternatural in the Fœtus, such as an excessively large Head, or an incommodious Situation of it, when, for Instance, it first presents the Chin, the Face, the Ears, the Occiput, the Shoulder, the Arm, the Breast, the Back, or other Parts, which ought not to present themselves. If the Patient has neither sufficient Strength, nor due Pains, whilst, at the same time, the Situation of the Infant is natural, or if the Delivery cannot succeed on account of the Narrowness of the Parts, as in Women under their first Labour, or by reason of the Largeness of the Infant's Head, 'tis, in this Case, necessary the Patient should be relieved by corroborating Medicines, and such as promote Delivery; and, anointing the Hand with Oil, it is to be introduced into the Vagina towards the Os Sacrum, and the Os Coccygis is carefully to be repressed, especially during the Pains: Thus the Passage must be gradually dilated. When these Measures are carefully taken, the Strength of the Patient, and the genuine Pains, generally return, and the Labour succeeds happily, provided no other Circumstances concur to render it difficult: Thus, if a Redundance of Blood retards the Delivery, a Vein is to be open'd. But when the Parts are either too narrow, as in Women in their first Labour, especially when pretty old, or preternaturally dry, 'tis expedient often to anoint them with Butter, Fat, Lard, Oil, or other emollient Substances of a like Nature; and gradually to dilate them with the Fingers, and, at last, with the whole Hand. If any preternatural Membrane should obstruct or block up the Vagina, it is skilfully to be

be cut, and removed with proper Instruments. If the Parts should be so preternaturally swell'd, as to prevent the Exit of the Foetus, digereat Fomentations, or Cataplasms prepared of the Flowers of Chamomile, Elder, and Mullein, Marsh-mallows, Mallows, and other Substances of a like Nature, boil'd in Milk, are to be applied warm. If any Tumor, large-Fungus, or fleshy Excrescence, of the Vagina should happen to render the Delivery difficult, these are to be extirpated in a proper manner, and by a skilful Hand. When the Parts are too narrow in consequence of a Callus of the Vagina, or Mouth of the Womb, when any other Cause concurs to hinder the Delivery, or when the Uterus is lacerated, and the Foetus fallen into the Cavity of the Abdomen, then there remains a deplorable, and sometimes an absolutely necessary Method of Relief, which is to perform the Cæsarean Section. If the Mother is entirely free from any Defect of this Kind, the Child found in a due and natural Posture, the genuine Pains are strong and sufficient, and yet the Birth does not succeed on account of the Narrowness of the Parts, the Patient, after having discharged her Urine, is to be placed in a proper Posture, or, after the manner of the *French*, laid across a Bed, with her Buttocks on its Edge, somewhat higher than her Head. Or she may be placed in a Chair contrived for that Purpose, and represented in *Tab. LIV. Fig. 15.* in such a manner, that the Foetus may slip a little backwards; by which means the Hand of the Operator may have a more easy Access. She is, also, to have her Knees and Legs held firm, and secured by the Women about her. Then both the external and internal Mouth of the Womb is to be relaxed with Oils, Fats, or Ointments, and gradually dilated by the Fingers, and, if possible, by the whole Hand of the Operator, sitting before her, on a low Seat. The whole Pelvis is, also, to be gradually enlarg'd by repressing the Os Coccygis with the Back of the Hand, especially during the Pains; by which means the Head generally descends gradually, and, upon retracting the Hand, follows it; in which Case, if it can be laid hold of, it is to be gently drawn forwards. If the Foetus should happen to present itself in an oblique and preternatural Posture, such as that exhibited in *Tab. LIV. Fig. 8. and 9.* we are, by the Hand, to attempt its Reduction to a due and natural Posture, not neglecting, at the same time, the Use of proper Corroboratives internally exhibited, and, if the due Pains are wanting, of such Medicines as promote them, till the Delivery is happily accomplished. If the Infant cannot easily be reduced to a natural Posture, its Feet are to be sought for, by which 'tis to be extracted as a Foetus presenting in an unnatural Situation. If the Membranes of the Foetus should happen to be so strong and firm, as not to break spontaneously, though the Mouth of the Womb should be dilated, and the Head perceived, and by this means the Delivery is retarded, and the Mother, perhaps, too much weakened, they are to be broken with the Nails of the Fingers, or a small Hook contrived for that Purpose. But we are by no means to attempt the Breaking of the Membranes, so long as the Mouth of the Womb is not sufficiently dilated, because by this means the Delivery would be rendered still more difficult. Besides, in assisting Women in hard Labours, we are carefully to abstain from the Use of Instruments, and only employ our Hands, so long as the Mother has a competent Degree of Strength, and the Child is perceiv'd to be alive; otherwise we run a Risque of severely injuring, if not of killing, the Infant with the Instruments. But if the Mother's Strength is exhausted, and her Death to be apprehended from a longer Delay, we are to take other Measures, and extract the Foetus by the Feet, and, if that cannot be done, by proper Instruments; for it is better in this Case, by the Attempts of Art, to preserve, if possible, both the Mother and the Foetus, than by trusting too much to Nature, as the Timorous and Unskilful generally do, to neglect and destroy both the Foetus and the Mother.

I must here remark, that the best Authors and Practitioners agree, that if a Child presents in any Posture but that which is natural, the best Method of Relief is to bring the Child away by the Feet, without attempting to reduce it to a natural Situation; for thus the Birth is accelerated with less Danger and Difficulty, both with respect to the Mother and the Child.

We must here observe, that though this Posture, in which the Head of the Foetus is adapted to the Mouth of the Womb, and the Vagina, is looked upon as natural, yet upon account of the Causes above-mentioned, but especially when the Situation of the Uterus is oblique, a Circumstance first remarked by *Sigismunda*, and afterwards by *Deventer* and *Hoorn*, a *Swede*, or when for some other Reason the Crown of the Infant's Head does not correspond to the Axis of the Vagina, but presents the Side of the Head, or the Face, as in *Fig. 8. and 9. Tab. LIV.* or the Ears, or the Occiput, it frequently occasions a Labour so difficult, that the Child cannot be brought into the World alive, either by the Force of Nature, or the Assistance of Art. Unskilful Practitioners generally, though falsely, lay the Blame

on the Bulk of the Head, when 'tis no larger than it naturally ought to be, and has even already passed the Mouth of the Womb. But this difficult Birth, especially if the Side of the Head, or Ear, present themselves, arises rather from the Shoulders, which sometimes bear against the Bones of the Pelvis, in such a manner, that they cannot be remov'd, either by the Force of Nature, or the Assistance of Art, especially when the round and slippery Head cannot be laid hold on, and commodiously drawn out, with the Hands; by which means the Foetus is gradually so compressed in the Uterus, as to fall a Sacrifice to its Situation. Hence it is, that the most skilful are so much afraid of these Situations, which by the promising Appearance deceive the most sagacious, that they are more willing to afford their Assistance in any other Cases, because in these their Hands can generally have Access to the Uterus, in consequence of which the Foetus can be extracted; whereas in the former the Head is so forcibly thrust, and, as it were, wedg'd obliquely into the Mouth of the Womb and Vagina, and the Shoulders, at the same time, bear against the Bones of the Pelvis, that the Access of the Operator's Hand, and consequently the only Means of relieving both Mother and Child, is prevented; whilst the alluring Prospect of an happy Delivery at the Beginning, was the Cause of neglecting the proper Means of Relief, when they were practicable. See *CÆSAREAN SECTION.*

This seems to have been the Reason, why, when all other Arts fail'd, in Cases of this Nature, the celebrated *Palfyn*, a skilful Surgeon of *Ghent*, used neither Hooks, Forceps, or sharp Instruments, for fear of tearing and destroying the Infant whilst alive, but a double Instrument excavated like a Spoon, or Hook, broad, smooth, and blunt, by the Application of which to both Sides of the Head, the Foetus may be extracted without a Dilaceration of the Head, or any other more terrible Injury, see *Tab. LIV. Fig. 16.* The real Size and Bulk of the Instrument sent me, says *Heister*, was only as large again as the Figure here exhibited. The Inventor would principally have Instruments of this kind used when the Foetus is still alive, or, at least, when its Death is not sufficiently certain. It, also, frequently happens, that Infants, and more especially their Heads, in difficult Labours of this kind, and their long Continuance in these narrow Parts, are so compressed and weaken'd, that no Remains of Life are perceiv'd in them. Being thus taken for dead, sharp Hooks are employed for extracting them; by which means they are miserably mangled and torn to Pieces, I myself, says *Heister*, have used this Instrument contriv'd by Mr. *Palfyn*, but without the proposed Success; for, if the Head is only gently compressed by them, the Foetus cannot be extracted; if, on the contrary, it should be strongly compressed, 'tis to be dreaded, lest the tender Cranium should be crush'd. When Experience had taught me this Disadvantage of Mr. *Palfyn's* Instrument, I attempted an Improvement of it; for which Purpose I join'd them both together, by means of a moving Joint or Hinge, that thus the Head might be more commodiously laid hold of; but neither did this succeed upon Trial. This, therefore, is often an highly incommodious and disadvantageous Posture of the Infant, since it either requires the Cæsarean Section, or that, for the Preservation of the Mother, the Foetus should be extracted dead or alive, by the Hooks represented in *Tab. LIV. Fig. 17. 18.* or by other proper Instruments. But we shall, in the Sequel, point out some other particular Means of affording Relief in Cases of this Nature.

If the Foetus is preternaturally situated, for Example, in the different Manners represented in *Fig. 5. 6. 7. 8. 9. 10. 11. 12.* as, also, in the Figures exhibited by *Scipio Mercurius*, *Welschius*, *Guillemeau*, *Mauriceau*, *Voelterus*, *Peu*, *Viardelius*, *Sigismunda*, *Deventer*, *Mellius*, and others, unless these preternatural Situations and Postures are altered by the Hand, the Delivery cannot, without great Difficulty, succeed; but the Lives, both of Infant and Mother, must be exposed to imminent Danger: For forcing Medicines, and the Efforts of the Mother, in such Situations of the Foetus, are so far from being beneficial, that they endanger the Death of the Foetus by the strong Compression of the Uterus, or even the Death of the Mother, or at least some formidable Disorder, in consequence of a Loss of Strength, a violent Hæmorrhage, a Rupture, or Gangrene of the Uterus. No Measure is, therefore, more expedient in Cases of this Nature, than, as soon as possible, to introduce the Hand into the Uterus, rectify this unnatural Posture, and extract the Foetus. Various Methods of obtaining this End are proposed by different Authors; but they are generally so improper and pernicious, that they can never be reduced to Practice. But the most commodious and infallible Method of reducing a Child to a proper and natural Situation, and bringing it into the World, is, after anointing the Hand with Oil, to introduce it into the Womb as cautiously as is possible, see *Tab. LIV. Fig. 6. 10. and 11.* and then searching for the Feet, and laying hold of them, to extract it by little and little, with all imaginable Circumspection.

This we lay down and recommend to Practitioners as the most important and universal Rule to be observed in reducing Children, and extracting them, except in a few Cases; when, for Instance, the Head deviates very little from its natural Posture, and may be easily reduced to it; for not only the surprising Constriction and Narrowness of the Uterus of Women in Labour hinder the Turning of the Fœtus, as some of the less skilful Practitioners formerly directed, but, also, the Roundness and Slipperiness of the Head itself is generally a great Obstacle to its being secured in such a manner, that it can be brought to a natural Posture in so little Room: And, even when this is attempted, if the Head should be laid hold of so firmly as is requisite for its being reduced to its natural Posture, there is considerable Danger, lest it should be compressed, the Brain injur'd, and the Eyes, or any other Part of the Head, hurt: So that the Advice of those who order the Fœtus in the Uterus, however unnatural its Situation is, to be reduced, is not only impertinent, but hurtful and preposterous: I myself am no Enemy to the Opinion of *La Motte*, who, tho' the Head of the Fœtus can be reduced to its natural Posture, yet orders the Child to be extracted by the Feet; for the Fœtus is more expeditiously brought away in this manner, than reduced to a natural Posture; and, by this means, the Mother is not only speedily eased, but, also, the Infant generally brought into the World alive. But when, after a great deal of Labour, the Head is reduced to a natural Situation, the Delivery is neither accomplished, nor the Mother eased; but the Work is rather left to Nature, and the Patient is to begin her Struggles afresh; which, on account of her Weakness, or some other accidental Causes, she is frequently not able to do; so that, after all, the Feet are at last to be sought for, and the Fœtus extracted in that manner. And in this Case 'tis with the greatest Difficulty we can reach the Feet, because the Head is strongly pressed upon by the Uterus. The Fœtus, in the mean time, is either dead before this, or dies in the Extraction, whereas, before, it might have been brought into the World alive. The Mother is, also, now in a far worse Condition than at first, since she often dies after this Usage, or is obliged for her Safety to have the Fœtus taken away by Instruments; so that I think it far more expedient to bring away such a Fœtus by the Feet, than by long, and often unsuccessful Attempts, to reduce its Head to a natural Situation.

But, before we proceed in our Directions with respect to the Reduction and Extraction of Children, it will be expedient here to point out in general, in what Cases this Reduction of Infants, and their Extraction by the Feet, are necessary. It is, therefore, to be used, first, in all Cases where any other Part of the Body than the Head, and especially its Crown, present themselves at the Mouth of the Womb. See *Tab. LIV. Fig. 5. 6. 7. 8. 9. 10. 11. 12.*

Secondly, In all Cases, where any other Parts of the Body than the Head are protruded thro' the Mouth of the Uterus, and especially the Hand, or the Navel-string, provided the Operator cannot so replace it, that it may not be again thrust out by the Access of fresh Pains.

Thirdly, When any Side of the Head, as the Ears, the Face, the Chin, or the Occiput, presents in such a manner, that the Head may be easily reduced to its natural Situation, as in *Fig. 8. and 9.*

Fourthly, When either the Back, or the Belly, as in *Fig. 5. and 7.* or any of the Sides, present to the Mouth of the Womb.

Fifthly, In natural Postures of the Fœtus, when, for certain Causes already mentioned, the Delivery is not promoted, but 'tis rather to be dreaded, that the Infant cannot be born alive, and that the Labour threatens Death either to the Fœtus, or to the Mother, or to both. Instances of this Kind are, when violent Hemorrhages of the Uterus, excessive Weakness, Convulsions, and Epilepsies, happen in Women during Labour; for, as, in all these Cases, both the Fœtus and the Mother run a Risque of being soon destroy'd, the former is to be extracted by the Feet with all possible Expedition, since 'tis better and safer, speedily to extract the Fœtus, whilst both that and the Mother have a sufficient Degree of Strength, than by long and unnecessary Labour to reduce the Child to another Posture, and thus extract it; a Circumstance which may prove detrimental both to the Mother, and the Child.

Sixthly, When the Navel-string is protruded from the Uterus, before the Head of the Fœtus: For if, in this Situation, the Child is not immediately extracted, it soon dies, because the Communication and Circulation of Blood betwixt that and the Mother, is intercepted by the Compression of the Navel-string.

Seventhly, When the Womb has an oblique Situation, tho' the Child should be duly situated; for in this Case 'tis generally more easy to extract it by the Feet, than to reduce the Womb to a direct and natural Situation. In all these, and other Cases

of a like Nature, it is, for many Reasons, and especially because Delays are dangerous, expedient to hasten the Extraction; rather than delay it, as *Deventer* and *Hoorn* have sufficiently demonstrated.

Among the great Variety of preternatural Postures, one of the most dangerous, as well as common, is that, in which the Hand, or Arm, presents, or is protruded, as in *Fig. 11.* With respect to this, we lay down the following Caution; that if, in the Beginning of the Labour, the Hand of the Fœtus is perceived through the Membranes, it often spontaneously retracts it, if the Midwife presses, and, as it were, pinches its Fingers with hers, after which it often presents the Head, instead of the Hand or Elbow; by which means the Labour is frequently rendered easy and natural, as is observed by *Sigismunda* and *Deventer*: But, if the Waters are already discharged from their containing Membranes, this Pinching is of no Advantage; because the Infant, in consequence of the strong Contraction of the Uterus, cannot retract its Arm: Most Authors, in this Case, advise the Midwife to replace it in the Uterus, bring the Head to its Mouth, commit the Work to Nature, and to wait for a natural Delivery: But because this requires great Labour, which is frequently unsuccessful, and is also accompanied with Danger, because by the Reduction we often lose the most favourable Opportunity of delivering the Woman; 'tis, in my Opinion, far more prudent forthwith to extract the Child by the Feet; for, when it presents one Arm, it lies in such a transverse Posture, that the Head and Neck are reclined on one Side, whilst the Breast, Abdomen, and Feet, are turned towards the other; so that the Body cannot follow the presenting Arm. If, in this Case, the Extraction should be attempted by pulling the Arm violently, as unskilful Midwives generally do, the Child would be more firmly fixed in the Passage, but could not possibly be extracted, unless it was imperfect, or at least very small: Instances of which I have sometimes seen.

By Attempts of this kind, on a perfect Child; the Arm will be torn from the Body before the Birth can be accomplished; especially if the Infant is either of a due Size, or somewhat larger than ordinary. Left, therefore, the Child, in this dangerous Situation, should perish together with the Mother, which frequently happens in a very short time, it is highly necessary, since Medicines are of no Advantage, and since the replacing of the Arm, and Reduction of the Head to a natural Position, are of no Use, to introduce the Hand, anointed with Oil, into the Uterus, if Necessity requires it, as in *Fig. 10. and 11.* Then searching for the Feet, and laying hold of them in the manner we shall hereafter more fully direct, the Posture of the Child is to be inverted; and the protruded Arm being thrust back by the other Hand of the Operator, the Child is to be brought away; which, however, especially when the Fœtus has remained long in such a Situation, cannot be done without a great deal of Trouble.

Full Directions for conducting such a difficult and dangerous Delivery as this, will be of great Service to the Operator, with respect to the Treatment of a great many others, provided he is acquainted with the Structure of the Bones of the Pelvis, and duly adverts to the Situation of the Fœtus.

We must always take care, when we intend to introduce the Hand into the Uterus, to make that Attempt in the Part of the Vagina which is contiguous to the *Rectum*; because, in the superior Part, the Bones of the Pubes render it less easily practicable.

As Cases in which the Arm presents, or is already protruded, are of such Importance, as to be a kind of Model for Practice in other difficult Labours; we therefore think it necessary to be as full and explicit upon this Point as is possible. That a Labour, therefore, of this kind, may succeed happily, the Operator is, above all things, to take care, that the Patient be placed in a proper and commodious Posture; because in this, as well as in all other Operations, 'tis not to be doubted but this Circumstance must contribute to the speedy and successful Relief of the Patient. The Mother, therefore, must be either placed in a Chair made for that purpose, and furnished with a Back which may be depressed at the Pleasure of the Operator, and, as it were, transformed into a Bed, such as that exhibited in *Tab. 54. Fig. 15.* Or she must be laid upon her Back across a Bed, or Table, or upon four Stools situated by two and two, opposite to each other, with her Head a little depressed, her Buttocks at the Edge of the Bed, Table, or Stools, somewhat higher than the rest of her Body; and her Thighs carefully separated by the Assistants, in such a manner, that the Operator may have a full Command of her lower Belly, and an easy Access to the Uterus, and the ill-situated Fœtus. When these Measures are duly taken, the next thing to be done is, carefully to examine which Hand of the Fœtus is protruded from the Uterus, that by this means we may the more easily discover, to what Part of the Abdomen the Feet are turned,

and, consequently, where they are to be found: If, therefore, after such a Scrutiny, we should find the Feet turned to the Left Part of the Abdomen, as in *Fig. 11.* anointing the Right-hand with Oil, Lard, or Butter, gently introducing it into the Uterus along the Arm of the Fœtus, and placing it under the Armpit, the Operator is gently to thrust back the Arm and Head, that by these means he may obtain more room for the Ingress and Motion of his Arm; after which, passing his Arm gradually, but without Violence, along the Abdomen, Thighs, and Legs of the Child, he is to endeavour to lay hold of its Feet. Great Dexterity and Caution is requisite in this Attempt, since 'tis often very difficult to lay hold of the Feet, which frequently reach a great Way upwards, and lie at a considerable Distance from each other. In some Cases, however, and especially when the Misfortune is recent, the Uterus as yet not much contracted, and the Feet not separated, this Attempt succeeds pretty readily: All Attempts, however, are vain, unless the Feet be laid hold of: And the Difficulty of succeeding in this is increased, because the Uterus, now remarkably contracted, with great Difficulty admits the Hand; whereas 'tis, for the most part, necessary it should be introduced as far as the Flexure of the Elbow, as may be seen in *Fig. 10.* and *11.* When, by a long Protraction of such a Scrutiny for the Feet, the Operator's Arm is become weary, he may withdraw it, and take a proper Interval of Respite, or begin his Work afresh, by forthwith introducing the other Hand. When the Feet are thus found, the Child is cautiously to be drawn forwards; by which means it is turned; and at last extracted. But, in this Attempt, we are not to draw the Infant upwards, nor strait forwards, but downwards; because there the Bones which form the Pubes, are at the greatest Distance. If at first only one of the Feet should be found, (for the Operator can rarely find both at once) it is cautiously to be drawn a little out of the Uterus, and a Fillet is to be gently wrapped about it; in order to prevent its Retraction, or Slipping-back. After this, the Operator's Hand is to be passed along the internal Side of the extracted Foot, which is known by the great Toe, to the Top of the Infant's Thigh; and thence, as in *Fig. 12.* descending by the other Thigh, till he comes to the Foot, he is to extract it in the manner already directed. Then both Feet, on account of their natural Slipperiness, are to be wrapped up in a dry and warm Linen Cloth, that they may be the more firmly held, and commodiously drawn forwards; and thus the Child, provided the Belly is turned towards the Os Sacrum of the Mother, is to be gradually extracted. If on account of the Narrowness of the Uterus, or any other Cause, I cannot, says *Heister*, with my Hand reach the Foot, I generally lay hold of the Thigh, by its means turn the Fœtus, bring the Knee to the Mouth of the Womb, and, at last, extract the Foot as far as the Knee; then I bring out the other Foot, in the same manner, and thus gradually extract the Fœtus entire.

If during the Extraction the Child is found lying on its Back, as in *Fig. 3.* with its Buttocks towards the Os Sacrum of the Mother, then, drawing out the Legs of the Fœtus, as far as the Belly, and laying hold of the Abdomen and Buttocks on both Sides, lest otherwise the Legs should be distorted, or injured, most Authors order it to be cautiously turned in such a manner, that it may lie with the Belly towards the Os Sacrum of the Mother; otherwise 'tis to be apprehended, that the Chin may catch upon the Bones of the Pubes, and the Uterus contract itself about the Neck of the Fœtus, and destroy it, as sometimes happens by the Ignorance of the Midwife. On the contrary, such Infants as are seasonably and cautiously turned upon their Bellies, are generally successfully brought away. We must, also, examine, by what Side it may be most easily turned upon its Belly; for 'tis frequently observed, that the Business succeeds easily when the Fœtus is turned on a certain Side, whereas, when it is turned on the other, the Neck is easily distorted. If in this Turning the Fœtus is extracted not in a straight, but in a spiral Direction, the Work generally succeeds the better. If the Legs of the Infant are extracted as far as the Abdomen, and if we are not inclined to alter the Posture, so as that the Face may be turned towards the Os Sacrum, the Hand is to be passed into the Uterus, along the Abdomen of the Fœtus, and under the Arch of the Bones of the Pubes, in such a manner, that, whilst the Fœtus is extracted with one Hand, the Chin and Face may slide along under the other, so as not to be retained by the Bones.

Almost all the Moderns order the Fœtus, when thus lying on its Back, to be turn'd upon its Belly; but *Hoorn*, skilful and judicious Artift in this Way, for Reasons of Importance, doubts, whether 'tis not more expedient not to turn a Fœtus in this Position; but rather by other means to disengage it from the Bones of the Pubes, in the manner I shall afterwards direct, since by Attempts of this kind the Body of the Infant may indeed be turned, whilst at the same time its Neck is so

distorted and twisted, as to create more Danger to itself, and greater Trouble to the Operator, than a careful disengaging of the Head from the Bones of the Pubes would have done. *Hoorn. Obs. 26.* See *AGRIPPÆ.*

Attempts to replace a protruded Arm in the Uterus are in this Case not only superfluous, but, also, frequently noxious, and sometimes absolutely impossible; for, after finding one of the Feet, whilst the Infant is a turning, it is either spontaneously retracted, or easily replaced by the other Hand of the Operator, and soon after extracted with the Fœtus; so that the Operator, in this Case, is under no Necessity of creating either superfluous Trouble to himself, or unnecessary Pain to his Patient. If the Feet of the Fœtus are turned towards the Right Part of the Abdomen, they are most commodiously discovered, and brought out with the Left-hand; but, if the Operator is not sufficiently dexterous with his Left-hand, he may perform this Operation with his Right. But, lest any one should be ignorant of the Reason, why, when one Foot is extracted, the other must be found with so much Caution, by introducing the Hand to the Top of the Thigh, it must be observed, that this Advice is necessary, lest, if there should be Twins in the Womb, the Leg of the wrong Fœtus should be laid hold of; and thus, by violent Attempts to extract the Legs of two different Children, both should be considerably injured. *La Motte*, and a later Writer, laugh at this Caution, and pronounce it entirely superfluous, because Twins are not included in one common Membrane, but each has one peculiar to itself, in consequence of which the Feet of the different Fœtuses cannot be confounded and mixed with each other. But I would have these Authors reflect, that the Membranes may break at one and the same time, and consequently the Feet of the different Infants may be confounded and mixed: So that though this Caution is not always necessary; yet *Mauriceau* and *Deventer* are of Opinion, that it is not entirely to be neglected.

The Methods of Procedure already specified and directed are of such a Nature, that they serve as a kind of Model for Practice, in most unnatural Postures of the Fœtus; for, as I have already observed, unless the Head presents duly and directly to the Mouth of the Womb, without any farther Delay, and before the Womb is forcibly contracted, the Feet are carefully to be sought for, and the Fœtus is to be extracted by them; for by these Measures, if taken at first, the Labour is rendered easy to the Mother, and the Fœtus generally brought away alive. But, if the Infant should remain in this Posture for a considerable time, the Womb is so violently contracted, that the Hand cannot without the greatest Difficulty be introduced, and perform its Office. Hence many Disadvantages may accrue, both to the Mother, and the Fœtus. A prudent Expedition is, therefore, absolutely necessary in Cases of this Nature; for this Reason principally, that the Life of the Fœtus is endangered by the violent Compression from the Womb.

From what has been said, the following Rules may be deduced as so many practical Corollaries.

First, When the Feet of the Child present, as in *Tab. LIV. Fig. 3.* they ought not to be put back; much less ought the Head, as some direct, to be reduced to a natural Posture, since this Practice scarcely ever succeeds. But the Midwife, or Operator, taking hold of the Feet, may better, sooner, and more effectually, extract the Child thus, than when its Head is directed to the Mouth of the Womb; provided the Child, as we have already observed, is extracted not with its Back, but with its Face and Belly, towards the Os Sacrum of the Mother: But 'tis more convenient to deliver Women in this Case, when laid on their Backs in a Bed, than when seated in the common Chair contrived for this Purpose.

Secondly, If the Hand presents itself with one or both of the Feet, the Feet are to be laid hold of, and extracted, gently repressing the prominent Hand at the same time.

Thirdly, If the Hand presents itself with the Buttocks, almost the same Measures are to be taken, provided the Feet can be found; but, if the Operator cannot lay hold of these, the Buttocks, together with the whole Fœtus, are to be extracted in that Posture.

Fourthly, When after the Extraction of one Foot, the other cannot be found, and when we find by the Buttock of that Side, that the Foot, as yet retain'd in the Womb, is bent forwards, and rests against the Belly of the Child, it may be extracted by one Foot.

Fifthly, If by one Foot the Child cannot be turned, and at the same time the other cannot be found, the Foot which is found is to be secured by a Fillet, and drawn a little towards the Mouth of the Womb; then the other Foot is to be searched for, and joined to the former: Thus the Child may at last be turned.

Sixthly, If, in extracting the Child by the Feet, the Navel-string should appear between its Thighs, we are, for a little, to desist from the farther Extraction, and the Navel-string is to be

be drawn somewhat farther out of the Womb, so as to form a kind of Doubling; then, bending the Knee of one Leg, the entire Leg is to be passed through the Doubling; by which means the Foetus may be afterwards extracted freely, and without the Danger of any Injury. If, on the contrary, the Navel-string was left between the Legs, till the whole Child was extracted, it might either lacerate the Navel of the Infant, or happen to be broken near it, so as not to admit of being tied; from which Accident very terrible Symptoms sometimes arise.

Seventhly, When the Child is extracted by the Feet, the Operator has no great Reason to be over-solicitous about the Arms; because, for the most part, they follow the Body easily; and if we should attempt to extract them separately, and before the Head, the Neck, unless assisted by other means, would be compressed by the Contraction of the Mouth of the Womb; and the Death of the Child, or some other Misfortunes, brought on; all which are prevented by leaving the Arms, or at least one of them, to be brought away together with the Head.

Eighthly, When only one Foot appears, as in *Fig. 12.* 'tis by no means necessary to thrust it back, in order to reduce the Infant, and bring its Head to the Mouth of the Womb; nor ought the Child to be extracted by this Foot alone, but 'tis better when it is extracted as far as the Knee, with the Hand to seek for the other Foot, which is generally at no great Distance from it, as in *Fig. 12.* and, laying hold of both together, to extract the Child in the manner already directed; but, when one of the Legs is situated longitudinally on the Abdomen, we may, as has been already observed, make the Extraction by one Foot, provided, by laying hold of the Buttocks, the Operation be duly assisted.

When the Child presents its Buttocks, which it frequently does, as in *Fig. 4.* it may indeed be brought alive into the World, but the Labour is generally very difficult, especially in Women whose Parts are not very large; for, as, in this Case, the Child must be extracted with its Body, as it were, doubled, and its Legs applied to its Belly, it runs an Hazard of being destroyed by the forcible Compression of the narrow Passage; which frequently happens, especially when Women are delivered alone, or at least without the Assistance of a skilful Midwife; or, if this Misfortune should not happen, yet 'tis more than probable, that the Passage of the Mother must be miserably lacerated. For this Reason, if a Part of the Buttocks already appears, or at least is so far fallen down, that it cannot be commodiously reduced, it is necessary forthwith to lay the Woman on her Back, with her Buttocks elevated. Then thrusting back the Buttocks of the Infant a little, and passing the Hand along the Thigh to the Knee, we must lay hold of one of the Feet, which in this Case are not at a great Distance, and so extract it; then the other is, if possible, to be found, and extracted in the same manner: But, if both Feet cannot possibly be found, let that which is already laid hold of be extracted, and, by its means, the whole Body of the Child. If the Buttocks are already so far advanced, that the Child can neither be thrust back, nor its Foot laid hold of, then, laying hold of both Buttocks with both Hands, especially by introducing the fore and middle Fingers by way of Hook at the Groins, the Foetus is forthwith to be artfully extracted. See *Fig. 4.* And this is to be done with all possible Expedition, lest by Delays, or the violent Compression made by the Parts, the Child should be destroy'd.

When a Child presents the Buttocks, a Midwife may easily be mistaken, and take them for the Head, before the Membranes break; but, so soon as ever the Waters are run off, 'tis easy to distinguish them.

If they are sunk low into the Passage, the Child must be brought in the Posture it presents in; but then it frequently causes a long and difficult Labour. *La Motte* says, he has delivered a great many Women in this manner, without losing one; but, if the Breech is not sunk very low, and the Feet can be come at, they are to be brought down.

In case the Child cannot be brought away by the Feet, but the Breech comes first, the Fingers are to be introduced on each Side the Child, into the Groin, as soon as it is sunk low enough to admit of it; and by this means the Child is to be pulled forward.

In this Situation a Child frequently discharges the Mecorium; the Buttocks are readily distinguished from the Head, by the Separation betwixt them; and by the Scrotum, if a Boy.

When a Child presents the Breech, and lies very high, and the Membranes are not broken, the Fingers must be introduced into the Vagina; and, if they are not long enough, the whole Hand, in order to be perfectly sure, that 'tis the Breech which presents, it being otherwise very difficult to distinguish it from the Head. This is a thing of much Consequence; for, when the Buttocks are sunk down low, 'tis difficult, and often impossible, to bring the Child by the Feet. If, therefore, the Midwife cannot make herself certain, by introducing the Fingers, or Hand, *La Motte* advises breaking the Membranes,

in order to be farther assured, and to bring the Child away by the Feet.

La Motte also advises, to break the Membrane, and bring away the Child by the Feet, as soon as ever 'tis known, that it presents the Buttocks.

He gives a Case, where he was called in very late, the Woman having been in Labour four Days, and the Buttocks being sunk so low, that 'twas impossible to return them, and the Passage being so strait, that he could not get a Nail of his Fingers between that and the Child, much less could he pass his Fingers to the Groin: However, at last, he introduced, first, one Finger, then two, and, by degrees, the whole Hand, into that Part of the Vagina which is nearest the Anus; acting all the while very gently; then he passed his Hand along the Thighs and Legs, till he came to the Feet, which he joined; and, pushing the Knees towards the Child's Belly, he at last made way for the Feet, brought them out, and so delivered the Mother.

If the Shoulders of the Child, after the Head and Neck are brought out, should stick in the Womb, we are then, after prudently applying our Fingers under both Arm-pits, to extract the Arm which yields most easily; and the whole Body, being attracted by it, for the most part, follows without any great Difficulty, especially if the Child is pressed towards the Intestinum Rectum, where the Interstice between the Bones of the Pubes is largest; which Caution is also to be observed in most other Cases. If, on the contrary, the Child should have its Feet and Abdomen protruded, but stick at the Arms or Axillæ, we are, with our Fingers, cautiously to extract one of the Arms, leaving the other within; then, by the Assistance of the extracted Arm, and the rest of the Body, we are to bring away the whole Child. And this Method generally succeeds pretty well, especially when the Child lies with the Face turned towards the Mother's Os Sacrum. The Arm left within, as we have already observed, hinders the Womb from contracting about the Neck of the Child, which it otherwise very readily does, and frequently proves fatal to the Infant.

When the Shoulders are too large for the Passage, they cause a difficult Labour, by sticking at the Bones of the Pelvis.

When the Obstacle is the Shoulder's sticking in this manner, the Woman has strong and repeated Throes; the Waters flow off, and the Head sinks well into the Passage, but can advance no farther; mean time there is an entire Liberty to pass the Hand round the Head.

The Method, in this Case, is, to depend pretty much on the Woman's Pains, assisting a little with the Hands placed on each Side the Child's Head, near the Ears; but the Head must not be pulled too hard, for fear of separating it from the Body.

Care must be taken to distinguish this Case from that where the Child, presenting with the Face towards the Os Pubis, is hooked there by the inferior Jaw.

La Motte, Obs. 460. gives a Case of this kind, where he was obliged to slide his Fingers under the Arm-pits, in order to bring the Child away after the Head was protruded; but, he says, the Fingers are not introduced in this manner under the Arm-pits, without a great deal of Difficulty.

It, also, frequently happens, that when an Infant has its Feet either spontaneously protruded, or extracted by the Hand, the Mouth of the Womb is so contracted about the Neck, especially when the Chin and Face lie towards the Mother's Belly, and the Hand cannot be soon enough introduced between the Face, and the Bones of the Pubes, that the Child at last sticks there. In this Situation the Child cannot possibly live long, because it is retain'd, and, as it were, suffocated, by the Mouth of the Womb, which strongly compresses its Neck. If, in this Case, we should attempt forcibly to draw the Child directly forwards, we should be in Danger of separating the Head from the Body, and leaving it behind, instead of bringing it away entire, especially, if the Infant lies with the Face towards the Mother's Belly, and has its Chin retain'd by the Bones of the Pubes. For this Reason we are rather to endeavour, if the Face lies towards the Os Sacrum of the Mother, to pass the Hand under the Neck, beyond the Chin and Mouth of the Foetus, and with two Fingers so to lay hold of the Superior and Inferior Jaws, that the Nose may lie between them, and, pressing at the same time towards the Intestinum Rectum, thus gently to extract the Head, and whole Child. Most Authors advise, that, in this Posture, the two fore Fingers should be introduced into the Mouth of the Child, and the Head, by their means, drawn out; but because the tender Jaws are easily injured, or perhaps torn off, I think the former Method preferable to this; and the celebrated *Hearn* is, also, of the same Opinion. If the Child should happen to lie with the Face towards the Mother's Belly, and its Chin stick on the Bones of the Pubes, as in this Case it generally does, we should sooner pull the Head from the Body, than extract it, the Bones of the Pubes so strongly resist the Egress of the Chin. Left, therefore, the Child should be suffocated, or have its Head

Head torn from the Body, the Mother is forthwith to be laid in a proper Posture; then, passing one Hand into the upper Part of the Vagina, the Chin and upper Jaw are to be laid hold of in the manner already directed, whilst with the other Hand, apply'd to the Region of the Pubes, the Head is to be carefully pressed towards the *Intestinum Rectum*. The Fœtus, in the mean time, is to be gently drawn forwards by an Assistant, till it is totally extracted; which, on account of the strong Resistance of the Bones of the Pubes, is an Operation so difficult, that, notwithstanding the greatest Care of the Operator, the Infant can very rarely be extracted alive. But *Hoorn* thinks, that this End may be more commodiously obtain'd, when an Assistant, laying hold of the Feet, raises them upwards, and, at the same time, draws gently, whilst the Operator either proceeds in the former Method, or, passing his Left-hand under the Occiput, he is to repress the Os Coccygis, and with the Right manage the Face in the manner already mentioned. By this means the Neck and Occiput, may be first brought out, and, at last, the Face, in such a manner, that the Chin may be freed and disengaged from the Bones of the Pubes. According to *Hoorn*, it sometimes happens, that whilst we endeavour to turn the Child in such a manner, that the Belly may be turned towards the Os Sacrum of the Mother, the Head is not turned along with it, but the Neck twisted; and the Child being extracted as far as the Neck, the Chin remains behind the Bones of the Pubes, in the same manner as if the Infant had not been turned. If this should happen, we are either to proceed in the manner already directed, or to relieve the Patient by a prudent and seasonable Introduction of the Hands. If a Child in this Situation is already dead, it may be extracted in the same manner, tho' with somewhat more Freedom and Violence.

MISCELLANEOUS OBSERVATIONS.

The Delivery must not be attempted when the Feet present, or any other Part, till the Mouth of the Womb is sufficiently dilated by the Force of natural Pains, except in case of great Flooding or Convulsions, or a dead Child. *La Motte*.

When the Feet present, accompany'd by the Head, or the Head and Hands, the Head must be thrust back with one Hand, whilst with the other the Feet must be joined, and brought away.

If both Feet cannot be found without Difficulty, a Woman may be delivered by one only. But *La Motte* cautions against drawing one Leg with the same Violence as both may be pull'd with, for fear of stretching the Ligaments, and laming the Child for ever.

The same Author, *Obs.* 458. reports a Case where the Feet presented, with the Toes towards the Mother's Belly, and the Heels towards the Anus; when he try'd to bring the Feet forwards, he found them immovable; upon a farther Examination, he found the Buttocks of the Child were sunk down, and kept the Knees bent upwards, in such a manner, as to fill up entirely the Passage, insomuch that it was impossible to move the Legs in this Situation. He delivered the Woman by thrusting back the Buttocks, whilst he kept hold of the Feet, and then brought away the Child with a great deal of Ease.

That this important Branch of Medicine may be the more perfect, and the better adapted to the Necessities of young Practitioners, I shall subjoin some of those Directions, which to me seem of the greatest Importance.

First, then, if, whilst the Membranes are as yet entire, and the Mouth of the Uterus sufficiently dilated, any other Part than the Head is perceived by the Touch, such as the Foot, the Hand, the Elbow, the Axilla, the Knee, or the Navel-string, the Membranes may be then safely broken with the Nails, or some proper Instrument; after which, the Feet are to be sought for, and the Child is to be extracted by them.

Secondly, If the Head is not in its natural Situation, but deviates a little from it, and is capable of being reduced, this is to be attempted with the Hand; but if it cannot be easily done, the Child, lest a Delay should destroy it, is to be forthwith extracted by the Feet.

Thirdly, When the Waters are too soon discharged, and at a time when the Midwife is not present, we are to search whether any Part of the Child is to be perceived; and, if not, we are to wait till some Part or other can be distinguished by the Touch. If, then, we find the Head in its natural Situation, an happy Labour generally ensues; but, if any other Part presents itself, the Feet are forthwith to be searched for.

Fourthly, When, in the Beginning of the Labour, the Child presents its Chin and Face, with its Forehead resting on the Bones of the Pubes, which is a very disadvantageous Posture, then the Face is, with the Right-hand, to be so brought towards the *Intestinum Rectum*, with the fore and middle Fingers apply'd to the Superior Jaw in such a manner, that the Nose may lie between them; at the same time, with the Left-hand apply'd externally to the Pubes, the

Head of the Fœtus is to be pressed down from the Os Pubis to the Vagina, till it comes to its natural Situation. This may be still more easily done, if, after introducing the Left-hand into the Vagina, the Os Coccygis is carefully depressed, whilst with the Right the Face is at the same time depressed. If the Child has remained in this Condition for a considerable time, the Mother is to be laid on her Back in the manner already directed, and the Reduction of the Head to its natural Posture attempted in the manner already, also, described. If this End cannot be speedily obtain'd, or if we want to avoid so troublesome a Piece of Labour, we are forthwith to pass the Hand under the Abdomen to the Feet, and by them, repressing at the same time the Head with the other Hand, to attempt the Extraction of the Child. We are, also, to proceed in the same manner in other Cases, where, after the Waters are discharged, we find the Head reclin'd to one Side; and these Measures are to be taken upon the first Approach of the Pains, when, with the friendly Concurrence of Nature, the Labour generally succeeds very well. But, if this Method cannot be speedily put in Practice, the Child, in order to prevent its Death, is always forthwith to be brought away by the Feet.

La Motte remarks, that in case a Child sinks low in the Pelvis, with the Forehead towards the Os Pubis, and the Face to the Passage, 'tis a very incommodious Posture; but may be born so by dint of very strong Pains; but the Face of the Child is always very livid, by reason of the Blood-vessels being compressed by the bending of the Neck; but it soon recovers the natural Colour. In such a Case, the Woman is always much in Pain, and has a very difficult Labour. A Linen Cloth, dipt in warm Wine or Brandy, is a proper Application to take off the Lividness of the Child's Face.

Fifthly, If the Child should present its Neck, or Shoulder, with the Head reclined to one Side, as in *Fig. 8. Tab. LIV.* the Mother is to be laid on her Back, the Shoulder must be repressed, and the Head brought to its natural Posture. But, if this cannot be speedily done, the Feet are to be forthwith searched for.

When a Child presents the lower and back Part of the Neck with the superior Part of the Scapulæ, the Face bending towards the Breast, it must soon perish, because the Circulation cannot be carry'd on thro' the Neck, whilst bent in this manner. As soon, therefore, as it is perceiv'd, the Woman must be delivered; which is the more difficult to do, in proportion as the Child is sunk lower into the Passage, and engaged therein. *La Motte* says, he never saw more than one Instance, where the Child presented in this manner; and then a Quantity of black Waters were discharged from the Womb, caused by the Meconium, which, being discharged, colour'd the Waters where-with it was diluted. This Lady he very soon delivered, by passing his Hand along the Spine of the Back: When he had found the Feet, he joined them together, brought them out, and so finished the Delivery.

'Tis not an easy matter to distinguish the Point of the Shoulder, when it presents, from the Knee, the Hip, or the Head, till the Membranes are broke, and the Waters discharged. This Situation is not very common; the way to be sure of it is, to search for the Neck on one Side, and the Arm on the other, after the Membranes are broken; and, when the thing is certain, the Feet must be found, and the Child brought away by them. *La Motte* says, that tho' he seldom or never breaks the Membranes, yet in such a Case as this, when he cannot be certain what Part presents, he breaks the Membranes, and brings away the Child, as fast as he can. I suppose he means, after the Mouth of the Womb is sufficiently dilated. *La Motte*.

Sixthly, If the Child with its Face towards the Os Sacrum of the Mother, together with either of the Arms, enters the Vagina, one of the Hands is to be introduced into the Vagina in such a manner, as to pass under the Face to the lower Jaw, thence to the Humerus or other Arm; and thus let the whole Fœtus be drawn downwards by both Arms, a Practice which frequently succeeds.

Seventhly, If both Hands, together with the Head, present at the Mouth of the Womb, the Child is to be extracted by the Feet.

Eighthly, In every transverse Situation, the Child is to be brought away by the Feet. Thus, when the Back presents, the Hand must be introduced into the Womb before 'tis possible to be certain, that 'tis the Back, the Fingers not being long enough; and then 'tis easy to lay hold of the Feet, and bring the Child away, without withdrawing the Hand.

The Membranes containing the Waters must break, before the Hand is introduced.

La Motte, Obs. 328. gives a very extraordinary History of a Woman in Labour, where the Waters flow'd off, the Membranes being broke by very violent Pains, which immediately discontinued, as it often happens; but then in some little time they return again; but in this Case they never return'd at all; mean

mean time, the Mouth of the Womb contracted so very close, that the Midwife, and a Surgeon, that was sent for, both declared the Woman was not with Child; which was the more readily believed, because the Woman was very fat. The third Morning after the Membranes were broken, *La Motte* was called in, who, after asking about every Circumstance, in regard to her Breeding, Gestation, and Labour, both with respect to herself, and the Child, and after laying her upon her Back, and feeling an hard large Mass through the Integuments in the Womb, he pronounced her certainly with Child. He then laid her in a proper Situation, and, introducing his Hand, found the Mouth of the Womb closely shut, but very easy to be dilated: In the Womb, he found a very large Child presenting with the Back, which he brought away by the Feet, and the Woman did very well.

This Situation is the very worst that can happen to a Child, it being impossible it should be born with natural Pains; but is very easy for the Midwife, who may very readily bring the Feet.

Thus, also, when the Belly presents, the Fingers are long enough to reach it: As soon, therefore, as the Membranes are broken, the whole Hand must be introduced; and then 'tis easy to lay hold of the Feet, and bring the Child away. Without introducing the Hand, 'tis impossible to be certain, that 'tis the Belly which presents. *La Motte*.

The Belly is distinguished from the Back by its larger Extent, Softness, and by the Umbilical Cord.

The Woman should immediately be delivered, by bringing the Child by the Feet, tho' by the Coldness of, and want of Pulse in the Navel-string, it appears that the Child is dead.

If the Navel-string is return'd never so often, it will fall down again at the first Pain; because it can be return'd no farther than into the Vagina, the Head of the Child preventing its being return'd into the Womb.

It does no Good to wrap the Navel-string in warm Cloths, in order to maintain the Circulation.

There is less Danger of the Child, when the Navel-string falls down first, and the Child presents in any unnatural Situation, than when it presents right with the Head.

When the Navel-string hangs out, 'tis proper to keep the Woman in a warm Bed, and not to expose the Navel-string to the cool Air.

La Motte lays it down as a general Rule, that, when the Navel-string presents, let whatever Part come first, the Woman should be immediately delivered.

When the Navel-string is perceiv'd by the Pulse to lie before the Head of the Child before the Waters are flow'd off, *La Motte* advises to break the Membranes, and hasten Delivery; I suppose he must mean, by bringing away the Child by the Feet. But the Falling-down of the Navel-string cannot always be foreseen, before the Membranes break.

But in such Cases, if the Pains are strong and quick, and the Membranes seem ready to break, more Haste is necessary, than when the Pains are slow, and the Membranes not likely to break very soon.

The Instant the Membranes are broke, is the Time to introduce the Hand into the Womb, in order to bring away the Child by the Feet; for then the Woman is without Pains, and that facilitates the Operation. *La Motte*.

Ninthly, When the Navel-string falls down with the Head, the Mother is forthwith to be laid on her Back, and it is to be thrust back behind the Head. But if, either in this, or any other Posture, it cannot be retain'd in the Womb, but again slips down, which sometimes happens, the Child, in order to prevent its Death, is to be extracted by the Feet, which is easily done.

This is a very dangerous Case for the Child; for it almost always dies, especially if the Head presents first, and exactly fills up the Passage; for then the Circulation betwixt the Mother and Child is entirely obstructed.

In this Case Delivery must be hastened as much as possible, if the Child sinks very low immediately upon the breaking of the Membranes, and the Waters flowing off. But if, at the same time, the Pains are very strong and redoubled, the Expulsion of the Child must be left to Nature, because it would be very difficult, if not impossible, to turn the Child, and bring it by the Feet. But if the Child is not sunk very low, and the Intervals betwixt the Pains will admit of it, the Child must immediately, and without Delay, be brought away by the Feet.

If the Child seems to be dead, the best way to revive it, is to lay it before the Fire, to wash it with warm Wine, and spurt Wine into its Mouth.

Tenthly, if, whilst the Child presents in a natural Posture, the Navel-string is wrapt about the Neck, the Child is not, indeed, in such immediate Danger, as in the preceding Cases; but, as soon as this Circumstance is observed by the Midwife,

the Navel-string is forthwith to be remov'd, that the Feet^u may afterwards be extracted with the greater Freedom. But if this cannot be commodiously done for fear of its breaking, it is to be cautiously cut near the Neck, and by an Assistant compressed, till, after the Delivery, it may be duly tied.

In the eleventh Place, when there are Twins, which, among other Signs may be known, if, after one of the Infants is born, by examining the Secundines, we find another Child; or if, when its Waters are not as yet discharged, we perceive by the Touch another Membrane distended with Water; in this Case, the Navel-string of the Child already born is to be cut, and in the usual manner tied, near the Navel. Afterwards, when the Membranes of the other Child are broken, if it presents duly with its Head, its Passage is to be forwarded and assisted. But, if it should happen to present in an unnatural Posture, it is forthwith to be extracted by the Feet, if they can possibly be found. But, if its Waters are not as yet discharg'd, we are not to wait their spontaneous Evacuation, because this, as is often observed, would protract the Labour, and at once endanger the Mother, and the Child; for, if the Delivery should be delay'd, the Mouth of the Womb would again be so contracted, that the Operator could not have a proper Opportunity of affording any Relief to the Patient. In this Case 'tis, therefore, expedient forthwith to break the Membranes, which at this time may be done without any Danger, and, by this means, relieve the Mother, who, for the most part, is sufficiently weak, whilst the Passages remain duly dilated.

La Motte blames *Mauriceau* for pretending to give any sure Signs of Twins; for he says, that a great Quantity of Waters, or a very large Placenta, or both together, very often make the same Appearances as Twins, tho' the Child itself may happen to be very small.

When there are Twins, immediately after the Birth of the first, the Hand must be introduced into the Womb, the Membranes must be broke, and the second Child must be brought away by the Feet. *Chapman*.

This he seems to have learn'd from *La Motte*.

La Motte affirms, that an extraordinary Largeness of the Belly, swell'd Legs, Difficulty in Walking, and equal Motion on each Side the Belly, are not certain Signs of Twins; and that it is not true, that a Woman with Child of Twins comes some Days sooner than the natural Time; which is contrary to the Opinion of *Mauriceau*.

La Motte seems to regard more the Shape of the Belly, which is pointed forwards, when there is but one Child; but, when there are two, the fore Part of the Belly is more flat and broad, and is very full towards the Sides, and backwards.

When a Woman is with Child of Twins, if the Placenta is small, and the Quantity of Waters but little, 'tis not necessary the Woman should appear more big, or be more incommoded, during her Pregnancy, than if she is only with Child of one.

La Motte advises to open the Membranes of the second Child, and to bring it away by the Feet always; unless the Pains are very violent, and the Child well placed, so as to be born immediately after the first.

When the After-birth does not readily come away, the Midwife must not pull too hard, so as to break the Cord; but must introduce her Hand into the Womb, and follow the Cord to its Root; and then, if she finds another Child envelop'd in its Membranes, two Ligatures must be made upon the Cord, and it must be divided betwixt the Ligatures; then, as soon as the Child is separated from the Mother, the Hand must be introduced, the Membranes broke, and the Child brought away by the Feet.

Sometimes Twins have each a separate Placenta, and sometimes one serves both; and then it would be of the worst Consequence to pull at the String.

Our own Country Authors all agree in advising to pass the Hand, and examine the Contents of the Womb; and, if there is not a second Child, the Placenta, Clots of Blood, and all other Contents, are then readily brought away.

La Motte says, a Labour of two Children is more easy than that of one, because the Children are smaller when there are two.

WHEN THE THROAT PRESENTS.

This is a very uncommon Situation; but, when it happens, it renders a Labour very difficult. The Method of Delivery mentioned by *La Motte* in this Case is, to endeavour with one Hand to thrust back gently the Breast, and, at the same time, with the other, to bring the Head down to the Passage. This must be done betwixt the Pains; and, during the Pains, Care must be taken to keep the Breast from falling down again. He gives the History of two Cases, where he endeavour'd to do this; but succeeded only so far, as to bring the Face towards the Passage; and in this Posture both the Children were born, one dead, the other alive; that alive was extremely livid and

swell'd, and was cur'd in twenty-four Hours by Linen Cloths dipt in warm Wine, or Brandy, and apply'd to the Face.

THE EAR PRESENTING.

One of the most inconvenient Situations a Child can present is, when the Side of the Head comes first to the Passage, which the Midwife readily distinguishes by feeling the Ear.

Midwives often are the Cause of this bad Situation, by not examining exactly the Posture of the Child, before 'tis sunk too low; for, when they perceive the Child's Head to come, they generally imagine all will do well in time, without assuring themselves what Part of the Head presents.

The Method here is, if possible, to turn the Child, and bring it away by the Feet.

But if this cannot be done, the Midwife must endeavour to place the Head right, by pushing it backwards with one Hand placed under the Ear, and drawing down the Vertex with the other. This must be attempted immediately after the End of the Pain; and 'tis observable, that the ensuing Pain will frequently spoil what has been done during the Interval.

'Tis very easy to bring the Child away by the Feet, immediately after the Waters are run off.

When the Head is so far placed right as to admit of it, an Hand must be introduced flat on each Side the Child's Head, and with these the Delivery must be promoted.

But, when all these Endeavours prove fruitless, the Head must be brought forwards enough to admit of opening it with a Knife, or Scissars; and then two of the Fingers must be introduced into the Incision, Part of the Brain be taken out, and the Child brought away by the Fingers hook'd within-side the Cranium. *La Motte.*

THE KNEES PRESENTING.

Before the Membranes break, the Knees may easily be mistaken for the Head, by reason of their Hardness, especially if they lie at a Distance; but, when the Waters are run off, they are easily distinguished from the Head, being much smaller; and, besides, one Knee generally comes first, and the other lies higher up in the Passage. In this Case, the Midwife must push it back a little, that she may come at the Feet more readily, which are very easy to be found, and by them the Child must be brought away.

When one Knee presents, the Child generally kneels, as it were, upon the Os Pubis, with the other; and this might cause some little Difficulty; the Knee first presenting should not be brought out alone, but should be push'd a little back, that both Feet, which are very easily found, may be join'd and brought out together. *La Motte.*

THE HIP PRESENTING.

There is no Part of a Child that more resembles the Head presenting at the Mouth of the Womb, than the Hip, by reason of its Roundness and Hardness; but it cannot sink so low as to be engaged in the Passage, unless the Body of the Child is pretty much bent, and forced down by very violent Pains. When there is any Reason to suspect, that this is the Case, not only the Fingers, but the whole Hand, if those are not long enough, must be introduced high enough to ascertain, whether it is the Hip that presents, or not; and, if it proves to be so, the Hip must be push'd back sufficiently to admit the Hand into the Womb; which must be introduced with as little Violence as is possible; and then sliding the Hand betwixt the Thighs, and afterwards betwixt the Legs, which serve as Guides, the Feet must be found and join'd. Then the Knees must be push'd towards the Child's Belly, provided the Parts are closely contracted about it, the Feet must be brought out, and the Woman deliver'd, as if the Feet had presented first.

This Situation exposes the Legs and Thighs of the Infant to be broke more than any other. *La Motte.*

OBLIQUE SITUATION OF THE WOMB.

When in the Beginning of the Labour, or at least immediately after the Waters are discharged, the Mouth of the Womb, and consequently the Crown of the Infant's Head, does not correspond directly to the Vagina, but either reclines to one Side, or backwards to the Os Sacrum, or towards the Bones of the Pubes, an highly dangerous Labour is to be dreaded; because, as has been already observed, this Circumstance proceeds from an oblique Situation of the Womb in the Abdomen; which the Operator may at first discover by the Touch, both from the Situation of the Mouth of the Womb turned to some Side; and from the Abdomen of the Mother, when the Womb, with the Child, is found to be highly prominent. As in this Case the Labour rarely succeeds without the Assistance of the Hands, unless the Obliquity of the Womb should happen to be very small, the Mother is immediately to be laid on her Back, either in a Bed, or on a proper Seat, with her But-

tocks somewhat higher than her Breast. After which we are, by introducing one of the Hands into the Vagina, to attempt the Reduction of the Mouth of the Womb, and consequently of the Infant's Head, to a natural Situation. This must be attempted in the following Manner: If the Head of the Child inclines towards the Right Os Ichiem, and thus the Womb, together with the Buttocks and Feet of the Child, is perceived in the Left Hypochondrium, with one Hand in the Vagina, the Mouth of the Womb, together with the Head of the Child, is, during every Paroxysm of the Pains, to be pressed from the Right to the Left Ichiem, whilst the Womb itself, with the rest of the Child, is, either by the Operator's other Hand, or that of an Assistant, apply'd to the Side of the Abdomen, gently pressed from the Left to the Right Hypochondrium. By these means it frequently happens, that the Head, sometimes sooner, and sometimes later, enters the Vagina in a strait Direction, and the Labour succeeds happily. If, on the contrary, the Mouth of the Womb, and Head of the Child, are inclined to the Left Os Ichiem, the Reverse of the former Operation is, also, to be perform'd with the Hands; and from these we may easily judge what Measures are to be taken, when the Mouth of the Womb, and the Crown of the Infant's Head, incline to the Os Sacrum, which often happens, or are turn'd towards the Os Pubis; for when the Mouth of the Womb is with one Hand remov'd from the Os Sacrum, and with the other apply'd externally to the Abdomen above the Bones of the Pubes, pressed, till it corresponds directly to the Vagina, the Descent of the Child is afterwards, as in other Cases, to be promoted. But, with respect to all these Cases, 'tis to be observ'd, that if this Reduction of the Womb and Child cannot be soon accomplish'd, or if the Fœtus has remained long in such a Situation, lest that, or the Mother, should be destroy'd, especially if she is afflicted with an Hæmorrhage from the Womb, Convulsions, or fainting Fits, the Feet are forthwith to be searched for, and the Child by them is to be extract'd; which Method is generally prefer'd to all others, as being at once more easy and expeditious.

But, the most difficult and dangerous Case is justly acknowledged to be that in which the Head of the Child is so far fallen down into the Vagina as to be seen; and at the same time is so firmly fixed there, that it can neither proceed farther, nor without the greatest Difficulty be extract'd by means of the Hands; for this Posture, as well as the preceding, often deceives the most skilful, by its specious and natural Appearance at first; whilst, as we cannot often know whether the Child is dead or alive, both that and the Mother are in Danger of being destroy'd, unless it is speedily extract'd either with the Hands, or with proper Instruments. The preternatural Bulk of the Head is commonly blam'd as the Cause of this difficult Labour; but generally without Reason, since it has already pass'd the narrow Mouth of the Womb: But the true Cause is rather to be ascribed to a bad Position of the Womb, and Shoulders of the Child, the latter of which touch on the Bones of the Pubes, and the former on the Spine of the Back, as *Hoorn* justly observes, whilst at the same time, in such a Posture, one of the Ears is generally turned upwards, and the other downwards. But because, in this Situation, the Shoulders are retain'd by the Bones of the Pelvis in such a manner, that they can neither come forwards spontaneously, nor without the greatest Difficulty be extract'd by the Hands of the Midwife, there are two Methods of Procedure directed. The first is, with the two fore Fingers of each Hand gradually to press down the Head from the Bones of the Pubes towards the Intestinum Rectum, particularly at the Approach of Pains, in such a manner, that it may descend as near that and the Os Coccygis as is possible. After Attempts of this kind have been made for several times, the Head is to be drawn forwards with the four Fingers of both Hands placed round about it, whilst the Lips of the Pudenda are to be gradually dilated below it; by which means the Head is so disengaged, that the Hands may be applied behind the Ears or Occiput, and the Head extract'd by them; which Practice, according to *Hoorn*, frequently succeeds very well. Sometimes, however, this Method does not succeed; in which Case the Arm, especially the inferior, is to be searched for, extract'd, and by its means the rest of the Child freed from the Bones of the Pubes, and brought away, according to the Directions of *Hoorn*.

The second Method is, after with the Fingers pressing down the Head, as much as possible, towards the Intestinum Rectum, to anoint the Left Hand, all except the Thumb, with Oil, and to introduce it under the Head, so far into the Vagina, that the Extremities of the Fingers may be capable of grasping the Head like a Globe. Then with the Fingers of the Right Hand introduced in the superior Parts of the Vagina, under the Bones of the Pubes, the Head is to be laid hold of; and, if the Pains should be defective, we are to order the Mother to bear down as much

much as is possible, in order to promote the Delivery, whilst the Operator, in the mean time, draws both Sides of the Head with his Hands, and endeavours to put the Perineum and Lips of the Pudenda behind it, which, according to *Hoorn*, is frequently attended with Success. When the Head is extracted, the Child is to be laid hold of about the Neck, and its Head drawn obliquely upwards, shaking it, at the same time, backwards and forwards, whilst with the other Hand introduced into the Womb, under the Neck, the Operator is to seek for the adjacent Arm, extract it, and, by drawing it obliquely, so to turn the Infant, as that it may lie flat on its Belly; after which 'tis so easily extracted, that it rather seems to come into the World spontaneously. But when, by none of these Measures, the Head can be extracted, which sometimes happens, as we learn not only from Experience, but, also, from the Observations of the most skillful Authors, such as *Mauriceau*, *Deventer*, *Hoorn*, and *La Motte*; and when the Strength of the Mother is gradually impair'd, or if Convulsions and Flooding should succeed, by which means her Life is endanger'd; in this Case there remains only one Remedy, which is, by Instruments to extract the Fœtus, though alive, with as little Caution as if it was dead. This may be done, first, by opening the Cranium, either with a Knife, or a Pair of Scissars, and extracting the Brain, either with the Fingers, or a Spoon. Thus, when the Cranium is collaps'd, it is more easily extracted either by the Hands, or by a large Forceps used for extracting the Stone of the Bladder; or, as *Deventer* advises, by a broad Fillet, passed carefully about the Neck; which Method, he says, proves successful, even when the Brain is not extracted from the Cranium. But if the Child cannot be brought away, when the Brain is taken from the Cranium, the Shoulders are to be freed from the Bones of the Pubes, and the Fœtus is to be extracted by them: Or,

Secondly, This End may be obtained by means of an Hook, like those represented in *Tab. LIV. Fig. 17. and 18.* instead of which, in Cases of absolute Necessity, *Hoorn* recommends a large Nail, bended in form of an Hook, with a Cord tied about its Top, that it may be the more forcibly pulled: Or,

Thirdly, The Head may be brought away by a particular Instrument, invented by *Mauriceau*, and commonly known by the Name of *Tire-tête*, to which, however, *Deventer*, *Hoorn*, and *Heister*, prefer Hooks, as more commodious. The same Measures are very nearly to be taken in other Cases, where the Fœtus cannot be extracted by the Assistance of the Hands, and especially in case of monstrous Children, such as those with two Heads, if the Life of the Mother is expos'd to Danger.

When the Woman has exceedingly violent and repeated Pains; when the Waters are flow'd off, and the Child, though well situated, is at a Distance, and advances but slowly; when the Child, being advanced betwixt the Os Sacrum and Pubis, low in the Vagina, sticks there, without retiring betwixt the Throes, though the Intervals are very long; there is then Room to apprehend, that the Largeness of the Head retards the Birth.

When the Case is thus, the Head of the Child, and Face is much swelled and livid; this is soon cured by a Linen Cloth dipt in warm Wine, and applied to the Part. *La Motte*.

La Motte very much blames the Use of Hooks. His Method of delivering a Woman, when the Child's Head sticks in the Passage, and cannot be protruded by the Pains, is thus, provided he is certain of the Child's being dead: He plunges a Pair of Scissars into the Head, about half the Length of the Scissars, and opens them; and by this means makes an Aperture large enough to take out Part of the Brain, and, if necessary, to take away some of the Bone; he then takes hold of the Bones of the Cranium, and brings away the Child.

He says, this Method may be practised without either the Woman, or any body present, knowing, that any Instrument was made use of.

But the very best way, in such a Case, is, if possible, to turn the Child, and bring it away by the Feet. However, this cannot always be done; for the Head is sometimes so lock'd betwixt the Bones of the Pelvis, that 'tis impossible to remove it.

This Author is of Opinion, that most difficult Labours of this kind are caused by the superior Part of the Os Sacrum, where it is articulated to the inferior Vertebra of the Loins, being bent too much inwards, and coming too near the Os Pubis, and by this means making the Passage too narrow for the Exclusion of the Child: Not but a Child of an extraordinary Size must have the same Effect, and cause a difficult Labour. But he infers from hence, that all those Fomentations, Liniments, and Embrocations, so much recommended by Authors, can be of no Service in making the Parts give way. And in this he seems to be very much in the right, because those Parts that are capable of Distention readily give way without them, except in very old Subjects; and I know of no Applications that will soften the Bones, and make them retire: So that the only Use of Ointments is, to lubricate the Passages, where they want it; and in Subjects pretty far advanced in Years.

La Motte makes a Distinction betwixt a Head that is too large to be forced into the Vagina, and be engaged in the Passage; and one that is small enough to descend into the Passage, but too large to be brought away by the Force of the Mother's Pains. In the former Case, the Feet are certainly more easily come at than in the latter.

The latter Case he calls being lock'd (*enclavée*) in the Passage.

When the Head is so far advanced, as to be able to make use of a Bistoury without Hazard, that is, when it can be guided by the Eye, *La Motte* says, he cuts open the Head with one. But if not sunk so far into the Vagina, he advises to plunge a Pair of common Scissars into the Head, as directed before. But when the Top of the Head lies at the Extremity of the Vagina, and at a Distance, he then makes a Canula with a strong Paper, or Leather, and directs it to the Top of the Head, and then through it introduces a Knife, sharp only on one Side, which he plunges into the Head, and makes an Opening sufficient to admit of the Fingers, with which he empties the Brain, and then takes hold of the Head with the Fingers bent within-side the Skull, and so brings the Child away.

La Motte affirms, there is no Fear of injuring the Woman by the Bones of the Cranium, when a Part of them is obliged to be taken away, or come away by breaking off, during the Operation above-mentioned, because the Scalp separates from the Bone which comes away, and, staying behind, covers the Edges of the broken Bones of the Cranium, and defends the Parts of the Mother from being hurt.

This he says in Contradiction to what *Mauriceau* has said upon this Subject.

The Bones of the Cranium of some Children are so very hard, that they will not give way in the least, and accommodate themselves to the Size of the Passages, let the Pains be never so strong and forcing; and this Circumstance causes a very difficult Labour.

In this Case the Head of the Child lies very high, at the Extremity of the Vagina, and cannot enter it. The way to deliver the Woman, is to put back the Head, if possible, and bring away the Child by the Feet.

When the Child's Head has lain long compressed betwixt the Bones of the Pelvis, it will sometimes be swell'd prodigiously, and so deform'd, that one would think it impossible it should ever come to itself again. It is generally cured pretty easily with Compresses dipt in warm Wine. But, sometimes, when it is very bad, an Abscess will be formed, and an Exfoliation sometimes ensues. In case of an Exfoliation, *La Motte* recommends Pledgets dipt in a Lotion made of equal Parts of Brandy, Lime-water, and Honey of Roses.

La Motte, in his Supplement, tells us of a very difficult Case, where the Labia Pudendi and Vagina were excessively hard and swell'd; the Child's Head lay very high, and was not yet sunk into the Vagina, but was incapable of being brought away by natural Pains.

The Child being certainly dead, after trying in vain to bring it away by the Feet, he plunged his Scissars into the Cranium, and, by opening the Branches, dilated the Aperture. He then introduced a straight Pair of Forceps, such as are used for extracting the Stone, one Branch within the Cranium, and the other without; and with these laid hold of the Os Parietale, and Os Occipitis; and by this means easily extracted the Child.

This Author recommends this way of delivering Women very strongly, and says, that, if one Pair of Forceps is not sufficient, two may be made use of, and one fix'd on each Side; and these Instruments he prefers to all others in parallel Cases.

Not only the Head, but the whole Body, also, is sometimes so large to cause a very great Difficulty in delivering a Woman, insomuch that a Man is sometimes obliged, after the Head, and Part of the Body, is born, to pull with all his Force to disengage the Hips; a Force which would certainly separate the Head from the Body, if Hold was to be taken of it.

In such Cases, the Fingers, after the Head is born, are to be introduced into the Arm-pits, and by that means the Shoulders are to be extricated. Hold must then be taken of the Body, and the Child must be brought away by main Strength.

La Motte gives a Case of a Woman, *Obs. 315.* who had been in Labour, and the Waters had been run off three Days; the Child was dead, presented with the Head, but lay very high, and was not at all engag'd in the Bones of the Pelvis; he attempted to bring it away by the Feet, but could not come at them; then he open'd the Cranium with his Scissars, introduced his Fingers into the Aperture, and, breaking off several Pieces of the Os Parietalia, made it large enough to take out Part of the Brain; then laying hold of the Cranium, he attempted to bring away the Head, but, as soon as it was engag'd betwixt the Bones, he could make it advance no farther. He then, several times, try'd the Crochet, which as often broke out; at last he took a Blacksmith's Forceps, and, with them, laying hold of the

Os Occipitis, brought out the Head, but could not bring away the Child, which stuck at the Shoulders; he then introduc'd his Fingers into the Arm-pits, and pull'd himself, whilst the Midwife pull'd at the Head; and by this means he brought out the Shoulders, and, disengaging the Arms, brought the Child as far as the Hips, where it stuck, insomuch that he was forc'd to make the Midwife help him a second time, in order to bring the Child away. The Child was of an extraordinary Size; and the Woman did very well.

DROPSICAL CHILDREN.

The Bellies and Heads of Children are sometimes dropsical. *La Motte* says, that no Instruments are necessary in this Case, but the Hands. If the Head comes first, he gets his Fingers under the Arm-pits as soon as he can come at them, and draws away the Child. If the Head by Accident separates, he brings away the Child by the Feet; as he does, when the Head is too large to be engag'd in the Bones of the Pelvis.

Others advise letting out the Waters by perforating the Belly.

EXTRACTION OF A DEAD FOETUS.

As the Death of the Child in the Womb, especially if its Posture should happen to be unnatural, creates a very difficult Labour, the Assistance of the Hand is generally absolutely necessary for the Relief of the Mother. In this Case the Labour is difficult for many Reasons, however naturally the Child may present; for, on account of the Mother's Weakness, and a want of Motion in the Child, very faint and languid Pains are excited; besides this, the Efforts of the Infant, which considerably promote a natural Labour, are wanting; add to these, that the Infants sometimes retire, and the Womb closes upon them, when they could not be brought into the World at the due time, either on account of their unnatural Posture, an excessive Largeness of the Head, a bad Conformation of any other Parts, or a Narrowness of the Mouth of the Womb, and Bones of the Pelvis: But, in a Case of this Nature, we must carefully examine, whether the Infant is as yet alive, or dead, lest, if it should be alive, we should, by the rash or preposterous Use of Instruments, destroy, or, at least, greatly injure and lacerate it. The Necessity for such an Examination is so much the greater, because the Signs, commonly propos'd for judging of this important Circumstance, are generally fallacious and uncertain; especially, if the Infant presents the Arm-pit, the Buttocks, the Back, or one Side of the Head; for these Parts exhibit so faint and uncertain Signs of the Life of the Child in the Womb, that it may readily be taken for dead, whilst it is still alive, tho' often considerably weaken'd by the Tedioufness of the Labour.

The most material and important Signs of a Child being dead in the Womb, are the following.

First, If the Mother, for a considerable time feels, no Motion of the Foetus; but rather perceives a certain unwieldy Mass, which always falls to that Part, which happens to be reclin'd by her bending or turning her Body.

Secondly, If the Mother is seiz'd with frequent Shiverings, Faintings, and a Tenesmus, or frequent Inclination to going to Stool.

Thirdly, If her Breath smell strong and rank.

Fourthly, When any thing of an highly fetid and cadaverous Smell is discharg'd from the Womb.

Fifthly, If the Abdomen of the Mother is cold, 'tis a Sign, that the Child is dead.

Sixthly, According to *Viardalius* and *Goueyus*, 'tis an infallible Sign, that the Foetus is dead, if the Meconium, or the black Fœces evacuated by new-born Infants, is discharg'd from the Pudenda of the Mother. But that this last-mentioned Circumstance has sometimes happen'd whilst the Infant was still alive, I myself, says *Heister*, have found from Experience, and others have frequently observ'd the same in the Course of their Practice. I frankly confess, says the above quoted Author, that, induced by this and other Signs, I myself formerly took an Infant for dead, and extract'd it as such, tho' I afterwards found it alive. The five Circumstances before enumerated, together with the following, are therefore, more certain and infallible Signs of a dead Child.

First, If the Navel-string, or Secundines protruded out of the Pudenda, are cold, and totally depriv'd of a Pulsation of the Arteries.

Secondly, When in an Arm or Foot hanging out, neither Pulsation, Heat, nor Motion of the Toes or Fingers are perceiv'd, but the Member is rather cold, livid, or black; and especially when the Cuticle, or Scarf-skin, is separated from the Skin, either spontaneously, or upon the Application of the Fingers to it.

Thirdly, In Infants presenting with the Head, and consequently in a natural Posture, 'tis a pretty sure Sign, that the Child is dead, if that Part of the Head, in which the Bone is wanting, and which by Physicians is call'd *Bregma*, *Fonticulus*, and *Fons Pulsatilis*, is so remarkably depressed and flaccid, that

the adjacent Bones of the Cranium are found sharp and moveable, and no Pulsation of the Arteries is felt in the Part; for, when the Child is still alive, this Part is hard, in some measure prominent, and a Pulsation of the Arteries is frequently perceived in it. But we are not to be rash in taking those Infants for dead, in whose Heads we perceive no Pulsation of the Arteries; for in weak Infants this Pulsation is often so faint and languid, that it is not perceptible by the Fingers. But 'tis a surer Sign of the Death of the Foetus, when the Cuticle is separated from the Skin of the Cranium. When the Child is infallibly dead, and the Waters discharged from the Womb, the Mother is to be reliev'd with all possible Expedition, lest the Putrefaction of the Foetus, which soon happens, should produce the worst of Consequences, such as violent Fevers, or even Death. But, if without the due Pains, and consequently before the legitimate Period of Birth, the Infant should happen to die, whilst, at the same time, the Waters are not discharged, we know from Experience, that the Infant may sometimes remain in the Womb for some Weeks, or even some Months, without any Danger of Putrefaction, especially if, in other respects, the State of the Mother's Health is good. Instances of this are given by most practical Authors. In this Case it seems more expedient to wait till Nature excites the due Pains, and by that means expels the Foetus, than by Medicines, or the Assistance of manual Operation, to bring it away either too soon, or in too violent and forcible a Manner.

If during the Pains the Infant should die, and is at the same time found in a natural Posture, we are not immediately, and before we are certain of its Death, to use Hooks, or other Instruments, for its Extraction. And because some Mothers are not easily prevail'd upon, immediately to admit the Hand of the Operator, corroborating Medicines, and such as excite the Pains, are to be exhibited. We are not in the mean time, especially when the Mother is weak, to neglect the Use of stimulating Clysters, since these generally contribute very powerfully, both to excite the due Pains, and expel the Foetus. But we are carefully to abstain from exhibiting those corroborative Medicines, and such as excite the Pains, in too large Quantities, lest, by their native Energy and Heat, they should produce Fevers, or dangerous and even mortal Hæmorrhages. If, therefore, these Medicines should produce little or no Effect, we are, with all possible Expedition, in order to prevent the Putrefaction of the Foetus, to attempt its Extraction with the Hand, by which means the Pains are also excited. This Operation is one of the oldest practis'd in Surgery, as may be seen in *Hippocrates's Book de Morb. Mulier.* and in his Treatise *de Extractione Fetus*: See also *Fontanus's Treatise de Fetus Extractione*. That this Operation may succeed the more happily, the Mother must first of all, as when the Infant is alive, discharge her Urine. If this cannot be done, as it frequently cannot, on account of the Compression made on the Neck of the Bladder by the Head of the Infant, the Urine is to be brought away by a Catheter, us'd either for Men or Women, such as those exhibited in *Tab. XLVIII.* by *Fig. 1. 2. 3. 4. and 5.* When the Urine is discharg'd, the Mother is to be plac'd in a Chair contriv'd for that Purpose, and represented in *Tab. LIV. Fig. 15.* or upon a Bed, with her Buttocks somewhat higher than the rest of her Body. Then the Operator is with one, or, if possible, with both Hands, to lay hold of the Child's Head, in the most commodious manner he can, and gradually extract it in that manner; but, if he cannot extract it by the Head, he is to search for the Feet, and bring it away by them. He may, also, if he thinks proper, try *Deventer's* Method of applying a broad Roller about the Neck, or posterior Part of the Head. If by these means the Delivery should not succeed, it seems necessary to use proper Hooks every way smooth, and well-polish'd, such as those exhibited in *Tab. LIV. Fig. 17. and 18.* and even *Fig. 21.* which has a double Beak. These are with the greatest Caution to be fix'd in some commodious Part of the Infant's Head, such as the Eye, the Ear, the Mouth, and sometimes the Forehead and Occiput; after which, by drawing the Instrument cautiously downwards, the Foetus is to be extracted. If these, or other proper Hooks cannot be had, the Operation may be perform'd in the manner directed by *Hoorn*, with a large Nail bended in form of an Hook. But *Celsus*, who seems to have been well acquainted with this Operation, says, that it is not to be perform'd at all times; for, if it should be attempted when the Mouth of the Womb is so compress'd, as not to afford a due Passage for the Foetus, that Part of the Infant in which the Hook is fix'd, breaks, and its Point runs into the Mouth of the Womb, a Circumstance which must expose the Mother to imminent Danger of Death. When, therefore the Mouth of the Womb is compress'd, that is, when the Pains cease, we are to desist; but when it is dilated, or during the time of the Pains, we must draw gently. The Right Hand must be employ'd in drawing the Instrument, whilst the Left directs the Foetus, and that Part of the Hook which is in the Womb. If the Infant's Head is so large, or so obliquely situated, that it cannot, so long as 'tis entire, be brought thro' the Vagina, which frequently happens,

we must either with the Fingers, a Knife, or sharp Scissars, open some Part of the Cranium near the Bregma, and, extracting the Brain with the Fingers, so lessen the Volume of the Head, that it may be more expeditiously and commodiously extracted, either with one, or both Hands, in the manner already directed. *Mauriceau*, that celebrated and skilful Midwife, invented a particular Instrument, to which he gave the Name of *Tire-tête*, both for perforating and laying hold of the Head. By this Instrument, on which he bestows great Encomiums, after making an Incision near the Bregma with a double-edg'd or common Knife, he says, he has often had great Success in extracting the Fœtus. But, as I before observ'd, this compound Instrument by no means seems absolutely necessary, because, after the Cranium is open'd, and the Brain extracted, the Instruments already directed, if properly made, the simple Hooks, for Instance, represented by Fig. 17. and 18. or a crooked Nail, or the Hand alone, are sufficient for extracting the Fœtus, as *Heister* informs us, he has often found by Experience.

If the dead Fœtus is found in an unnatural Posture, then, according to the Direction of *Celsus*, we are to lay hold of its Feet, and by them extract it, in the same manner as a living Child, which may be often done without any great Difficulty. But in this Attempt great Caution is to be us'd, especially if the Fœtus is already putrefied and corrupted, lest, by using too great Force or Haste in the Extraction, the Head should be torn from the Body, and left in the Womb; for, when the Head remains after the rest of the Fœtus is taken away, and is not forthwith extracted before the Mouth of the Womb closes, the Mother is, by that means, not only afflicted with the most terrible Symptoms, but, also, expos'd to an immediate and imminent Danger of losing her Life. For this Reason the Head, when left in the Womb, is to be extracted with all possible Expedition.

But, as the Head, in consequence of its round Figure and Slipperiness, cannot be commodiously secur'd by the Hand, it seems to be a proper Piece of Practice to introduce the Finger into the Mouth, or into the great Perforation of the Os Occipitis, and by that means to extract it. By this Expedient I myself, says *Heister*, have sometimes, without the Help of Instruments, happily, and without much Trouble, brought away the Heads of Infants left in the Womb. If the Fingers are not sufficient for this Purpose, a Linen Roller an Ell long, and about four Fingers broad, is to be introduc'd double into the Womb, so as to form a kind of Noose, in which the Head is to be included; and by that means it is often successfully extracted. Any of the above-mentioned Hooks, accommodated to this Purpose, may, also, be fix'd in the Mouth, the Orbit of the Eye, the Nostriis, the Perforation of the Occiput, or some other such Part, whilst, according to the Advice of *Celsus*, the Operator has previously pass'd his Left Hand under the Head, in order both to direct the Hook, and prevent the Injury which might otherwise be done to the Womb. Then the Head is, by the joint Assistance of the Hand and the Hook, to be carefully and cautiously extracted. But, if the Head should happen to be too large, it is with one Hand to be brought to the Mouth of the Womb, whilst with the other the Cranium is to be open'd, and the Brain extracted; after which 'tis cautiously to be taken away, either by the Hands alone, or with the Assistance of an Hook. The celebrated *Amandus*, an expert Practitioner in this way, in order to avoid the Injury which might possibly be done to the Womb by Hooks, for this purpose us'd a kind of Bag wove like a Net. This he pass'd over the Head, clos'd its Mouth with Cords, and by that means extracted the Head without any Danger. But this Bag is with great Difficulty apply'd to the Head, and the before-mention'd Methods succeed more easily, and with less Apparatus.

When a live Child is brought away by the Feet, and sticks at the Head, it sometimes also happens, that the Head is pull'd from the Body, and left behind in the Womb.

La Motte gives two Instances of this, in one of which he introduc'd his Left Hand into the Womb, and with it secur'd the Head, and with the Right Hand he slid in a Bistory, cover'd with a Sheath open at both Ends, with which he made an Opening in the Head, large enough to introduce his Fingers, with which he took away Part of the Brain, and then, taking, hold, drew out the Head.

In the other Case, the Mouth of the Womb contracting gave him a great deal of Trouble, by compressing his Hand, so that he could not use the Bistory, as in the former Case. So he was forc'd to open the Cranium with the Fingers, to lay hold of the Jaw, the Orbit of the Eye, or any other Place he could hold; and so at last drew it out. *La Motte*.

WHEN THE HEAD IS SEPARATED, AND THE BODY LEFT IN THE WOMB.

When the Pains come on very quick, and redouble, as soon as ever the Head is born, the rest of the Body soon follows; inasmuch that little more is necessary, than to receive the Child, and keep it from falling.

But when the Pains are slow, with long Intervals betwixt, and the Head happens to be born just at the End of a Pain, it sometimes happens, that the rest of the Body stays behind, so that the Child sticks in that Situation.

La Motte will not allow, that this is caus'd by the Contraction of the Mouth of the Womb about the Child's Neck; but says 'tis owing either to the Largeness of the Shoulders, or the Shortness of the Navel-string.

In order to bring away the Child, a flat Hand must be introduc'd betwixt the Neck of the Child, and Mouth of the Womb, on each Side; by which means the latter will readily give way, and admit of introducing a Finger, or Fingers, on each Side into the Axillæ, which may serve by way of a blunt Hook to bring away the Child. But this is not always done without Difficulty, and sometimes the Midwife is oblig'd to bring down both Arms, before the Child can be brought away.

When the Shortness of the Navel-string causes the Obstacle, it must be cut; and then the Child is readily brought away.

If the Navel-string is render'd too short, by being twisted about the Child's Neck, it must be cut, by introducing a Pair of Probe-scissars along the Finger first introduc'd.

This is a dangerous Situation for the Child, which certainly dies, if it continues long in this constrain'd Posture, because of the Compression of the Navel-string.

In order to prevent this Accident, the Midwife should pull boldly the Child's Head, the Moment 'tis born, in order to bring the Body away at the very same time, and by the very same Pain; taking care not to pull too hard, for fear of dividing the Head from the Body.

It does not seem prudent to pull hard at the Head at any time, but just the Instant 'tis born, because the Fingers are readily introduc'd into the Axilla.

When the Head is divided from the Body, and the Body remains in the Womb, the Method of bringing away the Body when it is far advanc'd, is to slip the Fingers on each Side under the Arm-pits, and so to draw the Child away; but if the Body lies at a Distance, the Method then is to bring it away by the Feet. *La Motte*.

Sometimes Infants, when dying during the Labour, thrust one of the Arms out of the Pudenda, in such a manner, that, by reason of the Shoulders sticking in the narrow Passage, it cannot again be replac'd in the Womb; nor indeed ought an Attempt of that kind to be made, especially if it has remain'd in that State for a considerable time. When this happens, and when the Signs of the Infant's Death are sufficiently manifest; that is, when the Arm is livid, black, and cold, when no Pulsation of the Arteries is felt in it, when the Fingers do not move, and when the Cuticle is separated from the Skin, we are first to try, whether, by reclining the Mother, and placing her in a commodious Posture, the Hand of the Operator cannot be introduc'd by the Infant's Arm into the Womb of the Mother, in such a manner, as to reach the Feet of the Child. If this can be done, which it often can, especially when the Labour has not been long, the Feet are forthwith to be search'd for, and the Fœtus is by them to be extracted, as if it was alive. But if, in consequence of a tumid State of the Infant's Arm, or a violent Constriction of the Mouth of the Womb, the Operator's Hand cannot be pass'd into the Womb, which, however, rarely happens, 'tis necessary either to twist the Arm out of its Articulation at the Scapula, or cautiously to cut it off. When the Surgeon intends to perform this Operation, 'tis highly expedient carefully to extend the Arm, to twist it about, and to hold it for a considerable time in that Position, before the Knife is apply'd, since, by this means, the Ligaments being partly distended, and partly broken, the Arm may be more accurately and safely cut off at the Shoulder-joint. But, lest the Mother should be wounded by the Knife, I generally, says *Heister*, use with Success one with a Button at the Point; take those exhibited in *Tab. XXVI.* by *Fig. 4.* and *5.* When the Arm is cut off, 'tis proper to try, whether the Hand cannot lay hold of the Feet; and, if it can, the Child is to be extracted by them.

If, on account of the Humerus sticking firmly in the Neck of the Womb, a transverse Situation of the Child, or a violent Constriction of the Womb, by means of which the Infant is so compress'd, as it were, into a Globe, that it cannot be directed by the Hands of the Operator, or if, in consequence of the Pains excited by introducing the Hand, which are sometimes so great, that the Mother cannot bear them, and a Rupture of the Womb, and the Death of the Patient, may be produced by the Application of a sufficiently considerable Force, in these Circumstances, it is not proper to pass the Hand so far into the Womb, as is frequently necessary for finding the Feet: 'Tis more prudent, therefore, in the Opinion of *Celsus*, cautiously to open the Breast and Abdomen of the Infant, either with the Fingers, a Pair of sharp Scissars, or an Hook, such as those represented in *Tab. LIV.* *Fig. 17.* and *18.* Then, extracting the Viscera and Intestines, we are to examine whether, the Body being lessen'd by this means, and the Buttocks coming nearer the Mouth of the Womb, the Feet cannot be

found; and, if they can, the Fœtus is to be extracted by them; a Practice which never fail'd to succeed with me, says *Heister*, as often as I attempted it. But if the Feet cannot be found, which frequently happens in consequence of a strong Constriction of the Uterus, then the Buttocks are, by the Hand pass'd under them, to be laid hold of; and, fixing an Hook in their superior Parts, they are thus to be extracted; for in this Case the Breast and Head follow, as it were, spontaneously, and with Ease; but it must be confess'd, that some Parts of the Body are frequently torn away, before the Delivery can be accomplished. But lest, in performing this Operation, the Womb should be wounded by the Hook, great Care is necessary in managing it. It, also, seems necessary so to sulcate or groove its Handle, that by the Touch only we may be able to judge how it ought to be directed in such a manner, that its Point may never be turn'd to the Womb, but always to the Fœtus. See *Tab. LIV. Fig. 19. Let. a a a a*: Which Caution cannot be possibly observ'd in Hooks, whose Handles want such a Groove. Hence it has often happen'd, that Practitioners in this way have miserably lacerated both the Womb, and the Bladder. By a prudent Use of this Hook, whose Handle is groov'd, I myself, says *Heister*, have frequently brought dead Children into the World, with such Success, as to prevent all ill Consequences to the Mother. With respect to this Handle, 'tis to be observ'd, that because the Infant, especially when pretty large, is so firmly inclos'd in the Womb, that the Strength of one Hand is not sufficient to extract it, (for the other is suppos'd in the Womb, under the Fœtus) for this Reason a strong Fillet may be ty'd about its Part *b b*, which may be call'd its Neck. This Fillet, in order to assist the Extraction, is be pull'd by the Midwife, or an Assistant, whilst the Operator, in the mean time, at once directs and draws the Handle. These commodious Circumstances are entirely wanting in the common cylindrical or angulated Handles.

Nor for this Purpose is it in some Cases improper, to use pretty large Forceps, such as those employ'd in extracting the Stone, and represented in *Tab. XLIX*. These are by *Ryff*, an old German Surgeon, and *Slevogtius*, a celebrated Physician of *Jena*, prefer'd to Hooks, and all other Instruments, because by them the Womb is less subject to be lacerated, and the Operator's Hand less subject to be hurt. However, no less Care and Circumspection is requisite in the Use of the Forceps, than that of Hooks, lest, by the former, the Mouth, or some other Part, of the Womb should be laid hold of, drawn forwards, or miserably lacerated.

Hoorn invented and described a new and more expeditious Method of extracting a dead Child, with its Arm sticking firmly in the Vagina; for, when the Feet could not be reach'd, he, either by means of a Knife, or a proper Hook, separated the Neck, which in Fœtuses is very tender, from the rest of the Trunk; for by this means the Fœtus is either spontaneously discharg'd from the Uterus, or may by the Arms be easily extracted. After this the Head is to be extracted by itself, either by the Hand, or by some of the Expedients before-mention'd, if the Hand should be insufficient for that Purpose; I must here observe, that *Celsus* long ago directed the same Method to be taken, when the Fœtus, without a prolaps'd Arm, is situated almost transversely with its Neck doubled, and its Head reclin'd on the Body, perhaps as in *Tab. LIV. Fig. 8*. for, says he, in this Case the Neck must be cut, and both Parts of the Fœtus brought away separately.

Tho' I do not absolutely reject the Use of Instruments, says *Heister*, but employ them where Necessity calls for it, yet I must here apprise all Practitioners, that they are never to be us'd for extracting Fœtuses from the Womb, except in Cases of absolute Necessity; when, for Instance, there is no Hope left of the Possibility of performing the Operation by means of the Hands, or when Delays would expose the Mother to the Danger of losing her Life; for every one must readily perceive, that Operations of this Kind must be far more safely perform'd by the Hands, than by means of Instruments. Surgeons are, also, to be carefully exhorted, not to use Instruments of any Kind, till they are absolutely certain of the Death of the Child; for that Surgeon cannot be acquitted from the Charge of Imprudence, Negligence, and Cruelty, who extracts a Fœtus alive, but torn and mangled, at the same time, by his Instruments, unless particular Cases, and especially a great Weakness of the Mother, or a Dread of her Death, if the Fœtus remains longer in the Womb, should require the Operation; for, tho', in this Case, the Popish Casuists will not admit the Operation to be lawful, yet lest two, one of whom may be preserv'd, should be destroy'd together, the most learned Divines of the Reformed Churches have declar'd it lawful, for the Mother's Preservation, to extract the Fœtus by means of Instruments. The most skilful and sagacious Surgeons have, however, been touch'd with the most lively Compassion, when they have extracted a Child alive, or at least half-dead, which they themselves, the Mother, and the Assistants, took for dead. 'Tis not, for this Reason, to be wonder'd at, that *Celsus*, in the twenty-ninth Chapter of his seventh Book, should place the Art of extracting the Fœtus from the Womb, among those

which are most dangerous and difficult, and consequently call for the greatest Prudence and Circumspection. On the contrary, so long as the Child is alive, and the Mother at the same time robust and vigorous, Instruments are never to be us'd. The *Specula Uteri*, by some us'd to enlarge the Womb, and delineated by *Albucasis*, *Scultetus*, *Mauriceau*, and others, are not, in the Opinion of many celebrated modern Surgeons and Physicians, of any considerable Use. Besides, as the Womb is very easily injur'd, the Use of them must in some Cases be attended with the worst of Consequences.

The Signs of a Child's being dead in the Womb are very deceitful; for it sometimes happens, that a Woman goes her Time, and is deliver'd of a living Child, after having all the usual Signs of a dead Child; for many Weeks, and even Months. *La Motte* gives an Instance of this.

The Hardness, Swelling, Blackness, and Coldness of an Arm protruded, is not always a Sign of the Child's being dead; nor is it a Reason, why the Arm should be taken off. *La Motte*.

La Motte says, that there is no Dependence to be had upon a Woman's Breath smelling, as a Sign of the Fœtus being dead in the Womb, as some Authors affirm, because the Fœtus itself may be dead some time without stinking; for instance, whilst kept from the external Air by the Membranes.

A Child frequently makes a strong Effort, and moves with Violence, just before it dies; and after that the Mother feels it stir no more. *La Motte*.

An intolerable Smell and a Discharge of redish Serosities from the Womb, are the most certain Marks of a Child's being dead in the Womb. *La Motte*.

No great Regard is to be paid to those pretended Motions, which a Woman fancies she feels, of the Child about the time of Labour, after it has not been felt for a considerable time before, especially when the Cessation of the Motion in the Child has immediately follow'd some considerable Accident, as a Fall attended with a Hæmorrhage. *La Motte*.

THE METHOD OF DELIVERING A WOMAN, WHEN THE NECK OF THE WOMB IS PROTRUDED BEFORE THE HEAD OF THE CHILD.

It is possible that Women labouring under a Descent of the Womb, or *Prolapsus Uteri*, may become pregnant, and Instances of it have often occurred. These Patients, during their Pregnancy, are exempted from their Misfortune, because the Bottom of the Womb becoming larger, in proportion as the Infant grows, cannot slip through the external Orifice, as it did before; but, if they are no longer troubled with this Descent, they have still more Reason than other Women to apprehend the several Accidents generally accompanying both their Pregnancy and Labour.

During their Pregnancy, Women subject to this Misfortune ought to take better Care of themselves than others; they must, for Instance, neither use any violent Exercise, nor undertake Journeys in Coaches, or Waggon, which might shake them too violently; nor even walk too much on Foot; because the Womb being disposed to fall down, in consequence of its not being sufficiently retained by its Ligaments, these kinds of Exercises must, in the very Nature of the thing, contribute to augment their Disorder; so that these Women are just Exceptions from that general Rule, which enjoins Exercise for pregnant Women. Patients of this kind must not lie in Bed with their Heads raised high; neither must they use emollient Clysters, which would relax the Ligaments still more; nor those of an acrid and purgative kind, since these, by the Effects they produce, would oblige them to bear down. But if their Circumstances indicate the absolute Necessity of Clysters, they must only consist of simple Water.

During the Labour of Women subject to this Misfortune, the Neck of the Womb, protruded by the Efforts occasioned by the Pains of the Mother, falls out, and is forced into the external Orifice.

The Neck of the Womb, or Vagina, which resembles the Palate of an Ox, being thus fallen down, is full of large Wrinkles or Corrugations, which become gradually more and more tumid, by the Efforts the Infant makes with its Head, to force its Passage into the World.

In a Labour of this kind, we must neither suffer the Woman to walk, nor stand, which in natural Labour is frequently practised. On the contrary, she must be always kept in Bed, with her Body and Head on a Level with her Buttocks: Then the Operator, in the Interval between two Pains, is with his Hand to restore the Neck of the Womb to its natural Situation. And that it may not fall down again, on the Accession of the first Pain, he is to keep his Hand in the Vagina, in order to support the Weight of the Child, and hinder it from again protruding the Neck of the Womb.

In Labours of this kind, the Operator must neither use Butter nor Oil, which have a Tendency to relax the Parts still more. The Mother, also, must be advised, not to bear downwards during her Pains, in order to prevent the falling down of the Part again, which is occasioned by the smallest Impulse.

It is, therefore, absolutely necessary the Operator should keep his Hand in the Vagina, not only in order gradually to dilate the internal Orifice with the Ends of his Fingers, but, also, to retain the Mouth of the Womb, and keep it from falling down again. It must, indeed, be confessed, that this kind of Labour is longer, than that in which the Parts are lubricated, and the Mother is at Liberty to bear down; but at the same time it is equally certain, that, when these Precautions are taken, it is conducted with more Safety, and terminates more happily, than if they were neglected.

When the Child is brought into the World, great Circumspection must be used in bringing away the Secundines; we must not draw the Navel-string, and, consequently, the Placenta, to which it adheres, with too much Violence, lest the Bottom of the Womb, which is not strongly retained, in consequence of the Relaxation of its superior Ligaments, should follow the Placenta, and fall out of the external Orifice. If a Misfortune of this kind should happen, the Operator is immediately, with his shut Hand, to push it as far back as he possibly can; which will not only restore it to its natural Situation, but, also, by lengthening the Neck of the Womb, remove those Wrinkles and Corrugations, which the Impulses of the Child had made in it.

When, therefore, the Womb is fallen down, and inverted, it must with the greatest Expedition be restored to its natural Situation, in order to prevent the fatal Consequences which might be produced by Delay, and suffering the Fibres of the Womb to contract themselves, before the Attempt is made. We have no Reason, in such a Case, to be afraid of creating any uncommon Pain to the Mother, since the Passage of the Infant has already so dilated the Parts, that the Hand can find an easy Access; which it cannot possibly do, after a very inconsiderable Delay.

After a Labour of this kind, attended with so uneasy and perplexing a Train of Consequences, the Mother must be far more careful of her Situation, than if she had been delivered in a natural Way. For the first fifteen Days she is not to get out of Bed; nor to quit it entirely, till a Month is expired. Before she follows her usual Business, she is frequently to apply a Compress immersed in some astringent Wine to the Region of her Kidneys; and, for the greater Security, she must use a Pessary for some Months. *Dionis.* See PROLAPSUS UTERI.

Mauriceau is of Opinion, that a Prolapsus Uteri is most frequently owing to a difficult Labour; but in this *La Motte* contradicts him. For he affirms, that he never saw the Neck of the Womb thrust before the Head of the Child, in any one Labour he was concerned in: But, he says, the entire Descent and Inversion of the Womb must be caused by a difficult Labour, the broad Ligaments being broken by the Violence used by the Midwife.

La Motte says, the too great Humidity of the Part is the Cause of Prolapsus Uteri.

THE METHOD OF TREATING A WOMAN LABOURING UNDER A RUPTURE.

In an umbilical Rupture, as soon as ever the Intestine suffers a Strangulation, the Patient feels a Pain, like the Colic; and the Part grows hard, and enlarges, more or less; though every umbilical Rupture is not painful, none being so till it grows hard.

The same holds good with respect to an inguinal Rupture.

If, during Pregnancy, or at any other time, any of these Ruptures grow hard and painful, they must by all means be soften'd, in order to a Reduction. This is to be done, by applying a soft Napkin to the Part, folded in many Doubles, and soaked in new Milk, as hot as the Patient can bear it; and, when it is softened, the Part of the Intestine, which descended last, is to be reduced, Care being taken to act as gently as possible, for fear of an Inflammation and Gangrene, which this Part is very subject to, if handled too roughly.

If this will not answer the End proposed, *La Motte* recommends a Cataplasm of the Pulp of the Leaves and Roots of Mallows and Marshmallows, Mucilage of Linseed and Fennel-greek, Flowers of Chamomile and Melilot, Bran of Wheat, and Meal of Rye, Oil of Chamomile and Lilies, as much as is sufficient.

If this is not sufficient to answer the End of mollifying, Baths are of great Service; and, if Baths do not succeed, the last Remedy is the Operation.

La Motte says, that, when a Rupture of either kind happens to be attended with these Circumstances of Hardness, and Pain, and Swelling during Labour, it is of very ill Consequences. But a simple Rupture, without Pain or Hardness, causes more Fear than Inconvenience.

All Parts of the Belly are subject to Ruptures, but the Navel, and Groin, more than the rest. When it happens in any other Part but the two last-mentioned, it is called a ventral Rupture.

An umbilical Rupture is generally less in Pregnancy, than at any other time, diminishes as the Belly enlarges, and seldom appears during Childbed, till the Woman rises again.

La Motte recommends a Plate of Steel to be worn upon the Part, with a kind of Girdle, made so as to be as tight, or as

loose, as the Patient pleases. But this is inconvenient, and not necessary, in the latter Months of Gestation.

La Motte seems to think these umbilical Ruptures of no manner of ill consequence in Labour, and to esteem them very little worth Notice: He thinks it even unnecessary to keep a Person's Hand upon them during the Pains, because, he says, let them be never so large, they will disappear, as soon as the Woman is laid in Bed, unless they suffer a Strangulation.

Children are very subject to an Exomphalos, because of the Laxity of the Part, but are easily cured by binding a Plate of Wax upon the Part, made with a Protuberance towards the Navel.

La Motte will not allow, that an Exomphalos is caused by tying the Navel-string too long.

When a Woman has a Bubonocoele, it is not less during Pregnancy, like an Exomphalos, but generally grows larger.

La Motte endeavours to reduce a Bubonocoele, before he delivers the Woman, by laying the Woman on her Back, with the Buttocks a little more elevated than the rest of the Body, and inclined a little to the Side opposite to the Rupture; then, as soon as a Pain is ended, he reduces the Intestine gently, and by degrees: Then he applies a warm Linen Cloth, made up into four Folds, to the Part; and makes a Woman keep an Hand flat upon it, to prevent a Descent during the Pains. And by these means a Woman is delivered with Ease.

A Bubonocoele is sometimes so excessively large, as to occupy not the Groin only, but, also, the Space betwixt the Thighs, which must embarrass a Midwife a good deal, unless the Intestine is reduced before Delivery. But sometimes it is so hard and tender, that the Woman cannot bear to have it handled enough to reduce it; and then the Woman must be delivered without reducing it.

La Motte gives a Case, where a Bubonocoele was attended with these Circumstances, and great Pain after Delivery: He gave the Patient fresh expressed Oil of sweet Almonds, with Syrup of Maidenhair, and a little Wine, in order to dissipate the Wind contained in the Intestine; and anointed her Belly with Oil of sweet Almonds, especially the Bubonocoele; and by these means, in a little time, the Tumor disappeared.

He advises, when breeding Women are troubled with these Bubonocoeles, to keep the Intestine always up; and if, when fallen down, it makes a Resistance, and cannot be reduced, he directs to soften it by means of a Cloth folded in many Doubles, dipped in Milk, and applied upon the Part. But, in case it is not possible to keep it always reduced, it must, at least, be kept soft, and in a Condition to be reduced.

Women with Child, especially when their Labour is at no great Distance, discharge sometimes a smaller, and sometimes a larger Quantity of Blood from the Pudenda; they are then said to labour under an Hæmorrhage of the Womb, or Flooding, in the common Phrase; which, as it happens in a State of Pregnancy, must be very different from the common menstrual Flux. In some Women, especially in the first Months, it proceeds from a Redundance of Blood, by which the Blood-vessels of the Vagina, or of the Womb itself, are opened, and pour forth a large Quantity of Blood, which is sometimes preternaturally hot. But this Disorder happens more generally in the last Months, and arises either from a total or partial Separation of the Placenta from the Womb; which may be produced either by an external Injury, such as a Fall, violent Exercise, a Blow, a Fright, and many other Causes; or by a Redundance or fervid State of the Blood; or, as some of the Moderns maintain, from an Adhesion of the Placenta to the Mouth of the Womb, of which *Giffard* gives a remarkable History in Case 224. On this Occasion, towards the End of Pregnancy, the Placenta is torn from the Mouth of the Womb, in proportion as it dilates itself. The more, therefore, the Mouth of the Womb is dilated by the Pains, the more the Placenta is separated from it, and consequently the greater the Hæmorrhage; which is sometimes so violent as quickly to weaken the Mother; and even to endanger the Life of her and the Child, unless the latter is, by the Hands, extracted, before the former is too much weaken'd, of which fainting Fits are a certain Sign. *Hoorn, Brunner, and Stuart*, agree with *Giffard*, in acknowledging the Possibility of an Hæmorrhage from this Cause; and bring Instances to support their Sentiments.

An Hæmorrhage may be discovered, both by the Relation of the Patient, and the large Quantity of Blood discharged: But, whether this Blood comes only from the Vagina, or the Womb, is a Circumstance which cannot be known, except from a diligent Examination of the Mouth of the Womb by the Fingers; for that this Discharge of Blood proceeds only from the Vagina, may be known, when, upon passing the Fingers into it, the Mouth of the Womb is found to be closed, and the Hæmorrhage is only small: If, on the contrary, the Hæmorrhage is large, and the Mouth of the Womb dilated, or if, in it, not the Head of the Child, but a certain spongy Body, which is generally the Placenta, is perceived by the Fingers, we may conclude, that the Hæmorrhage proceeds from the Womb itself, in consequence either of a partial, or total Separation of the Placenta from it. And this Case is far more dangerous, than when the

the Hæmorrhage proceeds from the Vagina only. Besides, the Danger is increased in proportion to the Largeness of the Hæmorrhage; and, when Faintings happen, unless speedy Relief is afforded, the Lives both of the Mother and Fœtus are exposed to the most imminent Danger. When the Hands of a Woman in this Situation become cold, her Eyes dim, her Pulse weak, and when she is seized with a cold Sweat and Convulsions, which in this Disorder generally happen sooner or later, the Case is desperate, and the Death of the Patient at no great Distance. In this Case it is not prudent to attempt the Delivery, lest we should be thought to have killed a Patient, already destroyed by the Disorder.

If such an Hæmorrhage arises from the Redundance, Commotion, or preternatural Heat of the Blood, it may be most properly checked by Venesection in the Arm, a due Regimen, Rest both of Body and Mind, and the Exhibition of gentle Astringents, together with such Medicines as correct the exorbitant Heat of the Blood. But, if a very large and copious Hæmorrhage from the Womb itself should not yield to the Force of these Medicines, it generally proceeds from the Placenta being separated from the Womb; and, in this Case, it cannot be stopped, till the Child and Placenta are extracted by the Hand; because the open Blood-vessels, distended by the Fœtus, cannot constrict themselves, till it is removed. When, therefore, we find, that Medicines are of little Advantage, that the Hæmorrhage, instead of being lessened, becomes larger, and that the Mother is seized with Faintings, no means of Relief are left, except the Extraction of the Child by manual Operation, which may be performed in the following manner.

Let the Mother be laid on her Back, either on a Table, or Bed, with her Heels retracted, her Legs separated, and her Buttocks raised: After this the Operator is to pass his Hand, well anointed with Oil or Fat, into the Vagina, as far as the Mouth of the Womb, into which, if it is not already sufficiently dilated, as it sometimes is not, he is with great Caution to introduce one, then two, then the rest of his Fingers, and thus gradually his whole Hand, into the Womb. It is scarce possible to believe with what Difficulty this is sometimes done, especially when the Placenta, which frequently happens in Cases of this Nature, is situated about the Mouth of the Womb, and has a great Part of it still adhering to it: This, however, is to be attempted with the greatest Care and Diligence. And the Placenta, when it adheres but slightly, is first with the Fingers, and then with the Hand, to be gently removed so far as is necessary for introducing the whole Hand, taking care that, in this Attempt, a greater Separation of the Placenta from the Womb may not be made, than is absolutely requisite for the Introduction of the Hand, since by these means a greater Hæmorrhage, which might possibly prove mortal, might be excited. When the Placenta is disengaged, and lodged about the Mouth of the Womb, in such a manner, as to prevent the Operator's having Access to the Child, *Hoorn* orders it to be first extracted, and then the Child. When the Placenta adheres so strongly to the Mouth of the Womb, that the Operator cannot introduce his Hand, it is to be broken with the Fingers, till the Hand can have free Access; for, as in Cases of this Nature it is dangerous to wait too long, or commit the Business to Nature, such a Practice is by no means to be recommended. Introducing the Hand, therefore, into the Womb, the Feet of the Infant, though as yet not entirely mature, must be immediately searched for, by which, for the Preservation of the Mother, it is to be extracted. But if it should happen, as it often does, that the Membranes are not broken, they are either to be pierced with the Nails of the Fingers, or, if they are very strong, with an Hook, that the Feet may be more easily found, which they generally are without any great Trouble, because in this Case they, for the most part, lie pretty near the Mouth of the Womb. But if the Membranes are broken, as they sometimes are, and which may be known from the bare or uncovered Parts of the Infant, there is no Occasion for breaking them, but the Fœtus is forthwith to be laid hold of by the Feet, and by them extracted. This is generally done with the greater Ease, if the Feet are directly opposite to the Mouth of the Womb. But this Operation is far more difficult, when the Child is turned on its Head, and ready, as it were, to be brought into the World; because, in this Case, the slippery Head cannot be firmly enough laid hold of; nor can the Feet, because they are turned upwards, be so easily found; they are, however, carefully to be searched for, and the Fœtus is by them to be extracted. When the Child is thus brought into the World, the Secundines generally soon follow it spontaneously; but, if they should happen as yet to adhere to the Womb, they are with the Hand to be gently disengaged, and extracted. When the Secundines are thus extracted, and the concremented Blood evacuated by the Hand, in order to prevent After-pains, the Hæmorrhage gradually ceases, till at last after due Rest, and a careful Use of proper internal and external Medicines, it generally disappears entirely, because the Womb now contracts itself, and with it the Blood-vessels, which were before open. In order to restore at once the Blood and Strength of the Patient, we are to take all those Measures generally prescribed after large and excessive Hæmorrhages. Thus, for In-

stance, hot Sorbitions are frequently to be exhibited; such as Broths, warm Milk, Emulsions of Almonds, Jellies, or corroborating Draughts, prepared of hot Ale, and proper Waters. I must here, also, observe, that, unless Patients of this Kind die within six Hours, they generally recover, because the Hæmorrhage ceases, and the Patient receives fresh Supplies of Strength from the Exhibition of easily digested Aliments: Whereas those who are destroyed by excessive Hæmorrhages, and their consequent Weakness, may have their Deaths ascribed to too late an Extraction of the Fœtus, which, as we have already observed, ought not to be delayed too long, that is, till the Mother is seized with Faintings. I myself, says *Heister*, have known several Women, who by refusing to submit to this Operation, or by submitting to it when it was too late, have been cut off in the Flower of their Age. The Reader who desires Instances of this Kind, may consult *Mauriceau*, *La Motte*, *Giffard*, and *Chapman*. *Heister*.

Maids are subject to considerable Hæmorrhages, as well as married Women, and sometimes very young, as at nine Years old, or sooner.

In such Cases Bleeding, Purging, and a cooling Regimen, are proper. Or, if the Hæmorrhage is violent, half a Dram of Roch-alum, a Dram of Dragons-blood, with some Conserve of Roses, is an excellent Remedy. *La Motte*.

Melt in a Crucible any Quantity of Roch-alum: Add to it an equal Quantity of Dragons-blood: Then let it be powdered.

The Dose of this, in violent uterine Hæmorrhages of any kind, is half a Dram every Half-hour.

Alum was first used in Hæmorrhages of the female Sex by *Scribonius Largus*. *Helvetius* added to it Dragons-blood.

The above-mention'd Preparation of it was *Pitcairn's*, and what he recommended.

This is an excellent Remedy in all uterine Hæmorrhages, whether of the Menes in too great Abundance; or Floodings of Women with Child. *Edinburgh Medical Essays*.

Mauriceau thinks a Virgin can scarce have an Hæmorrhage, attended with a Discharge of Clots of Blood: But *La Motte* is of quite another Opinion. It is difficult to determine which is right.

Women are subject to these Hæmorrhages at any time of their Pregnancy, during their Labour, or afterwards. *La Motte*.

Hæmorrhages, if considerable, are almost always followed with the Expulsion of the Fœtus.

The most common Causes of Floodings are, Falls, Blows, Frights, false Steps, Efforts in lifting any thing heavy, extending too much the Legs or Arms, pressing the Belly against something hard, Grief, Anger, and any violent Passions of the Mind. *La Motte*.

When Floodings happen with any Violence, the only Cure is to deliver the Women immediately, in whatever time of Pregnancy it happens.

If the Woman is gone less than five Months, it is no matter what Part of the Child comes first; but, after that Time, the Membranes must be broke, and the Child fetched by the Feet.

Women are sometimes so weaken'd by Flooding, that they are a long time before they recover their Strength, and that not without the Help of a good Regimen, and long Rest. Some are afterwards troubled for a long time with a violent Head-ach, and never after recover a fresh Colour.

However, we are not to be too hasty in delivering a Woman as soon as any Blood appears; for some have a small Loss of it, without any Disadvantage; but, when it grows excessive, and the Woman begins to be weak, then is the time to hasten Delivery.

Flooding sometimes proceeds from the Blood-vessels at the Bottom of the Vagina, or external Part of the Mouth of the Womb. *La Motte*.

La Motte gives the History of a Woman, who, being gone about six Weeks with Child, was seized with a violent Flooding; upon which he introduced one Finger into the Mouth of the Womb, which was all he could do; and, thrusting it as far as he could into the Womb, he rounded a little Body he found therein, which was like an Hen's Egg, without a Shell, and detached it from the Womb; and then brought it whole; which, he says, should always be done, if possible, for fear the Membranes, at that time so very little, should not be readily found, in case they were broken, and their Contents gone off; and, then, if they stayed behind, the Flooding would not cease.

In case of a Flooding, when a Woman is far advanced in her Pregnancy, if her Pains are strong and redoubled, and the Child so far sunk in the Passage, as to hinder the Introduction of the Hand into the Womb, in order to bring away the Child by the Feet, then the Expulsion of the Fœtus must be left to Nature.

It is not always possible to deliver a Woman of an abortive Fœtus, when she is seized with Flooding. *La Motte*.

Sometimes the Mouth of the Womb is too rigid and strong to be open'd sufficiently by the Fingers. And in this Case *La*

Motte

Motte affirms, that all the emollient Applications so much recommended are of no manner of Service, Rest and Patience being the best Remedies; for after Rest it will often be dilated of its own Accord.

Floodings, which happen to Women in Labour at their full Term, are of no great Consequence, if the Labour is very quick, and the Discharge not very considerable; but if the Labour is slow, and the Flooding violent, both the Mother and Child are in great Danger, especially if the Child presents right, and is advanced far into the Passage. But if the Child presents wrong, and is not far advanced, it is less dangerous, provided the Hand can be introduced, and the Child brought away by the Feet; which must, upon these Occasions, always be done. Or, if the Child present right, the Head must be put back, and the Child must be brought away by the Feet, if possible.

In case of Flooding in a Labour of the full Term, the general Rule is, to hasten Delivery as much as possible.

The weaker the Labour-pains, the more easy it is to introduce the Hand, and bring the Child away by the Feet.

Floodings are not always caused by a Separation of the Placenta from the Womb, but sometimes from a Rupture of some of the Vessels, which form the Navel-string. *La Motte*.

There is a sort of Hæmorrhage which Women of all Ages are subject to, whether married or unmarried, which it is very difficult to distinguish from that which happens during Pregnancy; because it is attended with all those Symptoms that accompany Pregnancy, without excepting one, as forcing Pains like those of Labour, Vomiting, &c. inasmuch that *La Motte* says, he has often been called to deliver Women in this Condition, who have thought themselves with Child; and whom he cured by a cooling Regimen, forbidding the Use of any spirituous Liquors, and advising Rest.

This is caused by a long Suppression of the Menstrues.

Young married Women generally breed soon after an Hæmorrhage of this kind.

In this Case the Belly grows less for the first two or three Months, as in true Pregnancy; and at the time of the Hæmorrhage, when the Woman has the Symptoms of Labour, no Waters are discharged, contrary to what happens in a Miscarriage, or true Labour at the full Period. *La Motte*.

An Hæmorrhage from the Nose, during Pregnancy, very often is the Cause of the Child's Death, if it proves excessive.

La Motte advises, in this Case, Rest, lying upon the Bed, with the Head a little elevated, taking care to excite no extraordinary Heat by too much Covering. He, also, gives the Woman cold Water to drink, and cautions particularly against giving any thing spirituous, and against blowing the Nose.

The following Decoction is much recommended by *Hamilton*, in an immoderate Flux of the Menstrues; especially when it is not caused by a Portion of the Placenta left behind after a natural Birth, or Miscarriage.

Take seven Orange-rinds, boil them in three Pints of Spring-water, till the Water is reduced to two Pints; and let the Liquor, when strained off, be sweeten'd with white Sugar. The Dose is ten Spoonfuls, three or four times a Day.

Riverius, Lib. 15. Cap. 3. quotes a Medicine much like this, from *Ludovicus Septalius's Animadvers. Medic. Art. 144.* which the last-mention'd Author recommends as almost infallible, as follows:

Take three Orange-rinds, as yet somewhat green; boil them in seven Pints of Spring-water to the Consumption of two Parts of the Liquor; of which eight or ten Ounces may be drank every Morning.

Septalius says farther, that, if you would make the Medicine yet more effectual, add, at the End of the Boiling, one Handful of Mouse-ear: Or else make the Decoction in a Gallon of Water, and boil to the Consumption of two Thirds; then quench frequently in the strained Liquor an Iron heated red-hot. *Riverius*. This seems very proper to be given with the styptic Powder, as above described.

La Motte says, that, after any great Loss of Blood, it is very common for Women to be troubled for a long time with a violent Head-ach, and a troublesome Buzzing in the Ears.

Women generally lose a large Quantity of Blood, when the Child is born; which ought not to be esteem'd a Flooding, and is attended with no Danger.

When the Navel-string is cut, the Part remaining with the Placenta should be tied up, as well as that remaining with the Child; otherwise a great Quantity of Blood will be discharged from it, which may prove fatal to the Mother.

Care must be taken, that all the Membranes are brought away with the Placenta.

When a redish Serosity, inclining to black, is discharged from the Womb, accompanied with violent After-pains, it is a certain Sign, that a Portion of the Placenta, or Membranes, remain in the Womb; and then a Finger or two, or more, must be intro-

duced, as it seems necessary, and the remaining Part must be brought away. *La Motte*.

Fatal Hæmorrhages will sometimes ensue, after a Woman has been safely deliver'd, and no Part of the Placenta, or Membrane, is left behind. In this Case the Woman's Voice sinks by little and little; she gapes, grows pale, loses her Pulse, and finds herself weak.

La Motte's Method of Cure is as follows: He rubs the Woman's Hands and Face with Vinegar, and Water, or Oxycrate; and applies doubled Linen Cloths dipt in the same to the Belly, and Region of the Kidneys. Mean time he keeps her as cool as is possible, and suffers her to be covered with very few Cloths: He gives her Broth without any Salt, but in very small Quantities at a time, with a little Water, and some Wine, in order to abate the Thirst, and to be of some little Refreshment. But he cautions particularly against giving any thing spirituous.

If the Woman has an Inclination to sleep, he keeps her awake, till the Hæmorrhage in some measure ceases.

In *Obs. 402.* he gives the History of a Woman, who, immediately after the Extraction of the Placenta, was suddenly seized with so violent an Hæmorrhage, that she remained, in Appearance, without either Pulse or Respiration: But he brought her to herself, and at last cured her, by throwing great Quantities of Water upon her Face, Hands, into her Mouth, and almost all over her, and by applying Linen dipt in the same. He then took away every thing that might keep her warm, and laid her upon Straw only.

Chapman has probably taken this Method from *La Motte*; he says, as follows: "When the Discharge is very great, it requires the most immediate Assistance; or the unhappy Woman, now just deliver'd, freed from her Pains and Tears, and flush'd, as it were, with new Life, will be infallibly lost. In this Case I never bleed, but lay the Patient very cool, almost naked, and cover her Body with Cloths dipped in Water, or Vinegar and Water mixt. This must be done when the Flux is extremely violent, and without which the Woman's Life would be lost in a few Minutes: It at once constringes and restores the Tones of the Fibres and Vessels of the Womb, at the same time that it abates the too violent Motion of the over-heated Blood. I beg Leave to recommend this Method as what I am confident has saved the Lives of great Numbers, in the Course of my Practice."

The same Author, *Case 12.* after having given the History of a Delivery, goes on in this manner.

"This Lady was of a plethoric Habit, and, having been much heated by a long Labour, and great Pain, together with several warm and cardiac Medicines, (which, as the Posture of the Child was right, were given her, in hopes that Nature might have done the Work herself) in about an Hour after, when we thought all was well, and I just about to take my Leave, she fell into the most violent Flooding I ever saw. I was obliged immediately to cover her Body with Cloths dipt in Oxycrate, changing them as they grew warm; and this for above half an Hour together; by which means the Flux at first was a little abated, and at length stopped, whilst we gave her several Draughts of cool and acid Liquors to drink. She was so excessively cold, and her Pulse so low, from the vast Loss of Blood, that we thought she was dying. But, forcing down some warm Sorbitions, as well as cordial Medicines, she was quickly able to bear warming, without a Return of the Hæmorrhage: By this Method she soon revived, and is still living."

Hippocrates recommends an Infusion of the Leaves of Vitex, or Agnus Castus, in an uterine Hæmorrhage, made in Black-wine. *De Natura Muliebri.*

LACERATION OF THE PERINÆUM.

That the Perinæum, or fleshy Partition between the Pudenda and the Anus, may be lacerated, is a Circumstance well known to every one who is in the least conversant in Surgery. But this Misfortune is principally incident to Women subjected to a difficult Labour, in consequence of the Largeness of the Child, its monstrous and unnatural Conformation, or its being doubled, as it were, and presenting with the Buttocks. In order, therefore, to prevent the many terrible Consequences which may possibly be produced by a Misfortune of this kind, the following Measures are to be taken with all Expedition: First of all, the Wound is to be washed and cleansed with warm Wine, or Brine: Then it is to be carefully anointed with some vulnerary Balsam, or, which is still better, the Powder of Sarcocolla; or Mastich, may be sprinkled upon it. After this, if the Wound should happen to be but small, its Lips are to be brought into Contact, by means of adhesive Plaisters: But if, in consequence of the Largeness of the Wound, these should not be sufficient for that Purpose, the knotted Suture, usual in other deep Wounds, is to be made with a crooked Needle, and a double-waxed Thread. After this the Wound is to be treated in the same manner with other Wounds in a like Situation. Only, in this Case, it is highly expedient, that the Woman should remain in Bed, with her Thighs close together, and have her Wound cleansed twice or thrice each Day, till it is healed. According to the eighty-second Observation of

Selinger, Wounds of this kind, when neglected at the Beginning, often become incurable, and are accompanied with a very troublesome Ulcer.

Whilst the Patient is under Cure, she should never be suffer'd to have a costive Stool, because it would be likely to dissolve the Union of the Parts, brought into mutual Contact by adhesive Plaisters; or to tear out the Stitches, if a Suture has been made.

CONTUSIONS OF THE PUDENDA.

It often happens after a very difficult Labour, that the Passages are so torn and contused, that a Mortification, and Loss of Substance, ensue, more or less: And then, if Care is not taken to keep the Sides from uniting together, the Passage will be entirely stopped up, or in part. If entirely, there will be no room for the Discharge of the menstrual Flux; and then the Woman may be seized afterwards with Convulsions, attended with great Pain in the lower Parts of the Belly. If in part, the Woman may be again with Child; and then this Union may render the Labour extremely difficult, or Delivery impossible.

La Motte introduces the middle Finger into the Anus, and a Catheter into the Bladder; and cuts an Opening, as near as he can, betwixt them.

La Motte, *Obs.* 419. gives the History of a young Girl of Seventeen, who was seized with a violent Pain in the Loins, and lower Part of the Belly, which the third Day were communicated to the Vagina, and would not yield to Baths, Clysters, Bleeding in the Arm and Foot. Upon examining the Vagina, he found the Caruncular Myrtiformes were wanting; and about two Fingers-breadth within the Vagina he found a Membrane distended and full, much like that which contains the Waters of a very little Child. As he could not break it with his Fingers, he was forced to cut it with a Lancet; upon which a Quantity of very black Blood was discharged without any Smell, and the Girl was immediately eased. She was afterwards married, and has since had many Children.

La Motte says, a Surgeon of his Acquaintance had Occasion to perform the same Operation.

Cooper gives us a parallel Instance.

La Motte, *Obs.* 453. tells us of a Woman, whose Vagina was entirely closed up, as well as the urinary Passages, by a spongy Flesh, which join'd the Sides together, insomuch that she was an Hour in making Water, and that with great Pain. This was caused by a Contusion which the Woman received in a Labour, from the too rough and frequent Handling of the Midwife. Upon Inspection he found there was no Passage for the Urine, but that it transuded through the spongy Flesh above-mentioned. This Woman he cured by an Incision, and dressing the Wounds with Pledgers of Lint dipt in Brandy.

When the Parts are so contused, as to endanger a Mortification, Fomentations, and antiseptic Topics, seem necessary.

In order to prevent an Union of the Sides, proper Dossils of Lint kept betwixt the Parts seem the best Precaution.

Sometimes there is so great a Loss of Substance, on account of a Mortification of the Parts contused, by the Head of the Child sticking a long time in the Passage, that the Woman suffers an involuntary Discharge of the Urine and Fæces for ever after. And sometimes there is a Mortification, even before the Woman is deliver'd; which manifests itself by an intolerable Stench.

La Motte recommends deterfive Fomentations, and Injections.

In natural or unnatural Labours, more particularly the latter, the Vagina and external Parts are subject to Contusions, Dilacerations, Inflammations, Impostumes, and Mortifications; and to these Accidents Women that have the Lips of the Pudenda thick and hard, are more subject, than those who have them thin and tender.

When the Bones which form the Head of the Child are very hard, the Lips of the Pudenda large and thick, and the Labour very quick, a Woman is most liable to these Misfortunes, because there is no time for a gradual Dilatation of the Parts, and the Bones of the Head cannot yield so as to accommodate themselves to the Passages.

When the Child comes with the Breech first, or if the Head lies a long while in the Passages, these Misfortunes are still more to be apprehended. *La Motte*.

In case of Contusion *La Motte* recommends only Embrocations with Wine warmed with a little Chervil in it.

This Remedy, he says, is the best of all others, and the only one necessary; and finds fault with all those recommended by *Peu* and *Mauriceau*, as useless, and even pernicious.

In case of a Laceration of the Perineum, and Vagina, the same Author advises a Reunion, by a few Stitches, whilst the Wound is recent; for, after the Sides thereof are healed, and grown hard, they will not unite without being made raw again.

Contusions, Inflammations, and even Mortifications, are often caused by a Midwife's too rudely handling the Parts; of which *La Motte* gives an Instance, *Obs.* 408. where the Parts were so roughly handled, that an Inflammation came on, attended with violent Pain, which was succeeded by a Mortification; insomuch

that he was obliged to scarify, not only the external Parts, but even high up in the Vagina, and to wash the Part with Sea-water, and then to use a Lotion made with Birthwort, Myrrh, Aloes, and Sugar, in White-wine, with an Addition of a little Brandy; mean time the Lochia never ceased, and the Patient had but very little Fever, and that only for a Day or two: By these means she recovered, and had many Children afterwards, without any of the like Accidents.

La Motte says, Oil does Prejudice in those Excoriations which happen during Delivery, and are felt immediately after it. His Method is, to bathe the Parts with warm Milk, Barley-water, and a Decoction of Liquorice and Chervil, and afterwards to embrocate with Wine and Chervil.

La Motte, *Case* 452. tells us of a Woman who had the Lips of her Pudenda and Womb excessively hard, and swelled, occasion'd by the Midwife's frequent handling the Parts: After the Woman was deliver'd, he injected into the Vagina an Infusion of a very small Quantity of Birthwort, Myrrh, and Aloes, in White-wine; and applied a Compress to the Lips, dipped in the same: By these means a Separation of the contused Parts was procured, which fell off; mean time he took care to keep the Parts asunder, for fear of a Reunion.

LACERATION OF THE WOMB.

If violent and strong Labour-pains cease all on a sudden, and Vomiting succeeds, a Laceration of the Womb is to be apprehended.

La Motte gives two Instances of Women, who had the Womb burst, and the Child extended lengthways, with the Feet towards the Diaphragm of the Mother, out of the Womb. Both these Children presented with the Head; and there seem'd to be no other Cause of this Laceration, but the Violence of the Pains, and Force of the Child.

The Symptoms were, extreme Weakness, perpetual Vomiting, the Belly hard, distended, and painful, a very small Pulse, and an entire Cessation of Pains or Throes.

The Placenta was torn through in both these Cases; and, in the first Case, the Woman felt a violent Motion of the Child, when the Laceration was made.

La Motte says, that an Hiccough, and cold Sweats, are generally Attendants upon such a Laceration.

This Case is always fatal.

INFLAMMATION OF THE WOMB.

In inflammatory Pains of the Belly, *La Motte* directs an anodyne Clyster, and emollient Fomentations of new Milk, applied by means of a fourfold Napkin dipped therein, whilst warm, and renewed from time to time, as it cools.

The usual Causes of an Inflammation of the Womb are, long and difficult Labour, the Adhesion or bad Consistence of the Placenta, Falls, Blows, and Swathing the Womb too tight: These Inflammations usually cause a total, or partial, Suppression of the Lochia, a Retention of Urine, frequent Inclinations to make Water; Diarrhoea, Vomiting, Oppression, Fever, Deliriums, Convulsions, and Death.

An Inflammation of the Womb is very easily known by a great Pain in the lower Part of the Belly, which makes it very difficult for the Woman to lie in any other Situation than upon her Back; and, if she turns never so little on either Side, she feels an painful and heavy Mass fall on that Side, and at the same time an excessive Pain in the Loins, Kidneys, and Groin of the opposite Side; and it is for this Reason, that she can lie in no other Situation than upon her Back.

As soon as ever an Inflammation is perceived, there is no room for Delay; and, though the Lochia flow in abundance, Fomentations must be applied to the Part in Pain, which is generally hard; for, if this is neglected, the Pain and Hardness quickly increase considerably. Mean time Clysters of an emollient Decoction only, in half the usual Quantity, must be made use of; or, if the Woman is costive, a Clyster of Whey with two Ounces of Honey of Violets may be used, first in order to discharge the hardened Excrements, and after that the half Clysters above-mention'd, which will be the more effectual, the longer they are retain'd.

If these are not sufficient to prevent the Increase of the Pain and Hardness, recourse must immediately be had to Bleeding in small Quantities, but often repeated, so long as the Symptoms either increase or continue.

The Regimen must be of Veal and Chicken-broth, avoiding every thing solid. Her Drink should be Water, impregnated a very little with Cinnamon; and, if the Fever is but slight, one eighth Part of Wine: All other spirituous Liquors must be avoided.

The Pains above-mention'd, attending an Inflammation of the Womb, sometimes extend themselves to the Inside of the Thighs, when a Woman turns on one Side.

La Motte uses a fourfold Napkin dipped in new Milk warmed, as a Fomentation, whilst more powerful Fomentations are preparing. He, also, generally bleeds once in twelve Hours.

He disapproves of uterine Injections, because, he says, if the Pipe of the Syringe should be introduced into the Womb, it would irritate the Part, and increase the Inflammation; and because, in this inflamed State of the Womb, the Mouth is entirely closed, and therefore an Injection could reach no farther than the Vagina.

He, also, disapproves of Bleeding in the Foot, because that must bring a greater Flux of Blood to the Part already inflam'd; he therefore prefers Bleeding in the Arm.

CONVULSIONS.

Women are sometimes seized with Convulsions, before, during, and after Labour. The Prognostic to be made upon this Occasion, is according to the Violence of the Convulsions, and their Causes.

A long Suppression of Urine will sometimes cause Convulsions.

When Convulsions, during Labour, begin to be violent, and the Woman weak, Delivery must by all means be hasten'd; as it must be at all times of Pregnancy, Convulsions generally ceasing soon after Delivery. But, when the Case will permit, we should wait to see what proper Medicines can do, and how far Nature is able to relieve herself.

Women will frequently be seized with Convulsions, without any manifest Cause, and very suddenly.

When a Woman is in Convulsions, it may sometimes be perceived, that she is in Labour, by a small Motion of her Lips, and an uneasy Movement of the lower Parts; and then Delivery is to be hasten'd. *La Motte*.

If a Retention of Urine is the Cause of Convulsions, the Catheter must be used; but the Neck of the Bladder is sometimes so compressed betwixt the Os Pubis and Head of the Child, that the Catheter will not pass: In this Case, the Head of the Child must be thrust back, with one or more Fingers, the Woman being placed in the same Situation as if she was in Labour; and then the Catheter will pass; and perhaps the Woman may make Water, without the Catheter.

Convulsions are sometimes caused by a Plethora; and then Bleeding judiciously repeated, Clysters, and Purges, are the proper Remedies. *La Motte*, Obs. 222. gives an Instance of a Woman, whom he was obliged to bleed fourscore and six or seven times, during the five last Months of her Pregnancy, taking away but a small Quantity at a time; and notwithstanding this prodigious Loss of Blood, she was at last delivered of an hearty Child, and did very well herself. This Woman had used herself to eat great Quantities of improper Food.

Convulsions which happen after Delivery, are always dangerous.

If they are caused by the Suppression of the Lochia, Care must be taken to procure their Return, if possible.

If Convulsions proceed from an Hæmorrhage, it must be stopped or diminished by all proper Methods.

La Motte tells us of two Women who were seized with violent Convulsions after Delivery; and this happen'd every time they lay-in: These he cured by giving them Broths, a little at a time, and often repeated, in order to repair the Loss of Blood, and Clysters in very small Quantities.

He advised them, as soon as they perceived themselves with Child the next time, to bleed, and repeat it frequently during their Pregnancy; and to take once every Month, for the three first Months, an emollient Purge, of

One Dram of Rhubarb, infused for ten or twelve Hours, in a large Glass of Water: Add to this an Ounce and an half of Cassia Fistula: Pour upon this some Broth, and dissolve in the strained Liquor one Ounce of Manna: Strain it again, and let the Woman take it early in the Morning; and, two Hours after, let her take a little Broth.

If a Woman is attacked with Convulsions, and a Suppression of the Lochia, *La Motte* advises Bleeding, and anodyne cooling Clysters.

DIARRHOEA.

La Motte gives the History of a Case, where a young Lady, at her full Term, was seiz'd with slow Pains, which increas'd in a little time, insomuch that they thought she would be soon deliver'd; but they went off again, and return'd the next Day; and so continu'd sometimes more, and sometimes less strong, by Intervals, till the eighth Day, when they increas'd so much, that the Lady was deliver'd. She continu'd very well for the six first Days, without, however, having any Sleep since the time she was first seiz'd with Pains, which was fourteen Days. At this time she was seiz'd with a violent Shivering, which was follow'd by as violent a Fever, accompanied with a Delirium, Diarrhoea and Vomiting, her Belly being distended, hard, and painful, and she herself extremely weak. The Lochia, however, continued in Plenty, which was the only encouraging Circumstance.

In order to appease the Gripings, with which she was much afflicted, he gave her four times a Day half the usual Quantity of a Clyster, made with a Decoction of wash'd Bran, Verbascum album (a Species of Mullein), Flowers of Chamomile and Melilot, with Linseed, and an equal Quantity of Broth. At the same time, he applied to her Belly a Napkin doubled, and soak'd in new Milk, as hot as she could bear it. Her common Drink was a Decoction of the Roots of Marshmallows; Shavings of Hartshorn and Ivory, with a little Quince Marmalade; at Night, she took two Spoonfuls of Syrup of Maiden-hair, with an Ounce of Oil of sweet Almonds, and a few Spoonfuls of Spanish, or other Wine; her ordinary Food was Broths, or Soups in small Quantities, and a little *Bouillie de Froment*, I suppose he means hasty Pudding; and by these means the Symptoms were reliev'd, and she recover'd by degrees.

La Motte, remarks upon this Occasion, that *Laudanum* is a Specific for these Disorders, at any other time but in Child-bed; but then particular Care must be taken, that neither *Laudanum*, nor any other Narcotic, is given, of any sort whatever; for they never fail to suppress the Lochia, and for that Reason to be fatal: Of which he gave an Instance in a Lady who died four Days after taking a Julap of Syrup of white Poppies, and Oil of sweet Almonds, as a Cure for violent Gripes, and to stop a Diarrhoea, which it effectually did, as well as the Lochia, which could never afterwards be recall'd by any Remedies whatever.

He, also, tells us of another Lady, whose Lochia were suppress'd by taking a Grain of *Laudanum* upon the same Occasion; which brought on a Dropsy, of which she died some Months after.

TUMORS OF THE BREASTS.

If a Woman takes Cold at her Breast, or any where else, during her Lying-in, her Breasts are very subject to Inflammations, which generally terminate in an Abscess, if not prevented.

La Motte's Method of treating these Cases, as appears by Obs. 434. is to endeavour, first, to resolve the Tumor by Bleeding, emollient Clysters, and a low Regimen, by Applications of warm Milk and Brandy, and an Ointment of the Oils of Roses, Lillies, and Chamomile.

But if the Resolution is impossible, and an Abscess must necessarily be produc'd, he makes use of an anodyne Cataplasim of the Crums of wheaten Bread, Milk, the Yolks of Eggs, Saffron, and Oil of Chamomile; and afterwards changes this Form for one more emollient, and consisting of a Mucilage of Linseed, Mallows, Marshmallows, Rye, Meal, Bran of Wheat, Chamomile-flowers, and Melilot, together with the Oils of Lillies, and Chamomile; and again changes this for one more maturative, and which consists of Onions roasted under the Ashes, old Leaven, and Ointment of Marshmallows. When Matter is perfectly form'd, he lets it out with a Lancet, deterges, incises, and cicatrizes.

These Accidents will sometimes be caus'd by Cold taken during Labour.

La Motte says, he has known several Women have an Apoplexation in the Breasts, only for having laid their Hands and Arms out of Bed.

AFTER-PAINS.

After-pains are very useful to a Woman; for these promote the Discharge of the Lochia, and expel Clots of Blood, or any thing which is left behind, and ought to come away.

After-pains are easily distinguish'd from Pains of any other kind; for they come by Fits, and last but a little while; and the Lochia flow abundantly, especially just after the Pain ceases, which does not happen after Colic-pains.

In Pains which proceed from an Inflammation of the Womb, or Suppression of the Lochia, the Belly is hard, distended, and painful, which never happens in the Case of After-pains.

As most Women are subject to these After-pains, and as they are of real Service, nothing more is necessary than to apply a soft and warm Napkin to the Belly, and to keep the Woman very warm.

Sweating often relieves a Woman from these Pains, provided it be spontaneous.

Sometimes After-pains are more violent than Labour-pains, and become almost insupportable, but cease generally in two or three Days, but sometimes continue seven or eight. *La Motte*, however, in this Case leaves the Cure to Nature, unless the Woman is coxive, and then he advises an emollient Clyster.

THE COLIC.

The Colic is easily distinguish'd from After-pains, because a Colic does not increase the Discharge of the Lochia, which After-pains do, especially just after they cease.

For the Cure of the Colic, *La Motte* recommends emollient Clysters, and Fomentations with new Milk.

This Author recommends an Ounce of Oil of sweet Almonds in half a Glass of Wine, and a little Sugar, or Syrup of Maidenhair, to be taken at once, as very proper in the Colic.

VAPOURS.

Some Women in Child-bed are so subject to Vapours, that the least Surprise give Occasion to them; or a good or bad Smell of any thing, particularly Musk. They are attended with a sudden Heat and Redness all over the Face and Body, violent Agitations, Trembling, Inquietude, Respiration either high and frequent, or weak and slow; Tears, and an Inaction of all the Parts of the Body, almost as much as in a Lethargy.

La Motte says, he has known Women seiz'd with Vapours upon being oblig'd to keep their Hands in Bed, which have ceas'd immediately after taking them out again.

Sometimes Vapours are so violent, as to make a Woman delirious; and sometimes the Pulse is so weak and languishing, that the Woman seems expiring; however, *La Motte* says, he never knew any one die of them.

The Remedies recommended by the same Author, in this Case, are Spirit of Sal Ammoniac, and Oil of Amber, to smell to; the Confection of the Hyacinth, in Water of Mugwort: Clysters of Whey, Mugwort, Feverfew, Rue, Camphire and Castor, he, also, says, are good Medicines in this Case.

A Sense of Suffocation and continual Efforts to swallow, are sometimes Symptoms of the Vapours. *La Motte*.

MISCELLANEOUS OBSERVATIONS.

A Woman has sometimes all the Signs of Pregnancy, without being with Child, the Symptoms of Impregnation being caused by a great Collection of Water in the Womb. In this Case, the Belly is much bigger than in that of a Mole; when the Woman lies on her Back, with her Knees elevated, her Belly is found soft and equal all over, without any Difference betwixt the inferior and superior Part, which is contrary to what happens in Pregnancy; besides, the Woman does not perceive the Child to move at the usual time; the Woman's Face is moreover generally pale and emaciated.

In an Ascites, when a Woman lies upon her Back, and an Hand is placed on each Side the Belly, when the Belly is press'd with one Hand, a Fluctuation is perceiv'd by the other; but, in the Case before us, no such Fluctuation can be perceiv'd.

These Waters are frequently discharg'd, at different Periods of Time, without any considerable Accidents.

These Waters are sometimes contain'd in a Membrane, which is attach'd to the Womb by some Blood-vessels; and in this Case there will be a Flooding, till the Membranes are excluded; but if the Membranes happen to stay long enough to putrefy, besides the Accident of Flooding, and Pains like those of Labour, the Woman will be seiz'd with violent Pains in her Head, and Shiverings, tho' at the same time extremely hot and burning to the Touch, and sometimes a Delirium.

Sometimes the Womb is so distended with Wind, as to give all the Appearances of Impregnation, notwithstanding which the Menstrual Flux continues often. In this Case, at the End of eight or nine Months, or sooner, the Womb discharges itself involuntarily of these Flatulencies with a Noise, as if it came from the Anus, and the Woman recovers without any farther ill Consequence. *La Motte* gives us an Example of this kind.

It must be observed, that the Woman mention'd by *La Motte* had a true Conception immediately after the Discharge of these Flatulencies.

When a Woman takes Cold during a Lying-in, 'tis a good Symptom not to have the Lochia stop'd, and to have the Belly soft and even.

La Motte gives an Instance of a Woman under these Circumstances, who was seiz'd with a violent Looseness, attended with a Shivering, and Pains all over, and want of Rest, whom he cured, by giving her an half Clyster of Broth; two Hours after that, an Ounce of Oil of sweet Almonds; and an Hour after that, a Draught of Broth: And then adding a few more Cloths on the Bed, she sweat plentifully, and recover'd of all these Symptoms by the next Day.

In order to examine whether the Belly is swell'd or not, the Woman must be put in the same Posture, as is directed by *La Motte* for Delivery; that is, upon her Back, with her Knees elevated, and Heels placed near the Buttocks. *La Motte*.

When a Woman is in Labour, there shou'd be a Fire in the same Room, or one very near it, let the Season be never so hot. For the Water flowing away at every Pain, will make her take Cold, if she is not constantly supplied with warm Cloths.

Hippocrates mentions Cold, as condensing the Lochia, and directs Patients under these Circumstances to be made warm.

When a Woman has sweated profusely for the eight or ten first Days of her Lying-in, it often hardening upon the Skin, causes a troublesome Itching. In this Case *La Motte* approves

of *Mauriceau's* Advice, who directs a Bath of warm Water. But, in cold Weather, this must be done with Care and Caution, for fear of opening the Pores too much.

Nothing is more serviceable to Women in Child-bed, than plentiful Sweats; for they prevent Fevers, and all other bad Consequences; and cure them when they happen. Inasmuch that 'tis common to see a Woman seiz'd with Shiverings, and Pains in the Breasts, Hips, and other Parts, attended with a violent Fever, and recover very soon by plentiful continu'd Sweats. *La Motte*.

La Motte's Method of Regimen for Women in Child-bed, is to give them, from time to time, a little Broth; and sometimes a little Toast and Wine, if there is no Reason to apprehend a Fever.

He recommends the following Mixtures, as a proper Drink for Lying-in Women.

Two Quarts of Water, Cinnamon a Dram, Sugar two Ounces.

Let these boil a quarter of an Hour, and then let it be drank always warm. If no Fever is apprehended, a little Wine may be added.

If the Woman continues costive till the third Day, he says, he never fails giving an emollient, or gently purging Clyster.

And the fifth Day he allows Fowl, either roasted or boil'd.

The Meconium is the Excrement of the Child, of the Consistence of Honey, and of a brownish Colour.

If this is discharg'd from the Womb, when the Child is well situated, 'tis a Sign the Child is dead, especially if the Labour is long, and particularly if the Navel-string presents before the Head. But when the Child presents in any constrain'd Situation, especially with the Buttocks, no Notice is to be taken of it, nor any Conclusion to be drawn from it with respect to the Child's Death. *La Motte*.

Women in Child-bed, upon exposing themselves to the Cold, whilst they sweat especially, are sometimes seiz'd with violent Pains in the Side, attended with a Cough, and Fever, and Difficulty of Respiration, tho' at the same time the Lochia proceed well.

La Motte seems in this Case to treat a Woman with great Judgment, his Intention being to relax by all possible means. He, therefore, directs Bleeding in small Quantities, and repeats it at short Intervals, if necessary; and gives emollient Clysters of Whey only; making the Patient drink large Quantities of diluting Liquors. He bleeds in the Arm, and repeats it, till the Pain ceases, and affirms that Bleeding is the only Remedy to be depended on in these Cases.

Vomiting is generally a Sign of a speedy Delivery; but, when it continues long, it becomes a very pernicious Symptom, because it prevents the Woman from taking any proper Nourishment to keep up her Strength.

If a Woman in Labour vomits a black Matter, or Substance like Hogs-blood boil'd and coagulated, 'tis a fatal Symptom, especially if it smells offensively. *La Motte*.

OBSTRUCTION. An Obstruction. See INFLAMMATIO.

An Obstruction is such an Obstruction of the Vessels, as prevents the Circulation of the Fluids, whether of the sound and vital, or of the morbid and peccant Kind, through them; arising from an Excess of the Bulk of the Fluid to be transmitted above the Capacity of the Vessel which ought to transmit it.

Such an Obstruction proceeds either from the Narrowness of the Vessels, or the excessive Bulk of the Fluids to be transmitted thro' them, or from a Concurrence of both these Circumstances.

The Narrowness of the Vessels is produced, either by external Compression, the proper Contraction of the Vessels themselves, or an increased Thickness in their Membranes.

The Bulk of the Molecules of the Blood is increased by the Viscidity of the Fluids, or by means of an *Error Loci*.

An Obstruction may, also, proceed from a Narrowness of the Vessels, in Conjunction with a preternatural Bulk of the Molecules of the Fluids.

The Vessels may be externally compressed,

First, By an adjacent Tumor, either of the plethoric, inflam'd, purulent, scirrhus, cancerous, cedematous, encysted, steatomatous, atheromatous, melicerous, hydatidic, aneurismatic, varicose, trophous, pituitous, calculous, or callous Kind.

Secondly, By Fractures, Luxations, Distortions, or Distractions of the harder Parts of the Body, compressing the flexible and pliant Vessels.

Thirdly, By every Cause which preternaturally stretches and lengthens the Vessels, whether by a Tumor, or the Pressure of a Part when out of its natural Situation, or by an external stretching Force.

Fourthly, By external compressing Causes, such as too tight Cloths, Bandages, the Weight of an incumbent Body pressing upon one particular Part, and Ligatures. This Effect may, also, be produced by Motion, Attrition, and embracing other Bodies; for, when any Part of the human Body is moved against an hard Obstacle, the flexible Vessels are necessarily compressed: Those who

who are not accustomed to travelling, have their Feet inflamed by long Journeys; and those who tug severely at the Oar, have their Hands inflamed; and, if that Exercise is long-protracted, Vesicles of an almost gangrenous Nature are raised.

An increased Contraction, especially of the spiral Fibres, and, also, of the longitudinal, lessens the Cavities of the Vessels; and this Contraction arises, first, from every Cause which increases the elastic Force of the Fibres, Vessels, and Viscera. Secondly, from the Tumor, and preternatural Distention, of those minute Vessels, by a Contixture of which, the Sides of the larger Vessels are formed. And, thirdly, by a Diminution of that Cause which dilates the Vessels, whether, for Instance, Inanition, or a languid State of the Vessels: Hence Vessels, when divided, soon confine and restrain the Discharge of their contained Fluids; and the Reason of this is sufficiently obvious: For whilst the Blood is, by the Force of the Heart, propelled into the Arteries, the greater Resistance there is about their Extremities, the more they are dilated. But, when an Artery is divided, there is scarcely any Resistance, and the Blood flows freely from the Wound. In consequence of this, the Artery is not distended, but by its own Contractility is gradually more contracted, till at last it totally hinders the Effusion of the Fluid, which would otherwise be discharged. Hence it is, that so violent Hæmorrhages happen from half-divided Vessels; which cannot be successfully stoppt, till the Vessels are totally divided.

The Thickness of the Membranes of the Vessels is increased, first, by every Tumor happening in those Vessels, by the Union and Contixture of which the Membranes are formed: And, secondly, by Calluses either of a cartilaginous, membranous, or bony Nature, formed there.

The Bulk of the Fluids is so increased, as to become incapable of circulating either, first, by a Change of the spherical Figure of their Parts, into any other; and thus entering the Cavities of the Vessels under a larger Surface: Or, secondly, by the Union of several Molecules before separated.

The Figure of these Molecules is principally changed by a Cessation of the equable and uniform Pressure upon them, so that they are left to their own Elasticity; and this happens, when the Motion of the Blood is languid, the Vessels relaxed, or the Quantity of the Fluids diminished.

The Molecules of the Fluids are united by Rest, Cold, Frost, Exiccation, Heat, a violent Circulation of the Blood, a strong Compression of the Vessels, as, also, by acid, coagulating Things; by austere, spirituous, and absorbent Substances; and by the Viscidity and oleous Quality of the Fluids.

By an *Error Localis*, the Fluids become incapable of circulating, if Corpuscles enter the dilated Bases of conical Vessels, and are, at the same time, incapable of passing through the narrower Parts of these Vessels: A Plethora; an increased Motion of the Fluids, their Rarefaction, or a Relaxation of the Vessels, principally produce this Dilatation; especially, if these are immediately succeeded by their Contraries.

Hence the Causes and Nature of every Kind of Obstruction may be understood.

An Obstruction, happening in a live Body, hinders the Circulation of the Fluids, which ought to pass through the Vessels; stops the other Particles of the Blood convey'd to it, and receives their Action; expresses the more subtiler, and unites the grosser Parts of the Fluids; extends, dilates, attenuates, and resolves the Vessels; condenses the stagnant Fluids; destroys the Functions arising from an uninterrupted Circulation; empties and dries the Vessels, which ought to have the circulating Fluids convey'd into them; lessens the Capacities of the Vessels, which ought to transmit the Fluids; augments both the Quantity and Velocity of the Fluids in the unobstructed Vessels; and, consequently, produces all the Evils which can arise from thence.

For this Reason, the Effects of an Obstruction are various, according to the Diversity of the obstructed Vessel, and the obstructing Matter.

In the sanguiferous arterial Vessels, an Inflammation of the first Kind happens; in the dilated lymphatic, arterial Vessels, an Inflammation of the second Kind; in the larger lymphatic Vessels, an Oedema; in the smaller, Pains without any apparent Tumor; but in the pinguiferous, osseous, medullary, and biliary Vessels, other Disorders arise from an Obstruction.

The Physician, who knows the Seat, the Nature, the Matter, the Causes, and the Effects of Obstructions already mentioned, will easily discover the Signs of a future and present Obstruction, together with their Effects.

When the different Kinds of Obstructions are distinctly known, 'tis no difficult Matter to find a Cure adapted to each.

For that Species of Obstruction which arises from external Compression, indicates the Removal of the compressing Cause, if possible.

That Species of Obstruction, which arises from an increased Contraction of the Fibres, may be known by those Signs which discover a Contraction of the Viscera, Vessels, and Fibres. That Kind of Obstruction in which the Contraction arises from a Tumor of the minute Vessels, which constitute the Sides and Cavities of the larger Vessels, may be discovered by the manifest Signs

of its Cause; as, also, that Species of Obstruction which arises from Inanition, or a Diminution of the Cause which dilated the Vessels.

This Species of Obstruction is removed, first, by such Medicines as correct the too great Contraction of the Fibres, Vessels, and Viscera; secondly, and more especially, if their Virtues have immediate Access to the Part affected, which Advantage is principally obtained by Fomentations, Fumigations, Baths, and Ointments; thirdly, by such Remedies as empty the too full Vessels composing the Membranes. This Intention is answered by Evacuants in general, but especially by laxative, diluting, resolvent, attenuating, detergent, and evacuant Medicines apply'd to the Vessels themselves; and, fourthly, by such Medicines as resolve Callosities, when formed.

But the Species of Obstruction, which arises from this Cause, is rarely or never to be cured: Emollient and relaxing Medicines are, however, most efficacious. Hence appears the inevitable Necessity of Death, and the great Difficulty of procuring a long Life, by means of Medicines.

That Unfitness of the Fluids for passing through the Vessels, which depends upon their losing their spherical Figure, may be known from an Investigation of its Causes, which are, for the most part, subjected to the Senses.

It is cured by such Remedies as restore the spherical Figure of the Globules of the Blood: Of this Kind are all those Things which increase the Motion of the Fluids through the Vessels and Viscera, such as all stimulating and corroborating Medicines, as, also, brisk Motion.

As the Concretion and Inspissation of the Fluids arises from so various and different Causes, so it requires different Methods of Treatment, and different Medicines, according to the different Conditions of the Patient: And this Diversity of Causes, when investigated, will discover the most proper Medicines, and the best Method of using them.

The Concretion of the Humours, in general, is removed, first, by the reciprocal Motion of the Vessels; secondly, by Dilution; thirdly, by an attenuating Fluid convey'd to the Mass of Blood, mixed with it, and circulating along with it; and, fourthly, by removing the coagulating Cause.

The reciprocal Motion of the Vessels is procured, first, by such Remedies as diminish the distending Causes, such as Venesection; secondly, by such Medicines as corroborate the Vessels; thirdly, by Friction, and muscular Motion; and, fourthly, by stimulating Medicines.

Water, especially when warm, is a powerful Diluent, when drank, injected, received by Exhalations, or apply'd in any other manner; provided it is propelled from the Parts to which it is apply'd, to those where the Matter, to be resolved, is lodged. This Intention is answered by deriving, attracting, and propellent Remedies.

The Fluids are attenuated, first, by Water; secondly, by Sea-salt, Sal Gemmae, Sal Ammoniac, Nitre, Borax; fixed and volatile alkaline Salts; thirdly, by native Soaps, consisting of an Alkali, and an Oil; by compound Soaps, whether fuliginous, volatile, or fixed; as, also, by Bile.

Native Soaps, consisting of an Oil, and an Alkali, are recent and mature Juices, expressed from all Herbs abounding with an alkaline Acrimony, or such as are of an highly aromatic Quality. Artificial Soaps, consisting of an Alkali and Oil, are black Soap, and Venice Soap, one or two Drams of which may be used; and Starkey's, or Helmont's Soap, four Grains, or one Scruple, of which may be used. Fuliginous volatile Soaps are, oleous and alkaline Spirits prepared of alkaline Aromatics, fifteen Drops of which may be exhibited; oleous alkaline Spirits prepared of Soot, fifteen Drops of which may be given; the oleous alkaline Spirits prepared from all the Humours or solid Parts of Animals, eighteen Drops of which may be exhibited. To this Class, also, belongs Soot itself.

And, fourthly, the Attenuation of the Humours is promoted by Preparations of Mercury. All these are convey'd to the Parts obstructed, by Derivation, Attraction, and Propulsion. Proper Mercurials are Mercurius dulcis, ten Grains of which may be used for a Dose. Corrosive Sublimate, one eighth Part of a Grain may be exhibited, diluted in some proper Liquor; red Precipitate, two Grains for a Dose; white Precipitate, four Grains; Turbith Mineral, two Grains; and Ethiops Mineral, sixteen Grains.

Attracting Medicines are such as relax the Place to which the Matter is to be convey'd; and straiten that from which it is to be drawn. These are specified under the Article FIBRA.

Deriving Medicines are those which invite the Fluids into any given Part; and such are the Remedies which produce an Evacuation in the Part affected; and artificial Frictions of the adjacent Parts.

Propellent Medicines are those of the stimulating Kind, which are specified under the Article GLUTEN.

The Cause which coagulates the Fluids, is removed by the Influence of strongly-attracting Medicines: Thus Acids and Oils are attracted into Alkalies, as is obvious from chymical Experiments.

But when the Fluids, propelled into improper Places, become incapable of circulating, and by that means generate Obstructions, many and violent Disorders are produced; for which Reason the Source and Cause from which they proceed, ought to be carefully attended to.

We may know, that the Fluids are propelled into improper Places, first, if we know, that the Causes of such a Disorder, which are generally sufficiently obvious, have preceded; secondly, if contrary Causes have succeeded these; and, thirdly, if the Effects are evidently perceived.

From what has been before said, we may easily foresee what the Consequences of such a Disorder must be.

The Cure is obtained, first, by repelling the impacted Matter, with a retrograde Motion, into larger Vessels; secondly, by resolving it; thirdly, by relaxing the Vessels; and, fourthly, by Suppuration.

The impacted Matter is repelled with a retrograde Motion, first, by evacuating the Fluid which acts upon the impacted Matter, by a liberal and sudden Venesection, by which means the obstructing Matter is forced back by the Effort of the contracted Vessel; and, secondly, by Friction, performed from the Extremities to the Bases of the Vessels.

The impacted Matter is resolved, and the Vessels relaxed, by the Medicines already mentioned. *Boerhaave's Aphorisms.*

I have been the less particular in explaining these Aphorisms, because they will be readily understood, by what is said under the Articles FIBRA, and INFLAMMATIO.

OBTUNDENTIA. Medicines which obtund, or correct the Acrimony of the Humours.

OBTURATIO. Obturation, or Obstruction. See OBSTRUCTION.

OBTURATOR. A Name for two Muscles of the Thigh; one of which is the MARSUPIALIS, and is called, *Obturator Internus*. See MARSUPIALIS. The other is the

OBTURATOR EXTERNUS. This is a small flat Muscle, which fills up the Foramen Ovale of the Os Innominatum exteriorly, and reaches from thence to the great Trochanter of the Os Femoris, behind the Neck of that Bone.

It is fixed by fleshy Fibres to the outer or anterior Side of the Os Pubis, all the Way to the Foramen Ovale, to the Edge of that Hole, next the small Branch of the Ischium, and a little to the neighbouring Parts of the Obturator Ligament.

From thence its Fibres, contracting in Breadth, pass on the fore Side of the great Branch of the Ischium, under the Acetabulum, where a Tendon is formed, which continues its Course behind the Neck of the Os Femoris towards the great Trochanter, and is inserted between the Gemelli and Quadratus, into small Fossulae, between the Apex of the great Trochanter and the Basis of the Collum Femoris.

The Obturator Externus concurs with the Internus in the same Uses, tho' in a more simple, and in a more uniform Direction. It acts chiefly when the Thigh is extended more or less; for, when the Thigh is bent, it only seems to co-operate with the Obturator Internus, in its Action on the Orbicular Ligament; because, in other respects, it is rather an Assistant to the Triceps, and performs the Motion of Rotation the other Way. *Winslow's Anatomy.*

OCCASIO, in Medicine, imports either Opportunity, a due Regard to which is of very great Importance to a Physician; or sometimes it signifies a Cause.

OCCIDENS. Vinegar. *Rulandus.*

OCCIDENS STELLA. Sal Ammoniac. *Rulandus.*

OCCIPITALIS MUSCULUS. The Occipital Muscle. See CAPUT.

OCCIPITO-FRONTALIS, according to *Douglas*, is a Muscle of the Head; which he thus describes.

It arises fleshy from the transverse Line of the Occiput, opposite to Part of the superior Termination of the *Mastoidaeus*, and Part of the Beginning of the *Trapezius* next it, and then tendinous from the rest of that Line backwards, arising after the same manner, on the other Side; from thence it grows strait up, and soon becoming all tendinous, it covers the two parietal Bones, and the *Ossa Squamosa*, above the Temporal Muscles, its outer Edge being fastened to the *Os Jugale*, on each Side. This broad Tendon near the Coronal Suture grows fleshy, and descends with strait Fibres as low as the *Musculi Orbiculares*.

It is inserted into the Skin at the Eye-brows, having sent down, between them, a narrow fleshy Slip, or Elongation, which is continued over the *Ossa Nasi*, as far as its cartilaginous Part, where its Fibres run off on each Side, and terminate in the Skin above the *Musculus Nasi Proprius*.

When this digastric Muscle, which covers all the upper Part of the Skull, like a Cap, acts, it pulls the Skin of the Head backwards, and at the same time it draws up and wrinkles that of the Forehead, being antagonized by the *Corrugator*. *Douglas's Myograph. Comp.*

OCCULTUS. Occult. Cancers not exulcerated, are called occult Cancers.

OHEMA, *ὄχμα*. The finest and most fluid Part of the Blood and Chyle. *Galen*. It seems to be what the *Moderis* call Lymph.

OCHETEUMATA, *ὀχετώματα*. The Foramina of the Nose.

OCHETOS, *ὀχέτος*. A Passage, Duct, or Canal, in any Part of the Body. It is principally used, by *Hippocrates*, with respect to the Passages for Urine, Stools, and Sweat.

OCHEUS, *ὀχέως*. The Scrotum.

OCHRA, *Offic. Mer. Pin. 218. Charlt. Foss. 2. Schrod. 320. Ochra Anglica. Worm. 17. Ochra. Aldrov. Mus. Metall. 254. Ochra nativa. Calc. Mus. 137. Ochra nativa five Sil Gossariensis. Kentm. 8. Ochra fossilis seu nativa crocei coloris. Dougl. Ind. 64. Vitriolum abortivum. Lillar. de Font. Sil. Plin. YELLOW OKER.*

It is an argillaceous Substance, of a yellow or luteous Colour, and an astringent Taste. As to its Virtues; it is drying, astringent, discutient, and repelles Excrecences. It is very seldom used, and never but externally, and that principally in Marks by Blows or Stripes, and in Collisions, and for discussing hard Tumors, *Dale*.

OCHREA. The fore Part of the Tibia.

OCHRUS.

The Characters are;

It has a round, smooth, cylindrical Pod, which is full of round Seeds; and the Leaves are articulated; sometimes simple, sometimes conjugated, and terminate in Tendrils.

Boerhaave mentions but one Sort of this; which is,

Ochrus folio integro Capreolos emittente. G. B. P. 313. Lathyrus folio integro, producente bina foliola, Capreolos emittentia. M. H. 2. 58. Lathyrus Species, quæ Ervilia Dodonæi sylvestris. J. B. 2. 17. 305. Ervilia sylvestris. Dod. p. 522. Boerh. Ind. alt. Plant. Vol. 2. p. 43.

The Seeds, which are cylindrical, of the Size of a small Pea, and of a dark-yellow Colour, are eatable, but generate a viscid Chyle, subject to cause Obstructions. *Hist. Plant. adscript. Boerhaav.*

OCHTHODES, *ὀχθόδες*, from *ὄχθος*, importing the tumid Lips of Ulcers. Callos, tumid. It is also an Epithet for Ulcers which are difficult to heal.

OCIMASTRUM. See OCYMASTRUM.

OCIMUM. See OCYMUM.

OCLASIS, *ὀκλασις*. That Posture which is called *Courting*; which is, when a Person, standing, brings his Knees forwards, towards which the Abdomen approaches, whilst the Buttocks descend, and come near to the Ground, or the Heels.

OCOB. Sal Ammoniac. *Rulandus.*

OCOLOXOCHITL, *seu Flos Tigris*. *Hernandez. Tigridis Flos. C. B. Dod. Lob. Ger. Tigridis Flos. Dracunculi Species putata. J. B.*

It is described by *C. Bonhine*, and *F. Hernandez*, as having a Root like a Leek, Leaves like the *Gladialis*, a Flower of a very beautiful red Colour, but white in the Middle, and spotted like a Tyger's Skin; whence it took its Name.

An Ounce of the Root, taken in Water, cools the Body, and extinguishes a Fever, and prevents those minute Eruptions [*Punctis adversatur*], which are usually consequent upon Burning Fevers. Some say, the Root, eaten, causes Fecundity; for it is esculent, and a cold, tho' not altogether unpleasant Food, lubricous, and good for the Breast.

It delights in a temperate Climate, like that of the City of Mexico; and thrives best in Gardens, and moist and cultivated Places. *Raii H. P. p. 1165.*

OCRIS, *ὀκρίς*, is expounded by *Galen*, in his *Exegesis*, an oblong Prominence, or Eminence. Hence *ὀκρινός*, and *ὀκρινός*, Adjectives which import, having an oblong Eminence, or Protuberance.

OCTUNX. Eight Ounces.

OCULARIA. A Name for the *Euphrasia*, Eyebright.

OCULI CANCRORUM. Crabs-eyes. See CANCER.

OCULISTA. An Oculist.

OCULUS. The Eye.

The Eyes are commonly two in Number, situated at the lower Part of the Forehead, one at each Side of the Root of the Nose; and they are made up of hard and soft Parts. The hard Parts are the Bones of the Cranium and Face, which form two pyramidal or conical Cavities, like Funnels, to which we give the Name of Orbits. The soft Parts are of several kinds.

The principal and most essential soft Part in each Organ, is the Globe or Ball of the Eye; the others are partly external, and partly internal: The external Parts are the Supercilia, or Eye-brows, the Palpebrae, or Eye-lids, the Caruncula lachrymalis, and the Puncta lachrymalia; and the internal Parts are the Muscles, Fat, lachrymal Gland, Nerves, and Blood-vessels.

THE ORBITS.

Seven Bones are concerned in the Composition of each Orbit, the Os Frontis, Os Sphenoidale, Os Ethmoides, Os Maxillare, Os Malæ, Os Unguis, and Os Palati. In each Orbit we are to consider the Edge, Sides, and Bottoms: The Edge is formed by the Os Frontis, Os Maxillare, and Os Malæ; the Bottom by the Os Sphenoides, and Os Palati; and all these Bones, except the Os Palati, contribute to form the Sides.

The Bottom is perforated by the Foramen Opticum of the Os Sphenoides; and the external Side near this Foramen, by two orbitary Fissures; one superior, called *Sphenoidales*, the other inferior, called *Spheno-maxillaris*.

All the Cavity of the Orbit is lined by a Membrane, which is an Elongation or Production of the Dura Mater; and it comes partly through the Foramen Opticum of the Os Sphenoides, and partly through the sphenoidal or superior Orbit of the Fissure. This Membrane, which may be looked upon as the Periosteum of the Orbit, communicates with the Periosteum of the Basis Cranii, by the inferior Orbitary Fissure, and with the Periosteum of the Face at the Edge of the Orbit. At the upper Part of the Edge of the Orbits, the two Periosteæ form a kind of broad Ligament, and a narrow one at the lower Part of this Edge, which I shall call Ligaments of the Palpebræ.

The particular Situation of the Orbits represents nearly two Funnels, placed laterally at a small Distance from each other, in such a manner as that their Apices are almost joined, their nearest Sides almost parallel, and the other Sides turned obliquely backward; and, for this Reason, the Middle of the great Circumference or Edge of each Orbit is at a much greater Distance from the Septum Narium, than the Bottom, or Apex; and the Edge, or great Circumference, is very oblique; the temporal or external Angle of the Orbit lying more backward than the nasal or internal Angle.

THE GLOBE OR BALL OF THE EYE.

The Globe of the Eye, being the most essential of all the soft Parts belonging to the Organ of Sight, and being likewise a Part which we are obliged to mention as often as we speak of the other soft Parts, must be first described. It is made up of several proper Parts, some of which, being more or less solid, represent a kind of Shell, formed by the Union of several membranous Strata, called the Coats of the Globe of the Eye; and the other Parts, being more or less fluid, and contained in particular membranous Capsulæ, or in the Interstices between the Coats, are termed the Humours of the Globe of the Eye. These Capsulæ are likewise termed Coats.

The Coats of the Globe of the Eye are of three kinds: Some form principally the Shell of the Globe; some are additional, being fixed only to a Part of the Globe; and some are capsular, which contain the Humours. The Coats which form the Shell, are three in Number: The external, whence the Convexity of the Globe proceeds, is termed *Tunica Sclerotica*, or *Cornea*; the middle Coat is named *Choroides*; and the third or innermost, *Retina*. The additional Coats are two, one called *Tendinosa*, or *Albuginea*, which forms the White of the Eye, and the other *Conjunctiva*. The capsular Tunics are, also two, the *Vitreæ* and *CrySTALLINA*.

The Globe of the Eye, thus formed, sends out backward a pretty large Pedicle, which is the Continuation of the Optic Nerve: It is situated about the middle of the Orbit, in the manner which we shall afterwards see; and it is tied to it by the Optic Nerve, by six Muscles, by the *Tunica Conjunctiva*, and by the Palpebræ. The back Part of the Globe, the Optic Nerve, and Muscles, are surrounded by a soft fatty Substance, which fills the rest of the Bottom of the Orbit.

The Humours are three in Number, the Aqueous, Vitreous, and CrySTALLINE: The first may properly be called an Humour, and is contained in a Space formed in the Interstices of the anterior Portion of the Coats. The second, or Vitreous Humour, is contained in a particular membranous Capsula, and fills above three Fourths of the Shell, or Cavity of the Globe of the Eye. It has been named Vitreous, from its supposed Resemblance to melted Glass, but it is really more like the White of a new-laid Egg.

The CrySTALLINE Humour is so called, from its Resemblance to Crystal; and is often named, simply, the CrySTALLINE. It is rather a gummy Mass, than an Humour, of a lenticular Form, more convex on the back than on the fore Side, and contained in a fine Membrane, called *Membrana*, or *Capsula CrySTALLINA*.

THE COATS OF THE EYE IN PARTICULAR.

The most external, thickest, and strongest Coat of the Eye, is the *Sclerotica*, or *Cornea*; and it invests all the other Parts of which the Globe is composed: It is divided into two Portions,

one called *Cornea Opaca*, the other *Cornea Lucida*, which is only a small Segment of a Sphere, situated anteriorly.

The *Cornea Opaca* is made up of several Strata, closely connected together; and is of an hard compact Texture, resembling Parchment. About the Middle of its posterior convex Portion, where it sustains the Optic Nerves, it is in a manner perforated, and thicker than any-where else, its Thickness diminishing gradually toward the opposite Side; and its Substance is penetrated obliquely in several Places by small Blood-vessels. The Course of the nervous Filaments through this Coat is very singular; they enter the convex Side at some Distance from the Optic Nerve, and, running thence through its Substance, they pierce the concave Side, near the *Cornea Lucida*.

The *Cornea Lucida*, called, likewise, simply, *Cornea*, the opaque Portion being named *Sclerotica*, is made up, in the like manner, of several Strata, or Laminæ, closely united; and appears to be a Continuation of the opaque Portion, or *Sclerotica*, though of a different Texture. When macerated in cold Water, it swells.

This Portion is something more convex than the *Cornea Opaca*, so that it represents the Segment of a small Sphere, added to the Segment of a greater; but this Difference is not equally great in all Persons. The Circumference of the convex Side is not circular, as that of the concave Side, but transversely oval; for the superior and inferior Portions of the Circumference terminate obliquely; but this Obliquity is more apparent in Oxen and Sheep, than in Man.

The *Cornea Lucida* is perforated by a great Number of imperceptible Pores, through which a very fine Fluid is continually discharged, which soon afterwards evaporates; but we discover it evidently, by pressing the Eye soon after Death, having first wiped it very clean; for we then see a gradual Collection of a very subtil Liquor, which forms itself into little Drops; and this Experiment may be several times repeated on the same Subject. It is this Dew that forms a kind of Pellicle on the Eyes of dying Persons, which sometimes cracks soon after.

The second Coat of the Globe of the Eye is the *Choroides*; which is of a blackish Colour, more or less inclined to red, and adheres, by reason of a great Number of small Vessels, to the *Cornea Opaca* from the Insertion of the Optic Nerve, all the Way to the Union of the two *Corneæ*, where it leaves the Circumference of the Globe, and forms a perforated Septum, by which the small Segment of the Globe is separated from the greater. This Portion goes commonly by the particular Name of *Uvea*, which was formerly given to the whole second Coat; and as it is of different Colours in several Subjects, it has likewise got the Name of *Iris*; which Term, however, agrees more precisely to the coloured Surface of this Portion, and, would even be very improper for this Surface, in Persons where it is uniformly brown, black, or blackish.

The external Lamina of the *Choroides* is stronger than the internal, and both appear blackish, because of their Transparency. At a very small Distance from the Union of the two *Corneæ*, this Lamina is most closely united to the *Cornea Opaca*, Round this Adhesion it changes Colour, and forms a whitish Ring of the same Breadth with the Adhesion; and near the Edge of the *Sclerotica*, this Ring is stronger, and of different Texture from what it is any-where else. It adheres so closely to the *Sclerotica*, that if we blow through a small Hole made therein, without touching the *Choroides*, the Air will penetrate every-where between the two Coats, but cannot destroy this Adhesion, or pass to the *Cornea Lucida*. This Adhesion has been improperly named *Ligamentum Ciliare*. On the inner Surface of this Lamina, we discover a great Number of flat Lines in a vortical Disposition, which are the Vessels named by *Steno* *Vasa Vorticosa*, or *Vortices Vasculosi*, of which hereafter.

The internal Lamina of the *Choroides* is thinner than the external, and its Surface, together with the corresponding Surface of the other Lamina, is covered by a blackish Substance with some Mixture of Red, which easily separates when touched, and immediately tinges the Water in which the *Choroides* is dipt. The Origin of this Substance has not as yet been discovered; but, after a nice anatomical Injection, I have observed a great Number of vascular Stars on the inner Surface of this Lamina. In *M. Ruysch's* Works, it is termed *Membrana Ruyschiana*.

The anterior Portion, or perforated Septum of the *Choroides*, has the Name of *Uvea*; and the Hole near the Centre of this Septum is called *Pupilla*. The anterior Lamina of the same Septum is termed *Iris*, and the radiated Plicæ of the posterior Lamina, *Processus Ciliares*. Between the two Laminæ of the *Uvea*, we find two very thin Planes of Fibres, which appear to be fleshy; the Fibres of one Plane being orbicular, and lying round the Circumference of the *Pupilla*, and those of the other being radiated, one Extremity of which is fixed to the orbicular Plane, the other to the great Edge of the *Uvea*.

The Plicæ, or Processus Ciliares, are small radiated and prominent Duplicatures of the posterior Lamina of the Uvea; and their Circumference answers partly to that of the white Ring of the external Lamina. They are oblong thin Plates; their posterior Extremities, or those next the Choroides, being very fine and pointed; the others, or those next the Pupilla, broad, prominent, and ending in acute Angles. In the Duplication of each Ciliary Fold, we find a fine reticular Texture of Vessels; and some pretend to have seen fleshy Fibres in the same Place, lying in small Grooves of the Membrana Vitrea, as we shall see hereafter.

The Space between the Cornea Lucida and Uvea contains the greatest Part of the aqueous Humour, and communicates by the Pupilla with a very narrow Space behind the Uvea, or between that and the Crystalline. These two Spaces have been termed, *The Two Chambers of the aqueous Humour*, one anterior, the other posterior, as I shall observe in describing this Humour in particular.

The third Coat of the Eye is of a very different Texture from that of the other two Coats. It is white, soft, and tender, and, in a manner, medullary, or like a kind of Paste spread upon a fine reticular Web. It appears to be thicker than the Choroides, and reaches from the Insertion of the Optic Nerve to the Extremities of the Ciliary Radii, being equally fixed to the Choroides through its whole Extent. At the Place which answers to the Insertion of the Optic Nerve, we observe a small Depression, in which lies a sort of medullary Button terminating in a Point; and from this Depression Blood-vessels go out, which are ramify'd on all Sides through the Substance of the Retina.

It is commonly said, that the Retina is a Production, or Expansion, of the medullary Substance of the Optic Nerve, the Sclerotica of the Dura Mater, and the Choroides of the Pia Mater, which accompanies this Nerve. But this Opinion is not agreeable to what we observe in examining the Optic Nerve, and its Insertion in the Globe of the Eye. If we take a very sharp Instrument, and divide this Nerve through its whole Length, between where it enters the Orbit, and where it enters the Globe, into two equal lateral Parts, and then continue this Section through the Middle or Centre of its Insertion, the following Phenomena will appear:

That the Nerve contracts a little at its Insertion into the Globe; that its outer Covering is a true Continuation of the Dura Mater; that this Vagina is very different from the Sclerotica, both in Thickness and Texture, the Sclerotica being thicker than the Vagina, and of another Structure; that the Vagina from the Pia Mater forms, through the whole medullary Substance of the Nerve, several very fine cellular Septa; and that, where it enters the Globe of the Eye, the Pia Mater does not directly answer to the Choroides:

Lastly, that, as the medullary Substance of the Nerve enters the Globe, it is very much contracted, and seems to terminate only in a small Tubercle, or Button, already mentioned; and that the Retina is too thick to be taken for an Expansion of the medullary Substance at this Place.

The Insertion of the Optic Nerve in the Globe of the Eye, is most commonly not directly opposite to the Pupilla; so that the Distance between these two Parts is not the same, when measured, on all Parts of the Globe. The greatest Distance is often on the Side next the Temples; and the smallest next the Nose. I have observed an Inequality of the same Kind in the Breadth of the Uvea, which, in many Subjects, is less near the Nose than the Temples; so that the Centre of the Pupilla is not the same with that of the great Circumference of the Iris; and I have seen the same Difference in the Breadth of the Corona Ciliaris.

THE HUMOURS OF THE EYE, AND THEIR CAPSULE.

The vitreous Humour is a clear and very liquid gelatinous Fluid, contained in a fine transparent Capsula, called *Tunica Vitrea*, together with which it forms a Mass nearly of the Consistence of the White of an Egg. It fills the greatest Part of the Globe of the Eye, that is, almost all that Space which answers to the Extent of the Retina, except a small Portion behind the Uvea, where it forms a Fossula, in which the Crystalline is lodged. This Humour, being dexterously taken out of the Globe, preserves its Consistence for some time in the Capsula, almost like the White of an Egg; and then runs off, by little and little, till it quite disappears.

The Tunica Vitrea is composed exteriorly of two Laminæ very closely connected, which quite surround the Mass of Humour, and are immediately apply'd to the Retina all the Way to the great Circumference of the Corona Ciliaris; but from thence to the circular Edge of the Fossula of the Crystalline, this Coat is full of radiated Sulci, which contain the Processus Ciliares of the Uvea. At the Edge of the Fossula, the two Laminæ separate, and form a particular Capsula, which belongs to the Crystalline, as we shall see hereafter.

The internal Lamina of the Tunica Vitrea gives off, through the whole Substance of this Humour, a great Number of cellular Elongations, or Septa, so extremely fine, as not at all to be visible in the natural State, the whole Mass appearing then to be uniform, and equally transparent through its whole Substance; but they are discovered by putting the Whole, soon after it is taken out of the Body, into some acceftent and gently coagulating Liquor.

The radiated Sulci of the Tunica Vitrea, which may be termed *Sulci Ciliares*, are perfectly black, when the Coat is taken out of the Body: This proceeds from the black Substance with which the Laminæ, or Processus Ciliares, are naturally covered, as well as all the rest of the Choroides, and which remains in the Bottom of the Sulci, after the Laminæ have been taken out. We observe very fine Vessels in this Humour, which shall be spoken to hereafter.

The Crystalline is a small lenticular Body, of a pretty firm Consistence, and transparent like Crystal. It is contained in a transparent membranous Capsula, and lodged in the anterior Fossula of the vitreous Humour. It is very improperly called an *Humour*, because it may be handled and moulded into different Shapes by the Fingers, and sometimes almost dissolved by different reiterated Compressions, especially when taken out of the Capsula.

The Figure of the Crystalline is lenticular; but its posterior Side is more convex than the anterior, the Convexity of both Sides being very rarely equal. The internal Structure of this Mass has not been hitherto sufficiently discovered, to be described with Certainty, especially in Man; where I could never find that contorted Disposition of crystalline Tubes, which some pretend to have seen in the Eyes of large Animals.

The Colour and Consistence of the Crystalline varies in different Ages, as was discovered by Mr. Petit, and demonstrated by him, in the *Academy of Sciences*, from a great Number of human Eyes; and his Observations are inserted in the *Memoirs* for 1726. Till the Age of Thirty it is very transparent, and almost without any Colour. It afterwards becomes yellowish, and that Yellowness gradually increases. The Consistence varies almost in the same Manner, being of an uniform Softness till the Age of Twenty, and afterwards growing gradually more solid in the Middle of the Mass; but in this there are Varieties explain'd in the *Memoirs* for 1727.

The Crystalline Capsula, or Coat, is formed by a Duplication of the Tunica Vitrea, as I have already said. The external Lamina covers the anterior Side of the crystalline Mass; the internal Lamina covers the back Side, and likewise the Fossula Vitrea, in which the Crystalline is lodged. The anterior Portion of the Crystalline Capsula is thicker than the posterior, and, in a manner, elastic; and both its Thickness and Elasticity may be discovered in Dissection, without any other Artifice.

The anterior Portion swells when macerated in Water; and then appears to be made up of two Pellicles, united by a fine spongy Substance. I demonstrated this Duplication very plainly in the Eye of an Horse, by the Knife alone; and I even carried the Separation of the two Laminæ as far as the vitreous Coat. Having made a small Hole in the Middle of the Capsula of an Ox's Eye, and blown into it through a Pipe, some Part of the Air remained between the Edge of the Crystalline Mass, and that of the Capsula, in the Form of a transparent Circle.

In examining the human Eye, I have found, that the Retina, having reached the great Circumference of the Corona Ciliaris, becomes very thin, and is continued between the Laminæ, or Processus Ciliares of the Uvea, and the Ciliary Sulci of the Tunica Vitrea, all the Way to the Circumference of the Crystalline. It is, perhaps, this Continuation which makes the Processus Ciliares to be covered by a whitish Pellicle, and likewise increases the Thickness of the anterior Portion of the Capsula Crystallina.

The aqueous Humour is a very limpid Fluid resembling a kind of Lymph or Serum, with a very small Degree of Viscidity; and it has no particular Capsula like the Crystalline and vitreous Humours. It fills the Space between the Cornea Lucida and Uvea, that between the Uvea and the Crystalline, and the Hole of the Pupilla. These two Spaces are called *The Chambers of the aqueous Humour*, and they are distinguished into the anterior and posterior.

These two Chambers are not of the same Extent. The anterior, which is visible to every body, between the Cornea Lucida and Uvea, is the largest; the other, between the Uvea and Crystalline, is very narrow, especially near the Pupilla, where the Uvea almost touches the Crystalline. This Proportion between the two Chambers has been sufficiently proved, contrary to the Opinion of many antient Writers, by Heister, Morgagni, and several Members of the *Royal Academy*; but none has treated these Matters at so great a Length as Mr. Petit, in the *Memoirs* of that Society.

THE TUNICA ALBUGINEA, AND MUSCLES OF THE GLOBE OF THE EYE.

The Tunica Albuginea, called commonly *The White of the Eye*, and which appears on all the anterior convex Side of the Globe, from the Cornea Lucida to the Beginning of the posterior Side, is formed chiefly by the tendinous Expansion of four Muscles, in the manner presently to be described. This Expansion adheres very close to the Sclerotica, and makes it appear very white and shining, whereas the rest of it is of a dull-whitish Colour. It is very thin near the Edge of the Cornea, in which it seems to be lost, terminating very uniformly.

There are commonly six Muscles inserted in the Globe of the Eye, and they are divided, on account of their Direction, into four Recti, and two Obliqui. The Recti are again divided from their Situation into superior, inferior, internal, and external; and, from their Functions, into a Levator, Depressor, Adductor, and Abductor. The two oblique Muscles are denominated from their Situation and Size, one being named *Obliquus Superior*, or *Major*; the other, *Obliquus Inferior*, or *Minor*. The Obliquus Major is likewise called *Trochlearius*, because it passes through a small cartilaginous Ring, as over a Trochlea, or Pulley.

The Musculi Recti do not altogether answer to that Name; for, in their natural Situation, they do not all lie in a strait Direction, as they are commonly represented in an Eye taken out of the Body. To understand this, we ought to have a just Idea of the Situation of the Globe in the Orbit, and at the same time to remember the Obliquity of the Orbits, as already explain'd. The Globe is naturally placed in such a manner, as that, during the Inaction or Equilibrium of all the Muscles, the Pupilla is turned directly forward; the inner Edge of the Orbit is opposite to the Middle of the Inside of the Globe; the outer Edge of the Orbit, because of its Obliquity, is behind the Middle of the Outside of the Globe; and, lastly, the greatest Circumference of the Convexity of the Globe, between the Pupilla and the Optic Nerve, runs directly inwards and outwards, upwards and downwards.

In this Situation, the internal Rectus alone is in a strait Direction, the other three being oblique; and the external Rectus is the longest; the internal is the shortest; and, between these two, the superior and inferior are of a middle Length, and equal. The external Rectus is likewise bent round the outer convex Side of the Globe; the superior and inferior are, also, incurvated, but in a less Degree, whereas the whole Internus is almost strait. Notwithstanding all this, I shall continue to give them all the common Name of *Musculi Oculi Recti*.

These Muscles are fixed by their posterior Extremities at the Bottom of the Orbit near the Foramen Opticum, in the Elongation of the Dura Mater, by short narrow Tendons, in the same Order in which I have already named them. From thence they run wholly fleshy, toward the great Circumference of the Convexity of the Globe, between the Optic Nerve and Cornea Lucida, where they are expanded into flat broad Tendons, which touch each other, and afterwards unite. These Tendons are fixed, first of all, by a particular Insertion, in the Circumference just mentioned, and afterwards continue their Adhesion all the Way to the Cornea, forming the Tunica Albuginea, as has been already said.

The superior oblique Muscle is fixed to the Bottom of the Orbit, by a narrow Tendon, in the same manner as the Recti, between the Rectus superior and Internus. From thence it runs on the Orbit opposite to the Interstice between these two Muscles, toward the internal angular Apophysis of the Os Frontis, where it terminates in a thin Tendon, which, having passed through a kind of Ring as over a Pulley, runs afterwards in a Vagina obliquely backward under the Rectus Superior, that is, between that Muscle and the Globe; and, increasing in Breadth, it is inserted posteriorly and laterally in the Globe, near the Rectus Externus.

The Ring through which this Muscle passes, is partly cartilaginous, and partly ligamentary. The cartilaginous Portion is flat, of a considerable Breadth, and like half a Ring. The ligamentary Portion adheres strongly to the two Ends of the Cartilage, and is fixed in the small Fossula which lies in the Orbit, on the angular Apophysis of the Os Frontis. By means of this Ligament, the Ring is in some measure moveable, and yields to the Motions of the Muscle. To the anterior Edge of the Ring a ligamentary Vagina is fixed, which invests the Tendon all the Way to its Insertion in the Globe.

The Obliquus Inferior is situated obliquely at the lower Side of the Orbit, under the Rectus Inferior, which consequently lies between this Muscle and the Globe. It is fixed by one Extremity a little tendinous, to the Root of the nasal Apophysis of the Os Maxillare near the Edge of the Orbit, between the Opening of the Ductus Nafalis, and the inferior orbitary Fissure.

Thence it passes obliquely, and a little transversely, backward, under the Rectus Inferior; and is fixed in the posterior lateral Part of the Globe by a flat Tendon, opposite to, and at a small Distance from, the Tendon of the Obliquus Superior; so that these two Muscles, in some measure, surround the outer posterior Part of the Globe.

The Rectus Superior moves the anterior Portion of the Globe upward, when we lift up the Eyes; the Rectus Inferior carries this Portion downward; the Internus toward the Nose; and the Externus toward the Temples.

When two neighbouring Recti act at the same time, they carry the anterior Portion of the Globe obliquely toward that Side, which answers to the Distance between these two Muscles; and, when all the four Muscles act successively, they turn the Globe of the Eye round, which is what is called *rolling the Eyes*.

It is to be observed, that all these Motions of the Globe of the Eye are made round its Centre, so that, in moving the anterior Portion, all the other Parts are likewise in Motion. Thus, when the Pupilla is turned toward the Nose, or upward, the Insertion of the Optic Nerve is at the same time turned toward the Temple, or downward.

The Use of the oblique Muscles is principally to counterbalance the Action of the Recti, and to support the Globe in all the Motions already mentioned. This is evident from their Insertions, which are in a contrary Direction to those of the Recti, their fixed Points, with relation to the Motions of the Globe, being placed forward, and those of the Recti backward, at the Bottom of the Orbit. The soft Fat, which lies behind the Globe, is altogether insufficient to support it; neither is the Optic Nerve more fit for this Purpose; for I have shewn, that this Nerve follows all the Motions of the Globe, which would be impossible, were not the Fat very pliable, and without Resistance. And to this we must add, that the Optic Nerve, at its Insertion in the Globe, has a particular Curvature, which allows it to be elongated, and consequently prevents it from suffering any Violence in the different Motions of the Eyes.

The Obliquity of these two Muscles does not hinder them from doing the Office of a Fulcrum, because this is not a Fulcrum distinct from the Part moved, or on which the Globe of the Eye slides like the Head of one Bone in the articular Cavity of another; but, being fixed to the Part, it easily accommodates itself to all the Degrees of Motion thereof. Had these Muscles lain in a strait Direction, they would have incommoded the Recti; but their Obliquity may be, in some measure, rectified by the inner Surface of the Orbit, and by the Rectus Externus.

The inner Surface of the Orbit serves for a kind of collateral Fulcrum, which hinders the Globe from falling too far inward; as the joint Action of the two Obliqui prevents it in part from falling too far outward. The Rectus Externus, by being bent on the Globe, not only hinders it from being carried outward, but, also, prevents the indirect Motions of the Obliqui from thrusting it out of the Orbit toward the Temples. The other Uses attributed to these Muscles seem to me to be without Foundation, from the Consideration of their Insertion, and of the Structure of the Parts with which they are concerned; both which Reasons are explained in the Memoirs of the Academy for 1721.

THE SUPERCILIA, AND MUSCULI FRONTALES, OCCIPITALES, AND SUPERCILIARES.

The Supercilia, or Eye-brows, are the two hairy Arches situated at the lower Part of the Forehead, between the Top of the Nose and Temples, in the same Direction with the bony Arches, which form the superior Edges of the Orbits. The Skin in which they are fixed, does not seem to be much thicker than that of the rest of the Forehead; but the Membrana Adiposa is thicker than on the neighbouring Parts. The Extremity of the Eye-brows next the Nose, is called the *Head*, as being larger than the other Extremity, which is named their *Tail*. The Colour is different in different Persons, and often in the same Person different from that of the Hair of the Head; neither is the Size of them always alike. The Hairs of which they consist are strong and pretty stiff, and they lie obliquely, their Roots being turned to the Nose, and their Points to the Temples.

The Supercilia have Motions common to them with those of the Skin of the Forehead, and of the hairy Scalp. By these Motions the Eye-brows are lifted up, the Skin of the Forehead is wrinkled more or less regularly and transversely; and the Hair, and almost the whole Scalp, is moved, but not in the same Degree in all Persons; for some, by this Motion alone, can move the Hat, and even throw it from their Head. The Eye-brows have likewise particular Motions, which contract the Skin

above the Nose; and all these different Motions are performed by the following Muscles.

The Frontal Muscles are two thin, broad, fleshy Planes, of unequal Lengths, lying immediately behind the Skin and the Membrana Adiposa on the anterior Parts of the Forehead, which Parts they cover from the Root of the Nose, and through about Two-thirds of the Arch of the Eye-brows on each Side, 'all the Way to the lateral Parts of the Hair on the Forehead. At the Root of the Nose they touch each other, as if they were but one Muscle; and at this Place their Fibres are short and longitudinal, or vertical.

The next Fibres on each Side become gradually longer, and more oblique, the most anterior being always the shortest and straightest; and the lateral, the longest, and turned most obliquely towards the Temples at their upper Extremities. By this Disposition an angular Interstice is formed between the Place where the two Muscles join, and the Hair on the Middle of the Forehead; but this Disposition is not the same in all Subjects, no more than the Wrinkles and Bounds of the Hair on the Forehead.

These Muscles are fixed by the inferior Extremities of their fleshy Fibres immediately in the Skin, running through the Membrana Adiposa. They cover the Musculi Superciliares, and adhere closely to them by a kind of Intertexture. By the same Fibres they seem to be inserted in the angular Apophyses of the Os Frontis, and to be blended a little with the Muscles of the Palpebrae and Nose. The upper Extremities of their fleshy Fibres are fixed in the external, or convex Surface of the Pericranium. Each of their lateral Portions covers a Portion of the Temporal Muscle on the same Side, and adheres very closely to it. The superior and inferior Insertions are graduated.

The occipital Muscles are two small, thin, broad, and very short fleshy Planes, situated on the lateral Parts of the Occiput at some Distance from each other. They are inserted by the inferior Extremities of their fleshy Fibres in the superior transverse Line of the Os Occipitis; and, also, a little above it. Thence they run up obliquely from behind forward, and are fixed in the inner or concave Surface of the Pericranium.

The Breadth of these Muscles reaches from the posterior middle Part of the Occiput, toward the Mastoid Apophysis, and they diminish unequally in Length as they approach these Apophyses. From this Inequality in Length, each of them appears as if it were double in some Subjects; and, in others, they are so thin and pale, that they seem to be wanting. They are sometimes covered by an aponeurotic Expansion of the Trapezii.

The Occipital and Frontal Muscles appear to be true Digastrici, both with regard to their Insertions in the Pericranium, and in regard to their Action. Their Insertions in the Pericranium are opposite, one being on the Outside, the other on the Inside; so that this Membrane, or Aponeurosis, may be considered as a middle Tendon of four single Muscles, that is, which have their fleshy Fibres fixed only to one Side of their Tendons. The fixed Insertions of the Occipitales at the lower Part of the Occiput, and the moveable Insertions of the Frontales in the Skin of the Forehead, and of the Supercilia, being well considered, together with their reciprocal Insertions in the same Aponeurosis, seem to be a very convincing Proof, that they are Digastric Muscles.

These four Muscles seem always to act in Concert, the Occipitales being only Auxiliaries, or Assistants to the Frontales, the Office of which is to raise the Supercilia, by wrinkling the Skin of the Forehead; these Wrinkles follow the Direction of the Eye-brows pretty regularly in some Subjects, and very irregularly in others.

To be convinced of the Co-operation of these four Muscles, we need only hold the Hand on the Occipitales, while we raise the Eye-brows, and wrinkle the Forehead several times; and we shall perceive the Occipitales to move each time, though not in the same Degree in all Subjects. In some Persons the Occipitales seem to be relaxed, while the Frontales, being in Contraction, move the whole Scalp and Pericranium forward, and then contract to bring them back to their natural Situation.

The Musculi Superciliares are fleshy Fasciculi, situated behind the Supercilia, and behind the inferior Portion of the Musculi Frontales, from the Root of the Nose to above one half of each superciliary Arch. They are strongly inserted partly in the Synarthrosis of the Os Nasi with the Os Frontis, where they come very near the proper Muscles of the Nose, and partly in a small neighbouring Portion of the Orbit. From thence they first run up a little, and afterwards more or less in the Direction of the Eye-brows. They are made up of several small Fasciculi of oblique Fibres, all fixed by one End in the manner already said, and by the other partly in the lower

Extremity of the Muscles, by which they are covered, and partly in the Skin of the Supercilia. This last Portion is easily confounded with a Portion of the Musculus Orbicularis Palpebrarum.

The Action of these Muscles is to depress the Eye-brows, to bring them close together, and to contract the Skin of the Forehead immediately above the Nose, into longitudinal and oblique Wrinkles, and the Skin which covers the Root of the Nose into irregular transverse Wrinkles. This Action, as well as that of the Frontales, and of the Muscles of the Nose and Lips, is not always arbitrary, but sometimes mechanical and involuntary. These Muscles may, perhaps, likewise serve to keep the Musculi Frontales in Equilibrio during their Inaction, they being moveable by both Extremities.

THE PALPEBRÆ, AND MEMBRANA CONJUNCTIVA.

The Palpebræ are a kind of Veils or Curtains placed transversely above and below the anterior Portion of the Globe of the Eye; and accordingly there are two Eye-lids to each Eye, one superior, the other inferior. The superior is the largest and most moveable in Man, the inferior the smallest and least moveable. They both unite at each Side of the Globe, and the Places of their Union are termed *Angles*, one large, and internal, which is next the Nose; the other small, or external, which is next the Temples.

The Palpebræ are made up of common and proper Parts. The common Parts are the Skin, Epidermis, and Membrana Adiposa. The proper Parts are the Muscles, the Tarsi, the Puncta or Foramina Lachrymalia, the Membrana Conjunctiva, the Glandula Lachrymalis, and the particular Ligaments which sustain the Tarsi. The Tarsi, and their Ligaments, are, in some measure, the Basis of all these Parts.

The Tarsi are thin Cartilages forming the principal Part of the Edge of each Palpebra; and they are broader at the Middle, than at the Extremities. Those of the superior Palpebræ are something less than half an Inch in Breadth; but in the lower Palpebræ they are not above the sixth Part of an Inch; and their Extremities next the Temples are more slender than those next the Nose.

These Cartilages are suited to the Borders and Curvature of the Eye-lids. The lower Edge of the superior Cartilage, and the upper Edge of the inferior, terminate equally, and both may be termed the *Ciliary Edges*. The opposite Edge of the upper Tarsus is something semicircular between its two Extremities; but that of the inferior Tarsus is more uniform, and both are thinner than the Ciliary Edges. Their inner Sides, or those next, are grooved by several small transverse Channels, of which hereafter; and the Extremities of both Cartilages are connected by a kind of small Ligaments.

The broad Ligaments of the Tarsi are membranous Elongations formed by the Union of the Periosteum of the Orbit, and Pericranium, along both Edges of each Orbit. The superior Ligament is broader than the inferior, and fixed to the superior Edge of the upper Cartilage, as the inferior is to the lower Edge of the lower Cartilage; so that these Ligaments, and the Tarsi, taken alone, or without, the other Parts, represent Palpebræ.

The Membrana Conjunctiva is generally described among the Coats of the Globe of the Eye; and I, also, mentioned it there. It is a thin Membrane, one Portion of which lines the inner Surface of the Palpebræ; that is, of the Tarsi, and their broad Ligaments. At the Edge of the Orbit it has a Fold; and is continued from hence on the anterior Half of the Globe of the Eye, adhering to the Tunica Albuginea; so that the Palpebræ, and the fore Part of the Globe of the Eye, are covered by one and the same Membrane, which does not appear to be a Continuation of the Pericranium, but has some Connection with the broad Ligaments of the Tarsi.

The Name of *Conjunctiva* is commonly given only to that Part which covers the Globe, the other being called simply, *The Internal Membrane of the Palpebræ*; but we may very well name the one *Membrana Oculi Conjunctiva*, and the other *Membrana Palpebrarum Conjunctiva*. That of the Palpebræ is a very fine Membrane, adhering very close, and full of small capillary Blood-vessels. It is perforated by numerous imperceptible Pores, through which a kind of Serum is continually discharged; and it has several very evident Folds, which shall be spoken to hereafter.

The Conjunctiva of the Eye adheres by the Intervention of a cellular Substance, and is consequently loose, and, as it were, moveable; and it may be taken hold of, and separated, in several Places, from the tendinous Coat. It is of a whitish Colour, and, being transparent, the Albuginea makes it appear perfectly white; these two Coats together forming what is called *The White of the Eye*. The greatest Part of the numerous Vessels which run upon it, contain naturally only the serous Part of the Blood, and consequently are not discoverable, except

except by anatomical Injections, Inflammations, Obstructions, and the like. With the Point of a good Knife we continue the Separation of this Membrane over the Cornea Lucida.

The Lachrymal Gland is white, and of the Number of those called Conglomerate Glands. It lies under that Depression observable in the Arch of the Orbit, near the Temples, and laterally above the Globe of the Eye.

It is a little flattened, and divided, as it were, into two Lobes, one of which lies toward the Insertion of the Musculus Rectus superior; the other toward the Rectus externus. It adheres very closely to the Fat which surrounds the Muscles, and posterior Convexity of the Eye; and it was formerly named Glandula Innominata.

From this Gland several small Ducts go out, which run down almost parallel to each other, through the Substance of the Tunica Interna, or Conjunctiva of the superior Palpebra, and afterwards pierce it inwardly, near the superior Edge of the Tarsus. These Ducts are very difficult to be found; but the best way to discover them is to let the superior Palpebra lie a little while in cold Water, and then, without wiping it, to blow on several Places of the Surface of the Membrane, through a small Tube held very near, but so as not to touch it, that the Air may fill some of the Orifices of the Ducts, and so discover them.

The Borders of each Palpebra, taken all together, are formed by the Edge of the Tarsus, and by the Union of the internal Membrane with the Skin and Epidermis. This Border is flat, and of some sensible Breadth from within about a Quarter of an Inch of the internal Angle all the Way to the external Angle, near which the Breadth diminishes. This Breadth is owing only to the Thickness of the Palpebra, which at this Place have their Edges oblique or slanting, in such a manner as, when the two Palpebrae touch each other slightly, a triangular Space or Canal is formed between them and the Globe of the Eye.

The flat Edge of each Palpebra is adorned with a Row of Hairs, called Cilia, or Eye-lashes. Those belonging to the superior Palpebra are bent upward, and longer than those of the lower Palpebra, which are bent downward. These Rows are placed next the Skin, and are not single, but irregularly double or triple. The Hairs are longer near the Middle of the Palpebra than toward the Extremities, and for about a Quarter of an Inch from the inner Angle, they are quite wanting.

Along the same Border of the Palpebrae near the internal Membrane, or toward the Eye, we see a Row of small Holes, which may be named Foramina, or Puncta Ciliaria. They are the Orifice of the same Number of small oblong Glands, which lie in the Sulci, Channels, or Grooves, on the inner Surface of the Tarsus. These little Glands are of a whitish Colour, and, when examined through a single Microscope, they appear like Bunches of Grapes, those of each Bunch communicating together. When they are squeezed between two Nails, a sebaceous Matter, like soft Wax, is discharged through the Puncta Ciliaria.

Near the great or internal Angle of the Palpebrae, the flat Portion of their Edges terminates in another, which is rounder and thinner. By the Union of these two Edges an Angle is formed, which is not perfectly pointed like a true Angle, but rounded; yet it ought not to be termed an obtuse Angle, because that Expression in the mathematical Style means something different. For the same Reason the Name of great Angle is improper; and we had better call it the internal or nasal Angle.

At this Place, the Extremity of the flat Portion is distinguished from the round Portion by a small Protuberance or Papilla, which is obliquely perforated by a small Hole in the Edge of each Palpebra. These two small Holes are very visible, and often more so in living than in dead Bodies; and they are commonly named Puncta Lachrymalia, being the Orifices of two small Ducts, which open beyond the Angle of the Eye into a particular Reservoir, termed Sacculus Lachrymalis, which is described under the Article NASUS.

The Puncta Lachrymalia are opposite to each other, and so they meet when the Eye is shut. Round the Orifice of each of these Points, we observe a whitish Circle, which seems to be a cartilaginous Appendix of the Tarsus, and which keeps the Orifice always open. These two oblique Circles are so disposed, that, when the Eye is but slightly shut, they touch each other only toward the Skin, and not toward the Globe of the Eye. The fine Membrane which covers these Circles, and passes through the Puncta into the Ducts, seems sometimes to run into Gathers, when it is touched with a Stilet.

The Caruncula Lachrymalis is a small, redish, granulated, oblong Body, situated precisely between the internal Angle of the Palpebrae, and Globe of the Eye; but it is not fleshy, as its Name would insinuate. The Substance of it seems to be wholly glandular; and it appears through a single Microscope, in the same manner as the other Conglomerate Glands. We discover upon it a great Number of fine Hairs, covered by an oily yellowish Matter; and on the Globe of the Eye, near this glan-

dular Body, we see a semilunar Fold formed by the Conjunctiva, the concave Side of which is turned to the Uvea, and the Convex Side to the Nose. This Fold appears most when the Eye is turned toward the Nose.

The Muscles of the Palpebrae are commonly reckoned to be two, one peculiar to the upper Eye-lid, named Levator Palpebrae Superioris; the other common to both, called Musculus Orbicularis Palpebrarum, which has been subdivided in different manners.

The Levator Palpebrae superioris is a very thin Muscle situated in the Orbit above and along the Rectus superior Oculi. It is fixed to the Bottom of the Orbit, by a small narrow Tendon, near the Foramen opticum, between the posterior Insertions of the Rectus superior, and Obliquus superior. Thence its fleshy Fibres run forward on the Rectus, increasing gradually in Breadth; and terminate by a very broad Aponeurosis, in the Tarsus of the superior Palpebra.

By the Musculus Palpebrarum obliquus, we understand all that Extent of fleshy Fibres, which by a thin Stratum surrounds the Edge of each Orbit, and from thence, without any Interruption, covers the two Palpebrae all the Way to the Cilia. The Fibres which run upon the Edge of the Orbit are nearly orbicular; but most of those which cover the Palpebrae are transversely oval. Almost all of them have a common Tendon situated transversely between the internal Angle of the Eye, and the nasal Apophysis of the Os Maxillare. This is a slender ligamentary Tendon, strongest where it is fixed in the Bone, and diminishing gradually as it approaches the Angle of the Palpebrae, where it terminates at the Union of the Points, or at the Extremities of the two Tarsi. The fleshy Fibres are fixed to it anteriorly, so that at first Sight it appears to be no more than a Linea Alba.

From thence one Portion of the Fibres is turned upward, the other downward; and both meet again at the external Angle, being united by a particular kind of Intertexture, very difficult to be explained; when, having inverted this Portion of the Muscle, we examine its posterior Surface, we observe a small, thin, tendinous Rope, which runs through the fleshy Fibres, and divides them all the Way from the Union of the two Tarsi to the Temporal Edge of the Orbit, where it disappears; the Fibres which lie beyond it appearing to continue the main Circuit of the Muscle.

I divide this Muscle into four Portions, whereof the first is that which surrounds the Orbit, and which does not appear to be interrupted towards the Temples, the upper Part of it lying between the Supercilia, and the lower Part of the Musculi Frontales. The second Portion is that which lies between the upper Edge of the Orbit, and the Globe of the Eye, and which covers the inferior Edge of the Orbit below, some of its Fibres being fixed to both Edges of the Orbit. *Riolanus* divided this into two semicircular Portions, one superior, the other inferior; the first lying between the Musculus Superciliaris and the lower Part of the Musculus Frontalis, to both which it adheres very much.

The third Portion seems to belong more particularly to the Palpebrae, and the greatest Part of it is spent in the Palpebra superior. The Fibres of this Portion meet at the two Angles of the Eye, where they appear to make very acute Inflections without any Discontinuation; but when examined on the other Side next the Globe of the Eye, they have in some Subjects appeared to me to be distinguished into superior and inferior. The greatest Part of these Fibres form a transversely oval Circumference, the shortest Diameter of which is longer when the Eyes are open, than when shut.

The fourth Portion is an Appendix to the third, from which it differs principally in this, that its Fibres do not reach to the Angles, and form only small Arches, the Extremities of which terminate in each Palpebra. This Portion is really divided into two, one for the Edge of the upper Eye-lid, the other for that of the lower. *Riolanus* names this Portion Musculus Ciliaris.

All these different Portions of the Orbicular Muscle adhere to the Skin, which covers it from the upper Part of the Nose to the Temples, and from the Supercilium to the upper Part of the Cheek. When they contract, several Wrinkles are formed in the Skin, which vary according to the different Direction of the Fibres; those under the lower Palpebra are very numerous, and run down very obliquely from before backward.

The Skin of the superior Palpebra is folded Arch-wise, almost in a parallel Direction to that of the semi-oval Fibres, the Plicae intersecting the Levator; whereas the other Folds only intersect the Orbicularis. The radiated and oblique Plicae seldom appear in young Persons, except when the first and second Portions of the Orbicularis are in Action; but in aged Persons the Marks thereof are visible at all times.

In Man, the superior Palpebra has much more Motion than the inferior. The small simple Motions called Twinkling, which frequently happen, though not equally often, in all Subjects, are performed in the upper Palpebra, by the alternate

Contraction of the Levator and superior Palpebral Portion of the Musculus Orbicularis; and in the lower Palpebra, at the same time, or alternately, by the inferior palpebral Portion of the Orbicularis; but, as there is but a small Number of Fibres in this Portion, these Fibres are but very inconsiderable in this Eye-lid.

These slight Motions, especially those of the upper Palpebra, are not very easy to be explained, according to the true Structure of the Part. The Motions which wrinkle the Palpebrae, and which are commonly performed to keep one Eye very close shut, while we look steadfastly with the other, are explicable by the simple Contraction of all the Portions of the Orbicularis. These Motions, likewise, depress the Supercilia, which consequently may be moved in three different manners, upward by the Musculi Frontales, downward by the Orbiculares, and forward by the Superciliares.

THE VESSELS OF THE EYE, AND OF ITS APPENDAGES.

The external Carotid Artery, by means of the Arteria Maxillaris externa, and the Temporal and Frontal Arteries, give several Ramifications to the Integuments, which surround the Eye, and to all the Portions of the Musculus Orbicularis; and these Ramifications communicate with those which are distributed to the Membrana Conjunctiva Palpebrarum, and to the Caruncula.

The same external Carotid, by means of the Arteria Maxillaris interna, sends a considerable Branch into the Orbit thro' the inferior Orbital or Spheno-maxillary Fissure; which is distributed to the Periosteum of the Orbit, to the Muscles of the Globe of the Eye, to the Levator Palpebrae superioris, to the Fat, Glandula Lachrymalis, Membrana Conjunctiva, both of the Eye and Palpebrae, the Caruncle, &c. It communicates with the internal Carotid, and sends a small Artery to the Ethmoidal Cells of the Nose, through the small internal posterior orbital Hole.

The internal Carotid Artery, having entered the Cranium, sends off small Branches which accompany the Optic Nerve, and those which pass thro' the Fissura Spheno-maxillaris. One of these small arterial Branches runs into the Substance of the Optic Nerve, and produces, on the *Retina*, the small Arteries which appear very plainly on the inner Sides of that Membrane. The rest join the Ramifications of the external Carotid already mention'd, and, having penetrated into the Substance of the Tunica Sclerotica on the back Side, and run for a little Way through that Substance, they perforate this Coat inwardly in five or six Places at an equal Distance from the Optic Nerve, and the Pupilla.

Afterwards they perforate the external Lamina of the Choroides in the same Number of Places, and form between that, and the internal Lamina, the Vasa Vorticosa of Steno, and the Vascula Stellae, mentioned in the Description of this internal Lamina. Some small vascular Filaments from these Ramifications are, also, observed to adhere very closely to the Tunica Vitrea; and, before they form the Vasa Vorticosa, they send small Arteries in a direct Course to the Circumference of the Uvea, where they form a vascular Circle, which sends out Capillaries as far as the Membrana CrySTALLINA, which are very easily injected in new-born Children.

The Veins of all these Parts answer nearly to the Arteries. The internal Veins unload themselves, partly into the internal Jugular Vein by the Sinus Orbitarii, Cavernosi, and Petrosi, and partly into the external Jugular Vein by the Vena Angularis, or Maxillaris Externa, the Maxillaris Interna, Temporalis, &c.

Besides the Capillary Vessels, easily distinguishable by the red Colour of the Blood, there are great Numbers of those which admit nothing but the serous and lymphatic Parts of the Blood, and consequently do not appear in the natural State. They become visible in some Places by Inflammations and Injections, as on the Membrana Conjunctiva of the Eye; but these Contrivances do not discover them every-where in aged Persons. In a Foetus, and in new-born Children, a fine Injection has succeeded so well, as to discover the Vessels of the Membrana CrySTALLINA and Vitrea; and, in a Foetus of about six Months, the injected Liquor seemed to me to have penetrated a Part of the CrySTALLINE and Vitreous Humour.

THE NERVES OF THE EYE, AND OF ITS APPENDAGES.

Besides the Optic Nerve, described under the Article NERVUS, the Globe of the Eye receives several small ones, which run on each Side, along and about the Optic Nerve, from its Entry into the Orbit to its Insertion in the Globe. These Filaments come chiefly from a small lenticular Ganglion, formed by very short Branches of the Orbital or Ophthalmic Branch of the fifth Pair, and a Branch of the third Pair, or Motores Oculi.

These nervous Filaments of the Lenticular Ganglion, having reached the Globe of the Eye, are divided into five or six Fasciculi, which, having surrounded the Optic Nerve, and pene-

trated and perforated the Cornea Opaca or Sclerotica, run at Distances more or less equal between the Sclerotica and Choroides, towards the Uvea. There each of them is divided into several short Filaments, which terminate in the Substance of the Uvea. These small Nerves, which run from behind forward, between the Sclerotica and the Choroides, have formerly been taken for particular Ligaments, by very great Anatomists.

The Nerves which go to the other Parts belonging to the Eye, come from the third, fourth, sixth, and first two Branches of the fifth Pair of Nerves of the Medulla oblongata, and, likewise, from the Portio Dura of the seventh Pair. The third, fourth, and sixth Pairs give Nerves to the Muscles of the Globe of the Eye. The two Branches of the fifth Pair, and the Portio Dura of the seventh, give Nerves, not only to the other Parts, which surround the Globe, but, also, to the Musculi Frontales, and internal Parts of the Nose.

The Trunk of the third Pair, or Motores Oculi, having entered the Orbit through the superior Orbital, or Sphenoidal Fissure, produces four Branches. The first runs upward, and divides into two, one for the Musculus Rectus superior, and the other for the Levator Palpebrae superioris. The Trunk, continuing its Course, gives off the second short Branch to the Rectus inferior. The third Branch is long, and goes to the Obliquus inferior, contributing likewise to the Formation of the lenticular Ganglion already mentioned. The fourth Branch is large, and supplies the Rectus internus.

The first Branch of the fifth Pair, commonly termed Nervus Ophthalmicus, divides into three Branches as it enters the Orbit; and, sometimes, only in two, one of which is afterwards subdivided. Of these three Branches, one is superior, which I term Nervus Superciliaris; one internal, named Nasalis; and one external, to which the Name of Temporalis agrees better than that of Lachrymalis, which may occasion a Mistake.

The superior or Superciliary Branch runs along the whole Periosteum of the Orbit, and, having passed through the superciliary Notch or Foramen of the Os Frontis, is distributed to the Musculus Frontalis, Superciliaris, and superior Portion of the Orbicularis Palpebrarum; and it communicates with a small Branch of the Portio Dura of the seventh Pair.

The internal or Nasal Branch passes under the Ramification of the Nerve of the third Pair, and, running toward the Nose, is distributed thereto, and to the neighbouring Parts of the Orbicularis and Caruncula. This Branch sends off a Filament, which, passing through the internal, anterior, orbital Hole, enters the Cranium, and presently returns again through one of the Ethmoidal Holes to the internal Parts of the Nose. I have sometimes observed this Nasal Branch to communicate with the superciliary Branch, by a particular Arch, before it enters the Orbital Hole.

The external or Temporal Branch, which is, sometimes, a Subdivision of the Superciliaris, is distributed to the Glandula Lachrymalis, and sends off a Filament, which pierces the Orbital Apophysis of the Os Malae.

The second Branch of the fifth Pair, called Nervus Maxillaris superior, sends off a Branch through the bony Canal of the lower Part of the Orbit, which, going out at the anterior inferior orbital Hole, is distributed to the neighbouring Portion of the Musculus Orbicularis, and communicates with a Branch of the Portio Dura.

The Portio Dura of the seventh Pair, or auditory Nerve, which I call Nervus Sympatheticus minor, gives Branches to the superior, inferior, and external lateral Parts of the Orbicularis Palpebrarum, one of which communicates with the Nervus Superciliaris, and another with the Suborbitarius.

THE USES OF THE EYE, AND ITS APPENDAGES.

Every body knows, that the Eye is the Organ of Vision. The transparent Parts of the Globe modify the Rays of Light, by different Refractions; the Retina and Choroides receive the different Impressions of these Rays, and the Optic Nerve carries these Impressions to the Brain. When Objects are at a greater Distance, or obscure, the Papilla is dilated; and it is contracted, when Objects are near, or placed in a great Light. The Muscles of the Globe of the Eye, and of the Palpebrae, perform the Motions already described.

The Glandula Lachrymalis continually moistens the fore Part of the Globe of the Eye; and the lachrymal Serum is equally spread over that Globe by the Motions of the superior Palpebra, the inner Surface of which is in a small measure villous. The Union of the two Palpebrae directs this Serum towards the Puncta Lachrymalia; and the unctuous Matter discharged through the Foramina Ciliaria, hinders it from running out between the Palpebrae. The large Size and viscid Surface of the Caruncula prevents it from running beyond the Puncta, and thus forces it into them. The Supercilia may hinder Sweat from falling on the Eyes. The superior Cilia, which are longer than the inferior, may have the same Use, and they both serve to prevent Dust, In-

and the like, from entering the Eyes, when they are only a little open. *Winslow.*

THE METHOD OF EXTRACTING BODIES FALLEN INTO THE EYES.

It is no uncommon Accident for the Eyes to be tormented by the Admission of a small Particle of Wood, Stone, Sand, of a Quill, of the Nails of the Hands or Feet, of Quick-lime, acrid Salts, and the like: which, if they are not quickly extracted, frequently occasion Inflammations, and other dangerous Consequences.

The easiest Remedy, in such a Case, is, to stroke the Eye-lid gently with the Finger, holding the Head down; by which means the increased Flux of Tears, excited by the adhering Particle, will often wash it out, without much Difficulty. If this Method fails, convey under the Eye-lid a little levigated Pearl, or Crabs-claws, that, when these are washed out by the Tears, the extraneous Substance may be brought with them. If this Remedy proves effectual, take the small round Head of a slender Probe, or a little Pair of Pliers, or the End of a Tooth-pick, and, gently elevating the Eye-lids from the Eye, carefully search for, and tenderly extract, the foreign Particle; or dip a Pencil-brush of soft Feathers, or a Bit of Sponge fastened to a Quill, in warm Water, which, being introduced under the Eye-lid, may brush it out. Lime, or any acrid Substance, may be washed out with Water, or Milk warmed, either by Injection, with a Feather, or Sponge. To remove the Redness and Inflammation, which may continue after the Substance is extracted, let the Patient frequently wash his Eye with a cooling and lenient Collyrium made of Rose-water, thoroughly mixed with the White of an Egg, a little Alum, and Sugar of Lead, or Tutty. If the Inflammation be violent, Bleeding must not be neglected.

OF TUBERCLES AND EXCRESCENCES ON THE EYE-LIDS.

These Tubercles are of different Sorts and Sizes. If the Excrescence be small, red, hard, immovable, and seated above the Eye-lashes, it is denominated *Crispe*, or *Hordeolum*, from its Resemblance of a Barley-corn. This is an encysted Tumor, which, by Inflammation, generates a thick Matter, whence proceed intense Pain, and various Disorders of the Sight: Sometimes it is seated outwardly next the Skin, and sometimes on the Inside of the Eye-lid. If the Tubercle be moveable, it is named *Chalazionum*. Some, being like Hail, assume the Appellation of *Grandinæ*; others, being Vesicles filled with an aqueous Humour, are termed *Hydrides*. Some are of the Nature of Atheroma, Steatoma, and Meliceris, which are described under the Article TUMOR. But almost all these Tubercles are of the encysted Kind, some hanging from a slender Root, and others seated on a broad Basis, as they are represented in *Tab. XXXVI. Fig. 16, 17, 18.*

Though such Tubercles, in other Parts of the Body, might be safely disregarded, yet, when they affect this Part, the Delicacy of the Organ requires particular Caution. If they are not very troublesome, they produce little or no Danger, though they somewhat disfigure the Part. These Tubercles seldom yield to Medicine, and by emollient Cataplasms, which are recommended by some, the Eye itself may be injured; therefore they require a surgical Operation.

All these Tubercles, those which hang from a small Root excepted, are removed by making an Incision in the Integuments, carefully avoiding wounding the *Cystis*, so that the *Cystis*, with the Tubercle, may, if possible, be extracted entire; as is directed under the Article TUMOR. But if the Coat of the Tubercle be wounded, or if it firmly adheres to the Flesh, so that it cannot be wholly separated from it by the Knife, cut out as much as you safely can, with a small Pair of Scissars, and immediately apply a digestive Ointment mixed with red Precipitate, or Unguentum *Aegyptiacum*, or with Lapis Infernalis, for eroding the Remains, and the Cure may be completed by a vulnerary Balsam. Sometimes, when I judge, that the Tumor cannot be entirely extracted, I make the Incision directly through the *Cystis*, and after having expressed the contained Matter, I apply Caustics for destroying the Remainder, as is directed for encysted Tumors. But here particular Care is required to prevent any of the Caustic from falling into the Eye, which might greatly injure the Sight. Pendent Tubercles may be easily removed either by cutting them off gradually with a Ligature of Silk-thread, or instantly with the Scissars. But the *Hordeola* require a different Method; for they, unlike other encysted Tumors, are attended with Pain and Inflammations; and, therefore, as in Inflammations, we must first endeavour to disperse them; but, if that Attempt fails, we must bring them to Suppuration, before we proceed to Incision. To promote the Discussion, and alleviate the Pain of a recent *Hordeolum*, frequently foment the Part with fasting Spirit, or apply Mucilage of Quince-seeds, or the warm Pulp of a roasted Apple, mixed with a little Saffron and Camphire. If all these prove ineffectual, and the Tumor, beginning to turn yellow, tends to Suppuration, it may be promoted by a Plaster of Honey and Meal, or of Diachylum with the Gums. But if we would sooner complete the Cure, we must have recourse to the Knife; for which Purpose, after drawing back

and inverting the Eye-lids, we must, with a slender Knife, make a rectilinear Incision, in such a manner, that, if the Tubercle is as yet hard, the Bag or Vesicle, in which it is contained, may be commodiously separated and extracted. But, if the Tubercle is already ripe, it is to be laid open, the Pus to be ejected, and the Vesicle consumed by corrosive Medicines; by which means an unsightly Scar will be prevented, and the Wound conglutinated without the Assistance of other Medicines.

OF WARTS ON THE EYE-LIDS.

The Eye-lids are often affected with Warts, not unlike the above-mentioned Tumors, which not only disfigure the Part, but often injure the Sight. These Warts have either a large or small Root, and may be extirpated either by the Ligature, the Knife, or corroding Medicines, like other Warts. The actual Caustery, which may be used in other Parts, must never be applied in this Case; and even Corrosives must be used with extreme Caution, lest, by slipping into the Eye, they might destroy, or at least greatly injure, the Sight. If these Warts appear blackish or livid, a Gangrene is to be apprehended, which will ensue, if they are irritated by the Application of Instruments or Medicines; and for this Reason they have been named *Noli me tangere*; and should, therefore, be let alone. I happily removed, by Ligature, a large Wart on the upper Eye-lid, (see *Tab. XXXVI. Fig. 17.*) which impeded the Opening of the Eye, but had no very broad Root.

OF THE RELAXATIONS AND TUMORS OF THE EYE-LIDS, CALLED PHALANGOSIS AND PTOSIS.

We often find the Eye-lids so much tumefied or relaxed, as greatly to deform the Part, and impede the Sight. (See *Tab. XXXVI. Fig. 19.*) This Disorder always proceeds either from a paralytic Distemper of the *Musculus Elevator Palpebræ*, or from a Relaxation of the Skin above. Sometimes an cedematous, or watery Tumor is formed in the Eye-lids, so as to keep the Eye almost entirely closed; this Case should be accurately distinguished from the other, and easily yields to Medicine, by administering Cathartics, Diuretics, and Sudorifics, and by fomenting the Part with a Compress dipt in warm camphorated Spirit of Wine, or in Lime-water. But, when it proceeds from a Relaxation of the Skin, strengthening Medicines are proper, as a Plaster of the black Oil of Tartar, mixed with Wax, or *Peruvian Balsam*, *Hungary Water*, Spirit of Worms, and the like. If these Medicines fail, the best Method is, carefully, to cut off a sufficient Quantity of the relaxed Skin; which renders it shorter, and reduces it to its natural State.

The Antients used the following Method of curing this Disorder. The relaxed Skin being raised, they passed a Needle, with a Thread, through it; then, artfully twisting the Thread about the raised Skin, they separated it, by making a tight Ligature; and this Operation frequently succeeds. Or with the Scissars or Knife, they amputated the superfluous Part of the Skin; and, bringing the Lips of the Wound into Contact, they secured them by a few simple Stitches; as we read in *Hippocrates*, (*Lib. de Viâ. Ratione in Acutis*) *Celsus*, (*Lib. 7. Cap. 7.*) and *Paulus Aegineta* (*Lib. 6. Cap. 8.*). But, in the last Method, the Hæmorrhage frequently proves so large, as to obscure the Wound, so that a neat Suture cannot be made, which is consequently followed by an unsightly Cicatrix. To prevent these Inconveniences, *Bartisius*, a celebrated German Oculist, contrived a wooden Instrument, represented in *Tab. XXXVI. Fig. 19. B. B.* to intercept the redundant Skin, *Fig. 19. C.* and, compressing it by turning the Screw *D. D.* so as to obstruct the Circulation, the intercepted Part mortified in a few Days, and cast itself off.

But as this Method of *Bartisius* was attended with great Pain, Inflammation, and other Inconveniences, *Verduin*, of *Amsterdam*, made a Brass Instrument almost similar, but perforated in its upper and lower Parts (as in *Tab. XXXVI. Fig. 21.*): By this Instrument, he compressed the superfluous Skin, and pass'd a Needle with a Thread through the Perforations, as often as might be necessary, leaving four or five Inches of the Thread hanging down on each Side; then with the Knife, or Scissars, he cut off the prominent Skin, close to the Edge of the Instrument; after which he removed the Instrument, taking care not to draw out the Threads, which he immediately ty'd as in a common Suture. The Wound must be dress'd, the first time, with some vulnerary Balsam, and scrap'd Lint; and, in the subsequent Dressings, you spread your Lint either with a vulnerary Balsam, or some digestive Ointment, to be secured with Compress and Bandage. After three or four Days, the Bandage being always removed with the greatest Caution, and the Lips of the Wound being closed, cut the middle Knot, and gently extract the Thread. The rest of the Threads may be treated by one at a time, in the same manner, completing the Cure with some vulnerary Balsam and Plaster. The Wound may be cauterized before the Removal of the Instrument, which will not only suppress the Hæmorrhage, and render the Disorder less subject to return, but may perhaps make a Suture unnecessary. Sometimes this Disorder is of so long Continuance, and the Tumor so large, that the Eye loses its natural Figure; and sometimes Relapses happen after repeated Operations; which ren-

ders the Case incurable. Lastly, we may observe, that *Rau* invented an Instrument for this Purpose, little differing from the former in its Shape and Uses, Fig. 22. But the Invention of this Instrument was highly controverted between him and *Ruyssch*, who attributed it to *Adrianfomius*.

OF THE EYES IRRITATED BY THE EYE-LASHES.

The Eye-lids are sometimes turn'd inwards, so that the Eye becomes extremely irritated by the Hairs or Eye-lashes: Hence proceed intense Pains and Inflammation, which, without timely Assistance, may greatly injure, if not totally destroy, the Sight. This Disorder was, by the *Greeks*, named *Trichiasis*, *Distichiasis*, or *Districhiasis*, hairy; and sometimes *Entropium*. It generally arises from an irregular Cicatrix formed after a Wound, the Small-pox, or a Burn; and sometimes it is occasioned by a Relaxation of the Eye-lids, and then it is attended with the other Mischiefs above-mentioned.

To remedy this Disorder, and prevent a Relapse, the Hairs must be entirely extirpated, an Operation very difficult to be performed. If the Hairs are cut close, it will be to no Purpose; for the rigid, sharp-pointed Stumps will again shoot up, and irritate the Eye worse than the Hairs did before. Some endeavour to bend the Hairs outwards, by keeping them agglutinated on the Outside of the upper and lower Eye-lids by some sticking Plaster; but the continual Motion of the Eye-lids soon loosens the Hair, and they become again inverted. *Celsus*, therefore, directs to burn the Roots of the Hair, one by one, with a slender, but broad-pointed Needle, shaped like a Spatula, heated red-hot. But *Egineta* advises to pull out the Hairs, one by one, before the Cauterization of their Roots, an Operation which cannot be performed without exquisite Pain; and, therefore, some chuse to fill up the Cavities at the Roots of the Hairs, after their Extraction, with some corrosive Medicine, such as Lapis infernalis, taking care, that no Part of it gets into the Eye; or it will be better to touch the Cavities with a small Pledget dipt in the Spirit of Sal Ammoniac, or the highly-rectified Spirit of Wine; by which means they will close up, without producing any more Hairs. When there are many inverted Hairs to be thus extracted, let them be pulled out at different times, and not all at once, which would induce violent Pain and Inflammation. The Cornea should, also, be defended from the Caustic, or the actual Caustery, by scraped Lint, or a smooth hollow Plate of Lead, Wax, or Horn, adapted as in artificial Eyes. If the Disorder should arise from a Relaxation of the Eye-lids, it will be necessary to treat it, like the Relaxation only, as was before directed.

But if all the Hairs of the Eye-lids are thus inverted, and the Patient will not permit them to be extracted by the Roots, and treated with Caustics, there is but one cruel Remedy left, by amputating the Cilia, or cartilaginous Margins of the Eye-lids themselves; a Remedy, which, tho' it deforms the Eye, had better be suffered, than an entire Privation of Sight. After the Operation, a Collyrium should be made and apply'd, of the White of Eggs, Rose-water, and Sugar of Lead, or with Water, and Spirit of Wine, mixed in equal Quantities; and the Wound must be treated, in the subsequent Dressings, with some Oil, or vulnerary Balsam, till it be healed. But *Cortumius*, in a Dissertation de *Trichiasis*, has propos'd to remove the Cilia, rather with Lapis Infernalis, than by Amputation, in the following Manner: When the Patient is laid on his Back, defend the Eye with Lint or Leather, and rub the Edges of the Eye-lids with strong Lapis Infernalis, till they and their Hairs are quite consumed. The Operation being completed, dress first with dry Lint; and, about an Hour after, apply upon the Lint the White of an Egg, soak'd in Rose-water, which must be often renewed. Next Day, Part of the Lint should be removed, to prevent an Inflammation from it. If any small Echar is formed, it may be removed by some digestive Ointment, after all the Lint is taken away; and thus he asserts, that the Wound will generally be conglutinated in six or eight Days time.

For ANCYCLOBLEPHARON, or Concretions of the Eye-lids, see ANCYCLOBLEPHARON.

For ECTROPIUM, and LAGOPHTHALMIA, or Everfion and Retraction of the Eye-lids, see ECTROPIUM.

For the ENCANTHIS, or Tubercle in the Corner of the Eye, see ENCANTHIS.

OF THE SARCOMA AND HYPERSARCOSIS, OR EXCRESCENCES BETWEEN THE EYE AND ITS LIDS.

Those Tubercles, which grow between the Eye and its Lids, as represented in Tab. XXXVI. Fig. 28. 29. called by the *Greeks*, *Hypersarcosis*, and *Sarcomata*, are nearly of the same Nature with those Disorders already mentioned. In the Beginning they are very small, but increase by degrees, and sometimes to a considerable Magnitude. Some of them are smooth, and even-surfaced; and some are rough and unequal like the Raspberry, or Mulberry; several of which Excrecences I have cured, in the following Manner.

I carefully pulled them out with a small Hook, and then cut down to the Root, with a small Pair of Scissars. After suffering

it to bleed, I ordered the Patient to wash his Eye frequently with a Solution of Tutty, Aloes, and Sugar of Lead, till the Wound conglutinated. Instead of an Hook, the Tubercle may be drawn out by passing a Needle and Thread through it. Some use the Lapis Infernalis, in extirpating these fleshy Excrecences; but I think Incision much safer.

OF BLEEDING IN THE EYES.

Blood-letting in the Eyes was, a few Years ago, claimed, by *Woolhouse*, an *English* Oculist, as an Invention of his own. But it evidently appears, that the Operation was known, described, and practised, in *Germany* above an hundred Years before. This Operation is, however, extolled by *Woolhouse*, as preferable to all other Discoveries in Physic, and even to the celebrated Philosophers Stone.

Blood-letting may be successfully used in the Eyes, 1. When they are violently inflamed; that is, when the Blood-vessels of the White of the Eye appear larger and redder than usual. This Operation, in this Case, has often had excellent Effects, when other Remedies, and even Phlebotomy, in other Parts of the Body, have failed, and when the Inflammation increases so as to endanger the Sight. 2. It may be serviceable, when the Cornea is affected with Specks, or Abscesses; for, after dividing the Vessels, which nourish the Disorder, it may be much more easily removed. 3. When a red Coat, or Film, grows upon the Eye; for the oftener the Vessels are cut, which nourish the Film, the sooner will it decrease and disappear. 4. When, after the Extirpation of such Films, a Relapse is threatened, by the Intumescence of the Veins in the White of the Eye, or those of the Cornea, the turgid Veins ought to be opened, and fomented with drying Medicines.

As the Methods of Operation are numerous, we shall only give the principal: 1. The Patient must be conveniently placed on the Bed-side, or on a Chair, and his Head must be steadily held by an Assistant; then make a transverse Incision with a Lancet upon the turgid small Veins in the Corners of the Eye, so as to open them, or cut them through. 2. Sometimes a small Pair of Scissars, instead of a Lancet, may be conveniently used to divide the Vessels. In both these Methods, the Operator must retract the Eye-lids with the Fingers of one Hand, and make the Incision with the other. 3. Some elevate the small turgid Veins with a crooked Needle before they divide them, the Eye-lids being distended by an Assistant. 4. But it would not be improper to have these Needles made thin and double-edged, so that they may divide the Vessels of themselves in the Elevation, without the Use of Lancet, or Scissars. 5. This Operation may be almost as advantageously performed by the scarifying Instrument, which shall be presently described.

The Veins being thus opened or divided, the Discharge of Blood should be promoted by Fomentations of warm Water, or the Decoctions of Eyebright, Hyssop, Male Speedwell, and the like digestive Herbs, frequently applied with a Sponge, or a soft Piece of Linen; for the more copious the Discharge is, the better will be the Effects. But, if one Operation is not sufficient to lessen the Disorder, it may be safely repeated two or three times, assisting it with proper Medicines both externally and internally. I must, indeed, confess, that after having tried this Operation on several Patients, first at *Altorf*, and afterwards at *Helmstadt*, I could hardly persuade them to suffer it at all, much less to submit to a Repetition of it; some being deterred from it through Fear of losing their Sight, and others on account of the great Pain which must attend it, especially as the Tenderness of the Eye must be increased by the Disorder. This Operation is seldom performed upon Infants, because of the Difficulty of persuading them to keep their Head and Eyes steady; and the Danger of applying a Lancet, or other sharp Instrument, when those Parts are in Agitation, is evident.

That Incision propos'd in a Dissertation under *Camerarius* at *Tubingen*, in 1734. for a Venereal Ophthalmia, is nearly allied to this Operation; in the most violent Symptoms of which Disorder, it is advis'd to make a circular Incision in the White of the Eye round the Cornea, to discharge the stagnating Blood; or other Matter distending that Membrane. But whether this be a safe or efficacious Practice, or whether it may not be successfully used in other violent Ophthalmias, as well as the Venereal, can be only ascertained by the best of Teachers, Time, and Experience.

OF THE SCARIFICATION OF THE EYES.

Scarification and Bleeding of the Eyes agree in many respects; so that it is no great wonder, that *Woolhouse*, though a famous Oculist, should confound them. But, I think, there is a manifest Difference; because, 1. Bleeding is confined to the White of the Eye: But Scarification is likewise extended to the interior Surface of the Eye-lids, where it is principally performed. 2. Each Operation requires different Instruments, as will presently appear.

That

That Scarification of the Eye is no modern Invention, is apparent from its having been described by *Hippocrates*, *Celsus*, *Aegineta*, and other eminent Physicians. But it was neglected by the Physicians in the succeeding Ages, partly, because it was difficult to perform, and attended with intense Pain; partly, as it was extremely dangerous; and partly, as they judged it to be of little or no Efficacy. *Woolhouse* was the first who revived the Practice among the Moderns.

The Operation is thus performed: Let the Patient be seated on a Bed or Chair, opposite to the Light, and his Head be held steady by an Assistant. Let the Operator, with his fore Finger and Thumb, gently press back the Lids of the closed Eye, so as to bring the interior red Surface into View, which may be done with most Ease in the lower Eye-lid. With his scarifying Instrument in the other Hand, let him diligently and swiftly rub backwards and forwards, upon the internal Surface of the Lid, or the White of the Eye, if necessary, and sometimes even the Cornea, and Caruncle of the greater *Canthus*, so as to lacerate the small turgid Veins, and make them bleed plentifully. But this Operation cannot easily be explained by Words, and none should attempt it before they have seen it performed.

The Scarification being completed, the Discharge of Blood must be promoted, as directed in the preceding Operation. The oftener the affected Eye is for the first Day moisten'd with Fomentations, or digerent Injections, it will be the better cleansed, and the Inflammation will the sooner abate. But, in order to prevent the scarified Parts from coalescing, they should not be bound up, at least in the Day-time; and the Lids should be frequently moved by the Patient. If they are bound up at Night, *Woolhouse* recommends the Interposition of three or four Seeds of Clary, or rather a Bit of Gold-beaters Skin, anointed with some Eye-salve, between the Eye and Lids, to prevent the Adhesion of the Parts. How often the Scarification should be repeated, and what Intervals allowed, must be left to the Judgment of the Physician. Meantime it will be absolutely necessary to prescribe a proper Diet, and to exhibit both external and internal Medicines. See *Platneri Diff. de Scarificat. Oculor.*

Different Authors have used different Instruments for this Operation. *Hippocrates* seems to have used a sort of prickly Thistle, like the *Atractylis*. Some ancient Physicians used a small Steel Rasp, in the Shape of a Spoon; see *Tab. XXXVII. Fig. 5.* with which they rub'd the internal Surface of the Eye-lid, till it bled, as we see in *Celsus, Lib. 6. Cap. 6. Num. 26.* who called this Instrument *Specillum Asperatum*; and in *Aegineta, Lib. 3. Cap. 22.* who named it *Blepharoxyston*. Others use the rough Herb, termed *Equisetum majus nudum*, (a Species of Horse-tail) which seems well adapted to the Intention; others, and among them *Celsus*, used the Fig-leaf; others recommend the Pumice-stone or Turtle-bone.

But the latest and best Instrument for this Operation, is found to be Beards of Barley or Rye, which are furnished with Rows of small Teeth, or Hooks, represented in *Tab. XXXVII. Fig. 3.* A. Ten, twelve, or fifteen of these Beards are to be cut, and tied together with a String, so as to resemble a sort of Brush for Cloths, as in *Tab. XXXVII. Fig. 4.* The Teeth of each Beard, or Spike, being turned outward all round, their slender Ends form a sort of Handle A; and the brushy-Part B, being quickly drawn over the Eye or Eye-lids, draws the Blood. This Scarification has been, by the Moderns, named *Ophthalmoxystis* or *Blepharoxystis*.

The first Contriver of this Eye-brush appears to be Mr. *Woolhouse*, who, though he highly extol'd the Usefulness of his Instrument to his Students, yet he studiously endeavoured to conceal it, till in 1726. *Mauchart*, present Professor at *Tubingen*, who had studied under *Woolhouse*, not only published the Instrument, but its Uses, and Method of Application, in his *Treatise de Ophthalmoxysti*. About two Years after *Platnerus* of *Leipsic* explained the Subject at large in his *Treatise de Scarificatione Oculorum*.

This *Ophthalmoxystrum* or Eye-brush, is said by Mr. *Woolhouse* to be very serviceable in all Disorders of the Eyes, which require Bleeding: As, 1. In a Stagnation of the Blood, or violent Inflammation in the Eyes, whether it proceeds from external or internal Causes, as a Blow, Wound, Cataract, Pterygium, Hypopion, Staphyloma, and the like; in which Cases the internal Surface of the Eye-lid should be first scarified, in order to discharge the stagnating Blood. And if we may believe *Woolhouse*, and his Followers, this Practice is more effectual in removing Inflammations induced by external Causes, or a Chirurgical Operation, than in spontaneous Ophthalmias. But in the *Chemosis*, or most violent Inflammation of the Eye, it will be necessary, besides the Eye-lids, to scarify the Eye itself with this Brush. 2. He likewise recommends this Method of Scarification, when the Eye is affected with a Pterygium, or with Abscesses, and whitish Specks; for by scarifying the *Albuginea*, or, if necessary, the Cornea itself, or rather the Pterygium upon the Cornea, the Vessels which nourish these Maladies are lacerated; so that, by the Applica-

tion of proper Medicines, the Disorder may be removed with greater Ease and Expedition. 3. This Operation, he says, is of great Efficacy in strengthening a decay'd Sight; or even to remove an Amaurosis and Cataract, which have not reached to a Degree of Inveteracy; for, by the strong Stimulus of the Scarification, the stagnating Humours are put in Motion, the obstructed Nerves, and straitened Blood-vessels, are again opened, and the Eye is by degrees restored to its former Vigour. 4. He us'd the *Ophthalmoxystis*, when the Eye was attacked with an Atrophy or Tabes. For the Extraction of the Blood occasions a larger Influx of the nutritious Juices into the tabid Part, by which means its due Nourishment is restored. 5. This Method he used in an *Hypohæma*, or Hypopion, that is, a Collection of Blood, or Matter under the Cornea, proceeding from a Blow, or other external Violence, which must be dispersed, in order to clear the Sight. 6. This, he says, is no despicable Remedy in relieving intense Pains of the Eyes, (called by the Antients *Ophthalmoponia*) when the Light itself is become intolerable. For, as these Pains proceed from an extraordinary Distension of the Blood-vessels, or from a Stagnation and Insipitation of acrid Humours, or from an internal Inflammation of the Eye, upon the Discharge of the superfluous Blood, the Pains must remit. 7. Lastly, the *Ophthalmoxystis* will likewise have excellent Effects in Palsies, Mortifications, and many other like Diseases, both of the Eye, and its Lids. See *Mauchart* and *Platnerus*, already quoted.

But *Platnerus* observes, that this Operation is not serviceable in every Disorder of the Eyes, for it will be improper, 1. In a Xerophthalmia, or dry Lippitude; that is, where the Eye is dry, itchy, hot, rough, the Eye-lids covered with dry Scales, and the Patient cannot behold the Light without Pain and Trouble. 2. When the Disorder proceeds from a venereal or scorbutic Cause. For unless the vitiated Juices be first corrected, as this Operation augments their Influx upon the Parts, it may increase, rather than relieve, the Disorder. 3. In a Cataract, Gutta Serena, or Hypopion, of an inveterate Nature. 4. Lastly, in an Ectropium, Trichiasis, Anchylosis, and other Diseases of that kind.

With regard to the Eye-brush, it is to be observed, that a small Force will blunt it, and therefore it cannot be used more than once; so that every Operation requires a new Brush. The Beards of old Barley are not so proper as those of what is new; or, at least, not above a Year old; because the first, being very brittle, will be subject to break, and leave some of its Teeth behind in the Eye and Lids, which might produce very dismal Consequences. For the same Reasons, it should not be the Product of a Soil too rich; nor should it be kept in a Place too dry, or too moist; nor have undergone Threshing.

After all, I must confess, that though I have performed this Operation in various Diseases of the Eyes, I never could perceive any remarkable Advantages in consequence of it. What is more, I have known many afflicted with various Disorders of the Eyes, who have been reported by *Woolhouse*, and his Followers, to be cured by this Practice, when the only real Benefit they have received by it, was an Abatement of their Pain; which I mention, lest it should be imagined I did not succeed, by not rightly performing the Operation. I must however own, that I have sometimes known it serviceable, especially in Inflammations of the Eyes: And I am persuaded, that it was in such Cases that *Woolhouse*, and his Followers, observed its good Effects, especially when it was assisted with proper Remedies, particularly Phlebotomy and Vescicatories. But, as the like Disorders of the Eyes have been frequently cured by the Use of proper Medicines only, without any Scarification of the Part affected, it may in general be questioned, whether those Disorders would not have been as easily removed by Bleeding, Purging, Blisters, and Scarification in other Parts, as by this Practice. We know that Diseases of the Eyes have been effectually cured, before *Woolhouse* introduced the *Ophthalmoxystis*; and perhaps are better removed at this Day, by some who have never known nor practised his Method. Besides, if the Pains produced by such rigid Treatment and Laceration of so tender an Organ, are so intolerable, that few would ever once undergo the Operation, much smaller is the Number that would ever submit to it a second time. Besides, though the greatest Caution is required in the Operator, yet, as the excruciating Torment will hardly permit the Patient to keep his Eye fixed, great must be the Danger, either of touching and even severely wounding the Cornea, or of breaking the Teeth of the Instrument, and leaving them in the Eye; whence would arise a more violent Inflammation than that intended to be cured, and many like dreadful Consequences. Hence then, in my Opinion, every prudent Physician will acknowledge, that this Scarification of the Eyes is surrounded with Difficulties, even in those Disorders, for the Remedy of which it is most peculiarly calculated. Nor are the Advantages usually expected from it so remarkable, nor the Examples of its good Effects so evident, as to counterbalance the extreme Danger, and exquisite Torment, with which it is attended. I would, therefore, advise this Method never to be used, but in Cases of the last Necessity, and when all other Means have failed. It is, also, remarkable, that, among the modern

learn French Surgeons, *St. Yves* excepted, as they say little or nothing of most other Methods of removing the Diseases of the Eyes, so they have taken no notice of this Operation, though it at first made so much Noise in the World.

For the EPIPHORA or watery Eye, see EPIPHORA.

For the FISTULA LACHRYMALIS, see FISTULA.

For Suffusions or CATARACTS, see CATARACTA.

For the Method of dilating the Contractions of the Pupil, see IRIS.

OF THE UNGULA, UNGUIS, PANNUS, OR PTERYGIUM OF THE EYES.

When a small Membrane is formed on the external Part of the Eye, extending itself over the Tunica Cornea and Pupil, and greatly obstructing the Sight, it is called Ungula or Unguis, from its Similitude to the Nails of the Fingers: For the same Reason the Greeks named it *Onyx*, and, also, *Pterygium*, a Wing, because it sometimes resembled the Wing of a Bat; sometimes it appear'd soft and red, when abounding with Blood-vessels, and then it usually assumes the Name of *Pannus*. It frequently arises from the Angle of the Eye next the Nose, and sometimes it comes from the upper or lower Side of the Eye, stretching itself gradually over the Cornea, as in *Tab. XXXIX. Fig. 1. and 2. a a*. Sometimes it is only slightly connected with the Cornea, by a few slender Fibres; at other times it overspreads the whole Eye, and firmly adheres to it; and difficult indeed is then the Cure.

Whilst the *Unguis*, or *Pannus*, is yet recent, small, and soft, it may be gently dissolved by Escharotics, such as a Draught of the Powder of double-refin'd Sugar, mixed with four or six Grains of white Vitriol, or burnt Alum, or a small Quantity of Verdegriese, carefully sprinkled at Intervals upon the Excrescence. To the same Purpose may a Powder be prepared of old *Scissilis Lapis*, Cuttle-bone, and Sugar. As it will be difficult to apply such a Powder to Infants, they may be treated with *Quercetani's* Eye-water; or the Fat of Vipers, or the Fat of the Grayling, or the Gall of the Eel-pout, or liquid Sperma Ceti, or the Oil of burnt Linen, or, lastly, with fresh Butter mixt with a little white Vitriol, with which the Membrane should be carefully anointed: These Remedies may, also, be advantageously applied to Adults. If the Unguis is attended with an Inflammation, begin with bleeding, blistering, and cooling Medicines to remove the Inflammation. *St. Yves* highly recommends in this Disorder, the *Lapis Divinus* or *Medicamentosus* of *Crollius*, dissolved in Water, and frequently instilled into the Eye; and of equal Efficacy is half a Scruple of white Vitriol dissolved in two Ounces of the Water of the greater Celandine.

When these Remedies are not effectual for destroying the Pellicle, it must be removed by Incision. For this Purpose, the Patient must be placed with his Back towards the Surgeon, and his Head inclin'd upon the Surgeon's Lap. The Patient must rest upon the Operator's Left Knee, if the Disorder is in the Right Eye, and *vice versa*. Then, the Eye-lids being sufficiently drawn asunder by an Assistant, let the Operator take a small Hook, as in *Tab. XXXIX. Fig. 3.* or *Tab. XXXVI. Fig. 30.* and endeavour to introduce its Point under the loosest Part of the Pellicle, thus attempting to elevate it a little. Then, passing a threaded Needle under the Pellicle, *Tab. XXXIX. Fig. 1. b b*, he may tie it with a double Knot, *Fig. II. a a*; and then, fastening the two Ends in a Loop *b c*, let him raise the Unguis by gently drawing the Thread to him; then let him separate the upper and lower Parts of the Membrane, that, with a small straight Pair of Scissars, he may expeditiously cut it near the Lachrymal Caruncle. He then draws back the Thread with the Membrane towards the Cornea; and, if it adheres any-where to the Eye, he gradually frees it, by degrees, with the Knife, or Scissars. Two Circumstances are here to be principally regarded by the Operator: 1. That he neither injures the Eye, nor its Cornea. 2. That he leaves none of the Unguis adhering to the Eye, which might occasion a Return of the Disorder. Yet it is better to leave some Part of the Unguis behind, when it obstinately adheres to the Cornea, than, by endeavouring to separate it, to wound the Cornea, and produce irremediable Scars; and this the rather, because any small Remains of the Membrane may be removed, by applying to the Eye the gentle Escharotics already named, two or three times a Day; though some prefer for this Purpose the following Collyrium.

Take of Rose-water, and Plantain-water, each an Ounce; prepared Mother of Pearl, a Scruple; Sugar of Lead, six Grains; white Vitriol, three Grains: Mix them for a Collyrium.

St. Yves advises the Patient's Eye to be washed, for four Days after the Operation, with Spirit of Wine diluted in Water; and then, to complete the Cure, a Solution of *Lapis Divinus* in common Water may be exhibited. But, in cutting the Pellicle near the Caruncle, particular Care must be observed, that no Part of the Caruncle, much less the Whole of it, be

amputated. For, if this Caruncle should be removed from the *Canthus*, a new Passage for the Tears would be made, and hence would arise the Disorder called *Oculus Lachrymans*, or the weeping Eye.

Some of those Pellicles, which assume a red Colour, because of the Blood-vessels communicated to them from the greater Angle of the Eye, may be removed by dividing these Blood-vessels near the Caruncle; for by this means the Pellicle, having its Nourishment withdrawn, will of itself gradually wither and decay; or will, at least, more easily yield to Medicine. Sometimes a glutinous Matter, resembling a thin Membrane, or Fat, overspreads the Cornea; which may be easily removed by applying the Bile of the Eel, Eel-pout, or the like, to the Eye; and it is not improbable, that this was the Case of *Tobias*, mentioned in the Apocryphal Writings. Sometimes these Membranes adhere so obstinately to the Eye, as to be absolutely inseparable from the Cornea; but, as we cannot be ascertained of this Obstinacy before Trial, it is better to attempt a Cure, though it should prove ineffectual, than to neglect it as irremediable. Some Pellicles on the Eye are extremely painful, inclining to a cancerous Disposition, which ought to be left as incurable.

If the Unguis be extended over the whole Eye, it will be proper to divide it into four Parts, as *St. Yves* directs, each of which may be removed, and the Dressings ordered in the manner already prescribed.

When the Operation is so performed on the Left Eye, after the Needle has been passed through the Membrane, the Patient should rise from the Ground, and place himself in a convenient Seat; by which the Operation may more speedily be completed, unless the Operator be as expert with his Left Hand as his Right.

OF THE ALBUGO, LEUCOMA, NEBULA, NUBECULA, AND SPOTS IN THE CORNEA.

As in several other Classes of Disorders belonging to the Eye, so in this, we meet with much Confusion, by a Misapplication and Multiplicity of Names. Hence proceed Difficulties, Mistakes, and Differences among Physicians in the Method of Cure; and much Trouble and Perplexity is created to the Student.

We find, however, that the most eminent Physicians have all agreed to ascribe the above-mentioned Names to whitish Spots on the Cornea; though they are not all of the same Nature: For they may be larger or smaller, thicker or thinner, and more pellucid; or they may be more or less prominent: Thus they may more or less impede the Sight, and sometimes entirely extinguish it, as these Spots sometimes over-run the whole Cornea. Hence this Disorder was named in Greek *Leucoma*, and in Latin *Albugo*, *Nebula*, and *Nubecula*, from its different Appearances.

These Blemishes may proceed, 1. From an Obstruction of the pellucid Vessels in the Tunica Cornea, and an inspissation of their contained Juices, proceeding from a violent Inflammation of the Eye. 2. From an Abscess generated by a Stagnation of these Juices, after an Inflammation of the Cornea, while the peccant, opaque Matter, hardens by degrees, and stretches a whitish Cloud over the Cornea. This Disorder has been by some called the *Unguis*, or *Onyx*, and esteemed a peculiar Species of Disorder. 3. From an Erosion, or external Abscess, of the Tunica Cornea. 4. From inflammatory Pustules, which, from different Causes arise in the Cornea; especially, 5. From those which are occasion'd by the Small-pox. 6. From the Scar after a Wound with a Sword, Knife, Fork, Splinter, Glass, Thorn, or the like. 7. From a Burn. 8. From the accidental Slipping of acrid or corrosive Medicines into the Eye, or the injudicious Application of them. 9. Lastly, from the Agglutination of a peculiar Coat to the Eye.

Though these Spots are, for the most part, very obstinate, yet they are not always equally dangerous, nor equally difficult to disperse; as the Cure depends upon the Habit of Body, their particular Causes, their Duration, and the Age of the Patient. Children are more easily freed from them than Adults; but when it is produced by a Scar from Wounds, Burns, Punctures, or the like, hardly any Remedy can be expected.

The Method of Cure must be adapted to the Cause of the Disorder. Those Spots which proceed from inspissated Humours stagnating between the Laminæ of the Cornea, and have been of no long Continuance, may be best cured by carefully observing a proper Regimen, by taking internal digestive Medicines, and the copious Use of sudorific Infusions and Decoctions: The necessary external Remedies are Bleeding, Scarifications, Vescicatories, and frequent washing of the Feet: To the Eye itself should be often applied discutient Bags made of Hyssop, Rosemary, Chamomile-flowers, Fennel-seed, and the like, boiled either in Wine or Water; or a Collyrium of the Water of Fennel, or Valerian, mixed with a small Quantity of camphorated Spirit of Wine. Lastly, it may not be improper for the Patient to fumigate his Eye, after the Dressings are taken off, with the warm Vapours of Coffee, or a Decoction of the Woods. Cold and astringent Collyriums, especially those

of Vitriol, however they may have been extolled, are certainly very pernicious in this Case; whereas I have found warm Applications extremely serviceable. When the Inflammation is carried off, let the Patient every Day infill into his Eye a little of *Quercetani's* Eye-water, prepared with Turty, or some other Digestive, and warmed, till he finds the Disorder almost removed. But if any of the Veins proceeding to the Spot appear turgid in the White of the Eye, recourse must be had to cutting them with the small double-edged, crooked Needle (*Tab. XXII. Fig. 5. or Tab. XXXVII. Fig. 2.*) or with a Lancet, or Scissars. If the Disorder has been of long Duration, no Remedy can be expected.

When Spots are produced by an Abscess between the Laminae of the Cornea, after an Inflammation, and the contain'd Matter makes the exterior Part of the Cornea project like a Lentil or Pearl, whence this Disorder is called a Pearl, the Matter should be immediately discharged by Incision, left, by its long Continuance there, it should by degrees affect the whole Cornea, and induce incurable Blindness. This may be most conveniently effected by a Lancet, or Couching-needle, *Tab. XXXVIII.* and the Operation must be repeated till the whole Matter is evacuated, afterwards exhibiting the digestive Medicines already propos'd. Nor is it improper to infill into the Eye Vipers Fat, for cleansing and conglutinating the Wound or Puncture. But when the Matter is lodged deep, and not near the Outside of the Cornea, the Sight is generally lost.

When an external Erosion of the Eye proceeds from an Abscess or Inflammation, *St. Yves* directs, first to remove the Inflammation, and then to drop frequently into the Eye *Hartman's* green Eye-water, which may be made stronger or weaker, as the Patient can bear it. The Virtues of this Water in removing Spots of the Cornea are strongly recommended by that Author.

If those inflammatory Pustules, which are called Uritides; project upon the Cornea like a Pearl or Grain of Millet, the inclosed Matter should be immediately discharged by perforating them with a small Needle. When the Eye is affected with Pustules in the Small-pox, they ought to be opened immediately, and the remaining Pellicle being taken away, with a small Needle, Lancet, or other Instrument, a small Quantity, about the Size of a Lentil, of a Powder prepared with Alum, Sugar-candy and Egg-shells, must be every Day put into the Eye; or it must be daily anointed with the Oil of burnt Linen: By which means the Remains of the Spots will, according to *St. Yves*, gradually decay. This Method must be observed in Pustules generated upon the Cornea by a Burn. If, at last, after the Pellicle is removed, some Spots should still remain, they may be treated with the Medicines prescribed in the Case of an Onyx or Unguis.

Those Spots which arise from Wounds and Scars, or the Abuse of vitriolic Collyriums, those which, by their long Continuance, have rendered the Cornea entirely opaque, and those which have altered the natural Shape of the Eye, or of the Cornea, seldom admit of a Cure. In these Cases, therefore, it is better to attempt nothing, than to torment the Patient with a tedious, but inefficacious Course of Remedies and Operations.

OF THE STAPHYLOMA.

The Term *Staphyloma* comprehends two Disorders of the Eyes: One is when the Tunica Cornea is gradually rendered more protuberant than in its natural State, as in *Tab. XXXIX. Fig. 4. 5. 6. 7.* The other happens, when either from an internal Cause, or an external Wound, the Uvea or Pupilla breaks forth upon the Tunica Cornea, and deforms the Eye with a Tumor, by which the Sight is generally destroy'd. See *Fig. 8. a. a.*

These Tumors from their different Forms and Sizes assume different Names. Thus they are called *Margarita*, *Myocephalon*, *Clavus*, *Mylon*, or *Pomum*; and, lastly, *Staphyloma*, *Uva*, or *Acinus*, according to the Resemblance they bear to the Things, whence they are named: The largest is the *Mylon*. I have not only observed the Cornea, but sometimes the Sclerotica, preternaturally swelled and distended; and even then the Disorder may be denominat'd *Staphyloma*; because these two Coats properly consist but of one. However, for Distinction, one of these Tumors may be call'd *Staphyloma Scleroticæ*, the other *Staphyloma Corneæ*.

These Staphylomas not only deform the Eye, and destroy the Sight, but occasion most violent Inflammations, Pains of the Head, Watchings, and Suppurations, and frequently induce a Cancer. Their Cure, therefore, is undertaken not so much with a Design to restore or preserve the Sight, which is by them almost always extinguish'd; but to remove the Deformity of the Eye, and those malignant Symptoms already enumerated.

In the Cure of this Disorder, apply to the Tumor a Compress dipt in Water, impregnated with Alum, together with a Plate of Lead and Bandage, or some proper compressing Instrument. When the Uvea protrudes through a Wound, it must be immediately replaced by a small Probe; in the mean time the Patient should continue to lie on his Back, and the Wound

must be carefully dress'd with the White of an Egg, and a Mucilage of Quince-seeds, till it conglutinates: By this Method the Sight has been sometimes restored.

If the Disorder is become so inveterate, as not to yield to Remedies, pass a double threaded Needle, through the middle of the Tumor, towards its Bottom (see *Tab. XXXIX. Fig. 8.*); then, removing the Needle, tie together the two Ends of the Thread on the Right Side; and, next, the two Ends of that on the Left Side: Thus the Tumor will gradually decay, and at last fall off with the Threads.

But as this Ligature frequently occasions violent Pains, Inflammations, and Suppurations in the Eye, it may be safer to remove the Tumor by Incision. Thus, I took hold of a Protuberance of this Kind, which projected from the Eye, about the Length of a Joint of the Finger, with two Fingers of my Left Hand, and happily cut it off with a Pair of Scissars.

St. Yves proposes the following Method: When the Tumor has not overspread the whole Cornea, he passes a sharp crooked Needle, with a Silk Thread, through the middle of the Staphyloma. Then, having removed the Needle, and twisted the two Ends of the Thread together, he takes them in his Left Hand, and with a Knife, or Lancet, gradually frees the Tumor under the Thread, till he can conveniently with the Scissars cut it entirely off. He then applies Spirit of Wine diluted in Water to the Eye, as is done for the Cataract. By this Method the Staphyloma is not only removed, but the Cornea is almost entirely heal'd, or else leaves but a very small Aperture in the middle of the Wound; whence indeed the aqueous Humour is continually discharged, as fast as it is secreted in the Eye, but without any Trouble to the Patient, because it flows gently with the Tears, through the Lachrymal Passages, into the Nose.

When the Staphyloma affects the whole Cornea, as in *Fig. 4. 5. 6. 7.* *St. Yves's* Method is certainly the most expeditious, by which not only the Cornea, but, also, the Iris and Uvea, and about a Line's breadth beyond the Ring, where it joins the Albuginea, are entirely cut out circularly. Then all the Humours of the Eye being discharged, the remaining Coats are contracted into a smaller Compass, and the Wound itself at last closes. An artificial Eye may now be used, nearly resembling the other Eye, and nicely adapted to the Part. Thus, the artificial Eye may be moved by the Muscles like a natural Eye, and the Difference be scarcely perceivable. A Cure of this kind I perform'd myself.

THE METHOD OF DISCHARGING EXTRAVASATED BLOOD BY AN INCISION IN THE CORNEA.

When by external Violence a small Quantity of Blood is extravasated within the Eye, it may generally be dissipated by applying the Resolvents already prescrib'd. But when the Quantity is so large, as not to yield to this Method, it ought to be discharged by opening the Cornea, in the manner directed under the Article *HYPOPION*, to prevent the stagnating Blood from destroying the Sight.

We see, in the History of the Royal Academy of Sciences for *An. 1705.* an Operation of this kind performed by *Gandolphus*. He immediately made a transverse Incision through the Cornea, and discharged the extravasated Blood, not only without Pain to the Patient, or any deforming Cicatrix, but the Sight was entirely restored; altho' he was obliged to open the Wound three times, because of the great Quantity and strong Adhesion of the Blood. In order to conglutinate the Wound, he applied Compresses dipt in four Ounces of Plantain-water, mixed with two Ounces of the Aqua Sclopetaria; so that in about eight Days the Cure was completed; nor could the wounded Eye be distinguished, except that its Pupil appeared a little broader, which seem'd rather the Effect of a Blow, than of the Operation.

OF THE DISTENSION, PROLAPSUS, FUNGUS, AND CANCER OF THE EYE.

Sometimes the Eye is so violently inflamed and swelled, that the Lids cannot contain it, but it becomes projected from its Orbit: This Disorder not only occasions a prodigious Deformity, Pain, and Trouble, but is almost always attended with Danger of Blindness, or a Cancer. The monstrous Deformity produced by it may appear from its Representation in *Tab. XXXIX. Fig. 14. 15.* *Paré* relates a Case in which the Eye was so vehemently distended, that it burst its Coats. This is termed by the Greeks a *Proptosis*; and sometimes, when the Eye is distended with an aqueous Humour, an *Hydrophthalmia*. Some call it *Oculus Bubulus*, or *Bovinus*, or *Elephantinus*, from its Resemblance to the Eye of an Ox or Elephant. Various are the Causes of this Disorder. Sometimes it proceeds from a violent Inflammation, or an Obstruction, of the Vessels from a Redundancy of peccant Humours; sometimes from external Violence; and sometimes from a scirrhus or cancerous Disposition of the Eye; to which last Causes may be imputed those Instances given by *Hildanus*, *Cent. 1. Obs. 3.* and *Muys*, *Dec. 12. Obs. 1.* and, lastly, the Case which I have represented in *Tab. XXXIX. Fig. 14. 15.* Some Physicians have likewise named this Disease *Fungus*, or *Ficus*; from its Figure, which however are really different Diseases.

If the Disease is recent, and the Eye not altogether deformed, the Hydrophthalmia may generally be relieved by Bleeding, Purgings, Sudorifics, Veficatories, and discutient Fomentations. But, if the Disorder be too stubborn to yield to Resolvents, the Matter must be discharged by the Operation of the Paracentesis, or Tapping, as in other dropical Cases, which must be performed by the Trocar, and repeated every Day, or every other Day, so long as may be necessary. At every Dressing a concave Plate of Lead should be firmly secured upon the Eye, till it be reduced to its natural Figure. By this Method *Nuck* tells us he completed a Cure, though he always made the Wound in the Cornea itself. But as that may leave an unsightly Cicatrix, I rather make my Perforation with a Lancet in the Sclerotica; and, after discharging the Matter, I dress the Eye with Lint dipt in Rose-water, mixed with the White of an Egg, and lay a leaden Plate above it, over which I put a thick Compress, thoroughly soak'd in warm Spirit of Wine, and secure the Whole with a Bandage; not neglecting to continue the internal Medicines, Purgings, and Sudorifics, till the Eye be reduced to its natural State.

When the Sight and natural Figure of the Eye are destroyed, and the Symptoms and Pains increase, there remains but one, and that a deplorable Remedy, by making a transverse Incision in the Coats of the Eye, and discharging the contained Matter. The Eye must be deterged, as in other Ulcers, and covered with a Compress, and tight Bandage, the sooner to reduce its Size, that the Eye-lids may cover it. But if the Eye still continues so large as not to be contained within the Lids, there will be a Necessity of cutting off, with the Knife or Scissars, the superabundant Part; by which means the Deformity may be afterwards the better concealed by an artificial Eye. Sometimes the Surgeons may cut out the Cornea by a circular Incision, as was directed in the Staphyloma.

Bartischius, *Hildanus*, and *Muyssius*, have contrived a crooked Knife, hollowed like a Spoon, for extirpating the Eye in this Disease. But, besides the Difficulty of sharpening this Instrument, it will be found sufficient to cut off only that Part of the tumefied Eye, which prevents the Lids from closing. Moreover, there is Danger of severely wounding some of the slender Bones of the Orbit of the Eye by this crooked hollow Instrument. But, when, because of a scirrhus or cancerous Affection, it is necessary to extirpate the whole Eye, the Operation may be performed, with equal Conveniency, with the straight Knife, (see *Tab. XXXI. Fig. 14.*) which was all I used in extirpating those monstrous Tumors represented in *Tab. XXXIX. Fig. 14. 15.* There are some who think it the mildest Practice to free the Eye so far from its Orbit by a Knife, till a Ligature can be made about the protuberant Part, in order to remove it by that means, like other Excrescences. But the violent Inflammations, Pains, and Convulsions, which this Method occasions, either kill the Patient, or put him into extreme Danger. When therefore the Eye is affected with a Scirrhus, or Cancer, even when it penetrates to the very Root, there is scarcely any other Way of relieving the Patient, than by carefully freeing the Eye from its Orbit, and entirely extirpating it. The Wound may be afterwards deterged, and healed with a vulnerary Balsam.

Sometimes it happens, after the Operation is performed, that a new fleshy Excrescence, growing over the Eye, threatens a fresh Tumor: To prevent which, dress with Lint dipt in Aqua Phagedænica, over which put a Leaden Plate, and depress the Eye with a very tight Bandage. It is, also, to be observed, that Cancers in the Eye, like those in other Parts, will very often return after they have been seemingly cured, by the Treatment here proposed; and must be again removed by the same Practice; as may appear from the fore-cited Case, given us by *Muyssius*. When these Disorders arise from a Caries or Spina Ventosa of the Bones of the Orbit of the Eye, if they will not yield to Mercury, as is sometimes the Case, the Physician must then be content to palliate the Disorder, and relieve the Pains, since a total Removal is frequently altogether impracticable.

OF ARTIFICIAL EYES.

Artificial Eyes are contrived for concealing the Deformity produced by the Loss of an Eye. They are now made of concave Plates of Gold, Silver, or Glass, stained so as to resemble the natural Eye. The nearer it approaches the sound Eye in Size, the more firmly will it stay within the Eye-lids. It will be necessary frequently to clean the artificial Eye, lest, by Sordes gathering upon it, the Fallacy may be discovered; and, lest one should be lost, broken, or disfigured, several should be provided, immediately to supply its Place. When the Patient goes to Bed, let him take out the Eye, and clean it, and replace it in the Morning. But, that it may be taken out, and put in, with Nearness and Conveniency, the Surgeon, in the Operation, must take care to remove so much of the disorder'd Eye, as will make room for receiving the artificial.

The more exactly the artificial Eye is fitted to the Eye-lids, the more perfectly will it perform the Motions of the natural Eye, which it will receive from the remaining Muscles. For this Reason we advised no more of the diseased Eye to be removed, but what was prematurely projected, except when a

Scirrhus, or Cancer, requires a total Extirpation; and then the artificial Eye can have no other Motion, than what it receives from the Lids.

Sometimes I have observed these artificial Eyes irritate the Parts, and produce Inflammations and Defluxions, and the like Disorders, especially if they are not made to fit exactly, so that they will often inflame and weaken the sound Eye. In these Cases, the Patient should either provide himself with an Eye which is better adapted, or else totally lay them aside, rather than lose the Use of his sound Eye.

OF THE STRABISMUS, OR SQUINTING.

We frequently meet with Persons whose Eyes, instead of being directed to an Object, are turned towards the Corners of the Eye-lids: This Disorder is called *Strabismus*, or *Squinting*. Sometimes one Eye, but oftener both are thus affected. This Misfortune is frequently produced in Children, by letting them constantly suck one Breast, or by placing them in the Cradle, so that they always look the same Way to the Light. But this Disorder is more frequently caused in Children by convulsive or epileptic Motions, to which the Muscles of their Eyes, as well as of their other Limbs, are extremely subject. Lastly, It may proceed from a Spasm and Rigor, or from a Palsy in some of the Muscles of the Eye, or from some Defect in the Retina; for, when that Part of the Retina which is opposite to the Pupil, and receives the Impression of the Object, is from any Cause render'd insensible, the Patient is then obliged to turn his Eye obliquely, till the Pupil directs the Rays, from the Object, upon some other sound Part of the Retina.

Squinting is a Disorder which is hardly ever cured without Difficulty, more especially in Adults, and when caused by some Defect in the Muscles or Retina of the Eye. In young Infants it may be remedied, according to the Directions of *St. Yves*, by frequently placing them before a Looking-glass, that their Eyes may be directed towards the Image of their own Face. Those more advanced in Years may be assisted by reading very small Writing, or inspecting very minute Objects, provided you observe and direct them to turn their Eyes even; they should likewise bathe their Eyes with *Hungary Water*, or anoint them with the Balsam of *Fioravanti*. Some have not unsuccessfully attempted to cure this Disorder by a sort of Mask Eye-swatch, as represented in *Tab. XXXIX. Fig. 16.* taken from *Solingen*. This Method is, also, recommended by *Bartischius*, in his *Ophthalmoduleia*. But lest Children should look strait through the Aperture, only with one, and squint in the mean time with the other, it will be best to bind up one Eye till the other is rectified, and then to remedy the other in the same manner; which is seldom practicable, through the Fretfulness of Infants, and other Impediments. *Heister. Chir.*

Authors differ in their Opinions, as to squint-eyed People: Some pretend, this Deformity is a Defect of the transparent Part of the Cornea, which is too convex, or placed obliquely. Others say, the Fault is in the Crystalline. But they are both mistaken; for the Defect is in the Muscles, as I shall make appear.

When a Person looks at an Object, and does not turn his Eye towards it, he is said to squint. Persons thus affected squint sometimes with one Eye, and sometimes with the other; sometimes both Eyes seem to squint together: Some squint very little, when the Object is near; and more, when it is at a great Distance: Some squint with one Eye, when near the Object; and with the other, when farther from the Object. When the Eye, that does not squint, is shut, the Eye, that squinted, looks strait; then, if the Eye-lid be opened, the Eye, that looked strait before, is found to squint.

This different Inspection of squint Eyes demonstrates a Disparity of Movement in one of the strait Muscles of the Eye, which is produced by the unequal Influx of the animal Spirits in all these Muscles: This regards only those who squint from their Childhood. This Disease may happen to Persons of any Age; but, in this Case, it commonly proceeds from a Palsy in one of the strait Muscles of the Eye. Persons thus affected see two or three Objects, and sometimes more, when they look but at one; these People are generally said to see double. This Accident happens for this Reason, because the two Pupils are not in a parallel Line; so that the Rays of Light, reflected from an Object, fall, in one Eye, on a Fibre, and, in the other Eye, on another Fibre, which does not meet in the same Point, from whence the first takes its Rise. As the Impression made by the Light in both Eyes affects different Fibres, which do not flow from the same Point, a double or triple Sensation is transmitted to the common Sensory; for which Reason a Multiplicity of Objects is seen.

To explain this more amply: Vision is performed by means of the nervous Fibres, which are distributed to all the Parts of the inner Cavity of the two Globes of the Eyes; and these Fibres coincide in the same Point of the Brain whence they rise; the Fibres on the Side of the great Angle in one Eye correspond with these on the Side of the great Angle in the other Eye. When they equally receive the Light reflected from an Object, a single Sensation only follows, in the Place of their Origin, for which

which Reason there is but one Object seen; but, as the Pupil or the Eye, which squints, is not in a parallel Line with the other, it happens, as I just observed, that some Fibres in one Eye are moved by the Light, whilst in the other Eye the Light makes its Impression on Fibres which do not correspond with the former: Hence follows a Confusion in Vision. To make an Experiment of it, let a Person press, with his Finger, one of his Eye-lids, and force down the Globe of that Eye somewhat lower than the other; then, the Pupils not lying in a parallel Line, or of an equal Height, the Person sees double, for the foregoing Reason. All the Difference between Persons who squint from their Childhood, and those who squint in a more advanced Age, consists in this; the first do not see double, as the latter do. In the first, when the well Eye is shut, the Eye that squints, turns equally of all Sides: But, in the latter, when the good Eye is shut, the other Eye cannot be brought to the Side opposite to that, towards which the Pupil is turned: This shews that this Defect, in Children, is caused by an unequal Influx of the animal Spirits, either in the adduct or abduct Muscles of the Eyes, which makes the Globe turn of one Side: But in grown Persons, when one of the Muscles becomes paralytic, the Eye remains as immovable towards one Side, by the Contraction of the antagonist Muscle, neither can the Eye move itself towards the Part opposite to that which is relaxed. Having thus distinguished the Difference that occurs in this Disease, when from the Infancy, and of the same when it happens in a more mature Age, we must now propose its proper Remedies: I shall begin by the Cure of Children; it consists in settling the regular Course of the animal Spirits in those Muscles: To which the following Method is highly conducive.

Let the Child sit before a Looking-glass, and, when he is thus seated, make him look directly at his Face in the Glass, so that each of his Eyes may look precisely at the Pupil of that Eye which corresponds with it in the Glass: By making him perform this visual Exercise, Morning and Evening, for a Quarter of an Hour, the Sight, at length, becomes strait: Besides this, get him to read very small Writing, or to work at fine Work, which requires a great Application of the Sight. Care must be had, when Children look at any Object, that they do not lay it sideways; for whilst the Organs are tender, they must be accustomed to look strait. Whilst these Exercises are performing, spirituous Remedies must be applied to the Eye, that they may animate the Spirits in the nervous Fibres, and invigorate the relaxed Muscle to perform its proper Action. The Queen of Hungary's Water, Fioraventini's Balsam, and such Remedies, may be applied with Success; the Forehead, the Temples, and upper Part of the Eye-lids, must be rubbed with them three times a Day.

As to Barnicles, which have been long in Use; when they are put on Children, it commonly happens, that they only look thro' the Hole of one of these Barnicles, while the other Eye remains askew; for which Reason I have invented a kind of Nose, like that of a Mask: It covers Part of the Eye that squints, or of both Eyes, when they both squint; it must reach no farther than the Pupils, which must be left quite uncovered: We are sometimes obliged to cover entirely the strait-looking Eye, so that, by looking singly, it may be habituated to look strait.

In Persons advanced in Years, this Indisposition may be caused by getting Cold in the Eyes, or in the Head, or by a Distillation of Humours, which are discharged on the Muscles of the Eye: Sometimes the Rheumatism in these Parts produces the same Effect.

This Disease is cured by Bleedings, Purges, and sometimes by an Emetic; the Steam of hot Coffee, and of the Spirit of Wine, must be applied to the Eye; a Decoction of Eye-bright and Sassafras must likewise be drunk. All Remedies proper for the Palsy are serviceable in this Case: Such are the hot mineral Waters, &c.

This Indisposition is sometimes owing to an Heat of the Viscera, or to Vapours conveyed to the Head: Then we are obliged to bleed in the Foot; to prescribe cooling Drinks, the House-baths, and sometimes the cooling mineral Waters. In this Case, the Advice of a Physician is requisite.

OF WEAK VISION.

St. Yves divides Vision into three Species; the good Vision, that of the Presbytae, and that of the Myopes; all which Species may be variously weaken'd.

I mean, says he, by Weakness of Sight, when Objects are not seen as distinctly as usual; for Instance, when a Person cannot see to read. All the three Sorts of Sight are liable to this Indisposition: The good Sight is impaired, when the Eyes become moist and weeping; the Serosity, which constantly moistens them, injures the Sight very much. Persons afflicted with this Infirmary must have recourse to convex Spectacles, which must be so proportioned to their Sight, that they may be able to read or work; which they cannot well do, without this Sort of Spectacles.

The Presbytae cannot distinguish small Objects, or minute Characters, without straining their Eyes, and discomposing their Head; yet they can see distinctly larger Objects, at a considerable Distance. This proceeds from the too great Convexity of the Crystalline, which occasions Rays, reflected from Objects near

the Eye, to diverge from the Place where they should unite, when Vision is perfect: The same does not happen, when the Objects are distant, because the Rays, reflected from them, converge more; and thus they have a Focus, in just Proportion. In order to remedy this Infirmary, let the Patient, at first, use Glasses which do not magnify; and from them he must pass gradually to more convex Spectacles, which shorten the Focus.

The Sight of the Myopes is so short, that they can neither read, nor distinguish Objects, without concave Glasses: This is owing to the too great Convexity of the Crystalline. The Concavity of their Spectacles must be proportioned to the Shortness of their Sight.

It often happens, after the Use of Spectacles for many Years, that the Crystalline re-assumes its proper Form, so that they are no more required. It has been, also, observed, that several Persons, neither Myopes nor Presbytae, have been necessitated, on account of a Weeping, to wear Spectacles; and, when this Disease ceased, they have laid them aside.

For the most part, Spectacles are either convex, or concave; they both have different Degrees, or Focuses: There are, also, some flat and even in their Surface; they are called Conives, and are made either of green, or of white Glass. Convex Spectacles, of the first Degree, magnify but very little, and may be used as Conives; the rest magnify, in proportion to their Convexity.

That Place in Spectacles is called the Focus, where the Rays of Light, which pass through the Spectacles, are united in a Body that is placed opposite to the Light; and the Degrees of Spectacles are measured by the different Distance of their Focus.

It is a Caution of great Importance, not to use Spectacles too soon; and, when a Person has once begun to use them, not to change them too often; for, at length, he cannot get any proper for his Sight.

Those Persons called *Myopes* ought to use concave Spectacles, when they read, as little as they can: They must, also, begin with the least concave.

I think it necessary to say something of the Means to preserve the Sight, and to lay aside the Use of Spectacles: Though, perhaps, this Method may not succeed to all Persons, yet several, by following it, will be freed from the Trouble of Spectacles. I shall exclude the Myopes, for no Remedy can lengthen their Sight; the good Sight, and that of the Presbytae, can only receive Benefit from this Method.

The good Sight, as we have already observed, is often weaken'd by a redundant Serosity, which perpetually fills some Peoples Eyes. In this Case, I use an ophthalmic Water, which, applied three times a Day, dries up the Moisture, and strengthens the Parts. Remedies that will evacuate the Pituita of the Brain, such as Purges, and smoking Tobacco, are serviceable in this Disorder of the Sight.

The Presbytae may be freed from the Use of Spectacles, by restoring their Crystalline to its natural State; the following Tincture will be very serviceable in this Case:

It is composed of Sage, Rosemary, Lavender, and Thyme, when they are in Flower, of Wormwood, and Origany, of each an equal Quantity: Let them infuse in Brandy, the Space of four Days; then let the Brandy be cleared off, and used in the following manner: Let one Part of this Brandy be mixed with four Parts of the distilled Water of Blue-bottle, or *Cyanus segetum*, or with Eyebright-water: Then put it into a Spoon, which you must heat warm, to the Brandy. Let the Inside of the Eye be bathed with this Mixture, twinkling the Eye-lids, that they may imbibe the Water, and convey it round the Eye: This must be done four or five times successively, Morning and Evening.

When this Mixture has been used in the foresaid manner, and Degrees of Strength, for a Fortnight, then let only three Parts of the fore-named Waters be mixed with one of the Brandy. When the Eye is accusom'd, for some time, to this Degree; then let Brandy, and the said Waters, of each one half, be mixed: Let this be the Standard. These Degrees are increased for this Reason, that the Brandy, by its Pungency, may stimulate and vellitate the Eye; by which the nutritious Juices of the Eye will be more inspirited and attenuated, and their Quantity, as well as Fineness, will be increased; so that by the Help of one and the other the Crystalline may be restored to its natural State.

PRESAGES FROM THE EYES.

Prognostics from the Eyes are the more considerable, in that these, above all other Parts of the Body, furnish the judicious Observer with the surest Marks for predicting the Events of Diseases, according to that Sentence of the divine Hippocrates, 6 *Epid. Sect. 4. Aph. 26. According to the State of the Eyes, so is that of the Body; and so their Colours change together for the better or the worse.* If the Eyes be clear and lively, the Body may be judged to be in a good Condition; for, as *Galen* rightly says, in his Comment on the forequoted Place, a good Colour of the Eyes shews the Body to be in good Health. But we shall treat of such Signs

Signs as are afforded by the Eyes for predicting the Death or Recovery of the Patient; and, first, we shall insist on those which are hopeful and salutary; and, afterwards, on those which are pernicious and fatal.

First, then, the Eyes of the Patient have a promising Appearance, and give no small Hopes of Recovery, when in Magnitude, Figure, Situation, Motion, Colour, Vision, and Splendor, they resemble the Eyes of Persons in Health; for sound and robust Eyes are always a good Indication; and such are those Eyes, as *Galen* observes, in his forecited Comment, which are of a lively Colour, full Bulk, and contain a splendid Humour: Eyes so qualify'd *Galen* calls sound and robust, because such an Appearance must be owing to the great Plenty of luminous animal Spirit, proceeding from the Brain to the Eyes; but, on the contrary, in Bodies weaken'd by Diseases, Indications of this Nature are not so much to be regarded, nor much Danger to be apprehended from them. Good Eyes, then, are like those of Persons in Health, of a florid Colour, full, splendid, seeing forward, at a Distance, through a luminous Air, without Molestation, free from Redness, Lividness, or Blackness, and without Tears, or Excrements, called by *Hippocrates*, *ἀνυμια*, *Lema*, adhering to their Angles: These we may always call good Eyes, as indicating a good State of the Body, and of the Head in particular.

But for our more secure Prognostication from the Eyes, we are to consult and consider other Signs appearing at the same time, which if they happen, also, to be good, we may with Confidence predict the Patient's Recovery. For the Eyes by themselves are incapable of determining our Judgment; nor have they any thing of Certainty, to which we may safely trust in forming a Prognostic; since, in some continual Fevers, the Eyes sometimes make a good Appearance, when the Fever is taking a fatal Turn, though indeed it rarely happens for the Eyes to be in a good State, when the Patient's Affairs tend to a fatal Issue; and therefore good Eyes generally afford no small Hopes of a Recovery. But not only those Eyes which are supposed to be good, but sometimes bad Eyes, may, by Accident, prove salutary Indications; for Instance, Eyes avoiding the Light, as incapable of bearing it, weeping Eyes, intensely red, shining, dark, dim, dull, distorted, tumid, hollow, closed Eyes; provided they put on such an Appearance against an approaching Crisis: I except from those before-mentioned such Eyes as are not render'd so by the Disease, but from some extrinsic Cause; these afford nothing of Certainty, because they appear thus changed immediately at the Beginning, at a time when they are quite incapable of suffering a critical Alteration, as is implied in what *Hippocrates* says, *Lib. Prognost.* "That in the Space of three or four Days the Eyes become and appear bad, through the Force of the Disease." External Causes are easily understood from the Patients themselves; and of these we find *Galen* speaking, *Com. 1. in Prognost. Text. 10.* where he says, that "Sometimes in the Beginning of a Disease, through much Drinking of Wine, or violent Vomiting, the Eyes avoid the Light, shed Tears, are distorted, or swelled, swell, or appear with red Veins." But at the Approach of a Crisis, when Nature is contending with the Disease, these bad Symptoms appear in the Eyes.

Some Eyes, for Instance, flow with Tears, at the Approach of a critical Hemorrhage from the Nose, according to *Hippocrates*, *1 Epid. Stat. 3.* "From those who under acute Fevers, and especially those of the burning Kind, are affected with a spontaneous or involuntary Flux of Tears, you are to expect an Hemorrhage from the Nose, if there be no concomitant destructive Signs; otherwise Weeping prognosticates not an Hemorrhage, but Death." We are to make a Distinction of Tears into voluntary, and involuntary or spontaneous: These last with critical Signs indicate a critical Eruption of Blood; but voluntary Tears never afford us any solid Foundation for grounding a Prognostic. Agreeable hereto is that of *Hippocrates*, *4 Aph. 52.* "In a Fever, or any other Distemper, Tears flowing voluntarily have nothing improper or unusual [*οὐδὲν ἀτόπον*]; but involuntary Tears are more unaccountable, [*ἀτομώτερον*]," or as *Galen*, in his Comment, reads it in the positive Degree, "*ἀτοπον*, unaccountable." But, in order to explain the Sentiments of *Hippocrates*, as deliver'd in this Aphorism, that they who weep voluntarily do nothing absurd, or that argues a Diminution of Reason, but Tears falling involuntarily from the Eyes are more unaccountable, or import a greater Defect, and are more to be suspected than the other; and in the Passage above quoted, that involuntary Tears, where they are no Signs of a Crisis, portend Death; and, also, *6 Epid. Sect. 1. Aph. 16.* "That in acute Diseases, where the Patient is much oppressed by the Violence of the Disorder, voluntary Tears are a good Sign, but involuntary, the contrary." We shall endeavour to obviate all Difficulties by observing, that Tears are said to be spontaneous on two Accounts: First, When they flow without any Desire of the Patient, being such as *Hippocrates* means by *ἀνυμια*, and *ἀνυμια*, in the Passages above render'd, that is, flowing spontaneously, or of themselves, without the Concurrence of the Will or Desire of the Patient. In the second Place, Tears are said, in another Sense, to be spontaneous, or to flow spontaneously, when they flow at the Desire, or with the Will, of the Patient; and therefore *Galen*, *Com. 1. in 1 Epid.* to avoid all Ambiguity,

and for the better Illustration of the Sentence, and the Truth, chose to express himself by a Word which signified not spontaneous, but involuntary; for spontaneous is spoken with reference sometimes to the Patient, sometimes to the Disease. But, to remove all Possibility of Mistake, let us distinguish Tears into voluntary and involuntary, which latter were sometimes called by *Hippocrates*, spontaneous, because, as was said, they flowed spontaneously, or without the Concurrence of the Will, and those non-spontaneous, which flowed in some measure at the Desire of the Sick. But, to prosecute our Design, we say, that voluntary Tears are of no important Signification towards a future Event; and therefore we are told by *Hippocrates*, in the above cited Aphorism, that such Tears portend nothing irregular, or bad; and justly he might say so, since they proceed not from the Disease, but the Will, of the Patient; whereas involuntary Tears, which flow without the Will of the Sick, are always bad, except they precede and portend a Crisis, agreeably to that Passage of *Hippocrates*, *1 Epid. Stat. 3.* above quoted. But, that Tears may be judged critical, it will be necessary, in order to a good Crisis, that Signs of Concoction should have preceded them; in which Case, they portend a Crisis, and very well deserve our Regard.

The same Event may often be predicted, from Light passing before the Eyes, Dimness, and Rednesses in the Eyes; which Signs, together with Tears, *Galen*, in his third Book of *Crisis*, reckons among Prognostics of an impending Hemorrhage. Sometimes, before such an Event, there is a Redness of the Eyes, attended now-and-then with a Redness of the Cheeks and Nose: A Dulness of Sight, also, if attended with a Pain of the Head, is sometimes succeeded by an Hemorrhage from the Nose: This is the Sentiment of *Hippocrates*, *Lib. Prognost.* where he says, "Some, in the first Period, [*ἐν τῇ πρώτῃ περιόδῳ*] are affected with an Hemorrhage from the Nose, and are much relieved by it; but we are to examine whether there be any Pain of the Head, or Dimness of Sight; for, if there be any thing of that Nature, it tends to such an Event." Such an Hemorrhage may, also, be predicted from the Patient's being disorder'd at Flashes of Light striking the Eye, attended with Deafness, Heaviness of the Head, and a Distention of the Hypochondria, as we read *Coac. 195.*

That a Redness of the Eyes prognosticates the like, we are taught by the Author of the *Prorrhetic. Lib. 1. T. 137.* where he says, that "Pains of the Neck, with intensely red Eyes, forebode an Hemorrhage." And to the same Purpose, *Coac. 166.* we read, that "They who are affected with a Cephalalgia, and a Catochus, attended with Pain, and a great Redness of the Eyes, are relieved by an Hemorrhage from the Nose." But this Symptom must be presumed of true Signification only when preceded by Signs of Concoction; for, in the Beginning or crude State of a Disease, red Eyes are never a good Prognostic.

Sometimes, at the Approach of a Crisis, there is a Perversion and Distortion of the Eyes, as it happened to the Patient in the Garden of *Deales*, *3 Epid. Aeg. 3.* of whom it is said, that "On the ninth Day he was seized with a Rigor, and had an high Fever; sweated, and was cold; fell into a Delirium, had his Right Eye distorted, with a Dryness of the Tongue, Thirst, and Want of Sleep." *Galen*, commenting on this Place, says that "A Delirium and Distortion of the Right Eye, on the ninth Day, as there described, are Symptoms which usually happen in Crises."

Closed, and now-and-then twinkling, Eyes sometimes forebode an Hemorrhage, according to *Coac. 77.* where we read, that "They, who, under a continual Fever, lie speechless, with their Eyes shut, and now-and-then twinkling, if seized with Vomiting, and an Hemorrhage from the Nose, succeeded by a Recovery of their Speech and Senses, escape; otherwise they fall into a Dyspnoea, and die in a short time." For Eyes thus affected indicate the Head to be oppressed with a Redundance of Humours; and if the Patient, in this Case, be favoured with a considerable Evacuation, he escapes by a Crisis; Nature, by a copious Excretion, freeing itself from that Load of Humours under which the lay oppressed.

A Change therefore in the Eyes, or their Motions, or some remarkable Disorder or Defect therein, often proceed from a Crisis, and therefore are no bad Signs, but Prognostics of a good Crisis; and this Judgment will be confirmed, if no bad Sign appears in Conjunction with them, and Signs of Concoction have preceded them; but if the Case be the reverse, they are not only bad, but generally mortal Signs.

Now there are three Things requisite to a good critical Sign: First, That it be consequent to Signs of Concoction. Secondly, That it be not attended with any bad Sign. And, lastly, That it be succeeded by some Evacuation in which the Patient shall find considerable Relief. To this Purpose is that of *Hippocrates*, before quoted, *1 Epid. Stat. 3.* that "Involuntary Tears, in acute Diseases, signify an Eruption of Blood, if unattended with other destructive Signs; but if these, also, appear, they jointly signify not a Crisis, but Death."

But we have said enough of salutary Signs observable in the Eyes: We shall now treat of such as are of pernicious or fatal Signification; and here, in general, it is bad and pernicious, under

der acute Diseases, for the Eyes to appear bad or disorder'd; as when they shun the Light; shed Tears; appear red or inflamed, or with intensely red Veins in the White; are livid, or black; have a fierce, grim, or fixed Aspect; are dull, heavy, weak, or not robust, hollow, tumid, prominent, tabid, dry, squalid, dusty, closed, or with the Eye-lid half-shut, half-open; are suspended, unfable, concreted, have too much or too little Splendor, or are cloudy and obscure, void of Splendor, and infested with pituitous Excrements. Such Eyes as these, consider'd in themselves, are never good, and are only so by Accident, when, Nature struggling with the Disease, they forebode a Crisis, and are reckon'd among critical Signs.

All these Signs just mentioned, which, in acute Diseases, are observable in the Eyes, shew the Condition of the Patient to be at least very doubtful. But some Signs are plainly fatal, as when the small Veins in the Eye appear livid and black, and the Patient has lost his Sight, as well as Hearing; when the Eyes are destitute of all Splendor; and when all the above-mentioned Signs concur with some fatal one; and most of all, when they appear on a critical Day, attended with critical Signs, which determine nothing, or leave us short of a Crisis.

But for more Perspicuity we shall treat particularly of these Signs; and we shall begin with those which Hippocrates mentions, *Lib. Prognost.* "If the Eyes, he says, avoid the Light, or shed Tears involuntarily, or are distorted, or become one less than the other; if the White of the Eye be red, or a small Vein thereof appear livid or black; if pituitous Sordes [αἷμα] infest the Pupil; if the Eyes are suspended [ἐκστασιμύβοι]. See *ENÆOREMA*], protuberant, or remarkably hollow; or the Pupil appears squalid, and void of Splendor; or the Colour of the Face be quite altered; all these are to be esteemed bad and pernicious Signs." But to these we may add the Limitations of the same Author, in the Case of the *Facies Hippocratica*; which are, "Provided these Symptoms proceed not from some external Cause, as Want of Sleep, Fasting, an immoderate Looseness, Drunkenness, or some such Circumstance."

But we shall proceed, as we said, to consider each Symptom more accurately under its proper Head, beginning with Sight, or Vision. And when it happens in acute Diseases, that the Eyes avoid the Light, and can by no means endure to behold the Splendor of the Air, which was an usual Symptom of the Pestilence at Padua some time ago, and generally mortal, it is pronounced by Hippocrates, as we just now observed, a pernicious Sign, and very justly; for, as Galen observes, Eyes avoid the Light, on account of the Weakness of the visive Faculty, which sometimes labours under an Affection of the Orifices, as in a Lippitude, and sometimes is itself affected, which is a mortal Sign; and this latter Case is distinguished from the other, in that the Orifices of the Eyes are not at all affected.

For a sick Person under an acute Disease not to see, is fatal, and most of all when the Strength is exhausted, according to that of Hippocrates, 4 *Aph.* 49. "In a continual Fever, if the Patient cannot hear, or cannot see, the Strength being, also, exhausted, Death is near at hand."

Obscuration of the Eyes, or Dimness of Sight, are, also, condemned by Hippocrates, 6 *Epid. Sect. 1.* *Aph.* 16. "For in acute Diseases, says Galen, an Obscuration of the Pupil indicates a Weakness and Decay of the visive Faculty, unless it happens critically, as when it is attended with Signs of Coction, and other Signs indicating a Crisis. But when it is accompanied with other bad Signs, particularly critical ones which fall short of a Crisis, of which Nature are all Evacuations by which the Patient is not relieved, or if it succeeds such Evacuations, it is a mortal Prognostic." In this Sense, perhaps, we are to understand the Author of the *Coac.* 105. when he says, "In long Diseases, small Tumors about the Ears, attended with repeated Eruptions of Blood from the Nostrils, and a Scotomia, are mortal."

For the Eyes to look dull, or the Pupil and interior Parts of the Eye to appear to a Spectator like those of dead Persons, is accounted by Galen, *Com. in Prorrh.* a most mortal Sign; which perhaps was meant by Hippocrates, 2 *Epid. Sect. 6.* in saying, that "They whose Eyes have lost their Strength are near to Death." This was the Case of the Wife of Theodorus, 7 *Epid. T. 27.*

It is a pernicious Sign, also, for the Eyes to be destitute of Splendor, as we are taught *Lib. Prognost.* But for them to appear blind in a mortal Disease, shews Death to be very near, as it was in the Case of the Son of Antiphanes, 7 *Epid. T. 28.* "Whose Left Eye was first affected with Blindness, and a Tumor, without Pain; and nor long after he was taken blind, also, in his Right Eye, and the Pupils of his Eyes became very white and dry, and he died soon after his Blindness." They who attend on dying Persons, observe the Decay of Splendor in their Eyes, with the utter Loss of which the Sight is extinguished.

To Eyes obtuse, or dull, squalid, and without Splendor, as described in *Lib. Prorrh.* are opposed Eyes which have a fierce, bold, or grim Aspect, as mentioned 6 *Epid. Text. 1.* *Aph.* 19. Eyes thus affected are peculiar to Persons in a Phrensy or Deli-

rium; and generally portend Convulsions, or, with other bad Signs, Death; agreeably to that Aphorism of Hippocrates just mentioned, which says, that "A Fierceness of the Eyes portends a Delirium; and a Distortion [κατάκλισις] or Sinking [ἐπίκλισις] of the Eye-lids are pernicious." Eyes thus affected in Phrensy signify Convulsions succeeded by Death; for Convulsions, coming upon a Phrensy, are most pernicious; and mortal Phrensy terminates in Convulsions. Upon this Consideration the Author of the *Prorrh.* *Lib. 1. T. 71.* if we may believe Galen, would have such Patients left to Nature, and treated them not with Medicines, when he says, "They who are molested with black Vomiting, have lost their Appetite, are delirious, have a fierce Cast of the Eyes, or have them closed, are not to be purged, for it would be destructive." In Conformity to this Precept, several of our most learned Physicians have made it a Rule to themselves, never to prescribe Cathartics for Patients in such mortal Circumstances, that the Art of Medicine might incur no Disgrace by such Practice.

The Fate of the Patient may, also, be predicted from the Magnitude of the Eyes, as when one appears bigger than the other; for, among other pernicious Signs mentioned by Hippocrates, *Lib. Prognost.* one, we find, is for the Eyes to appear one greater than the other.

It is no less fatal, in a dangerous Disorder, for the Eyes to appear greater than ordinary, as indicating the Head to be oppressed with a Redundance of Humours, and an Extinction of the Faculty; so that nothing resists the Flux of the Humours to the Eyes. This Sign was observed by Hippocrates, 7 *Epid. T. 100.* in the Son of Nicolaus, whose Right Eye, on the sixth Day of his Illness, appeared bigger than ordinary, and the next Day he died: And the same Sign was observed by him in the Wife of Hermoptolemus, as she lay dying, 7 *Epid. T. 13.*

Prominent or tumid Eyes are, also, enumerated by Hippocrates, *Lib. Prognostic.* among those fatal Signs which appear in those Parts. The Eyes are usually thus affected from violent and inflammatory Pains of the Head, when, becoming replete with a Redundance of Heat and Spirits, they swell out, and appear prominent.

Hollowness of the Eyes, also, in acute Disorders, unless it proceeds from some external Cause, within the Space of three or four Days, from the Time when the Patient was seized, is accounted, *Lib. Prognost.* a pernicious Sign. For such a Symptom, as Galen teaches, in his Commentary on the Place, proceeds from an extreme Imbecillity, by which the Eye is deprived of all manner of Nutrition; and this indicates the Violence of the Disease to be so extraordinary, that Nature must of Necessity sink under it.

When the Eyes appear shrunk, and quite wither'd, as if they were destitute of Aliment, it proceeds from an Imbecillity of the natural Heat, the small Remains of which reside only in the internal Parts, and are incapable of diffusing themselves to the external Parts, in order to concoct Aliments for the Nutrition of the Eye: To which it may be added, by the same way of Reasoning, that the few Spirits which remain in the Heart, and internal Parts, cease to flow to the Eyes; whence those Parts must of Necessity wither, dry up, and appear hollow; for Hippocrates, 7 *Epid. T. 33.* observed an Hollowness of the Eyes immediately consequent upon a Wound in the Liver; and in many dying Persons, sometimes the Right, sometimes the Left Eye, have been observed to fade and wither.

There are, also, certain Motions of the Eyes which are of fatal Prognostication. Thus, for Instance, first, for the Eyes to be erect, or suspended [ἐκστασιμύβοι], which Galen interprets *unstable*, or *wavering*, is accounted by Hippocrates, *Lib. Prognost.* a pernicious Sign, as portending, according to Galen, a Delirium or Trembling, either of which is fatal: But that the Physician may safely venture to pass his Judgment, other Signs are, also, carefully to be consulted; for, in order to pronounce an Instability of the Eyes a mortal Prognostic, it is necessary, that it should be attended with some other deadly Sign. Galen, *Com. 2. in 1 Prorrh.* more clearly explains this Property of Instability, by saying that unstable Eyes are like an unstable, unmanageable Horse, always in Motion; whereas, on the contrary, concrete Eyes are fixed and immoveable. Hence the Author of the *Coac.* 227. justly concludes, that quick Motions and Twinklings of the Eyes are of as bad Signification, as a Fixedness thereof; whence they are denominated concrete, firm, stable, and immoveable.

That fixed Eyes are always a bad Sign, we are taught by the Author of the *Prorrh.* *Lib. 1. T. 46.* where he says, ὁμα αἰμαρυσμύβον, φλαῖον, ἢ τὸ πεπρηγὸς ἢ ἀχλυσῆς, καὶ οὐ. "For the Eye to be dulled, vitiated, concrete, or confused, (as Galen explains the Word) is a bad Sign." He might more justly have said, a mortal Sign, because they are almost constantly fatal in acute Diseases, unless they happen to be so from some critical Cause. Galen, in his Commentary, writes, that a Concretion of the Eyes proceeds from an Immobility of the Muscles which move the Eyes; which Immobility is owing either to a Resolution of all the Muscles, or to their equal Tension, whereby they are attracted to all Parts alike; or, lastly, to an extreme Imbecillity

Imbecillity of the Muscles, which is certainly of most fatal Consequence; as are, also, the other Cases, as proceeding from a Convulsion of the Muscles, when the Original of the Nerves is affected by the Violence of an acute Disease.

Galen, Com. 1. in 6 Epid. T. 27. writes, that concrete, or immoveable Eyes, which *Hippocrates* very much condemns in the Text, (6 *Epid. Sect. 1. T. 16.*) indicate a perfect Extinction of that Faculty by which the Muscles, in their natural State, were moved. *Hippocrates, 5 Epid. Text. 50.* in the Case of the fair Daughter of *Nerios*, who died of a Stroke on the Crown of the Head, given her by a Wench, her Playfellow, with the Flat of the Hand, says, that, before her Death, one of her Eyes was affected with a Cataplexy, or Stupor [καταπληξίς].

With respect to the Posture of the Eyes, Distortions are of very fatal Prognostication, unless they happen to be critical, as in the Case of the Patient in the Garden of *Deales*, 3 *Epid. Sect. 1. Aeg. 2.* who, in the ninth Day of his Illness, was affected with a Distortion of the Right Eye. *Hippocrates, Lib. Prognost.* reckons Distortions among other pernicious Signs belonging to the Eye. But it is necessary to make a Distinction here; for sometimes, as *Galen* says, *Com. 1. in Prognost.* the Eyes are distorted through a Convulsion of the Muscles which move them, as it often happens in Fevers, on account of the Multitude of Humours; and, if no more than such Redundance be indicated, nothing can with Certainty be predicted from the like Distortions of the Eyes. Generally, however, in acute Distempers, the Eyes are perverted and distorted, not from such a Cause, but from the Disease affecting the Original of the Nerves, which is the Brain, and therefore highly pernicious. We conclude, then, that Perversions and Distortions of the Eyes are constantly bad, when proceeding from the Multitude or Redundance of the Humour, which is least to be dreaded; or from a Driness of the Muscles: But if they happen in burning Fevers, or Phrenesies, they prognosticate nothing but Death; and that most of all, when they appear with Signs of the Extinction of the Faculty, indicating an extreme Imbecillity, or a Diminution or Deprivation of some Sense.

There is a celebrated Aphorism of *Hippocrates*, to this Purpose, 4 *Aph. 49.* In a continual Fever, says he, if the Lip, or Eyebrow, or Eye, or Nose, be distorted; if the Patient cannot see, or hear, and is at the same time very weak; whatever of these Signs appears, Death is near at Hand. And this is expressed more clearly, *Lib. Prognost.* where it is said, If the Eye-lid, or Lip, or Nose, be distorted, or corrugated, or livid, or pale, attended with some other Sign, you are to know, that Death approaches. Distortions of the Eyes, therefore, are always a bad Sign, unless they happen critically, as was said: They are not, however, necessarily mortal, which the divine *Hippocrates* seems to have well understood, 6 *Epid. Sect. 1. Aph. 16.* where he says, A Circumtension (or Tension of the Circumference) of the Eye-lid is bad. But a certain Judgment may be made from preceding, concomitant, and much better from succeeding Signs. Perversions or Distortions of the Eyes are, also, bad, when they happen while the lower and weaker Parts are oppressed by the Force of the Disease, because it indicates a Translation of the Humours to the Brain, and nobler Parts; which seems to be the Sentiment of the Author of the 1 *Prorrhet. 69.* when he says, that "A Distortion of the Eye, which is owing to a Recourse of the Humours from the Loins, is a bad Sign." But such Distortions, accompanied with other bad Signs, may be pronounced mortal: To which Purpose we read in the same Book, *Text. 81.* that "In burning Fevers, accompanied with superficial and general Refrigerations, and frequent watry and bilious Stools, a Distortion of the Eye is a bad Sign; and the worse, if the Patient labours, also, under a Catochus." He might more justly have called it a mortal Sign; for general Refrigerations in burning Fevers, accompanied with Evacuations, by which the Patient is not at all relieved, but rather injured, are critical Signs, which determine nothing, and consequently mortal, according to *Hippocrates* and *Galen*, who frequently tell us, that if the Patient finds no Relief from such things as might with Reason be expected to afford it, but is rather injured by them, and reduced to a worse State than before, nothing but Death can be the Consequence; for such Symptoms are to be esteemed critical Signs, which prove abortive, and answer no End, and are, of Consequence, mortal: Whence, if Distortions of the Eyes are accompanied with these bad Symptoms before-mentioned, it is not enough to call it a bad, but a fatal and destructive Sign. To this Purpose the Author of the *Prorrhet. Lib. 1. Text. 89.* tells us, that "In a Distortion of the Eyes, accompanied with a Fever and Lassitude, a Rigor is pernicious; and a Coma, attended with the same Circumstances, is bad." Distortions of the Eyes, therefore, attended with bad Signs, and especially bad critical Signs, are justly esteemed mortal; but, if accompanied with mortal Signs, they signify the near Approach of Death. Of this Nature was the distorted Eye, observed by *Hippocrates*, in a Woman who died of an Abortion, 3 *Epid. Sect. 1. Aeg. 11.* On the fourth Day, he says, she was taken with a Delirium, attended with Fear and Sadness; her Right Eye was distorted; she had somewhat of a cold Sweat about her Head, and her Extre-

mities were cold. These Circumstances, in acute Diseases, are mortal Signs.

To examine, next, what are the bad Prognostics which may be drawn from a Closure, or Shutting of the Eyes: When the Eyes, in acute Disorders, continue closed, and cannot be open'd, either from the Redundance of the Humours, pulling together and conglutinating the Muscles of the Eyes and Eye-lids, or from a Dryness and Resolution of those Muscles, through Imbecillity, in acute Disorders, it is always a mortal Sign: And, if at any time it be not so, it is when it is critical, and followed by some good and remarkable Evacuations; otherwise it portends nothing but Death. To this Purpose the Author of the *Coac. 77.* very finely expresses himself, where he says, that They who lie speechless under a continual Fever, with their Eyes closed, and now-and-then twinkling, if they happen to be seized with an Eruption of Blood from the Nose, and Vomiting, succeeded by a Restoration of their Speech and Senses, recover their Health; but, if no such thing happens, they fall into a Dyspnoea, and die in a short time. But it seldom happens, that a Closure of the Eyes is critically attended with the forementioned Symptoms, and never but in very robust Bodies; and therefore it is, for the most part, a mortal Sign. A Closure of the Eyes, accompanied with other bad Signs, is always fatal, agreeable to 1 *Prorrhet. 71.* above-quoted. Here the Physician is advised, as some understand the Passage, to prescribe nothing to his Patient, but attend the Event of the Prognostic; for such a Closure of the Eyes, as *Galen* says, in his Comment on the Place, proceeds either from a Tension of the Muscles which close the Eyes, or the Imbecillity of those which open them; both which are pernicious Symptoms.

To lie with the Eye-lids half-closed, in acute Distempers, is a bad and most fatal Prognostic. Of these speaks *Hippocrates, Lib. Prognost.* where he says, We ought to consider whether the Patient lies with his Eyes half-closed in Sleep; for if any Part of the White appears between the unclosed Eye-lids, without a preceding Flux of the Belly, or Cathartic administered, and the Patient is not wont to sleep in that manner, it is an highly pernicious and mortal Sign. This Sign, says *Prosper Alpinus*, I observed in my dearest Wife, before she died; and it proved fatal, though sometimes she used to sleep in that manner; but now it was attended with a Coma, Coldness of the Extremities, Restlessness, with Roughness and Blackness of the Tongue, unattended with Thirst: This Symptom therefore, in acute Distempers, is always to be dreaded, according to the Author of *Coac. 218.* where he says, that An incurvation of the Margin of the Eye-lids, with a Fixedness, or continual Twinkling, of the Eyes, or a Change in their Colour, or the Eye-lids not closed, is a pernicious Sign.

The Colour of the Eyes is, also, to be regarded, in forming Prognostics of a bad Event: Thus, for the White of the Eye to appear red, unless it critically indicates an Hæmorrhage, is pernicious; but, when it is far from being critical, such a Symptom, in acute Diseases, is constantly bad. This Circumstance, also, is reckoned by *Hippocrates, Lib. Prognost.* among pernicious Signs, because, as *Galen* says in his Commentary, it proceeds either from a Redundance of Blood stagnating in the Brain, and its Membranes, or a considerable Inflammation in those Parts, both which, in continual Fevers, are constantly pernicious; and not the less so, if this Redness appears attended with other bad Signs, on critical Days, or after what manner soever, but worst of all in high Phrenesies. Of this Symptom, among others, the Author of the *Coac. 163.* thus speaks: Concussions, or Shakings, of the Head, with intense Redness of the Eyes, and a manifest Deliriousness, are pernicious. That this Redness is a bad Sign, and to be dreaded, we are taught 7 *Aph. 3.* because, says *Galen* on the Place, a Redness of the Eyes indicates a considerable Inflammation of the Brain, or Stomach, both which are destructive, as the same Author teaches expressly, in his Comment on 1 *Prorrhet.* where he says, that A Redness of the Eyes, coming on a continual Fever, shews either a Redundance of Blood in the Head, which is the Cause of this Redness, as in Lippitudes, or from an Inflammation of the Brain, or Stomach; which are distinguished, in that, under the former, the Veins only in the White of the Eye appear red, whereas an Inflammation of the Stomach is attended, also, with Hiccups, or Vomiting. Hence *Hippocrates, Lib. Prognost.* did not say simply, that a Redness of the Eyes, but of the Veins in the Whites of the Eyes, was of fatal Signification.

But the most pernicious and mortal Sign, according to the above-cited Place of *Hippocrates*, is when these Veins appear livid, or black; for, as *Galen* on the Place has it, this Lividness, or Blackness, proceeds from Refrigeration, which indicates an Extinction of the natural Heat.

In the last Place, the bad Fate of the Patient may be predicted from the Excrements which appear in the Eyes. *Hippocrates, Lib. Prognost.* and 1 *Epid. Sect. 2.* among other fatal Signs belonging to the Eyes, in acute Diseases, reckons involuntary Tears. The Cause of such Tears *Galen* refers either to some Lippitude, or to a Defluxion from the Head upon the Eyes; but, in acute Fevers, it must be imputed to the Imbecillity of the retentive Faculty, which is of most fatal Consequence. Involuntary Tears, therefore,

therefore, in acute Diseases, where they are not a Sign of a future Crisis, by an Hæmorrhage, especially from the Nose, portend inevitable Death, according to *Hippocrates*, 1 *Epid. Sect. 2.* Puerile Excrements in the Eyes are, also, reckon'd, *Lib. Prognost.* among bad Signs. *Galen*, in his Comment, tells us, that though this Humour, or Excrement, proceeds from a Defluxion, as is sometimes the Case in a Lippitude, yet in acute Diseases it indicates an Imbecillity of the natural Faculty, which is too weak to concoct the Aliment necessary for the Eye. Sometimes there appears a sort of hard and dry Excrement, which the Author of the 1 *Prorrhæc.* 17. pronounces a Sign of a Phrensy; and *Galen*, in his Comments, writes, is sometimes observed in Persons under a Consumption, when all the fleshy Substance both in the Face, and on the Temples, is colligated by an immoderate Heat, which Circumstances are attended with an Hollowness of the Eyes; but, in a Phrensy, this dry and dusty Excrement appears without this Hollowness. Hence *Hippocrates*, 6 *Epid. Sect. 1. Text. 16.* among other bad Signs of the Eyes, reckons a sort of Excrement like Chaff, or dried Spume, which, as *Galen* says, happens in acute Diseases, from an extraordinary Driness and Imbecillity, very small Tears falling from the Eyes, which, thro' the Imbecillity of the retentive Faculty, were unable to retain them; and these minute Drops, or Tears, being dried by the intense Heat of an inflamed Brain, are changed into those dusty Sorts of Excrements, which the *Greeks* call *Lemæ*, and are for the forementioned Reasons accounted mortal Signs. *Prosper Alpinus de Præfag. Vit. & Mort.*

TABLE XIX.

- Fig. 1. A, the Cilia, or Eye-lashes, of the superior Eye-lid.
 B, the Cartilage of the superior Eye-lid.
 C, the Musculus Attollens, or Aperiens Palpebræ Superioris, or Muscle that elevates the superior Eye-lid.
 D, in Fig. 2. exhibits the Musculus Superbus, or Elevator Oculi.
 E, the Tendon of the preceding Muscle.
 F, in Fig. 4. represents the Depressor Oculi, or Musculus Humilis.
 G, in Fig. 1. 2. and 3. represents the Adductor Oculi, otherwise called *Bibitorius*.
 H, in Fig. 3. and 4. represents the Abductor, or Musculus Indignatorius.
 I, in Fig. 1. 2. and 3. the Obliquus Superior, or Trochlearis.
 K, in Fig. 4. the Obliquus Inferior.
 L, in Fig. 1. 2. and 3. the Tendon of the Obliquus Superior passing over the Trochlea.
 M, in Fig. 1. 2. 3. and 4. the Optic Nerve.
 N, in Fig. 3. the Optic Nerve in its Progress to the Globe of the Eye.
 O, in Fig. 1. the Union of the Optic Nerves.
 P, in Fig. 2. 3. and 4. the transparent Part of the Cornea.
 Fig. 5. A, the Tunica Sclerotica.
 B, that Part which is covered by the Tunica Adnata, or Albuginea.
 C, the transparent Part of the Cornea.
 Fig. 6. represents a posterior View of the Eye, where the Tunica Sclerotica is removed in four Segments A A A A, in order to shew the subjacent Uvea furnished with innumerable Vessels.
 Fig. 7. exhibits the same posterior View of the Eye, in order to shew the Retina, being an Expansion of the Optic Nerve.
 Fig. 8. exhibits a View of the Eye, wherein all the Tunics are removed, in order to shew the Vitreous Humour, inclosed in its proper Membrane.
 Fig. 9. represents the Vitreous Humour A A A A, in the Midst of which is placed the Crystalline Humour B.
 This is an anterior View of the Eye.

Fig. 10. represents the Pupil of the Eye, with the Crystalline Humour, and Ciliary Ligaments.

Fig. 11. represents the three Rugæ of the Processus Ciliaries, as viewed through a Microscope: That in the Middle is venous, and the other two arterial. The other Rugæ are neglected, and removed as much as possible.

A exhibits the expanded Portion of the Tunica Uvea, and Choroidea, viewed in its interior Part through a Microscope, together with the three Striæ of the Processus Ciliaries.

B B represent two *Chori*, as *Hovius* calls them, of the Processus Ciliaries, consisting of arterial Vessels only, together with their Vermiculations; other Substances being removed, that the Order of the Vessels may appear the more distinctly.

C C, some vermicular small Vessels, ascending from the inferior Part to the Processus Ciliaries.

D D, the Union of the Vessels ascending from the inferior Part.

E E, the vermicular small Vessels, both long and short, together with the nerveo-lymphatic Ducts.

F F, the same Vessels, but arising from the Circulus Arteriosus, together with their Nerveo-lymphatics.

G represents the refluxent, small, nerveo-lymphatic Vessels, together with the venous small Vessels.

H, the vermicular small Vessels, mark'd as well as the arterial ones.

I, the venous Vessel, formed of the vermicular small Vessels, which, when it has arrived at the End of the Processus Ciliaries, is carried almost in a straight Course to the Circulus Venosus.

Fig. 12. represents to the Life one Stria of the Processus Ciliaries, consisting of arterial Vessels alone, together with the Nerveo-lymphatics, delineated by the Assistance of a good Microscope.

A, some of the small arterial Vessels, arising from the inferior Part, and laid somewhat to one Side; that the Excursion of the vermicular Vessels may be exposed to the naked View.

B, the Vessels joined in one, and ascending.

C C represent the short, vermicular, arterial Vessels, sent off before the uniting of the Vessels.

D, the same Vessels, but somewhat longer.

E, the Ramification of the vermicular Vessels arising from the Circulus Arteriosus: Some of these Vessels are turned back, as may be seen at F.

G G G, represent the short lateral or nerveo-lymphatic Vessels, sent off from the vermicular Vessels, and divided from the Ligamentum Ciliare.

Fig. 13. represents a small Ramification, view'd by a Microscope, and consisting of the vermicular Vessels, of which, together with the Nerveo-lymphatics, the Circulus Arteriosus furnishes a large Number.

A, a Part of the Branch arising from the Circulus Arteriosus cut off.

B, the vermicular Vessels, arising from the said small Branch.

C C, the nerveo-lymphatic small Vessels, reaching to the Ligamenta Ciliaria.

Fig. 14. represents the Ciliary Processes of a Dog, covered with two Coats. The former of these Coats represents, as viewed through a Microscope, the vermicular Vessels, together with the Nerveo-lymphatics dispersed through the Second, which is the fifth in Order, united, and torn from the Ligamentum Ciliare.

A, a small Part of the Circulus Arteriosus.

B B represent two Branches coming from the Circulus Arteriosus, one of which was cut off, whilst three other Branches, in order to prevent Confusion, were preserved, together with their vermicular Excursion, and a Distribution of the nerveo-lymphatic Vessels, through the nerveo-lymphatic Coat; as is shewed at C C.

D D exhibit the nerveo-lymphatic Vessels united in this Coat, representing, as it were, small Papillæ, and taken from the Ligamentum Ciliare, which they compose.

Fig. 15. represents a nerveo-lymphatic Vessel composed of several others, ascending to the Ligamentum Ciliare, and resolving itself into the said Number of Vessels, when it has reached that Ligament.

Observe, that, in order to prevent Confusion, all the small Vessels are not marked.

A A A, the Union of the nerveo-lymphatic Vessels into larger Vessels.

B B, the larger Vessels, formed of smaller ones.

C, Branches cut off.

D, the Vessels united, and ascending to the Ligamentum Ciliare.

E, the Resolution of this Vessel into small Branches.

Fig. 16. represents the Tunica Choroidea inverted, in which the Vessels made up of the smallest Nerveo-lymphatics, filled with a redish Matter, resembling the Vitreous Humour, are torn off, and exhibit Papillæ twice as large as in the natural State; but, for preventing Confusion, far fewer in Number.

A, the nerveo-lymphatic Vessels sparkling, as it were, through the Tunica Papillofa, and forming the above-mentioned small Papillæ, or, rather, the small Vessels for containing the Vitreous Humour.

B represents these Vessels, formed of many others, as broken, and resembling small Papillæ.

C, the Part where the Optic Nerve has been cut off.

D, a Part of the Artery which was distributed through the Optic Nerve.

Fig. 17. represents the nerveo-lymphatic Vessels of a Dog, dispersed through the lymphatic Coat, viewed through common Spectacles, and larger than in the natural State, together with some small Papillæ, or Vessels, going to the Vitreous Humour, and left in the smallest Portion of the Tunica Papillofa.

A A are nerveo-lymphatic Vessels running out through their proper Coat.

B, some Papillulæ, or small Vessels appropriated to the Vitreous Humour.

C, a small Portion of the remaining Tunica Papillosa.

Fig. 18. is the arterial small Vessel of an Ox, viewed through a Microscope, and which is sent to the internal Parts, from those between the second and third Coats expanded, that, together with the vermicular Progress, the nerveo-lymphatic Vessels, in some measure destroy'd, might also be seen, by laying the other Parts aside.

A is a small arterial Branch running off to the vermicular Vessels from these between the second and third Coat.

B represents the vermicular Vessels variously subdivided, and by Expansion somewhat removed from their vermicular Course, that their nerveo-lymphatic Vessels, represented by C, might be the more distinctly observ'd.

Fig. 19. exhibits the two Humours of the Eye. In this Figure, besides the true Situation of the Ligamentum Ciliare, and some small Mouths of the Vessels composing the Vitreous Humour, is also exhibited the small Vessel, which serves to nourish the Tunica Arachnoidea.

A A, the Ligamentum Ciliare.

B B are the nerveo-lymphatic Vessels broken off from the vermicular Vessels of the Processus Ciliares.

C C, a Collection of these Vessels into Striæ wreathed up like Cords.

D, the nerveo-lymphatic Vessels contorted, and running off to the Crystalline Humour.

E E, some Mouths of Vessels which compose the Vitreous Humour.

F is a Ramification of the Vessel dispers'd thro' the Tunica Vitrea, and a Distribution of that which serves for its Nourishment.

OCYMASTRUM. A Name for the Circæa; Lutetiana; and, also, for several Species of *Lychnis*.

OCYMOIDES. A Name in *Boerhaave* for several sorts of *Lychnis*.

OCYMUM.

The Characters are;

The Root is annual in all the Species, except that of *Ceylon*. The Galea, or Crest, is erect, roundish, crenated, quadrifid, and larger than the Beard, which is simple, hollow, long, horizontal, and crisped, or slightly jagged. The Calyx is tubulous, open, quadrifid, and defective in a fifth Part; but has that Defect supply'd, instead of a Segment, with a small Leaf, which covers it like a Buckler, and is eared on the hinder Part.

Boerhaave mentions twenty-four Species of *Ocymum*; which are,

1. *Ocymum*; caryophyllatum; monachorum; five Acinos; Columnæ. *J. B.* 3. 260. *Acinos Dioscoridis*. *Col. Phytob.*

1. 23.

2. *Ocymum*; foliorum fimbriis ad *Endiviam accedenibus*; maximum.

3. *Ocymum*; latifolium; maculatum; vel crispum. *C. B. P.* 225. *Basilicum, Indicum, maculatum*. *H. Eyst. Æst.* o. 7. Fig. 1.

4. *Ocymum*; viride; foliis bullatis. *C. B. P.* 225.

5. *Ocymum*; foliis fimbriatis, viridibus. *C. B. P.* 225.

6. *Ocymum*; Caryophyllatum; maximum. *C. B. P.* 225.

7. *Ocymum*; Caryophyllatum; majus. *C. B. P.* 226.

8. *Ocymum*; Citri odore. *C. B. P.* 226.

9. *Ocymum*; Anisi odore. *C. B. P.* 226.

10. *Ocymum*; Melissæ odore.

11. *Ocymum*; Styracis liquidæ odore.

12. *Ocymum*; Foeniculi odore.

13. *Ocymum*; nigrum; latifolium; laciniatum; spicâ nigrâ; flore albo; odore Cinnamomi.

14. *Ocymum*; vulgatus; see *BASILICUM*.

15. *Ocymum*; vulgatus; foliis ex nigro virescentibus; flore albo.

16. *Ocymum*; vulgatus; foliis ex nigro virescentibus; flore violaceo.

17. *Ocymum*; medium; crispum; conglomeratâ brevique spicâ.

18. *Ocymum*; minus; angustifolium; foliis serratis.

19. *Ocymum*; minus; angustifolium; foliis bullatis.

20. *Ocymum*; tricolor.

21. *Ocymum*; minimum. *C. B. P.* 226. *J. B.* 3. 247. *Raii Hist.* 1. 541. *Tourn. Inst.* 204. *Boerb. Ind.* 2. 170. *Ocymum Caryophyllatum*. *Offic. Ocymum vulgare minus*. *Park. Theat.* 18. *Ocymum minus Caryophyllatum*. *Ger.* 547. *Emac.* 673. *BUSH-BASIL*.

It is cultivated in Gardens, flowers in *June*, and the Seed is in Use.

22. *Ocymum*; minimum; foliis ex purpurâ nigricantibus. *M. H.* 3. 407.

23. *Ocymum*; minus; *Chinense*; odoratissimum; flore albo. *Triumf.*

24. *Ocymum*; *Zeylanicum*, perenne; frutescens; folio *Calaminthæ nonnihil simili*. *M. H.* 10. 153. *Nepeta seu Mentha Cataria affinis Indica*, candido flore. *Boerb. Ind. alt. Plant. Vol.* 1.

The Name *Ocymum* is from *ὀκύνω*, *Oceos*, swiftly, quickly, from its sudden Growth; for it shoots forth from its Seed within the Space of two Days: It is also called *Basilicum* from *Βασίλειος*, *Basilus*, a King, because of its incomparable Smell, and eminent Virtues.

Many say, that, if the Smell be received up the Nostrils, there ascend Seeds or Eggs of Insects into the frontal Sinus, which are there cherished by the Mucus, and hatched; and this is not so much to be wonder'd at; since Insects are sometimes excreted with the Mucus.

This Herb is endu'd with a balsamic Virtue, and a most sweet and penetrating Smell; it is heating, and wonderfully reviving to the Spirits. An Addition of some Leaves of *Ocymum*, in a Preparation of *Sal Volatile*, gives it a much finer and more refreshing Smell. What gave Occasion to say, that much Smelling to the Leaves of *Ocymum* generates Scorpions in the Brain, might be, perhaps, that Scorpions, being allured by the Smell, lay their Eggs in the Leaves; which, being attracted through the Nostrils into the frontal Sinus, are there easily hatched, and afterwards increase. *Ocymum* is good to provoke Urine, and for an Obstruction of the Menes, for the Colic, Asthma, and venomous Bites: It is a Plant of a balsamic and temperate Quality, and not offensive to the Smell, like Sage and Clary. *Hist. Plant. adscript. Boerhaave.*

OCYMUM SYLVESTRE. See ACINOS.

ODALLAM. H. M. A Name for the *Mangas fructu venenato*.

ODAXISMOS, *ὀδᾶξιμος*, from *ὀδῆς*, a Tooth. A biting Sensation, Pain, or Itching. It is us'd by *Hippocrates* principally with respect to the Gums, when the Teeth are forcing a Passage thro' them.

ODIUM. Hatred. This is reckon'd among the Procatartetic Causes of Diseases; and seems to produce Effects like those of Anger. See IRA.

ODMALEA, *ὀδμαλέα*. Fetids. *Hippocrates*.

ODONTAGOGOS, *ὀδονταγωγός*. An Instrument for drawing Teeth.

ODONTAGRA signifies either the same as *Odontagogos*; or the Gout in the Teeth.

ODONTALGIA, *ὀδονταλγία*. The Tooth-ach, from *ὀδῆς*, a Tooth, and *ἄλγος*, Pain.

ODONTIASIS, *ὀδοντίασις*. Dentition.

ODONTICA. Remedies for Pains in the Teeth.

ODONTIS, and ODONTITIS, are Names for several Species of *Lychnis*.

ODONTOGLYPHON, *ὀδοντόγλυφον*, from *ὀδῆς*, a Tooth, and *γλύφω*, to scrape. An Instrument for rubbing, or scaling the Teeth.

ODONTOIDES, *ὀδοντοειδής*. A Name for the Tooth-like Process, or the second Vertebra of the Neck.

ODONTOPHYIA, *ὀδοντοφυία*, from *ὀδῆς*, a Tooth, and *φύω*, to grow. Dentition.

ODONTOTRIMMA, *ὀδοντότρυμμα*, from *ὀδῆς*, a Tooth, and *τρίβω*, to wear away. A Dentifrice.

ODORATUS. The Sense of Smell. See OLFACTUS.

OE. *ὄν*. The Sorbus, Service-tree. *Oribasius, Med. Collect.* L. 15. C. 1.

OECONOMIA, *οἰκονομία*, from *οἶκος*, an House, and *νόμος*, a Law, or Rule. Properly, the Management of an House, or Family. But *Hippocrates* uses it to express the Management of a sick Person. The Animal Oeconomy is the Conduct of Nature in preserving Animal Bodies.

OEDEMA, *οἰδημα*. A Tumor in general. But it is particularly us'd to signify a phlegmatic, cold, and soft Tumor, retaining the Print of the Finger, but attended with little or no Pain. It is not confined to a particular Part of the Body; sometimes it seizes the Head, sometimes the Hands, sometimes the Eyelids, or any other Part, and sometimes the whole Body. In the last Case, it assumes the Name of a Cachexy, Leucophlegmatia, or Dropsy. This Disorder affects the Feet most frequently, which are then said to be tumefied, or cedematous.

The immediate Cause of an Oedema is doubtless to be ascribed to the too great Serosity or Viscidity of the Blood, which stagnates in the minute Vesicles of the Fat, or Tunica Cellulosa, and distends the Skin. This Disorder of the Blood proceeds either from a cold and phlegmatic Habit, or from old Age; and it happens most frequently in cold Weather, when the Inclemency of the Air increases the Disease, by coagulating the stagnating Blood. It is not, therefore, surprising, that the Tumor prodigiously increases, though it may seem favourable and much diminished in the Morning; which is certainly to be ascribed to the Warmth of the Bed. This Disorder may, also, proceed from an Irregularity in Diet, from Excess in Eating and Drinking, or from the Use of cold, crude, and hard Meats.

Fevers, particularly those of the intermitting Kind, frequently conduce to this Disease; especially if the Patient has indulged himself in intemperate Drinking, while the Heat and Thirst are upon him. Another Cause may be a profuse Discharge of Blood either by Wounds, by Vomiting, or from the Nose, Lungs, Hæmorrhoids, or Uterus. It may, also, arise from Obstructions of the menstrual Discharge in Women, or from a Compression of the Vena Cava by the Fœtus, or a Scirrhus in the Abdomen, by which means the Reflux of the Blood from the lower Extremities is greatly impeded. It may likewise be ascribed to a Life too sedentary, or to too great an Indulgence of lying in Bed and sleeping; or to a Phthisis, and Difficulty of Breathing; or to any other Disease or Fatigue of the Body, which weakens the natural Vigour of the Heart in propelling the Blood.

Hence it may easily appear, by what Symptoms an Oedema may be known; but it is necessary to observe, that the harder the Tumor is, and the longer it retains the Print of the Finger, the stagnating Blood, or Humour, is the thicker, and more tenacious.

An Oedema upon the Feet can scarcely be cured without removing the Distemper whence it sprung. In pregnant Women, especially those of a robust Constitution, oedematous Tumors are attended with little or no Danger; for they generally disappear spontaneously after Delivery, the Vena Cava being then freed from its Compression. In weakly Women the Danger is greater, if they continue after Delivery; as they are frequently succeeded by a Dropsy, an Asthma, and even Suffocation. The longer the Duration is of these phlegmatic Tumors, the greater is the Danger, and the Cure more uncertain; but when they are recently attended with no other Disease, the Cure may be readily effected. Those, also, which follow an intermitting Fever, are milder than those which proceed from a too copious Discharge of Blood, or any other Weakness. If they proceed from the Obstruction of a natural Evacuation, they are best cured by removing that Obstruction. This Disorder of the Feet is easily remedied in young Persons, but in the Aged it is often incurable. When the Feet are violently tumefied, and Remedies, especially external Applications, have little Effect upon them, the Consequence is, generally, a Difficulty of Breathing, Suffocation, and, at last, Death.

The Cure of oedematous Tumors is different, according to the different Diseases whence they proceed; and therefore it is, in the first place, necessary to inquire into their Cause. When they appear to arise from an internal Disorder, recourse must not only be had to outward Applications, but principally to internal Medicines. With regard to external Applications, 1. Use frequent Frictions, with warm Cloths every Morning and Evening, till the Feet grow red, and glow with Heat. 2. In order to defend them from the Inclemency of the Air, especially in Winter, let the Legs be wrapt in Furs, or other thick Coverings; and at Night let warm Stones, or Pieces of Oak, be laid under the Feet in Bed, for attenuating the Blood. 3. Let a proper Bandage be applied, beginning with the Foot, and proceeding gradually to the Knee, which will greatly strengthen the relaxed Limb, prevent any Collections or Stagnations of the Blood, and the Skin from being distended by the inspissated Blood. 4. Digestive and strengthening Medicines should likewise be applied outwardly; thus let the affected Leg be plac'd over burning rectified Spirit of Wine, and so cover'd with Cloths, as to receive and retain the Vapour: By this Method the stagnating Blood will either be perspired in Sweat, or returned to the Circulation, and the relaxed Leg will be wonderfully strengthened. 5. A Remedy, often used by the Vulgar, is the greater Celandine, bruised and applied with Cloths to the Feet. Others use in the same manner Water-pepper, either alone, or mixed with Celandine, and not without Success; for they are both powerful Resolvents. Others apply the Scrapings of Horse-radish, or a warm Cataplasm of Dittander, boiled in Wine. An excellent Discutient, for this Purpose, is a Cataplasm of Pigeons Dung mixed with Salt and Vinegar, which must be often applied warm. Of equal Efficacy are the following Fomentations, a Lixivium prepared from the Ashes of Oak, and the Water in which Blacksmiths cool their hot Iron, which may likewise be mixed with some Ounces of Spirit of Wine, and a small Quantity of Alum, and applied warm with Compresses; or the Feet may be bathed twice a Day in this Liquor. Lime-water applied in the same manner, either alone, or mixed with Spirit of Wine and Alum, is very beneficial in this Case; as is the following Mixture.

Take of Spirit of Wine, and Wine-vinegar, each a Pound; crude Alum, an Ounce and half; Viuriol, a Dram: Mix them together.

It is necessary to observe, that, after the Use of the Friction and Fomentations, the Leg must be carefully wrapped up with Bandages, and warm Stockings, or Coverings; and the Patient must not only be very moderate in eating and drinking, but must also use frequent Motion and Exercise, and never neglect

proper internal Medicines, without which all the external Applications will nothing avail. Sometimes the mineral Waters are very efficacious in this Disorder, though they do not always succeed. Dr. Harris says, that he has frequently removed this Disease, by exhibiting the aperitive Crocus of Iron, mixed with the Peruvian Bark; others assert, that they have done it with the Bark alone, though some condemn these Remedies. It is, therefore, proper, in this Point, to take the Advice of a Physician. Heister. Chirurg.

OEDEMODARCA. A Species of Tumor, mention'd by Marcus Aurelius Severinus, of a middle Nature betwixt an Oedema and Sarcoma.

OELNIZIUM. A Name for the *Thysselinum*; Plini.

OENANTHARIA, *ὄνανθια*. Sweet-scented Ointments. Paulus Aegineta describes two of these, and informs us, that they are not called by this Name, because the *Oenanthe* enters their Composition; for many *Oenantharia* are without it, but because it is sweet-scented, and fragrant; or on account of the Wine and Lilies, which are Ingredients in it. L. 7. C. 21.

OENANTHE.

The Characters are;

The Root consists of great, long, carnos Tubers, resembling Spindles, the Petals of the Flower are unequal, and shaped like an Heart. The Apex of the Ovary is crowned with the Placenta; which shoots forth long Tubes, and is surrounded underneath by the upper Margin of the Ovary, which is expanded into five Pinnulæ, or small Lobes, supporting the Petals of the Flower like a Perianthium. These Pinnulæ stick to the ripe Seed like Prickles, and the Tubes themselves harden into Substances of the same Form.

Boerhaave mentions ten Species of *Oenanthe*, which are,

1. *Oenanthe*; *Chærophylli foliis*. C. B. P. 162. Boerb. Ind. a. 51. Tournef. Inst. 313. *Oenanthe Petroselinifolia*, venenosa. Offic. *Oenanthe Cicuta facie*. Lobelii. Park. Theat. 894. Raii Hist. 1. 441. Synop. 3. 210. *Oenanthe succo viroso*, *Cicuta facie*. Lobelii. J. B. P. 193. *Filipendula Cicuta facie*. Ger. 901. quoad. descript. Emac. 1059. **HEMLOCK, DROPWORT.**

It grows plentifully in Brooks, and in muddy and watery Places, in the Northern as well as Southern Parts of England.

It is an inexcusable Piece of Ignorance, says Johnson in Gerard, in those, who now in our Times sell the Roots of this Herb for Peony-root; and he is very well assured, he says, that the Herb-women at London sell these Roots under the Name of *Levisiticum Aquaticum*. But whether the Roots of this Plant be of a remarkably poisonous and malignant Quality, is doubted by some. Matthioli affirms his third Species of *Oenanthe*, and *Tabernaemontanus* his *Oenanthe Scharophyllos*, both which C. Baubine makes to be synonymous with this Plant, to be wholesome and salutary Plants. For my Part, says Ray, I shall not determine the Matter, but leave it for farther Examination. Raii H. P.

2. *Oenanthe*; *maxima*; *folio Apii*; *caulibus atropurpureis*, *flore albo*.

3. *Oenanthe*; *Aprii folio*; *caule firmiore*. M. U. 16. M. H. 3. 288.

4. *Oenanthe*; *Staphylini foliis aliquatenus accedens*. J. B. 3. 2. 191.

5. *Oenanthe*; *Cretica*. Pon. Mont. Bald. Ital. 213.

6. *Oenanthe*; *aquatica*. C. B. P. 162. Raii Hist. 1. 441. Synop. 3. 210. Tournef. Inst. 313. Boerb. Ind. a. 51. *Oenanthe palustris sive aquatica*. Park. Theat. 895. *Oenanthe sive Filipendula aquatica*. J. B. 3. 191. *Filipendula aquatica*. Ger. Emac. 106. **WATER-DROPWORT.**

It grows almost every-where in watery Meadows, and by the Side of Brooks.

This has a bitterish Taste, with somewhat of an Astringency; is of an hot and dry Nature, and has an opening and astringent Virtue. It provokes Urine, and expels Gravel, used either inwardly or outwardly; opens Obstructions, and cleanses the urinary Passages. Raii H. P.

7. *Oenanthe*; *aquatica*; *minor*. Ind. 9.

8. *Oenanthe*; *Lusitanica*; *semine crassiore, globoso*. T. 313.

9. *Oenanthe*; *quod Bulbocastanum*; *folio leviter inciso*; *Lusitanicum*.

10. *Oenanthe*; *folio Aprii rotundiori*. Boerb. Ind. alt. Plant. Vol. 1.

The Plant takes its Name from *ὄνη*, *Oene*, a Vine, and *άνθος*, *Anthos*, a Flower; so that *Oenanthe*, in English, is *Vine-flower*; for the Antients called some Plant, which was in Flower at the same time as the Vine, or whose Flowers had the same Smell as those of the Vine, *Oenanthe*.

It is of a very poisonous Quality, and, if tasted, causes immediate Death with Convulsions, as it happen'd at the Hague, where two Men went out an herbing, and, finding this Plant, tasted it: One of them was immediately taken with Convulsions, and dy'd on the Spot, the other soon after. Some such Instance we have in Stalpert vander Wiel's Observations, where Persons have dy'd within two Hours, after only tasting this Plant, which affects the Brain so as to cause Convulsions, and is so quick in Operation,

OENANTHE MYCONI A Name for the *Thalictrum*; minus;
gyrnosa radice; *floribus majoribus*.

Gather the sweet-scented *Oenanthe* of the wild Vine; and, having suffer'd it to dry, put it into *Oleum Omphacinum*, (Oil made of unripe Olives) and carefully stir the same about; then let it rest for two Days, and afterwards strain it, and set it aside for Use.

THE PREPARATION OF THE VINUM OENANTHINUM.

It is good for a weak Stomach, restores lost Appetite, and is serviceable in the Colic Passion and Dysentery. *Dioscorides, Lib. 5. Cap. 33.*

OENOGALA, *οινογάλα*, from *οἶνος*, Wine. Spirituous, or strong.
OENOLOGA, *οινολογα*, from *οἶνος*, and *λόγος*, Milk. A
 sort of Potion, made of Milk and Water. *Hippocrates*. Some
 interpret it, Wine as warm as new Milk.

...
 OENOMELI SANUM. The Name of a Composition,
 wherein Wine and Honey are Ingredients, describ'd by *Nicolaus
 Myrepsus*, Sect. 37. C. 31.

to be hot, or boil. Drunkenness. Apparates.
 ..OENOPLIA. Offic. *Oenoplia spinosa* & *non spinosa*. Ger.
 Emac. 1605. Raii Hist. 2. 1534. C. B. P. 477. *Oenoplia spi-*
nosa & *non spinosa*, five Nabeca; five *Zizyphus alba*. Park.
 Theat. 1441. *Oenoplia* five Nabca; *Paliurus Africana*. Chab.
 51. Nabca folio Rhamni vel Fuzubæ. J. B. 1. 39. THE GREAT
 TUBER.

Though Jujubes, especially when ripe, are highly grateful to the Taste; yet they nourish but little, and, if immoderately eaten, are like Cherries, easily subject to Corruption in the Stomach. They are, however, greatly esteem'd, and accounted a Delicacy by the *Egyptian and Turkish* Grandees.

OENOPUS, *οἰνωπός*, from *οἶνος*, Wine, and *ωπός*, an Aspect, is an Epithet for any thing resembling Wine. Thus,

OENOS SYCITES, οἶνος συχίτης, is Wine in which Figs have been macerated.

OENOS STAPHIDIOS LEUCOS, *δίνος σταφίδιος λευκός*. White Wine made from Raisins, or dry'd Grapes.

OENOS TETHALASMENOS, *δίνος τεθαλασμένος*. Wine where-with Sea-water is mix'd. Hippocrates.

OENOSTAGMA. Spirit of Wine.

OENOTHERA. A Name for the LYSIMACHIA.

OEPATA. H. M. P. 4. T. 5. *Arbor Indica fructu conoide, Coricæ pulvinato Nucleum unicum, nullo afficulo rectum claudente*.

This is a tall and large Tree produc'd in sandy Soils on the Brinks of salt Waters, especially about Cochín. The Kernels of the Fruit are by the Indians us'd among a particular kind of Dish, by them call'd Caril; but their Bitterness must be previously remov'd by a long Maceration, and Boiling in Water. The Fruit of this Tree, also, when green, and boil'd with the Leaves of *Adamboe*, and a sufficient Quantity of Butter, makes an excellent Cataplasm, for softening and maturing Tumors, as, also, for maturing and discharging the Measles and Pox.

The Fruit of this Tree bears a great Resemblance to the *Anacardium*. *Raii Hist. Plant.*

OESOPHAGUS. The membranous Canal, which conveys the Aliment from the Mouth to the Stomach. As the *Pharynx* is the superior Part of this Duct, I shall first describe that.

The *Pharynx* is a muscular and glandular Bag, the outer Surface of which is closely join'd to the inner Surface of all that Space, which is at the Bottom of the Mouth, behind the posterior Nares, Uvula, and Larynx, and which reaches from the great or anterior Apophysis of the Os Occipitis, all the Way to the Oesophagus, which is the Continuation of the Pharynx. This Space is bounded posteriorly by the Muscles, which cover the Bodies of the first Vertebra of the Neck; and laterally by the superior Portions of both the internal Jugular Veins, and of both the internal Carotid Arteries; by the Spinal Apophyses of the Os Sphenoides; by the Extremities of the Apophyses Petrofæ; by the Os Sphenoides, immediately above the internal Wings of the Apophyses Pterygoides, and by the neighbouring Portion of both Pterygoide Muscles.

From these Limits and Adhesions of the Pharynx, we may pretty nearly determine its Figure. It may be compared to the wide Part of a covered Funnel, of which the Oesophagus is the narrow Part or Tube; or it may be called the broad End of the Oesophagus, that and the Pharynx, taken together, being compared to a Trumpet. The Pharynx may be divided into three Parts; one superior, which is the Arch of the Pharynx; one middle, which is the Body, or great Cavity; and one inferior, which is the Bottom, narrow Portion, or Sphincter. We are, also, to observe in it three Openings; that of the Arch, toward the Nares; that of the Body, toward the Mouth; and that of the Bottom, toward the Oesophagus.

The Arch is the broadest Part of the Pharynx, and ends on each Side in an Angle or Point, toward the Jugular Fossulae of the Basis Cranii. Afterwards the great Cavity contracts a little toward the Sides, all its other Dimensions continuing the same; and behind the Larynx it is again enlarged on each Side, a very small Space being left between it and the Cricoid Cartilage. The Extremity of the lower Portion is very narrow, and joins the Basis of the Cartilage just mention'd.

The Pharynx is made up partly of several distinct fleshy Portions, which are look'd upon as so many different Muscles, so disposed as to form a large Cavity; and partly of a Membrane, which lines the inner Surface of this whole Cavity, and is a Continuation of that of the Nares and Palate.

This Membrane is wholly glandular, and it is thicker on the superior and middle Portions of the Pharynx, than on the bottom or lower Portion. Immediately above the first Vertebra, it forms several longitudinal Rugæ; very thick, deep, and short; and we generally find therein a Collection of Mucus in dead Bodies. In the great Cavity there are no Rugæ, the Membrane adhering both there, and in the upper Part, very closely to the Muscles. At the lower Part, where it is thinnest, it covers likewise the posterior Part of the Larynx, and is very loose, and formed into irregular Folds. It runs in a little on each Side between the Edges of the Pharynx.

Though almost all the muscular or fleshy Portions, of which the Pharynx is composed, concur in the Formation of one continued Bag or Receptacle, they are nevertheless very distinguishable from each other, not only by their different Insertions, from which they have been denominated, but, also, by the different Directions of their Fibres. The greatest Part of them may be look'd upon as digastric Muscles, the middle Tendons of which lie backward in one longitudinal Line, which in some Subjects appears plainly like a Linea alba.

These Muscles may be reduced to three general Classes, with regard to their Insertions. The first Class is of these which are inserted in the Basis Cranii, as,

Cephalo-pharyngæi.

Petro-pharyngæi.

Spheno-pharyngæi, five Spheno-salpingo-pharyngæi.

Pterygo-pharyngæi.

Stylo-pharyngæi.

The second Class comprehends those which are inserted toward the Mouth; as,

Peristaphylo-pharyngæi.

Glossopharyngæi.

Hypero-pharyngæi.

Genio-pharyngæi.

The third Class includes those inserted in the lateral Parts of the Larynx; as,

Syndesmo-pharyngæi.

Thyro-pharyngæi.

Crico-pharyngæi.

Oesophagæus.

Adeno-pharyngæus.

The Cephalo-pharyngæi are inserted in the lower Side of the Apophysis Basilaris, or great Apophysis of the Os Occipitis, about the Middle of the posterior Part. From thence they separate laterally, and sometimes they join the Stylo-pharyngæi. The Linea Alba of the Pharynx begins by the middle Adhesion of these Muscles.

The Petro-pharyngæi are inserted in the lower Part of the Extremity of the Apophysis Petrofæ; the Spheno-pharyngæi, partly in the Os Sphenoides, directly above the internal Ala of the Apophysis Pterygoides, and partly in the neighbouring cartilaginous Portion of the Eustachian Tube; and the Pterygo-pharyngæi, in the Edge of the same Ala of the Apophysis Pterygoides. These three Muscles, on each Side, run obliquely backward, covering each other by some Fibres, and meet at the Linea Alba. Their Use may be to draw the middle Portion, or great Cavity, of the Pharynx, upward.

The Stylo-pharyngæi are inserted interiorly by one Extremity in the Apophysis, or Epiphysis Styloides. From thence each Muscle runs down obliquely along the lateral Part of the Pharynx, covering and crossing the other Muscles. It extends gradually in Breadth, as it descends; and forms two principal Portions, one superior, which is narrow; and one inferior, which is broad. The narrow Portion is spread among the muscular Fibres above the Thyroide Cartilage, and the broad Portion is inserted in the Side of that Cartilage; and thus the Stylo-pharyngæus is partly a true Stylo-thyroidæus. These Muscles may draw the Pharynx laterally upward, especially by their Thyroide Portions; but the Use commonly assigned to them, of dilating the Pharynx, seems conformable neither to their Situation, nor to their Direction.

The Peristaphylo-pharyngæi are two small Muscles, inserted between the Uvula and lower Extremity of the internal Ala of the Apophysis Pterygoides, and run obliquely backward on the Sides of the Pharynx. It is difficult to find them in very lean or young Subjects, and they seem to be the same which M. Santorini calls *Hypero-pharyngæi*, or *Palato-pharyngæi*. The Glossopharyngæi are Fibres which run along the lateral Edges of the Tongue, from which they are parted backward, and run down on the Sides of the Pharynx, under the Stylo-pharyngæi.

The Hyo-Pharyngæi, in general, are those on each Side, which are inserted in the Os Hyoides; and they may be reckoned three Pairs, the Basio-pharyngæi, Kerato-pharyngæi minores, and Kerato-pharyngæi majores; these Denominations being taken from their Insertions in the Basis, and in the small and great Cornua of the Os Hyoides.

I have never been able to see distinctly the Mylo-Pharyngæi of Dr. James Douglas; all that I have hitherto found, is a muscular Portion really distinct from the Genio-glossus, inserted in the Side of the Pharynx; and for that Reason I call it Genio-pharyngæus, as being joined to the Genio-glossus, all the Way to the Chin.

The Syndesmo-pharyngæi of Dr. Douglas are Fasciculi of muscular Fibres very distinctly inserted by one End along the Ligaments, by which the superior Cornua of the Cartilago Thyroides are connected to the Extremities of the great Cornua of the Os Hyoides. From thence they run backward, and meet at the Linea Alba. To be able to see them distinct from the other Muscles, the Pharynx must be filled with Cotton, to give it a proper Convexity, and to support its Sides, which otherwise collapse, and sink inward, and thus prevent our seeing the Direction and Distinction of several of the Muscles belonging to it.

The Thyro-pharyngæi are very broad, and each Muscle is inserted along the Outside of the Ala of the Cartilago Thyroides, between the Edge of that Cartilage, and the oblique Line in which the Thyro-hyoidæi are fixed; and they are a little confounded with the Crico-hyoidæi. From thence they run up obliquely backward, and, meeting under the Linea Alba, they sometimes appear to be but one Muscle, without any middle Tendon. Sometimes they have appeared to me to be distinguished into Superior and Inferior, because their upper Portion ran upward and backward, and their lower Portion more transversely.

The Crico-pharyngæi are inserted each in the lower Part of the Side of the Cricoid Cartilage. They seem to be Appendices of the Thyro-pharyngæi, shewing no other Marks of Distinction, but these Insertions, and a small Difference in Direction, because, as they run backward, they descend a little. For this Reason I

have sometimes looked upon these two Muscles to be one, and have called it *Thyro-crico-pharyngæus*.

The lowest of these muscular Fibres make a complete Circle backward, between the two Sides of the Basis of the Cartilago Cricoides. This Circle is the Beginning of the Oesophagus, and has been thought by some to form a distinct Muscle, called *Oesophagæus*. I have found another Fasciculus of Fibres detach'd from the Thyro-pharyngæus, and inserted laterally in the Thyroide Gland; for which Reason I call it *Musculus Thyro-adenoides*.

The particular Uses of all these Muscles are very difficult to be determined. It is certain, that those of the middle and lower Portions of the Pharynx serve chiefly for Deglutition. Those of the upper Portion, and some of those of the middle Portion, may, among other Functions, be useful in modifying the Voice, according to the Opinion of M. Santorini.

The Oesophagus is a Canal partly muscular, and partly membranous, situated behind the Trachea Arteria, and before the Vertebrae of the Back, from near the Middle of the Neck, down to the lower Part of the Thorax; from whence it passes into the Abdomen, thro' a particular Hole of the small or inferior Muscle of the Diaphragm, and ends at the upper Orifice of the Stomach.

It is made up of several Coats, almost in the same manner as the Stomach, of which it is the Continuation. The first Coat, while in the Thorax, is formed only by the Duplication of the posterior Part of the Mediastinum, and is wanting above the Thorax, and in the Neck, where the outer Coat of the Oesophagus is only a Continuation of the cellular Substance belonging to the neighbouring Parts.

The second Coat is muscular, being made up of several Strata of fleshy Fibres. The outermost are mostly longitudinal; but they are not all continued from one End of the Canal to the other. The following Strata are obliquely transverse; the next to these, more transverse; and the innermost are turned a little obliquely the contrary Way. They cross each other irregularly in many Places, but are neither spiral, nor annular.

The third is termed the nervous Coat, and is like that of the Stomach and Intestines. It is differently folded or plaited, according to its Length, being much wider than the muscular Coat; and it is surrounded by a whitish, soft, fine filamentary Substance, like a kind of Corion, which, when steep'd in Water, swells and grows thicker.

The fourth, or innermost Coat resembles, in some measure, that of the Intestines; except that, instead of the Villi, it has small and very short Papillæ. It is folded lengthwise like the third Coat, so that the Oesophagus, when cut across, represents one Tube within another. Through the Pores of this Coat, a viscid Lymph is continually discharged.

The Oesophagus, from its very Beginning, turns a little to the Left Hand; and naturally runs along the Left Extremities of the Cartilages of the Aspera Arteria. Winslow.

Disorders of the OESOPHAGUS.

Tho' Spasms of the Oesophagus are rarely mentioned in Medicinal Writings, yet they are so frequent, and not only the Symptoms of other violent Disorders, but, also, an idiopathic Disease, that they deserve a particular Consideration. Spasms of the Oesophagus may be defined, An involuntary and preternatural Constriction of the Oesophagus, or of its Beginning, called the Pharynx, or both, generally produced by an irritating Mucus.

Hence appears the Difference of these Spasms; for as the whole Oesophagus is, by Anatomists, divided into its Beginning, the Pharynx, and the rest of the Canal, so we find from Experience, that its Spasms differ with respect to Place, since they sometimes seize the Pharynx, and at other times its inferior and remaining Parts. To these may be added, a third Species of Disorder, in which the whole Canal, together with its Beginning, and the adjacent Parts, are violently convulsed.

All Spasms of the Oesophagus, in whatever Country they happen, have these Signs in common with other Distentions of the superior Parts. There are Refrigerations of the Extremities, and especially of the Feet; Tremors and Rigors of the Joints; Suppressions of the Excrements by Stool; Regurgitations of Flatulencies to the superior Parts; Strictures of the lower Abdomen, accompany'd with Pains and Rumbles; Uneasiness of the Præcordia; Efforts to vomit; Cardialgias; thin, aqueous, and pale Urine; and an hard and large Pulse.

Spasms of the Pharynx alone discover themselves by these Signs. The Deglutition becomes difficult, and accompany'd with such Pain, that the Patient can sometimes neither swallow Solids, nor Fluids. There is a Constriction, Rigidity, retarded Motion and Pain of the Parts adhering to the Pharynx, of the Tongue, the Larynx, and whole Neck; a suffocative Uneasiness afflicts the Patient, and a Sensation, as it were, of a Stake fix'd in the Fauces; and as if something was creeping out of the Part. The Voice is hoarse, and these Symptoms afflict the Patient by Intervals, and frequently terminate in Convulsions of the whole nervous System.

The Signs peculiar to Spasms of the inferior Part of the Oesophagus are these: A certain Stopping of the Aliments freely

swallowed is perceived in the Gullet, especially about the superior Orifice of the Stomach; by cold Liquors these Parts seem to be more obstructed and constricted, whereas warm Liquors are often perceived freely to pass thro' the Oesophagus, and to enter the Stomach; a Pain is felt in the Spine of the Back, between the Scapulæ. To these Symptoms is often added a great Inclination to Vomit, which is sometimes accompany'd with an actual Vomiting. A Nausea, and an uneasy Expulsion of Eructations, are, also, frequent in this Disorder; a limpid Mucus is, also, frequently discharged from the Mouth, and is to be distinguished from Vomiting. If these Symptoms concur with those enumerated in the preceding Paragraph, they shew that the whole Oesophagus is spasmodically contracted.

But since these Disorders may be easily confounded with other Diseases of the Oesophagus, by reason of the Similitude of Symptoms, we must explain their Differences. First, then, Spasms of the Pharynx are to be distinguished from a Palsy, or the Want of a due Tone in that Part; for, in the Want of a due Tone, there is a perpetual Difficulty of Deglutition, though Solids are more easily swallowed than Fluids. (See *Forestus, Lib. 15. Observ. 30.*) for Fluids often slip into the Aspera Arteria, and regurgitate through the Mouth and Nostrils, in such a manner, as to endanger a Suffocation. In a perfect Palsy of the Pharynx, such as *Tulpius* mentions in *Lib. 1. Cap. 44.* Deglutition is totally destroy'd, so that the Patient is in Danger of dying of Hunger. The Face, also, and the adjacent Parts, are highly pale, soft, and flaccid. On the contrary, in Spasms of the Pharynx, the Difficulty of swallowing Solids and Fluids is equal, and remits at Intervals; the Vessels of the Face become tumid; the Countenance red; the Parts affected, rigid, and often painful.

Spasms of the Pharynx are easily distinguished from an Inflammation thereof, and of the Fauces in a Quinsy, in which the internal Fauces are swelled, red, scorched with an intense Heat, the Thirst is greater, and, for the most part, accompanied with a violent Fever. The Physician may, also, be imposed upon by a Tumor, an Excrescence, or a Piece of any thing sticking in the Pharynx, or a preternatural Conformation of the Larynx, so as to ascribe the Impediment of Deglutition, arising from these Circumstances, to Spasms. See *Forestus, Lib. 15. Observ. 28.* In this Case a Wax-candle, or the Instrument described by *Hildanus, in Cent. 1. Observ. 36.* thrust into the Fauces, will often discover the Truth. Besides, in Spasms of the Pharynx, all the Signs, taken together, will amount to a Certainty.

Besides, Spasms of the inferior Part of the Gullet agree with other Disorders of the Oesophagus, and a Stopping of the Aliments is a Symptom common to each; such as an Obstruction of the Gullet by a Piece of solid Aliments sticking in it; see *Hoffman. Consult. Med. Sect. 2. Cas. 63.* and *Forestus, Lib. 15. Observ. 28.* And Tumors, Excrescences, Funguses, and Warts arising in the Canal of the Oesophagus; see *A. N. C. Dec. 1. An. 4. Obs. 47. Decur. 2. An. 8. Obs. 96;* as, also, the dorsal Glands about the fifth Vertebra of the Back, adhering to the Oesophagus, and elevated with preternatural Pain, as *Verheyen, in Anat. Cap. 10.* and *Heister, in Compend. Anatom.* have observed. In these Cases solid Aliments stop, and are vomited up again, whereas Fluids, whether cold or hot, have a more or less easy Passage to the Stomach. But, if there is a spasmodic Constriction of the Oesophagus, 'tis observable, that warm Fluids descend more easily than such as are cold; there is a Pain of the Scapulæ, and other Signs concur, which by no means happen in an Obstruction of the Oesophagus, produced by any foreign and preternatural Substance.

But that the Causes, and mechanical Reasons, of these Symptoms may appear the more distinctly, we shall take a short View of the Structure of the Oesophagus. The Oesophagus, then, beginning at the last Part of the Fauces, has, at its Beginning, a large Cavity, called by the *Greeks, Pharynx*, and by the *Latins, Infundibulum*. Its anterior Part is connected with the Root of the Tongue, the Os Hyoides, and the Larynx; and its posterior Part closely adheres to the Vertebra of the Back. It is moved by various dilating Muscles, which elevate and dilate the Pharynx, and by other constrictory Muscles, which shut it. There is one Pair of these Muscles, which, arising by three Origins from the Os Hyoides, the Cartilago Cricoides, and the Cartilago Thyroides, totally surrounds the Pharynx, and is called the Sphincter of the Oesophagus. There are principally three Pairs of these Muscles; the first of which is called the Cephalo-pharyngæus, which, arising from the lowest Part of the Occiput, and the first Vertebra of the Neck, is expanded to the Coats of the Larynx. The second is called the Spheno-pharyngæus, which, arising from the Alary Processes of the Sphenoid Bone, runs to the Sides of the Pharynx; and the third is called the Stylo-pharyngæus, which, rising from the Styloid Apophysis of the Temporal Bones, is inserted in the Sides of the Pharynx.

At the End of the Pharynx begins the Oesophagus, which first of all runs strait between the Aspera Arteria, and the Vertebrae of the Neck and Back, but turns to the Right about the fifth Vertebra of the Back, and to the Left, about the ninth. Then, proceeding thro' the Middle of the Thorax, and the muscular Part of the Diaphragm, it is united with the superior Orifice of the Stomach.

Stomach. The Oesophagus, itself, consists of four Coats; the outermost of which, being membranaceous, thin, vascular, and cellular, derives its Origin from the Pleura, and joins the Gullet to the adjacent Parts. The Coat next to this is fleshy or muscular, furnished with annular, or orbicular Fibres, and, above these, with longitudinal Fibres. The third Coat is nervous, common to the Mouth and Fauces, and, reaching three Fingers-breadths within the Stomach, is thick-set with Glands, to which, on the opposite Side, are distributed some Vessels, from which they receive a certain Liquor more pinguious than the Saliva, and which drops into the Cavity of the Gullet. The fourth and innermost Coat is covered with a slippery Mucus, villous, and everywhere perforated like a Sieve, with many Emunctories. Besides, the Oesophagus is furnished with numberless Glands, partly those which, being smaller than the Eggs of Silk-worms, are lodg'd in the nervous Coat, and are easily perceived, if, upon taking off the nervous Coat, the fleshy Coat is exposed to the Sight, or the Gullet is macerated in Water; and partly with other Glands plac'd without the Oesophagus, among which the most considerable are, the Dorsal Glands about the fifth Vertebra of the Back, adhering to the Gullet, and the Thyroide Gland, situated between the Thyro-cricoid Cartilage, and the Oesophagus, see *Vercellonius in Dissert. de Glandulis conglomeratis Oesophagi*. Nor is this Canal destitute of Vessels; for its superior Part receives Arteries from the internal Carotids, its middle Part from the Aorta, and intercostal Arteries; and its inferior Part from the gastric Arteries. Its superior Part receives Veins from the Jugular Veins, its middle Part from the *Vena sine Pari*, its inferior Part from the coronary Veins of the Stomach; and it receives nervous Vessels from the Par Vagum.

The Function of the Pharynx is Deglutition, the mechanical Account of which is as follows: Whilst the Bark of the Tongue is apply'd to the Palate, by means of the Mylo-glossus, the Stylo-glossus, and the Stylo-hyoidæus, the Root of the Tongue, the Os Hyoides, and the Larynx, are pressed forwards by the Muscles subservient to this Action. The posterior Part of the Pharynx is elevated by the Cephalo-pharyngæi Muscles, and its anterior Part dilated by the Stylo-pharyngæus, and the Spheno-pharyngæus.

By these Actions of these Parts, a larger Space, and a greater Cavity, are made before the Membranes surrounding the Vertebrae of the Neck and Pharynx under the Veil of the Palate, Uvula, and Tonsils, and above the Larynx and Pharynx. Then the Substances to be swallow'd are pressed between the Back of the Tongue, and Roof of the Palate; and, being thus pressed upon the Chink of the Larynx, which is shut by a cartilaginous Covering, or the Epiglottis, are propelled into the Cavity of the Fauces. Then the antagonist Muscles begin to act; for the Tongue being already elevated, and press'd forwards, the *Larynx* and *Os Hyoides* are restored to their former Figure; and especially the Cartilages of the Larynx, being extended to the Pharynx, press upon it; by which Action, the Substances to be swallowed are, when lodg'd in the Oesophagus, farther propel'd. These Substances, when the dilatatory Muscles of the Pharynx are relaxed, and the Oesophagus constricted, are more protruded; and, thus the Pharynx being again constricted, they are lodg'd in the Cavity of the Gullet, under the Pharynx.

Then this Action is succeeded by that of the Oesophagus, by means of the peristaltic Motion of which, performed by its muscular Coat, and tending downwards, the Aliments already swallowed, and lodged under the Sphincter of the Pharynx, are convey'd to the Stomach; for since this Coat, by its alternate Dilatation and Contraction, the former of which is performed by means of longitudinal Fibres, and the latter by annular Fibres, sometimes constricts, and sometimes dilates the Oesophagus, and since in Men its Situation is perpendicular, the Aliments taken are gradually press'd downwards. This Descent is render'd still more easy by the Mucus of the Glands, which continually drops into the Gullet, lubricates it, and assists in the Resolution of the Aliments. The Aliments being thus convey'd to the Stomach, the Flesh of the inferior Muscle of the Diaphragm constricts the Gullet, as it passes through it, and in that Part closes the Stomach.

From what has been said, 'tis easy to account for the Nature and Reasons of Spasms of the Oesophagus; for, first, if we consider the Pharynx, it is obvious from the Mechanism of Deglutition, that, when the Muscles of the Pharynx are constricted, it can hardly be performed; because, when the Organ is injured, the Action must of course be so too. Besides, when the dilatatory Muscles, situated in the posterior Part of the Infundibulum, are seized with Convulsions, and drawn more forwards into a conglobate Figure, there is a Sensation as if a Stake was fixed in the Fauces. But when the Musculus Oesophagus is constricted together with the adjacent Muscles of the Larynx, Tongue, and Os Hyoides, a Difficulty of Speech is produced, and a suffocative Uneasiness. But since all Spasms are sometimes violent, and sometimes mild, the Reason is, also, obvious, why Spasms of the Oesophagus are at certain Intervals augmented.

In like manner, when we suppose the Spasms of the inferior Part of the Gullet to arise from a violent Stricture of the longitudinal and

orbicular Fibres of the muscular Coat, which surrounds it, we can account for all the Symptoms which accompany that Disorder; for when there is a Constriction in any Part, either near the Pharynx, or Stomach, all the Aliments swallowed stop in that Canal, and, the peristaltic Motion being inverted, are again vomited up. If cold Liquors are drank, they increase the Spasm, and, like solid Substances are hindered in their Descent, whereas tepid Liquors, by soothing the spasmodically-constricted Fibres, pass freely into the Stomach. Besides, the Oesophagus is, by various Ligaments, connected with the Vertebrae of the Neck and Back. Hence, when the Oesophagus is constricted, the Pain must necessarily be propagated to the Membranes surrounding the Vertebrae of the Back. Hence we account for the Pain, which, in this Disorder, is perceived between the Scapulae; see *Forestus, Lib. 15. Obs. 31. Schol.* where he tells us, "That all Pains of the Oesophagus affect the Spina Dorsi, on which the Gullet reclines, and to which it adheres."

Whatever Causes, therefore, are capable of vellicating or stimulating the Muscles of the Pharynx, or the fleshy Coat of the Oesophagus, are called the immediate Causes of the Spasms. But as these Causes act either immediately on those Parts which constitute the Seat of the Disease, or on other more remote Parts, by Consent; so these Spasms are either idiopathic, or symptomatic. If, therefore, from the Larynx, the Stomach, Intestines, or any other Parts, primarily seized with Convulsions, the Spasms are propagated to the Pharynx and Oesophagus; the Disorder is called *Symptomatic*.

Among the Causes inducing idiopathic Spasms of the Oesophagus, the most considerable are, the Passions of the Mind, especially violent Anger, particularly after liberal Drinking. That by this means the Pharynx is seized with Convulsions, and consequently Deglutition injured, is certain from Experience. Nor is it less frequently to be observed, that the same Cause, especially after Eating, constricts the inferior Part of the Gullet; whilst the swallowed Substances remain in it, and are often thrown up again by Vomit.

Spasms, especially of the inferior Part of the Gullet, are powerfully excited by a Loathing, which can by no means happen without being attended with such Spasms. But if we consider the Effects of a Loathing more attentively, Observation will inform us, that, in such a State, first, the Idea of some ungrateful Substance in the Mind; secondly, an Aversion to this Substance, happens; thirdly, this Aversion is succeeded by an Impediment of Deglutition; fourthly, the Aliments stop in the Oesophagus, and a Sensation of Stricture is produced; fifthly, to these a Nausea is joined; sixthly, in this Case a Vomiting frequently happens; and, seventhly, sometimes a Deliquium: So that a Loathing may be defined, The Idea of some ungrateful Substance, accompany'd with Spasms of the Oesophagus and Stomach.

Imagination alone frequently disposes to obstinate Spasms of the Oesophagus, accompany'd with remarkable Aversions. Thus, in *A. N. C. Centur. 7. Obs. 61.* we have an Account of a Woman in good Health, and of a robust Make, neither subject to hysteric nor spasmodic Disorders, who could eat and drink without Difficulty; but, when she attempted to take the Host, she had not only a great Aversion to it, but, also, threw it up by Vomit, before it reach'd her Stomach; tho' she had cram'd it down her Throat, and endeavour'd as much as she could to swallow it. In the same Work, *Dec. 3. An. 1. Obs. 79.* we have, also, an Instance of a Man, who, by an excessive Use of Tobacco, brought on an Impediment of Deglutition, which was sometimes greater, and sometimes less, according to the different Degrees of Force in his Imagination.

Medicines, acrid Substances, or Poisons taken, are capable of producing the same Effects, since, by vellicating the nervous and muscular Parts, they induce Strictures thereof. Thus *Hoechstetterus*, in *Obs. Dec. 3.* makes mention of a Constriction of the Gullet, by drinking Malmsey-wine, in which the Roots of the greater Consound were infused. This happens so much the more readily, if the Substances taken are of a caustic Nature; so that it is not to be wondered at, if, according to the Observation of *Forestus, Lib. 15. Obs. 30.* a certain Boy, by drinking Aqua-fortis, was seized with such a Constriction of the Pharynx, as to endanger a Suffocation. But especially Sublimate Mercury, when taken, produces a violent Constriction of the Fauces. See *Forestus, Loc. citat.* Insects swallowed, by Vellication, also, excite Spasms of the inferior Part of the Gullet. Thus *Rbaser, Lib. 9. ad Almanx. Cap. 56.* and *Rhodius, Obs. Cent. 2. Obs. 72.* affirm this concerning Leeches drank in Water. *Gesnerus, Lib. 2. de Histor. Animal. Cap. de Lacert.* affirms, that the same Effect is produced by Lizards creeping into the Fauces. *Hernius de Morb. Cap. 7.* asserts, that the same Misfortune is produced by swallowing Lice. And *Platerus, in Lib. 2.* gives an Instance of the same Effect, produced by swallowing a live Eel.

Besides, Spasms both of the Pharynx, and inferior Part of the Gullet, may be produced by the Blood stagnating in these Parts, and distending the Vessels, which Distensions are always accompanied with Spasms. For this Reason hypochondriac Persons are frequently subject to this Disorder, since in them, by

the Force of the intestinal Spasms and Flatulencies, the Blood is forced to the superior Parts, and easily stagnates in the Oesophagus. This Disorder is, also, very readily produced by an universal Dyscrasy of the Humours, especially those of the serous Kind; when, for Instance, that lymphatic Liquor, secreted from the Glands into the Gullet, is viscid and acrid; in which Case a liberal Expectoration of the viscid Mucus affords great Relief: Of this kind seems to have been the Case mentioned by *Wepfer*, in *Observ. Medic. Pract. Observ.* 117. of a Man of seventy Years of Age, whose Aliments stuck, as it were, in the middle of his Gullet, where they afflicted him till they were again thrown up by Vomit.

Spasms of the Gullet may be produced by Disorders of the Stomach and Intestines, in consequence of the Consent between it and these Parts. Thus this Disorder is easily produced by acrid, acid, or bilious Sordes of the Stomach and Intestines. Accordingly *Forestus*, in *Lib. 18. Obs.* 13. affirms, That it may be produced by Milk concremented in the Stomach. *Hercules Saxoniensis*, in *Prælect. Pract. Part. Cap. 7. Sect. 4.* *Henricus ab Heer. Obs.* 16. and *Thonerus*, *Lib. 2. Obs.* observe, That Worms, lodged in the Stomach or Intestines, contribute to the Production of this Disorder. The Explosion of Eructations, and Vomiting, are also accompanied with Spasms of the Oesophagus; for, unless the Action and peristaltic Motion of the Oesophagus were inverted, and assisted the Ejection of the Humours out of the Stomach, it could by no means happen, that such a Quantity of Humours could, with such an Impetus and Quickness, be so often thrown up, not only from the Stomach, but, also, from the Intestines.

In consequence of the Consent of the Parts, Spasms of the Oesophagus are, also, frequently observed to accompany various spasmodic, and convulsive Disorders of the nervous System: Thus, in hysterical Suffocations, we find from Experience, that there is always a violent Constriction of the Neck and Fauces, and a Sensation resembling that produced by a Ligature stopping and compressing the Fauces. See *Ettmüller. Oper. Pract. P. 2. Cap. 3. Sect. 3.* and *Helmont*, in *Tract. de Asthmate & Tussi*. A Constriction of the Gullet, also, frequently happens to those who labour under convulsive Colics. And *Hofferus*, in *Hercule Medic.* gives us a memorable Instance of a Colic, which brought on a violent Cephalalgia, and Madness accompanied with Blindness, and a Difficulty of Deglutition. Epileptic and convulsive Paroxysms are, also, attended with this Symptom, since under them the Deglutition is either very difficult, or none at all, as is particularly observable in the Incubus, where, besides the Sense of Strangulation, there is an Inability of the Tongue, and an Impediment of Deglutition. The same Misfortune, also, frequently accompanies the Opisthotonos, as may be seen in the Cases related by *Forestus*, *Lib. 10. Obs.* 12. and 13. Nor are we to omit acute Disorders, especially malignant Fevers, in which there is not only a Difficulty of Deglutition, but, also, sometimes a Constriction of the inferior Part of the Gullet.

A Nausea is nothing but a gentle Convulsion of the Oesophagus, accompanied with an Inversion of its peristaltic Motion, and producing an Inclination to vomit, or Vomiting, or, at least, a Discharge of a more or less viscid Mucus from the Glands of the Gullet. It may be occasionally caused by every thing capable of vellicating either the Oesophagus itself, or its nervous Coat propagated to the Stomach, by which means this Constriction is, by Consent, propagated to the Gullet. We find in general, first, that a Nausea is the Forerunner of a subsequent Vomiting; secondly, that it accompanies all Inclinations to Vomits, and Cardialgias; thirdly, that without these it often happens with a frequent Discharge of a limpid Mucus, which is nothing but the Lymph of the Glands, expressed by the Force of the Spasms; this Disorder, also, frequently indicates, that Worms are lodged in the Primæ Viæ; fourthly, that it generally succeeds Crudities of the Stomach, which, as they are acrid when the Stomach is empty, they then, particularly excite a Nausea, which is to be alleviated by taking Aliments; fifthly, that it precedes violent Disorders of the Head, such as Vertigos, Apoplexies, and Deliquiums, especially when, by Consent, they derive their Origin from the Orifice of the Stomach, whence a certain Aura, or Vapour, seems to ascend from the Stomach to the Head; in which Case they are rendered, as it were, apoplectic, and deprived of the Exercise of their Senses; sixthly, for the same Reason, a Nausea afflicts those who labour under hypochondriac, or other Disorders, the Fomes of which is lodged in the Primæ Viæ; and, seventhly, in the Beginning of malignant Fevers a Nausea generally happens.

As for the Prognostic: Idiopathic Spasms of the Pharynx are never of good Presege, because, especially when preposterously treated, they prove very obstinate. Those Spasms of the Pharynx, which proceed from taking acrid Substances, are never free from Danger, and lay a Foundation for dreading an Inflammation. Those Spasms of the Oesophagus, which frequently seize hysterical Women, preface an Apoplexy. In Wounds, if

an Impediment of Deglutition happens from Convulsions, 'tis a bad Sign, according to *Ettmüller. Oper. Pract. Part. 1.* And *Hippocrates*, in *Sect. 4. Aph. 35.* tells us, That "if the Neck of a Patient labouring under a Fever is suddenly distorted, so that he can hardly swallow any thing, and without any Tumor, it is a mortal Sign." Spasms of the inferior Part of the Gullet, produced by Anger excited when at Meals, readily lay a Foundation for the Cholera Morbus, and bilious Fevers. And those Spasms of the Oesophagus, which depend upon an universal Dyscrasy of the Humours, and a Weakness of the nervous System, constitute a chronic Disease, succeeded by a Consumption. A Nausea, happening in the Beginning of malignant Disorders, is a Proof of the Strength of Nature; but is an highly pernicious Sign in a Plague, according to *Forestus*, in *Lib. 18. Obs.* 14. *Schol.*

THE CURE.

Since Spasms of the Oesophagus, whether in the Pharynx, or Middle of the Gullet, when neglected, not only become chronic, but, also, by hindering the Deglutition of the Aliments, readily bring on a Consumption, they, therefore, deserve to be expeditiously treated by proper and suitable Remedies; And these Remedies are of two kinds; the one calculated for allaying the Spasms, and the other for removing the Causes contributing to their Production.

The former of these Intentions is obtained by Antispasmodics and Anodynes, joined with Discutients, and used both internally and externally; but the more violent the Constriction is, the more expedient it is to begin the Cure with external Applications, because internal Medicines can hardly be swallowed without the greatest Difficulty. Some of these external Medicines, by drawing the Afflux of the Humours to the inferior Parts, and rendering the Circulation of the Blood equal, breaks the Force of the Spasms: Of this kind are Clysters, and Bathing the Feet. The Clysters ought to be prepared of emollient Substances, with an Addition of Corroboratives, and repeated twice or thrice. The Baths for the Feet are to be pretty warm, and the Legs are to be immersed pretty deeply in them. The Topics to be applied to the Part affected are generally paregoric and nervous Liniments, which may be prepared of the Aqua Anhaltina, Spirit of Sal Ammoniac, the Essences of Saffron and Nutmeg, Castor, and Camphire, and the Balsam of Life; which, if mixed with the Anodyne mineral Liquor, is an excellent Medicine, when the Disease is at its greatest Height. It also proves beneficial, when a few Drops of it are poured upon Sugar, kept in the Mouth, and slowly swallowed. This Intention is, also, answered by a few Grains of Theriaca, kept under the Tongue, and again spit out. An Ox's Bladder full of some warm emollient Decoction, and applied to the Part affected, is, also, of considerable Service in relaxing the Spasms.

Among internal Antispasmodics the most valuable are the Oils of sweet Almonds, and of Olives, mixed with Sperma Ceti; antispasmodic Powders, prepared of Cinnabar; the Pulvis Marchionis, prepared Amber, and the Extracts of Saffron and Castor, or the nitrous Powders, with one or two Grains of Camphire; as, also, the anodyne Liquor, either alone, or mixed with Essence of Castor; the Spiritus Bezoardicus Suffi, or the succinated Spirit of Hartshorn, or the Spiritus Nitri Dulcis, mixed with a few Drops of the genuine Oils of Chamomile or Mace: But, when the Disorder becomes chronic, we may use alternately, every other Day, with these, the antispasmodic Pills, which I generally prepare of the Extracts of Yarrow, Chamomile, and St. John's-wort, Mithridate, the Extracts of Saffron and Castor, and the distilled Oils of Mace or Mint.

When the Spasms are alleviated, the Physician who intends to remove the material Causes of the Disorder, ought carefully to inquire, which of them contribute to its Production; for, if the Disorder is produced by acrid Substances, Poisons, drastic Purgatives, or Emetics, their Force is, with all Expedition, to be obtunded with mucilaginous and oleous Substances, and with Preparations of Milk. This Intention is answered by pretty pinguous Broths, and Draughts of warm Water continued to a Nausea, that, thus, a gentle Vomiting being excited, the Poison may be again carried off.

Sometimes Acids subdue the Force of Poison: And by these, *Hochstetterus*, in the Case before-mentioned, affirms, that he cured a Constriction of the Gullet produced by Malmsey Wine, in which Confound had been boiled. And *Forestus*, in the Part before-mentioned, informs us, that a Constriction of the Gullet, produced by Aqua-fortis, was happily cured by Mucilage of Quinces.

When violent Anger, excited at Meals, brings on Spasms of the Gullet, there generally happens, at the same time, an Effusion of Bile into the Stomach. In this Case, besides the Mitigation of the Commotions, the Bile is to be corrected, lest it acquire a corrosive and virulent Quality; after which it is to be eliminated from the Body, by gentle Emetics, or Cholagogues.

The Bile is corrected by absorbent and mucilaginous Substances, such as Decoctions of Oats, or Barley. The Bile, on the other hand, is most commodiously eliminated by Preparations of Manna, join'd with those of Rhubarb, or by Vomit, when these Preparations are heighten'd by one or two Grains of emetic Tartar, or Ipecacuanha. But we are to take care, that the Emetic, or the Purgative, be not exhibited immediately after the Fit of Anger.

But if the Spasms of the Gullet are produced by a Dyscrasy of the whole Mass of Humours or, particularly, if acrid and viscid Sordes of the Primæ Viæ lay a Foundation for a long-continued Disorder of this Kind; these Sordes are to be corrected by inciding, resolvent, digestive, and absorbent Medicines; and evacuated by Preparations of Manna, Rhubarb, and the Pilulæ Balsamicæ. But as the Disorder frequently proves obstinate to this Treatment, there will be no Medicine found more efficacious, than medicinal Waters; among which, the best are those of *Sedlitz*, drank for about four Days, and then succeeded by those of *Egra*. In hypochondriacal Disorders, also, where the Excretions of Blood, whether by the Uterus, or hæmorrhoidal Veins, are suppressed, besides Venesection and Exercise, the *Caroline Baths*, duly used, are, of all other Things, the most beneficial.

A Nausea, produced by acrid, acid, and viscid Sordes of the Primæ Viæ, requires the same Cure with that before-mentioned. But singular Service is done by vinous Infusions, prepared of resolvent, aromatic, and evacuating Herbs and Roots. In Nausea, accompanied with a Bitterness of the Mouth, *Gabelboverus*, in *Cent. 1. Cur. 14.* recommends an Infusion of the Root of wild Radish in *Rhenish Wine*, to be drank every Morning. If a Nausea, accompanied with Loathing, is produced by using any fetid Substance, or fordid Aliments, it is expedient either to excite a Vomiting, or to chew Lemon or Orange-peel, or to use generous Wines. If, whilst malignant Fevers rage, any one is, without a manifest Cause, seized with a Nausea, 'tis forthwith expedient to exhibit a gentle Vomit, consisting of about fifteen Grains of Ipecacuanha; by which means, the Contagion being eliminated, the Fever is either prevented, or, at least, render'd more mild and benign in its Progress.

Chronical Spasms of the Oesophagus, which depend on a Weakness of the nervous System, and often recur, are rather to be cured by dietetic Preparations and Aliments, than by strong Medicines; for, in this Case, we are, for ordinary Drink, to choose Decoctions prepared of Viper's-grass, Succory, and Cinnamon. All Malt Liquors are to be abstained from, and the Patient is to use generous Wine moderately. The Aliments are to be light, and small in Quantity, but Exercise is to be frequently used. For corroborating the Stomach, balsamic Elixirs, prepared without a spirituous Menstruum, are to be used. The Redundance of the Blood is to be diminished by properly repeated Venesections; and the Generation of Sordes in the Primæ Viæ is to be prevented by gentle Laxatives. But, above all, the Passions of the Mind, which so greatly contribute to the Production of Spasms, are to be carefully guarded against; then the *Caroline Springs*, and afterwards the Baths of *Toeplitz*, are to be used.

PRACTICAL CAUTIONS.

The Physician who, in order to sooth Spasms of the Oesophagus, intends to bathe the Feet, with a View to drive the Humours from the superior Parts, ought to take care, that the Feet be not too cold; for in this Case, the Bathing is to be defer'd for some time; and the Feet are to be previously warm'd by Frictions, and Vessels full of warm Water placed under them. This Rule is, also, to be observed with respect to the Use of Venesection.

If a Constriction of the Fauces is join'd with a Redness of the Face, Inflation of the Vessels, and a Pulsation of the large Arteries of the Head, a Vein is to be open'd, for fear of an approaching Apoplexy. Where there are hysteric, or hypochondriac Symptoms, and Suffocations, as it were, already present, Venesection is, also, to be used; tho' not in the Arm, but rather in the Foot; since the Paroxysms are rather heighten'd, by taking Blood from the former.

When the Spasms seize the inferior Part of the Gullet, the Liniments, and other external Medicines, are not so much to be applied to the Breast and Præcordia, as to the Spine of the Back; as *Johannes Langius*, in *Epistol. Medic. Part 2. Epistol. 43.* shews from *Aetius*, and *Galen*, and, which is still better, from Experience: For, as the Oesophagus is immediately connected with the *Spina Dorsæ*, the Force of Remedies applied to the latter will the more certainly penetrate to the former.

In the suffocative Paroxysms of hysteric Women, where the Patients lie half-dead, in order to rouse them, besides Clysters, volatile, fetid, oleous Substances, and Preparations of Castor, are useful, when applied to the Nostriis; as, also, the Feathers of Partridges, and other fetid Substances, kindled; for these are of singular Efficacy in soothing irregular Motions.

For exasperating, and more effectually confirming the Spasms, both of the Pharynx, and inferior Parts of the Gullet, nothing

contributes more than the Use of drastic Purgatives. 'Tis always expedient to substitute, in the room of these, mild Laxatives; such as balsamic Preparations of Manna and Rhubarb; or, if the Disorder is join'd with Flatulencies, oleous and carminative Clysters.

A Constriction of the Fauces, succeeding an acute Fever, besides a proper Regimen, is to be relieved by antispasmodic and analeptic Medicines; such as the *Pulvis Marchionis*, Nitre mix'd with Camphire, and the *Tinctura Bezoardica Michaelis* mix'd with the *Mixtura Simplex*; for, in Cases of this Nature, Opiates, and the grosser Astringents, are as bad as Poison.

Spasms of the Oesophagus, produced by Worms vellicating the *Primæ Viæ*, cannot be removed, till the Worms are eliminated. But, in this Case, we are to use Purgatives very cautiously; and, if Mercurials are exhibited, the Patient ought, immediately after, to drink Oil of sweet Almonds, lest the Intestines should be too much vellicated by them.

When the Constriction of the Oesophagus is so great, that no Aliments can pass, and, at the same time, continues long; then, lest the Patients should be wasted away, it is expedient to inject milky and nutritive Clysters: Concerning which, see *Langius* in *Epistol. Medic. Lib. 1. Epist. 80.*

Among the convulsive Motions of the Oesophagus, we may reckon those Concussions of the Breast, which happen with a Noise in Children, when seized with Epilepsies, and which are generally taken for a Species of Hiccup: But they are really nothing else than convulsive Concussions of the Oesophagus, and adjacent Parts; and they are generally the fatal Forerunners of the Patient's Death. In this Case, the Physician is to use mild Antiepileptics, anodyne and analeptic Medicines; but, at the same time, he is to predict instant Death. *Frederic Hoffman.*

OESTROMANIA. The *Furor Uterinus*.

OESTRUM VENERIS, in Anatomy, is the CLITORIS.

OESYPE, or OESYPOS, οἰσύπη, or οἰσύπος. The Sordes of Wool. See LANA.

OFFA HELMONTIANA.

Take of the alkaline Spirit of Sal Ammoniac, so strong as to leave much of its Salt undissolved at the Bottom; put into a cold and dry cylindrical Glass, with a narrow Mouth, so as to fill about one half thereof; pour to it, gradually, a Quantity of pure cold Alcohol, so as to run gently down the Sides of the Vessel, till it be full; a white Coagulation will be made upon the Surface, where the lighter Alcohol rests upon the alkaline Spirit. If the Glass be now inverted, there will instantly appear a white opaque Coagulation, where the Alcohol and alkaline Spirit mix; and, when they are both well shaken together, the Whole becomes a white opaque consistent Mass, concentered together like Stone, so that not a Drop will fall out of the Glass, while inverted. Stop the Vessel close, and set it by: Thus the Mixture will soon resolve into a Fluid, that floats at Top, and a dense, saline Concretion, that falls to the Bottom; so that, in a Year's time, the Salt will almost become solid below, with a Liquor floating above it. If the whole Mass, thus produced, be distilled with a soft Fire, an alkaline, balsamic, oily, solid Salt, will sublime. The colder the Season, and the Place, in which the Experiment is made, the better it will succeed.

REMARKS.

This is one of the more difficult Experiments in Chymistry, as it requires both the Liquors to be perfect, and the Observance of several Circumstances, any one of which being wanting, will cause it to miscarry; but, if they all be observed, it will succeed. Here, then, we see, that pure volatile alkaline Salt will closely attract to itself the most subtle Oil that is known, that is, Alcohol; whence the Soap so produced is the most subtle and penetrating of all Soaps, consisting of an exceeding subtle and volatile Alkali and Oil, wonderfully united together in an Instant. If this Medicine be diluted with Canary, and taken upon an empty Stomach, it passes, perhaps, through all the Vessels of the Body, resolves Concretions, opens Obstructions, excites the vital Powers; and thus successfully cures many dangerous Distempers, proceeding from an obstructing Matter, capable of being resolved by it. But its Virtue vanishes too soon, as being so extremely volatile, and therefore becomes unequal to the more stubborn Distempers. It is highly commended in the Jaundice, unattended with an acute Inflammation; it does not dissolve the Stone, or prevent the Concretion or Increase thereof; it seems to agree with Salt of Tartar rendered volatile; it dissolves in a gentle Heat, like Ice, and returns to a solid Form in the Cold. If pure Alcohol be thus mixed with One-third of dry volatile Alkali, it makes a much more solid Soap, as being without Water, which is always double the Quantity in the strongest alkaline Spirit, with respect to the pure Salt. *Helmont* needed not have apprehended the sudden Generation of the Stone from hence; for this Matter is not the Stone, but dissolves with Heat, dilutes with Water, and proves totally and spontaneously volatile; so that

that it has nothing in common, nor like to the Stone. *Helmont* was not the Inventor of the Experiment, though the Production be called *Offa Helmontiana*; but *Raymond Lully*, long before him; and the *English* Author upon the Alcahest, supposed to be *George Starkey*, inconsiderately pretends, that this Soap, brought to a Liquor by repeated Distillation, will become the Alcahest of *Helmont*. *Boerhaave's Chymistry*.

OFFICINALIA. Official Medicines, that is, those usually found in the Shops.

OFFION. Opium.

OGER, OGERTINUM, and OGERTUM, in *Paracelsus*, is the same as **OCHRA**.

OLAMPI. The Name of a very scarce Gum, brought from *America*. *Lemery* informs us, that it is hard, yellowish, with a black Cast, transparent, resembling Copal, and sweet to the Taste, with some Degree of Astringency. It is esteem'd detergent, drying, and resolvent.

OLCA. The same as **HOLCA**; which see.

OLDENLANDIA.

The Characters are;

It hath a Rose-shaped Flower, consisting of one Leaf, which is divided into four Parts, almost to the Bottom, and rests on the Empalement; which Empalement, afterward, becomes an almost globular Fruit, having two Cells, which contain many small Seeds.

Miller mentions but one Sort of *Oldenlandia*; which is,

Oldenlandia humilis Hyssopifolia. Plum. Nov. Gen.

This Plant was discover'd in *America* by Father *Plumier*, who gave this Name to it in Honour to *Henry Bernard Oldenland*, a German, who was a Disciple of Dr. *Herman*, at *Leyden*, and was a very curious Botanist. *Miller's Dictionary, Vol. 2.*

OLEA.

The Characters are;

The Leaves are oblong, and always green; the Calyx is dentated, and swelling like a Bottle. The Flower is monopetalous, with its lower Part tubulated, and the upper multifid; the Lobes, or Segments, expanding in Form of a Star. The Ovary, in the Centre of the dentated and multifid Calyx, becomes a roundish, pulpy Fruit, containing one, or generally two Stones, inclosing Kernels.

Boerhaave mentions five Species of *Olea*; which are,

1. *Olea*; sativa. *Ger. 1026. Emac. 1392. Park. Theat. 1438.*

C. B. P. 472. J. B. 1. Raii Hist. 2. 1541. Boerb. Ind. A. 2. 218.

Olea. Offic. THE OLIVE-TREE.

The Olive-tree grows to a great Bigness in its native Climate, being full of Branches, whose Twigs are of a grey or ash Colour; having two Leaves set opposite at a Joint, of an hard firm Texture, of a long oval Shape, whitish underneath, and of a sad Green above; among these grow Bunches of small, yellow, monopetalous Flowers, cut into four Sections; and after them come oval Fruit, of different Magnitudes, some being as big as a large Plum, as the *Spanish*, and several others; and some, as the *Luke Olive*, a great deal less: They are green at first, and black when ripe, having an hard Stone in the Middle, which is sharp-pointed at both Ends, when ripe; they are hot and burning in the Mouth.

The Olive-tree grows in *Spain, Italy, and Turkey*; from whence the Oil, and the pickled Olives, are brought to us.

The Oil is press'd out from the Olives, which are laid together awhile, to wither, and then ground in a Mill; and, having hot Water pour'd on them, they are press'd out, the Water subsiding, and the Oil swimming on the Top. What is drawn from the unripe Olives, is called *Omphacinum*, and is accounted drying and restraining, and fitter for some external Remedies: What is press'd out of the ripe Fruit, is called Oil of Olives, being what is generally eaten, and made use of in Medicines; the different Fineness being from the different Care and Management in the making it. The sweetest, and what we esteem most, comes from *Florence*.

Oil is moderately heating and mollifying, rendering the Body lax and soluble; it is good for Disorders of the Breast and Lungs, tempering the sharp cholerick Humours in the Bowels; and so helps Gripings, and the Colic; and is useful against all corrosive mineral Poisons, as Arsenic and Sublimate, &c. It opens the urinary Passages, and is good for the Stone and Gravel. The pickled Olives are grateful to the Stomach, and provoke an Appetite; the ripe ones are more eaten in the Eastern Countries, among the *Greeks*, being great Part of their Food, especially in *Lent*. *Miller's Bot. Off.*

The *Portuguese* Olive-trees, says *Clusius*, bear a lesser sort of Olive, [such are those of *Luca*, and other Parts of *Italy*, which are most in Esteem among us] which yet yields much Oil, and that of the best kind. So there are some Olive-trees in *Langue-doc* and *Provence* in *France*, and in *Andalusia* and *Granada* in *Spain*; which produce a smaller Olive, but what yields more and far better Oil, than the larger Olive.

They gather the Olives in *November, December, January, and February*, in the Kingdom of *Granada*, where they are not ripe before. Then they strew them on the Floor, and let them lie till they become wrinkled; then grind them, and press out the

Oil. Some strike off the Olives with Poles; but are blamed by others, who gather them with the Hand, by Help of Ladders, that they might not frustrate their Hopes of the next Year's Harvest, by striking off the Buds; for an Olive-tree is very much injured by Beating. It was a very antient Law established among Olive-gatherers, as *Pliny* tells us, "Never wound nor beat an Olive-tree."

In *Spain* and *France* they generally pickle them before they are ripe, tho' sometimes they pickle those which are ripe and black. Pickled Olives, with us, serve as Sawce to Roast-meat, especially Mutton; and they are also eaten in Salads. The *Italians* serve them in at a second Course, and eat them with Bread; they excite an Appetite, provoke to Stool, and dry and strengthen a too humid Stomach.

The Olive-tree was consecrated to *Minerva*; either because it was the Gift of that Goddess, or, as *Martianus Capella* supposes, because Arts and Sciences, which are under her Protection, are best learn'd in nocturnal Lucubrations, by the Light which Oil affords. The Olive-tree was, also, an Emblem of Pardon and Peace; in order to obtain which, the Supplicants used to carry in their Hands Branches of this Tree.

This Tree is distinguished according to its Form, Colour, Juice, Magnitude, Place of Growth, or first Discoverers; all which Varieties it would be endless to enumerate. The Antients have mention'd various Species, whose Names it would be very difficult to accommodate to those known at present, for which Reason I shall pass them over. *Pliny, Lib. 15. Cap. 3.* seems to make the *Colymbades* a distinct Species; but some will have them to be pure Olives, preserved and swimming in their own Oil, by way of Distinction from the *Halmades*, which are Olives pickled with Salt; others make the *Halmades* and *Colymbades* to be the same thing.

We observe not so many Varieties of Olive-trees, as of Apple-trees, Pear-trees, and Plum-trees; either because the Olive-tree, in its own Nature, is less subject to vary, being produced from Seed, or because it was not worth the Planter's while to spend his Pains and Industry in attempting to multiply Varieties: To this may be added, that the Tree, being impatient of Cold, will not come under the Care of the *French, German, and English* Gardeners, who are most curious and active in procuring and producing new Species of Fruits.

According to *Cherlerus*, the Antients were very solicitous in preserving Olives; tho' they are, in reality, only suited to gratify the Palate: So unbounded was their Luxury, that they even made bitter Substances subservient to it; for nothing has a more ungrateful Taste than Olives, either ripe or unripe. But Art found Means of bestowing upon them that grateful and agreeable Taste, which Nature had denied them. Tho' *Columella* and *Palladius* furnish us with various Methods of preserving Olives, yet they are, at present, generally imported to us, preserved in a very simple Manner, by means of a Brine prepared of Vinegar and Salt.

Tho' Olives, when ripe, are of a blackish Colour; of an acrid, bitter, and nauseous Taste; yet the Oil expressed from them is generally pellucid, of a somewhat yellowish Colour, and of a sweet and grateful Taste. Hence 'tis obvious, that the ungrateful Taste and Smell only reside in the aqueous Part, or that which remains after the Expression of the Oil: But that Oil is reckon'd the best, which is most free from all Colour and Taste.

According to the Antients, ripe Olives are moderately hot; but they soon become corrupted, and prove offensive to the Stomach, Eyes, and Bladder. When roasted and applied, they stop *Nomæ*, and remove the Scurf about the Edges of Carbuncles: When unripe, they are of a drying and astringent Quality. Preserved Olives are said to be of an astringent Quality, to corroborate the Stomach, and excite an Appetite. Those imported to us are preserved before they are ripe; but 'tis sometimes usual with the *Italians*, to preserve such as are black, and perfectly ripe.

The Leaves of the Olive-tree are of a drying and astringent Quality. They are only used externally, especially in Fluxes, immoderate Discharges of the Menses, an Herpes, and other Disorders of a like Nature. According to *Dioscorides*, they are better adapted to Medicines intended for the Eyes, than the Leaves of the wild Olive; because they are of a milder and more gentle Nature. That Substance which is within the Kernels of Olives, if mix'd with Lard and Meal, removes scabrous and rough Nails.

The Juice, which drops from recent Olive-branches, when they are kindled, cures Lichens, scurfy Disorders, and running Ulcers.

Pliny informs us, that when *Augustus*, happening to visit *Pollio Romulus*, then above an hundred Years old, asked him, By what means he had so effectually preserved the Vigour of his Body, and the Powers of his Mind? the latter answer'd; By the internal Use of Mulsom, and the external Use of Oil. *Cardan*, also, affirms, that three Things powerfully contribute to Longevity; which are Milk, Honey, and Oil, not externally used, but taken inwardly, and among the Aliments. *Aristotle* was of Opinion, that every Man ought to be well provided in Salt and Oil, because both of them greatly contribute to Longevity.

Oil seems to be of an aerial Nature, for which Reason it floats in Water, and cannot be easily mixed with aqueous Liquors; but, though shaken along with them, soon disengages itself, and rises to the Surface. But when these aqueous and oleous Liquors are shaken together, and intimately mixed, they assume a whitish Colour, and resemble Milk.

According to *Dioscorides*, that Oil which is expressed from unripe Olives, and for that Reason called *Omphacinum*, is most conducive to Health: And that *Omphacinum* is best, which is recent, fragrant, and not of a biting Taste. This Kind is, also, most proper for the Composition of Ointments: It is, also, beneficial to the Stomach, in consequence of its astringent Quality. If held in the Mouth, it braces up the Gums, fixes the Teeth, and checks Sweats. It is of a refrigerating, drying, and astringent Nature; for which Reason it is used as an Ingredient in many Compositions.

The Oil expressed from ripe Olives is moderately heating and moistening; but the old is hotter than that which is recent. It is, also, of an emollient, digestive, and vulnerary Quality: If an Ounce of it is drank with warm Ale, it renders the Body soluble, removes a Driness of the Breast, allays Gripes, relaxes the urinary Passages, and cleanses and consolidates such as are corroded: Externally it is frequently used in Clysters, and for the Cure of hot Tumors: When drank with warm Water, it excites Vomiting, for which Reason it is generally exhibited against Poisons.

Schroder informs us, that in *Westphalia*, his native Country, it is customary to exhibit to wounded Patients Oil of Olives mixed with warm Ale, in so large Quantities, that the Sweat of the Patient often smells of the Oil.

In order to render the Body soluble, a Piece of toasted Bread, soaked in Oil, and eaten every Morning, is highly recommended: And this, says *Cherlerus*, is a very grateful Medicine. *Boerlii Observat.*

Pliny informs us, that Oil refreshes the Limbs; and it is certain, that the Antients frequently anointed the Body with Oil, because they imagin'd, that it not only procured Strength and Vigour, but, also, preserved the Tone of the Parts. But this Custom is long ago abolished, and in my Opinion very deservedly; partly on account of its Nastiness, and partly because it obstructs the Pores of the Skin, and hinders Perspiration, which is absolutely necessary to the Preservation of Health.

According to *Pliny*, in *Hist. Natural. Lib. 11. Cap. 19.* not only Bees, but, also, all other Insects are killed by means of Oil; which *Malpighi* found true in Silk-worms, and other Insects: The Reason of this is obvious, since the Oil obstructs the Passages, or Pores, through which the Air enters, and returns; in consequence of which, the Animal is forthwith destroyed: Nor is Respiration less, but rather more, necessary to these Insects than to larger Animals, since, in the former, the Vessels destined for the Reception of the Air are larger in proportion, more in Number, and more dispersed through all the Parts of the Body, than in the latter.

Oil, according to *Pliny*, extracts Pitch from Cloaths, an Effect not to be obtained by Water. And *Sennertus*, in *Hypom. 1. Cap. 5.* informs us, that, when the Hands are stained with Pitch, they cannot be made clean by means of Water, but by Oil, or some pinguious Substance, which melts the Pitch.

In a Vessel full of Oil, the superior Part is best; for the inferior is too much contaminated by the Amurca; and the Surface is best of all, because it is at the greatest Distance from the noxious Part, and is not injured by the Air. *Plut. Sympos.* The same is, also, asserted by *Macrobius*, in *Saturnal.* who, also, affirms, that the middle Part of Wine, and the lowest Part of Honey, is the best.

Dioscorides and *Galen* inform us, that the Oil obtained from the Twigs of the Olive-tree is useful for a great many Purposes; but though the former affirms, that this Oil is made of the Twigs, yet the latter asserts, that, in the Preparation of this Oil, they only add the Buds, produced by the Olive-tree. *Raii H. P.*

With respect to the Oil of Olives, it is remarkable, that, if rubbed upon any Part wounded by a Viper, it effectually prevents all the ill Consequences. See *VIPERA*.

2. Olea; sylvestris; folio duro; subtus incano. *C. B. P. 472. Tourn. Inst. 599. Boerb. Ind. alt. 2. 218. Oleaster. Offic. Oleaster sive Olea sylvestris. Park. Theat. 1438. J. B. 1. 17. Olea sylvestris. Ger. 1206. Emac. 1392. Raii Hist. 2. 1542. THE WILD OLIVE-TREE.*

As it is agreed by Botanists, that the Garden Olive-tree differs from the wild only in Culture, and that the former, if neglected, will degenerate into the other, which, also, is produced from the Kernel of the Garden Olive, it must certainly be granted, that the Oleastrum differs from the Olea, not in Species, but in some accidental Circumstances, for which Reason we shall be the shorter in its Description.

The Oleaster, in Bigness of Trunk or Branches, is not inferior to the Olea; but has fewer Branches, and those set with Thorns. The Leaves, also, are less, though of the same Shape; the Fruit, also, is like an Olive, but less, more shrivelled, and containing an acrimonious purple Juice. To this *Clusius* adds, that the Bark

is smoother than that of the Garden Olive-tree, that the Fruit has a recurved Point, and all the Parts are remarkably bitter.

In *Theophrastus* the Trunk is described as gaping, and discovering some peculiar Caverns, as in the Garden Olive-tree: This Defect in the Tree has the Name of *Gongri*.

The Victors at the *Olympic Games* were usually crowned with the Oleaster, as we are informed by *Pliny*, who, also, says, that the Oleaster of *Olympia*, with which *Hercules* was first crowned, was religiously preserved down to his Time, as was the Olea which was said to be proposed by *Minerva*, in a Trial of Skill, at *Athens*.

The Oleaster delights in an argillaceous and stony Soil, as does the Olea, and grows in the same Places. *Dioscorides* and *Pliny* say much of the Virtues of the Leaves of the Oleaster; for which the Reader is referred to those Authors: We suppose the Leaves, in this respect, are not much different from those of the Olea, only more effectual in their Operation: Nor is the Oil, which the Fruit affords, any way different from *Omphacinum*, except that it is hotter, more potently astringes, and, yet, at the same time, deterges. This Oil is not used in Food; but, if any one constantly uses it about his Head and Beard, he will find it to retard Greyness. *Amatus*, from *Dioscorides*, says, that it stops the Falling-off of the Hair, deterges Scurf and Achors, Itch and Leprosy.

For the Elæomeli, which, according to *Pliny*, distils from Olive-trees, according to *Dioscorides*, from a certain Trunk, see *ELÆOMELI*; the Account of it is very much illustrated by *Lobel* and *Penz.* who tell us, that the Olive-trees in the Vineyards of *Montpelier*, being wounded in the Trunk, discharge an Honey, or *Elæomeli*: They assure us, from their own Experience, that from their common Olea, which is a Tree of a very bitter and unpleasant Taste, in its Bark, Trunk, and Fruit, also, before it is pickled, there distils a truly melleous Liquor, resembling Honey, not only in Colour and Taste, but in keeping uncorrupted; and that, by slightly wounding the Trunk with a Penknife, through the Chinks of the Bark, they obtained enough of this Liquor, not only to gratify their own Curiosity, but to impart to their Friends. But it will be in vain to expect this Honey, unless the Olive be nearly ripe and blackish. From those Trees, also, especially from Wounds made in the larger Trunks, was discharged a glutinous Liquor, more liquid than Honey, at first; but, after it had stood a-while, becoming more dense with the Cold, resembling rather Manna than Honey, in Appearance, Taste, Relish, and Manner of Concretion, in the Opinion of all who examined it.

As for the *Ethiopian Olive-tree*, mentioned by *Strabo* and *Dioscorides*, which discharged a Tear, like Scammony, or, according to *Paulus*, like Gutta Ammoniaca, and suspected by *Casalpinus* to be Gum Elemi, we are not certain what Sort of Tree it is, and whether it be the same with the common Olive-tree, or not. However, we are told by *Dioscorides*, that this Tear is good for a Cicatrix and Albugo in the Eyes, and for Dimness of Sight, the Eyes being anointed therewith; that it provokes Urine, and the Menes; and, put into an hollow Tooth, eases the Pains thereof, expels the Fœtus, and cures the Impetigo and Lepra; and that, used in Medicine, it is of a deleterious Quality. *Raii Hist. Plant.*

3. Olea; Afra; folio Buxi, crasso, atroviridi, lucido; cortice albo, scabro.

4. Olea; Afra; folio longo, lato, supra atroviridi splendente, infra pallide viridi. *Slangenbout vulgo Batavis.*

5. Olea; Afra; folio longo, angusto, pallide viridi; fructu rotundo, purpurascete. *Boerb. Ind. alt. Plant.*

OLEAMEN. A thin Liniment, composed of Oils. *Scribonius Largus.*

OLEANDER. The Rose-bay. See *NERIUM*.

OLEASTER. See *OLEA*.

OLEASTER GERMANICUS. A Name for the *Rhamnoides*; fructifera; foliis Salicis; baccis leviter flavescens.

OLECRANON, ὀλέκρον. The Elbow.

OLEITAS. Oiliness. *Rulandus.*

OLENE, ὀλένη. The Cubit.

OLEUM. Oil. Various Sorts of Oils are used in Medicine, prepared from Animals, Vegetables, and Minerals. Animal Oils are their Fats, which are originally vegetable Oils. All animal Substances yield these Oils, together with their volatile Salts, in Distillation: For an Account of which, see the Article *CERVUS*.

Vegetable Oils are principally procured by Expression, Boiling, and Distillation.

There is a certain Part in Plants, which, being either spontaneously fluid, or easily made so by a gentle Heat, is called their Oil. This Oil may become thick by long standing, as we see in the Oil of Turpentine, which, though extremely fluid at first, manifestly thickens by degrees. It may, also, grow thick with Cold, and thus appear knotty like Fish-spawn; it may even become solid, as we see in Wax; but by what means soever it thus becomes hard, it flows again upon being applied to the Fire. This Oil, therefore, whenever it becomes liquid, is, at the same time, unctuous, or exceeding soft and slippery to the Touch; though it has, at the same time, a certain Tenacity, or Viscosity, [E c*]

in its Parts, not found in Waters and Spirits. Again, these Oils are always inflammable, and feed both Fire and Flame; being themselves disposed to go into Flame; a Property not found in Air, Water, or Earth. Lastly, Oil will not intimately mix with Water, but, when shook therein, repels the Water from it, collects together, and separates into a distinct Liquor; in which respect it differs from Spirits. Vegetable Oil, therefore, is an unctuous inflammable Liquor, that does not mix with Water.

This Oil is found of many different Kinds in Plants; the volatile Sort, which is produced in the Distillation of the Waters from unctuous Vegetables, lodges the presiding Spirit, which contains the Taste and Smell of the Plants; whence in this Oil the particular sensible Properties of the Plant manifestly reside; which, being once separated, robs the Plant of its Nature: Thus, if all this Oil were totally extracted from Cinnamon, Mace, Cloves, or Nutmeg, these Bodies would remain of their pristine Form, so as to be perfectly known, though they retain nothing of their peculiar Properties: For, when all this Oil is taken away, those Spices can no longer be distinguished by the Smell or Taste; though the Body of the Oil receives not its Smell and Taste from itself, but entirely from that Spirit, which, when present, distinguishes these Oils, and, when absent, leaves them scarce distinguishable, and almost of one and the same Nature.

Sometimes, in certain Plants, and particular Parts thereof, this Oil is collected pure, in little peculiar Cells, or Receptacles; at other times, oily Particles are mixed with the Juices of Plants, and so dispersed therein as scarce to appear in the Form of Oil, but lie concealed in that of Soap. But when these latent oily Particles associate, or separate from the rest, they immediately appear in the Form of Oil. Thus the Juices of a Plant being extracted with Water, inspissated, made saponaceous, and dried, it is manifest, that they contain Oil, by their burning. On the other hand, a pure Oil distils from the Incisions made in the Fir, the Pine, and the Larch-tree. A transverse Section being made into the Root of Masterwort, newly dug up in the Winter, we may, by the Help of a Microscope, perceive little Drops of gold-coloured Oil, issuing out from certain Vessels on the Surface; and the same holds true of a Nutmeg, or Almond, cut with a warm Knife. But we find this Oil no-where more plentifully than in Cotyledons, or seminal Lobes of Plants; where it defends the tender Embryo from the pernicious Effects of unseasonable Weather, or too great Cold; for Freezing might probably prove destructive to so fine a Structure. This Oil, likewise, is in the Winter-time found driven toward the Bark, by the preceding Summer; and, being there more drained from its watery Moisture, is collected in great Abundance, especially in the Ever-greens. The Oil of Vegetables, therefore, chiefly abounds in their more durable Parts, in order to defend the other natural and more necessary ones; and is therefore found in such Parts, as are farthest removed from the absorbing Vessels of the Roots, and the nutrimental Juice there drawn in from the Earth: Thus, more Oil is found in ripe Linseed, than, perhaps, in all the other Parts of the Plant together. Sometimes, also, this Oil is collected in such Quantity as spontaneously to appear in its proper Form, burst its Cells, and run out; whence the Barks of Trees and Fruits principally afford it, as we see in Pine-apples, Juniper-berries, and the like, especially in the Ever-greens, where the outward Bark is often cased over with this Oil. The Trees in the Northern Regions, which grow upon the high Mountains, exposed to the freezing Cold, more particularly afford it; whence it should seem, that this Oil is highly requisite to defend the Life of Vegetables, against the freezing Cold of Winter. We likewise observe, that these fat Oils principally grow and collect in full-grown Plants, that soon after seem, as it were, to sleep, or become aged; for both Herbs and Trees contain little Oil in their young growing State, but are defended with a diluted thin watery Juice: Thus Flax, soon after it is first sown, rises in the Form of Grass, and is merely aqueous; but, when come to Maturity, it loses its Greenness, grows yellow, and now affords a copious Oil, especially in its Seed: And the same holds true of a young Pine, compared with one that is full-grown. It is, also, observed, that the shrubby Plants, which have lively Roots, gradually contract themselves upon the Approach of Winter, withhold their Juices, perspire but little, receive little Nourishment from the Earth, nor throw much off into the Air; and thus they continue to do in an higher Degree, as the Winter comes on, till at length they, in a manner, rest. On the other hand, as the Spring approaches, all begins to move again; they take in Nourishment, and perspire. If these Autumnal or Winter-stations may be called Times of Sleep, and the Summer and Vernal Periods, Times of Waking, in Plants it will generally appear, that the Oils of Vegetables are increased in their Sleeping, but their Water in their Waking. Thus the Root of Masterwort, being perfectly leafless in the Winter, and lying hid and unactive in the Earth, may be called dormant; but if now dug up, and examined, it will be found rich in Oil; but, if again dug up in May, it appears aqueous, saline, and by no means so oily as before; and the same is observed in Trees. Lastly, We see that old Trees are oppressed with their own Oil, and thence suffocated, through the abundance of Fat, as the Pine, the Fir, and the like, where this Oil appears in the

Form of a Gum; but in others, under that of Resin, Oil, or Balsam. And hence it is, that Gardeners so frequently complain of the Death of Trees, obstructed in their Bark; which thus die, as Animals do, when choaked with their own Fat.

The Chymist, therefore, who would extract the Oils of Vegetables, should first learn from Botany, that there are certain Seasons, wherein Plants abound with Water and Salt, and then but little with Oil; and again, that there are other Seasons, wherein they principally abound with Oil, and but a little with Water and Salt; for whilst new Leaves, Flowers, and Fruit, are forming in Plants, the Motion of the aqueous Juices, pregnant with Salt, is promoted, and the sluggish Oils excluded; but, when the Leaves begin to wither and fall off, the Flowers to shed, or the Fruit to ripen, or spontaneously fall off, when perfect, then the oily Parts gradually collect together, and preside; the more subtle ones being dissipated by the Summer's Heat: Whence Builders fell their Timber in the Midst of Winter, that it may be durable, and Proof against Moisture and Rotteness. For all the hardest, most ponderous, and lasting Woods, are found to abound with a ponderous Oil: Thus Cedar and Lignum Vitæ contain an exceeding heavy, compact, and copious Oil. Chymists, therefore, must chuse their Subjects for Salt, at a certain Season, and for Oil at a very different one.

THE PROCESS.

1. The ripe Seeds of most Vegetables, when they begin to fall, and grow dry, contain a copious native Oil: These Seeds therefore, being taken, and somewhat farther dried, are ground into a kind of Meal; but, if they prove too unctuous for this Purpose, let them only be bruised in a Stone Mortar; by which Action alone some of them will yield an Oil, such as Almonds, Pine-nuts, Pistachios, and the like: Let the Meal thus procured be suspended awhile in the Vapour of boiling Water; and then again be gently dried, to open it the more, and fit it the better for yielding its Oil by Expression: Put this Meal or Paste into strong hempen Bags, which are to be close tied up, and place them between two Iron Plates, heated in boiling Water; and squeeze the Bags in a strong Press; and thus, the Oil being melted by this innocent Heat, will sweat and drop through the Bags into a receiving Vessel, placed underneath, without Empyreuma; but almost as it naturally existed in the Plant. And by this means may an Oil be drawn from the Seeds of the least oleaginous Plants, such as Hemip, Flax, Lettuce, and numberless other Subjects; in which no Mortal would have expected such an Oil should lie concealed. In the same manner, a copious Oil may be expressed from Cloves, Mace, and Nutmegs; though the sharp aromatic Virtue of these Spices will not be found in their expressed Oil; for Mace and Nutmeg, when thus treated, rather afford a mild and very thick Balsam, than an hot aromatic Oil, such as they yield by Distillation. I was formerly surpris'd, that the expressed Oil of Mustard-seed should be ordered with Success in the raging Pain of the Stone; but my Wonder ceased, upon finding this Oil so sweet, so soft, and mild; whereas that by Distillation from the same Seed is so violently sharp and fiery, that, to this Day, I cannot sufficiently wonder at the Difference, as often as I consider it; for it seems difficult to assign the Reason, why this expressed Oil has not the pungent Taste and Odour, which are so remarkable in the distilled Oil; and why the Acrimony of the preceding Spirit, which resides in the Oil, is not here manifest; and this, whether we regard the Water, the Salt, the Spirit itself, or its Oil.

2. The Oil of our present Process contains very little Salt, tho' it has evidently much of the particular Nature of the Plant, as our Senses inform us; but, whilst fresh, it sheaths, blunts, and mollifies, what is acrimonious in the Humours; relaxes the Fibres, Membranes, Vessels, and Viscera, when applied thereto; softens the Hardness of the Flesh, and cures its Crispiness; it mollifies and moistens dead and dry Eschars, and renders them separable from the sound Flesh, by the vital Actions; it defends the naked Parts in Wounds, and prevents the dry Air from hurting them by Desiccation. It, also, prevents the thin Humours from exhaling too much through the open Mouths of the Vessels in Wounds, and thus spoiling the extreme Vessels; and hence it becomes an excellent Remedy for expeditiously healing recent Flesh-wounds. It is, also, accounted a great Anodyne, both as it is emollient; and relaxing. *Boerhaave's Chymistry.* For a farther Account of these Oils, see CHYLUS.

DISTILLED OR ESSENTIAL OILS, BY THE ALEMBIC, FROM THE RECENT LEAVES OF SAVINE.

All Plants are more or less fit for this Operation; but principally those which are rich in an aromatic Virtue; and none of them are more proper for our present Purpose, than those of an high and fragrant Odour, and a pungent, hot, and grateful Taste: But in the present Process, which opens the Subject of essential Oils,

Oils, we are more particularly concerned with the Leaves of Plants: These Leaves are either the recent ones of Ever-greens, or the fading ones of Plants that shed their Leaves.

The aromatic Leaves of Ever-greens, such as the Arbor Vitæ, Bay, Box, Cedar, Citron, Ivy, Juniper, Lemon, Marum Syriacum, Myrtle, Orange, Pine, Rosemary, Savine, Sage, Thyme, wild Thyme, are almost always full of Oil, but principally in Autumn, and towards Winter; so that the Rule and Method of Working is nearly the same for them all.

But the annual aromatic Leaves, which die spontaneously, though, when green, prove highly odoriferous and aromatic, are to be gathered for our present Purpose, at the time of their full Growth; or just before they begin to decline from their utmost Vigour; for then the aqueous Moisture, and the Salt, being dissipated, leave a more tenacious Oil and Balsam behind; and the principal Plants of this Kind we have enumerated under the Article AQUA. Experience has shewn, that these Leaves, being gather'd at the Time above-mention'd, afford more Oil, if they are somewhat dried in the Shade, and a moderately fanning Air, before Distillation, than if they were immediately committed to the Still, with a watry Juice remaining in them; perhaps, because, the Water being carried off, the Oils unite the closer, and come over in their proper Form; whilst, being divided by the Interposition of the Water, they indeed impregnate the distilled Liquor with their Virtue, though they do not appear in the Form of Oil; but Care must be had, not to use too great a Heat in the Drying, lest the Oil, also, should fly off. Some Leaves, however, are found to contain so large a Quantity of a balsamic Oil, as to afford it copiously upon Distillation; as we see in Mint and Rosemary. There are, also, others that dry with Difficulty, and lose some of their fine Spirit, which enriches the Oil; such as Calamint and Maudlin-tansy; so that some Particulars are always to be excepted from the general Rule.

THE PROCESS.

1. Take the green Leaves, therefore, of any of these Plants, which, without bruising, spontaneously and copiously emit their Fragrance: Put them into a Still, whereof they may possess two Thirds; and pour on the distilled Water of the same Plant, to the same Height; then immediately perform the Distillation: And thus Baulm, Calamint, Dill, Dittany, Fennel, Lovage, Marum Syriacum, Marjoram, Maudlin, Tansy, Mint, Origanum, Sage, Savine, Savory, Scurvy-grass, Southernwood, Tansy, Thyme, and wild Thyme, all immediately afford their Oils. But others require to be long digested, in a Vessel exactly closed, together with Sea-salt, or the Spirit of Vitriol, in order to fit them to afford their Oil in Perfection, and in larger Quantity. Thus, if the essential Oils be required from the Leaves of Bays, Box, Calamus Aromaticus, Cedar, Chamomile, Citron, Fir, Hyssop, Juniper, Lemon, Myrtle, Orange, or Pine: Let them be first gently dried, then put into a Still, so as to fill two Thirds thereof; pour on their own distilled Water to the same Height, and for every Pint of Water add half an Ounce of Sea-salt, or a Dram of the Oil of Vitriol; lute the Still perfectly close, and continue the Heat up to ninety Degrees, for three Weeks before the Distillation. But the more tenaciously any Leaves retain their Oils, the more Acid, and the longer Digestion, they require; for Acids loosen and resolve these Oils, and, perhaps, in some measure, increase them, according to the Observation of Boyle, Hoffman, Homberg, and Le Mort. Now, therefore, proceed to Distillation, as is directed under the Article AQUA; only observing to make the Matter boil quick, and the Still to run strong; for thus the Oil required will come over with the first Water; whereas, if the Distillation be too slow, the Oil will be agitated by a great Heat; yet not being able to rise, it will be mixed in among the Water and the Leaves, and be thus attenuated, and greatly enrich the Water, to the Diminution of the Oil. Let the Distillation be continued with this Degree of Heat, so long as any Oil comes over with the Water, the Receiver being often changed, to discover how long any Oil continues to rise; for the Distillation should be continued so long as the Water has any considerable Virtues, as mentioned under the Article AQUA; for this Water is serviceable in procuring new Oil.
2. In this Operation, therefore, the Cells and Skins containing the Oil, being soften'd by the Digestion, and burst by the boiling Heat, which sets free, moves, and rarefies the Oil; this is, consequently, liquefied, and thrown to the Surface of the Water, especially if the Plant be *European*. And, as the oily Particles are carried upwards along with the watry, they are together forced into the Worm, where being condensed, by the Cold, into Oil, they are thus transmitted into the Receiver pure, considerably natural, without any Empyreuma; and excellently retaining, in a small Compass, the Odour, Taste, and peculiar Virtues of the Plant; leaving its Remainder perfectly deprived of all the Oil, by the Distillation, and almost without any Mark of

its own Nature: For the Oils of Box, Calamint, and Worm-wood, are as perfectly distinguishable by their Smell and Taste, as the Plants from whence they were drawn; whilst the Plants themselves, from whence all the Oil is extracted, cannot afterwards be well distinguished from each other. These Oils long retain their Virtues, without growing rancid; and, therefore, with respect to all these Properties, the Chymists have justly termed them *essential Oils*.

REMARKS.

1. These Oils have a certain sharp heating inflammatory Property, so as to stimulate the nervous Fibres, attenuate Viscidities, prove grateful to the Smell and Taste, and quicken the Spirits: Their Acrimony appears from hence, that, if applied to the naked Membranes and Nerves in Wounds, they give an acute Pain. We learn they are heating, because, when taken inwardly, they excite a greater Heat, than almost any other simple Body; so that a free Use of them will bring on burning Fevers, keep them up, and by an increased and continued Use, raise them even to the utmost Degree of Heat and Violence. When externally applied to the Skin of an healthy Person, so that they cannot be thrown off; they cause an Heat, Burning, Pain, Redness, Shining, Pulsation, and Blisters; and, if their Action be great, even Gangrenes: Whence it is manifest how high an inflammatory Power they have, when imprudently given internally, where, coming in Contact with the Viscera and Membranes, they may produce the like Inflammations; and hence, being actuated in the Body, by the Force of Circulation, they effectually stimulate the Nerves, and may thus excellently attenuate, and intimately divide, those Viscidities, which, arising from mere Inactivity, require to be resolved by a brisker Motion. Again, the odoriferous Kind, by their Sweetness and pleasant Taste, prove highly acceptable and refreshing, in Faintness and Torpidity; and all these Effects they have not by means of their oily Tenacity, but of the subtle Spirits, which are lodged in this Oil, and contain the proper Taste and Smell of the Plant: These Oils, therefore, by a prudent medicinal Use, afford the noblest Remedies against all those Distempers, wherein the animal, natural, and vital Spirits are wanting, or torpid; for Instance, in Persons afflicted with cold watry Disorders, a simple Leucophlegmatia, or mucous Serosity, proceeding from mere Inactivity, without any inflammatory Obstruction. Hence, also, they become serviceable in Winter Fevers, that are perfectly intermittent; and attended with cold Fits; being given whilst the Fever is off, and principally before the cold Fit is expected. A moderate Use of them is, also, serviceable to aged Persons, and to the Hypochondriacal, whose Blood is sluggish, and unfit for affording of Spirits; whence such Persons become indolent, forgetful, heavy, lethargic, and subject to weep like Children. In like manner they are serviceable to hysterical Women; but where hysterical Disorders proceed from a Plethora, essential Oils, though in other Cases so excellent, prove very prejudicial: and the like is to be understood of apoplectic Cases: For though these Oils are serviceable where the Patient is old, and lethargic through a Want of Spirits and Activity; yet they prove almost mortal, when the Disorder proceeds from Blood extravasated within the Skull, or from an inflammatory Fulness, or Plethora: Whence such Persons have been often hurt by the Use of apoplectic Balsams, prepared from these Oils, tho' almost every-where indiscriminately commended. They are in no Distempers more deservedly praised, than against Flatulencies in the Stomach, Gripings, and the Colic; but here, also, they must be prudently used, because these Disorders may arise from Inflammation, Spasms occasioned by Fulness, and the like Causes, wherein such Oils are hurtful; though, on the other hand, excellent, when those Disorders proceed from mere Coldness, languid Circulation, and a cold viscid Serosity blocking up the Intestines.
2. With regard to the chymical Use of our present Process, it is hence manifest, (1.) That aromatic Plants contain an Oil, which is volatile with the Heat of boiling Water: (2.) That this Oil principally contains the presiding Spirit, which rises together with it; and, after Distillation, remains for several Years therein, provided the containing Vessel be close stopped: (3.) That Plants contain this Oil only in one certain Quantity, which being drawn out, there remains no more behind: (4.) But if the boiling Water, in this Distillation, be saturated with as much Salt as it can dissolve, it will then be hotter than mere Water; whence, by means of a large Quantity of Salt, more essential Oil may be extracted from a Vegetable, than by boiling Water alone, without it; but it is erroneous to expect, by this means, more of the Spirit, wherein the Virtue of the Oil resides; for the native Spirit is separable by the boiling Heat of mere Water; so that the Promises made upon this Head are vain. (5.) Hence we learn, also, that these Oils are more volatile, than the saline Matter, which, with a stronger Fire, rises in a volatile, oily, acid, or alkaline Salt, or that which by Calcination is changed into

into fixed Alkali. (6.) That the proper Virtues of every Plant are found more in these Oils, than in other of their simple Parts; tho' this always with respect to the Spirit wrapped up in the Oil: For neither the Water, the fixed Oil, the saponaceous Part, nor the Salt of the Plant, contain this peculiar and proper Virtue; as, by separately examining all the rest, no one could discover from what Plant they proceed; whilst the Oil alone, by its Smell and Taste, never fails to indicate the Plant it was drawn from; or, if these Oils should correspond to two different Subjects, it is then usual to give them the same Name, as in the Oil of Roses, and *Lignum Rhodium*, or Rose-wood. So, also, the great Agreement betwixt the Oil of *Cassia Lignea*, and Cinnamon, has occasioned the true Cinnamon-tree to be called *Cassia Lignea*, and the other, *Cassia Fistula*. (7.) Lastly, we hence learn what an excellent Part Plants may lose by boiling.

THE DISTILLED OILS FROM DRY LEAVES, BY THE ALEM-BIC, SHEWN IN MINT.

1. We proceed to shew the same Experiment upon a dry Plant. Take Mint, therefore, that was gathered in a proper Season, dried in the Shade, and kept for six Months; digest and distil it with its own distilled Water, as in the preceding Process, observing only not to fill the Still above half, with the dry Leaves; because, being thus shrunk, they will swell very much with the Water poured upon them, and so easily burn, or boil over. By this means there will rise, thro' the whole Time of Distillation, a considerable Quantity of Oil, rich in Taste, Smell, and Virtue, and floating upon the distill'd Water.
2. If all the Liquor be expressed from the Remainder, and pour'd upon a fresh Parcel of Mint, and all the former distill'd Water be also returned after the Oil is first separated from it, with the Addition, also, of as much more distilled Mint-water, as is necessary, and the Whole be digested and distilled as before, this second Operation will afford a much larger Quantity of Oil; and, if several times repeated, the more Oil will each time be acquired; for, by numerous Cohobations, the Water will become extremely rich, and full of Oil. It is manifest, that the distilled Waters here retain the peculiar Virtues of the Plants, as is sufficiently shewn under the Article AQUA.

THE DISTILLED OIL OF FLOWERS; BY AN EXAMPLE IN LAVENDER.

1. The most odoriferous Part of Plants either resides entirely, or is found in greatest Perfection, in their Flowers; but, as it is here sweetest, so it is most perishable, by reason of the Delicacy, unstable and falling Nature of the Flowers; tho', indeed, there are some, as the kinds of Lavender, which long preserve their Fragrance: But the Method of obtaining their Oil is nearly the same in all; for which Purpose they are to be gathered at that time they are sweetest, which generally happens when their Petals begin to open; let them be gathered whole, with the Morning-dew upon them, and immediately be committed to the Still, whereof they may possess Two-thirds; a sufficient Quantity of the distilled Water of the same Flower being poured thereon, and as much Oil of Vitriol as may give a grateful Acidity to the Whole: Then, immediately, distil as in the preceding Process; by which means some Oil will appear floating in the Water, which is to be collected, and kept apart. Let the Decoction be expressed from the Flowers remaining in the Still, and be returned upon a fresh Parcel along with the former distilled Water, and a little more Oil of Vitriol; and thus, by repeating the Operation, a much larger Quantity of Oil will be now obtained. Repeat the Process three times, or more; for the oftener the Work is repeated, the more Oil will each time be obtained; the Decoction, each time, growing thicker, and the cohobated Water stronger, or fuller of Oil, which is to be carefully separated after every Distillation: And thus the distilled Waters, also, so often returned, at length become extremely fragrant, like the Oils themselves, and rich in Medicinal Virtue.
2. As this Oil is highly odoriferous, and therefore exceeding valuable, so it can only be obtained in a very small Quantity, whence Chymists have used great Endeavours to find a Way of increasing it, without impairing its Virtue; and at length observed, that if the Flowers were digested in a close Vessel, for fifteen Days, or more, with the Addition of so much Oil of Vitriol as might preserve them from Putrefaction, they would afford a third Part more of an excellent Oil; as we see by an Example in the precious Oil of Roses, given in the History of the Royal Academy of Sciences at Paris. Some of the principal Flowers that are fit for this Purpose, are the following: The Flowers of Chamomile, Citron, Clove, Hyacinth, Gilly-flowers, Jessamy, Lavender, white Lilies, Lilies of the Valley, Lemon, Maudlin Tansey, Orange, *Philadelphus Athenæi*, Roses, and Tansey.

REMARKS.

These Oils, for their excellent Fragrance, are valued by great Personages, and sold at an high Price; whence it is worth while to study them.

THE DISTILLED OILS OF SEEDS; BY AN EXAMPLE IN FENNEL.

It has been long observed, that the Oil of Plants is plentifully lodged in the Cotyledons, or double Placenta of their Seeds, whence their Oils have been long sought, especially in the aromatic Kinds; and it has appeared, that the more sharp, hot, and odorous they were, the more copious and excellent Oil they afforded: Yet Nature does not constantly follow this Rule alone; for tho' sometimes the Seed contains this aromatic Oil, as in Anise, Cumin, &c. yet in others the Oil is not found in the Seed, but in different Parts: Thus the curious Oil of the Rose is only found in its Flower, and none at all in the Seed, or Fruit. The Orange-tree contains an excellent odoriferous Oil in its Flower, the Rind of its Fruit, and its Leaves; but not the least Sign of any in its Seed: The Seed, indeed, leaves an Oil of its own, but nothing like that excellent one we speak of. Thus, the Seed of the Cinnamon-tree affords none of that admirable Oil which so richly abounds in its Bark, Leaves, and Wood. Hence no general Rule can with Certainty be laid down, but recourse must be had to particular Experiments, for sure Information. The best Seeds, therefore, for this Purpose, we judge to be those of Ammi, Amomum, Angelica, Anise, Bay, Cardamom both the greater and lesser, Caraway, Chervil, Coriander, Cubeb, Cumin, Dill, Fennel, Garlick, Hedge-mustard, Sweet Marjoram, Masterwort, Juniper, Lovage, Mustard, Onions, Origanum, Pepper, Rocket, Rue, Smallage, Spignel, Scurvy-grass, Tansey, and Zedoary.

These Seeds are to be gathered when perfectly ripe, and then to be dried for three Weeks, in an open airy Place, and afterwards digested in a close Vessel, with hot and salted Water, for three Days; let them afterwards be distilled in the same manner as was directed of Waters, only with a stronger Fire; otherwise the Oil will not ascend so well: And here, again, Salt Water being used instead of common, the Oil will be raised the better, on account of the greater Heat of the Liquor, and so become purer.

Some of these Seeds contain so copious an Oil, that, rising collectedly, and so running into the Worm, it is there suddenly cooled by the Water of the Worm-tub; and thus coagulates into a solid Mass, which blocks up the whole Cavity in one cold Part; so that no more Liquor being able to descend, the Vapour of the boiling Water and Oil, with a violent Force, throws off the Head of the Still, which might prove dangerous to the Operator. It is, therefore, proper to see, that the Worm here employed be sufficiently wide, and not kept too cool; but when the Water, and the Oil, are observed thus to stop their Running, let the Head of the Still be immediately taken off with Care, and boiling Water pour'd into the Worm, in order to dissolve the Oil, and drive it out, after which the Distillation may again proceed as before: The Seeds disposed to afford this coagulating Oil are principally those of Anise, Bay, Cardamom, Caraway, Fennel, and Zedoary; the Oils whereof somewhat resemble Camphire, which melts with the Heat of Distillation, and immediately grows solid in the Cold; though it still continues a pure Oil, that in Distillation generally blocks up the Vessels. And, in the hottest Countries, aromatic Plants are often so far matured, that their Oils thus change to Camphire.

REMARKS.

Hence, again, we learn, that a copious Oil is lodged in the Lobes of Seeds, and proves rich in the peculiar Spirit of the Plant, being here safely treasured up for long preserving the tender Embryo, afterwards to shoot out in its proper Season. Hence, also, we see that the vital Principle may be long preserved by such a Balsam, which seems necessary to prevent its being destroyed by the Winter's Cold, or left unseasonable Warmth, or Moisture, should cause it to shoot before the Time, and thus expose it to be easily killed; and hence this Oil is principally found in the Seeds and Roots of Vegetables. But as there are many Seeds, whose distilled Oil has no remarkable Smell or Taste, whilst residing in the Seed, we are hence informed, that the Spirits of many Vegetables escape the Cognizance of our Senses, whilst yet they actually distinguish the peculiar Properties of Plants from each other; whence we are taught to attribute somewhat considerable, but not too much, to the Sagacity of our Senses. Perhaps, the more volatile the spirituous Principle is in the Oil of Seeds, and of the sharper Taste, the less Time such Seeds will retain their growing Faculty; and, on the other hand, the less active

active that spiritual Principle is, the longer they will remain fit to propagate their Species. Certainly the fragrant aromatic Seeds, which have an exceeding pungent Taste, soon become effete and barren, as we see in the balsamic umbelliferous Kind, and the most odoriferous Seeds of the *Indies*; which commonly prove sterile with us in *Europe*; such as Cardamom, Cubeb, Zedoary, and Ginger; whilst, on the other hand, the Seeds of Cassia, the Humble-Plant, Sena, and Tamarinds, long remain perfect: And the same thing is found in the Grain Kind, which will long preserve their Embryos fit for growing. And here it is highly remarkable, that this Oil should continue so very long-unhurt in dry Seeds, under the Form of Oil, so as by chymical Means to be drawn from thence in full Virtue; and yet as soon as these Seeds begin to swell and sprout with warm Water, they should immediately begin to lose of their Oil, and become disposed to produce Spirit: Whence it should seem possible, that this Oil may be so changed by the Moisture of the fertilizing Earth, the Action of the warm Atmosphere, and the saponaceous Virtue of the Juices, both of the Earth and Seed; as to be dissolved, attenuated, and render'd miscible with Water, so as to be driven into the tender Vessels of the Embryo, through the Canals of the Radicula, planted in the Lobes or Placenta, and thus feed the tender Plant with these Spirits; and, by communicating its own particular Nature to the nutrimental Juices, impregnate the Whole, and produce the Species; for Seeds once moistened to such a Degree, as to give Signs of vital Motion, cannot afterwards be well preserved fit for Propagation.

For the distilled Oil of *Indian Cloves*, see *CARYOPHYLLUS*.

THE DISTILLED OIL OF SASSAFRAS-WOOD.

(1.) The lighter odoriferous oily Woods, cut in the Winter, and brought into Shavings whilst sound and perfect, being strongly distilled with twenty times their own Quantity of Water, afford a milky Liquor, and an Oil, which from the Sassafras of *America*, is almost pellucid, and sinks to the Bottom of Water, tho' the Wood that affords it is considerably soft, light, and almost spongy. Let the Distillation be continued so long as any Oil comes over, or the Water continues richly milky, and an austere and acid Decoction will remain at the Bottom of the Still. (2.) If a fresh Quantity of the same Shavings be distilled along with the former Decoction, and the Water that first came over, more Oil will now be obtained, and more again at a third or fourth Repetition, or Cohobation. (3.) And by this means we obtain the Oil from all the Woods that afford it, with Ease; such as Fir, Pine, and Sassafras; the two former whereof afford lighter Oils; that float in Water; but Sassafras, an heavy one, that sinks therein. (4.) But the hard and ponderous Woods must be thinner shaved, and long digested with Salt and Water, before they are distilled; for, by this means, these, also, will afford their Oil: Of this kind are the *Arbor Vita*, Benjamin, Box, Cedar, Citron, Guaiacum, Juniper, Lemon, Orange, Rhodium, Savine, Snake-wood, Storax, and other Balsam-trees; as those which afford the Balsams of Capivi, Peru, Tolu, and Gum Elemi; for the longer these Woods are digested in close Vessels with Salt and Water, the easier they afford their essential Oils, by Distillation. (5.) Those Trees are fittest for this Process, which are fat, and yield Rosin, Balsam, Gum, or Pitch, especially those which are both ponderous and solid; but those which are light, spongy, and grow in watery Places, as the Alder, the Elder, the Lime, the Poplar, the Willow, and the like, are unfit for this Operation, as scarce affording any essential Oil. (6.) The Trees, felled at the Time when their Juices are in their strongest Motion, afford less Oil, and not so good; but those cut down in the midst of a frosty Winter, afford a larger Quantity, and a better Oil. The Wood of young Trees, whilst in the Vigour of their Growth, afford less than those which are old, and past their Growth. The Evergreens afford a larger Quantity, and sharper Oil, than those Trees which shed their Leaves: Whence the Reason is manifest, why ponderous Woods of a strong Texture are required in Building.

REMARKS.

Hence we may understand, that the Ponderosity of Woods is principally owing to the ponderous compact Oil, which closely binds the other Principles together, tho' we do not mean their essential Oil alone, but principally that fixed Kind remaining after Distillation. Of this we have Examples in Cedar, Guaiacum, and Juniper-wood. And upon the same Cause depends their Durability; for the most lasting Woods are always the most oily, as appears in Box, Cedar, Oak, and Olive. Extreme Hardness also depends upon the same; for spongy soft Woods hold little Oil; but Box, Guaiacum, Ironwood, Olive and Snakewood, abound therewith. And hence we understand the Difference of

Balsam, Turpentine, Rosin, and Pitch, as being owing to a longer or shorter, a greater or a less inspissating Heat of the Sun. Lastly, We hence understand the Nature of Rotteness in Timber, proceeding from the Worm which feeds upon the subtle Oil contained in the particular Cells thereof; which Oil being consumed, the Wood afterwards falls into a kind of Dust or Ashes; or else by lying exposed to an Air sometimes hot, sometimes moist, sometimes dry, and sometimes cold, the Oil is at length consumed, and only a friable Earth left behind.

For the distilled Oil of Cinnamon, see *CINNAMOMUM*.

OILS DISTILLED PER DESCENSUM, SHEWN IN CLOVES.

Human Industry first discovered, that Plants rich in Oil, being agitated by the Fire, sweat out their unctuous Matter, so that it might be collected; and hence was discovered the Art of procuring Pitch, by the burning of fat Trees. After this, the more unctuous Seeds, being bruised, and exposed to a gentle Fire, thus suffered an Oil to run from them, as in the Case of Almonds. At length, by the same Methods, the aromatic Tribe of Plants were, in particular, made to sweat out their Oil; but the Oil, thus procured, differs entirely in Smell, Taste, and Virtues, from that which is thence expressed as above: But we are to give an Example of the Thing.

Take, therefore, the best Cloves, bruised to an unctuous Pulp, and spread it a quarter of an Inch thick upon a close Linen, stretched, and tied over the wide Mouth of a cylindrical Glass Vessel, so that it cannot fall into the Cavity thereof: And the deeper this Glass, the better it is fitted for the Purpose; because a spacious Cavity serves best to cool and condense the oily Vapour. Then take a Dish made of Iron-plate, so hollowed with a flat and round Rim, that this Rim may exactly rest upon that of the cylindrical Glass, whilst the protuberant Part of the Dish falls exactly within the Mouth of the Glass, the Depth of the Dish's Cavity in the Middle, the third of an Inch. Let this Dish be a little squeezed upon the Cloves, so as to press them with its convex Part, and the Linen that supports them, a little within the Mouth of the Glass: When this is done, fill the Cavity of the Dish with clean Ashes, and place a few live Coals at the Top, the Heat whereof, passing through the Ashes, will liquefy the Oil, and agitate the native Water of the Cloves, whereby they will both be resolved into Vapour; which, coming into the Cavity below, will be condensed upon the Sides of the cold Glass, and fall in Drops to the Bottom, in the Form of a sharp Water and Oil. The Fire being thus prudently continued, nearly all the Oil will successively be driven out; and the Work is then finished, when no more is made to descend by that Degree of Heat; but beware of putting on too much Fire, because this would render the Produce empyreumatic. On the other hand, if the Heat be too gentle, scarce any thing will be forced out: A Medium is easily obtained, by beginning with a small Heat, and rising by degrees; and thus, by repeating the Operation, any Quantity of Oil may be obtained.

REMARKS.

This Experiment shews the Nature and Appearance of a proper aromatic Oil: The Oil, so prepared, exactly resembles the distilled essential Kind, both in Taste, Smell, and Virtue, so as scarce, in any respect, to be distinguished from it. It is, indeed, obtained in a less Quantity than by Distillation with Water; but the Remainder may be afterwards employed in Distillation, or to other Purposes, as retaining much of the original Virtue. And this Method is principally of Use, when such an Oil is immediately required, or when we want, to exhibit the Experiment. In other Cases, we rather make Choice of Distillation; but by the present Process we can expeditiously obtain the Oil from the Rinds of Citrons, Lemons, and Oranges, and from Mace, Nutmeg, and other very unctuous Substances. And hence we learn, what Effect this Degree of Fire may have upon Oils, as they are naturally contained in Vegetables, by liquefying and separating them, so as to make them sweat out, almost spontaneously; but, when the Subjects are too dry to afford this Oil commodiously, let them be bruised, then put into a Linen Cloth, and exposed, for some time, to the Vapour of hot Water, that thus they may be opened before they are committed to the Operation; for then they will afford more Water, and more Oil; and that less altered, and with greater Ease. These Oils differ surprisingly from those gained by Expression, as being much more aromatic, when obtained *per Descensum*.

SCHOLIUM.

This experimental History of Oils obtained by Chymistry from Spices, particularly in the Way of Distillation, contains many extraordinary and useful Particulars, the principal whereof

we will here briefly enumerate, for the Service of Chymistry, Natural Philosophy, and Medicine.

1. The entire aromatic Virtue of Plants is contained in their essential Oil alone; which being perfectly extracted, the remaining Substance retains not the least Sign thereof.

2. This essential Oil, again, contains the exceeding subtle, volatile, minute, sharp, and scarce ponderable Spirit, which gives the whole Virtue to the Oil, and which, when separated therefrom, leaves nothing particular in the Oil: Therefore, in these Oils, the Sulphur is to be carefully distinguished from the Spirit, or the refinous Part from that which is sharp and fiery. The Spirit easily exhales, but the Sulphur remains sluggish behind, and gradually thickens, sooner in the Air, and slower in a close Vessel; thus becoming, from a liquid Oil, a gross one; then a Balsam; then a more thick and tenacious Substance; and, at last, a brittle Rosin; from all which State it is again recoverable, by Distillation, into a thin liquid Oil. Whence many eminent Authors have thought, that distilled Oils are only liquefied Rosins; and Rosins, again, condensed Oils. Certainly the Sun thus changes Oils in Plants; for the Cedar, the Fir, the Larch, and the Pine, weep, by Incision, a liquid and thin Oil, which, being full of Spirit, is extremely aromatic, as I have often tried to my Surprise; but, when this Oil comes upon the Bark, it begins, with the Heat, gradually to lose of its Spirit, grow thick, and become a Turpentine, not only of an higher Consistence, but less rich in Spirit, than before. Thus Turpentine, when more dried by the farther Action of the Sun, becomes refinous, losing its Spirit more and more, so as at length to prove almost inodorous and insipid. Hence, when it is said, that Rosin, by being distilled with Water, again resolves into an Oil, we must understand it of the sulphureous Part alone, but not of both the sulphureous and the spirituous; for the Spirit does not return, nor is regenerated; but only the Fluidity of Oil returns. So, also, the aromatic odoriferous Tears of Benjamin, Lacca, Mastich, Olibanum, and Sarcocol, lose much of the Spirit at first contained in their fluid Oils; whence the more liquid and recent these are employed, their medicinal Effects are always the greater; as, on the other hand, they grow perfectly effete with Age; and when, at length, all their Spirit is gone, the remaining oily Matters are scarce longer distinguishable from one another. Hence it seems probable, that the Bodies of essential Oils are greatly alike; and that the Spirits alone make the Difference between them. Whether this Spirit differs with the specific Gravity of the Oils, I leave to farther Inquiry. It must, however, be carefully observed, that a sharp Taste and Virtue may depend upon the Salt of a Plant, tho', in this Case, the peculiar Characteristic is not owing thereto, but to the Spirit of the Oil. Vegetables, therefore, lose all that is peculiar to them, when their Oil is extracted.

3. The more pungent Odour Vegetables have, the more fiery their Spirit generally proves; and the more biting, when chewed in the Mouth, the sharper the Spirit of their distilled Oil. So, also, they afford the thicker, stronger, and deeper-coloured Oils, when they are ripest, and moderately dried; but, when distilled whilst moist and recent, they afford less of a thinner, more transparent, less heating, but more odoriferous Oil: Whence, possibly, the Spirit itself may arrive gradually at its greatest Perfection in the Plant. This is certain, that the Smell and Taste, which proceed from the Spirit, are not the strongest, when the Plant is young, nor till it has arrived at complete Maturity. We must also observe, that, in certain Plants, there seems to be more Spirit contained in less Oil than in others, and *vice versa*. When a Pound of Nutmegs afford an Ounce of Oil, and twenty-five Pounds of Calamus Aromaticus afford only an Ounce; this shews that there is not here the same Proportion between the Quantity of the Oil and Spirit. There, also, predominates a certain peculiar Acrimony in the Spirits that distinguish Oils; this Acrimony, in the Oil, or Cinnamon, burns, like Fire, any Part of the Body it touches, and can scarce be washed off under a long time; and there is an exceedingly pungent Spirit in the Oils of Savory and Thyme. Hence, therefore, we find there is a strange Disposition in these Spirits; which, tho', upon exhaling from the Oil, scarce diminish the Weight thereof, yet deprive it of its Virtue, and leave it ungrateful, thick, terebinthaceous, and at length refinous. I have search'd after the Weight of these Spirits, but could not discover it.

4. Essential Oils are found of different Colour, according to the different Plants from whence they are distilled: The Oil of Mint is brown, of Lavender yellowish, of Cinnamon Gold-coloured, of Wormwood black-green, of Chamomile and Yarrow blue, of Aniseed almost white, and of Camphire quite white. Whether this Difference depends upon the Difference of the Spirits, or the Oil, or some other third Principle, that in some Cases rises in Distillation, is not certain, and deserves to be inquired into.

5. These Oils are sometimes extremely liquid, almost spirituous, or scarce having any Tenacity, as we see in the essential

Oil distilled from the Rind of China Oranges, this being one of the most fluid Liquors; and of this kind is the Oil of Lavender, and even the ponderous Oil of Sassafras-wood. On the contrary, the Oils of some other Plants are thick; as that of Fennel and Roses, that of Aniseed is still thicker, and the thickest of all is Camphire: But the thick dissolve with a gentle Heat, the thicker with one a little greater, and the thickest with a moderate one. Whence this proceeds, should be farther examined.

6. Again: These Oils differ remarkably in their specific Gravities, some being considerably heavier than Water; as the Oils of Cinnamon, Cloves, Sassafras, Nutmeg, and perhaps of other aromatic Plants that grow within the Tropics, where the violent Heat of the Sun might otherwise prove scorching to them; for these Oils, in Distillation, require a greater Fire to raise them, and a shallower Still, only one fourth whereof remains empty. Other essential Oils are extremely light; as that of Lavender: And yet this Excess of Weight does not make the Oils thicker; for the Oil of Sassafras, as we just now observed, is at once very thin and heavy, whilst Camphire is, at the same time, extremely thick and light, so that this must have some other Cause. The Oil of Aniseed will often remain floating in Water, and that distilled from Juniper-berries sometimes subside.

7. These essential aromatic Oils have an almost inimitable Virtue, entirely depending upon the Spirit so often mentioned, which is sharp, inflammatory, grateful, refreshing, heating, attenuating, and stimulating to the animal Spirits, and nervous Fibres; and by these Properties the Oils prove serviceable in cold, aged, watry, and phlegmatic Constitutions; and, again, in cold Intermittents, moist and cold hypochondriacal and hysterical Cases, or other Diseases proceeding from cold, acid, or aqueous Flatulencies in the Intestines; and, when prudently used in these Cases, they prove generally powerful and safe Medicines; but, when indiscreetly applied in Distempers attended with violent Heat, Motion, or Inflammation, they prove poisonous. The Chymists have prudently observ'd, that these Oils act by means of their Spirits, which, as lodged in the Oil, come to be apply'd to the Parts of the Body, so as there to produce their proper Actions, which would otherwise easily be lost through their extreme Volatility; and, when both the Oil and the Spirit act together, the Effect is more gentle, but more lasting. These Spirits, therefore, have, and communicate to the Oil, a certain Acrimony, which gives the Sensation of Fire to the Tongue, and presently occasions Pain; and the like Effect it shews, when apply'd to the naked Nerves: When apply'd to the external Skin, they soon occasion the whole Series of an Inflammation, and end in a gangrenous Eschar. If applied to the Lips, or the internal Parts of the Nose or Palate, where the Nerves lie bare, it occasions the same, with greater Violence; and presently brings on dangerous Inflammations. Whence we easily see what Effects they may produce upon the Mouth, Throat, Stomach, and Intestines, when imprudently exhibited. Hence these Oils may justly be called *Inflammatory*; tho' we before observed, there is no better Remedy for immediately raising the Spirits by their grateful and extraordinary Virtue; which can scarce be explained, for want of general Principles, otherwise than by direct Experiment. They have not only this Refreshing, but, also, an heating Virtue; for, if externally apply'd, or internally taken, they immediately begin to heat the Parts of the Body, and presently increase this Heat, thus once begun; but the colder and more languid the Body, the less they heat it, and *vice versa*; so that, when rubbed upon a dead Carcase, they produce no Heat at all: Whence it is highly dangerous to give them in a burning Fever. They, also, increase the Motion of the Nerves by Irritation, propelling the Spirits, and perhaps agreeably warming to them both; and whilst they perform all this, they attenuate and dissolve Viscidities, so far as can be done, by increasing the Motion of Circulation. But we have already enumerated nearly all the Virtues, above, which these Oils have in common, excepting that they differ as to their different Degrees of Acrimony. They have, however, besides these, other Virtues no less considerable, and peculiar to each, whereof we have sufficiently spoken under the Article AQUA. Thus the Oils of the Arbor Vitæ, and of Savine, are powerful Emmenagogues, where the Stoppage of the menstrual Discharge arises from a languid Circulation. The essential Oil of Rue is of Service in the Epilepsy, from a cold relaxed State of the Nerves; and, likewise, in hysterical Disorders, from a cold Cause: That of Juniper-berries, in the cold Scurvy, and the Pains and Heaviness thence proceeding; and, also, in nephritic Complaints, from cold Obstructions: That of Mint, in an almost paralytic Weakness of the Stomach: That of Lavender, in the Palsy, Vertigo, Lethargy, and other cold Disorders of the Head: The fragrant un-inflammatory Oil of Roses is a noble Reviver of the languid Spirits: That of Cinnamon, very advantageous in a great Paucity

Paucity of Spirits, without Inflammation, either during the Periods of Pregnancy, Delivery, or immediately afterwards, if, at the same time, there be no Rupture of the Vessels: Those of Wormwood, *Carduus Benedictus*, the Lesser Centaury, Chamomile, and Tansey, are useful against Worms; for which Purpose they may be formed into Pills with the Crum of Bread, and given in a sufficient Dose, upon an empty Stomach, the Patient refraining from all kind of Aliment, for two Hours afterwards: Those of Baum and Lemon-peel, in Palpitations of the Heart, from cold phlegmatic Humours: And those of Marjoram, Rosemary, and Sage, in Obstructions, and mucous Discharges, of the Uterus, from a cold Cause.

8. If these Oils be strongly ground, for a considerable time, with thrice their own Weight of pure and dry Sea-salt, so as to divide them well, and then again distilled with Water, they become clean, pure, and limpid, or freed from their mucilaginous or gummy Part; and fitter for keeping, if put up into Glass Vessels that are not too alkaline, and having close Necks well fitted with ground Glass Stoppels, and set in a dry cold Place; but they lose of their Quantity by this Rectification; much gross Matter remaining behind in the Still, unable to ascend by reason of its Tenacity. Their Virtues, also, are lessened, which depend upon their Spirits, because these remain in the Water used in the Distillation, and are, also, dissipated in the Water which comes over. This Mr. *Homburg* shews by a laborious and instructive, tho' dear Experiment; for, upon distilling such an Oil with fresh Water every time, six-and-twenty times over, he at length obtained only a fourth Part thereof; the other Three-fourths becoming an insipid and tenacious Substance, whilst the Water, four-and-twenty times cohobated with the Oil, was rendered exceeding sharp, aromatic, saline, or spirituous.

9. When these pure Oils are without Addition, distilled in a Glass Retort, with a Fire carefully and gradually increased, they always exhale some Water; and afterwards become more clear, liquid, penetrating, and light; leaving at the Bottom of the Retort, after the Distillation is performed, a strong Heat, a black, fixed, spongy, terrestrial Matter: And, if the Operation be thus several times repeated, the greatest Part of the Oil will be converted into what the Chymists call *Caput Mortuum*. The excellent Mr. *Boyle*, by this means, reduced a Pound of essential Oil almost wholly to Earth.

10. They who have distilled these Oils from pure Chalk in clean Vessels, have found that by cohobating five Ounces of Oil eight times, upon fifteen Ounces of Chalk, it afforded only two Ounces and one Dram of Oil, two Drams and forty-five Grains of Salt, and half an Ounce of a strongly saline Water, containing the volatile Salt of the Oil; according to the Observation of Mr. *Bourdelin*.

11. Again, these Oils distilled from Lime slaked in the Air, and afterwards made exceeding dry, are so changed, that a Pound of Oil being six times distilled, in the way of Cohobation upon fresh Quantities of Lime; with an extreme Degree of Fire, there came over fifteen Ounces and an half of Water; and one Ounce of Oil, according to the Observation of Mr. *Homburg*. Hence these Oils are found to consist principally of elementary Water and Earth, a little Oil, Spirit, and Salt; and therefore grew from the Union of those different Principles by the Action of the Fire: Whence Oil is not a simple elementary Body, but a Compound of several others. But whether this be really the Case, or whether Experiments may shew, that these Oils are rather transmutable, I do not take upon me to determine.

12. This may be said with greater Certainty, that the more excellent of these Oils, being dissolved in highly rectified Spirit of Wine, digested and distilled with a gentle Fire of one hundred Degrees, give out their native Spirit to the Spirit of Wine, leaving a tenacious oily Matter behind; which, being again treated in the same manner with fresh Spirit of Wine, affords more; and thus at last remains an indolent, scentless, insipid, thick, and tenacious Body of Oil, perfectly deprived of all its Spirit. And, if even pure Water be long shook with these Oils, it takes to itself their Spirit, becomes rich therewith, and thus robs the Oil of its Virtue; so that, if the Operation be often repeated, it at length leaves the like indolent Remainder as the Spirit of Wine. And hence we are furnished with excellent Preparations, and learn, that these Oils are separable into Spirit and Oil, a little Salt, much Water, and much Earth; at least, that these are producible from them by Distillation. But nothing here seems stranger, than that Water should remain so tenaciously mixed with these Oils, as not to be separated from them by Distillation twenty times repeated.

13. Hence, again, it is confirmed to us by this whole History, (1.) That the peculiar Taste and Odour of Plants wholly reside in their native Spirit. (2.) That the Taste and Odour of distilled aromatic Waters is solely owing to this Spirit, as peculiar to each Plant. (3.) That essential Oils, also, have their

respective Characteristics from these Spirits alone. (4.) That the volatile Oil of Plants principally serves for detaining these Spirits, and the fixed Oil for connecting the solid Parts together; whence the Difference of these two Oils is very great. (5.) That both the expressed and distilled Oils, before explained, are tolerably natural in the Plants themselves. And, (6.) That the Difference of Oils is principally owing to their Spirits. *Boerhaave's Chymistry*.

Oils drawn by Expression are from Nuts and Seeds; and those for internal Use are to be drawn cold, because the Fire, or any Warmth, which facilitates the oily Parts to flow out in greater Quantities, is supposed to communicate somewhat to such Oils, that damages their Virtues, considered as Softeners; and likewise forces out somewhat that gives them much fouler Scents, than when drawn cold; though it is probable, that there may be Purposes, for which some of these Oils are prescribed, which might be better answered by the common way of Expression with Warmth; as where the *Oleum Lini* is given for a Detergent, which it often is, the Property making it so is certainly more increased, by being drawn by Heat; and all the Objection in this Case is, that it is not so cleanly upon the Palate.

The common way of prescribing these Oils internally, hath been alone, or in Linctuses; but a much neater way is in Emulsion. But although the College direct these to be drawn from many Materials, yet there are none of them in Use, besides that of sweet Almonds and Linseeds internally, and the *Oleum Macis*, *Laurinum*, and *Palmæ*, externally: Tho' the last is not taken notice of in the Dispensatories, but brought much into Practice by those Travellers who have learned its Use in the Countries where it is made.

The next Class of Oils are such as are made by Infusion, or Decoction, wherein some Herb or Flower hath its Virtues drawn out by the Oil. Of those in Use are the *Oleum Rosaceum*, *Chamæmelinum*, *Hyperici*, *Liliorum*, and *Sambucinum*; and these require somewhat different in their making, on account of some different Qualities in the Things themselves; as the scented Flowers, particularly the Roses, do better by long Infusion, only in such a Warmth as the Sun will give; because much boiling would exhale their more fragrant Parts. But Oils impregnated with green Herbs, as Chamomile, and Elder, require long boiling, before they receive that green Colour which is desired in them. It is to be observed concerning these things which require boiling, that no Oils will bear such Management without turning black, any longer than there remains some aqueous Humidity, which is herein supplied from the Juice of the Herbs: When, therefore, they grow crisp for want of farther Moisture, the Process is finished.

There are, likewise, directed, in the Dispensatory, many compound Oils, to be made, after the same manner, by Infusion or Decoction; and the like Rules are to be observed in them, as in the simple ones. *Quincy's Praelect. Pharm.*

DIRECTIONS for preparing OILS from the College Dispensatory.

OLEUM ABSINTHII. Oil of Wormwood.

Take of Wormwood, one Pound; and as much Spring-water as will stand above it three or four Fingers-breadth; distil in a large Alembic, with its Refrigeratory, or in a Copper Body, with its Head and Neck winding in a spiral Form, through a Vessel of Water. Let the Oil which comes out with the Water be separated by a Glass Funnel, called the *Separator*; and keep the Water so cleared of its Oil for another Distillation.

After the same manner are procured the Oils of Marjoram, Mint, Origany, Pennyroyal, Rosemary, Rue, Savine, Sage, Savory, Thyme, &c.

After the same manner is prepared the Oil of Damask Roses, of Chamomile and Lavender-flowers; as indeed from all other warm Herbs and Flowers.

From the same Procedure, also, are procured the Oils from the dry Peels of Oranges, Citrons, and Lemons: Although Oils may, also, be drawn from the same Peels, while green and succulent, by bruising and distilling with a sufficient Quantity of Water, both in a greater Quantity, and as useful to any medicinal Purposes.

OLEUM ABSINTHITES.

This is made after the same manner as the Oil of Roses, by a triple Maceration of four Ounces of the Tops of common Wormwood in three Pints of ripe Oil, adding three several times four Ounces of the Juice of Wormwood, and evaporating it again over the Fire, by a slow Boiling.

OLEUM AMYGDALARUM AMARARUM. *Oil of bitter Almonds.*

It is made after the same manner as that of the sweet Almonds, unless that there is no Occasion for blanching; nor can there so much Inconveniency arise from any Heat made use of to facilitate their Pressure. After the same manner is drawn the Oil of Hazel-nuts, Ben, Acorns, and of Nutmegs, from the Nut; as that of Mace, from the second reticular Coat of the same Fruit.

OLEUM AMYGDALARUM DULCIUM. *Oil of sweet Almonds.*

Take of sweet Almonds fresh and dry, as many as you please; break and throw away the hard Shells, and blanch the Kernels; then beat them in a Stone Mortar, and by degrees press out the Oil, without any Help of Fire.

OLEUM ANETHINUM. See ANETHUM.

OLEUM ANTIMONII. See ANTIMONIUM.

OLEUM E BACCIS JUNIPERI. *Oil of Juniper-berries.*

Take two Parts of Juniper-berries; of Sea-salt, one Part: Bruise them together; and, with a sufficient Quantity of Spring-water, distil next Day in the common Vessels.

OLEUM CARYINUM.

It is made after the same manner from Walnuts.

OLEUM DE CASTOREO. See CASTOR.

OLEUM DE CASTOREO COMPOSITUM. See CASTOR.

OLEUM CERÆ. *Oil of Wax.*

With yellow Wax, melted one Pound, mix three Pounds of Brick-dust; put them into a Retort, and draw off the Oil in a Sand-heat, and rectify that with new Brick-dust: Or to the Oil just drawn off put double the Quantity of fresh Wax sliced, and again distil with a Retort in a Sand-heat.

After the same manner are distilled Oils from fat Substances; as, also, from Gums and Resins, that cannot be reduced into Powder.

OLEUM CHAMÆMELINUM. See CHAMÆMELUM.

OLEUM CHAMÆMELI CHYMICI. *Chymical, or Essential Oil of Chamomile.*

This is prepared in the same manner as other chymical, or essential Oils. The Plant affords but a small Quantity of this Oil, as all do which seed little; and is, therefore, dear. It is used principally, as the Oil of Cloves, to correct Purgers; and sometimes, also, it is given as a Carminative, in Boles, a Drop or two to a Dose; and it does often good, by suddenly removing those Flatulencies, which occasion Stitches and Pains of the Side.

OLEUM CHEIRINUM SEU KEIRINUM. *Oil of Wall-flowers.*

This is made of the Flowers, and Oil, in the same manner as that of Dill.

OLEUM CHRYSOMELINUM.

This is made by the Expression of Apricock-kernels. After which manner, also, is procured Oil from the Kernels of Cherries, Peaches, Pine-nuts, Pistachio-nuts, and Plums; as, also, from the Seeds of Oranges, Hemp, Bastard-saffron, called *Cnicus*, Citrons, Cucumbers, Gourd, Citruls, Dwarf-elder, Henbane, Lettuce, Linseed, Melons, Poppies, Parsley, Horseradish, Rape, the greater Cataputia, Nicinus, (called *Oleum Cicinum*, *Recinum*, and *de Kerva*) Sesamum, called *Oleum Sesaminum*, Mustard, and Grape-stones.

OLEUM COSTINUM. *Oil of Costus.*

Take of the bitter Costus-root, two Ounces; of Cassia-wood, one Ounce; of the Tops of Marjoram, eight Ounces: Grossly bruise them together, and macerate them for two Days, in twelve Ounces of aromatic White-wine; and then, with two Pints of Olive-oil washed with White-wine, let them be boiled in *Balneo Mariæ* to the Consumption of the Wine.

OLEUM EUPHORBII. See EUPHORBIIUM.

OLEUM DE EUPHORBIO COMPOSITUM. See EUPHORBIIUM.

OLEUM EXCESTRENSE. See EXCESTRENSE OLEUM.

OLEUM SIVE BALSAMUM SIMPLEX HYPERICI. *Simple Oil, or Balsam of St. John's Wort.*

This is made from the Oil of the Seeds of St. John's-wort, ground in a Mill, and pressed out, with the Addition of the Flowers of St. John's-wort, duly macerated together.

OLEUM HYPERICI COMPOSITUM. *Compound Oil of St. John's-wort.*

Take of fragrant White-wine, one Pint; of the Tops of St. John's-wort, with the Flowers and Seeds, four Ounces: Let them be bruised, and macerated in a Glass-vessel well stopped for three Days, in one Pound of Linseed-oil, either in the Sun, or a Bath-heat, and then pressed out: Let a second and third Infusion be made of the Tops of St. John's-wort, after the same manner, without the Wine; and, after the third Infusion is boiled to a Consumption of almost all the Wine, press it out; and add of Turpentine, three Ounces; and Saffron, one Dram; and then give it another gentle Boil, and put it by for Use.

This is very near copy'd after the *Augustan Dispensatory*; for the first of the College hath got a very different Sort, with the Addition of many Ingredients, that are of much more Trouble than Advantage: It is there called *Oleum Hyperici Compositum, seu Balsamum Magistrale Florent.* And it is continued down to the last but one, under the Title of *Oleum Hyperici magis Compositum*; yet it was hardly ever used, being an injudicious Contrivance: It is now justly rejected, and this only retained, which is not so tedious to make, and is well esteemed by our Surgeons, for many Intentions of Consequence; tho' for some Purposes they blame the Turpentine and Saffron, and certainly with good Reason.

OLEUM IRINUM. *Oil of Orris.*

Take of *Florentine* Orris-root, three Pounds; four Ounces of white Lily-flowers, with their yellow Heels cut off; fifteen Ounces of fresh Cypress-root; six Ounces of Elecampane; three Ounces of Bugloss-root; two Ounces of Cinnamon; Spikenard and Benjamin, one Ounce. Bruise all as they require, and macerate them together, in the Sun, or any warm Place, in fifteen Pounds of old Oil, and four Pints and an half of Spring-water; and, after four Days and an half standing in that manner, boil them in *Balneo Mariæ*, to the Consumption of the aqueous Humidity; then strain by a strong Pressure, and put by for Use.

Mesue hath given a very concise Prescription of this, with nothing but the Orris-roots and Flowers, which the *Augustan* Collection hath preserved; it is, also, in the first Dispensatory of the College, amongst the simple Oils; but this Prescription, which is, also, there, is from *Nicolaus Alexandrinus*; and, notwithstanding it hath been continued down to the last Edition of the College, it hath yet been very little called for in common Practice, and hardly, I believe, ever made.

OLEUM LATRITIUM PHILOSOPHORUM. See LATRITIUM.

OLEUM LAURINUM. See LAURUS.

OLEUM LILIORUM. *Oil of Lilies.*

This is made in the same manner as the Oil of Roses.

OLEA EX LIGNIS AROMATICIS. *Oils from aromatic Woods.*

As from Sassafras, Rhodium, &c. the Woods must first be rasped, and then distilled.

OLEUM LUMBRICORUM. See LUMBRICUS.

OLEUM MAJORANÆ. *Oil of Marjoram.*

Take of the Herb a little bruised, four Ounces; of good White-wine, six Ounces; of Oil, one Pound: Let them be mixed together, macerated, and expressed, and fresh Herbs put in to the third time; and then the Wine evaporated by boiling, in a double Vessel.

OLEUM MAJORANÆ CHYMICUM. See OLEUM ABSINTHII.

OLEUM MANDRAGORÆ. *Oil of Mandrake.*

Take common Oil, two Pounds; of the Juice of Mandrake-apples, or, in their Defect, of its Leaves, four Ounces;

Ounces; of the Juice of white Henbane, two Ounces; of the Juice of black Poppy-heads, three Ounces; of the Juice of Violets, and young Hemlock, of each one Ounce; of Opium, and Storax, of each half an Ounce. Let the Juices, with the Oil, be exposed to the Sun; and after ten Days standing, boil them leisurely to the Consumption of the Juices; then sprinkle in the Opium finely powder'd; and work in the Storax, first dissolved in a sufficient Quantity of Turpentine.

This is intended against Inflammations, to procure Sleep; and ease Pains of the Head, by washing the Temples and Nostrils with it; but it is rarely prescribed, and hardly to be met with ready made.

OLEUM MENTHÆ CHYMICUM. See **OLEUM ABSINTHII.**

OLEUM MYRRHÆ PER DELIQUUM.

Boil Eggs till they are hard, split them in the Middle, and take out the Yolks; fill the Cavity with fine Myrrh in Powder; place them upon little Sticks about an Inch and a Quarter long, three or four of them being prick'd into the Egg; set them in a clean Pan in a Cellar, or some such moist Place; and there will drop from them into the Pan a Liquor, which is call'd *Oil of Myrrh*.

This is used only externally to take off Blemishes and Spots on the Skin, and is commended as excellent for such Purposes.

OLEUM NARDINUM. *Oil of Spikenard.*

Take of Spikenard, three Ounces; of sweet Oil, one Pound and an half; of aromatic Wine, and clear Water, of each two Ounces and an half: Boil them together in a double Vessel, over a gentle Fire, often stirring them, till all the aqueous Humidity is evaporated.

OLEUM NARDINUM COMPOSITUM. *Compound Oil of Spikenard.*

Take of Spikenard, three Ounces; of fresh Marjoram, two Ounces; of Aloes-wood, Calamus Aromaticus, fresh Elecampane, Cypress, fresh Bay-leaves, of Mace, Camels-hay, and Cardamoms, of each one Ounce and an half. Let all grossly be beat together, and macerated for a whole Day in Water, and generous Wine, of each fourteen Ounces; and Oil of Olives, four Pounds and an half: Then with a slow Heat, and in a double Vessel, evaporate the Wine and Water, so as to have the Oil perfectly by itself.

This is originally ascribed to *Mesue*, and hath hardly been omitted in any Official Dispensatory since his Time: Tho' where here is put Cypress, in the *Augustan*, is Mace, and, in the first Edition of the *London*, Indian Leaf: But such are not Alterations of any great Consequence. It is seldom used or made.

OLEUM NICOTIANÆ. *Oil of Tobacco.*

Take of Tobacco-juice, and common Oil, each equal Parts; and boil them in a Bath-heat, *S. A.*

OLEUM PAPAVERIS, *Oil of Poppies,*

Is made of the Flowers, Heads, and Leaves of Garden Poppies, and Oil of Olives, in the same manner as the **OLEUM ANETHINUM.**

OLEUM ROSACEUM. *Oil of Roses.*

Take of the exungulated red Roses not quite blown, and bruised in a Marble Mortar with a wooden Pestle, four Ounces; of clean Oil of Olives, one Pound: Expose them to the Mid-day Sun, in a Glass Vessel well stopped, for a whole Week, and shake them together every Day; then gently simmer in a Bath-heat, and press out the Oil: Put in fresh Roses, which manage after the same manner; and repeat the Process a third time; and then let them stand together for forty Days; at the Expiration of which, set by the Oil for Use, without pressing out the Roses.

This is much the same as the *Oleum Rosatum Ombacinum* of the *Augustan* Dispensatory; and the first of the College, and the *Oleum Rosatum Compositum* of the *Augustan*, and the *Oleum Rosatum Completum* of the first College Dispensatory; both

ascribed to *Mesue*, differ from it so little, that they have not been thought worth any Notice here.

OLEUM RUTACEUM, *Oil of Rue,*

Is made of the bruised Herb, and ripe Oil, as the Oil of Roses.

OLEUM SABINÆ, *Oil of Savine,*

Is made after the same manner as the foregoing.

OLEUM SAMBUCINUM, *Oil of Elder,*

Is made from the Flowers and Oil, as the Oil of Roses.

OLEUM E SEMINIBUS ANETHI. See **ANETHUM.**

Oils from the Seeds of Anise, Caraway, Cumin, Carrot, Fennel, Parsley, Saxifrage, and others, are prepared like the Oil of Dill.

As, also, the aromatic Oils, from Cinnamon, Cloves, Mace, Nutmegs, Pepper, and others, which for these Purposes are not to be powder'd, but only cut small, and slightly bruised.

OLEUM SIVE SPIRITUS TEREBINTHINÆ. See **TEREBINTHINA.**

OLEUM SUCCINI. See **AMBRA.**

OLEUM SULPHURIS. See **SULPHUR.**

OLEUM TARTARI PER DELIQUUM. See **TARTARUS.**

OLEUM VITRIOLI. See **VITRIOLUM.**

OF DISTILLED OILS, AND THE CAUTIONS TO BE OBSERVED IN THEIR DISTILLATION.

'Tis certain, that there is a pinguious and inflammable Principle, by the Chymists called Sulphur, lodged in all mixed Bodies which are easily changed and destroyed; and that this Principle is the Matter of their Inflammability, and the Cause of their principal Virtues. But it is sufficiently evident from various Phenomena, and a great Number of Effects, that this Principle of mixed Bodies is not, in each, of one and the same, but of vastly different and even disagreeing Natures; for, in some Bodies, this sulphureous Principle is of a Nature so highly fixed, and temperate, as to act on the Body without any Heat, as we principally observe in the Oils expressed from Seeds, or in the Fat and Lard of Animals; all which, tho' inflammable, yet, because they are destitute of that volatile and ethereal Principle, do but little heat or alter the Body. But 'tis far otherwise with these Oils, which have a strong Smell and Taste; and which, upon the Application of a somewhat violent Heat, are evaporated into the Air, or distilled; since these, when used in a very small Quantity, exagitate the Body with a violent Heat and Motion. Oils of this kind are principally found in the Vegetable Kingdom; for from Animals, and their Parts, such hot, ethereal, and subtile Oils of a strong Smell, cannot be obtained by Heat alone, nor extracted from them when macerated in Water, by means of an Alembic, or any other chymical Instrument: Of the same kind are those Bodies with which we are supplied from the Mineral Kingdom; for from such bituminous Substances, Amber, for Instance, Jewspitch, and common Sulphur, no subtile Oil can be obtained by a moist Distillation; but these hot, volatile, and odorous Oils, are only to be obtained from the Vegetable Kingdom, tho' all Plants and Vegetables do not yield such an Oil, but only such of them as have a strong and permanent, and not a slight and superficial Smell, as most Flowers have; for 'tis to be laid down as a Maxim in Chymistry, that those Vegetables, which, by Attrition and Heat, diffuse a strong Smell, by a moist Distillation, afford a subtile Oil; so that the more permanent and strong the Smell is, the larger Quantity of Oil is afforded; and the more sweet and fragrant it is, the more grateful and agreeable the Oil, also, is. And the opposite of this holds true.

For this Reason we may, from the penetrating Smell, form an Estimate of the Quality of the distilled Oil, and from that judge of the Degree of Smell. That Maxim of the Chymists is therefore true, That Sulphur is, as it were, the Parent and Principle, from which Smell proceeds; but 'tis to be observed, that many Bodies, which affect the Tongue with a strong and acrid Taste, yet afford little or nothing by Distillation; because they are destitute of Smell. This is sufficiently evinced in the Root of Arum, Ginger, Pepper, Zedoary, Mustard, and Water-creases: All which are of a very strong Taste; for these, when subjected to Distillation, afford little or no Oil: An infallible Proof, that the Principle of Taste is different from that of Smell; since the Matter of the latter is volatile and moveable, whereas that of the former is fixed, tho', at the same time, penetrating. Hence it follows, that Medicines, or

Mixtures, of a strong Taste, without any Smell, such as Pepper, Ginger, and Mustard, do not heat the Body so much, nor throw its Humours into such strong Commotions, as those Substances, which, having a strong Smell, yield a large Quantity of Oil in Distillation: Hence we justly infer, that fragrant Aromatics, such as Cloves and Cinnamon, are of an hotter Nature than Ginger or Pepper, which are absolutely destitute of Smell.

But in some Vegetables there are Oils of almost three different Kinds. The first is mild, and is that which is generally express'd from their Seeds; the second is that obtain'd by moist Distillation; and the third, that yielded by dry Distillation, or Combustion: For from the Seeds of such Vegetables, those of Baum, for Instance, Origanum, and Hyssop, a temperate Oil, with little Smell, is express'd. From the Leaves of these Herbs and Flowers there is distil'd with Water, from an Alembic, an Oil of an highly fragrant Smell; and what is left in the Alembic, when dried, and subjected to a dry Distillation, yields an empyreumatic Oil, of an acrid Taste, and ferid Smell; for we are carefully to distinguish between these Oils, which are easily by a slight Fire, and strong Heat alone, obtain'd in the Form of Exhalations only; and those which, by a strong and dry Heat, are extracted from mixed Bodies; since the former rather constitute the fluid Parts, which nourish the Plant, and circulate thro' its Vessels; whereas the latter are obtain'd from the solid Parts of the Plant, the Texture of which is far more firm. Hence they require a stronger Degree of Heat, or a brisker Fire, for their Extraction. As for the Distillation of subtile ethereal Oils, the following Directions are to be observ'd.

From Flowers and Herbs gently and gradually dried in the Air, more Oil is obtain'd, than if they were humid, and as yet recent from the Earth. Thus, two Pounds of the dried Flowers of Spike yield an Ounce of distil'd Oil; whereas, if they are distil'd when recent, they hardly yield above half of that Quantity: The same Observation, also, holds good with respect to Baum, Sage, Marjoram, and Mint. The Reason is plainly this: By the gentle Drying, the aqueous Moisture is only carried off, thro' which the resinous Particles were dispers'd; so that the former being remov'd, the latter are more united, and more quickly join with each other; and, because from two Pounds of the moist Plant we obtain no more than from one of the dried Plants, and because a little of the subtile Oil is evaporated, it follows, that more Oil must be obtain'd from the dry than from the moist Plant. But 'tis to be observ'd, that if the Herbs are dried by an excessive, or too long protracted Heat, the Oil obtain'd is not only in a smaller Quantity, but, also, of a thicker Consistence, and more saturated Colour; because, by the immoderate and long-continued Heat, the more subtile Parts of the Oil are too copiously exhal'd, and dissipated in the Air. Besides, there is this Difference between Oils obtain'd from recent Plants and Flowers, and such as are yielded by them when dry, since the former are of a more mild and grateful Smell, and a fainter Colour, tho' their Quantity is less; whereas the Oils obtain'd from them, when dried, are more penetrating, of a deeper Colour, and a less grateful Smell.

Before Distillation, the Herbs to be distil'd must be macerated in Water. But, for this Purpose, we are to use River-water, but not Spring-water, which is too hard; nor Rain or Well-water, which is too thin; since the former is unfit for Solution and Extraction, whilst the latter has a strong Tendency to Putrefaction. It is, also, to be observ'd, that three Parts of Water are to be us'd for one Part of the Substance to be distil'd.

A few Handfuls of common Salt are to be added. Thus, for Instance, to ten Quarts of Water we may add three or four Handfuls of Salt: And this Caution is very necessary, because the common Salt not only assists the Extraction of the oleous Parts, but prevents Putrefaction. Besides, by this means the Water is rendered heavier, in consequence of which it prevents the Descent of the Substance to be distil'd, lest, subsiding to the Bottom of the Alembic, it should be burn'd. In my Opinion, common Salt, also, contributes to the Depuration of the Oil, and lays a Foundation for its being distil'd clear, and not turbid. Others advise the Addition of an alkaline Salt, Pot-ash, or Tartar; but I can by no means approve of this, because Tartar is with Difficulty dissolv'd; and alkaline Salts dispose to Putrefaction, which in Distillation is to be carefully guarded against.

The Maceration is not to be too long, and in the Summer-time is only to be continued for twenty-four Hours, because, if the Mixture stands longer, it approaches to Putrefaction; especially if the Herbs are turgid with a penetrating Oil, such as Meat and Marjoram particularly are.

In the Distillation of Oils, three Parts of the Alembic are to be fill'd, and only one left empty; for, when too great a Space is left, the Oil ascends with Difficulty, and, if it is urged by too strong a Fire, loses its sweet Smell; nor in this Case is the Oil so easily rais'd, as is commonly imagin'd; but, if the Alembic

is too full, it readily happens, that, during the Action of a brisk Fire, the Mixture either runs over the Alembic, or the slimy Particles of the Herbs are, at the same time, elevated: Hence the Oils are turbid, as if Slime had been put into them; and, tho' in the Beginning, a considerable Degree of Heat is requisite, in order to make the Water boil, since without this Circumstance the Ascent of the Oil is difficult; yet the Distillation is afterwards to be carried on by a moderate Heat, lest the Oil should be exhal'd like Smoke from the Beak, and dissipated in the Air. In managing the Fires we are farther to observe, that a flaming Fire is at first necessary, whereas afterwards one of live Coals is sufficient. The Distillation may be finish'd in four or five Hours, nor is it expedient to protract it longer; because the Oil, which is wanted, first ascends, and then a Water, which as it is not destitute of Virtue and Smell, is to be us'd in a fresh Distillation.

As the Oils to be distil'd differ much from each other with respect to their Texture, Weight, and Degrees of Subtility; so, in distilling each, particular Cautions are requisite; for such as are heavy, and subside to the Bottom, such as the Oils of Cloves, Cinnamon, and Sassafras-wood, as, also, those Oils which are condens'd in the Cold, such as the Oils of Anise, which in Weight surpasses other Oils, those, for Instance, of Lavender, or Marjoram, since our Statical Instrument, which descends in other Oils, floats in this; such Oils are to be distil'd from a lower Alembic, and with a greater Degree of Fire, than the more light and subtile Oils.

Because Oils differ with respect to their penetrating Qualities, their strong Smells, and powerful Virtues, the Oils of Marjoram, and Rosemary, on account of the copious volatile and acrid Salt they contain, ought to be distil'd with a far more gentle Heat, than the Oil of Mint, which requires a gentler Heat, than the Oil of Spike, which, again, requires a still more moderate Fire, than Oil of Lavender, which is highly subtile; for, if these Oils are urged by too intense an Heat, they lose their grateful Smell, and genuine Taste; and not only acquire an acrid Taste, and a strong Smell, but, also, assume a more yellowish and brownish Colour; for it can hardly be imagin'd, how much the Texture of Oils is chang'd, only by the Degrees of Fire.

There is, also, a considerable Difference in the Distillation of Oils, with respect to their Colour, Consistence, and the greater or smaller Quantity yielded by the Things to be distil'd; for, with respect to Colour, the Oil of Cloves is yielded very white; as, also, the Oils of Sassafras, Wood, and Cinnamon, which, however gradually, and especially when exposed to the open Air, in a Glass which is not full, change their Colour, and generally become yellowish; and, at last, redish. Oil of Lavender is highly limpid; that of Spike is a greenish-yellow Colour; and the Oils of Mint and Marjoram are yellow; but, when distil'd by too intense an Heat, they are redish; the Oil of Rue is of a brownish Colour, and that of Wormwood of a darkish-green Colour. The Oil obtain'd from Chamomile-flowers, without the Addition of other Substances, is of a beautiful bluish Colour; as, also, the Oil of Yarrow-flowers. But this grateful bluish Colour, especially when the Oils are exposed to the open Air, is, in Process of Time, chang'd, totally destroy'd, and degenerates into that of a Dark-yellow.

Oils, also, differ with respect to their Consistences; for some are yielded, not in a thin and liquid Form, but float coagulated like Butter, which holds principally in Oil of Roses; or firmly adhere, like a thick Magma, to the Sides of the Glass, or the leaden Pipes, thro' which they pass; so that they cannot without Difficulty, and an Infusion of rectified Spirit of Wine, be separated, as we may principally observe in the Oil of Wormwood, and that obtain'd from the Tops of Yarrow: And other Oils, or Spirits, distil'd in the same Vessels, must have a foreign Colour, Taste, and Smell, unless the Vessels are previously well washed.

In the Distillation of Oils there is, also, a considerable Difference with respect to the Quantities yielded; for some Vegetables afford a large Portion, others a moderate Quantity, and others but very little. Among all the Productions of the Earth, I know no Simple, which, besides its Turpentine, yields a larger Quantity of Oil, than Savine; since one Pound of it, in the Alembic, yields almost three Ounces of Oil. Hence, from two Pounds of it, if the Distillation is duly manag'd, at least five Ounces of Oil may be obtain'd. Savine is succeeded by Nutmegs, a Pound of which yields one Ounce of Oil, which, by Distillation from an Alembic, is rais'd, whilst, at the same time, there is left at the Bottom a large Quantity of Oil, which does not pass over the Helm, but is generally express'd from the Nutmegs. Hence 'tis obvious, that these Nuts abound with a large Quantity of mild and fix'd Oil, which is obtain'd by Expression, as, also, with a subtile Oil procur'd by Distillation.

Among Flowers, those of the Spike abound most in Oil. Hence, four Pounds of these Flowers, when dried, afford full three Ounces of Oil; but a smaller Quantity is obtain'd from the Flowers of Lavender, since four Pounds of them yield only one Ounce of Oil, which, however, is of a far more grateful and

fragrant Smell, than that of Spike: Four Pounds of the Leaves of Mint, gently dried, yield an Ounce and an half of Oil; whilst, from an equal Quantity of the Leaves of Marjoram, hardly one Ounce can be obtain'd. From fifty Pounds of Calamus Aromaticus, I only obtain'd two Ounces of Oil: There is but a very small Quantity of Oil in Mother of Thyme; neither is a large Quantity of Oil afforded by Rue: And tho' this Plant is of an acrid Taste, and penetrating Smell, yet ten Pounds of it yield only half an Ounce, or two or three Drams, of Oil. Hence 'tis certain, that in this Simple the saline is superior to the oleous Principle.

The Flowers of common and Roman Chamomile yield but a very small Quantity of Oil; for which Reason it must, when genuine, be sold at a pretty dear Rate; for the Oils of that kind, as commonly sold, are almost all adulterated: The Calamus Aromaticus, also, tho' of a pretty acrid Taste, affords but little Oil.

The Four carminative Seeds, which are Anise, Dill, Caraway, and Fennel, yield a large Quantity of Oil; but those commonly sold are generally adulterated.

We are, also, to advert to the specific and distinguishing Taste and Smell of some Oils. Thus, the Oils of Thyme and Savory are so acrid, as to corrode the Nostrils. The Oil of Wormwood, which is highly bitter, fills the Head with a fetid Vapour; and 'tis to be observ'd, that this Oil, when distill'd from green Wormwood, is green; but of a brownish-yellow Colour, when obtain'd from old Wormwood. The Oil of Chervil, in Taste, resembles that of Fennel; Oil of Tansey, in Smell, greatly resembles the Herb from which it is obtain'd.

It is in a particular manner to be observ'd, that Plants, and their various Parts, whether Seeds, Flowers, or Leaves, do not in all Seasons, and at every Age, yield equal Quantities of Oil; for if Mint, Thyme, Rue, Baum, or Marjoram, when recent, tender, and young, are subjected to Distillation, they yield little or no Oil; but they must be arriv'd at a just Degree of Vigour and Perfection; when, for Instance, they begin to rise into small Heads, or Flowers: And, as, in old Animals, the Strength is much impair'd and diminish'd, so, also, old Plants lose a great deal of their Virtues, and yield but little Oil. Hence 'tis obvious, that the perfect Strength and Maturity of Plants consists in the Abundance of the Oil they contain, and, which is either large, or small, according to the Period of their Age.

'Tis, also, to be observ'd, that the Seasons and Constitutions of the Year contribute greatly to the obtaining a larger or smaller Quantity of Oil; for I have often observ'd, that if the Spring or Summer are too moist, or rainy, Herbs, and their Flowers, Spike, for Instance, or Lavender, do not yield so large a Quantity of Oil, as when these Seasons are moderately warm and dry: Hence we learn, that a due Temperature, Purity, and Driness of the Air and Weather, contribute greatly to bring Vegetables to their due Maturity and Perfection.

OF THE ADULTERATION OF DISTIL'D OILS.

'Tis a shameful, tho' true Assertion, that the true and genuine Oils of Plants are rarely to be had in the Shops; since, in order to increase their Weight and Price, 'tis customary, in distilling them, to mix with them some pinguious or other Substances of little Value. As for the dear aromatic Oils exported from Holland, 'tis certain from Experience, that they are almost all adulterated, as is obvious in the Oils of Cinnamon, Cloves, Nutmegs, and Mace. But in these the Fraud is easily detected by pouring Alcohol of Wine, or highly rectified Spirit of Wine, upon them; for this Liquor immediately resolves and imbibes the Particles of the purer Oil, leaving in the Bottom a large Quantity of express'd Oil; either of Almonds, or Ben-nuts. But the more skilful of the Chymists have an artful Method of concealing this Piece of Fraud; for they dissolve pure Oil of Cinnamon, or Cloves, by adding an equal Quantity of highly rectified Spirit of Wine, which may be so prepared, that one Part of the Spirit may absorb one Part of the Oil, whilst the Taste remains, and the Smell continues sufficiently strong and penetrating, so that the Imposition is with Difficulty discover'd. But this Piece of Fraud is, also, quickly discover'd, if these Oils are poured into common Water; for then the Water immediately becomes milky, which Effect is not produc'd by pure Oil, when put into cold Water, and left to itself. There is still another Method of adulterating the Oils of Plants, by mixing Oil of Turpentine, or Pine, with the Herbs to be distill'd; and this Piece of Fraud is most commonly committed in preparing cephalic Oils from Plants, which abound with a balsamic Resin, such as Mint, Origanum, Sage, Rosemary, Marjoram, Savory, Thyme, Mother of Thyme, the Flowers of Spike and Lavender, and Basilicon; from which, by the Addition of these Oils, they obtain a large Quantity of Oil, tho' of a bad Kind, and inconsiderable Virtues; but such Oils, if the Plants are recent, retain their specific and distinguishing Taste and Smell. But this Piece of Fraud is easily detected; for, if such Oils are kept for some time, they lose their grateful Smell, and the disagreeable Odour of the Turpentine remains. But there is still a more

expeditious Method of discovering this Fraud; for if a Piece of Cloth macerated in such Oil is put in a warm Place, or expos'd to an hot Furnace, the subtil Fragrance is immediately exhal'd, and the Smell of Turpentine discovers itself.

Besides, the cephalic Oils, adulterated with Turpentine, or Oil of Pines, are more limpid than the genuine Oils, which are of a deeper Colour. There is, also, another Method of detecting this Fraud; which is, when the Letters of the Signature put upon the Mouth of the Glas become successively pale, which does not happen with the genuine Oils; for the Effluvia of the Turpentine contain a subtile Acid, which, in Process of Time, destroys the Colour of the Ink. Some, in the Distillation of these Oils, instead of Turpentine, add Seeds which contain a large Quantity of pinguious Juice, such as those of Poppies; and by this means that thick Oil, which at other times is generally express'd, with Difficulty passes the Helm, is rais'd and distill'd in Conjunction with a Portion of subtile and ethereal Oil: And this is the usual Method of adulterating the Oil of Rue; for tho' Rue is of a strong Taste, and penetrating Smell, yet there is hardly any Plant, which affords a smaller Quantity of Oil: But pure Oil of Rue is easily distinguish'd from that which is adulterated, since, when genuine, it does not become thick and coagulated, when expos'd to the Cold; but is inspissated, when it is adulterated with any express'd Oil. The Oils of Chamomile, and the Tops of Yarrow, when pure and recent, are of a beautiful bluish Colour, which is afterwards chang'd into that of brown; for, if this bluish Colour of the Oil of Chamomile-flowers remain above a Year, 'tis a sure Sign, that it is adulterated; for 'tis customary to mix with it Oil of Turpentine, which is of a deep-bluish Colour, on account of the Tincture it receives from the Copper of the Vessel. 'Tis of great Importance to the Physician, to be able to distinguish genuine from adulterated Oils; for these balsamic and cephalic Oils not only lose much of their Efficacy, but, also, acquire a foreign Quality, by being adulterated; and 'tis sufficiently known, that all terebinthinaceous Substances violently exagitate the Mass of Blood and Humours, and create an intense Heat in the Body.

OF SOME RARE DISTIL'D OILS.

In the Shops there are a great many Oils, most of which may be obtain'd by Distillation; but some of them are yielded in so small Quantities, and are so rare, that they are sold at very high Prices. But this Circumstance ought not to deter the Physician from prescribing them, since they are of singular Efficacy in preserving and restoring Health.

Among the rare Oils, especially those obtain'd from the Woods, we shall first consider that of yellow Sanders, which, on account of its grateful Taste and Smell, and the large Quantity of Resin it contains, deserves to be more us'd in Medicine, than it has hitherto been; for it not only yields a very elegant Tincture, with highly rectified Spirit of Wine; but, also, the Wood itself, when ras'd down, and macerated in Water for a considerable time, with the Addition of common Salt, affords an elegant Oil, of an excellent Taste, and admirable Virtues; since in Smell it resembles the Oil of Amber; a certain Sign, that it is possess'd of a cordial Quality: It is most commodiously dissolv'd in some rectified Spirit; such as that of Roses, or white Lilies, which are commodiously mix'd with corroborative, cephalic, and stomachic Medicines.

From odorous and sweet-scented Aloes-wood is prepared an Oil of a thick Consistence, of a whitish Colour like Camphire; for this Purpose about ten Pounds of Aloes-wood are to be ras'd down, triturated, and, after a sufficient Maceration in Water, subjected to Distillation in a pretty large Still: Upon which, a small Quantity of a fragrant and delicate resinous, or rather oleous Substance, is obtain'd; but no more than half an Ounce was obtain'd from the ten Pounds of Aloes-wood. This Oil is quickly dissolv'd in Alcohol of Wine, and is an incomparable Medicine for restoring Strength, and corroborating the Stomach.

Among the rare and precious Oils, we may justly reckon the Oils of Scurvygrass, and Syrian Marum. A small Portion of the former is only obtain'd from a large Quantity of Scurvygrass; but it is so highly volatile, that it is with Difficulty preserv'd in Glasses, and must be carefully kept from evaporating in the Air; for which Purpose some cork the Glas well, and immerse them in Water, partly to guard against the Heat, and partly to prevent the Access of the Air: It is, also, of so penetrating a Taste and Smell, that one small Drop of it communicates a strong Taste to an Ounce of the Spirit of Wine; or a small Drop of it dissolv'd, and pour'd into a Quart of Wine, imparts so strong a Taste and Smell of Scurvygrass to it, that it acts strongly on the Nostrils, and affects all the internal Parts of the Head. This Oil is, also, very heavy; for, like Oil of Cloves and Cinnamon, it subsides in Water. It is sold at a great Price, since in England, where large Quantities of it are prepar'd, one Ounce of it is sold for Eight Crowns.

The next most considerable Oil is that of true Marum, a Plant which contains an highly acrid, volatile, and oleous Salt; for which Reason its Oil, in Taste and Smell, is hardly inferior to that of Scurvygrass, neither is it sold at a cheaper Rate.

Rate. Among the rare and little known Oils we may, also, reckon that of Basilicon, which, on account of its penetrating fragrant Smell, and its cephalic and nervous Virtues, is far superior to the Oil of Marjoram, tho' much dearer by reason of the Scarcity of Basilicon.

True Oil of Baum, which is at present often mistaken for Oil of Camels-hay, on account of the Similitude of their Smells, may, also, be reckon'd among the rare and precious Oils, because a large Quantity of Baum yields but a very small Portion of Oil. Its Scarcity is, however, compensated by its uncommon Efficacy in removing Diseases of the Head, and corroborating the nervous System.

Among the Oils of this kind, we may, also, reckon that of the wild Cinnamon, which is not much known in the Shops. This Oil is, also dear, because a large Quantity of the Bark yields but very little of it.

Among the Oils which are but little known, we may, also, reckon that of the *Ranunculus esculentus*, a domestic and Kitchen Herb, whose Oil is possess'd of a subtil and penetrating Taste, and a grateful Smell; and as the Water of this Herb is highly efficacious in an Asthma, especially of the moist kind, so, in this Disorder, the Virtues of its Oil are more conspicuous, especially when mixed with Sugar, and exhibited.

From black Cumin-seeds there is, also, an Oil prepar'd, which is not much known, but which is, of all others, the most powerful Carminative.

The Oil of *Cretan Origanum*, instead of which the Oils of Thyme or Savory are generally us'd, by its acrid Taste and Smell, strikes the Nostrils strongly, operates as an Errhine, and dissolves Phlegm: Some highly esteem'd this Oil, as an Arcanum for curing the Tooth-ach.

There are, also, other rare and precious Oils brought from the Indies, such as the Oil of the Flowers of Cananga, the aromatic Oil of Cajeputum, the Oil of Cedar, the Oil of Culilabanum, the Oil of *African Hypericon*, the Oil of Kike-kunemali, the Oil of Spikenard, Oil of Camels-hay, the Oil of Malabathrum, and the Oil of Camphire prepar'd with Cinnamon, each of which has its proper Uses and Virtues.

Among the rare, precious, and useful Oils, we may, also, reckon that obtain'd by Expression from recent Orange-peel; as, also, the Oil of Mace by Expression, and that obtain'd from the Flowers of the Orange-tree duly distil'd.

SOME CAUTIONS TO BE OBSERV'D IN THE DISTILLATION AND PRESERVATION OF OILS.

It frequently happens, that Oils, in Distillation, are yielded either too acrid, or of too deep a Colour, especially if they are urg'd by too strong a Fire; and this is principally to be observ'd, when these Herbs which abound with a large Quantity of acrid Salt, such as Thyme, Savory, Marjoram, and *Cretan Origanum*, are subjected to Distillation; for, if the Distillation is accelerated by too brisk a Fire, the Oils not only lose their grateful Smell, but, also, acquire a brownish or redish Colour, which by no means happens, if the Distillation is carried on by a moderate Fire.

Hence we learn, that excessive Heat is of great Efficacy in changing the Texture of Oils: And this Observation is applicable to the human Body, since we see, that, by the intense Heat in Fevers, the temperate and sulphureous Parts of the Blood and Humours are surprisngly agitated; so that it is not to be wonder'd at, if the oleous and temperate Principle of the Blood is converted into an highly saline sulphureous Matter, which, being discharg'd by Stool and Urine, renders the Fæces bilious and yellow, and the Urine intensely red.

'Tis not to be doubted, but, if right Measures are taken, those Oils, which, by too intense an Heat in Distillation, have, in a great measure, lost their grateful Taste, their Fragrance, and their Colour, may, by Rectification, be reduc'd to a due Degree of Perfection: But if the Rectification is attempted by putting the Oils in a Glass Retort, and carrying on the Distillation by a Sand-heat, we find our selves deceiv'd, since, by this means, these Oils have an ungrateful empyreumatic Smell, and are so far from acquiring their due and grateful Sweetness, that they are rather rendered more acrid. The Rectification is, therefore, to be made in another manner: Those Oils, for Instance, are to be mixed with common Salt, with which they are to be strongly triturated, taking three Parts of Salt to one of Oil: Then, adding a sufficient Quantity of Water, the Rectification is to be made from an Alembic, by which means there is yielded an Oil far clearer, and of a more grateful Colour; and what is surprisng is, that in the Bottom of the Alembic there is found a thick black Mass, which firmly adheres to the Hands, and the Quantity of which is the greater, the thicker and deeper-colour'd the Oils are: I have often observ'd, that Oil of Marjoram contain'd more of this resinous Substance than other Oils, since an Ounce of it generally affords a Dram of such a Substance: The Oils of Mint, Spike, and Lavender, thus treated, do not leave so great a Quantity of Resin; but the Oils of Thyme and Savory afford a large Quantity of it:

We, also, find that old Oils, and such as are of a gross Consistence, yield a large Quantity of this Resin.

This Experiment sufficiently evinces, that Oils are nothing but subtil and liquid Refins closely united with Phlegm, and some ethereal Spirit; as, also, that those Oils are hottest, which contain the largest Quantity of Resin: For which Reason such Oils should always be cautiously prescrib'd internally by the Physician, because all subtil oleous Substances induce an intense and long-continuing Heat on the Humours of the human Body.

'Tis, also, to be observ'd, that Oils, render'd more pure and limpid by this Rectification, are not so soon dissolv'd by rectified Spirit of Wine, as they were before; but for this Purpose they require highly rectified Spirit of Wine, since they are form'd into small Globules, and with great Difficulty incorporated with common Spirit.

'Tis, also, certain from Experience, that ethereal, limpid, and fragrant Oils become thicker by Age, and lose a great deal of their Fragrance; and, if we want to restore this Fragrance, we must infuse them with recent Herbs, and Leaves, and reiterate the Distillation from an Alembic; by which means they are again impregnated with that subtil, sweet, and spirituous Principle, which they had lost by excessive Age.

From this Experiment we learn, that, besides a sulphureous, saline, earthy, or aqueous Principle, there is, also, another in Oils, which the Antients call'd Spirit, which is highly active, of a thin ethereal Substance, and necessary to preserve the natural Crasis and Texture of the Oil.

This Spirit is principally dispos'd to Evaporation; by the Heat of the Air; and, when this Spirit is lost, we find that the Oil is greatly chang'd in its Consistence, Smell, Taste, and Virtues. If, therefore, we intend to preserve Oils, we must not only carefully stop the Vessels which contain them; but, also, deposit them in cold Places, so that, the Spirit being pent up in them, their Texture may remain entire.

Because the Air, especially when hot, induces a greater Change on the Nature of Oils, and the Quality of the oleous Mixture, than any thing else, whilst, by long acting upon them, it deprives them of their grateful Taste and Smell, and inspissates them, the express'd Oils tending to a rancid State, and those distil'd to a terebinthineous Nature; the Colour, also, being in some greatly chang'd; hence Oils are carefully to be preserv'd from the free Access of an hot Air, which may be done by filling the Vessels in which they are kept, allowing only a small Space for Rarefaction, left, upon the Approach of Heat, they should burst: They are, also, to be carefully stoppt, and put into cold and dry Places.

Some, in order to preserve Oils, add some Water; such, for Instance, as distil'd Rose-water, which is of excellent Service, when there it not Oil enough to fill the whole Glass, since the Water, by its Exhalation, keeps the Consistence of the Oil thin, and hinders it from being inspissated.

'Tis, also, certain from Experience, that Oils can never be intimately united and incorporated with Water: But these Substances, naturally immiscible, may by Art be so mix'd, as not to be separated from each other. This is most commodiously done, by pouring a few Drops of any aromatic Oil on Sugar, then putting it into Water, and shaking it; by which means the whole Oil in a Moment enters the Pores of the Water. Thus we may, in an extemporaneous manner, prepare the Waters of Cinnamon, Cedar, Nutmeg, Mint, Baum, and Hyssop, which are otherwise to be only obtain'd with considerable Labour by Distillation. Besides, by the Addition of a small Quantity of Spirit of Wine, these Waters become spirituous. The Reason of this is, that the Oil, by reason of its ramified and branchy Particles cannot enter the Pores of the Water; but because the Sugar is easily and quickly admitted into the Pores of the Water, which, easily adhering to the branchy Parts of the Oil, divides and disjoins them, hence they become capable of an intimate Mixture with Water. *Hoffman. Obs. Phys. Chym. Lib. 1.*

OLEUM TERRÆ. OFFIC. OIL OF EARTH. Dale.

This Oil is of two Kinds, the red, and the black: The red is brought from the *East Indies*, and is of a pellucid red Colour, and has a strong Smell like *Petroleum*, but more grateful, as *Schroder* says; but, as to what we know of this Oil, it is either the same with *Petroleum*, or else is unknown in our Shops.

The *Indian* Oil of Earth, described by *Nauborius*, is scarcely ever brought over to us; but ingrossed by the *Asian* Potentates; but whether it be a Species of *Petroleum*, or *Naphtha*, I cannot certainly determine. What is brought to us from the *Indies*, and sold for Oil of Earth, is prepared of express'd Oil of the Cocoa-nut, mixed with medicated Earths, as I have been informed by a Person very skilful in these Matters, and therefore wholly belongs to the Class of Vegetables. *Boerhaave.*

These Kinds of *Bitumen* differ only in Degree, as some think, so as that the more spirituous and subtil Part of it is the *Naphtha*, the next to it the *Petroleum*, and the grosser and more feculent Part *Asphaltum*; just as we see in Amber, from which,

which, by Distillation, there is obtained, first, a spirituous and limpid Oil, representing *Naphtha*; soon after, comes off a yellow and thicker Oil, resembling *Petroleum*; and, last of all, a black feculent Matter, which might pass for *Asphaltum Dale*.

OLFACTORII NERVI The Olfactory Nerves. See **NERVI**, and **CEREBRUM**.

OLFACTUS. The Sense of Smelling.

The Nostrils, which are in Number two, and run upwards from a wide Cavity, gradually becoming narrower, are excellently adapted for attracting volatile odorous Particles, and applying them to their Surface; especially whilst they are, at the same time, contracted by the united Action of the Muscles, which constrict the Alæ of the Nose, and which, arising fleshy from the anterior and inferior Part of the fourth Bone of the upper Jaw, are inserted in the Alæ of the Nostrils, sometimes in Conjunction with the Semilunar Muscle of *Eustachius*.

The Capacity of both Nostrils is all that Space, into which open, first, the frontal Sinuses, which are generally form'd among the separated Laminæ of the *Os Frontis*, under the Eminence lying below the Eye-brow, and which, afterwards, open upwards, with a large *Foramen*, into the Cavities of the Nostrils, next to the superior Bones of the Nose. These Sinuses receive the mucous Membrane of the Nose, with which the whole interior Surface of their Cavities is lined, and from which the Mucus, when generated, drops into the Cavities of the Nostrils.

Secondly, the *Antra Highmoreana Magna*, form'd in the superior Jaw, and opening themselves, with a large *Foramen*, into the Cavities of the Nostrils, also, are lined with the same Membrane, prepare, collect, and secrete the Mucus into the Nostrils.

Thirdly, the *Cellule* of the *Os Cuneiforme*, under the superior spongy Bone of the Nose, opening by *Foramina* frequently distinct, into the Cavities of the Nostrils, receive the mucous Membrane of the Nose, are cover'd with it, secrete the Mucus, and discharge it by this very Passage.

Besides, there are lodged in the Cavities of the Nostrils, and in various Places, curiously disposed, the four spongy Bones of the Nostrils; in each two. The superior is anteriorly united to the superior Part of the Maxillary Bone, where it is united with the *Apophysis* of the *Os Frontis*, at the internal Angle of the Eye. The other, or inferior spongy Bone of the Nostrils, is, in the inferior Part of their Cavities, join'd to the Maxillary Bone. These four Bones are wonderfully form'd of bony Laminæ, thinner than Paper, and so wrapt up, or disposed, as to form many Cavities; among which, the mucous Membrane insinuates itself in such a manner, as to enter, run out, accurately cover the Surfaces between the Laminæ, and leave the Cavity free and unconfined. These Cavities of the spongy Bones, and of all the *Cellule*, open freely into the Cavities of the Nostrils.

The Nostrils are lined with a thick and soft Membrane, which is furnished not only with an incredible Number of small arterial Vessels, but, also, with round glandular Corpuscles, and a Set of minute Vessels, which distil a thin Lymph. This Membrane curiously insinuates itself into the Cavities of the six Sinuses, and into the *Cellule* of the four spongy Bones. Hence, by a wonderful Contrivance in this narrow Cavity of the Nostrils, the Surface of the last described Membrane is greatly enlarged; but yet in such a Manner, as that one Part does not incommode another.

The olfactory Nerves, without being accompanied by the *Dura Mater*, reaching to the *Os Ethmoides*, apply their tender Fibrils to the small *Foramina* found in that Bone; and, penetrating the small Vagina, which they receive from the *Dura Mater*, the Fibres are sent out from the *Os Ethmoides*, and immediately and accurately distributed over all that large Surface, above described, into all the Sinuses and *Cellule*.

Hence 'tis sufficiently obvious, that these Nerves are widely expanded; and that in no Part of the Body are there to be found Nerves so soft, naked, and, consequently, easily affected and injured, as in this.

Besides, by means of the inconceivable Number of Glands lodged in this Membrane, and by the large Quantity of arterial Vessels distributed in this Part, in the Form of *Fasciculi*, there is continually here prepared and secreted a mild, fluid, inodorous, and pale-colour'd Liquor, with scarce any saline Taste, in order to moisten, lubricate, and defend the Nerves everywhere, and in all the Cavities above described. This Liquor, when left in a State of Rest, is always collected, becomes itaginant, and inspissated; and, when discharged in whatever Disposition of the Body, is called *Mucus*; by means of which, the highly tender olfactory Nerves, which would otherwise be easily disorder'd, remain good for a great Number of Years.

But, lest this Liquor, which is easily concreted when it is accumulated, stagnant, and inspissated by too long a Continuance in its Cavities, should become unfit to pass through the narrow Orifices of these Receptacles, there is distributed to these Parts a Ramification of the fifth Pair of Nerves, convey'd hither from its Union with a Nerve of the sixth Pair. By the Irritation of this Ramification, the intercostal Pair, the *Par Vagus*, and, consequently, the Nerves of the Muscles subservient to Respiration, are put in Motion. Hence, Sternutation being produced by the Force of the Air violently propell'd, and rushing into these Cavities, the Mucus is absterge'd.

The Objects of Smell are those Parts of Animals, Vegetables, and Fossils, which are lodged in their Spirit, Oil, Salt, or Soap, if they are so divided as to become capable of floating in the Atmosphere. But 'tis obvious from Experiments, that the subtil Principle lodged in Oil, and called the Spirit, is the principal Thing which excites the Sense of Smelling; for, when this Principle is totally separated from odorous Bodies, the Residuum hardly retains any Smell; and a Fragrance is procured to other Substances, by pouring this Spirit upon them.

An Animal breathing thro' the *Aspera Arteria*, cut, and appearing thro' the Wound without the Neck, has no Sense of Smelling excited, even by the most highly odorous Substances.

The Person who expels the Air from his Lungs thro' his Nostrils, has no Sense of Smell excited by external Objects, during that Action.

The Person, in like Manner, who retains his Breath, is almost incapable of perceiving any Smell.

But the Person who attracts the Air thro' his Nostrils, has the Idea of Smell excited.

And the more strongly he attracts the Air, and expels it reciprocally, the brisker the Sense of Smell is.

The Smell of odorous Substances is increased by Motion, Heat, Attrition, and an Admixture of various Things. And the Smell of odorous Substances, of an oily Nature, is augmented by a cautious Admixture of Salts.

The Sense of Smell is, therefore, excited, when the odorous Effluvia contain'd in the Air, and, during Inspiration, sufficiently strongly attracted thro' the Nostrils, are, by this Force, applied to the olfactory nervous Fibrils, which, by the Structure of the Nose, and the Position of its Bones, are exposed to them. When these Effluvia thus act upon the olfactory nervous Fibrils, and communicate this Action to the common Sensory, they excite either an acid, alkaline, aromatic, putrid, or vinous Smell.

Hence we may understand, how great an Affinity there is between odorous and sapid Substances; or the Objects of Taste and Smell:

Why Smells, or Odours, often restore Life instantaneously, and as it were in a Moment:

For what Reason Odours, sometimes, excite Diseases and Death; and produce almost all the same Effects with Medicines of all Kinds, whether of a medicinal, or deleterious Quality:

Why, in different Persons, the same Smell, arising from the same odorous Body, produces so widely different Effects:

Why Animals, who are furnish'd with very long Beaks and Nostrils, and the spongy Bones of whose Noses are very large, have a quicker Sense of Smelling than others:

Why the smallest exhaling Corpuscles, whilst, at the same time, the Mass from which they exhale, is, upon being weighed, hardly diminished, are capable of communicating so strong and long-continued a Smell:

Why the ferid Smell, exhaling from the putrid Parts of Animals and Vegetables, when once convey'd to the Nostrils, is so obstinate, troublesome, and lasts so long:

Whether the strongest odoriferous Substances are not also possess'd of a sternutatory Quality:

What the Use is of the Humour and Mucus continually generated, and distributed in the Nostrils:

Why the Sense of Smelling is dull and languid, when a Person first awakes out of his Sleep; but becomes more brisk and quick after he has sneezed:

Whether the Discharge of the Mucus is not subservient to the cleansing of the Brain; and how far this Doctrine is true:

Whether the Mucus is originally thick, when generated; or whether it afterwards becomes so:

Whence proceeds the so great Communication of the interior Nose, with the Muscles subservient to Respiration, and the abdominal Viscera:

Whether Sternutation is not a kind of Convulsion, and for that Reason fatiguing, often productive of Pain, and sometimes mortal:

Why, in the mean time, it excites and increases the Motion of the Brain, Spirits, and all the Humours: Why it is frequent in the Morning after Sleep; and what good Purposes it answers.

OLIBANUM.

Olibanum & Thus maris. Offic. *Olibanum sive Thus*. Park. Theat. 1602. Raii Hist. 2. 1840. *Olibanum Officinatum*. Geoff. Traët. 362. *Olibanum sive Thus masculinum*, Ind. Med. 75. *Thus*. J. B. 1. 302. Schrod. 4. 223. *Thus*, *Thus masculinum Olibanum*. Mont. Exot. 11. *Arbor thurifera*. Ger. 1247. Emac. 1435. C. B. P. 399. *Thus sive Olibanum Officinatum*. Ejusd. 501. **FRANKINCENSE**, or **OLIBANUM**.

Olibanum is a dry resinous Gum, which is brought from the Indies, and gotten from a Tree which is said to grow in Arabia; but of what Species it is, we are altogether ignorant; the best is that which is in large Drops, of an opaque, white Colour, with a little Yellowness, and sometimes a Reddishness, of a strong, resinous Smell, and a warm bitterish Taste.

It is hot, dry, and binding; useful against Diseases of the Breast, as Coughs, Shortness of Breath, catarrhus Defluxions of Rheum, and Spitting of Blood; it helps a Looseness and Bloody-flux; and stops a Gonorrhoea, and the Whites: Outwardly used

in Fumigations, it stops Defluxions of Rheum on the Nostrils, and is good to cicatrize Wounds and Ulcers. *Miller's Bot. Off.*

The Tree which produces this Incense, grows in the Heart of *Africa*; but we know not what it is. It is a good Sudorific, and has, by some, been order'd in Pleurifies, in the Quantity of a Dram, being first baked in an Apple, by the Fire-side, and then eaten. This Medicine ought to be taken in the Beginning of the Disease, after the Patient has been blooded once or twice. This Method was followed for a whole Year, at the *Hotel Dieu*, by *M. Hangard*, Physician of that Hospital, with surprising Success; but the next Year it had scarce any Effect at all. *Olibanum* is also cordial, and very serviceable in Hemorrhages, when mixed with proper Astringents. Externally, it is resolvent, emollient, &c. and resists Putrefaction. It may, also, be used as a Fumigation, to raise Sweat, in Rheumatisms, either alone, or mix'd with Amber. *Geoffroy.*

This is a resinous Substance, of a pale-yellow Colour, somewhat hard and pellucid, form'd into small Drops, like Mastich, of a bitterish resinous Taste, and fragrant Smell. It drops spontaneously from the Tree which produces it, and is transported to us from *Turkey* and the *East-Indies*. That which is in small Drops, is preferable to the other Kinds. It is heating, drying, and subastringent. It is principally used, internally, against various Disorders of the Head and Breast; as, also, against Fluxes, and Hemorrhages of the Uterus, Coughs, Vomitings, Spittings of Blood, Diarrheas, and Dysenteries. Externally, Fumigations of it corroborate the Head. It dissolves Catarrhs, incurs hollow Ulcers, and brings them to a Cicatrix. It conglutinates recent Wounds, especially those of the Head. It cures Chilblanes, and mitigates malignant Ulcers, not only of the Anus, but, also, of other Parts. It, also, removes Redness and Inflammation of the Eyes; and carries off beginning Warts and Imperigos. *Schrod.*

What we call the *Manna Thuris* of the Shops, are Fragments of the Frankincense, as small as Meal, produced by the Collision of the Bags with each other, during the Carriage. But others, by the *Manna Thuris*, mean small Portions of the Frankincense.

Nothing certain is left upon Record, with respect to the Tree which bears the Frankincense. *Theophrastus* informs us, that it is not a very large Tree; that it is about five Cubits high, full of Branches, with Leaves resembling those of the Pear-tree, and a smooth Bark, like that of the Bay-tree; but, says he, others affirm it to be like the Mastich-tree, bearing a similar Fruit, and a reddish-colour'd Leaf; whilst others assert, that both its Leaves and Bark resemble those of the Bay-tree. *Diodorus Siculus* ascribes the Form of the *Egyptian* Thorn to the Tree which bears the Frankincense, and the Leaves of the Willow. *Garcias* informs us, that this is a low Tree, whose Leaves resemble those of the Mastich-tree: But *Thevetus* informs us, that it resembles the Resin-bearing Pines. Mr. Ray also affirms, that we are still uncertain of the true Form of this Tree. *Dale.*

OLIGOPHORUS, ὀλιγοφόρος. An Epithet for Wine, in *Hippocrates*, importing it being very small, weak, and watery.

OLISTHEMA, ὀλίσθημα, from ὀλισθαίνω, to fall out. A Luxation. *Hippocrates.*

OLIVA. An Olive. See **OLEA**.

OLIVARIA CORPORA. Two Prominences, on the *Medula Oblongata*, are called by this Name.

OLIVITAS. Oiliness.

OLOPHLYCTIDES, ὀλοφλυκτίδες. The same as **PHLYCTENÆ**. *Erotian.*

OLOR. The Swan. See **CYGNUS**.

OLUS ALBUM. A Name for the *Valeriana*; *arvensis*; *præcox*; *humilior*; *semine depresso*.

OLUS ATRUM. A Name for the **SMYRNIUM**.

OLY. The oleous Substance of Metals, swimming on the Surface of their solvent *Menstruums*. *Rulandus.*

OLYMPIACUM COLLYRIUM. The Name of a Collyrium described by *Paulus Ægineta*, L. 7. C. 16.

OLYMPIANUM OXYPORIUM. The Name of a Medicine described by *Marcellus Empiricus*, C. 20. and recommended for promoting Digestion.

OLYNTOS, ὀλυνθος. An unripe Fig. *Hippocrates.*

OLYRA. Offic. Park. Theat. 1124. *Zea Amylea* five *Olyra*. C. B. Theat. *Zea Amylea* vel *Zoopyrum Amyleum*. C. B. P. 22: *Zea verna*, J. B. 2. 413. Raii Hist. 2. 1243. *Triticum Amyleum*. Ger. 63. Emac. 69. **SPRAT-CORN**.

This Species of Corn is sown in *Germany*, and reaped late. The Seeds are used in the Kitchens of *Germany*. It agrees in Virtues with the *Speltz* Wheat, but is somewhat less nutritive.

Of the *Olyra* a coarse Meal is, also, made. *Dale.*

OLYSCION. The seventh Part of an *Hemina*. *Marcellus Empiricus.*

OMAGRA. The Gout in the Articulation of the *Humerus* with the *Scapula*.

OMASUM. The third Ventricle of a ruminating Animal.

OMELYSIS, ὀμήλυσις, from ὀμός, crude, as *Galen*, in his *Exegesis*, expounds it, is the Meal of Barley, not parched. He adds, that some properly apply the Term only to crude Meal, but others use it, improperly, to signify all other Sorts of Meal. *Hippocrates*, in several Places, advises *Omelysis* boiled in Wine and Oil, and reduced to the Form of a Cataplasm, to be ap-

plied warm, outwardly, to a Tumor of the Tonsils, and, also, in the *Hypoglossis*; and, *Lib. 2. περὶ γυναικ.* he prescribes ὀμήλυσιν κριθῶν, crude Meal of Barley, in a Potion, for an Hemorrhage of the Womb, *ὑπερμενσ.* in Women. Sometimes the Word signifies all Sorts of crude Meal, and wants an Epithet to distinguish it, as ὀμήλυσις κριθῶν, *Farina hordeacea*, Meal of Barley in particular. It is, by *Hesychius*, explain'd, Barley-meal, or a Cataplasm made thereof. In *Absyrtus*, one of the Hippiatric Writers, *Omelysis* is a Mixture of the Meals of Fenugreek, Linseed, and Barley, in equal Quantities. In *Cælius Aurelianus*, it signifies sometimes a Cataplasm of Meal, or of Bread soak'd in Water; and sometimes of Meals prepared in the same Manner. It is sometimes wrote ὀμή λύσις, in two Words.

OMENTA. The Membranes of the Brain. *Castelles* from *Mercurialis*.

OMENTUM. See **EPIPLOON**.

As the Omentum is a soft and pinguious Part, in consequence of its Laxity, highly subject to receive the Humours convey'd to it from other Parts, 'tis for this Reason, as well as the Omentum and Pancreas, subject to various Disorders; which, however, are not described by Authors, because they can hardly, if at all, be discover'd in live Persons; and are only to be investigated by laying open their Carcasses, as is obvious from the Cases recorded by various Authors. Thus *Vesalius* informs us, that in a certain Carcase, when laid open, he saw the Omentum so preternaturally tumid, that it weigh'd about five Pounds; whereas, in its natural State, it hardly exceeds half a Pound. *Roussel*, in his Treatise *de Partu Casareo*, tells us, that, upon laying open a Carcase at *Paris*, there was a very considerable Abscess found on the Omentum. *Riolanus*, also, in his *Anthropographia*, informs us, that, upon laying open the Body of a young Gentleman of nineteen Years of Age, he saw the Omentum full of a large Number of Glands, from which a considerable Quantity of sordid Humours had been convey'd to it; whilst, at the same time, the Mesentery and Pancreas were, by means of the Abscess, purified; and the Spleen so greatly diminish'd, as to be almost entirely consumed. And I myself, upon laying open the Body of a Canon of *Montpelier*, saw the Omentum scirrhus, possessing the whole epigastric Region, and about four Fingers-breadth in Thickness. The Colour of this Tumor of the Omentum resembled that of the Spleen: So that 'tis highly probable, that the melancholic Humour was translated from the Spleen, and accumulated in that Part, since the Patient was of an highly melancholic Constitution, and since, thro' the splenic Ramifications, there is a sufficiently potent Conveyance from the Spleen to the Omentum. According to *Hippocrates*, in a Dropsy, the Waters are also frequently convey'd from the Spleen to the Omentum, from which they gradually drop into the Cavity of the Abdomen.

But as the Tumors of the Omentum are not, by all the Efforts of Art, to be distinguished from those of the Mesentery, so their diagnostic or distinguishing Signs cannot possibly be ascertain'd. 'Tis true, indeed, Tumors of the Omentum are more easily perceived by the first Touch, because that Part lies immediately under the Peritonæum, whereas the Mesentery is situated deeper: But the larger Tumors of the Mesentery rise to the Peritonæum, and even the epigastric Muscles are, sometimes, so united with it, that, a Suppuration happening, these Tumors discharge their sordid Contents thro' the Navel, or some other Part.

But this Difficulty of ascertaining the diagnostic Signs of these Disorders by no means produces any Perplexity in the Method of Cure; since in all Tumors of the same Species, possessing the inferior Parts of the Abdomen, the same Measures are to be taken; which, however, are not so successful in the Omentum, which is not furnished with so commodious Outlets for the Matter of these Tumors, as the other Parts are. *River.*

Prax. Med. Lib. 13. Cap. 5.

OMOCOTYLE, ὀμοκοτύλη. The Cavity in the Extremity of the Neck of the *Scapula*, in which the Head of the *Humerus* is articulated.

OMOLINON, ὀμόλινον, seems to have two Significations, one of which is crude, or raw Flax; the other, coarse, or unbleach'd Thread, or Cloth.

OMOPLATÆ, ὀμοπλάται, from ὤμος, the Shoulder, and πλατὺς, broad. The *Scapula*.

OMOS, ὤμος. The Shoulder. The Part of the *Uterus*, beyond the Neck, where it grows broad, is, also, thus call'd by *Moschion*.

OMOTARICHOS, ὀμοτάριχος, the Flesh of the pickled Tunny-fish; which *Dioscorides* recommends, taken internally, against the Bites of Vipers, and mad Dogs, L. 2. C. 33.

OMOTRIBES. An Epithet for Oil, importing its being express'd from unripe Olives.

OMPHACINUM OLEUM. Oil of unripe Olives.

OMPHACIUM, ὀμφάκιον. The Juice of unripe Grapes. The Antients used to expose the Grapes to the Sun some Days, and then press out their Juice into large Vases; and, in the Time of *Dioscorides*, they used to let it stand open in them, exposed to the Sun, till most of the Humidity was exhale'd, and the Remainder inspissated into a Rob. This *Dioscorides*, L. 5. C. 6. recommends, with Honey and Passum, for Ulcers and Relaxations of the Tonsils, Uvula, Mouth, and Gums; and for Purulencies of the Ears; for Dysenteries, and Uterine Fluxes; in Clysters,

Clysters, or Injection. He, farther, says, it clears the Sight, and cures Asperities of the Angles of the Eyes; and that it is good for a recent Spitting of Blood, from a Rupture of a Vessel; but, in this Case, it must be taken in a small Quantity, because it corrodes powerfully

OMPHACIS, *ὀμφακίς*. An Acorn-cup.

OMPHACITES VINUM. Wine made of Grapes not perfectly ripe. It is astringent, and friendly to the Stomach; good for a depraved Appetite, Iliac Disorders, Indigestion, Relaxations of the Stomach, and in pestilential Disorders; but must be kept many Years, before it is fit to be drank.

OMPHACITIS. A Sort of small Gall, or Excrescence of the Oak, mention'd by *Dioscorides*, L. 1. C. 146.

OMPHACOMELL. A Sort of Oxymel, made of the Juice of unripe Grapes, and Honey; the Method of preparing which is described by *Dioscorides*, L. 5. C. 31.

OMPHALOCARPOS. A Name for the APARINE. *Blancard*.

OMPHALOCLE. An Umbilical Rupture. See HERNIA.

OMPHALODES.

The Characters are;

The Calyx is monophyllous, soft, and expanded into five long slender Segments. The Flower is monopetalous, rotated, quinquefid, and expanded into large round Segments, with an Umbilicus rising in the Middle. From the lower, interior, and narrower Part of the Flower proceeds a Tube, closely surrounded by five Stamina. The Fruit consists of four hollow, umbilicated Capsules, resembling a Basket, containing one almost flat Seed, and affixed to a pyramided, quadrilateral Placenta.

Boerhaave mentions three Species of this Plant; which are,

1. *Omphalodes*; *pumila*; *verna*; *Symphyti folio*. T. 140. *Symphytum minimum*, *repens*, *sive Borrage minima Herbariorum*. J. B. 3. 597. *Borrage minima*. H. Eyft. Hyem. o. 1. F. 4. Fig. 1.

2. *Omphalodes*; *Lusitanica*; *Lini folio*. T. 140. *Linum umbilicatum*. Park. Theat. 1687. *Cynoglossum*, *minus*, *album*, *lini foliis glaucis*, *semine umbilicato*. M. H. 3. 449.

3. *Omphalodes*; *Lusitanica*; *elatiore*; *Cynoglossi folio*. T. 140. *Linum umbilicatum*, *folio latiori*. Ind. 78. *Boerhaav*. Ind. alt. Plant.

It has its Name, *Omphalodes*, from *ὀμφαλός*, a Navel, because the Calyx is excavated in the Middle, like the human Navel. It flowers very early in the Spring, bearing a shining Gold-colour'd Flower. Some have taken it for Borrage, but the *Omphalodes* is not so succulent. *Boerhaav*. Hist.

OMPHALOMANTIA. A Sort of Conjuraton, or Divination, practised by Midwives, and old Women; which consists in foretelling how many more Children a Woman shall have, by observing how many Knots there are on the Umbilical Cord of one Child.

OMPHALOS, *ὀμφαλός*. The Navel.

ONAGER. Raii Synop. A. 63. Aldrov. de Quad. 332. Jonf. de Quad. 14. Charlt. Exer. 4. *Onager sive Asinus sylvestris*. Gesn. de Quad. 21. THE WILD ASS. Dale.

Some think there is no more Difference between the wild Ass and the tame Ass, than that the one is wild, and an Inhabitant of the Woods; and the other tamed, and broken for Service: Others take them for a different Species. It does not come within the *Materia Medica*; but their Skins are called, among Mechanics, *Chagria*.

ONAGRA.

The Characters are;

The Calyx, Ovary, and Flower, are like those of the Chamænerion; but the Seeds are not downy: The Flower is rosaceous and tetrapetalous.

Boerhaave mentions three Species of Onagra; which are,

1. Onagra; *latifolia*. T. 302. *Lysimachia*, *lutea*, *corniculata*. C. B. P. 245.

2. Onagra; *latifolia*; *flore dilutiore*. T. 302. *Lysimachia*, *lutea*, *corniculata*, *non papposa*, *Virginiana*, *major*, *flore sulphureo*. H. L. 396.

3. Onagra; *angustifolia*. T. 302. *Lysimachia*, *lutea*, *corniculata*, *non papposa*, *Virginiana*, *minor*. M. H. 2. 271. H. L. 396. *Boerb*. Ind. alt. Plant.

We know nothing of its Virtues, nor why it is so called. *Boerhaave*.

ONBOU. *De Laet*. The Name of a West-Indian Tree, with Leaves like those of the Manga, and a Fruit like a Peach.

ONCOS, *ὄγκος*. A Tumor.

ONDA, in *Paracelsus*, is the Inventor of all Medicines, but especially of simple Medicines.

ONEIROCRITICUS, from *ὄνειρος*, a Dream, and *κρίνω*, to judge. A Person who forms a Judgment of the State of the Body, by Dreams. *Oneirocritice* is the Art of forming such a Judgment.

ONEIROGMOS, *ὄνειρογμός*. *Cælius Aurelianus* gives us the Description of a Disorder which he calls *ὄνειρογμός*, by which he means Venereal Dreams. Though this Word is not found in the Writings of *Hippocrates*, yet he uses the Verb *ὄνειροσσειν*, to have Venereal Dreams; from which has been formed the Word *ὄνειρογμός*, a Word used by other Authors; which lays a Foundation for suspecting, that there is a Fault in the Text of *Cælius Aurelianus*; and that, instead of *ὄνειρογμός*, we ought to read

ὄνειρογμός. This is the Opinion of *Boesius*: But *Reinesius* asserts without assigning any Reasons for his Belief, that they are two quite distinct and different Disorders. *Cælius Aurelianus* gives his Sentiments of this Disorder in the following manner.

The Patients labouring under this Misfortune, being subjected to wild and delusive Dreams, are, during their Sleep, afflicted with an Emission of the seminal Fluid. It receives this Name, because it produces the same Effect with a real Venereal Stimulus. But, in general, it is neither a Distemper, nor the Symptom of a Distemper, but the Result of the unaccountable Impressions made upon the Fancy, affecting the Patient during Sleep, and arising either from an insatiable Desire of Venery, a continual Indulgence in Pleasures of that Kind, or, on the contrary, from a long Continence, and Self-denial in the Use of Venery. But this Disorder, when often recurring, not only frequently degenerates into a Distemper, but, also, becomes the antecedent Sign of some approaching Disease; such as an Epilepsy, Madness, or some other Disorder of a like Nature; because it is an effectual Proof, that the Body is preternaturally affected, and, as it were, touched with a previous Sense of its future Calamity. It is, also, sometimes the antecedent Cause of what we call a *Gonorrhœa*; from which it differs, since, in the former, the Semen is involuntarily discharged during the Day, whilst the Patient is awake, and not prompted to Venery by the Workings of his Fancy; whereas Venereal Dreams, by delusive Impressions made upon the Fancy, only produce an imaginary Sense of Copulation, during Sleep. Some affirm, that the *ὄνειρογμός* is different from the *ὄνειροσσειν* for the former produces a Sense of Copulation, without a real Emission; whereas the latter creates a Sense of Venery so strong and brisk, as to procure a real Emission. But *Milesius* affirms, that these two Disorders are not in the least different, since, in both, there is the same Discharge made from the seminal Vessels: And that the Semen is sometimes ejected, and sometimes retained, even though the Impressions made upon the Fancy, during Sleep, are the same, he ascribes to some accidental Causes. But there is no great Difference between these Disorders, nor are different Intentions of Cure to be pursued, since one and the same Method is found sufficient for removing both.

The *Oneirogonos* is, in different Patients to be treated in different Manners; for those in whom it prognosticates an Epilepsy, Madness, or any other Disease, are to be relieved by Medicines appropriated to the particular Natures of these Disorders: Whereas those in whom this Disorder prognosticates no other of a more formidable Nature, are to be treated in the same manner with those labouring under a mild and gentle *Gonorrhœa*; for an Increase of the *ὄνειροσσειν*, or *ὄνειρογμός*, brings on a *Gonorrhœa*, because the seminal Vessels are either, by this means, render'd paralytic, or oppressed with a Defluxion of Humours from other Parts. It is, therefore, in the first Place, expedient to draw off the Workings of the Patient's Fancy from Venereal, and to fix them on other external Objects; for the Impressions made upon the Mind of the Patient, whilst awake, easily exert themselves in Dreams, when he is asleep. Besides, the Body is considerably injured by a Loss of the Semen. For this Purpose, the Patient is to lie on a hard Bed, and use refrigerating Medicines; and, when he composes himself to Rest, he is to be order'd to lie on his Side, or his Belly; or a broad and thin Plate of Lead is to be laid under his Buttocks; or the Region of his Loins is to be cover'd with Sponges, immersed in a Mixture of cold Water and Vinegar, or with Substances of a cold Quality, such as Balauustines, Acacia, Hypocystis, or Fleawort, which may be either applied by themselves, or in Conjunction with Dates. Astringent Aliments, or such as are of a condensing and cooling Quality, are, also, to be used; and the Patient is to drink cold and astringent Liquors, not prepared in a delicate and luxurious manner: Then the Patient is to have his Strength restored in the common Method, and to use the cold Bath, by the Greeks called *ψυχρασία*. Strong Frictions of the Parts affected are, also, to be used; for these Measures are sufficient to constrict and brace up the Parts: Some affirm, that a long Retention of the Urine is proper for the Cure of this Disorder, lest, by the frequent Discharge of that Fluid, the Cause of the Misfortune should be excited: They, also, order that the Patient should compose himself to Rest, with a full Bladder, that by this means he may not fall into a profound Sleep, but, being frequently awaken'd, may lose the Impressions of Venereal Pleasures, which exert themselves in Dreams, during Sleep: They, also, maintain, that by this means the urinary Bladder, being distended, compresses the adjacent seminal Vessels, and, consequently, renders them capable of retaining the Semen: Others order the Thumb to have a tight Ligature of strong Thread apply'd to it, that thus, by the intense Pain, a profound Sleep may be prevented, and the Impressions of the Mind hindered from exerting themselves in Venereal Dreams. But both these Methods are to be rejected, since Watching is highly injurious to the Patient, and an excessive Retention of the Urine often produces a Difficulty in discharging that Fluid; and by that means proves the Cause of another Disorder, instead of removing that for which it was directed. *Cæl. Aurel. Morb. Chronic. Lib. 5. Cap. 7.*

ONEIROMANTES. The same as ONEIROCRITICUS.

ONEIROPOLESIS. See ONEIROGMOS.

ONIS, *vis.* Affes Dung. See ASINUS.

ONISCI. MILLEPEDES; which see.

ONISCUS. Offic. *Afellus mollis major, seu albus.* Raii Ichth. 170. Ejsd. Synop. Pisc. 55. *Afellus minor & mollis.* Charlt. de Pisc. 3. *Afellus mollis.* Jonsf. Tab. 2. Mer. Pin. 184. *Merlangus altera Species Afellorum.* Bellon. de Aquar. 104. *Secunda afellorum Species.* Rondel. de Pisc. 1. 276. *Secunda afellorum Species Merlangus Rondeletii.* Gefn. de Aquar. 85. *Afellus minor alter.* Ald. de Pisc. 287. THE WHITING.

It is taken in the Sea, and the Flesh and Liver are regarded in Medicine. The Flesh is universally allow'd, and found by Experience, to be very wholesome; and the Liver is recommended in a Consumption.

The Whiting is a Sea-fish, which often comes near the Shore, and is very common in many Parts, and is valued for the Goodness of its Taste, and served to the best Tables. It feeds upon small Fishes, and any thing it can find in the Sea. It is very wholesome, and the Reason is, because that it is not burdened with viscous Juices, that its Principles are exalted enough, and that it is not very compact in its Parts; which makes it light, short, and easy of Digestion.

A Whiting is a Fish that produces no ill Effects, that we know of; and there are some who have eaten of it to Excess, and yet found no Inconvenience by it: And therefore sick Persons, and those that are recovering from Illnesses, are safely allowed to eat it. *Lemery on Foods.*

ONITIS. A Species of Origanum mentioned by *Dioscorides*, Lib. 3. Cap. 23.

ONOBRYCHIS.

The Characters are;

It has a cristated, or echinated Pod, full of Kidney-shaped Seed; and the Flowers are collected into close Spikes.

Boerhaave mentions five Species of *Onobrychis*; which are,

1. *Onobrychis major*; filiculis echinatis, cristatis, in Spica digestis. *Hist. Oxon.* 2. 131. *Boerb. Ind. A. 2.* 47. *Onobrychis*. Offic. *Onobrychis vulgaris.* Park. Theat. 1082. *Onobrychis foliis Viciae, fructu echinato, major.* C. B. P. 350. *Tourn. Inst.* 390. *Onobrychis sive Caput Gallinaceum.* Ger. 1063. *Emac.* 1243. *Raii Hist.* 1. 914. Synop. 3. 327. *Polygalon Gefneri.* J. B. 2. 335. COCKSHEAD-VETCH, or SAINT FOIN.

It grows spontaneously on the Sides of Gogmagog Hills, near Cambridge, and on the Borders of the Corn-fields thereabouts, in a plain Field near Newmarket, on Salisbury Plain, and other Parts of England, but always in a dry, chalky Soil, and Places exposed to the Sun. This Plant has been of late Years cultivated among us, for the sake of feeding Cattle, by the Name of *Saint Foin*, that is, *Holy Hay*; the Seed being brought over from France. It has been of vast Profit to many, being found, by Experience, to generate Plenty of Milk in Cows, and other Animals; whence it justly deserves the Name of *Polygalon*, given it by *Gefner*: Besides, it delights in a barren and chalky, and pretty dry Soil, which will not well bear Grass nor Corn: Whence the yearly Rents of Lands of this kind have been increased manifold.

It flowers in June and July, and the Herb is in Use, which, according to *Dioscorides*, being bruised and apply'd, discusses Tumors; taken in Wine, cures the Strangury; and rubbed, on the Skin, with Oil, provokes Sweat. *Dioscorides*, Lib. 3. Cap. 170.

Though the Plant, says *Dale*, which, in Agreement with *Clusius*, *Thalius*, and others, I have presented you with, as the *Onobrychis* of *Dioscorides*, be called by *Gefner* *Glaux*, by *Lobel* *Caput Gallinaceum*, by *Casalspinus* *Lupinus*, by *Dodonaus* *Vicia*, and by *Lugdunensis* *Polygala*; yet it is described by *Dioscorides*, as having Leaves generally longer than those of the *Lens*, a Stalk nine Inches in Length; a scarlet Flower, with a small Root; and, by *Pliny*, with Leaves a little larger than those of the *Lens*, a red Flower, and a small and slender Root. And, tho' both these Descriptions are short, yet they agree better with this Plant, than with the *Campanula arvensis*, to which it is refer'd by *C. Baubine*, in his Pinax. It is not certain, however, what Herb it is, some giving the Name of *Onobrychis* to the *Ruta sylvestris*; others to the *Galega*; others, again, to the *Hedysarum*; and others to other Plants: Besides, *Cornarius* thinks the *Onobrychis*, and *Onopordon*, to be the same. *Dale*.

2. *Onobrychis*; minor; filiculis echinatis, cristatis, majoribus & crassioribus aculeis præditis, donata. *M. H. 2.* 131. *Caput Gallinaceum, minus.* C. B. Prodr. 149.

3. *Onobrychis*; seu Caput Gallinaceum, minus; fructu maximo insigniter echinato. *Laet. Triumfett. apud fratrem*, 65.

4. *Onobrychis*; saxatilis; foliis Viciae angustioribus, & longioribus; Aquilegifolius. *T.* 390.

5. *Onobrychis*; Cretica; foliis Viciae; fructu magno, aculeato, & cristato. *T. C.* 26. *Boerb. Ind. alt. Plant.*

It is called *Onobrychis*, from *ὄν*, an Ass, and *βρύχον* (*brycho*) to bray, because the Smell of this Plant makes Asses bray, or because, when an Ass eats these Pods, he is always said to bray. *Hist. Plant. adscript. Boerhaav.*

ONOBRYCHIS is, also, a Name for several Sorts of HEDYSARUM.

ONOCITES. See ANCHUSA.

ONOCLEA. A Species of *Anchusa*, which *Paulus Aegineta*,

Lib. 7. Cap. 3. describes as having an astringent, and bitterish Root.

ONOCROTALUS. The Pelican, an aquatic, web-footed Fowl, as large as a Swan. The Fat is esteemed emollient, and resolvent.

ONOSOLAT, according to *Blancard*, is an Arabic Word, importing half a Scruple.

ONONIS. See ANONIS.

ONOPERDUM. A Name for the *Carduus*; *tomentosus*; *Oenanthe folio, angustiore.*

ONOPTERIS. See ADIANTHUM NIGRUM.

ONOS. See ASIRACUS.

ONOSMA. Offic. J. B. 3. 586. *Lycopsis.* C. B. P. 255. *Raii Synop.* 3. 227. *Lycopsis Anglica.* Ger. 658. *Emac.* 802. *Park. Theat.* 519. *Echium alterum.* Merc. Bot. 1. 31. *Phyt. Brit.* 35. *Echium alterum seu Lycopsis Anglica.* Mer. Pin. 33. *Echium ramosius annuum flore suave-rubente.* *Hist. Oxon.* 3. 441. STONE-BUGLOSS.

Onosma, which some call *Osmas*, others *Phlonitis*, and others *Ononis*, has Leaves like those of *Anchusa*, oblong, soft, four Digits in Length, and one in Breadth, lying on the Ground, and mightily resembling the Leaves of *Anchusa*; it has neither Stalk, Seed, nor Flower. The Root is somewhat long, weak, slender, and moderately red; it grows in rugged Places.

The Leaves, taken in Wine, expel the Foetus; and they say, that, if a pregnant Woman only treads upon this Herb, she afterwards miscarries. *Dioscorides*, Lib. 3. Cap. 147.

The Herb was observed, by the learned Dr. *Sherard*, growing in the Island of *Fersey*.

The *Onosma* is one of those Plants which have caused Divisions among Authors in Botany, who are not agreed whether to refer them. *Dioscorides*, in describing the *Onosma*, as having Leaves like *Anchusa*, but without Stalk, Flower, or Seed, has given great Occasion for Dispute. This Error of *Dioscorides* seems to proceed from his having observed it only in the first Year, after its Appearance above Ground, when it shoots forth nothing but Leaves, after the manner of the *Cynoglossum*, *Buglossum*, *Echium*, and other Plants of that kind; to which I should have refer'd it, if *Dioscorides* had not treated of them in distinct Chapters. It is, however, a vulgar Error, which others, also, have fallen into; for how is it possible for a Plant to be produced without Fruit or Seed? I chose to reduce it to this Plant, rather than another, from the Cut which *J. Baubine* has given us of it, and from the Likeness of its Leaves to those of *Anchusa*.

ONYX. Offic. Worm. 97. *Aldrov. Mus. Metal.* 915. *De Laet.* 62. *Charlt. Foss.* 34. *Kentm.* 49. *Onyx & Camebna.* *Boet.* 241. *Onychites.* *Schw.* 386. *Lapis Onyx dictus sive Unguis Humani candorem referens.* *Cap. Hort. Cath. Supp.* 2. 50. THE ONYX-STONE.

It is an opaque, or not very lucid Gem, of the Likeness, Colour, and Splendor of the human Nail, being, at least, of two Colours, white and black, which appear in two distinct Zones, and rather opaque, than diaphanous. *Pliny* calls the black Part of it *Morion Indicum*, or *Pramnion*, which, perhaps, is the *Morion* of *Schwenkfeld*.

As to its Virtues, it is supposed to induce Tranquillity of Mind by composing the Passions, and to quicken the Senses.

OOEIDES. An Epithet for the aqueous Humour of the Eye.

OOGLA. A Mixture of Milk, and Eggs.

OPALUS. Offic. *Boet.* 190. *Calc. Mus.* 207. *Geoff. Prælect.* 83. *Kentm.* 47. *De Laet.* 52. *Aldrov. Mus. Metall.* 978. *Opalus olim Pederos.* *Worm.* 107. *Opalus seu Opalis.* *Charlt. Foss.* 40. THE OPAL.

Opal is a beautiful Gem, of almost all Colours: According as the Rays of Light are refracted thro' it, it appears blue, purple, green, yellow, red, milky, and black; and hence it has been, by some, called the Gem of Gems. The best Opals are found in India, the more ordinary Sort in Cyprus, Egypt, Hungary, and in some Danish Islands. They all grow in a soft Stone, marked with black or dark Lines. It is said to have the same Virtues with the rest, but is never used in the Shops. *Geoffroy*.

OPERMETHIOLIM. The Spirit of Minerals. *Rulandus*.

OPHIASIS. A Species of Baldness. See ALOPECIA.

OPHIDION. A sort of short Sea-serpent, which is esteem'd aperitive, and good to purify the Blood.

OPHIGENIUM. A Name in *Oribasius*, *Collect. Medic. Lib. 1.* for the *Elaphoboscum*, or *Sisarum Germanorum*.

OPHIOGLOSSUM.

The Characters are;

It has but one Leaf; and the Fruit, which is lingulated, or like a Tongue, is divided into many Capsules, situated in a double Order, and full of Seed.

Boerhaave mentions but one Species of this Plant; which is the *Ophioglossum vulgatum.* C. B. P. 354. *Tourn. Inst.* 548. *Boerb. Ind. A.* 27. *Ophioglossum.* Offic. J. B. 3. 708. *Ger.* 327. *Emac.* 404. *Raii Hist.* 1. 126. Synop. 44. *Ophioglossum sive Lingua Serpentina.* *Park.* 506. ADDERS-TONGUE.

This is a small tender Plant, about four or five Inches high, consisting of a single thick green Leaf, smooth, and without Ribs, or large Veins, of an oval Shape, but sharp-pointed at the End,

End, from the Bottom of which arises a Stalk about two Inches high, bearing on the Top a slender crenated Tongue, about an Inch long, in which is contained the Seed, so small, that it is hardly visible. The Root consists of several matted Strings, or Fibres; it grows in moist Meadows, and is in its Prime in May; the Leaf soon perishing by the Summer Heat, and the Root remaining in the Earth.

Adders-tongue is a good vulnerary Plant, both given inwardly, either in the Juice, or Powder, for Bruises and Wounds; and outwardly boiled in Oil, for fresh Wounds, Ulcers, Bruises, and Inflammations. *Miller's Bot. Off.*

Dodonæus says, that *Baptista Sardus* pretended to cure Ruptures by the Use of the Powder of this Herb, and all Sorts of Wounds, by the Oil made by Infusion. *Marty's Tournefort.*

The fresh Leaves conglutinate Wounds, and cure an Enterocæle; for inward Wounds it is exhibited in Water of *Equisetum*. *Baptista Sardus* affirms, that the Powder of the Herb, exhibited for some Days, is of sufficient Efficacy for the Cure of all Sorts of Herniæ. The Oil, prepared of the Leaves macerated, for a considerable time, in Oil of Olives, or Omphacinum, exposed to the Sun, or, which is a shorter Way, boiled over the Fire, till the Leaves become dry and juiceless, and then expressed, is reckon'd one of the best Remedies, not only for recent Wounds, but for old Ulcers, and an Hernia; especially, says *Parkinson*, if a small Quantity of Oil of Turpentine be dissolved in it.

Mentzelius found a great Difference in the Size of the *Ophioglossum*, about the Town of *Furstenwald*. The least rises not above an Inch with its Tongue and Leaf; the middle-sized has a Leaf of two Inches, and a Tongue above three Inches in Length; the largest has a Leaf four Inches in Length, and one and an half in Breadth, with a Tongue in proportion; in the same Place he met with *Ophioglossa* of three Tongues, and two Tongues. The Farmers of the *Valedo* bruise it, and put it into boiling Butter, which, thus used, will keep two or three Years, as an Ointment, wherewith, after milking, they anoint their Cows Teats, which are chapt; or sore. *Raii Hist. Plant.*

The Name *Ophioglossum* is from *ὄφις*, *Ophis*, a Serpent, and *γλῶσσα*, *Glossa*, a Tongue, because the Fruit of this Plant resembles the Tongue of a Serpent. The Plant is vulnerary, consolidating, and resolvent; and is effectual for inflamed Wounds and Hæmorrhages. *Cæsalpinus* commends an Ointment prepared of this Plant, for an Hernia in Infants. Many strange Things are reported of this Plant, as that, by virtue thereof, a Person shall be preserved from evil Spirits, and Infection by Poison, with other wonderful Effects, which none is bound to believe. *Hist. Plant. adscript. Boerhaav.*

OPHIOSCORODON. Viper's Garlick, or Rocambole. See **ALLIUM**.

OPHIOSTAPHYLON. A Name for the *Vitis Alba*, or *Bryonia Alba*. *Oribasius, Medic. Collect. Lib. 11.*

OPHITES & SERPENTINUS. *Offic. Ophites.* *Charlt. Foss 18.* *Worm. 43.* *Schröd. 354.* *Aldrov. Mus. Metall. 752.* *Ophites veterum; Serpentine recentiorum.* *Boer. 501.* *Lapis Ophites.* *Marb. 1389.* **THE SPLEEN-STONE, or OPHITE.**

It is a very hard Sort of Marble like Porphyry, of a deep-green Colour, interspersed with some fainter Spots of the same. *Dale.* But we are told by *Dioscorides*, that one Species of this Stone is ponderous and black, another Ash-coloured and spotted, and a third distinguished by white Lines. All of them, worn as Amulets, are effectual against the Bites of Serpents, and the Head-ach; that with the white Lines, in particular, is said to cure the Lethargy, and Pain of the Head. *Dioscorides, Lib. 5. Cap. 162.*

OPHRIS. See **BIFOLIUM**.

OPHRYS, *ὀφρύς*. The lowest Part of the Forehead, where the Eye-brows grow; and the Hair of the Eye brows.

OPHTHALMIA, *ὀφθαλμία*, from *ὀφθαλμός*, an Eye. It sometimes signifies any Disorder, or Pain of the Eye; but it is used strictly to express an Inflammation of this Organ. *Monfieur de St. Yves*, a celebrated French Oculist, thus distinguishes the several Species of Ophthalmies, and directs the following Methods of Cure for each Sort.

An Ophthalmia, says he, is an Inflammation of the Conjunctiva, sometimes attended with violent Heat, and a Flux of Tears, sometimes without either Heat or Tears. This Inflammation sometimes extends over all the Globe of the Eye, and even to the adjacent Parts. Of all Disorders of the Eye, this is the most frequent, as it accompanies almost every Disease to which the Eye is subject.

Some of these Inflammations are without Danger, and easily cured; others are very dangerous, and difficult to cure. Their Cause is either external or internal. Internally they proceed from the Blood, whether from too great a Redundancy, or some acquired bad Quality of it; such are the Thickness, Viscosity, Acrimony, or too great Rarefaction, of the Blood.

If the Quantity of Blood be excessive, it will be carried too copiously into the minute Vessels of the Eye, and so produce an Ophthalmia.

If the Blood be too thick, as it is incessantly conveyed into the fine Vessels of the Eye, its Particles being too heavy and large to pass into these Vessels, the Circulation, in these Parts, must

be obstructed, and an Inflammation generated. When the Blood is too sharp, the Serosity, furnished by the lachrymal Gland, will partake of the same Nature, and by irritating the Conjunctiva, which it constantly moistens, will produce an Ophthalmia. If the Blood be too much rarefied, as the Rarefaction affects the fine delicate Vessels of the Eye, it will occasion an Inflammation.

As to external Causes, it is evident, that whatever can violently irritate the Conjunctiva, and the Membrane which covers it, or can make a Separation in the Vessels of those Parts, will necessarily cause this Distemper.

An Ophthalmia is sometimes attended with very dangerous Accidents; it is often exasperated by improper Remedies, apply'd by the Patients, when first attacked; it is sometimes so violent, that its Progress can hardly be stopped, or the Sight preserved.

These Inflammations are generally divided into the dry and humid: But I shall add some others; for I have observed different Symptoms in each particular Species, as will appear in the Sequel.

The DRY OPHTHALMIA.

This Species brings a Redness on the Eye without Tears, or any purulent Matter. It occasions no Swelling of the Eye-lid, nor Pain in the Eye, or in the Head. It is caused by a thick Blood, which stagnates only in some of the Vessels of the Conjunctiva, only Part of the White of the Eye being red.

The HUMID OPHTHALMIA.

This Sort is produced by a great Quantity of Lachrymal Lymph, which, as it passes continually over the Globe of the Eye, irritates the same by its Acrimony, inflames it, and the inner Part of the Eye-lids, which become swelled; it, likewise, often ulcerates the transparent Part of the Cornea. This Disease is attended with shooting Pains in the Eye, and the Patient cannot behold the Light without intense Pain. Children, and old People, are both subject to this Disease, in whom it becomes very obstinate, by reason of the natural Moisture of their Temperament. When it runs to a Length in Children, their Lips and Noses swell, and are covered with Scabs and Pustules, that sometimes overspread the Face.

The OPHTHALMIA, from a DEFLUXION of the BRAIN.

In this Species an Itching is excited in the Eye, a thick glutinous Matter ouses out, and conglutinates the Eye-lids in the Night. This Kind is most easily cured.

The OPHTHALMIA, attended with dry FILM.

This resembles the first dry Sort; the Conjunctiva is red, and the Eye-lids are smeared with dry Film like gritty Flour, Part of which falls on the Globe of the Eye; and the Patients think there is something in it, which is very troublesome, and makes the Conjunctiva appear red.

The OPHTHALMIA in the GLOBE of the EYE towards the ACANTHI.

This fifth Kind is when the Patient's Eyes are red only towards the Angles, while the upper and lower Parts of the Globe are not at all affected; when the Caruncula Lachrymalis becomes inflamed, the Vessels which pass under it, swell even to the transparent Part of the Cornea. This Disease often changes to the Unguis. See **OCULUS**.

The OPHTHALMIA, with PIMPLES on the GLOBE of the EYE.

In this Species there is a Swelling of the small Plexus or Bundles of Veins, which are sent from the inner Surface of the Eye-lids, and terminate where the Conjunctiva is joined with the transparent Part of the Cornea; a Pimple, as big as a Lentil, appears in that Place. Sometimes the Redness is continued to the Cornea, and, at its Extremity, whitish Pus may be seen. It is evident, that the Matter producing these Pimples, ouses thro' the Ends of the aforesaid Vessels. This Disease can only be cured by piercing the Pimple, or discussing the contained Matter.

The OPHTHALMIA, with LITTLE ABSCESSSES on the CORNEA and CONJUNCTIVA.

In this seventh Species all the Conjunctiva becomes red, with small Abscesses, seated partly on the transparent Cornea, and partly on the Conjunctiva. Sometimes there are five or six of them round the Eye; they are sometimes as big as a Pin's Head, and sometimes as big as a Lentil.

The ERYSIPELATOUS OPHTHALMIA.

This eighth Sort reddens the Conjunctiva, swells the Eye-lids, and causes violent Pains and Heat both in the Eyes and Head. The adjacent Parts, as the Temples, the Forehead, and the Nose, are covered with Scales and Scabs, that leave, when they fall off, Marks for Life, resembling those of the Small-pox.

Of the OPHTHALMIA, called CHEMOSIS.

In this ninth Kind, all the Conjunctiva is swelled to the Thickness of a Finger's breadth; this makes the transparent Part of the Cornea appear, as it were, sunk in a Cavity. This Inflammation is attended with violent Pains in the Head and Eye, with Heaviness over the Orbit, and with Want of Sleep; there is, likewise, a Fever, Pulsation, and the like. All the transparent Part of the Cornea often comes away by Suppuration, which destroys the anterior Chamber of the Eye. The Cicatrix, subsequent to the Suppuration, hinders the crystalline and vitreous Humours from falling out; and, by that means, the entire Decay of the Globe is prevented: Sometimes both happen.

This Species of Ophthalmia is often the Consequence of a Stroke received in the Eye, or in the adjacent Parts. At other times it comes without any external Cause preceding the Disease. It may be caused by a critical Translocation, after a malignant, or other Fever.

A Lady, who got a Pleurisy by riding in the Rain, not being ordered to let Blood by the Country Physicians, there ensued an Ophthalmia of this Sort, upon which the Pleurisy abated; but the Fever, and Inflammation of the Eye, still continuing, it soon turned to an Abscess. The other Eye was seized, about the twentieth Day, with the same violent Symptoms. When the Patient was in a Condition to be removed, she came to Paris to consult me. Having examined her Eyes, I found the first I mentioned, was entirely lost, and the other was covered with a Cicatrix, which I took off by proper Remedies; so that she can now see enough to find her Way.

Of the VENEREAL OPHTHALMY.

This tenth Sort has almost the same Phenomena with the last, with this Difference, that the Conjunctiva, which is swelled, appears hard and fleshy. It begins thus: A great Quantity of whitish Matter, with a yellowish Cast, issues through the Eye. This Disease, which proceeds from a Venereal Cause, is very rare: Yet I have seen several attacked with it. In most of them, this Disease appeared two Days after the Beginning of a virulent Gonorrhoea; the Matter, not running off by its usual Passages, was removed to the Eye; whence there flowed a like Matter, which stained the Linen in the same manner; as when it passed through the usual Channels.

The OPHTHALMIA of the CHOROIDES.

In this eleventh Species the Choroides and Uvea are inflamed, and the Conjunctiva only lightly; it is attended with a Flux of Tears. The looking at the Light is painful to the Patient, who feels acute Pains towards the Top of the Head and the Temples.

The OPHTHALMIA, from STROKES on the EYE.

The Violence of the Stroke, or the Shape of the Instrument, makes all the Variation found in this Disease.

The OPHTHALMIA, from the RUPTURE of the VESSELS of the CONJUNCTIVA.

In this thirteenth Species, the Eye grows very red, though the Patient feels no Pain, neither is the Light uneasy to him. It is caused by the Rupture of some Blood-vessel of the Conjunctiva, which occasions an Effusion of Blood between the Laminae of that Membrane.

Of the PROGNOSTIC of OPHTHALMIAS.

The Symptoms of all Ophthalmias are not alike to be feared, or accompanied with the same Danger. The humid Ophthalmia is dangerous, either on account of its Duration, or of its Returns, or of the Acrimony of the Lymph, that excoriates and ulcerates the transparent Part of the Cornea; it, likewise, destroys Part of the Sight, by the Cicatrices which remain after the Ulcers.

The Erysipelatous Ophthalmia is dangerous, because of the violent Pains which it causes, besides the considerable Damage it does to the Sight.

The Chemosis is very fatal, by reason of the Pains which follow it, and often the very Loss of Sight. The Venereal Ophthalmia is equally dangerous.

The Ophthalmia of the Choroides, and the Uvea, is very dangerous; for it often destroys the Sight, or else generates a membranous Cataract.

The Ophthalmia from Strokes on the Eye is more or less dangerous, according to the Parts which are damaged by the Stroke.

The Ophthalmia subsequent to Strokes on the Head, by which the Meninges have been hurt, is a Sign of Death.

When in the Beginning of the Small-pox the Eyes are, as it were, filled with extravasated Blood, it is, also, a mortal Sign; for it denotes, that the Blood is carried with Violence to the Head.

The other Species of Ophthalmias are, in general, not dangerous; being, for the most part, free from any fatal Symptoms. A Diarrhoea cures an Ophthalmia, according to Hippocrates.

Of the CURE of OPHTHALMIAS.

The general Remedies are, Bleeding, to lessen the Quantity of Blood; Purging in some Cases, which would, in other Cases, be prejudicial. The Spots, Ulcers, and certain Abscesses, of the

transparent Part of the Cornea, attended with an Inflammation of the Conjunctiva, are more speedily cured by Bleeding in the Eye, than by any other Means; though in some Cases it is not proper. See the Methods of performing this Operation, under the Article OCLUS.

The CURE of the DRY OPHTHALMIA.

For some Days wash the inner Part of the Eye with a Collyrium, made of twelve Grains of prepared Tutty, dissolved in two Ounces of Rose and Plainain-waters, with the Addition of a Spoonful of Spirit of Wine. Take of *Paul's Betony*, Thyme, and Red Roses, each a Pugil; two Stalks of Mullein: Boil them in a Gallon of Wine; and, at Night, apply to the Eye a Compress dipt in this Wine.

As this Species of Ophthalmia is not dangerous, it requires but few Remedies; and is sometimes cured by Bleeding, repeated according to the plethoric Constitution of the Patient.

The CURE of the HUMID OPHTHALMIA.

This Species is sometimes very difficult to cure, and requires more Medicines than the last, besides such Repetitions of the general Remedies, as the State of the Patient may require.

Bleeding at the Neck, and in the Foot, is often necessary. Apply a Collyrium, made with the distilled Waters of Fennel, Eye-bright, and Plantain, of each two Ounces; in which dissolve two Grains of Salt of Lead. Sometimes we are obliged to use a Seton, a Caustery, and Blisters. If the Vescicatories incommode the Kidneys or Bladder, they must be laid aside, and other Means employ'd. If the first Collyrium, which is design'd only as a Sweetener, after some Days, does not succeed, let another be substituted, which, by constringing the Pores, will hinder the great Afflux of Tears to the Eye; for which Reason you may omit the Salt of Lead, and dissolve, in the same Waters, half a Dram of the white Troches of *Rhafs*. When the Flux of Humours has ceased, if any Ulcer remains, as often happens, on the transparent Part of the Cornea, make use of a Dissolution of the *Lapis Divinus* in common Water.

To make this Stone, put of Alum, Salt-petre, and Vitriol of *Cyprus*, each a Pound, into a glazed earthen Vessel; then place the Vessel in a Furnace, and surround it with Charcoal, till it comes half an Inch above the Bottom of the Vessel; and set Fire to it. As you see the Materials melt, stir them with a long small Stick; and, when they are raised in the Ebullition about three Fingers-breadth, let the Vessel be taken from the Fire, and throw in two Drams of Camphire, continuing to stir the Whole, till the Camphire is entirely dissolved; then cover the Pot, as quick as you can, luting its Junctures with some Rolls of firm Paste, a Foot long, and half an Inch thick. Leave it so for twenty-four Hours; then break the Pot, and separate the Stone, which put into a Glass Vessel, closely stopp'd.

The Dose is from twelve Grains to half a Dram, dissolved in half a Pint of common Water: The Dissolution of two Drams of Sugar-candy, with a Spoonful of Brandy, may be added.

When the Ulcer is cicatrized, if this Remedy does not entirely remove the Spot, make use of the Powder of Cuttle-bone and Sugar-candy mix'd together; drop about the Bigness of a Lentil of this Powder, every Morning, on the Spot. We must sometimes have recourse to more powerful Remedies; such are, Oil of Linen, and Powders in which Alum is an Ingredient.

Humid Ophthalmias are often attended with scrophulous Tumors, as appears from the Swelling of the Glands about the Neck.

In this Case, we must use Remedies that can eradicate the Cause of this Disease, which otherwise will destroy the Eyes by the Ulcers and Spots, which succeed it; for which Reason, besides the foresaid Remedies, the following Pissan must be prepared.

Take of *China* and Burdock-roots, sliced, each one Ounce; boil them in five Pints of Water, to half the Quantity; add an Handful of *French Marigolds*, and some Liquorice. The Patient must drink, every Day, about three Half-pints of this Pissan, two in the Morning, and one in the Afternoon, to be continued for a Month. Let him take thirty Grains of *Æthiops Mineral*, three Days successively. Let him be purged, the fourth Day, with a very brisk Purge; still taking care, that it be suited to the Disease, and the Patient's Constitution. Then let him rest four Days, without taking any *Æthiops*; afterwards renew the Use of the *Æthiops*, for three Days; and let him be purged again, which must be continued, till he is perfectly cured.

The Dose of the *Æthiops* must be increased, by little and little, to a Dram; for, when it is given in too small a Quantity, it has not its full Effect, nor does it answer the End expected from it: Regard must still be had to the Patient's Age, Temperament, and the like Circumstances.

The CURE of OPHTHALMIAS, from a DEFLUXION.

After the general Remedies, the Ointment of Tutty must be used; every Night, about the Bigness of a Lentil of it, when the

the Patient goes to Rest, must be put in the Corner of his Eye, towards the Nose, so that it may enter into the Eye. The Eye must be washed with warm Water and Brandy, ten Parts of the first to one of the last. If the Angles of the Eye-lids, which are often ulcerated, do not cure with the Ointment of Tutty, a Dissolution of Lapis Divinus must be used.

The CURE of the OPTHALMIA, with FILM.

Let Sal Ammoniac, and Sugar of Lead, of each seven Grains, be dissolved in Rose and Plantain-waters, of each four Ounces; with which the Eye must be bathed three or four times a Day.

The CURE of the OPTHALMIA in the GLOBE of the EYE, towards the ANGLES.

Use a Collyrium made of white Vitriol, and Florentine Orice, of each one Dram; infused in two or three Pints of Water, according as it is required, stronger or weaker.

The CURE of the OPTHALMIA, attended with PIMPLES.

Make use of a Dissolution of the Lapis Divinus in common Water, when the Pimples lie only on the Conjunctiva; but if they are spread on the transparent Part of the Cornea, and Pus appears between the Pellicles of that Membrane, then Remedies, proper for Abscesses of the Eye, must be applied; which are mentioned below.

The CURE of the OPTHALMIA, with little ABSCESSES on the CORNEA and CONJUNCTIVA.

Apply between the transparent Part of the Cornea and the Conjunctiva, where the Abscesses are formed, Remedies proper to open them, and likewise to cicatrize them; for the Inflammation and Violence of the Disease do not abate, till the Matter is discharged.

First, then, apply the distilled Water of Camphire; as soon as it begins to penetrate, use a Dissolution of Lapis Divinus in common Water; it will cleanse and cicatrize the Ulcers.

The CURE of the ERYSIPELATOUS OPTHALMIA.

This Species is difficult to cure. First apply the distilled Water of Elder-flowers, with a tenth Part of Brandy; warm it, and bathe the Eye with it. You must likewise have recourse to a Seton, to Bleeding in the Arm, in the Neck, and in the Foot; afterwards, Purging and Blisters, if necessary, must be employ'd.

The CURE of the OPTHALMIA, called CHEMOSIS.

The Violence of this Disease requires a speedy Cure; for which Reason, as soon as the Derivation on the Eye is perceived, the Patient must be let Blood, the first Day, twice in the Arm; the next Day, let him be purged briskly; and the same Night, if the Symptoms continue, let him be bled in the Foot; the Day after the Purge, let him be bled in the Neck. This Disease, with regard to the Eye, is the same as the Pleurisy, with regard to the Breast; for the Blood has the same Colour and Quality in both Cases. Let a large Blister be laid to the Patient's Shoulders. In the Beginning, Poultices are generally applied; but that Method is very pernicious; for the Weight of the Cataplasms is troublesome, and rather tends to bring the Matter to a Suppuration, than to discuss it; whereas the proper Remedies are such as can mitigate the Inflammation, and carry off the Matter that causes it by Perspiration; such is Brandy, mixed with a great deal of warm Water. The Eye must be washed often with this Mixture. Let a Dram of Diaphoretic Mineral, fresh-made, be mix'd in two Pints of common Pilsen; the Patient must drink this Quantity in a Day and an half. If the Purge gives Ease, let it be repeated again in two Days; and, if the Eye seems disposed to a Suppuration, apply a resolvent, discutient Medicine, to prevent it. Take Sage, Rosemary, Hyssop, and red Roses, each a Pugal; boil them, for three or four Ebullitions, in half a Pint of red Wine; dip Compresses in it, and lay them to the Eye, taking care not to press it too much with the Bandage. If a Whiteness appears in the transparent Part of the Cornea, drop some of this Wine into the Eye, three times a Day; wet the Compress, as it grows dry. If, by these means, the Swelling of the Eye ceases, and the Globe does not come to a Suppuration, or if the Matter of the Suppuration be resolved and discussed without injuring the Eye, then make use of the distilled Water of Camphire; it must be dropped, from time to time, into the Eye, till all the Redness goes off. If the Eye, as often happens, remains weak, instead of this Water, I use a strengthening Water, which restores the Eye to its first State. We are sometimes obliged to open the Abscess with a Lancet, lest the Stagnation of its Matter might destroy the Parts of the Eye which inclose it. The Manner of performing that Operation we shall shew presently in the Abscess of the Eye.

The CURE of the VENEREAL OPTHALMIA.

This requires as speedy Help as the preceding Species. The Patient must be bled in the Foot, to make a Revulsion of the Humours from the Eye; he must likewise take the Panaceum Mercuriale; he must bathe at home Morning and Evening; he must be purged from the first Day of his Bathing, which sometimes must be repeated several Days successively; he must take the Panaceum every Night; his Eye must be washed every Morn-

ing, with a Mixture of Water and Brandy; Compresses, wetted in the Wine mention'd above, must be constantly kept to his Eyes. By this Method, the Disease, if taken in time, will soon be cured; otherwise the Eyes will perish, or very little Sight will remain after the Cure.

The CURE of the OPTHALMIA of the CHOROIDES.

The Cure of this Species is the same as that of the Chemosis, with this Difference, that two Drops of the distilled Water of Camphire must be put into the Patient's Eyes every two Hours.

The CURE of the OPTHALMIA, from Strokes on the EYE.

As in this Species there is always some extravasated Blood, it is necessary to apply anodyne discutient Medicines; such as Pigeons Blood, which must be dropt into the Eye twice a Day; Compresses steep'd in warm Wine, mixed with some Drops of the Balsamum Commendatoris, must be laid to the Eye-lids; Bleeding must be repeated once, or oftener, as the Disease seems to require it. The Eye must be washed, three times a Day, with a Mixture of Aqua Vulneraria, one Spoonful in five Spoonfuls of the distilled Water of Eye-bright. Other Remedies may be afterwards used; still having due Regard to the State of the Eye, and to the Symptoms subsequent to the Stroke.

The CURE of the OPTHALMIA, from the RUPTURE of the VESSELS of the CONJUNCTIVA.

This Species is commonly cured by dropping Pigeons Blood into the Eye, three times a Day; and afterwards applying a Compress, wetted in the Vulnerary Water, which must be taken off, when it grows dry: Then let fall some Drops of this Water into the Eye, to clear it of the Pigeons Blood. The White of the Eye, from red, at first becomes yellow, and afterwards recovers its natural Whiteness.

Of the OPTHALMIA, subsequent to the SMALL-POX.

The Small-pox causes four Sorts of Diseases in the Eyes; the Inflammation of the Conjunctiva, the Fistula Lachrymalis, the Abscess of the Cornea, and Ulcers in the Eye-lids. All these four are sometimes united, and sometimes there is only one. In the Course of the Small-pox, the Face and Eye-lids swell, the Eyes redden, and a glutinous Matter issues out of them; this glews the Eye-lids together, so that, when Care is not had to loosen them, they remain shut several Days. This Humour, thus confined between the Eye-lids and the Globe, becomes acrid, and, by that means, may ulcerate the transparent Part of the Cornea, and injure the Sight considerably.

When the Pustules of the Small-pox, in the other Parts of the Body, suppurate, they cicatrize; but the Pustules on the Edge of the Cartilage of the Eye-lids, between the Cilia and their internal Surface, do not cicatrize, by reason of the acrimonious Serosity, which incessantly moistens the Eye. Hence follow Ulcers, which continue, sometimes, several Years, and even during Life, if they be not remedied.

There are two Sorts of Ulcers caused by the Small-pox in the Eye-lids; some are attended with a sort of fungous Flesh, which retards their Cure, till it be consumed. Others undermine the Glands that separate the Film, and so corrupt that Humour, which, by sticking to their Surface, contributes very much to prolong the Ulcers; in Length of Time, it makes the Eye-lashes fall off.

The third Accident, caused immediately by the Small-pox, proceeds from a viscid Humour, collected and lodged between the Globe and the Eye-lids, when they have been kept shut too long. This Humour enters the Lachrymal Points, passes into the Lachrymal Bag, creates an Obstruction in the nasal Chanel, and so produces a Fistula Lachrymalis.

The fourth Accident commonly happens twenty Days after the Small-pox, and sometimes in the Height of the Disease; it is caused by a Pustule, which appears in the Middle of the transparent Part of the Cornea, between its Pellicles; the Hardness of the Cornea hinders the Pustule from coming out, unless it be superficial; then the Pustule penetrates inwardly, and, by that means, generates an Abscess; or else the Matter is extravasated between the Pellicles, congeals, hardens, and forms a Spot in that Part.

Besides these Accidents, sometimes a violent Defluxion supervenes, when the Patient, after all the Pustules are cured, comes to take the Air. As the Pores of the Skin are exposed to the Air, they are, as it were, closed by it, so that the Perspiration of the Residue of the saline Humour, which passed through the Ulcers of the Skin, is hindered by this Obstruction of the Pores. This Humour, thus obstructed, returns into the Vessels, is discharged on the Eyes, and generates an humid Ophthalmia, attended with an Humour so corrosive, that it excoriates the Skin of the Face.

Of REMEDIES for the OPTHALMIA, subsequent to the SMALL-POX.

Here I must refer the Reader to the Cure of the humid Ophthalmia; I shall only add this Caution: During the Small-pox, use a Collyrium made of Saffron, and the distilled Waters of Roses and Plantain; and the distilled Water of Camphire, if applied in the Beginning, prevents all these Disorders. It suffices to put some

some Drops of it into the Eye, three or four times a Day; and, to hinder the glewing of the Eye-lids, which is of great Consequence, dip a Feather in this Liquor, and draw it between the Eye-lids several times in the Day and Night.

The Remedies for the Pustules of the Small-pox, on the transparent Part of the Cornea, are under the next Head; and those for the Fistula Lachrymalis, see under that Article.

In Ulcers on the Edges of the Eye-lids, Ophthalmic Waters are, generally, of little Service; but I have found from my own Experience, that, by touching them with the Lapis Infernalis, they cicatrize easily. The violent Heat of the Caustic must be abated, as soon as they have been touched, by washing the Eye in a small Glass full of warm Water. But, above all, Care must be taken, that the Part of the Eye-lid, which was cicatrized, may not bear against the Globe of the Eye, till the Pain is entirely gone off. They may be touched, in this Manner, once or twice a Week, till they seem to require no more Use of the Caustic; then lay on these Places, Morning and Evening, Tutty reduced to a very fine Powder; it will cicatrize them. We are to observe, that these Ulcers, which lie deep, are more difficult to cure, than those attended with fungous Flesh.

Of the Abscess of the Eye.

This Disorder may be seated in different Parts of the Eye; sometimes on the transparent Part of the Cornea; at other times, between the Conjunctiva, and the opaque Part of the Cornea; and often on the Uvea.

By Abscess I understand a Collection of Pus, whether it be great or small. When the Abscess is in the transparent Part of the Cornea, as often happens after the Small-pox, it is soon known from a Whiteness which attends it: But when it begins between the opaque Part of the Cornea, and the Conjunctiva, it may be known from the Swelling of the Eye, which is more tumefied at the Place of the Abscess, than in any other Part. If the Abscess be formed in the Uvea, it often lurks concealed, till the Pus is extravasated into the Aqueous Humour.

Abscesses which attack the transparent Part of the Cornea, begin, sometimes, by a little white Spot, which appears on the first Pellicle of that Membrane, which becomes a little raised. This Species is easily cured by pricking it slightly with the Point of a Lancet, without piercing the other Pellicles. But if the Abscess lies deeper, and in the Middle of the thickest Part of the Cornea, and spreads to such a Breadth as to cover almost all the transparent Part of that Membrane, it then becomes what is commonly called an Hypopion. But if this Abscess be not so large, and it breaks on the Inside of the Eye, and that the Pus falls into the anterior Chamber, between the Iris and the transparent Part of the Cornea, and there makes a Gathering in form of a Speck, shaped like an Half-moon, resembling that which appears at the Bottom of our Nails, it is then called Onyx.

[Heister gives a different Account of Hypopion and Onyx. See HYPOPION and OCULUS.]

Sometimes the transparent Part of the Cornea is clear of the Abscess, which lies between the Conjunctiva and Sclerotica, or in the Duplication of the latter; the Pus breaks into the anterior Chamber, between the Iris and the transparent Part of the Cornea. In the first Case, the Pressure of the Eye-lids may occasion it; and, in the second, it may proceed from the Pressure of the Aponeuroses of the Muscles of the Globe.

In all these different Abscesses, there is great Danger of losing the Sight; several of them, however, are cured, without the least Damage to the Eyes. In the Cure of the Chemosis, I proposed a Remedy to resolve this Collection of Pus; and therefore, I shall here only speak of an Operation, which is sometimes necessary to discharge it. It is requisite, first, to give a Rule to know the Quality of the Pus in the Eye, which requires this Operation; for often the Matter, that escaped into the anterior Chamber, between the Iris and the transparent Part of the Cornea, is dispersed by the Help of Remedies already described; though this Matter cannot be justly said to be dissolved, but is rather precipitated to the Bottom of the Eye.

When this Pus is not dispersed, but rather increases, so as to enter the Hole of the Pupil, it is then full Time to perform the following Operation.

Let the Patient be set fronting a great Light, with his Head on the Back of an easy Chair; then make an Incision in the transparent Part of the Cornea, under the Hole of the Pupil: You must take care the Point of your Lancet do not touch the Iris, which lies behind the Pus.

The Aperture must be made long enough to let the Pus out; to help the Discharge of it, inject warm Water into the Aperture; it will wash, and, as it flows out, bring away the Matter. Apply to the Eye a Compress wetted in a Collyrium, made of Rose, Fennel, and Plantain-water, mixed with the White of an Egg; the Compress must be kept moist, by sprinkling it, from time to time, with the said Collyrium; some of which must be dropt, three or four times a Day, on the Orifice in the Cornea. Some Days after this Pus is emptied, there is, for the most part, a Collection of fresh Pus, in the Place from whence the former was discharged. In this Case, introduce a fine Stilet into the In-

cision made to open the Abscess; and so let out this Matter, as you had done the first time. If no fresh Matter gathers, the Orifice may be closed; and, if the Eye still continues inflamed, apply the proper Remedies, which I need not repeat.

OPHTHALMIATER. An Oculist.

OPHTHALMOS, ὀφθαλμός. The Eye. See OCULUS.

OPHTHALMOXYYSIS, from ὀφθαλμός, the Eye, and ξίς, to scrape. A Brushing of the Eye. See OCULUS. Heister. Chirurg.

OPHTHALMOXYSTRUM, of the same Derivation as OPHTHALMOXYYSIS. A Brush for the Eyes. See OCULUS.

OPIATA. The Ancients justly called those Medicines Opiates, in whose Composition there was Opium, or any other Ingredients, of a narcotic Quality; but, at present, the Name of Opiates is unjustly and abusively bestow'd upon Medicines prepared without Opium, whether of the corroborative, alterative, or purgative Kind, only on account of their Consistence, which resembles that of the Theriaca, and other Opiates of a like Nature.

These are, more properly, called Electuaries, which are, at present, divided into those of the solid Kind, otherwise called Troches; and those of a softer Consistence, by some called Opiates, both of which were, by the Greeks, called by the common Name of Antidote; which, however, did not comprehend purgative Medicines, as our Word Opiate does.

An Opiate, therefore, is a Medicine of a thicker Consistence than a Syrup, and, like the true Theriaca, prepared with Opium, scarcely fluid. It consists of various Ingredients, made up with Honey, or Syrup; and is to be used for a long time, either for purgative, alterative, or corroborative Intentions.

Hence there are Opiates of three Kinds; that is, of a purgative, or alterative, or of a corroborating Quality. Morelli Formula Medicament.

OPION. The same as OPRUM; which see.

OPISTHOBARES, ὀπισθοβαρές, the Name of a Collyrium, of Use in Asperities of the Eye-lids, and described by Aetius, Tetrab. 2. Serm. 3. Cap. 110. from Oribasius. It was otherwise called HARMATION, and EUTONON.

OPISTHOCEIMON, ὀπισθοχειμών, from ὀπισθεν, behind, backwards, and χειμών, the Winter, in Lib. 1. Epid. and Lib. 1. de Humor. signifies the cold Season at the latter End of the Winter, which is, generally, then most severe.

OPISTHOCRANION, ὀπισθοκρανιον, from ὀπισθεν, behind, and κρανιον, the Cranium, in Aegineta, Lib. 6. Cap. 2. is the Occiput, or hinder Part of the Head.

OPISTHOCYPHOSIS, ὀπισθοκύφωσις, from ὀπισθεν, backwards, and κύφωσις, of κύφω, gibbous, is the same as Cyphosis, or an Incurvation of the Spine backwards. Gibbosity.

OPISTHOTONOS, ὀπισθότονος, of ὀπισθεν, backwards, and τόνος, from τείνω, to stretch, is a Species of Convulsion; for which see TETANOS, and EPILEPSIA.

OPIUM. This is an inspissated Juice, of a blackish-brown Colour; sometimes redish, of a bitter Taste, and a very disagreeable Smell. The Greeks distinguished two Kinds of it; one got by wounding the Papaver album, Officin. the other by Expression. The Opium which we have, is of the first Kind; and as it was cultivated formerly in Egypt, near the City of Thebes, it has acquir'd the Name of Opium Thebaicum. If we may believe Kempfer, all the Opium now used in the East, is what transudes spontaneously from the Plants in Natolia, and other Places. But M. Tournefort, and several other modern Travellers, could find no such Opium among the Turks, all that they met with being the same with what is brought to us in soft Lumps. They, also, observe, that the sober People among the Turks seldom take above a Dram in a Day; and a few Grains of that Quantity are always mix'd in their Coffee. In the Empire of the Great Mogul, Opium is sold as commonly in the Shops, as Tobacco with us. The Inhabitants prepare it in different Manners, and mix it with different Ingredients, such as Rhubarb, the Extract of Rhubarb, and the like. Some add to it other narcotic Substances, such as the Datura. This last is generally the Artifice of the Quacks, by which they who take this, are thrown into pleasing Dreams, which they take for Ecstasies, and believe to be real. Kempfer relates many wonderful Effects of this Preparation, which he terms the Indian Nepenthe.

The Effects of Opium are always narcotic, whether taken inwardly, or applied externally; and it has been found to cause Sleep, when given in a Clyster, better than when taken by the Mouth. When applied to the Eyes and Ears, it has caused Blindness and Deafness; and Galen relates, that an Opium-plaster, laid on a Gladiator's Head by a Stratagem of his Enemy, killed him in a little time afterwards. This Author, also, says, that he never used Opium, except in very pressing Cases. Opium does not make the Pulse quicker, or harder, than it was before; but only greater, and heats very much; which is a sure Proof, that it dissolves and rarefies the Blood; and this appears also from its causing an Itching in the Skin, and sometimes Sweat. It is observed of the Turks, who are killed in Battle, that as soon as their dead Bodies are removed from the Places where they fall, they begin to bleed, their Blood being made more fluid by the Opium

Opium which they take. By this Rarefaction of the Blood in the Vessels, the Nerves which lie near these Vessels, are compressed; and thus the Course of the animal Spirits is stop'd, as is, also, the Secretion of many Fluids, such as the Bile and Urine, which occasion Costiveness, and the making of very little Water. Opium, in all Probability, acts by its narcotic Sulphur, which divides and rarefies, in an extraordinary Manner, the sulphureous Parts of the Blood: And accordingly we observe all Vegetables, which contain an Oil of this kind, such as Nutmeg, Saffron, and the like, produce in the Body an Effect of the same Nature with that of Opium. Neither is it at all unfeasible, that Sulphurs should be capable of a very great Degree of Rarefaction, since the Smell of Musk, or Ambergrise, may extend through so large a Space. *Pitcairn* was of Opinion, that the Effects of Opium were owing to its volatile Salt; but it seems to contain that Principle in too small a Quantity for such Operations.

When a Person has taken too great a Quantity of Opium, the first Thing to be done is, to empty the Vessels by copious Bleeding, if the Patient's Strength can bear it. The next Thing is to drink acid Liquors, such as Vinegar, Lemonade, Syrup of Barberries, and such-like, which coagulate the Blood, and thus give the Vessels room to contract. Smelling to Vinegar, and all Aromatics, is also proper; and, if the Stupor be very great, Scarifications ought to be made; and Vinegar and Salt sprinkled upon the scarified Parts. Blisters and sharp Clysters answer the same Effect.

The Rules to be observed in taking Opium, are these;

1. If the Patient be plethoric, he ought not to take Opium, till he has lost some Blood.

2. It ought not to be given in the time of the Menfes and Lochia of Women, nor during the usual Flux of the Hæmorrhoids in Men, because it stops all these natural and healthful Evacuations. Neither ought Opium to be given in every Diarrhoea, because, if it be critical, the Stoppage thereof may be very hurtful. It must, also, be very improper in a Suppression of Urine; and the general Rule is, that, when the Suppression of any one Evacuation by Opium is foreseen, other Evacuations, especially by Bleeding, ought to succeed.

3. Opium ought never to be taken on a full Stomach, because it hinders Digestion, and proves, commonly, emetic. The Digestion ought, therefore, to be completed at the Time of taking it; and the same thing is to be said of all other Narcotics, which, given unseasonably, and for a long Continuance of Time, quite destroy the Appetite, bring on Hickups, Nauseas, and habitual Vomitings.

4. Persons who begin to take Opium, ought to venture only on a very small Quantity at first, because the Effects of the same Quantity on different Persons are very different; and there is no way to determine, but by Experience, how much any Person can bear. Half a Grain has been found to cause Sleep for twenty-four Hours together, to a Person who, afterwards, required half a Dram to produce half that Effect. For it is a certain Observation, that they who accustom themselves to take Opium habitually, must often increase the Dose, otherwise it gradually loses its Effect on them; and the elder *Geoffroy* knew a Woman who took seventy-two Grains every Day, merely to ease the Pain of a cancerous Breast. The common Quantity among the *Turks* is a Dram in a Day; but some take much more.

The Antients were extremely cautious in giving Opium; but, in the Beginning of the last Century, *Felix Platerus*, a learned Physician of *Basil* in *Switzerland*, began to bring the Use of it in Vogue. *Sylvius de le Boe*, Professor of Physic at *Leyden*, perfected what *Platerus* began; and, from that Time, many of the most famous Physicians in *Europe*, such as *Sydenham*, and others, found, by certain Experience, that it was one of the most valuable Medicines in the World, when prudently administered, in calming the too violent Motion of the Blood, and easing Pain.

There are, however, still some very great Men, who continue Enemies to Opium; and among these *M. Stahl* has declared himself, in his Dissertation *De Imposturis Opii*. They are afraid to use it for the Ends just mentioned, for fear of suspending the Crises which commonly happen after violent Pains, such as those of the Gout and Rheumatism; and in acute Distempers, in which the Fluids are violently agitated, they apprehend, that by giving Opium, to diminish these Motions, they only throw a Veil over the Distemper; which hinders them from observing its true Genius, and the Tendency of Nature in the Course of it. Of this they cite Pleuritis as an Example; and they are certainly in the right, not to give Opium in that Disease.

But, notwithstanding all the Strength of these and other Reasons against the Use of Opium, and the Authority of those who advance them, this Medicine is undoubtedly very proper on many Occasions; as in great want of Sleep, too great Motion of the Fluids, occasioned by purgative, and other kinds of Medicines, in great Defluxions, and in stubborn Coughs. *Geoffroy*.

PREPARATIONS OF OPIUM.

EXTRACTUM OPII: EXTRACT OF OPIUM.

Put four Ounces of good Opium in thin Slices, into a Glass Body, wherein there are two Pounds of Spring-water; set

it in Sand, and stop the Mouth of the Body with another Glass: Make Fire under it, till by gradual Heat it is made to boil, in which State keep it two or three Hours; then let out the Fire, and, while the Dissolution is hot, run it thro' a Flannel Bag, and press it strongly into an earthen Vessel; put that which remains in the Bag into a Matrafs, in which there is a Quart of rectified Spirit of Wine; make a double Vessel of the Matrafs, and let it stand in Digestion twenty-four Hours, now-and-then shaking it; then take it out, and, when it is cool, run it thro' a Flannel; put the Spirit of Wine, which is charged with the gummy Part of the Opium, that the Water was not capable of dissolving, into a Cucurbit; and in a gentle Heat draw off Two-thirds of the Spirit of Wine, which will serve again for the same Use. Then put both the Extractions together, and in a clean earthen Pan, with a moderate Fire, evaporate, till of a Consistence fit to form into Pills, which keep in a Pot for Use.

This is a most certain Opiate yet known, and is very convenient for any Compositions of Laudanum; and some prefer it to any of the Liquid Preparations, because the Dose can more certainly be assigned. It is often prescribed by the Title of *Extractum Thebaicum*: The Dose is from half a Grain to two Grains. Some do this without any thing but common Water; and that, indeed, is a certain way to purify the Opium of all its Dross.

DR. GODDARD'S COMPOUND EXTRACT OF OPIUM.

Take of Saffron, and Nutmegs sliced thin, of each one Ounce; of Castor, half an Ounce; put them into a Matrafs with Tincture of Tartar, twelve Ounces; set them on a gentle Heat of Sand (with the Mouth of the Matrafs well stop'd) in Digestion twenty-four Hours, shaking it often; then let it cool, and press it thro' a Cloth into a clean earthen Pan: What stays in the Bag, put into the Matrafs again; and put to it rectified Spirits of Wine, half a Pint; let it stand warm for twelve Hours; strain it off to the other: Into these Tinctures put, of the Extract of Opium, five Ounces, set them over a gentle Fire to evaporate into an Extract.

This has the Virtues of the former, but may be ventured in somewhat a larger Dose, so far as to three or four Grains.

GUTTÆ VITÆ: DROPS OF LIFE.

Dissolve of the best Opium in Water, as in the *Laudanum Liquidum cum Camphora*, four Ounces, Then take of *English* Saffron, one Ounce; of *Russia* Castor; one Ounce and an half; *Cochineal* and *Virginia* Snake-root, of each half an Ounce; Nutmegs, Zedoary, of each two Drams; of Camphire, one Dram: Powder these Ingredients, and put them into a Matrafs; pour upon them Tincture of Antimony, (made with Salt-petre, and *Antimonium Diaphoreticum*) one Pint; let them stand three or four Days in a gentle Heat, shaking the Matrafs often, till a good Tincture is produc'd, which put to one Quart of the Dissolution of Opium: Then let all stand in Digestion forty-eight Hours, and, when settled, decant for Use.

This is the Medicine which *Salmon* made so much Noise with: It is an excellent Medicine in proper Hands, and one of the best Preparations of this kind, tho' it is not enough known to be much met with in Prescription. The Opium is so well guarded with cordial Aromatics, that it may be ventured upon in very considerable Doses, and there is no Fear of Nauseas afterwards at the Stomach; it promotes Sweat very much, and is wonderfully carminative: A Patient may take from 10 to 40, 50 and 60 Drops.

PILULÆ MATTHÆI. MATTHEW'S PILLS.

Take of the Extract of Opium, of black Hellebore, of Liquorice, and the Soap of Tartar, (described under the Preparations of Tartar) of each four Ounces. Let the Hellebore and Liquorice be made into a subtil Powder. Beat and mix these four Ingredients very well; then, with two Ounces or three Ounces of this Mass, mix of *English* Saffron, one Ounce; cut into small Pieces, and beat them well together, till the Saffron is perfectly mix'd with the Mass; so that no Part of it is discernible from the rest; then beat and mix that with the rest of the Mass as well. If this Mass be too dry, you may mix with it some of the Oil which comes from the Soap, which it spues out; when it stands a long time by; or, in its stead, so much rectified Oil of Turpentine, as is sufficient to make it into a Mass fit to form into Pills. Then put it into a wide-mouth'd Glass, or Gally-pot, ty'd over with a Bladder or Leather.

There are many ways of making this Medicine: *Bates* puts in white Hellebore; but, how much soever it may be imagin'd to stand corrected here, it is much safer left out, and the Medicine still left efficacious enough to all the Intentions it is ordered for. The Saffron in this is not in that of *Bates*; but betters the Medicine in many Cases. It is an admirable and safe Opiate, and promotes the Discharges both by Sweat and Urine; and the Soap of Tartar is so aperient, that it makes it safe, even in Asthmas, when no other Preparation of Opium dare be ventured upon. It may be given from three to ten Grains: When it grows dry with keeping, it must be again moistened with fresh Oil of Turpentine; but the oftener it has had those Amendments, its Dose may be enlarged; for the Turpentine will not dry away so much, as not to leave enough behind to give some Augmentation to its Bulk.

PILULÆ STARKEL. DR. STARKEY'S PILLS.

Take Extract of Opium, four Ounces; Nutmegs, and mineral Bezoar, of each two Ounces; Saffron, and *Virginia Snake-root* of each one Ounce: Beat the Nutmegs and Saffron together into a Paste, so that they cannot be distinguished from one another. Let, also, the Mineral Bezoar and Snake-root be an impalpable Powder. Then mix all together, with half a Pound of the Soap of Tartar; of Oil of Sassafras, half an Ounce, and two Ounces of Tincture of Antimony: Let them be all well incorporated, by beating in a Mortar: Then keep them in a Glass or Gally-pot, ty'd over with a Bladder or Leather, for Use.

This, Mr. *George Wilson* says, he had from Dr. *Starkey's* own Mouth, in the Year 1665, a little before his Death; who then told him, he gave *Matthews* the former for a little Money, but that this was what he successfully made use of himself. It is both more diaphoretic, and more anodyne, than the former; and they who have made use of it in their Practice, affirm it to be the best Laudanum they ever met with. And yet this is not the Sort which is kept in the Shops, and it is not in so constant Prescription as the former. Indeed there are hardly any of the Shops that prepare this; so that a Physician may write for it in vain, while the other is so ready for a Succedaneum. This may be given in a good handsome Dose, when Rest is wanting, in Fevers; and is not so hazardous in its Effects as common Opium, or any other of its Preparations. The Alexipharmics, likewise, in its Composition, cause it sooner to raise a Sweat, because, at the same time that they warm and attenuate the Fluids for Secretion, the Opium relaxes the Fibres, and makes more Way for their Passage thro' the cutaneous Pores.

THE UNIVERSAL ANODYNE.

Dissolve of the best Opium, four Ounces, in a sufficient Quantity of Water; evaporate to one Pint and an half, to which put one Pint of rectify'd French Brandy; of Saffron, half an Ounce; of Cochineal, two Drams; and of the Tincture of the volatile Salt of Tartar, two Ounces (or, in its stead, two Ounces of the Soap of Tartar); of *Sal Volatile Oleosum*, and the Spirit that was drawn from the Soap of Tartar, of each three Ounces: Digest these for four or five Days in a well-luted Matrafs in a gentle Heat; then strain it for Use.

This Preparation has some time since been in great account amongst some particular Persons; but it never obtained to be a Shop Medicine: It is very good for all the Purposes of the *Pectoral Sudorific Liquid Laudanum*, (described under the Article LAUDANUM; which see) given from ten to fifty Drops.

Opium is the proper or milky Juice, which issues from Incisions made in white Poppy-heads, thickened in the open Air into a solid, but softish resinous Gum, of a dark redish-brown Colour; and of a very hot bitter Taste; and strong, heavy or soporiferous Smell; brought from the Levant, and the East Indies, in round flat Cakes, or more irregular Loaves, of different Sizes, from four Ounces, to a Pound and upwards, in Weight; and covered with Leaves, or other vegetable Stuff, to prevent their running and sticking together.

So little is the History of Opium, even at this Day, sufficiently known, that in this short Description there is scarcely one thing asserted, which is not contradicted by famous Authors: And therefore I am under a Necessity to explain and confirm each Part of it.

1. It is well-known, that a milky Juice flows from Poppy-heads, when hurt or wounded; that this bears a very small Proportion to the Juices got by Expression, and widely differs from them in Taste, Smell, and Qualities; also, that the Opium of the Ancients was made of the Milk, and their Meconium of expressed Juices, or of the Decoction of one and the same Plant; and that, in their Opinion, the Meconium was much weaker than the Opium. But it is disputed, whether the Opium now used be the true Opium, or the Meconium only.

On the one hand, it is affirmed by *Garcias ab Horto*, *Belionius*, *Mandelstlo*, *Tavernier*, and, to name no more, by Dr.

Kempfer, that our Opium is the Milk drawn from Poppy-heads by Incision, or is the same way prepared, as was the Opium of the Ancients, according to the Account *Dioscorides* and *Pliny* have given of it. On the other hand, it is as positively asserted by *Prosper Alpinus*, *Belionius*, *Lemery*, *Savary*, and *de la Candamine*, that the Opium of the Shops is nothing but a Meconium.

But that our Opium is neither an Extract, nor an inspissated expressed Juice of Poppies, may be demonstrated by Arguments, which to me appear unanswerable. For, 1. The milky Juice drawn by Incision from Poppy-heads, and thickened either in the Sun, or Shade, even in this Northern Country, has all the Characters of good Opium; its Colour, Consistence, Taste, Smell, Faculties, Phenomena, are all the same; only, if carefully collected, it is more pure, and more free of Feculencies. To obtain this Tear, I first followed the Directions of *Dioscorides*; and on a clear dry Day, before Noon, cut off the Asterisk, as he calls it, or Crown of the Poppy-heads, so as to avoid penetrating into the Cavity of the Fruit; and collected the pure Milk, with a little Silver Spoon, and my Finger, into a China Tea-cup. I made Choice, for this Purpose, of Poppy-heads come to their full Bigness, and before they began to harden or dry. The Juice soon thickens (a small Quantity in a Day or so) to the Consistence of Opium, in the open Air. It was of a fiery-hot and very bitter Taste, and soporiferous Smell; both hotter and stronger scented than the common Opium; of a dark yellowish-brown Colour on the Outside, somewhat lighter within when broken, and not all of the same Colour, but, as it were, composed of Drops. I have of it by me, and, though now more than ten Years old, it retains both its Colour and Taste, though it is not so strong-smelled as when new. This Specimen was taken from the white Poppy: About the same time I gathered Opium, also, from the wild Poppy, which was a little lighter-coloured; but this I thought accidental only; for the Milk turns soon black on the Knife, and so may colour some of the Juice more than another; and in nothing else they differed.

I made Trial afterwards of the *Persian* way of making Opium. I had not the five-edged Knife; but, as quickly as I could, superficially scarified one Side of the Poppy-heads, in four, five, or six Places, according to their Bigness. Next Day, when the Juice was as hard as Opium, I scraped it off, and kned it together; so could not discover any thing like Drops in it. Notwithstanding all my Caution, I sometimes penetrated the Head, and some few Drops fell to the Ground; both which would have probably been prevented, had I been furnished with a right *Persian* Knife. Yet I found, that I was able to collect considerably more this way, in the same Time, than in *Dioscorides's* way. That I might have the true Tear, as clean, free of Dust, and fair as possible, I cut off the Star of several Heads, and, bending them down, suffered the Milk to drop into a Tea-cup; then set it in a Window, being well covered with Paper; when it was as solid as Opium, I scraped it out, and pressed it into a Lump. It is altogether of the same Colour, and the whitest I ever saw. I made use of the white Poppy for these Experiments also; and repeated them on several Varieties of the Poppy, both with the white and black Seed, without observing any Difference of the Juice.

2. Both the Extract, and the thickened expressed Juice, differ very much from Opium; and scarcely any way resemble it. I ordered both to be prepared, but neither of them has so much of the Taste or Smell of Opium, that any one could know thereby, that they were all got from the same Plant. The brown Extract is black when dried, as is, also, the green inspissated Juice; but, when diluted, the former is brown, the other green. The Extract is pretty tough and sticking; the Juice is rough, and more friable. Both were evaporated in a gentle Sand-heat; the Juice beginning to turn mouldy in two Days after Expression, though kept in a dry Place, and a broad Basin. I own some Part of either of these may be mixed in some Places with the true Opium; and perhaps the greenish-brown Opium, mentioned by *Condamine*, may have some of the expressed Juice in it, but it cannot be much, for the Reasons following; and probably it is some other aromatic Substance that gives it the penetrating Smell, which it cannot derive from the Poppy.

3. The common Opium contains more Resin, or Sulphureous, than either the expressed inspissated Juice, or Extract, of Poppies can possibly do. For, as will appear below, about the third Part of the common Opium, as well as of what I made, is Resin or Sulphur. Of the Extract, and thickened expressed Juice, Alcohol did not dissolve the hundredth Part, and was even scarcely tinctur'd by them.

4. If Opium was not the true Tear, there needed not be so many large Fields sown with Poppies, as there are in *Natolia*, *Egypt*, and *Persia*; neither would Opium be so strong a Medicine as it is; its Virtues, as an Anodyne, depending chiefly, if not entirely, on the proper milky Juice.

The Objection, taken from the Price of Opium, seems to be of no Force; because I could have collected here, without the *Persian* Knife, and that Dexterity which can be acquir'd only by

by Use, notwithstanding the Climate, and the consequent Smallness of our Poppy-heads, in an Hour's Time, about a Dram of Opium. For these Reasons I conclude, *That Opium is, at least for the far greatest Part, the true Tear of the Poppy.*

II. Another Controversy is, whether Opium is got from the white Poppy, or from the black. The Antients seem to have believed it was from the black. But I think it of no Consequence, whether from the black Poppy, or the white, with regard to the Medicine, though of great Consequence with regard to the Makers of Opium. Interest, therefore, will direct every-where to cultivate, for Opium, only such Poppies as bear the largest and most juicy Heads in the Country, and consequently, so far as I know, the white. Thus we find it is from the white Poppy they procure the Opium in the Eastern Countries.

III. As to the Choice of Opium, I shall pass it as known. But since *Dioscorides* writes, that Opium is sophisticated several ways, and *Bellonius* tells us, that the Merchants increase the Quantity of Opium before it is distributed among the Provinces; it may be asked, whether all the Opium we use is from the Poppies, or whether any other Drug is mixed with it, such as Glaucium-gum, Juice of wild Lettuce, and Suet or Tallow, all mentioned by *Dioscorides*: Though I cannot answer this Question with Certainty, yet I think it probable, that nothing is mixed with it, if it be not a small Quantity of some innocent Liquid, or a milky Juice of the same Nature with that of Poppies; otherwise it would be weakened, and not so strong as what we make here. I know not the Glaucium of the Antients, nor did I ever see any Opium, that I had Reason to suspect to be adulterated with Gum or Suet; but the wild Lettuce abounds, more than any Poppy I know, with a Milk of the same Taste and Smell: Perhaps therefore this, if it can be more easily collected, may still, in some Places, be mixed with Opium, and the Medicine be nothing the worse, the Milk even of the common Lettuces being anodyne and somniferous, as well as that of the Poppies.

IV. I said, Opium comes to us covered with Poppy-leaves, &c. because every Author says so; but what I have seen here is covered with the Flowers, Seeds, chaffy Husks, stripped from the Stalks of some of the *Lapatha* or Dock-kind.

Opium, or *Opion*, now the most common Name of this Juice, was, I believe, given it by *Pliny*, *Galen* being the first among the *Greeks* I have seen, that uses it.

That Opium was known to the Antients, nobody denies; but whether the *Greeks* or *Egyptians* were the Inventors, is a Question not yet determined: What seems most probable, is, that this Honour is due to the *Greeks*, and that its soporiferous Quality at least was discovered, if not by *Hippocrates* himself, not long before him; and those learned Men who are of Opinion, that Opium was the *Nepenthes* of *Homer*, seem to be mistaken.

As for the Opium-plant, it is evident from *Homer*, that it was cultivated long before *Hippocrates* lived. The Invention of it is even attributed to *Ceres*; and so acceptable was it believed to be to that Goddess, that she was named *Mecone*; that *Cereale* was a common Epithet of the *Papaver* among the Poets; that it was offered to her in her Sacred Rites; and that she was represented holding it in her Hand. So much Honour could never have been done to a narcotic Vegetable, especially by the *Romans*, had it not been otherwise very useful, and reckoned one of the *Frumenta*, which *Ceres* first taught the *Greeks* at *Attica* how to cultivate and use, for which she was deified after Death. That the Seed of the Poppy was used in Food by the Antients, and particularly in Deserts, will not be denied by any in the least acquainted with their Writings: This *Le Clerc* acknowledges; but he thinks, it was on some other account than Nourishment, or that the Manner of dressing it divested it of the somniferous and noxious Qualities. But I must be of a contrary Opinion; for, even in *Hippocrates's* Works, it is called nourishing; and, without depending on the Testimony of the Antients, Poppy-seed is of a more delicious Taste than sweet Almonds; it is oily and farinaceous; and I have eaten large Quantities of the black Seed, as well as of the white, frequently, and never found them somniferous or noxious: Besides, it is still used in Food in some Places, as well as the express'd Oil, which is as innocent and wholesome as Olive-oil. If this Seed was noxious, baking would not free it of its bad Qualities, the narcotic Part of Poppies being very fixed, and not at all volatile. Hence is confirmed what was said above, that the anodyne and soporiferous Virtues of the Poppy are lodged in the Milk, and in it only: In this it is not singular; for the proper Juice in many Plants differs much in Nature from the common Juices; as the Milk of the common Garden Lettuces is hypnotic, while all the Plant besides is cooling, diluent, and nourishing.

It is, also, certain, that our Garden-poppy is not specifically different from the *μικρον* or *Papaver* of the Antients; for although we could not make a tolerable botanical Description of this Plant, out of all they have left us concerning it, yet we find in their Works so many Marks of it, as are sufficient to distinguish it from others: For Instance, we learn from

Theophrastus, that it is an Herb, which does not cast its Leaves, contains a milky Juice, has very small Seeds contained in Heads, from which the milky Juice is collected. *Dioscorides*, also, gives Marks to this Effect. This may appear to some a mere historical Nicety; but if the Identity of the Medicine be not first demonstrated, we cannot be benefited by the Experience and Observation of former Ages.

Opium eases Pain, procures Sleep, promotes Perspiration, but checks all other Evacuations; cheers the Spirits, incrassates the Humours, and relaxes the Fibres. Hence it is recommended in intense Pains, Watchings, Spasms, Spleen, Vapours, Fluxes, Hamorrhages, Tenesmus, and in all Diseases proceeding from Tension or Irritation of the Nerves, irregular Motions of the Spirits, or from Thinness or Acrimony of the Fluids.

It would be too tedious here to recount the various Opinions of Authors concerning Opium: Let it suffice to hint briefly at such afterwards, as are contradicted by plain Experiment.

1. Opium is acrid, bitter, and strongly odoriferous. *Dioscorides* says, it is bitter in Taste, and carotic and soporiferous in Smell; *Matthiolus*, that it ulcerates the Tongue and Palate; if kept for some time in the Mouth. Some call the Smell *vitiosus*, others *gravis*, *teter*, *penetrans*, and the like. If one attentively tastes Opium, he will perceive, first, a nauseous and diffusive Bitterness; then, in about half a Minute, a pungent Heat, affecting first and principally the Tongue, then the Palate, and, last of all, the Lips, in a lower Degree. The Heat continues more than fifteen Minutes, the Bitterness still longer, provoking a plentiful Discharge of the Saliva. It heats and irritates, also, the Nose, and creates an Inclination to sneeze.

Hence, were we to judge of the Virtues of Opium by its Effects on the Mouth and Nose, or by its Taste and Smell, we would reckon it an acrid, diaphoretic, nervine and cathartic Medicine. It certainly is diaphoretic, and properly enough may be called nervine; but not Purgative, though by Accident it sometimes has that Effect. *Erastus* thinks, that, if it was not for its stupefying Power, it would always prove cathartic. According to him, therefore, the narcotic Virtue has no Dependence upon the above sensible Qualities. This will appear the more probable, if we consider, that some Narcotics are acrid, others mild; some bitter, others sweet; some odoriferous, others not; some purge, others stop such Evacuations; and yet all of them are anodyne, and almost equally narcotic and virulent, if the Dose be proportioned to their Strength; and, also, that there are not a few Cathartics as acrid, bitter, and strong-smelled, as Opium, which are no ways narcotic. Consequently, we ought to distinguish between the stimulating and narcotic Qualities of Opium; at least, we may at present conceive of them as different.

These sensible or stimulating Qualities, in the Opinion of some, sufficiently confute the old Notion of the refrigerating Faculty of Opium, and prove it to be a very hot Medicine; and certainly in one respect it is so. But it is as certain, that its Effects in diminishing preternatural Heat, observable in a Variety of Cases, also, evince its cooling Virtues; inasmuch that it would not be difficult to prove, that Opium may more properly be said to cool, than to heat.

2. Opium consists of Gum, Rosin, and terrestrial Parts, in such Proportion, that in twelve Parts of Opium there are about six Parts of Gum, four of Rosin, and two of terrestrial Feculencies, neither dissolvable in watery or spirituous Menstruums.

I dissolved Opium in Water, Wine, Vinegar, Spirit of Vinegar, and Brandy; and drew a Tincture from it with Spirit of Wine rectified with Salt of Tartar, or Alcohol, keeping always the Proportion of one Part of Opium to twelve Parts of the Menstruum; and found that Alcohol dissolved Four-twelfths of Opium, there remaining Eight-twelfths; of which Water dissolved Five-twelfths, and left Three-twelfths of Fæces. Water dissolved Eight-twelfths; and, of Four-twelfths remaining, Alcohol dissolved one, leaving of earthy Parts as above. It must be owned, the Proportions were not always exactly the same; but did not much differ. Hence Water dissolves about Three-fourths of the Sulphur of Opium. I found, also, that Water dissolves Opium as well, and as soon, as Wine, Vinegar, or Spirit of Vinegar; only the Solution in Water, in three or four Days, becomes turbid, and soon after mouldy, separating from it a whitish Substance, containing Part of the dissolved Rosin; that Brandy, or Proof Spirits, dissolves both the gummy and resinous Parts of Opium, that is, all that Water and Alcohol separately can dissolve, and that even without Heat, leaving nothing but the feculent Part. Hence, there being, in twelve Parts of Brandy, about eight Parts of Water, so much Water, Wine, or Vinegar, is a sufficient Menstruum for one Part of Opium. But though I tried this Proportion of eight to one, and it answered; yet, because twelve to one completed the Solution sooner, I kept by it. For Water, Wine, Vinegar, and Brandy, in the Proportion of twelve to one, took but four or five Days for the Solution without Heat, if frequently shaken; but Water, in the Proportion of eight to one, took ten or twelve Days; Alcohol requires about a Month. And the Residuum of a Solution of Opium in cold Water contains nothing which boiling Water can extract.

Supposing,

Supposing, therefore, that the Resin or Sulphur of Opium is as good, or as much wanted, as the Gum, or the mucilaginous Part, Brandy is certainly the best Menstruum.

3. The Gum of Opium has the same Taste and Smell with the Juice; but the Resin has no Taste, and smells rather musty than of Opium. This is taken notice of, also, in the *Col. Chym. Leid. C. 310*. This Resin is much condemned by Dr. Jones, and others. I wish they had given more convincing Evidence of the Mischief it does. The World is too cautious now to believe implicitly every general Assertion.

It is well known, that the Solution of Opium in Water is anodyne and soporiferous, has all the good Qualities of the Juice, and operates in as small a Dose; and yet that Opium in Substance is sometimes preferable to it; that, allowing half the Sulphur of Opium only to be Resin, even thus one half of it is in all the aqueous Solutions and Extracts; and that a few Grains of the most tenacious, tough, and sticking Resin, cannot do much Prejudice, if not otherwise hurtful, far less the Third or Fourth of a Grain. Common Aloes is fully as resinous as Opium, and its Resin as sticking. This Resin of Aloes has generally been blamed for causing the Tenesmus Hæmorrhoidalis, &c. by its irritating Acrimony. But a late Member of the Royal Academy (who asserted, also, that Rhubarb was not astringent) has attempted to prove it not only innocent, but very friendly to Nature, and the best Corrector of the Acrimony of the Gum. Left this should be the Case with Opium, I made Experiment upon myself with a Tincture of the Residuum of Opium dissolved in Water, extracted by Alcohol. I took at first ten Drops, then fifteen, and last of all twenty-five; and must own, that it tasted strongly of Opium, and was somniferous; but I was not sensible of any bad Effects of it. I may add, that the Balsamum Anodynum is found to be really Anodyne internally, as well as externally, though the Tincture is extracted with rectified Spirit. But, whatever is in this, crude Opium may be preferable to the Solution, as it does not so soon dissolve in the Stomach, or as it increases the diaphoretic Quality, or on account of some Singularity in the Constitution. But, for the most part, what does not dissolve in Water may be unnecessary. Hence I infer, that the narcotic Virtue of Opium does not depend on its *vaporosum Sulphur*, according to *Fred. Hoffman*, nor on its *Sulphur crassum ad modum rarefiscibile*, according to *Geoffroy*, akin to that of *Crocus*, *Castor*, &c. Few vegetable Substances have less Sulphur than *Crocus*. It yields all to Water, nothing to Oil. And I may add, that *Castor* and Aromatics are commonly reckoned Correctors of Opium.

4. Though Opium is rather alcalinescent, than acidescent; yet it cannot be called an Alkali. This I learned by many Experiments: For I dropt into a Solution of Opium in Water, in different Glasses, and separately, the Spirits of Vinegar, Hartshorn and Vitriol, and the Oil of Tartar *per Deliquium*. None of them caused the smallest Ebullition or Effervescence; the Acids only diluted the Solution; but the Alkali turned it milky, the Mixture soon separating into two Parts; below it was clear and transparent as before, and the milky Part gathered above, like a thick Cream, which, on shaking the Glass, subsided, leaving the upper Part clear: Yet this did not always happen; for, on repeated Concussions of the Glass, the Cream sometimes returned to the upper Part of the Solution. The Solution, with the Oil of Tartar in it, smelt somewhat urinous. The Cream separated by Filtration, and dried, melted and flamed with Heat; and dissolved in Alcohol, but not in Water; and consequently was Part of the Sulphur of Opium, which the Water had dissolved. To be more certain of this, I dropt Oil of Tartar, and Spirit of Hartshorn, into separate Portions of a Solution in Water of the Residuum, after extracting the Resin of Opium with Alcohol; and found that neither the volatile nor fixed Alkali caused the least Separation, or Precipitation, but only diluted the Mixture, Alcohol having dissolved and extracted all this Sulphur.

I mixed the Solution of Opium in Water, with an Infusion of Violets; it did not turn red, or undergo any Change, except what necessarily follows the conjoining of two Colours so different, when the one does not destroy the other. Tincture of Saffron in Water had the same Effect. I infused, in the said Solution, a Piece of blue Paper, with which Sugar-loaves are commonly covered; and poured some of it upon another Piece of the same Paper, till both were thoroughly melted with the Solution; and though at first, when it was covered with the red Solution, the Paper appeared redder than before, yet, when dried, it was so far from being redder, that it had lost its native redish Cast, and was become of a worn-out or faded Blue, rather greenish than redish. I mixed, also, the Solution of Opium with the Tincture of Turnsole in Water; and it turned of a bright-red Colour. The aqueous Tincture of Saffron made the same Change. The Tincture of Turnsole, betwixt the Eye and the Light, is of a deep Crimson; but, when it dries on the Glass, is blue like the Juice. What dried on the Glass of that mixed with Opium, continued a Bright-red. A Solution of Opium in Water, also, turned a Solution of corrosive Sublimate milky, and curdled it; Spirit of Vitriol made

it again clear. In a word, this Solution of Opium gave more Phenomena of an Alkali, than of an Acid: So that I cannot imagine what made Mr. *Geoffroy* assert the contrary.

All these Experiments were, also, made with the Opium I had collected here, and likewise with the Solutions of common Opium in Wine, Vinegar, Spirits, &c. with the same Event, except in so far as the Menstruum made a Difference. Thus Spirit of Vitriol precipitated the Tinctures; Oil of Tartar *per Deliquium* would not mix nor incorporate with them, though often well shaken together.

I poured a few Drops of the Oil of Tartar *per Deliquium* upon crude Opium, but could observe nothing like an Ebullition, or Effervescence, which some have asserted. It became, indeed, a little whitish, when dried; and smelt somewhat urinous, by reason of the Alkali's Action on the Sulphur, and essential Salt. The Occasion of this Experiment, which might otherwise seem superfluous, was because Professor *Hoffman* attributes this Change of Colour and Smell to the Congress of the Alkali with the acid Sulphurs; though he denies, that the Blood can be coagulated, or that the animal Spirits can be fixed, by it.

Blue Vitriol turned a Solution of Opium in Water whitish, and opaque, or milky; but this subsiding, the upper Part was transparent, and of a beautiful green Colour. Green and white Vitriols made it black, like a dirty Ink. To see whether this was owing to the heterogeneous Substances, which the Opium was covered with, I drew a Tincture from them separately, and mixed it with a Solution of green Vitriol; but it did not in the least make it black.

From these Mixtures I may infer, 1. That the essential Salt of Opium is ammoniacal. 2. That Opium contains a very small Proportion of an Acid. 3. That it is somewhat astringent, or makes the same Change on Chalybeates, that vegetable Astringents do.

5. The most active Principles of Opium are not volatile, but very fixed; for it keeps well. I have of it forty Years old, which is still hard, solid, and retains its Taste. I kept a Dram of Opium in the Heat of boiling Water for five Hours; and, though fresh, and pretty soft, it scarcely lost one Grain and an half in Weight. I had Opium, dissolved in Water, fermented and distilled, but got no Proof Spirits from it, though eight Ounces of Opium were used. The first four Ounces of Spirit that came over, were hot to the Taste, and had a peculiar Smell and Flavour very different from that of Opium, and not bitter; the second four Ounces were much weaker, and the last four almost tasteless. The first and second Spirits, or rather Waters, were mixed and rectified by Distillation; and I got from them about three Ounces, which I thought would have been a Proof Spirit; but, on Trial, it appeared weaker than the first four Ounces. Then having filtrated what remained after the first Distillation, I dried the resinous Residuum, and had as much fully, as if no Fermentation had preceded. The filtrated Liquor I evaporated to an Extract; but, before it was cold, the Vessel in which it was, being broken by Accident, I lost Part of it; but, so far as I could guess, I should have had a Quantity of Extract and Residuum, very near equal to the Quantity of Opium I employed. The Extract had nothing of the Smell of Opium, but the Residuum still retains a little of it, though it is near five Years since the Experiment was made.

Hence, 1. Old Opium is but a little worse or weaker than new. 2. Toasting Opium on a Plate of Iron, with a Design to correct it by divesting it of its narcotic Part, which was long practised, and much commended, by Authors, may burn it, but cannot make it better. 3. Opium affords little or nothing by Distillation: If, therefore, we would have the Virtues of the Theriaca in a liquid Form, we must infuse Wine, or rather Brandy.

6. By a Chymical Analysis, Phlegm, urinous Spirit, Oil, volatile as well as fixed Salt, and Earth, may be got from Opium, Although it must be acknowledged, that some Simples, as different in Figure, Nature, and Qualities, as possibly can be, afford the very same Principles by a Chymical Distillation, such as Deadly-nightshade, and Cabbage: and consequently that, very little of the Virtues of Opium can be thus either investigated, or explained; yet, seeing some by the Analysis pretend to prove, that the Effects of Opium depend on its Sulphur; others, on its volatile Salt; others, that its Sulphur is narcotic, and Salt diaphoretic; I thought it not amiss to repeat this Process three times; and found that sixteen Ounces of Opium distilled by itself in a Glass Retort, with a Sand-bear, gradually increas'd, gave,

1. Of Phlegm, an Ounce and two Drams. This Phlegm was very fetid, and empyreumatic, like that from Mustard-seed; it made no Effervescence, either with Spirit of Vitriol, or Oil of Tartar; nor did it change the Colour of Syrup of Violets, but turned the Tincture of Turnsole into a pretty bright Red, which Oil of Tartar again changed into blue; it also whitened and precipitated a Solution of corrosive Sublimate.

2. Of Spirit, four Ounces two Drams; and of Oil, two Ounces. The Spirit was very fetid and acrid, and made a great Ebullition with Spirit of Vitriol; the Oil was black and light, partly thin, and partly thick.

3. Of volatile Salt, adhering to the Neck of the Retort, about four Grains.

4. Of Caput Mortuum, six Ounces. So I lost in the Operation about two Ounces three Drams and fifty-six Grains.

The best Method I could devise to find how much volatile Salt was contained in this Spirit, was to compare its Strength with the Strength of Salt of Hartshorn, in enervating the Spirit of Vitriol; and, finding that one Part of Salt of Hartshorn, dissolved in Water, saturated as much Spirit of Vitriol as eighteen Parts of the Spirit of Opium, I thought I might conclude, that, in thirty-four Drams of the Spirit of Opium, there was not more than 114 Grains of volatile Salt; which, with the four Grains in the Retort, made one Dram fifty-eight Grains: That is all the volatile Salt we could obtain from sixteen Ounces of Opium, and consequently one Grain of volatile Salt from sixty-six Grains of Opium. Hence it appears, that the Virtues of Opium do not depend on its volatile Salt or Spirit, far less on its spirituous and volatile Parts, coagulating the Blood as Spirit of Urine does Spirit of Wine, which was *Cranius's* Opinion.

The Caput Mortuum, by long and repeated Calcinations in a Crucible, was reduced to four Drams forty-nine Grains. I made a Lixivium of it with boiling Water, filtrated it, and dried the Earth, which weighed two Drams fifty-one Grains; so Water extracted one Dram fifty-eight Grains. This Lixivium had a saltish Taste, made no Effervescence with Spirit of Vitriol, nor with Oil of Tartar *per Deliquium*; neither made any Change on Syrup of Violets, Tincture of Turnsole, or the Solution of corrosive Sublimate. I evaporated it over the Fire to a Pellicle, and to Driness, in a *Delft* Plate, in the Air, and had of a pretty white Salt in Powder, with numerous small prismatic Crystals in it, one Dram thirteen Grains, neither Alkali nor Acid by any Experiment. The Earth I again calcined for three Hours, by which it lost about six Grains in Weight, and, being elixivated and dried, it was diminished twenty Grains more; but the Remainder of the Lixivium, evaporated to Driness, gave only about ten Grains of a Salt like the former, though not at all alkaline, but white: So of the calcined Caput Mortuum Water extracted two Drams eighteen Grains, which, with the six Grains lost in the last Calcination, subtracted from four Drams forty-nine Grains, gives two Drams twenty-five Grains, as the Quantity of Earth contained in a Pound of Opium. The Quantity of the Salt is not equal to the Substance dissolved in the Water, because Part of the Lixivium was employed otherwise.

The Proportions of Salt and Earth were much the same in the Caput Mortuum of all the three Analyses; and, also, in the Ashes of some Opium I calcined by itself, none of them affording any fixed Alkali: But, having by me a little fixed Salt of the second Analysis, which had been kept five Years, by evaporating the Lixivium in a Tea-cup in a Chamber-window, and was in small, somewhat prismatic, but irregular, and yellowish Crystals, I dissolved it in Water, filtrated and crystallized it without Heat as formerly, and had a Salt like brown Sugar-candy, which is a true fixed Alkali by every Experiment. During the five Years it had lost about an eighth Part of its Weight, and the Paper was moist in which I kept it; it does not run or melt *per Deliquium*, but is still perfectly dry. To account for this, it requires more Experiments.

In the first Analysis we increased the Fire slowly, and changed the Recipient so soon, as all the Phlegm was come over; in the second, we did not change the Recipient, but raised the Heat to the greatest Degree the Retort could bear, as fast as we could, and continued it for ten Hours; in the third we first kept the Retort in *Baño Mariæ*, or boiling Water, for the greatest Part of a Day, and then changed the Recipient, and gave it the Sand-heat. Thus we had two Drams less of Water, than in the first Analysis; neither of them effervesced with Acids or Alkalies; but the Water in this third Process, which was almost tasteless, smelled more of Opium, and was less empyreumatic, precipitated a Solution of corrosive Sublimate, and redened Syrup of Violets, and Tincture of Turnsole. Hence Opium contains but little Acid, or a very weak Acid, though Mr. *Geoffroy* said he found in it a powerful acid Salt.

A Pound of Opium, by a Chymical Analysis, gave, according to Dr. *Pitcairn*, of Spirit, forty-five Drams; of Oil, ten Drams and an half; of Caput Mortuum, sixty-two Drams; and there were lost in the Distillation ten Drams and an half; according to Mr. *Geoffroy*, of Spirit, forty-nine Drams; of Oil, nine Drams and an half; Caput Mortuum, sixty-two Drams; lost seven Drams and an half; and the Caput Mortuum, calcined to eight Drams twenty-five Grains, yields of fixed mere alkaline Salt two Drams twenty-eight Grains and an half; consequently there remained of Earth six Drams six Grains and a half: But, by our Processes, of Phlegm, forty-two Drams, six Grains; volatile Salt, one Dram fifty-eight Grains; Oil, sixteen Drams; fixed

Salt, two Drams eighteen Grains; Earth, two Drams twenty-five Grains; and there evaporated in the Distillation, perhaps of Air, nineteen Drams fifty-six Grains, and consumed in Calcination of Oil, &c. forty-three Drams seventeen Grains.

The Effects of Opium on other Animals are not much different from its Effects on Men; or it is, to some of them at least, innocent, hurtful, or poisonous, according to the Dose.

I. I, one Evening, put a big strong Frog into a Pot of Water, wherein a small Quantity of Opium was dissolved; it soon appear'd to be uneasy, by making strong Efforts to get out of it; but, in a short time, it flag'd, or grew dull, making very little Motion; and next Morning it was dead, and much swell'd.

II. I convey'd, through a small Glass Tube, a few Drops of a Solution of Opium in Water, into a Frog's Stomach; and, putting the Animal into a Glass Cylinder, adapted it so to a good Microscope, that we had a distinct View of a Part of the Membrane between the Toes of its hinder Foot, where the Circulation of the Blood may easily be seen. My Design was, since I found Opium killed Frogs, to observe if there was any visible Change made by it in the Blood itself, or in its Motion: I could not, indeed, see any Alteration of the Blood, as to its Consistence, Colour of the Serum, Magnitude, Figure, or Colour of the red Globules; but I saw, very distinctly, a surprising Diminution of the Blood's Velocity; for it did not move half so swiftly, as it uses to do in these Creatures. But, in less than half an Hour, I saw the Velocity of the Blood gradually increase, the uneasy Frog recover its wonted Vigour, and the Blood its common Celerity; upon which, we put the Frog into a Basin of clean Water, and allowed it half an Hour to refresh itself; then gave it another Dose of Opium, and viewed it as before; the Blood then moved slower than it did the first time; and, its Velocity gradually decreasing, at length it stagnated, first in the smaller, then in the larger Vessels; and, in about a Quarter of an Hour, the Animal expired. One Thing very observable was, that, notwithstanding the diminished Velocity of the Blood, there was no sensible Diminution of the Frequency of the Pulse; when there was even no Circulation, or progressive Motion, of the Blood in this Part, the Pulse was visible by an undulatory Motion; that is, the Blood returned as far back at every Diastole of the Heart, as it was protruded by the preceding Systole; this continued till the Frog appeared to be quite dead. I then opened it, and found nothing in its Stomach but a clear Mucus, like a Gelly, a little coloured with the Opium, of which it was full; every thing else seem'd perfectly natural. This Experiment we frequently repeated, and it had always the same Appearances and Event. The Recovery, however, of one of the Frogs, which, for a considerable Time, appear'd to be dead; is not to be omitted. Having, one Evening, seemingly killed a Couple of Frogs, as above, with Opium, I laid the strongest half in Water on a Tile, in the Bottom of a Water-pot, that, if it recovered, it might sit either wet or dry, as it chus'd; the other I left on the Earth, dry, under an Hedge; this I found, next Morning, dead, as I left it; but the other, in the Water-pot, was alive, and appear'd to be in perfect Health.

We injected into the crural Vein of an old Dog, weighing about forty-two Pounds, half an Ounce of Opium, dissolved in four Ounces of Water filtrated, and of the same Warmth with the Blood of the Animal, in the following Manner. We first threw in, very slowly, about fifteen Drams. It had no observable Effect. About an Hour after, we injected, also slowly, eight Drams more, and immediately the Dog was seized with strong Convulsions; the Pulse was frequent and small, and, after some time, he foam'd at the Mouth. But there appearing no Signs of immediate Death, after we had waited an Hour more, we threw in, as quickly as we could, the last nine Drams; upon which, the Pulse became full and slow, and, in about a Minute, the Dog expired.

Opening his Thorax, we found the Lungs sound, but very small and white, without any Blood in them; the Heart very big, and all its great Vessels much distended with Blood. In this State they continued till next Day, when, on opening them, clotted Blood ran out from the Right Ventricle, and Vena cava; the Blood in the Left Ventricle, and Aorta, being much more coagulated. But we could observe nothing in the Brain, or Abdomen, preternatural. Some Days before, a Solution, neither filtrated nor warmed, had been very forcibly injected into a Dog; upon which, he fell immediately into violent Convulsions, and died in three Minutes. See Dr. *Freind* *Emmenolog.* C. 14.

We gave, also, to a little Dog, of about fifteen Pounds Weight, at different Times, in the Space of a few Minutes, and wrapped up in the Crum of new Bread, two Drams of Opium. Being very hungry, he swallowed it greedily, without shewing any Inclination to vomit. We watched him about an Hour; but, observing no Alteration or Effect of the Opium, we left him till next Morning; when he was not sleeping, but had lost the Power of his Limbs, and would neither eat nor drink. In this State he continued four Days more, without tasting any thing, and then perfectly recovered. The Quantity of Opium, dissolved in boiling Water, had more sudden and more fatal Effects on the Dog mentioned by Dr. *Mead*.

Opium, externally applied, is discutient, anodyne, and soporiferous; and has almost the same Effects as taken inwardly. One of the Inconveniences following the immoderate Application of Opium, Mandragora, and Hyoscyamus, for Pains of the Eyes, taken notice of by *Galen*, (*Method. Med. L. 3. C. 2.*) is the Mydriasis, or a preternatural Dilatation of the Pupilla. And Mr. *Ray* was Witness to a remarkable Instance of this kind. A Woman having applied Part of a Leaf of the deadly Nightshade, to a cancerous Ulcer, a little below her Eye; in one Night's time, the Uvea lost entirely its muscular Force, and was so relaxed, that the Pupilla, in the clearest Light, remained four times bigger than that of the other Eye. But, on removing the Leaf, the Tunica Uvea recover'd its Tone by degrees. That Opium gives Ease in Pains of the Teeth and Ears, in Colics, Inflammations, even in cancerous Ulcers, externally applied, is well known; but that it stupefies the Part to which it is applied, so as to make it insensible of any Pain, without the Intervention of Sleep, is not so evident. I applied it, by way of Plaster, round my little Finger; also to my Arm, immediately above the internal Condyle, for a whole Night; it grew soft, and stuck fast to those Parts, but neither stupefied nor inflamed them, nor had any Effect that I could observe. I have, also, several times, applied a Solution of Opium in Water, to Parts excoriated, and superficial Wounds; and found it always hot and irritating, like weak Spirits, the Pain continuing for some Minutes.

Hence, 1. Opium is not, properly speaking, narcotic externally; and there may be Pains which it cannot remove as a Topic. *Platerus* found it ineffectual in the Gout. If, therefore, the common Caustic, prepared with Opium, gives no Pain when used, it is a very extraordinary Phenomenon. I never tried it; not because I fear'd a Gangrene, but because the Fact is improbable. 2. That Narcotics, at least sometimes, impair the Tone of the Muscles, and cause, for a time, a Relaxation of the Nerves, or Palsy, about the Place to which they are applied externally.

Opium rather coagulates or thickens, than dissolves or attenuates the Blood. I mixed a Solution of Opium in Water, with Milk, Serum of the Blood, and Blood itself, drawn fresh from Arteries, as well as Veins. It made no observable Change in Milk; yet, after the Mixture stood some Days, there was a Separation; a white grumous Part subsided; it had a Cream above, and between these it was clear, and of the Colour of the Solution. It turned the Serum of the Blood more thick and whitish, and curdled it a little; it, also, had the same Effect on the Blood fresh-drawn, which always precipitated a sort of whitish Coagulum; and so left what was uppermost a little thinner. *Sydenham's* Laudanum made the Blood from a Vein appear more crimson-colour'd; but next Day it was darker, there was a greyish Precipitation, and the upper Part was not coagulated as usual; perhaps, because shaken and diluted by an uncoagulable Liquid. These Trials agree with Dr. *Freind's* Experiments, and seem to favour the Affirmation of some Authors, that the Blood has been found congealed and frozen about the Hearts of such as have died by Opium. There was grumous Blood in the upper Part of the Brain of the Dog, which Dr. *Mead* mentions. *Mech. Account Poiss.*

Habit, or customary Use, makes that Quantity of Opium safe, and even beneficial, which would otherwise be Poison. A few Grains of Opium are Death to any Person in Health, and unaccustom'd to it; but, if one, beginning with small Doses, habituate himself to it by degrees, he will not only, in time, be able to bear a much greater Quantity, but also, at length, find it as necessary as Wine or Spirits are to Tipplers. I said, in Health; because some Diseases, as Madness, in a great measure, enervate the Force of this Medicine.

The Action of Opium is very analogous to that of Wine, or vinous Spirits, excepting only in so far as it depends on the Quantity requisite for the same Effect: For, both the good and ill Effects of Opium are very little different from the good and ill Effects of Wine. Vinegar, also, is as much an Antidote to Opium, as it is to Wine. Hence Wine cannot be said to correct Opium, nor can Opium be said to act by rarefying the Blood, since Spirits, which coagulate it, produce much the same Effects.

The Virtues of Opium, internally taken, depend, principally, on its Action, or Influence on the Stomach. I have often observed a violent Tenesmus removed in a Moment, by a few Drops of liquid Laudanum, Vomiting stopt, Pain eased, and Sleep procured the same Way, and almost as soon. There are many Instances in *Wepper*, (*de Cicuta aquatica*) of very terrible Symptoms, and Death itself, caused by Narcotics, before they went out of the Stomach, and without so much as inflaming it, or undergoing any visible Change in it, far less vitiating the Mass of Blood; and, also, of the same Symptoms being removed, and Death prevented, by Vomiting.

Several other Præcognita may be here insisted on. 1. In Pain there is a preternatural Contraction in the sensible Fibres, and in Sleep a Relaxation, or, as it were, a Palsy, of the Organs of Sensation, and voluntary Motion. 2. The most inconsiderable or minute mechanical Impulse on the Nerves, or unusual Impression

on the Mind, may be the Cause of the greatest Changes in the animal Oeconomy. 3. The Virtues of many Medicines depend solely on their Action on the Nerves, or nervous Fibres. 4. The same Force or Impression on the Nerves of one Part has very different Effects from what it has on the Nerves of another; and often at one time from what it has at another time on the same Part; as Asarabacca in the Nose, and in the Stomach; Tobacco at first, and after it is habitually used. 5. This Action of the Nerves being, many times, no otherwise discoverable than by its Consequences, the primary and secondary Effects of Medicines may be, and too often are, confounded. 6. As the primary Effects of a Medicine have frequently several secondary ones, so the same Simple sometimes differently affects the same Nerve, or at least, different Nerves of the same Part, so as to produce Effects altogether independent of one another: This our Taste, in many Instances, can discover; and the Taste of Opium, compared with that of other Narcotics, sufficiently evinces it to be the Case here; that is, that the stimulating Qualities of Opium have very different Effects from the narcotic Part; and, if we compare the Effects of wholesome Aromatics with those of the most virulent Narcotics, we may add, 7. That the stimulating or aromatic Part of Opium is so intimately united to the narcotic, as thereby to mitigate it in some measure, and render it more friendly to Nature, than the Narcotics, that want it, are; as the *Hyoscyamus major vel niger*, or *Sium Eruca folio*.

From all that has been said, I may draw the following Inferences.

1. That the anodyne and hypnotic Virtues of Opium depend not on its Action on the Brain, or on the Blood, whether externally or internally used.

2. That it affects, first and principally, the Nerves to which it is applied; next, such as are more immediately connected to, or communicate with them; then those which serve for Sensation, and voluntary Motion; and, last of all, by Consent, the whole nervous System.

3. That this Impression, Action, or Influence on the Nerves, differently affects the Common Sensory, and the Mind, according to its Degree, and the Nature and Function of the Nerves primarily acted upon.

“Those who take a moderate Dose of Opium, especially if not long accustomed to it, are so transported with the pleasing Sense it induces, that they are, as they often express themselves, in Heaven; and, though they do not always sleep, yet they enjoy so perfect an Indolence and Quiet, that no Happiness in the World can surpass the Charms of this agreeable Ecstasy.” *Mead on Poisons*. Which, therefore, *ceteris paribus*, must remarkably promote a free Circulation and Perspiration; and, by removing Impediments, dispose to Sleep. But if the Dose be immoderate, or excessive, and the Impression exceeds the Bounds prescribed by Nature, as in Drunkenness, these Transports of Joy degenerate into ridiculous Mirth, Deliriousness, or the like; or end in profound Sleep and Lethargy; or a Palsy, Apoplexy, or sudden Death, finish the Tragedy, according to Circumstances; whereas the Effect of Opium in the Mouth and Nose, on Parts sore or excoriated, are very different, as has been formerly observed. The anodyne Virtue of Opium, externally applied, cannot be the Effect of any delightful Sensation in the Part: Pleasure may well be the Consequence, but it does not appear to be the Cause, of the Removal of Pain.

4. That the primary, or first observable Effect of the mechanical Impression or Action of the narcotic Part of Opium on the Nerves, is the Relaxation of their Fibres.

Whether this Relaxation is the physical Action of Opium on the Nerves themselves, or only the Effect of the Impression made by it on the Common Sensory, that is, whether Opium is immediately, or only mediately, the Cause of it, I shall not positively determine. It may, perhaps, be as difficult to explain how the Action of Narcotics on the Nerves causes a paralytic Relaxation, as how the Images painted on the Retina cause Vision.

Neither can I say, that the stimulating, or aromatic Part of Opium does not contribute to its easing Pains; for Spirit of Wine is anodyne, but it causes no Relaxation of the Part, or near it, to which it is applied, in which it evidently differs from Narcotics.

Now, as this Relaxation of the Nerves, and consequently of the moving Fibres, demonstrates Opium to be more than a palliative Remedy, in a great many Diseases; so it is not difficult, by it, to account for its bad, as well as good Effects; for, by relaxing to certain Degrees, it may prove anodyne, cordial, diaphoretic, hypnotic; or cause Stagnations, Deliriums, Lethargies, Apoplexies, and Death.

I have hitherto, on purpose, taken little Notice of Opium's rarefying the Blood, though asserted by Authors whom I very much esteem; not only because, by the foregoing Experiments and Observations, it appears to have no such Effect; at least, that the Action or Operation of Opium cannot depend on it; but also because, were this Theory admitted, it might be of bad Consequence, and lead into dangerous Errors in Practice. Thus, if Rarefaction of the Blood be admitted as the Cause of direful Symptoms,

Symptoms, which the Abuse of Opium sometimes occasions, the Remedy indicated would be Venesection; whereas some Authors affirm, that it is Death to open a Vein, even the Day after a Narcotic has been taken. Besides, if it rarefied the Blood, how could it be so useful in Hæmorrhages, Small-pox, and the like, as it is found to be?

It is by no means necessary now, to answer the Objections against the Use of this Medicine, in different Ages, since it has, at last, triumph'd over all Opposition; and is not only of more universal Use, but, also, does more Honour to Medicine, than any Remedy whatsoever.

Opium is commonly given to adult Persons, unaccustom'd to it, from half a Grain to three; but to such as are used to it, to four, five, or more Grains, till it produce the desired Effect. The usual Preparations are, the Extract, Tincture, Sydenham's Liquid Laudanum, anodyne Balsam, and pacific Pills; and it is the Basis of the Storax-pills, Mithridate, Theriaca, and Diascordium.

With relation to the Dose, the general Rule, that it is safer to give too little, than too much, of efficacious Medicines, is in no Instance more to be observed, than in the Administration of Opium; especially, seeing its Effects appear so soon, that the Defect may much more easily be supplied, than the Excess can be remedied. For, if too much Opium is taken, the Muscles become soon paralytic, so that nothing can be swallowed; and all we can do, is to endeavour to provoke Vomiting, by tickling the Throat, or by Clysters, and Cataplasms of Tobacco, and such emetic Applications; and, at the same time, to rouse Nature by strong Sinapisms. If thus the unfortunate Patient is enabled to take Medicines, after emptying the *Prima Via*, Diaphoretics mixed with Vinegar, and such-like Acids, will seldom fail to complete the Cure.

To conclude; I am very sensible, that Opium is an edged Tool, and may do Hurt; but it is, also, a divine Remedy, and may do much Good. A Physician may be too timorous, as well as too bold, in Practice; and the Sick oftentimes suffer the one way, as well as the other. As, therefore, I see no Reason absolutely to condemn the giving of Opium to Infants, to weak, plethoric, or aged Persons; to pregnant Women, or in malignant Diseases; so, on the other hand, if removing Pain, procuring Sleep, checking Evacuations, preventing a salutary Hæmorrhage, or the like, be dangerous or unsafe, he must either be ignorant of the Healing Art, or of the Nature of Opium, who, in such Cases, rashly prescribes it. *Edinburgh Medical Essays, Vol. 5.*

Among all the vegetable Substances used in the *Materia Medica*, none has had so various a Fate as Opium; for some, both of the Antients and Moderns, esteem'd it rank Poison, because they found, that it often induced Drowsiness, Torpor, Sleep, and sometimes Death; or, at least, that Diseases were rendered worse by it; whilst some others, especially among the Moderns, extol it as the most efficacious of all Medicines, for alleviating Pain, procuring Sleep, and preserving the Strength; so that some Physicians, and, among the rest, *Platerus* and *Sylvius*, who brought this Medicine into Reputation, after it had long lain in Obscurity, have not scrupled to affirm, that they would not be Physicians, if Opium was banish'd from the *Materia Medica*; and the incomparable *Sydenham* thanks Almighty God for having bless'd the World with Opium, a Medicine highly efficacious in removing a large Number of Disorders incident to Mankind. Besides, some Authors of Note and Learning have wrote on purpose to screen Opium from the Calumnies with which others had loaded it, and shew that it is the safest, most efficacious, and universal Medicine, provided it is cautiously used. But though the Use of Opium is of vast Importance in Practice, yet its Abuse is no less fatal and destructive, since it accidentally proves poisonous; and 'tis, at present, hard to determine, whether the Good procured by its due Use be greater, than the Misfortunes induced by a preposterous Exhibition thereof. But as Physicians differ with respect to the Efficacy of Opiates, so their Sentiments are no less various about its Method of acting; so that 'tis hard to choose which Side to embrace. As none of their Hypotheses are satisfactory, we shall now briefly inquire, whether the Influence of anodyne and narcotic Medicines on the human Body cannot be accounted for from the Motion of the Blood.

As, therefore, that Hypothesis is certainly best, which is most easy, perspicuous, and best calculated for accounting for Phenomena, and solving Difficulties; so 'tis incumbent on those who would investigate Truth in a proper Manner, and establish a rational Hypothesis, carefully to advert to all Effects, Phenomena, and Circumstances; that, by comparing these with the Hypothesis, their Affinity, or Incongruity, may be the more palpably discerned: For this Reason we shall consider the most remarkable Effects produced in the human Body by Opiates, according to the different Times, Doses, and Methods in which they are exhibited.

'Tis, therefore, certain from Experience, that all vegetable Substances, which for a long time diffuse an acrimonious Smell, whether internally or externally used, excite Sleep, Drowsiness, and a Stupor of the Senses; and if they are used for a considerable

Time, and in large Quantities, they produce the same Effects with Narcotics. 'Tis, also, to be observed, that all fragrant and volatile Substances induce a calm and gentle Sleep; but this Observation holds most conspicuously with respect to the Flowers of Rosemary, Saffron, Lily of the Valley, Cowslips, Elder, the Lime-tree, the *Egyptian* Thorn; as, also, the Flowers of Oranges, Jessamine, and white Lilies; the Waters of which, especially when distilled with May-dew, are of singular Efficacy in allaying the tumultuous and irregular Motions of the Spirits in Epilepsies, and spasmodic Disorders. To the same Class, among animal Substances, belong Musk and Civet, and, among Sea Substances, Amber; which, when frequently exhibited in due Doses, is of singular Efficacy in allaying the most violent epileptic Fits: On the contrary, 'tis certain from Experience, that those Substances which for a long time exhale a violent, vinous, and fixed Vapour, are rather of a stupefactive Quality, by which the Strength, Senses, and Operations of the Mind, are considerably weaken'd, and sometimes totally destroyed. Of this Kind are all the Species of Poppies, Henbane, Nightshade, and Mandrake; and fetid animal Substances, such as Castor, the Shavings of Horns and Hoofs. Some Animals and Insects dried, generally, do not produce a narcotic Effect, but only, by checking the irregular Motions, prove beneficial in alleviating painful Spasms.

'Tis, also, to be observed, that no Substances are possessed of an anodyne or narcotic Effect, unless they consist of a volatile Principle; according to the more fix'd or volatile Nature of which, they produce different Effects. Hence, an anodyne, or narcotic Quality is falsely ascribed to Nitre, or Vitriol; though 'tis not to be denied, that these Substances, when rightly prepared, and duly used, are of singular Efficacy in alleviating Pain, since they both fix and weaken the bilious Acrimony in the *Prima Via*. From what has been said, we may easily assign a Reason, why unboil'd Opium produces Sleep, and alleviates Pain, far more expeditiously, than when it is deprived of its volatile Principle by boiling; as, also, why the oleous and pinguious Parts of the Seeds of Poppies and Henbane are less narcotic, than their Plants, Leaves, Flowers, and Roots, which consist of a resinous Volatile, though, at the same time, a Principle not exhaled without Difficulty; and 'tis certain, that the Vapours exhaled from a somewhat fix'd volatile Substance affect the Brain more violently, stop the Motion of the Blood and Spirits more effectually, and suspend the Action of the animal Functions more thoroughly, than if the Matter diffusing the Exhalations was of an highly subtle Nature. Hence, the Water and Spirit of Poppies, and the Waters obtain'd from the Flowers of the wild Poppy, and the white Lily, are far more mild, than their more fixed and resinous Extracts.

'Tis, in like manner, certain from Experience, that Opiates, duly prepared, cautiously used, and exhibited at proper Times, especially in young and full-grown Persons, such as are neither of a plethoric nor cacoehymic Habit, but of sanguine and choleric Temperaments, provided the Strength is sufficient, and the Pulse such as indicates the Vigour of Nature, are the most safe and effectual Remedies in violent Pains, convulsive and spasmodic Disorders, excessive Discharges of Blood or Serum, and continual Watchings: On the contrary, 'tis equally certain from Experience, that Opiates, in unskilful Hands, have often either kill'd Numbers, or render'd the Disorders, for which they were exhibited, worse; especially if, when not corrected, they are exhibited in too large Doses, to Persons of weak and delicate Constitutions, to such as labour under malignant Disorders, to such as have a weak and small Pulse, or are phlegmatic, fat, plethoric, cacoehymic, or costive.

But 'tis principally remarkable, that Opiates, and all Narcotics, unseasonably exhibited, are, in a particular manner, noxious to the Brain, and animal Functions; for nothing is more frequent, than that the Use of Medicines of this Kind is succeeded by an oppressive Pain of the Head; a profound Sleep, accompanied with terrible Dreams; a Vertigo so violent, that the Head cannot be kept erect; a Torpor of the Senses, a Redness and Tumor of the Face, an Inflation of the Veins of the Head, a Languor of the Strength, and an Inability to Motion. But still more terrible Disorders of the Brain have, by skilful Physicians, been observed to be produced by the injudicious Use of Opium; such as profound Sleep, Stupor, and a surprising Loss of Memory. Thus *Willis*, in his *Pharmacop. Ration. Part. 1.* observes, that some, by taking a small Pill of Laudanum, have been thrown into so profound a Sleep, that they could never afterwards be roused out of it; and though from their Pulse, Respiration, and Heat, they seem'd to be alive, and in a due State, for three or four Days, yet they could never, either by internal Remedies, or external Applications, be recall'd to Sensation and Waking. The same Author, in the Work last quoted, informs us, that by taking a small Dose of Opium, he has observed, that others have hardly slept at all, but that they immediately became worse with respect to their Pulse, Respiration, and Heat; since such Patients forthwith became more breathless, and could not be restored by any Cardiacs, but gradually languished, till they died. The same Author, in his *Treatise de Anima Brutorum*, gives us the History of a Man, who, in order to alleviate a Colic,

took large Quantities of Opium; immediately after which, he complain'd of a violent and oppressive Weight in his Stomach. His Friends exhibited Wine, Cordials, and hot Spirits, which afforded him no Relief; for the Oppression, spreading farther, excited Languors about the Præcordia, and Deliquiums; till at last, though he continued awake, and preserved his Reason, he complain'd that his Spirits were, gradually, more and more exhausted, and died in three Hours.

That the unskilful Use of Opiates greatly injures the Brain, Senses, and mental Powers, we learn from a Case in *Miscell. Nat. Curios. Decad. 1. a. 5.* where we are inform'd, that a certain Man, upon ignorantly taking a large Quantity of Opium, was first afflicted with terrible Dreams, and then deprived, in some measure, of the Use of his Tongue; an Hour after which, he was seized with a Vertigo, a Disturbance, and gyratory kind of Motion in his Head. The Patient, also, afterwards, told, that he and the Bed seem'd not only to be suspended in the Air, but, also, to fly. Thus he remain'd, as it were, in an Apoplexy, and unconscious of his own Existence. In the Beginning of his Disorder, he said, he neither perceived the Taste of the strongest Vinegar, nor the Smell of the Spirit of Sal Ammoniac. His Pulse was low; and, when he shut his Eyes, he had the Appearance of a distracted Person. During this Condition, spirituous apoplectic Water was exhibited to him, by which his Spirits seem'd to be forthwith recruited; after which, he perceived an Itching all over his Body. *Stalpart Vander Wiel*, in *Obs. 42.* justly cautions, that Nurses, and Women who have the Charge of Infants committed to them, should not, when any Pain or Uneasiness seizes them, forthwith exhibit somniferous Medicines; since it often happens, that though these do not prove fatal, yet, if often used, they frequently weaken the Brain, and nervous System of Infants, and, as we find from Experience, induce a Tremor of the Joints, a Palsy, and Stupor. And *Willis*, in his *Pharmac. Rational. Part 1.* tells us, that, by means of Opium, he knew several Persons who contracted Slowness of Genius and Stupidity, and others confirm'd Folly. And in the same Work he informs us, that he knew a certain Man, who by taking a large Dose of Laudanum, when he was feverish, lost his Memory totally. *Tilingius*, in his *Treatise de Laudano Opiato*, gives us an Account of a Servant Maid, who, instead of the Theriaca, took Laudanum Opiatum, by which means she was immediately seized with a Stupor and Drowsiness, which lasted all her Life: Her Memory in the mean time was lost, nor did she ever recover her usual Health. *Schneider*, also, in his *Treatise de Catarrho*, *Lib. 4. Cap. 8.* informs us, that by the Use of Opium the Son of a certain Indian King lost both his Reason and Memory.

From what has been said, we may understand, why Opiates are so prejudicial to the Head, as we observe in violent Disorders of the Head, such as Apoplexies, Epilepsies, Lethargies, Palsies, Diminution of Memory, and Vertigos, which, after the Use of Opiates, are always increased, and become more dangerous: Thus *Bartholin*, in *Act. Hafniens.* informs us, that a certain Woman, upon allaying an Head-ach by Narcotics, was from that time seized with a Vertigo, Stupor, and Weakness of the Head. In Diminution of Sight, and Difficulty of Hearing, Opiates are by no means to be used. Thus *Waldschmidt*, in *Dissert. de Opiatorum Noxa*, informs us, that a Woman, labouring under a dangerous Hæmorrhage of the Uterus by the Use of Opiates, contracted a Blindness not to be removed by any Medicine.

Besides, Opiates and Narcotics disturb the Use of the Senses, and of Reason, and often excite Folly and Deliriums; which, also, holds true with respect to the more fixed stupefying Medicines, such as the deadly Nighshade, the Roots and Seeds of Henbane, Mandrake, and Lolium, which, when eaten, according to the Observations of Authors, produce an Alienation of Mind, and drive Persons into Madness; so that they seem to be possessed by Devils. In some they produce surprising Convulsions and Agitations of the Members, accompanied with Madness: Instances of which are to be met with in *Matthias de Lobel's Nova Stirpium Adversaria*, *Matthioli in Dioscorid. Wierus de Præst. Dem. Olearius in Itin. Persico*, and *Timæus*. In a Mania these Medicines, also, generally increase the Rage; for which Reason *Helmont*, in his *Treatise de Lithiasi*, justly charges those with an Error, who attempt to mitigate a Mania by Opiates, since all the Medicines of this Kind naturally produce Distraction, which is nothing but a waking Dream. And in his Book, intitled *Retenta*, he confirms the same Doctrine, by telling us, that Narcotics, exhibited in Doses four times as large as those commonly used, hardly procure Sleep to mad Persons, but rather increase their Madness. *Freitagius*, in his *Treatise de Opio*, *Cap. 3.* observes, from *Prosper Alpinus* and *Bellonius*, that the Egyptians and Turks eat Opium, in order to render themselves cheerful, bold, and salacious. But these two Authors, at the same time, observe, that though these Devourers of Opium seem to enjoy good Health, and not to be injured by its Use, they yet become colder, their Functions are render'd worse, they almost always appear drunk and torpid, become comatous, stupid, and inconstant; sometimes affirming, and at other times denying, the same thing, so that they are neither fit to be dealt nor conversed with; and Persons who contradict themselves are,

by way of Reproach, said to have eaten Opium; just as we accuse others of being drunk.

Besides, Opiates greatly stop the vital Motions of the Heart and Arteries, and render the Circulation of the Blood more faint and languid; for which Reason Opium generally renders the Pulse weak, and the Respiration difficult, producing, at the same time, an Anxiety about the Præcordia, especially in Persons who abound with thick Blood. Hence we are enabled to assign a Reason, why weak Persons, and those labouring under malignant Disorders, are easily destroyed by Opiates, since the Exhibition of them is succeeded by an extreme Loss of Strength, Syncope, and at last Death. Hence Instances of the fatal Events of Opium are every-where to be met with in practical Authors. Thus, we are informed by *Frederic Hoffman*, in *Metal. Morbis*, that a certain Physician of Hall, labouring under a burning Fever, in order to remove continual Watchings, took some Grains of Laudanum, by which means he soon died. *Sanctorius*, also, in his *Method. vitand. Errores*, *Lib. 8. Cap. 12.* tells us, that in the Confines of Hungary he saw a Soldier, who, upon taking seven Pills of Opium, forthwith began to breathe with a kind of Impetus, and soon after expired. *Forestus*, also, in *Lib. 9. Obs. 14.* makes mention of a cacochymic Patient, who, upon an Exhibition of Opium, in nephritic Pains, by an unskilful Physician, had a Sleep procured, out of which he could never afterwards be awaked. Instances of the like Kind are to be found in *Willis's Pharmac. Rational.* and *Sennertus*, in *Prax. Lib. 6. Part. 7. Cap. 1.* It is, also, observable, that Opium, injected by way of Clyster, has proved fatal to many; various Instances of which are collected by *Telingius*, in his *Treatise de Opio*, *Sennertus*, in *Lib. 6. Prax. Part. 7. Cap. 1.* and *Marcellus Donatus*, in his *Treatise de Histor. Medicis Mirabilibus*, *Lib. 4. Cap. 18.* which, in my Opinion, happens, because the Opium, by stopping and checking the Motion of the Blood, induces a Sphacelus of these Parts.

It is, also, to be observed, that Opium proves a Stimulus to Venery, Cheerfulness, and Cruelty; for which Purposes it is much used by the Turks and Indians, who, of the purest Tears of Opium, prepare, by Fermentation, what they call *Maslah*, a very intoxicating Liquor, which procures a kind of Madness, and which they use when they are either about to enter the Field of Battle, or embrace the Fair. This is confirmed by *Joh. Jac. Saar*, in his *Itiner. Ind. Orient.* who tells us, that the Indians of Bantam prepare a certain Electuary of Opium, which they call *Affion*, a Substance of a cineritious Colour, of a sweetish and somewhat bitter Taste, and by the Use of which they are render'd fierce. The Chinese, also, in *Batavia*, use this Electuary as a Stimulus to Venery, which it excites so powerfully, that they continue the brutal Gratification of their Lust for a whole Night, and often oblige their Prostitutes to make their Escape, when they are able to sustain the Diversion no longer. See *B. D. D. Sachs. Tom. 2. Ephem. Germ. Obs. 69.* where other Authors are, also, quoted; and the celebrated *Wedelius*, in his *Treatise de Opio*, informs us, that in hot Constitutions Opium excites nocturnal Pollutions and Tentigos, especially if the Persons are naturally disposed to such Disorders: Hence, if it is mixed either with Amber, or the Essence of Amber, it proves an excellent Stimulus to Venery.

It is, also, necessary we should consider the Method of correcting Opium; for as crude Opium is rarely to be trusted to, so, when rightly prepared and corrected, it proves a Medicine of singular Efficacy. *Galen*, in his *Treatise de Theriaca ad Pisonem*, *Cap. 13.* convinces us, that he was very cautious in the Use of Opium, by telling us, that Opium used by itself was fatal; but, when prepared with other Substances, a salutary and beneficial Medicine. Hence, in my Opinion, those Things correct Opium, which lessen its Virulence, render it mild and salutary to the Body, and especially which rouse the languid Motion of the Fibres, brought on by the Use of Opium; for since Opium, as we find from Experience, generally stops all the Motions of the Blood and Spirits, it must of course be salutary, to mix with it such Substances as excite and promote these Motions. Hence, from a Mixture of these two contrary and repugnant Substances, there results a kind of third and neutral Substance, which is at once of an aperient and sedative Quality: And as those Things which induce the most violent Motions in the human Body, are by all allowed to be Sudorifics, Purgatives, spirituous and aromatic Substances, saline and diuretic Medicines, so Opium is most commodiously mixed with them; by which means they are render'd surprisingly efficacious, and, as it were, universal. Of this kind are the Theriaca of *Andromachus*, so highly esteemed for so many Ages; the *Diascordium* of *Fracastorius*; the *Theriaca Cælestis*, the *Requies Nicolai*, and the *Theriaca de Citro*; which are highly safe and efficacious Medicines, in many Disorders, Pains, Defluxions, and Spasms. Opium is, also, an excellent Medicine, when mixed with Purgatives, such as the Extract of Aloes in the *Pilulæ Wildegansii*, the Extract or Powder of white Hellebore, in the *Pilulæ Starkii*, or *Matthiæ*: For these Preparations, as we often observe, render the Body soluble, powerfully excite Sweat, and generally never bring on a Torpor, turbulent Dreams, a Vertigo, and an oppressive Torpor of the Head, like other Opiates, left to themselves, without any kind

of Correction. Opium mixed with tartarized Tincture of Antimony, or with the acrid Tincture, prepared from the Regulus of Antimony, is both a safe and efficacious Diuretic: Spirituous Substances, such as Cloves, Cinnamon, and its Oil, as, also, Malmsey and Spanish Wines, excellently prevent the Injuries of Opium, and convert it into an innocent Medicine; for this Reason the Laudanum Liquidum of Sydenham is justly to be commended, because we know from Experience, that it is safely exhibited in all Disorders, where Sedatives are indicated as proper. *Stabius* greatly commends the following Spirit, prepared from Opium by Distillation.

Take of Spanish Wine, one Quart; of the best Opium, half an Ounce; of the Flowers of wild Poppies and Elder, each three Pugils; of Saffron, one Dram; of Nutmegs, Cloves, Cinnamon, and Cardamoms, each two Drams.

These Ingredients, when mixed, and duly distilled, yield a Spirit of a grateful Taste, a pleasant Smell, and an efficacious Virtue. This Spirit is of a nervous, antispasmodic, and sedative Quality. Its Dose is one Spoonful.

Having thus consider'd the principal Effects of Opium on the human Body, we now come to investigate the Method in which Narcotics, and especially Opium, operate. The Antients, then, universally imagin'd, that these Medicines operated by a certain occult, poisonous, and refrigerating Quality, which extinguished the innate Heat of the Constitution. Among the Moderns, *Willis*, in P. 2. *Patholog. Cap. 3.* affirms, that these Medicines are a Species of Poison, which, by its Vapour, surrounds, and, as it were, overwhelms the animal Spirits, whilst the Blood, in the mean time, and solid Parts, are not in the least injured. And in his *Pharmacop. Rational. Sect. 7. Cap. 1.* he tells us, that by Opiates the Spirits are affected, and, as it were, poison'd; so that by their Vapour being, as it were, confined in Chains, they forthwith become languid, and cease to perform their Offices. The learned *Estmuller*, in his *Disput. de Virtute Opii Diaphoret. Cap. 501.* affirms, that Opiates fix the Spirits, and that, in Cases where the animal Spirits become fierce and exorbitant, they are checked, and reduced to a due Order, by Opiates. The celebrated *Wedelius*, in his *Tractat. de Opio*, explains the Operation of Narcotics, from the Condensation of the Spirits, and an Obstruction of the Pores of the Brain: For, says he, the Operation of Opium consists in a particular Kind of Evaporation, which obstructs the Pores of the Brain, already open'd, and dilated by too long Watching; hinders the immoderate Influx of the animal Spirits; condenses, and, as it were, coagulates them; and by that means procures a grateful Rest to the Body. Nor can it be denied, says he, in the same Work, that the Nerves of the Stomach immediately receive this Vapour or Exhalation, especially since Opium contains a Sulphur, which is easily resolved in Vinegar, Water, and spirituous Liquors. *Gladbachius*, in *Prax. Med. Idea nova*, informs us, that Opium produces its Effects by its volatile Salt, and gross Oil; which, when resolved in the Stomach, and expanded in the Blood, by its Ramifications involves the Spirits resolved by the Fermentation, so that the Blood may not be thrown into a Commotion and Fermentation. Hence the gross and irregularly moving Spirits in the Blood, which, by obstructing the Nerves, hinder a free Circulation, are suppressed, and deposited in smaller Quantities in the Brain. Whilst this is a carrying on, the Blood is more slowly propelled from the Heart, the Pulse becomes more languid, and the Circulation is hinder'd. The *Cartesians* imagine, that Narcotics, by a certain foreign Æther, in some measure coagulate the Blood and Humours, and stop their Motion, notwithstanding their volatile Salt and subtile Oil, which otherwise seem rather adapted to increase the Motion of the Blood: Hence, when the Motion of the Blood in the obstructed Parts is no longer so violent as it was before, the Pain must be somewhat mitigated. And, say they, it is very probable, that the volatile Salt of Narcotics, being highly subtile, but, at the same time, sufficiently acrid, is capable of separating some of the slender Fibres of the Parts, which, being by that means render'd more flaccid, cannot convey so brisk a Motion to the Common Sensory. This Opinion is, also, embraced by *Cranius*, who, in his *Tractat. de Homine*, informs us, that the spirituous and oleous Parts of the Opium coagulate the Blood, in the same manner with the Spirit of Urine, and the rectified Spirit of Wine; by which means a Drowsiness is afterwards produced, and the Pain alleviated, because, by the volatile and acrid Salts of the Narcotics, the Fibres of the Nerves are so resolved, as to lose their Tension, and, consequently, cannot convey the Action of Objects to the Common Sensory. Some, by various Experiments, endeavour to prove, that Opium contains an acid Sulphur; but especially because crude Opium, by an Affusion of Oil of Tartar per Deliquium, produces an Ebullition. Hence they are of Opinion, that this Acid coagulates the Blood, and fixes the Spirits.

But a little Attention easily convinces us, that none of these Hypotheses are sufficient for accounting for the before-mention'd Effects. And, first, for the Opinion of those Antients who took Opium for a Poison, because, by its excessive Coldness, it ex-

tinguishes the native Heat, or Sulphur and Spirit of the Blood, we observe that, even according to *Hippocrates*, Opium is hot; consists of an hot and inflammable Sulphur; and, when externally applied, softens and resolves Tumors, a Property peculiar to hot Substances. Much less can the Favourers of this Opinion ascertain, wherein this poisonous Quality, which extinguishes the vital Spirits, consists. Nor do I think they could, upon their Hypothesis, disentangle themselves, if one was to ask them why the Theriaca of *Andromachus*, the Theriaca Cœlestis, Mithridate, and the Diacordium of *Fracastorius*, whose Basis is Opium, have for many Ages been accounted the most present Alexipharmics, and justly celebrated Remedies. Besides these, many Panaceas, which have longest sustained their Character for Efficacy, have Opium in their Composition; such as the Pilulæ Wildegansii, sold under the Name of *Panacea Solaris*, the Pilulæ Starkeanae, and others. Opium is, also, the most present Aphrodisiac, because it produces a Turgescence of the Semen, and an Erection of the Penis; and the Eastern People render themselves bold and hardy in Battle by its means. The like Effects I myself have, also, observed produced by it on others, when used moderately: But, in such Cases, it must produce an additional Stimulus, rather than an Extinction of the Spirits. And though we are, by various Observations, taught, that several Persons have been killed by Opium, or, at least, subjected to violent Symptoms, yet nothing else is proved by this, than that Opium is an highly active and powerful Body; and though all drastic Medicines, such as ethereal Oils, Sudorifics, Emetics, Purgatives, and Mercurials, when exhibited in large Doses, not only induce terrible Symptoms, but, also, sometimes Death, yet they are not, for this Reason, to be called Poisons: And the same holds true with respect to Opium.

Those, also, who affirm, that Opium coagulates and fixes the Blood and Spirits, principally on account of its acid Sulphur, are, in my Opinion, greatly mistaken; for though I readily grant, that crude Opium, by an Admixture of alkaline Substances, is concreted, and undergoes a Change, with respect to its Smell and Texture, by means of the Acid peculiar to almost all the resinous and gummy Extracts of Vegetables, yet we cannot hence conclude, that this Acid fixes and coagulates the Spirits, and much less the Blood; for it is known from Chymistry, that all Resins, resinous Gums, and Woods, are possessed of an acid Taste, which, however, does not render them narcotic. And, if the Effects of Opiates proceeded from an Acid, certainly the Oil of Vitriol, which is highly acid, concentrated Spirit of Vinegar, and Spirit of Nitre, must produce the same Effects in a greater Degree, which, however, they do not. Besides, no Traces of an Acid can be discover'd in the Water of wild Poppies, Opium, Saffron, and the Seeds of Poppies and Henbane. It is, also, to be observed, that Opium resolved in Tincture of Tartar, by which means its Acid is taken away, still retains its somniferous Quality. And, granting that the Acid of Opium is a Sulphur of a fixing Nature, uncommon to other Acids; yet it cannot be conceived how it can stop or coagulate the Blood or Spirits, the most moveable Fluid, perhaps, of any in Nature. Nor is this Hypothesis proved by that Experiment, in which rectified Spirit of Urine is mixed with highly rectified Spirit of Wine; for this is not so much a Coagulation, as a Precipitation of the volatile Salt, contain'd in the Pores of the Phlegm, by means of the highly rectified Spirit of Wine, imbibing the Phlegm. Besides, no one can conceive, that Opiates alleviate Pain, because, by their highly saline and volatile Acrimony, the Fibres of the Nerves are so resolved so as to lose their Tension, and due Sensation; for those Spicula, if there are any in Opium, are not so considerable, as to dissolve the Texture of the Nerves, or Membranes; for by this means they would rather increase the Pain; and volatile Salts, and acrid Substances, such as Things prepared with Pepper and Cantharides, would, for the same Reason, ease Pain, which, however, they do not. And what is advanced about a foreign Æther, is equally unsatisfactory, because such a Substance, not coming under the Cognizance of our Senses, cannot be defined. Those who derive the diaphoretic and Pain-alleviating Virtue of Opium from its volatile oleous Salt, as being an Acid, and the Principle which removes the Pain, as *Bontekoe* in his Works affirms, embrace an Hypothesis equally ill-founded; for only a small Quantity of volatile oleous Salt can be obtained by Art from Opium, Mandrake, Nightshade, and Poppy. Besides, it may be justly asked, why volatile oleous Salts, exhibited in a larger Dose, do not produce the same Effect.

But those who seem to have consider'd this Affair with greater Accuracy, are of Opinion, that Opium, by its highly subtile and sulphureous Vapour, which is of a branchy Nature, acts immediately upon the Spirits, and the Pores of the Brain and Nerves, the former of which it clogs and overclouds, whilst it obstructs and blocks up the latter. Hence a more languid Influx of the Spirits into the muscular Parts, and the Heart, happening, the Organs of Sensation are deprived of their Tension, the Circulation of the Blood and Humours render'd slower, and all the Secretions and Excretions weaken'd. Though these are very considerable and important Circumstances, yet it is justly to be doubted, whether they exactly quadrate and correspond to the

Effects of Opiates; for first it is hard to be conceived how, by the Power of the Stomach, the highly subtle Vapours of the Opium, being resolved, and passing into the Blood, should be again separated from the Blood in the Brain, and how they should obstruct the minute, medullary, and nervous Ducts; since a vaporous Substance does not enter peculiar Ducts, much less obstruct the Motion of the subtle and elastic Lymph of the animal Spirits. But granting that the vaporous Exhalation of Opium is exhaled through the Pores of the Arteries of the Brain, yet it will with Difficulty find its Way into the *Corpora Striata*, and Bottom of the Brain, where the Nerves generally arise; and, if it should by chance get Possession of these Parts, it may again be easily dissipated through their Pores. Hence it cannot, in my Opinion, be accounted for, why Opiates, and other stupefying Medicines, often leave behind them a long-protracted Torpor, a Sensation of Weight in the Head, a Stupor, a Vertigo, an Inflammation of the Head, and a Loss of Memory. It may be, also, asked, why other fragrant Substances, which diffuse a penetrating and copious Smell, do not, like Henbane or Nightshade, produce stupefactive Effects, even though these latter are less vaporous than the former. Nor can it be commodiously accounted for, why, in some Persons, Opium should be an Aphrodisiac, and sometimes produce Watchings and Madness, or disturb the Fancy and Reason; for if the Pores of the Brain are obstructed, or the Spirits condensed, by these Vapours, their due Influx into the Parts must be retarded; which, however, cannot happen in Watchings and Madness, where, by the Consent of all Physicians, the Pores are open, and the Spirits conveyed with a preternatural Fury and Impetus. That highly fetid Vapours, of the sulphureous Kind, have not a Power of extinguishing the Spirits, is obvious from this, that kindled Hairs, or Feathers, infallibly rouse hysteric Patients, and those labouring under a Syncope, and rather restore than extinguish the Motion of the Spirits. I have frequently observed, that, in burning and inflammatory Fevers, the Exhibition of a small Dose of Opium has brought on a Disorder of the Head, and a gentle Delirium, succeeded by a long Hæmorrhage, by which the Delirium was afterwards terminated. But this Phenomenon can but ill be accounted for from this Hypothesis, which supposes that Opium operates by Vapours and Effluvia; for if this Delirium, Alienation of Mind, and Stupor of the Brain, proceeded from Vapours stagnating in the Brain, undoubtedly Sudorifics, and such things as recruit the animal Spirits, would most quickly remove those Effects, which, however, does not happen.

In an Affair, therefore, of so difficult a Nature, we shall briefly propose what we think most probable: First, then, it is not to be denied, that the Principle by which Opiates, and other Narcotics, act, is a Sulphur capable of Resolution and Evaporation, that is, which, by the Addition of a sufficient Degree of Moisture and Heat, is resolved into highly subtle Vapours. Now Sulphurs may be commodiously reduced to three Classes; for some of them are pinguious and unctuous, and abound with a gross Earth, and a large Quantity of Moisture, such as all expressed Oils, Fats, or Lards, which are with Difficulty resolved into Vapours: Other Sulphurs consist of a subtle and saline Earth, which, however, is fixed by acid Particles, such as all resinous Substances, which, if they are freed from the Substances in which they are involved, become too subtle and ethereal, such as all distilled Oils: And other Sulphurs are of a temperate Kind, consisting of a Fluid, a Salt, and a subtle ethereal Earth, more or less fixed; and all such Substances exhale a certain gross and long-continuing Vapour, and are either of a fragrant or a fetid Smell. Those Bodies, therefore, which consist of such a temperate Sulphur, and not only yield to temperate, but, also, to aqueous Menstruums, are possessed of an anodyne and stupefactive Quality; for which Reason, when they are taken into the Body, they are, by a kind of fermentative and rarefactive Motion, resolved in the Stomach and Intestines; a mild Heat, the salival Menstruum, and the Fluid of the Air, concurring to the Production of the same Effect. But the sulphureous and highly subtle Particles, thus resolved, are partly conveyed immediately to the Blood, through the porous Substance, by means of the membranous and nervous Ducts; and they are, also, partly convey'd to the Blood, along with the Chyle and Lymph. But when the Blood, impregnated with an highly subtle vaporous Principle, arrives at the Lungs, it is there more expanded, attenuated, and render'd elastic, by the elastic Parts of the Air, conveyed thither by means of Inspiration. Hence the Blood is necessarily expanded, and fills a larger Space. But when a Blood too much inflated, rarefied, and turgid, approaches the cortical Substance of the Brain, and the small arterial Ducts surrounding the *Pia Mater*; these Ducts, whose Coats are very slender, are preternaturally distended and expanded by this rarefied Blood, a Circumstance which renders the systolic and contractile Motion less and slower: Hence the Circulation of the Blood through the Head and Brain is render'd slower, and more languid; since, in order to the Return of the Blood through the Veins, the Systole of the Arteries, and, consequently, the subsequent Impulse, are always necessary.

But from a slow Return of the Blood through the Veins of the Head, a Distention of the Arteries, and a Stagnation of the Blood there, all the Phenomena and Effects, produced by the Exhibition of Opium, may be commodiously explained and accounted for; for, whilst the Blood thus retarded moves through the Veins, the thin aqueous Parts are easily secreted through the Pores, and induce a profound and gentle Sleep: And if a larger Quantity of this Serum, secreted from the Blood, should overflow the adjacent Parts, an oppressive Pain of the Head, a Torpor, a Loss of Memory, and an Alienation of Mind, may be produced. But when the Blood, in consequence of its preternatural Thickness, becomes stagnant, or when it is agitated by an acrimonious Principle, or a violent, hot, and intestine Motion, then various Fancies, turbulent Dreams full of Terror, and even Madness and Watchings, are excited. Hence the Reason is obvious, why, after the Use of Opiates, the Vessels of the Head are render'd turgid and tumid, the Face becomes red, and Hæmorrhages of the Nose sometimes succeed. But, when the Blood is thus slowly conveyed through the Brain, a small Quantity of animal Spirits are secreted and generated, and whilst this happens, the due Tone and Tension of the Nerves, which depends upon a proper Influx of the Spirits, and is highly necessary to all Sensation, is destroyed in the Parts; and hence the Privation of Pain draws its Origin: Hence, also, we are enabled to assign a Reason, why those Spasms of the whole Body, which depend upon an imperious Influx of the Spirits, are alleviated; and as excessive Spasms generally hinder the Excretions of Sweat, Urine, and Stool, it happens, that, after the Use of Anodynes, the Sweat, suppressed by such a Cause, as, also, the Evacuations by Stool and Urine, flow more freely, and are reduced to better Order. And as the Excretions of Blood, and the Evacuations by Stool, derive their Origins from an Influx of the Spirits; hence Opium generally stops immoderate Hæmorrhages and Fluxes, since it retards and lessens the Influx of the Spirits, because, by this means, the due Flux and Reflux of the Blood in the Head is intercepted: Hence the Reason is obvious, why, after the Use of Opiates, the Pulse becomes weaker and slower, since, by the Consent of all Anatomists, it is granted, that the Motion of the Heart depends upon the Influx of the animal Spirits: Hence, also, we understand why, in a Defect of Strength, proceeding from a diminished Circulation of the Humours, in malignant Fevers, as, also, in all Disorders of the Head, such as Apoplexies, Vertiges, Palsies, Weakness of the Senses, Deliriums, and Loss of Memory, which arise from a retarded Circulation of the Blood through the Head, Opiates produce present Mischief, and render these Disorders more dangerous. The same fatal Effects are produced by Opiates in all weak Persons, such as are fat, those of phlegmatic Habits, and where-ever the Strength is impaired; in which Cases an incautious Exhibition of Opiates may often produce Death. That Opium, in some, proves a Stimulus to Venery, may be easily accounted for, from this Hypothesis; for the Blood in the whole Body, being rarefied, and quickly carried through the Vessels, expands the Muscles of the Penis, by which means it is erected; for Erection is procured not only by the Influx of the Spirits, but, also, by a large Conveyance, and long Continuance, of the Blood to the Penis.

As *Pliny* and *Matthioli* have observed, no Substances are more efficacious for removing the Symptoms brought on by Opiates, than Acids, which, especially when of the volatile Kind, by their acid Spicula, communicate a certain Motion to the Fibres, and partly stop the excessive Rarefaction of the Blood, and hinder the Effects of the sulphureous Vapours. Purgatives, also, and all Substances which produce a Commotion in the Body, have a Tendency to prevent the mischievous Effects of Opiates, because, by these, the Fibres being stimulated to a brisker Motion, the Stagnation in the Head is, by that means, generally render'd less: And in this Case the worst of Symptoms are not to be expected. This Hypothesis is greatly confirmed by a curious History, recorded in *Lentili Miscell. Méd. pract.* where we are told, that, half an Hour after a certain Person had used some Hemp-seeds, there was such an Expansion of the Cranium, that the Surgeon could take the Blood extravasated in the Wound, through the Fissures of the Cranium. Now, that Hemp-seed is possessed of a narcotic Quality, is shewn by *Simon Pauli*, in his *Quadrupart. Botan.* The *Dutroy* is, also, by many Authors who have wrote concerning the *Indies*, accounted a Species of Hemp, as we are informed in *Itiner. Olearii Oriental.* Hence *Lentilius* justly concludes, that the Substance of the Brain is render'd turgid, and possesses more Space, by the Fumes of Opium. Besides, that Narcotics operate by retarding the Motion of the Blood through the Brain, is obvious from dissecting the Carcases of those who have perished by the Use of Narcotics: Thus *Joach. Cureus*, *Lib. 2. de Sensu, Cap. 17.* and *Leovirus Lemnius de Occ. Nat. Mir. Lib. 2. Cap. 52.* informs us, that, in Subjects of this Kind, the Blood has been found congealed like Ice in the Ventricles of the Brain.

Lastly, That the Effects of Anodynes may be commodiously explained and accounted for from the Rarefaction and Expansion of the Blood and Humours, is obvious from this; that those Substances

stances which produce a rarefactive and expansive Motion in the Blood and Humours, are, also, possessed of a remarkable Power of inducing Sleep. Thus the immoderate Use of Brandy is succeeded not only by profound Sleep, but, also, by a Stupor. And *Platerus*, in *Lib. 1. Observ.* informs us, that he frequently observed, that those who drank immoderately of Brandy, or Aquavitz, were first seized with an intolerable Heat; afterwards became stupefied, as if they had taken Opium, and snored till they died. That Amber, Musk, Saffron, Camphire, and Nutmegs, rarefy, expand, and attenuate the Blood, whilst, at the same time, they produce anodyne Effects, is certain beyond Dispute: That Baths for the Head, Feet, and whole Body, dispose to mild and gentle Sleep, is well enough known; which is owing to nothing but their inducing an Expansion of the Humours; by which means they render the Body turgid and inflated; in consequence of which, the Blood moves slowly thro' the Head, and a gentle Sleep succeeds. The vaporous and fragrant Substances, which exhale from Flowers, are, also, possessed of a singular Power of inducing Sleep; for which Reason *Strabo*, in *Geogr. Lib. 65.* affirms, that a Carus may be produced by highly fragrant Substances; for the sulphureous Vapours, being possessed of a remarkable Elasticity, and received into the Pores thro' the Blood, by dilating and expanding it, produce the above-mentioned Effects. 'Tis, also, certain from Experience, that, by means of the incoercible and expansive sulphureous Exhalation arising from live Coals, many have been seized with a Stupor, and sometimes with Death. Instances of this kind frequently occur in practical Authors. But, that, during Sleep, the Humours and whole Habit of the Body are expanded, is sufficiently certain; since, in sleeping Persons, the Inflation of the whole Body and Head is sufficiently conspicuous; and 'tis observed, that the Shoes, Stockings, and other Cloaths of such Persons, are tighter than when these very Persons are awake. Hence, also, the Reason is obvious, why in rainy, warm, and Summer-weather, as, also, in hot Baths, which manifestly rarefy the Blood; Persons are more excited to Sleep, than when the Weather is cold, dry, and serene; because, by this last-mentioned State of the Atmosphere, the Fibres of the Body are more constricted, the Humours more condensed, and the Circulation of the Blood more brisk and accelerated. From what has been said, the Reason is, also, obvious, why Persons in a deep Sleep are commodiously roused by cold Water, or rather Vinegar, apply'd to the Region of the Liver, the Genitals, and the Back: As, also, why Acids, such as Lemon-juice and Vinegar, whether internally or externally used, commodiously remove Sleep and Drunkenness. 'Tis to be cautiously observed, that this Expansion of the Blood and Humours, which is necessary to induce Sleep, and procure a Freedom from Pain, varies much as to its Nature, according to the different Causes by which it is produced. Thus, 'tis a Circumstance of great Importance, by what Anodynes, or somniferous Medicines, the Sleep is induced; for, if it is procured by fragrant Substances, or such as contain a mild and gentle Sulphur, which is friendly to the Spirits, the Symptoms induced are not very dangerous, nor much to be dreaded. But if the Sleep is brought on by a sulphureous, fetid, and foreign Vapour, which is unfriendly to Nature, and the Spirits, then a more terrible Train of Symptoms infallibly succeeds; for 'tis certain, that those Spirits, which are so useful to the Body, and are subservient to Reason, and the Functions of the Mind; derive their Origin from the highly subtle Vapour of the Blood, and the most fine and elastic Portion of the Air. Hence we may easily conceive, that, by Anodynes and Narcotics, our Spirits must be variously affected and changed; so that Opiates and Narcotics exert their Efficacy immediately, not only on the Blood, but, also, on the Spirits.

From what has been said, I think 'tis sufficiently obvious, that Opiates are not without the greatest Caution to be exhibited in those Disorders; where there is a manifest Languor of the Spirits, a Defect of Strength, and an impaired Motion of the Blood, especially in the Head. Hence, in Disorders of the Head, Deliriums, all Fevers, and especially those of the inflammatory Kind, Opiates and Narcotics are either never to be used, or exhibited with great Caution. *Hoffman*.

The Antients, having experienced, that Opium would often kill, though taken in no large Quantity, ranked it with Poisons; and gave it the first Place among those, which, from their stupefying Quality, they called Narcotics.

True, indeed, it is, that we every Day find this to be, in a small Dose, one of the most noble Remedies in the World. But it is not worth the while to engage in the Controversy warmly debated by some Authors, how far Poisons are medicinal, since it is notorious enough, that Medicines sometimes prove poisonous. And, take the Matter as we please, it may serve to very good Purposes to understand the Manner of Operation of so celebrated a Drug, and help us, in a great measure, to ascertain its Use in different Cases, if we are beforehand rightly apprised of its Nature, and Way of acting.

In order hereunto, it is necessary, besides some other Precognita, since one of the chief Virtues of this Medicine is hypnotic, to define distinctly what Sleep is; or rather (to avoid Confusion and Disputes about Words) what Difference there is in an animal

Body, when asleep, and when awake. For I suppose the History, Manner of preparing, &c. of Opium, to be already sufficiently known.

First, then, there is no one but knows, that in Sleep there is a Cessation from Action. When waking, we walk, discourse, move this or that Limb, &c. but, in natural and undisturbed Rest, there is nothing of all these; that is, whereas, being awake, we perform several Motions by the voluntary Contraction of our Muscles; when asleep, those Muscles only are contracted, whose Action is in a manner involuntary, or to which the Mind has always so constantly determined the Spirits, that it acts by an Habit, without the Intervention of the reasoning Faculty; such are those of the Heart and Breast.

So that there is, at this time, a kind of Relaxation, or Looseness, of the moving Fibres of the several Members, or, at least, in such a quiet Position and State of them, by which all the antagonist Muscles are in an Equilibrium, and Equality of Action, not overpowering one another. For this, indeed, seems to be one great Design of Sleep, to recover, to the Parts over-stretched by Labour, their former Tone or Force; and, therefore, we naturally, when composing ourselves to Rest, put our Body into that Posture, which most favours the particularly-wearied Limbs, and conduces to this End.

In the next place, it is very plain, that there is, in Sleep, not only a Rest and Suspension from acting of most of our bodily Organs, but even of our thinking Faculty too: That is, (for I would prevent Cavils) a ceasing from such Thoughts, as, when waking, we are exercised about, which we reflect upon, and will, to employ our Mind with. For tho' Dreams are Thoughts, yet they are but imperfect and incoherent ones, and are, indeed, either so faint and languid Representations, as to be consistent with our Sleep, as some may be; or else, if they be strong and lively, they are, as every one knows, the Interruption and Disturbance of it.

Hence it will follow, that the Motion of the arterial Fluid must be, *ceteris paribus*, more sedate, even, and regular, in the Time of sleeping than waking; for, besides the various Alterations, which, in the latter State, this receives from the several Passions of the Mind, the very Contractions of the Muscles themselves, in Exercises of the Body, do differently forward its Course; whereas, in Sleep, the Force of the Heart, and pectoral Muscles, being more constant and uniform, gives it a more calm, and equally-continued Impulse.

Hence, also, it will come to pass, that the Influx of the Liquor of the Nerves into the Organs of the Body, as, also, its Reflux towards the Brain, is in Sleep either none, or very inconsiderable; that is, that this Fluid has at this time, but little or no Motion: For it is muscular Action and Sensation that require it to be thus determined this Way, or that, which are now hardly any; and yet, by the Arrival of the Blood at the Brain, this Juice will still be separated there, fit to be derived into its Canals or Tubes: So that by these means there will be a kind Accumulation, or laying up in Store, of Spirits for the Offices and Requirements of Waking.

Thus we may, in short, look upon the Time of Watching, as the Time of wearing out, or the Destruction, of the animal Fabric, and the Time of Sleep, as that in which it is repaired and recruited; not only upon the account of what we have just mentioned concerning the nervous Liquor, but, also, with respect to all the other Parts, as well fluid as solid. For Action does necessarily, by degrees, impair the Springs and Organs; and, in Motion, something is continually abraded and struck off from the distractile Fibres, which cannot otherwise be restored, than by their being at Rest from Tension; besides, that such a regular and steady Course of the Blood, as we have observed to be in Sleep, is by far more fit and proper for Nutrition, or an Apposition of Parts to the Vessels; which an uneven Hurry of it is more liable to tear off, and wash away.

The Case being thus, it is very plain, that whatsoever can induce such a Disposition of the Fluids, and muscular Parts, of the Body, as this we have described, will so far cause Sleepiness. And, in like manner, when any thing interposes, and hinders this Composedness and Tranquillity, the removing of the Impediment will be the causing of Sleep; inasmuch as this is only reducing the animal Oeconomy to its right State, in which, by natural Order, there must be a Succession of Sleeping and Waking.

Thus it appears, how necessarily continued Exercises make us sleepy, since these exhaust the Juice of the Nerves, that is, both lessen its Influx into the Organs of Motion, and incline the Mind not to determine it any longer that Way, upon the account of the Pain and Uneasiness, with which too violent a Tension of the Parts is always attended; which, therefore, we must needs desire to relax; or lay to Rest.

That Sleepiness which follows upon a Fulness of the Stomach, after Eating or Drinking, is owing to a different Cause; and, indeed, so nearly falls in with the Effects of opiate Medicines, that it requires a particular Consideration.

As Hunger, or the Emptiness of the Stomach, is a painful Sensation; so the satisfying or removing of this, is a pleasing or agreeable one. Now all Pain is a Stimulus upon the Part affected;

and this, we all know, being attended with Contractions of the pained Membranes, causes a greater Afflux than ordinary of the nervous Juice that Way. On the other hand, Pleasure, or a delightful Sensation in any Part, is accompany'd with a smooth Undulation, and easy Reflux, of the Liquor of the Nerves towards the Brain. This is, as it were, the Entertainment of the Mind, with which being taken up, it does not determine the Spirits to the Organs of Motion; that is, there is such a Relaxation of the muscular Fibres, and such a Disposition of the nervous Fluid, as we have observed to be necessary to Sleep.

This is the Reason of that Chilliness of the Limbs, of which we commonly complain after a good Feast.

If it seem strange, that a Pleasure in the Stomach should so powerfully influence the Mind; let it be considered, on the other hand, how violent Effects an uneasy and disagreeable Sense of the same Part produces; what a terrible Agony two or three Grains of Crocus Metallorum throws the whole Fabric into; how readily the Fluid of the Nerves is, with a more than ordinary Impetus, determined and commanded into the Muscles of the Stomach and Abdomen, in order to throw off the Enemy, and remove the ungrateful Sensation.

Now the Consequences, which we have ascribed to a pleasing Sense in this Part, are only just the contrary of these we find the opposite Affection of Pain induces. And, indeed, Pleasure and Pain are two great Springs of Action in the animal Economy; the Changes they make in the Fabric are the Causes of many Effects which seem surprising, because we do not regard the Mechanism by which they are produced; but these must be more considerable in the Stomach, than any where else; this Part being, for very wise Purposes, of so acute a Feeling, that some Philosophers have, for this Reason, thought it to be the Seat of the Soul.

Besides this Consideration, we must take notice, that the Stomach, being distended with Food, presses upon the descending Trunk of the Aorta, and thus causes a greater Fullness of the Vessels in the upper Parts; whereupon the Brain is loaded, or the Derivation of Spirits into the Nerves diminished, and Unactivity, or Drowsiness, ensues. Hence proceed those Flushings in the Face, Redness, &c. after plentiful Eating or Drinking, most visible in those, whose Vessels are lax and weak, as in exhausted and hectic Persons they more especially are.

Thus we may, without the Assistance of the new Chyle entering into the Vessels, account for that Inclination to Sleep, which follows upon a full Stomach. Though we must, also, allow the Distention from this, to be a considerable Cause of the same Effect; but this does not happen immediately, nay, sometimes, perhaps, not within two or three Hours after eating; and, therefore, the sudden Drowsiness must (as well as the present Refreshment and Reviving which Meat gives) be chiefly owing to some more speedy Alteration.

We come, in the next place, to Opium itself; the chymical Analysis of which, out of one Pound, affords a volatile Spirit of the like Nature with that drawn from Hartshorn; five Ounces and five Drams; of a fetid Oil, one Ounce two Drams and an half; of Caput Morruum, smelling like Spirit of Hartshorn, seven Ounces and six Drams.

The Virtues, therefore, of Opium are owing to a volatile alkaline Salt, intimately mixed, and combined with an oily sulphureous Substance; the Effects of which we must consider, first, of all, upon the Stomach, and afterwards, when they have passed the Primæ Viæ, upon the arterial Fluid itself.

An agreeable Sensation, produced in the Stomach, together with a Distention of its Membranes, we observed before to be the Cause of that Sleepiness to which we are so prone after Eating. The one of these engages the Mind, the other acts upon the Body. For Pleasure, amuses the Soul, as it were, so that it does not think, or exercise itself, about any outward Objects; that is, is inclined to Rest. And the Fullness of the Vessels in the Brain checks and hinders, in some measure, the Derivation of the nervous Juice into the Organs, &c.

Now, if they who take a moderate Dose of Opium, especially, if not long accustomed to it, are so transported with the pleasing Sense it induces, that they are, as they oftentimes express themselves, in Heaven; and tho' they do not always sleep, (which proceeds from the Presentation of pleasing Images to the Mind, being so strong, that, like Dreams, they over-engage the Fancy, and so interrupt the State of Rest) yet they, however, enjoy so perfect an Indolence and Quiet, that no Happiness in the World can surpass the Charms of this agreeable Ecstasy.

Thus we have, from this Medicine, but in a far more eminent Degree, all those Effects, which we observed to follow upon that grateful Sense in the Stomach, which a moderate Fullness produces. For no Bodies are so fit and able, pleasingly to affect our sensible Membranes, as those which consist of volatile Parts, whose Activity is tempered and allayed by the Smoothness of some lubricating and oily ones; which, by lightly rarefying the Juices of the Stomach, and causing a pleasant Titillation of its nervous Coat, will induce an agreeable Plenitude, and entertain the Mind with Ideas of Satisfaction and Delight.

The Cause being thus, we easily see upon what Mechanism the

other Virtues of Opium depend, its easing Pains; checking Evacuations, &c. not only in that the Mind, being taken up with a pleasing Sense, is diverted from a disagreeable one; but, all Pain being attended with a Contraction of the Part, that Relaxation of the Fibres, which is now caused, eludes and destroys the Force of the Stimulus.

In like manner, in immoderate Secretions, there is, most commonly, an Irritation of the Organs, the Removal of which will abate the Discharge. And herein lies the incrassating Quality of this Medicine, in that the twitching Sense upon the Membranes of the Lungs, Bowels, &c. being now lessened, the sharp Humour is suffered to lodge there in a greater Quantity, before it is so troublesome, as to be thrown off, and expelled; it being all one, as if there were no Irritation of the Part, if the uneasy Sense thereof be not regarded by the Mind. These Effects will all be heightened by the Mixture of the opiate Particles with the Blood; which is hereupon rarefied, and distends its Vessels, especially those of the Brain; and thus still, to a greater Degree, lessens the Influx of the nervous Fluid to the Parts, by pressing upon the little Tubuli, or Canals, through which it is derived.

This is the Reason of that Difficulty of Breathing, which they for a time experience, who take this kind of Medicine; this Symptom being inseparable from the Rarefaction of the Blood in the Lungs.

Hence it appears, that the Action of Opium is very analogous to that of other volatile Spirits, only, that a small Portion of it has a Force equal to that of a greater Quantity of them.

This is very evident in those who accustom themselves to take large Doses of it; as the *Turks* and *Persians* do to that degree, that it is no uncommon thing there, to eat a Dram or two at a time; for the Effects of it, in them, are no other than downright Drunkenness; upon which account, it is a common Saying with them, and on the same Occasion, *He has eat Opium*; or, with us, *He has drank too much Wine*.

Neither do they otherwise bear such large Quantities of it, than our Tipplers will a great deal of Brandy; that is, by habituating themselves to it by degrees, beginning with small Doses, and requiring still more and more, to raise themselves to the same Pitch. Just as *Galen* tells us of a Woman, at *Athens*, who, by a gradual Use, had brought herself to take, without any Hurt, a considerable Quantity of Cicuta, or Hemlock: Which Instance is the more to our Purpose, because *Nic. Fontanus* knew one, who, being recovered of the Plague, and wanting Sleep, did, with very good Effect, eat Hemlock for some time, till, falling ill again of a Fever, and having left off the Use of this Remedy, he endeavoured to procure Rest by repeated Doses of Opium, which (Nature having been accustomed to a stronger Alterative) had no Operation, till the Help of Cicuta was again called in with desired Success.

It is a sufficient Confirmation of all this Reasoning, that *Prosper Alpinus* observed, among the *Egyptians*, those who had been accustomed to Opium, and were faint and languid thro' want of it, (as Drinkers are, if they have not their Spirits) to be recovered and put into the same State of Indolence and Pleasure, by large Doses of *Cretic Wine*, made hotter by the Infusion of Pepper, and the like strong Aromatics.

Nor is it, perhaps, amiss to remark, that in maniacal People, as is frequently observed, a quadruple Dose of Opium will scarce produce any considerable Effect. Now, in Persons so affected, the Mind is deeply engaged, and taken up with some Images or other, as Love, Anger, and the like; so that it is not to be so easily moved or diverted by those pleasing Representations which it would attend to at another time, and upon which the Virtues of this Medicine, in a great measure, depend. Beside this, those who are maniacal, to a Wonder, bear the Injuries of Cold, Hunger, and the like, and have a prodigious Degree of muscular Force, which argues the Texture of their Blood to be very strong, and the Cohesion of its Globules great; so that the spirituous Parts of the Opiate cannot make that Disjunction and Rarefaction of this Fluid in them, which it does in ordinary Bodies and Constitutions.

Many are the Improvements which might be made of this Theory, with relation to the Practice of Physic; but these will be obvious enough to one instructed in the animal Oeconomy.

To conclude, then, as to the Subject in Hand, it is very plain, that there needs no more to make Opium prove destructive, or a Poison, than to take too great a Quantity of it; for, then, it must inflame the Stomach, and rarefy the Blood to such a Degree, that the Vessels cannot again recover their Tone; whereupon apoplectic Symptoms will ensue.

To be convinced of this, I forced into the Stomach of a small Dog about half a Dram of crude Opium, dissolved in boiling Water. He quickly vomited it up, with a great Quantity of frothy Spittle; but, repeating the Trial, by holding up his Head, and beating him, I made him retain three or four Doses, intermitting between each, about a quarter of an Hour: When he had thus taken, as I could guess, near two Drams, I watched him about an Hour; then he began to sleep, but presently started up with Convulsions; fell into universal Tremblings; his Head constantly twitched and shaking; he breathed short, and with Labour; lost entirely the Use, first, of his hinder Legs, and, then,

then, of the fore ones, which were stiff and rigid, like Sticks. As he lay snoring, to hasten his End, I was giving him more of the Solution; but, on a sudden, his Limbs grew limber, and he died.

Opening his Stomach, I found it wonderfully distended, tho' empty of every thing, but some Water and Opium; Parcels of frothy Mucus swimming in it; the Inside was as clean, as if scraped and washed from all the Slime of the Glands, with some Redness here and there, as in a beginning Inflammation. The Pylorus was contracted. The Blood-vessels of the Brain were very full; and I took out a large Grume of concrete Blood from the upper Part of it, cutting into the Sinus Longitudinalis, as it is not uncommon in apoplectic Carcases; but found no extravasated Serum in the Ventricles, nor among any of the Membranes.

As to the Cure of such a Case, besides other Evacuations, acid Medicines, and lixivial Salts, must certainly do Service; these, by their diuretic Force, causing a Depletion of the Vessels. This is the Foundation, upon which *Starkey* compounded his *pacific Pill*. Generous Wine, which the Antients gave for an Antidote, can be no otherways useful, than as it dissolves the resinous clammy Parts of the Opium sticking to the Coats of the Stomach, and so forwards its Expulsion by other Helps, which cause a Contraction of the muscular Fibres. *Mead on Poisons*.

One *Mustapha Shatoor*, an Inhabitant of *Sedique*, a Village six Miles from *Smyrna*, by Trade a Coffee-man, about forty-five Years old, a most famous Opium-eater, told me, that his constant eating was three Drams a Day of crude Opium, one half of which was his Dose in the Morning, and the other half in the Afternoon; but that he could safely take double this Quantity. Resolving therefore to be an Eye-witness of what he could do, I provided the best Opium I could get, and weighed it nicely into Drams: He came to me, at my Desire, at Nine in the Morning; but excused his having taken half a Dram before, because he had not Strength to rise out of his Bed without it. I laid before him my Opium made up in Pills, each weighing a Dram, and desired him to eat what he pleased; he took one Dram and an half, making it up in three Pills; and, chewing it with a little Water, he commended the Opium; but was not willing to eat more at a time, and I would not press him for fear of Accidents. He staid with me about half an Hour, after he had eaten the Opium: The visible Effects it had upon him, were to make his Eyes sparkle, and to give a new Air of Life and Brightness to his Face. He told me, that he was extremely refreshed by my Entertainment; and I found him half an Hour afterwards labouring heartily at cleaving Wood to burn: At Three in the Afternoon he came to me again, and took the same Quantity as in the Morning, and the same Symptoms appeared. He says that it has always the same Effects, giving him Vigour and Spirit; and is now become as necessary to him, as any other Part of his Sustenance; and that it makes him fitter for Procreation; for he has many Wives and Children; that it never affects him with Sleep and Drowsiness, but rather hinders his reposing when he happens to take too much of it; that he entered upon this Practice twenty-five Years ago, beginning with the Bigness of a Grain, and so training up Nature gradually to larger Quantities; and that the Want of it, and the Desire of taking more, grow daily upon him.

The Alteration and Impairment, which this Custom has produced in him, are Weakness, his Legs being small; his Gums eaten away; so that the Teeth stand bare to the Roots; his Complexion very yellow, and appearing older by twenty Years, than he really is.

Opium is commonly taken by the Messengers in *Turky*, who are employed in making quick Dispatches; 'tis generally part of their Provision: They take it when they find themselves tired, and it gives them Strength and Spirit to proceed. I had the following Relation of one of them, that, coming from *Constantinople* to *Mr. Samuel Barnardiston*, a Merchant of *Smyrna*, at entering into a Gentleman's House, he fell down for dead; at which when the whole House was surprised and concerned, one of the Servants rightly judging, that this fainting away was occasion'd by the Stock of Opium laid in for his Journey being spent, forced a little of it into his Mouth; and by this means he recovered presently, and acknowledged the Servant had been his Physician.

The *Turks* use Opium made up with something that renders it palatable, at their Feast called *Biram*, to make them cheerful; which may be one Reason of its prevailing so much; for, finding it then entertains with pleasing Fancies, they are tempted to continue it; and so the Use of it becomes necessary, and grows upon them. *Philosophical Transact. Abr. Vol. 2.*

Some pound the Heads and Leaves together, then subject them to the Press, afterwards bruise them in a Mortar, and so reduce them into Troches; this Preparation is called *Meconium*, and is more gentle than Opium [*πρὸς ὄρε*]. The Way of preparing the Juice, of Opium, is, first, after the Dew is dry'd up, to cut out the Star [in the Head of the Poppy], with a Knife, in so clean a manner, that none of it be forced inwards, and

then to make sraic, but slight, Incisions at the Sides of the Head, which will be follow'd by an Eruption of the Tear, to be wiped off with the Finger into a Saucer. And, if you return after a little while, you will find more of the Tear condensed, and so again the next Day; after this pound the Whole in a Mortar, and, reducing it into Troches, lay them up for Use. By way of Caution, when you cut the Poppy, take care to retire back, that the Juice might not be wiped off in your Clothes. *Dioscorides, Lib. 4. Cap. 65.*

OPOBALSAMUM. See BALSAMUM.

OPOCALPASON, OPOCARPASON, *ὀποκάλπασον, ὀποκάρπασον*, the Juice of a Tree called *Calpasi*; this Juice resembles Myrrh; but is poisonous and deadly, inducing a Strangulation. *Galen, de Antidot. Lib. 1.* says, that in the Course of his Time he had observ'd the fatal Effects in many, who had ignorantly taken Myrrh mix'd with *Opocalpason*. For they who prepare Antidotes, he says, purposely mix this as an Ingredient, taking it for the best Sort of Myrrh; because they had observ'd it to be a very good Medicine in Collyria, where it attenuates Sanies without Corrosiveness, and sometimes removes an incipient Cataract. And if you put, says he, this Kind of Myrrh into a Plaster, Cerate, or any attenuating Medicine, to be outwardly apply'd, you will increase its Virtue, but the Effects of it taken into the Body are deadly.

OPODELDOC. The Name of a Plaster said to be invented by *Mindererus*, tho' often mention'd by *Paracelsus*. See EMPLASTRUM.

There is a famous popular Ointment, which goes by the Name of *Opodeldoc*; which is said to be thus prepar'd.

Take of the Roots of Marshmallows, Comfrey, Gentian, Long-birthwort, Angelica, of each one Ounce and an half; of the Herbs Sanicle, Ladies-mande, Moufe-ear, Colts-foot, Snakewood, Periwinkle, bruised, of each half an Handful; of the Leaves of Rosemary, Sage, and Lavender, of each one Handful and an half; Flower of Rosemary, Sage, and Lavender, of each one Handful; Juniper-berries, two Ounces; Cumin-seeds, one Ounce; Camphire and Castor powdered, of each one Ounce and an half; and of Spirit of Wine, three Pints and an half.

Put all into a Glass Cucurbit, well luted, and digest for ten Hours in *Balneo Mariæ*, that is, in hot Water, but not to boil; then strain; and, the Spirit of Wine being sufficiently impregnated with the Ingredients, then add one Pound of Castile Soap shaved thin; then digest in the same manner as before, until the Soap is dissolved.

A FARTHER EXPLANATION.

Lute the Juncture carefully, with two or three Doubles of Paper, daub'd over with the White of Eggs, and tied about with Thread; the Luting being dry'd, then digest in *Balneo Mariæ* for ten Hours, the Matrass being fix'd in the middle of the Kettle, with a Layer of Straw under it, to keep it at the Distance of two Inches from the Bottom: For the first eight Hours, keep the Water so hot about it, that you can scarce hold your Finger therein; and the two other Hours augment the Heat, but not so much as to make the Water boil.

After the Spirit of Wine is thoroughly impregnated with the Tincture of the Roots, Herbs, Leaves, and Powders, cool it gently; and, straining it thro' a Linen Cloth, pour it again into the Matrass, with one Pound of Castile Soap shaved thin; then fit the Vessel of Rencontre to the Matrass; lute the Junctures, and digest as before, till the Soap is entirely mix'd with the Spirit, and the Whole reduced to an Ointment; then take out the Matrass, and suffer it to cool.

If the Doses, and other Directions, are duly observed, it will be the Confidence of an Unguent, neither too thick or thin; and the Method of trying if 'tis truly prepared, is, to rub some of it on your Hand, which it will immediately penetrate, leaving only a greenish Stain; tho' the natural Colour of the Ointment is brown.

'Tis excellent in Strains, Relaxations of the Sinews in Horses, as well as human Kind; also, in all Pains, Numbness, Weakness in the Joints, or other Parts, being well rub'd in.

ITS SUCCEDANEUM.

Take of Castile Soap, two Ounces; of rectify'd Spirits of Wine, four Ounces; and of Camphire, two Drams: Mix.

OPOPANAX. C. B. P. 494. Schrod. 4. 408. Raii Hist. 1. 411. Mill. Bot. Offic. 327. Park. Theat. 1544.

This is a Gum which is brought from *Turky*, flowing, as is generally believ'd, from the wounded Root of a Species of *Panax Heracleum* call'd by *Gerard*, *Panax Heracleum majus*; and by *Boerhaave*, *Pastinata*, *Olusatris folio*.

The best *Opopanax* is of a deep-yellow Colour, but whiter within, in large Drops, but yet usually sticking together, of a
[N n *] very

very strong, not unpleasant Smell, and of a warm bitterish Taste, easily dissolving in Water, which it turns of a milky Colour.

This Gum is heating, dissolving, and evacuating tough Phlegm, from the remote Parts of the Body, and on that Account is useful against old Coughs and Asthmæ; it helps the Gout, Sciatica, and rheumatic Pains in the Limbs; and is very good to procure the Catamenia: Outwardly applied, it is good to dissolve hard Swellings, Tumors, pestilential Buboes; and to cure the Bittings of mad Dogs, and other venomous Creatures.

Miller's Bot. Off.

Geoffroy says, the Dose is from twenty Grains to a Dram, and it is an Ingredient in many Compositions. See PANAX Heracleum.

OPOPIA, ὀπία, the Plural of ὀπίον, Oporion, from ὀφ, the Eye, in Hippocrates περί ὁφίων φύσ. are the Bones of the Eyes.

OPOPYRON Laudani. A Name given by Paracelsus, de Vita longa, Lib. 2. Cap. 5. to a Remedy, which, he says, removes a Fever, and prevents its Dilatation, as he calls it. Opopyrion is the Name of a Composition, in Antid. Nicolai Operum Mesue, against spasmodic and paralytic Affections.

OPORÉ, ὀρέν, has two Significations; for, first, it means a certain Season of the Year, or the latter Part of the Summer, comprehending half, or but one Third of it, according to the various Divisions of the Antients. Galen. pluribus Locis. Some by ὀρέν understand the Autumn. Secondly, it often signifies the Fruits which come to Maturity in the aforesaid Season, particularly Figs and Grapes; but Hippocrates, as he is generally render'd by Interpreters, uses the Word ὀρέν to signify Autumnal Fruits, and principally Apples.

OPORICE, ὀporice, from the preceding Word, is a noble Remedy, as Pliny calls it, composed mostly of Fruits of Trees. It consists, he says, of five Quinces with their Seeds, as many Pomegranates, a Pint of Services, and a like Measure of what they call Rhus Syriacum, (Syrian Sumach) with half an Ounce of Saffron, put all together into a Congius of white Must, and boiled over a gentle Fire to the Consistence of Honey; it is excellent for Dysenteries; and Disorders of the Stomach. Pliny, Lib. 24. Cap. 14.

OPOS, ὀπός, Juice, in general, but more particularly the crude Juice of Plants, whether expressed, or distilling spontaneously; Galen. Simp. Facult. Lib. 1. Cap. 36. ὀπός, taken simply, or by way of Eminence, signifies, in Hippocrates, according to Galen in his Exegesis, the Juice of Silphium or Lafer, as the general Word καυλός (Caulos) a Stalk, in the same restrained Sense, signifies only the Stalk of that Plant; tho' Hippocrates, Lib. 7. Epid. and in many other Places, chuses to express the same by ὀπός σιλφίου, "the Juice of Silphium," at large. The Word has been found, also, to signify not only the Juice of the Lafer, but the very Silphium, and Laferpitium; thus Galen, in his Exegesis, expounds κατέπευ ὀπός, "the Fruit of the Opos," by σιλφίου σπέρμα, the Seed of the Silphium;" which, he says, is, also, called by some Phyllon and Magydaris. ὀπός, among the Antients, was usually put, also, for the milky Juice of the Ficus and Caprifiscus, with which they used to curdle their Milk. Castellus. Foefius.

OPPILATIO, from oppilo, of pilo, to condense, to compact, Oppilation, is a very close kind of Obstruction; for oppilare imports not only occludere, to shut up, but implere, to fill. Rhodius in Lexic. Scribon. See OBSTRUCTIO.

OPRIMECHIOLUM, a Term coined by Paracelsus, by which he would express all sorts of Fumes arising from Copper. OPSIGONOS, ὀψιγόνος, from ὀψέ, an Adverb signifying Lateness of Time, and γίνομαι, to be generated, is an Epithet of those last Dentes molares, which are latest in appearing, and discover themselves at an adult Age. They are, also, called Cranteres and Sophronesteres, σαρκενέστερες, or Dentes sapientiae. See CRANTERES.

OPSIS, ὄψις, from ὀψομαι, to see, in Hippocrates, is the Pupil of the Eye, as appears from several Places in 2 Prorrhæ. Sometimes, however, it means the whole Eye, or Vision itself, as Lib. περί ὄψιος, and in Prognostic. and Coac. Again, it signifies the Aspect, Countenance, or whatever appears to View: Thus Lib. de R. V. I. A. εἰς δὲ ὄψις πολλὰ τῶν καμνόντων "Various are the Aspects of the Sick:" On which Galen commenting says, ὄψις εἰρηκεν ὁσάκις διαφοράς, ἢ τρεῖς, &c. "He said Aspects, that is, Differences, Modes, or Forms of the Patients, instead of saying, Various are the Forms of the Diseases with which the Patients are affected." And again he says, ὄψις εὖν εἶπε καμνόντων, &c. "The Differences or Alterations which we find in the Sick, upon a thorough View, he calls Opsies, Aspects."

OPS Metallum. Quicksilver. Rulandus.

OPSOMANES, ὀψομανής, from ὀψον, Food, and μανίαι, to be mad, one who is particularly fond of this or that sort of Food, beyond all Reason. Castellus.

OPSON, ὀψον, in Latin Opsonium, corruptly Obsonium; in general signifies all sorts of Food which are brought to Table, except Bread and Wine. Athenæus, Lib. 7. restrains it to Meats

prepared by the Fire. Among the Antients, the Term Opsion was more peculiarly appropriated to Fish; whence φιλοψοί (Philopsi) and ὀψοφάγοι (Opsophagi) are Persons who are great Lovers of Fish. Foefius. Castellus.

OPULUS. The Gelder Rose.

The Characters are;

The Leaves are like those of the Maple-tree: The Flowers consist of one Leaf, which expands in a circular Rose-form, and is divided at the Top into five Parts; these are collected (for the most part) in form of an Umbel, the largest of which grows on the Outside; and are barren; but those in the middle are fruitful, producing red Berries, in each of which is contain'd one flat Heart-shap'd Seed.

Boerhaave mentions two Sorts of Opulus; which are,

1. Opulus. Ruellii 281. Sambucus, aquatica, flore simplici. C. B. P. 456. Sambucus aquatica. J. B. 1. 552.
2. Opulus; flore globofo. T. 607. Sambucus aquatica, flore globofo pleno. C. B. P. 456. Sambucus rosea. J. B. 1. 553.

Besides the two foregoing Species of Opulus, Miller mentions a third; which is,

Opulus, flore globofo, folio variegato.

There are no medicinal Virtues ascrib'd to either of these Plants at present, that I know of.

OPULUS is, also, a Name for the second Species of ACER; which see.

OPUNTIA.

The Characters are;

The Flower consists of many Petals, which expand in form of a Rose, having a great Number of Stamina in the Centre, which grow upon the Top of the Ovary: The Ovary afterwards becomes a fleshy umbilicated Fruit, with a soft Pulp inclosing many Seeds, which are, for the most part, angular.

Boerhaave mentions eleven Species of Opuntia; which are,

1. Opuntia; maxima; folio spinoso; latissimo, & longissimo. T. 240. Ficus, Indica, seu Opuntia maxima, folio spinoso, longissimo, & latissimo. H. L.
2. Opuntia; major; validissimis spinis munita. T. 139. Ficus Indica, seu Opuntia major, folio spinis longissimis & validissimis armato. Breyn. Prod. 1. 35.
3. Opuntia; folio minori; rotundiori, & compressiori. H. L. T. 239.
4. Opuntia, folio spinoso, longissimo & angusto. H. L. T. 240.
5. Opuntia; folio oblongo media. T. 239. Ficus, Indica, folio oblongo, media. H. R. Par. 70.
6. Opuntia; vulgo; Herbariorum. J. B. 1. 154. Tourn. Inst. 259. Boerb. Ind. A. 2. 82. Opuntia. Offic. Ficus Indica. Ger. 1329. Emac. 1512. Ficus Indica, spinosa, major. Parkinson. Theat. 1497. Ficus Indica major. Parad. 433. Raii Hist. 1464. Ficus Indica folio spinoso fructu majore. C. B. P. 458. Tuna Indorum. Jons. Dendr. THE PRICKLY PEAR-TREE.

The only Parts of this Tree which are us'd, are the Fruit and Leaves; which are of a refrigerating and moistening Quality, and good for extinguishing burning Fevers, and allaying Thirst. Dale.

7. Opuntia; minima; folio subrotundo. T. 240. Ficus Indica, minima, folio subrotundo. H. R. Par.
8. Opuntia; Curassavica; minima. H. Beaum. Ficus Indica, seu Opuntia Curassavica, minima. H. A. 1. 107.
9. Opuntia; flagelliformis, angustissimis, longissimis foliis.
10. Opuntia; latifolia; crassiori folio, spinis albis numerosis armato.
11. Opuntia; folio plano, glabro, Scolopendriæ. Ficus Indica, Scolopendria folio, Epiphyllitis. Par. Bat. App. 8. Boerb. Ind. alt. Plant. Vol. 2.

See COCHINILLAS.

OPUNTIOIDES. A marine Plant.

The Characters are;

It is brittle and hard, and in Shape like the Opuntia.

Boerhaave mentions two sorts of Opuntioides; which are,

1. Opuntioides marina; parva, forma Trichomanis.
2. Opuntioides marina; quæ Corallina latifolia; & Opuntia marina. Plukn. Phyf. T. 26. 1. Scutellaria, five Opuntia marina. J. B. 3. 802. Lichen marinus. Cluf. H. 2. 250. Sertolara. Imper. 653. Boerb. Ind. alt. Plant. Vol. 1.

It is esteem'd good against the Worms.

OQUICHITLI. A Name for the Tagetes; Indicus; medius; flore simplici, inteo pallido.

ORBICULARE OS. The Name of a small round Bone, in the internal Ear. See AURIS.

ORBICULARIS. A Name for the Fungus, call CREPITUS. LUP. Blancard.

ORBICULARIS MUSCULUS. The Name of a Muscle of the Eye-lids. See OCULUS.

ORBIS. The Name of a large Sea-fish, cover'd with an hard rough Skin, but without Scales, of which there are many Species. It is thus call'd because of its orbicular Form. The Teeth are recommended as astringent, and good to stop Diarrhoeas and Hæmorrhages, taken in Powder.

ORBITA. The Orbit of the Eye; or circular Cavity, in which the Eye is plac'd.

ORCA. The Name of a very large Sea-fish, of the cetaceous Kind, shaped like a Dolphin, but much larger, some weighing a thousand Pounds. The Fat is said to be resolvent.

ORCHEA, ὄρχηα, is explain'd by Galen, in his *Exegesis*, ὄρχηος, the Scrotum.

ORCHESTÆ ACOPON. The Name of an *Acopon* recommended by *Aetius Tetrabib.* 3. *Serm.* 4. C. 5.

ORCHESTÆ UNGUENTUM. An Ointment describ'd by *Aetius, Tetr.* 3. *Serm.* 4. C. 44.

ORCHILUS. A Bird, said to be a Friend to the Crocodile, and Enemy to the Eagle.

ORCHIS, ὄρχις. A Testicle. Hence a Plant is thus call'd from the Similitude of its Root to Testicles: Hence the following Plant.

ORCHIS.

The Characters are;

The Root is tuberous, and consists sometimes of three, sometimes two Tubera, and sometimes a single Tuber, shaped like Testicles, or fleshy, and resembling an Hand. The Leaves are simple, and like those of the Lily; the End of the Pedicle passes into an oblong, tricapular, trivalve Ovary, pervious in three Places, and containing dufty Seeds. The Flower, seated on the Apex of the Ovary, is of a surprising Contexture, irregularly hexapetalous, collected into Spikes, and hardly to be described.

Boerhaave mentions fourteen Species of *Orchis*; which are,

1. *Orchis*; latifolia; hianthe cucullo; major. *T.* 432. *Cynosorchis*, latifolia, hianthe cucullo, major. C. B. P. 80.

2. *Orchis*; latifolia; hianthe cucullo; altera. *Tourn. Inst.* 432. *Boerb. Ind. A.* 2. 152. *Cynosorchis*. *Offic. Cynosorchis* major. *Ger.* 156. *Emac.* 205. *Cynosorchis* prior *Dodonæi*. *J. B.* 2. 758. *Raii Hist.* 2. 1213. *Cynosorchis latifolia hianthe cucullo altera*. C. B. P. 81. *Orchis* major latifolia altera. *Park. Theat.* 1343.

DOG-STONES.

It grows in the grassy Places about *Basil*; and the Root, which is the Part used in Medicine, agrees in Virtues with those of other Species of *Orchis*.

3. *Orchis*; morio; mas; foliis maculatis. C. B. P. 81. *Park. Theat.* 1346. *Raii Hist.* 2. 1214. *Synop.* 3. 376. *Tourn. Inst.* 432. *Boerb. Ind. A.* 2. 152. *Satyrium* mas. *Offic. Cynosorchis* morio mas. *Ger.* 158. *Emac.* 208. *Orchis* major, tota purpurea, maculosa altera. *J. B.* 2. 973. **MALE SATYRION.**

This *Orchis*, which is the common *Satyrium* of the Shops, has two oval Roots, about as big as a small Olive, of a whitish Colour, full of a slimy Juice, which, contrary to most other Plants, have several white Fibres growing above them; from these springs a single succulent Stalk, encompassed with three shining, smooth, Lily-like Leaves spotted with black. The Flowers grow on the Tops of the Stalks in a long Spike or Thyrsus, of a purple Colour; each Flower being of an irregular Form, consisting of six Leaves, somewhat resembling a Galea, with a small Piece of Ear standing erect on each Side, and a broad Labella spotted with deeper Spots. The Seeds are very small, included in a triangular long Capsula; it grows in moist Meadows, and flowers in *April*. The Roots only are used.

They are accounted a Provocative and a Stimulus to Venery, and a Strengtheners of the genital Parts, and help Conception, and for these Purposes are a chief Ingredient in the *Electuarium Diaphyrium*: Outwardly applied in form of a Cataplasm, they dissolve hard Tumors and Swellings.

The only official Preparation is the aforesaid *Electuary*. *Miller's Bot. Off.*

It grows in Meadows, and Places over-run with Bushes and Brambles. The Root, which is used, is heating and moistening, and of a sweet Taste. Its principal Virtue consists, says *Schroder*, in restoring manly Vigour; it is believed also to strengthen the Uterus, and dispose to Conception.

4. *Orchis*; morio; foemina. C. B. P. 82. *Park. Theat.* 1347. *Synop.* 3. 377. *Tourn. Inst.* 433. *Boerb. Ind. A.* 2. 152. *Satyrium* foemina. *Offic. Cynosorchis* morio foemina. *Ger.* 158. *Emac.* 208. *Orchis* minor purpurea, & aliorum colorum cum alis virentibus. *J. B.* 2. 762. **FEMALE SATYRION.**

This is a lower and somewhat lesser Plant than the former, having no Spots on the Leaves; the Spike of Flowers is less, and not so beautiful, of a purplish Colour, having the Labella striped with green Stripes; it grows in the like Places with the former, and flowers somewhat later. The Root is much alike, and it is supposed to have the same Virtues.

Though these Plants are used in the Shops for the *Satyrium*, yet they are not the *Satyrium* of *Dioscorides*, and the Antients; that being, as is plainly proved by *Parkinson*, and other skilful Botanists, our common Tulip, which much better answers the Description of *Dioscorides*, than any of the *Orchides*. *Miller's Bot. Off.*

It is as frequently to be met with as the former, and grows in the same Places, but is later in flowering.

These two last Species are of the same Virtues, where it is to be observed, that there are a Multitude of Species of *Satyrium*, or *Orchis*, which may indeed be used promiscuously; yet our Shops have thought fit to make choice of the last-mentioned or Female *Satyrium* before the rest.

There are two Species of the *Satyrium*, mention'd by *Dioscorides*, who describes the one of them in the following manner: "Some give the Name *Trefoil* to *Satyrium*, because it has three Leaves bending to the Ground, like those of the Dock or Lily; but less, and of a redish Colour. Its Foot-stalk is about a Cubit long, naked and white, like the Flowers of Lilies; its Root is of the bulbous Kind, as large as an Apple, of a darkish-brown Colour, within white, like the White of an Egg, sweet and grateful to the Palate." The other Species he describes thus: "There is another *Satyrium* distinguished by the Epithet *Erithronium* or *Erythraion*, that is, red; whose Seed is larger than that of a Grain of Linseed, hard, smooth, and shining, and which, as well as the Skin, is said to be a Stimulus to Venery. Its Root is cover'd with a slender rough Bark; but white within, and of a sweet and grateful Taste." Since the Days of *Dioscorides*, there have been great Disputes among the learned Physicians and Botanists concerning this Plant, some ascribing its Name to one, and others to another Plant; but most of them agree, that it belongs to some of the Species of *Orchis*, of which Opinion our Shops, also, are: For this Reason, in a former Work, I gave the same Name to the Roots of the now us'd *Satyrium*, tho', at the same time, I was not ignorant, that some Authors gave this Name to the *Orchis Palmata*, and others to the *Cynosorchis*. But, having now chang'd my Sentiment, I think the *Satyrians* of *Dioscorides* are sufficiently determin'd by *Parkinson*, and others, who took them for Species of Tulips, which come the nearest of any to the Descriptions of the two *Satyrians* given by *Dioscorides*. *Dale*.

5. *Orchis*; morio; foemina; flore roseo. *H. R. Par. H. L.* 460.

6. *Orchis*; morio; foemina; flore niveo. *H. R. Par. H. L.* 460.

7. *Orchis*; morio; foemina; flore carneo. *Commelin. Ind.* 82.

8. *Orchis*; alba; bifolia; minor; calcaribus oblongo. C. B. P. 83. *T.* 433. *Orchis* *Serapias*. 1. *Dod.* p. 237.

1. **ORCHIS; PALMATA;** pratenfis; latifolia; longis calcaribus. C. B. P. 85. *Tourn. Inst.* 434. *Boerb. Ind. A.* 2. 152. *Orchis palmata*. *Offic. Orchis palmata* major mas five *Palma Christi* mas. *Park. Theat.* 1356. *Orchis palmata* non maculata. *Raii Hist.* 1223. *Palma Christi* mas. *Ger.* 169. *Emac.* 220. **MALE SATYRION ROYAL.**

It is produc'd in moist and marshy Soils, and flowers in *May*. Its Root is only us'd, and seems in Virtues to agree with the other Species of *Satyrians*.

2. *Eadem*; flore carneo. *Palma Christi erecta, flore incarnato*. *H. Eyft.* o. 4. F. 5. Fig. 3.

3. *Eadem*; flore albo.

4. *Orchis*; palmata; pratenfis; maculata. C. B. P. 85. *M. H.* 3. 498. *Palmata, speciosiore thyrsis, folio maculato*. *J. B.* 2. 774. *Satyrium, Basilicum, foemina*. *Dod.* p. 240. *Palma Christi maculata*. *H. Eyft. Vern.* o. 2. F. 17. Fig. 3.

5. *Orchis*; palmata; palustris; latifolia. C. B. P. 86. *Palmata, seu Serapias, palustris, latifolia, flore albo subpurpurascente*. *J. B.* 2. 775. *Satyrium Basilicum, foliosum*. *Dod.* p. 241.

6. *Orchis*; Lilifolia; minor; fabulorum *Zelandiæ & Bataviæ*. *J. B.* 2. 770. *Chamaorchis, Lilifolia*. C. B. P. 84. *Pseudo Orchis bulbosa, Lilifolia, palustris, nostras, flore subviridi*. *M. H.* 3. 500. *Boerb. Ind. alt. Plant. Vol.* 2.

Besides the foregoing Species of *Orchis*, *Dale* mentions the five following;

1. *Satyrium* vel *Orchis*. *Offic. Orchis militaris* major. *Tourn. Inst.* 432. *Orchis strateumatica* major. *J. B.* 2. 758. *Orchis strateumatica*. *Ger.* 165. *Emac.* 215. *Raii Hist.* 2. 1215. *Cynosorchis militaris* major. C. B. P. 81. *Cynosorchis militaris* five *strateumatica* major. *Parkinson. Theat.* 1345. **THE FRENCH SATYRION.**

This Species of *Satyrium* is produc'd in mountainous Places, and flowers in *June*: Its Root is only us'd, and is possess'd of the same Virtues with the former Species of *Satyrians*.

2. *Orchis Hermaphrodita* bifolia. *J. B.* 2. 772. *Raii Synop.* 3. 380. *Raii Hist.* 2. 1221. *Orchis Hermaphrodita*. *Ger.* 162. *Emac.* 211. *Orchis bifolia* altera. C. B. P. 82. *Tourn. Inst.* 433. *Orchis Serapias bifolia, trifolia minor*. *Park. Theat.* 1350. **BUTTERFLY or GERMAN SATYRION.**

This Species is produc'd in Woods, and flowers in *May*. Its Root is used, and is possess'd of the same Virtues with the other *Satyrians*.

3. *Serapias*, *Offic. Serapias* five *Saleps*. *Marl. Obs. Orchis foemina procerior, majore flore*. *Tourn. Herbar. Par.* 508. *ex sententia nuperi amici celeberrimi D. Gulielmi Sherardi, LL. D.* **SALOP.**

This is an oblong, somewhat clear, and pellucid Root, of a yellowish-white Colour, very hard and almost horny, somewhat

what flat and wrinkled; of very little Smell, having a mucilaginous Taste. It is brought over from *Turky*, and seems to be the dried Root of some Species of *Orchis*.

Of these a Decoction is made, and drank hot, like Tea; being accounted analeptic and strengthening, proper to prevent Miltarrage; and, like *Satyrium-root*, is supposed to be a Provocative to Venery. *Miller's Bot. Off.*

This is the Root of a kind of *Orchis*, or *Satyrium*, which grows on the Mountains of *Bursia*, near *Constantinople*. The *Turks* pretend, that it is very effectual in restoring decay'd Strength, and exciting Venery. It is, also, said to prevent Abortion; and is used both in Substance, and in Infusion. *Geoffroy*.

The Taste of the Root resembles that of Gum *Tragacanth*, but has no Smell, and is accounted good against Sterility. It is to be prepared in the same manner with *Chocolate*.

The *Turks* and *Persians* call the Roots of the *Orchis*, *Salop*; and of it prepare a Drink with Milk and Ginger, which they also call *Salop*, which they drink hot, and esteem an excellent Medicine against Venereal Disorders.

They chiefly use the Root of the *Orchis morio femina*, of *Caspar Bauhine*, which is most copiously produced, and much broader than that of the Northern Countries; nor does the *Orchis femina procerior, majore flore*, of *Tournefort*, seem to be a different Species. *Dale*.

4. *Tragorchis*. Offic. *Tragorchis maximus*. Ger. 160. Emac. 210. *Tragorchis maxima*. Park. Theat. 1248. *Orchis barbata, odore hirci, brevior longioreque folio*. C. B. P. 82. Tourn. Inst. 433. *Orchis barbata fastida*. J. B. 2. 756. Raii Hist. 2. 1212. Synop. 3. 376. *Orchis, Cynorchis, Satyrium*. Chab. 146. GOATS-STONES.

This is only produced in fat Soils, and flowers in May and June. Its Root is only used; and, in Virtues, agrees with the *Satyrium*. *Ibid*.

5. *Triorchis*. Offic. Ger. 167. Emac. 218. *Triorchis alba, odorata major & minor*. Park. Theat. 1354. *Triorchis vel Triorchis alba, odorata major*. C. B. P. 84. *Orchis spiralis alba, odorata*. J. B. 2. 769. Raii Hist. 2. 1217. Synop. 3. 378. Tourn. Inst. 433. TRIPLE LADIES TRACES.

This is produced in dry Soils, and flowers in the Autumn. Its Root is, also, used, and agrees in Virtues with the former. *Dale*.

ORCHOS, ὄρχος, the Extremities of the Eye-lids, where the Eye-lashes grow.

ORCHOTOMIA. Castration. *Orchotomus* is the Person who performs this Operation.

OREGIOELLA. Chluifil. The Name of an Indian Flower, which is mix'd with *Chocolate*, in order to communicate to it a fragrant Smell, and agreeable Taste. It is, also, called *Xochimacazilis*, and *Orejuelas*. Raii Hist. Plant.

ORELLANA. A Name for the *Mitella*; *Americana*; *maxima*; *tinctoria*.

OREOSELINUM.

The Characters are;

The Root is slenderer than that of the *Daucus*, and not lactescent; the Leaves are like those of the *Apium*, or *Cicuta*; and the Seed is oval, flat, large, striated, marginated; and sometimes casts off its *Involucrum*, or Husk.

Boerhaave mentions three Species of *Oreoselinum*; which are,

1. *Oreoselinum*; *Apium folio, majus*. Tourn. Inst. 318. *Boerb. Ind. A. 67. Gentiana nigra*. Offic. *Daucus montanus Apium folio major*. C. B. P. 150. *Daucus Selinoides major*. Park. Theat. 898. *Libanotis Theophrasti nigra*. Ger. 858. Emac. 1010. *Libanotis altera quorundam, alius dicta Cervaria nigra*. J. B. 3. 165. Raii Hist. 1. 413. *Laserpitium minus Paludapii folio; semine cristato*, Pluk. Alm. 207. MOUNTAIN DAUKE.

It grows in the mountainous Parts of *Italy*, and flowers in July. The Seed is used, which is of an heating, opening, and inciding Quality; provokes Urine, and the Menstrues; expels the Birth, and dissolves Tumors.

2. *Oreoselinum*; *Apium folio; minus*. Tourn. Inst. 318. *Boerb. Ind. A. 68. Petroselinum montanum*. Offic. *Oreoselinum*. Ger. 863. quoad descript. Emac. 1015. *Apium montanum vulgatius*. Park. Theat. 927. *Apium montanum nigrum*. C. B. P. 153. Raii Hist. 1. 413. *Apium montanum Dalechampii*. J. B. 3. 103. MOUNTAIN PARSLEY.

It grows in the mountainous Parts of *Germany*, and is found in great Plenty on the Sides of the Mountain *Gurca*, not far from *Geneva*; the Root and Seed are used.

As to its Virtues, it is of an heating and drying Quality; and is alexipharmic, sudorific, diuretic, and discutient. Its principal Use is in the Stone of the Kidneys and Bladder; in the Pestilence, Flatulencies, and the Strangury. *Dale* from *Schroder*.

3. *Oreoselinum*; *pratense*; *Cicuta folio*. T. 318. *Daucus, Alsaticus*. C. B. Prodr. 77. *Umbellifera, Alsatica, magna, umbellâ parvâ, sublateâ*. J. B. 3. 2. 106. *Angelica, pratensis, Apium folio, altera*. T. 313. *Boerb. Ind. alt. Plant. Vol. 1.*

Oreoselinum Africanum. A Name for the *Ferula*; *Africana*; *Galbanifera*; *folio & facie Ligustici*.

ORÉSTIA. This is a Plant mentioned by *Oribasius Medic. Collect. L. 12*. which must be different from the *Orestium*; for he describes it as a small Herb, shooting up three or four Digits

above Ground, with Leaves and Branches like those of the *Coronopsis*; or *Gramen*, of an astringent Taste, and a very slender, white, capillary Root, of a vinous Savour, and four Digits in Length; it grows on Hills.

ORESTION. A Name for the *Helenium*, in *Dioscorides, L. 5. C. 66*.

OREXIS, ὄρεξις. Properly Appetite; but it frequently signifies, in *Paracelsus* and *Helmont*, an Heat of the Stomach.

ORGASMUS, from ὄργω, to desire vehemently, to be turbulent, or, properly, to be in Heat, as certain female Animals are, at certain Seasons of the Year. An Orgasm; that is, a violent Turgescence, and Motion of the Humours.

ORIBASIIUS. This Physician, though commonly reckon'd a *Sardian*, was born at *Pergamus*, and bred up, together with *Magnus* and *Ionius*, in the School of *Zeno the Cyprian*, who taught then, I suppose, at *Sardis*; though afterwards he removed to *Alexandria*, where he became a famous Professor. *Eunapius*, who had good Knowledge in Physic, and is the same Person, probably, to whom the four Books of *Euporists*, &c. are inscribed, represents *Oribasius* as the greatest Scholar and Physician of his Time, and a very engaging and agreeable Man in Conversation. He describes him as no less considerable in his Interest, than in his Learning. According to his Account, he contributed very much to the Advancement of *Julian* to the Empire, who, in Return, made him Quæstor of *Constantinople*; and who, as appears by one of his Letters, had an entire Confidence in him. In the succeeding Emperor's Time, through the Envy of his Enemies, he fell into Disgrace, had all his Estate confiscated, was banished, and delivered into the Hands of Barbarians; among whom, in a little Time, by his Courage and Skill, he gained so much Love and Reverence, that they, seeing what great Cures he perform'd, adored him as a God. At last, he was recall'd by the *Roman* Emperor, and flourished in Reputation and Riches, at the very Time when *Eunapius* wrote this Account, which must be near the Year 400; for *Eunapius* was then, as it should seem, in the first Rank of Physicians, and was but twelve Years old at the Death of *Julian*, in 363.

Oribasius wrote seventy (according to *Photius*) or (according to *Suidas*) seventy-two Books of Collections, which he compiled not only from *Galen*, but from all the preceding Physicians, and his own Experience, at the Desire of *Julian*; the fifteen first of which are only remaining, and two others, treating of Anatomy, which are called by the Translator, *Rasarius*, the twenty-fourth and twenty-fifth of that Collection. Afterwards he made an Epitome of this great Work, and reduced it into nine Books, for the Use of his Son *Eustathius*. He also wrote four Books about Medicines and Distempers, as was before observed, to his Friend *Eunapius*. Besides these, *Photius* gives an Account of two other Pieces, extant in his Time; one consisting of four, the other of seven Books, which were merely an Epitome of *Galen's* Works, and dedicated likewise to *Julian*. *Paulus* mentions this Epitome; but it is now lost, as are some other Tracts, which *Suidas* takes notice of. There are several Receipts of *Oribasius*, quoted by *Aetius*. The Commentaries upon the Aphorisms of *Hippocrates*, put out by *Guinther* under his Name, are, without doubt, spurious.

Dr. Freind observes, that *Oribasius* uses a great Variety of Expression, of which we have this Advantage, that often one Place, or one Author, explains another; and this Justice ought to be done to him, that he helps us the better to understand several Passages in *Galen*, relating both to Anatomy and Medicine. He was, by all Accounts, a Man, not only of a great Genius, but of great Business and Experience: And, accordingly, if we peruse him with Attention, which, I believe, has scarce ever been done by those who have pretended to give a Character of him; we shall find very just Rules of Practice laid down in several Cases.

The Works of *Oribasius*, mentioned by *Photius* and *Suidas*, are;

1. Four Books of Medicinal Commentaries, contracted from the Writings of *Galen*, by the Command of the Emperor *Julian* the Apostate, and dedicated to him. These are mention'd by *Oribasius* himself, in the Preface to his *Synopsis*, but have long since been lost; at least, were never published.

2. His *Synopsis*, compiled not only from *Galen*, but other Physicians, by Command of the same Emperor; who had approved the former Work. Of this *Synopsis*, which consisted, according to *Suidas*, of seventy-two Books, there are extant the first fifteen, with the twenty-fourth and twenty-fifth, translated into Latin by *J. Baptista Rasarius*, a Physician of *Novara*, with *Oribasius's* Preface to the Emperor *Julian*.

3. A *Synopsis* of the former seventy-two Books, written after the Death of the Emperor *Julian* to his Son *Eustathius*, and contracted into nine Books. This, also, is extant in the Latin Version of *Rasarius* above-mention'd.

4. *Euporista*, or Medicines easily prepared, in four Books, to *Eunapius*; or, as it is in some Copies, according to *Photius*, to *Eugenius*; but the Copies, made use of by both the Latin Translators, read *Eunapius*. For these four Books were translated into Latin by an Anonymus, and published by *J. Sicking*, together

ther with *Celius Aurelianus*, of chronic Diseases at *Basil*, 1529. in Folio, (not printed in Octavo, as it is said in *Merklin's Lindenius renovatus*) and afterwards printed with a new Version, by the above-mention'd *Rasarius*, together with the rest of the Works of *Oribasius*, at *Basil*, 1557. Octavo; and also with the *Medici Principes* of *Henricus Stephanus*, at *Paris*, 1567. Fol. There was an old Manuscript Latin Version of *Oribasius's* Works, very different from that published, both with respect to the Order of the Books, and the Matters treated of in them, in the Library of *René Moreau*, as we are told by *Labbeus*, *Bibl. novæ Manuscrip.* p. 214. There is, also, an Epitome of the Writings of *Oribasius*, composed at the Command of the Emperor *Constantinus Porphyrogenitus*, by one *Theophanes*, in Greek, which lies, somewhere or other, in Manuscript, in the Emperor's Library. *Fabricii Bibl. Vol. 9. p. 451.*

To this Account we are to add, that the six first Chapters of the fifth Book of the *Synopsis*, and the fourteenth Chapter of the first Book to *Eunapius*, on Waters, in Greek; together with the Fragments of *Galen*, *Rufus*, *Diocles*, and *Athenaus*, on the same Subject, with a Latin Version of them separately subjoined, was published at *Rome*, An. 1543. Quarto, by the Care of *Aug. Riccius*, a Physician of *Luca*. In the Catalogue of the *Bibliotheca Bigotiana*, are mentioned some of *Oribasius's* Medicinal Collections, printed in Greek, at *Paris*, 1556. in Octavo, which Book I never yet had the Fortune to see. *Antonius Verderius*, in his *Bibliotheca Gallica*, says, that he saw a French Manuscript Version of *Oribasius's* Works, by one *Adam de la Vallée*. The two Books of Chirurgical Bandages and Machines, from *Heraclides*, or *Heraclides Ephesus*, *Soranus*, and *Heliodorus*, are also extant in Latin, translated by *Vietus Vidijs*, in *Gesner's* Collection of Chirurgical Treatises, published at *Zurich*, 1555. in Folio. The *Synopsis Medica*, to his Son *Eustathius*, in nine Books, translated by *Rasarius*, was printed at *Venice*, 1555. Octavo; and all that remains extant of the seventy Books of his *Synopsis*, translated, also, by *Rasarius*, printed at *Paris*, 1555. Octavo. The Commentaries on the Aphorisms of *Hippocrates*, printed first in Latin, by *J. Guinter Andernac*, at *Paris*, 1553. Octavo, for *Simon Colinaeus*, were reprinted at *Basil*, 1535. at *Venice*, 1553. and at *Padua*, 1658. Octavo. It is easier to say, they were not written by *Oribasius*, than to assign their true Author; but they seem to be composed in Latin, and by some Christian. The Fragment of *Oribasius*, concerning Diet proper for all Seasons of the Year, was published in Latin, with *Plinius Valerianus*, by *Albanus Torinus*, at *Basil*, 1528. Folio. *Oribasius of Simples*, with four Books of the *Euporista* of *Octavius Horatianus*; the Physics of *Hildegardes*; the Regimen of *Theodorus* the Naturalist; and *Æsculapius* of the Causes, Description, and Cure of Diseases, were printed at *Strasburg*, 1533, and 1544. Folio. Extracts from the Works of *Oribasius*, on Waters and Baths, translated by *Aug. Gadaldinus*, of *Modena*, were printed in a Venetian Work, which treated of Baths, An. 1553. Folio. *Fabricii Bibliotheca Græca*.

ORICHALCUM. The same as **AURICHALCUM**.

ORICIA. The Name of a sort of Turpentine-tree, so call'd from *Oricus*, a City of *Epirus*, near which it grows.

ORICULARIS. The same as **AURICULARIS**, or **AURICULARIUS**.

ORIGANITES. Wine impregnated with *Origanum*. *Dioscorides*, L. 5. C. 61.

ORIGANO COGNATA. A Name for the *Majorana*; *rotundifolia*, *scutellata*, *exotica*.

ORIGANUM.

The Characters are;

The Calyx is long, simple, tubulous, and closely seated among foliaceous Scales; in this is situated the Flower, having an erect, roundish, bifid Galea, or Crest, and a Beard divided into three Parts, the middle one being hollow, like a Spoon. The Flowers are collected into squamous Spikes, resembling those of the *Muscari*; and sometimes form a sort of Umbella, shooting forth; one on each Side of the Scales.

Boerhaave mentions eleven Species of *Origanum*; which are,

1. *Origanum*; sylvestre; humile. C. B. P. 223. Prodr. 109.
2. *Origanum*; sylvestre; humile; floribus candidioribus.
3. *Origanum*; humilius; latifolium; glabrum. T. 199.
4. *Origanum*; sylvestre; Cuncta Babula Plinii. C. B. P. 223. Tourn. Inst. 199. Boerb. Ind. A. 179. *Origanum*. Offic. *Origanum vulgare spontaneum*. J. B. 3. 236. Raii Hist. 1. 539. Synop. 3. 236. *Origanum Anglicum*. Gen. 541. Emac. 666. *Majorana sylvestris*. Park. Theat. 12. **WILD MARJORAM.**

This *Origanum*, or wild Marjoram, is a Foot, or more, high, having many hairy, brown, brittle Stalks, with two broad, round-pointed Leaves, bigger than Marjoram, set at a Joint on very short Foot-stalks, and of a brownish green Colour. The Flowers grow on the Tops of the Stalks, being small, labiated, and galeated, of a purple Colour, among long Heads, composed of a great Number of green Scales. The Roots are woody and fibrous. It grows in Hedges and Thickets, and flowers in July. The Tops and Leaves are used.

This *Origanum*, though not so strong as the *Origanum Creticum*, yet is very good for Obstructions of the Breast, Liver, and

Womb; helps the Jaundice, Shortness of Breath, and Stoppage of the Menes; comforts the Head and Nerves. The distilled Oil helps the Tooth-ach, being put upon Lint into the aching Tooth. *Miller's Bot. Off.*

The wild Marjoram is acrid, aromatic, deterfive, and gives a very faint Tincture of red to the blue Paper; which makes us conjecture, that this Plant is filled with a volatile, aromatic, and oily Salt; not entirely destitute of Acid; whereas, in the artificial volatile Salt, the Acid of the Sal Ammoniac has been detain'd by the Salt of Tartar. Besides, the wild Marjoram contains abundance of terrestrial Parts. It is diuretic, diaphoretic, good to make one spit, and provoke the Terms. A Tea of it may be used in an Asthma, violent Coughs, Indigestion, and Pleurisy. It is used in the Washings for the Feet, and Semicupiums for the Vapours, Green-sickness, and Palsy. Take wild Marjoram, dried at the Fire, and wrap it warm in a Linen Cloth, and cover the Head well with it, for a Rheum and Rheumatism in the Neck, commonly call'd *Torticolis*. *Martyn's Tournefort*.

It is opening, absterfive, and astringent; and principally used in Obstructions of the Lungs, Liver, and Womb: Whence it is of Service in a Cough, Asthma, and Jaundice. It increases Milk, and expels ichorous Excrements by Sweat, being taken before Bathing. Outwardly, it is of frequent Use in Baths for the Head and Uterus, and for the whole Body under the Itch. *Raii H. P. p. 539.*

5. *Origanum*; sylvestre; album. C. B. P. 223. M. H. 3. 359.

6. *Origanum*; sylvestre; foliis variegatis, argenteis. Flor. 2. 78.

7. *Origanum*; sylvestre; foliis variegatis, aureis. Flor. 2. 79.

8. *Origanum*; Creticum. Offic. Ger. 541. Emac. 666. Raii

Hist. 1. 540. J. B. 3. 238. C. B. P. 223. Boerb. Ind. A. 179.

Origanum sylvestre sive vulgare. Park. Theat. 15. **ORIGANY OF CRETE.**

The *Origanum*, whose Tops are found in the Druggists Shops, grows taller than common sweet Marjoram, having longer and whiter Leaves, and larger and longer scaly Heads, white and hoary also, among which grow small white Flowers, like those of sweet Marjoram; of a most pleasant, strong, aromatic Scent. It grows in the Island of *Candia*, or *Crete*, and other Parts of *Greece*; and flowers in June.

This is what ought to be used, when the *Flores Origanæ* are, at any time, order'd to be put in a Composition.

This *Origanum* is heating and warming, and good for Diseases of the Lungs; to open Obstructions of the Womb, and bring down the Menes, and to heal all kinds of venomous Bites. *Miller's Bot. Off.*

9. *Origanum*; Creticum; flore purpureo.

10. *Origanum*; Orientale; folio Brunellæ glauco; flore albo; *Vaill.*

11. *Origanum*; Dictamni Cretici facie; folio crasso; nunc villosa, nunc glabro. T. C. 13. T. Voy. 1. 240. Boerb. Ind. alt. Plant.

There is no Plant more celebrated by *Hippocrates*, than *Origanum*; he recommends it in Diseases which require Heating, Dissolving, and Stimulating: Whence it is of Use in Exulcerations of the Lungs, being boil'd in Wine, and then sweeten'd with Honey, and so supt hot. Thus prepared, it is a very good Medicine to expectorate Phlegm; but, however, is not to be exhibited, where an Hæmoptoe is to be fear'd. It is, also, adapted to Diseases of the Kidneys; for it is aperient, dissolvent, and balsamic. This Herb is more heating than the *Dictamnus*, but not of so subtle Parts; it is of excellent Service in hypochondriacal Disorders, and Tertians, and where languishing Nature requires Relief by inciding. The Leaves boil'd in Water, and sweeten'd with Honey, are proper for old Persons in a great Cough; being relaxing and stimulative. The Herb is heating and penetrating; the Juice thereof, sweeten'd with Honey, is good for Impostumes of the Lungs, the Asthma, and Jaundice. *Origanum* provokes Sweat, and is proper in soporous, hysteric, and catarrhus Disorders; and increases Milk. The Preparations from this Plant are, a distill'd Water, a Spirit, and an Oil. The Seed of *Origanum* is very hot, like Pepper, and of Service in putrid Fistulas; and the Oil, prepared of the Flowers, is good against the Scurvy and Colic. A Tea of the Leaves is effectual in the Asthma, a violent Cough, and Indigestion; and, in Baths, the Leaves are used for the hysteric Passion, Chlorosis, and Palsy. *Hist. Plant. adscrip. Boerhaav.*

Origanum is, also, a Name for the *Dictamnus*, *Creticus*; and for the *Dictamnus*, *montis Syphilis*; *Origanum foliis*.

Origanum Smyræum. A Name for the *Majorana*; *Cretica*; *Origanum foliis*; *villosa*; *Satureia* odore; *corymbis majoribus*.

Besides the foregoing Species of *Origanum*, *Dale* mentions the following.

Origanum Heracleoticum. Offic. Ger. 541. Emac. 666. Raii Hist. 1. 539. *Origanum Heracleoticum verius*. Park. Theat. 15. *Origanum Heracleoticum*. Matthioli, aliis forte *Creticum*. J. B. 3. 237. *Origanum Heracleoticum*, *Cunila gallinacea* Plinii. C. B. P. 223. Tourn. Inst. 199. **BASTARD MARJORAM.**

It is cultivated in Gardens, and flowers in the Summer. The Herb is in Use, and is proper, as *Dioscorides* says, for Bites of Serpents, and exhibited in Ruptures, Convulsions, and Dropsies.

ORIONIUS. Urinous; an Epithet for the Spirit, and Salt of Urine.

ORIZEUM. Gold. *Orizæus Color* is a yellow Colour in the Eyes, or Urine.

ORLEANA. See **ACHIOTL.**

ORMINUM. The same as **HORMINUM.**

ORMS. A Hen. *Rulandus.*

ORNITHIÆ, *spirital.* In *Hippocrates, Epidem. L. 7.* these are the Vernal Winds, which bring the Swallows, and other Birds of Passage. *Pliny* says, these Winds blow from the West; and that, by some, the *Etesiae* are thus called. Others are of Opinion, that the Winds here meant blow from the North, or North-east, as the *Etesiae* do.

ORNITHOGALUM.

The Characters are;

The Pedicle, proceeding from the Stalk, ends in a long thin Membrane. The Flower is naked, hexapetalous; the Petals expanding into a Circle; and bears in its Centre an erect, floral, and hexapetalous Tube; each Petal having a Stamen, or Chive, growing to its upper Part, on the Inside; the Flower, with its Tube and Ovary, closely embraces the Ovary, and its Tube. The Ovary is furnish'd with a long Tube, having a spherical Apex, and becomes a roundish Fruit, full of roundish Seeds; the Root is bulbous, or tuberous.

Boerhaave mentions eleven Species of *Ornithogalum*, none of which have any Uses ascribed to them, except the seventh, which is thus distinguish'd.

Ornithogalum; umbellatum; medium; angustifolium. *C. B. P. 70. Tourn. Inst. 378. Boerb. Ind. A. 2. 142. Ornithogalare. Offic. Ger. 132. Emac. 161. Ornithogalum vulgare & verius. J. B. 2. 620. Raii Hist. 2. 1153. Synop. 3. 372. STAR OF BETHLEHEM.*

It is cultivated in Gardens, and flowers in May, and the Root and Seed are in Use; the first of which, as *Dioscorides* says, is eaten either raw or boil'd, and the other is baked in Bread.

Ornithogalo-affinis. A Name for the *Phalangium*; *Africanum*; *foliis Tricoidis*; *floribus spicatis, aureis.*

Ornithogalum maritimum. A Name for the *Scilla, vulgaris*; *radice rubra.*

ORNITHOGLOSSUM. Is a Name given for the Seeds of the common Ash-tree. See **FRAXINUS.**

ORNITHOPODIO AFFINIS. A Name for the *Ferrum equinum*; *Germanicum*; *siliquis in summitate.*

ORNITHOPODIUM.

The Characters are;

The Leaves are conjugated, in a Series of several Pairs, and end in an odd one. The Pod is hooked, jointed, and undulated, or waved; containing, within each Joint, one round Seed. The Pods grow many together, from the same Origin, in such a manner, as to resemble a Bird's Foot.

Boerhaave mentions six Species of *Ornithopodium*; which are,

1. *Ornithopodium*; majus. *Ger. 1061. Emac. 1241. Tourn. Inst. 400. Boerb. Ind. A. 2. 50. C. B. P. 350. Ornithopodium, Offic. Ornithopodium radice nodosa. Park. Theat. 1093. Raii Hist. 931. Synop. 3. 326. Ornithopodium tuberosum Dalechampii, J. B. 2. 351. BIRDS-FOOT.*

It grows in sandy and gravelly Places, and flowers in Summer. The Herb, which is of Use in Medicine, breaks and expels the Stone in the Kidneys and Bladder, and is effectual in an Hernia.

2. *Ornithopodium*; minus. *C. B. P. 350.* This agrees in Virtues with the former.

3. *Ornithopodium*; radice tuberculis nodosa. *C. B. P. 350.*

4. *Ornithopodium*; Portulacæ folio. *Tourn. Inst. 400. Boerb. Ind. A. 2. 50. Scorpioides. Offic. Scorpioides Matthioli. Ger. Emac. 337. Raii Hist. 1. 931. Scorpioides Matthioli five Portulacæ folio. Park. Theat. 1117. Scorpioides Portulacæ folio. C. B. P. 287. Telephium Dioscoridis seu Scorpioides ob siliquarum similitudinem. Ejusd. Telephium Scorpioides. J. B. 2. 889. SCORPIONWORT.*

It is cultivated in our Gardens, and flowers in Summer. The Herb is used, and is, according to *Galen*, of an heating and drying Quality; and, as *Dioscorides* says, is a present Remedy against the Sting of the Scorpion, being apply'd to the Part.

5. *Ornithopodium*; minimum; *διέκταρον vel δαρυχέκταρον. M. H. 2. 125.*

6. *Ornithopodium*; Scorpioides; siliquæ compressa. *T. 400. Ornithopodio affinis, hirsuta, Scorpioides. C. B. P. 350. Scorpioides, leguminosa. J. B. 2. 349. Boerb. Ind. alt. Plant.*

ORNUS. A Name for the *Sorbus*; *Aucuparia.*

OROBANCHE.

The Characters are;

The Root is squamous, and the Plant appears as if it were bare of Leaves. The End of the Pedicle opens into a multifid Calyx; the Flower is monopetalous, anomalous, bilabiated, (the Galea being hollow, and the Beard trifid) collected into Spikes, and embracing an oblong Ovary, furnished with a long Tube, unicapsular, bivalve, opening, when ripe, into two Valves, and pregnant with very minute Seeds.

Boerhaave mentions four Species of *Orobanche*; which are,

1. *Orobanche*; major; garyophyllum olens. *C. B. P. 87. Raii Synop. 3. 288. Tourn. Inst. 175. Boerb. Ind. A. 240. Orobanche.*

Offic. Orobanche flore majore. J. B. 2. 780. Orobanche, five Rapum Genista. Ger. 1130. Emac. 1311. Park. Theat. 1362. BROOM-RAPE.

It frequently grows to the Roots of *Genista*, or *Broom*; whence it is called *Rapum Genista*, or *Broom-rape*; it is found also among Corn. The Herb preserved, or its Syrup, is of excellent Use in splenic and hypochondriac Disorders; and an Ointment prepared of the same, with Swines Fat, is good for hard and scirrhous Tumors.

It grows in gravelly and dry Places, and flowers in June and July. The Herb, dry'd and pulverized, is a present Remedy for the Pains of the Colic. *Dale.*

2. *Orobanche*; ramosa; floribus purpurascens. *C. B. P. 88. M. H. 3. 502. Orobanche minor, purpureis floribus, five ramosa. J. B. 2. 782. Orobanche. III. πολύκλαδός. Clus. H. 271.*

3. *Orobanche*; ramosa; floribus cœruleis. *C. B. P. 88.*

4. *Orobanche*; ramosa; floribus subalbidis. *C. B. P. 88. Ind. alt. Plant.*

OROBION, *ορόβιον*, in *Hippocrates*, according to *Foesius*, is the Meal of the *Orobis*.

OROBEOIDES HYPOSTASIS, *ορόβειοδης ὑπὸ στασις.* A Sediment in the Urine, resembling the Meal of the *Orobis*; that is, of a dark-red Colour, such as is made in a Jaundice.

OROBO. Metallic Glafs.

OROBUS.

The Characters are;

It has a smooth round Pod, full of oval Seeds, and two conjugated Leaves growing to a Rib, which ends in a Point.

Boerhaave mentions nine Species of the *Orobis*; which are,

1. *Orobis*; purpureus; sylvaticus; vernus. *C. B. P. 351. Galega nemorosa, verna. J. B. 2. 343.*

2. *Orobis*; sylvaticus foliis Vicia. *C. B. P. 352. Astragaloides. Dod. p. 551.*

3. *Orobis*; Pyrenaicus; foliis nervosis; latifolius. *Sch. Bot. Par. T.*

4. *Orobis*; sylvaticus; foliis oblongis, glabris. *Tourn. Inst. 343. Boerb. Ind. A. 2. 46. Raii Synop. 3. 324. Orobis. Offic. Astragalus sylvaticus. Ger. Emac. 1237. Raii Hist. 1. 916. Astragalus sylvaticus foliis oblongis, glabris. C. B. P. 351. Astragaloides seu Astragalus sylvaticus Astragalo magno Eufstii, seu Chamabalano leguminosa affinis planta. J. B. 2. 334. WOOD-PEASE, or HEATH-PEASE.*

The Plant grows in woody and bushy Places; flowers in April, and the Seed is ripe in May. The Tubera of the Root taste much like Liquorice, and the *Scotish* Highlanders make use of them in the same Disorders of the Thorax, for which Liquorice is proper. They call the Plant *Karemyle*, and use those Tubera, temper'd with Water, to enable them to support Hunger and Thirst the longer; for which Purpose, they find them very serviceable; for, by their sweet and viscid Substance, they correct and mitigate, and even fix and restrain, the acid and acrimonious Humours in the Stomach; and, by that means, are a Remedy against Hunger and Thirst. If this Plant, therefore, be not the same with what *Theophrastus* calls *Scythica*, (which is generally thought, by the Learned, to be Liquorice) it is certainly very much like it, being leguminous, siliquous, and of the same Qualities. And it seems very probable, that the Tubera of this Plant were the Food with which the *Britons* sustain'd themselves for some Days, when they were pressed by the Enemy; as it is related by *Dion*, in the Life of the Emperor *Severus*. For this Plant, says *Dr. Sibbald*, in his Introduction to the Natural History of *Scotland*, has the Virtues of Liquorice; and its Tubera, by our Highlanders, who, to this very Day, retain the Manners, and Way of living, of the ancient *Scots*, are still applied to the same Uses; but, as for Liquorice, I know not, that it grows any-where in the whole Island, without Cultivation. *Raii H. P. 916.*

5. *Orobis*; angustifolius; Italicus; flore vario. *T. 393.*

6. *Orobis*; latifolius; repens; siliquæ parvæ. *Ind. 162. Galega nemorensi similis; multiflora; flore purpureo. J. B. 2. 345.*

7. *Orobis*; latifolius; repens; flore cœruleo; foliis & siliquis hirsutis. *Sherard. Ind. 162.*

8. *Orobis*; sylvestris; vernus; flore albo. *Thalii.*

9. *Orobis*; Creticus; folio Vicia. *Boerb. Ind. alt. Plant. Orobis sativus.* A Name for the *Eryum*; *verum.*

Hippocrates recommends this Plant in the Pleurisy, Peripneumony, and nephritic Disorders; for which Purposes, let the Seeds be roasted and bruised, and then have hot Water poured upon them; after this, it must stand a Night, and then be kept hot, with an Addition of Oxy-mel. This Liquor is said to be lenitive, and of a penetrating Virtue, and is the same as our Coffee; but, whether this be the *Orobis* of the Antients, is a Question. The Seed of this Plant, on account of its farinaceous and mucilaginous Quality, answers to Fenugreek, in mollifying and maturing Abscesses; and, by virtue of its diuretic Salt, which it contains in common with other leguminous Plants, it is of Service in provoking Urine, and expelling Gravel. *Hist. Plant. adscript. Boerhaave.*

OROGAMO. Gold. *Rulandus.*

OROS, *ὄρος.* The entire superior Part of the Foot is sometimes thus called.

ORRHA-

ORRHAGOGON, ὀρραγωγόν, from ὀρρῆς, *Serum*, and ἄγω, to bring away. An Epithet for Purges which evacuate *Serum*.

ORRHOPISSA. The ferous, or most fluid Part of Tar.

ORRHOPYGION, ὀρροπύγιον. The Line, or Seam, which runs from the *Penis*, along the Middle of the *Scrotum*, to the *Anus*. It, also, signifies the Extremity of the Spine. *Gorrieus*.

ORRHOS, ὀρρῆς. The Whey of Milk, or *Serum* of the Blood; ὀρρῆς πῖσις is the same as **ORRHOPISSA**. But

ORRHOS, ὀρρῆς, is the same as **ORRHOPYGION**.

ORTHOCOLON, ὀρθόκολον, from ὀρθός, strait; and κῶλον, a Limb. Such a Species of stiff Joint, as is form'd when it cannot be bended, but remains inflexible and strait.

ORTHODORON, ὀρθόδωρον, a Greek Measure of Length, equal to the Space between the upper Part of the Hand; next the *Carpus*, and the Extremity of the middle Finger, containing eleven Dactyls, or Digits. *Arbutnot*.

ORTHOPNOEA. See **DYSPNOEA**.

ORTHOSTADEN, ὀρθοστάδην. An Adverb, frequently used by *Hippocrates*, importing that a Person is up, and about his Affairs, and not confined to his Bed by Sickness.

ORVALA. A Name for several Species of *SCLAREA*.

ORUCORIA. The Name of a filiquiferous *Indian* Plant, the Juice of the Fruit of which is said to consolidate Wounds.

ORVIETANUM. The Name of a celebrated Antidote, thus call'd, according to *Lemery*, from *Orvieto*, a City of *Italy*, where it was first used; but, according to others, from *Hieronymus Ferrantes Orvietanus*, a celebrated Mountebank, who invented it.

The *Antidotum Orvietanum* is thus prepared.

Take of old *Theriaca*, and dry'd *Vipers*, with their Hearts and Livers, each four Ounces; of the Roots of *Vipers-grass*, *Carline-thistle*, *Masterwort*, *Angelica*, *Bistort*, the smaller *Birthwort*, *Contrayerva*, white *Dittany*, *Galangals*, *Gentian*, *Costus*, and the true *Acorus*, of the Seeds of *Macedonian Parsley*, of the Leaves of *Sage*, *Rosemary*, *Goats-rue*, *Carduus Benedictus*, and *Dittany of Crete*, of *Bay* and *Juniper-berries*, each one Ounce; of *Cinnamon*, *Cloves*, and *Mace*, each half an Ounce; and of the best *Honey* despumated, eight Pounds: Make into an Antidote.

Reduce all the Ingredients into a common Powder; despumate the *Honey*; and boil it to the Consistence of a thick Syrup: Suffer it to become half-cold, and then, by means of a Spatula, carefully mix with it the *Theriaca*, and the Powder, in order to make an Electuary, to be kept, for Use, in a close-stopt Vessel.

This Electuary, or Antidote, is highly esteem'd, as good against the Plague, the Small-pox, and the Bites of poisonous Animals. It, also, corroborates the Brain, the Heart, and the Stomach. The Dose is from one Scruple, to a Dram and an half.

As the Goodness of the *Orvietanum* is principally estimated by its Smell, the following Preparation of it will have the due Smell, Strength, and Efficacy.

Take of *Angelica-root*, two Pounds; of dried *Vipers*, with their Hearts and Livers, of the Roots of *Contrayerva*, *Gentian*, the true *Acorus*, *Costus*, *Galangals*, *Carline-thistle*, *Ginger*, *Spignel*, white *Dittany*, long *Birthwort*, and *Masterwort*, each two Ounces; of the Leaves of *Sage*, *Rosemary*, *Wormwood*, *Calamint*, *Savory*, *Marjoram*, *Scordium*, *Dittany of Crete*, *Hyssop*, *Thyme*, and *Poly-mountain*, each two Drams; of the Flowers of *Arabian Stoechas* and *Lavender*, of the exterior Rinds of *Citrons* and *Oranges*, *Mace*, *Cinnamon*, *Bay* and *Juniper-berries*; of the *Anthelmintic* Seeds, the Seeds of *Carduus Benedictus*, *Citrons*, the lesser *Cardamoms*, *Macedonian Parsley*, *Caraway*, together with *Sal Ammoniac*, and the Salt of *Tartar*, each one Ounce; of old *Theriaca*, one Pound; of *Peruvian Balsam*, two Ounces; of the Oil of *Rosemary*, one Ounce and an half; and of despumated *Honey*, twenty-three Pounds. Mix up into an Antidote, or Electuary; the Dose of which is from one to four Scruples.

The *Electuarium Orvietanum* of *Frederic Hoffman* is thus prepared.

Take of the Roots of *Swallow-wort*, *Zedoary*, the *Carline-thistle*, *Angelica*, *Butter-bur*, *Valerian*, white *Dittany*, *Elecampane*, and *Celandine*, each three Ounces; of the Leaves of *Dittany of Crete*, *Scordium*, and *Rue*, each two Handfuls; of the Powder of *Vipers*, two Ounces; of oriental *Saffron*, one Ounce and six Drams; of *Galbanum*, one Ounce and an half; of the best *Myrrh*, *Sulphur*, and *Seal'd Earth*, each one Ounce; of the volatile Salt of *Vipers*, six Drams; of *Cinnamon* and *Cloves*, each half an Ounce; of corrected *Opium*, or the *Laudanum* *Opiatum*, three Drams; of the Oils of *Amber* and *Citron*, each one Dram and an half; and of the *Honey* of *Juniper*, ten Pounds: Mix all together into an Electuary, and allow the Prepa-

ration to stand in Fermentation, for some Months; in a close Vessel.

Reduce the Roots, the Leaves, the *Cinnamon*, and the *Cloves*, to a Powder together. Then reduce the *Saffron* to a Powder by itself, after having dried it slowly between two Papers. The *Seal'd Earth* and *Sulphur* are to be reduced, also, to a Powder by themselves. The *Galbanum*, also, which ought to consist of the purest Tears, is to be reduced to a Powder with the *Myrrh*; and all these Powders are to be mixed with that of the *Vipers*.

Then prepare, in the ordinary Manner, ten Pints of the Extract of *Juniper*, in the Consistence of *Honey*, or a thick Syrup. Dissolve in this Extract, whilst as yet warm, the *Laudanum*, and the Powders; and when the Preparation is entirely cold, mix with it, exactly, the Salt of *Vipers*, after having dissolved it in two Ounces of *Spanish Wine*. At the same time, also, mix with it the Essences, or distil'd Oils, of *Amber* and *Citron-peel*, for an Electuary, or Opiate; to be kept for Use in a close-stopt Vessel; allowing it to stand in Fermentation for some Months, before 'tis used.

This is possess'd of the same Virtues with the former, and is to be exhibited in the same Dose.

This *Orvietanum*, says *Lemery*, is one of the best to be found any-where. However, he is of Opinion, that some of the superfluous Ingredients should be retrench'd; such as the *Seal'd Earth*, and the *Celandine-root*; and thinks, that the small Quantity of *Opium* is not sufficient to render the Preparation somniferous. *Lemery Pharmacopée*.

ORYCALUS. The Name of a cetaceous Fish, mention'd by *Oribasius*, *Collect. Medic. L. 2. C. 58*. where he says, it is a large *Pelamis*, Tunny.

ORYX. A Sort of wild Goat, the Horns of which are said to be sudorific, and good against the Bites of venomous Animals, taken either in Powder, or by way of Decoction. It is said to be found, principally, in the Woods of *Getulia*.

ORYZA.

The Characters are;

It hath its Grains disposed into a Panicle, which are almost of an oval Figure, and are cover'd with a thick Husk, somewhat like *Barley*.

Boerhaave mentions but one Sort of *Oryza*; which is,

Oryza. *Offic. Ger. 72. Emac. 79. Park. Theat. 1136. Raii Hist. 2. 1246. C. B. P. 24. Theat. 479. J. B. 2. 451. Tourn. Inst. 514; Boerb. Ind. A. 2. 160. RICE.*

This Grain, which is so much in Esteem in the Eastern Countries, that it is the principal Corn they use, grows to be three or four Feet high, with Leaves broader than those of *Wheat*; bearing loose Spikes, much divided, and composed of oblong flatish Grains; having each a Beard, or Awn, two or three Inches long, forked at the Top, and frequently curled at Bottom. They are of a white Colour, inclosed in a brown Husk or Skin. *Rice* is sown in *Italy*, *Turkey*, and the *East-Indies*; and we have as large and good from *Carolina*, as from any Part of the World.

It is more used for Food than *Physic*; being a wholesome strengthening Grain, restraining, and good for those who have a Slipperiness in their Bowels, or are inclinable to a Flux or Looseness. *Miller's Bot. Off.*

Rice is the principal Food in all the Countries of the *East-Indies*, whence it was first imported into *Greece* and *Italy*. It thrives very well, also, and is a profitable Grain, in *Egypt*, some Parts of *Syria*, and the *Canary Islands*; as, also, in *Spain*, and in *Italy*, where, says *Ray*, we have observed it to grow in the marshy Places of the Territory of *Ferrara*.

It delights in a moist Soil, and grows in the very Waters. In the Island of *Zeylan*, they have Reservoirs of Water, for watering their Fields of *Rice*; in which Country, they say, the fat Soil is so moisten'd and soften'd with perpetual Inundations, that the Reapers, in the Time of the *Rice-harvest*, stand up to the Knees in Water. It ripens with the Heat of the Summer, and its latest Harvest is about the Autumnal Equinox; so that our Northern Regions, tho' redundant in Moisture, are too cold for bringing this Grain to Maturity.

Rice is very much used among Aliments, by all the Eastern Nations, and especially the *Indians*. It is more easily digested, and more grateful to the Palate, when boil'd in Cow's Milk, *Almond-cream*, or pinguous Broths, prepared of Flesh. It is commodiously mix'd with Aliments, intended for those who labour under a *Dysentery*, the *Coeliac Passion*, or a *Diarrhoea*; especially when 'tis previously roasted, and boil'd in Milk, in which ignited Stones have been extinguish'd. *Matth.*

Rice, among the *Indians*, is made into Bread in various Manners, described by *Caspar Baubine*, in his *Theat. Bot. Lib. i. Sect. 4. Cap. 29*. The Inhabitants, also, of many Parts of the *Indies* prepare a kind of Drink of *Rice*, as the same Author informs us, in the Part last quoted. The *Turks* prepare *Panadas*, and several other Dishes, of it. The various Methods of preparing *Rice* for Aliments, in *Europe*, where the Bread is made of *Wheat*, are to be found in *Caspar Baubine*, in the Part last quoted.

'Tis a common Opinion, that Rice renders those who eat of it, fat; for which Reason, in some Places, lean and slender Women frequently use it with Milk, and a large Quantity of Sugar. But this Notion is contrary to the Opinion of the antient Physicians, who reckoned it not only among the *larytessa*, or such Things as only nourish little, but, also, among the *diuturna*, or such Substances as are of difficult Digestion. But, says Mr. Ray, I am of the same Opinion with the common People, nor dare I condemn the Aliment used for so many Ages, by so many Nations: That it renders the Patient moderately costive, I grant; for which Reason I don't deny but it is beneficial in the hepatic Flux, a Discharge of bloody Urine, and a Cough, when used in Conjunction with other astringent Substances. The Meal of Rice is, also, mixed with repellent Cataplasms, and such as are intended to remove beginning Inflammations of the Breasts, with an Addition of the Flowers of Chamomile and Roses. *Helmont*, in a Spitting of Blood, recommends Rice boiled in Water, or chalybeate Milk. *Dol. Lib. 3. Cap. 8. Sect. 16. D. Soame.*

A thin Decoction of Rice with Water is, among the *Indians*, very frequently used as a Vehicle for many Medicines.

Some call the vinous Liquor extracted from Rice, *Arrack*. *Raii Hist. Plant.*

OS. A Bone.

The Bones are subject to the like Disorders with those incident to the softer Parts of the human Body.

It is certain, that a Knowledge of the several Diseases incident to the Bones is a Circumstance of the highest Importance, not only for understanding, but, also, for curing, a Lues Venerea, the Rickets, and the Scurvy.

That the Bones, which by *Galen*, in his Book *de Offibus, in Proemio Charter. Tom. 4.* are justly called the most hard, dry, and terrestrial Parts of Animals, and subservient to the Support of the others, should be subjected to the same Disorders with the softer Parts, may at first possibly seem surprising; but that they are so, will sufficiently appear from the following Considerations.

All the Bones in the human Body were once soft; for the whole Rudiment of the Embryo, some Days after Conception, unless sustained by the equable Pressure of the circumambient Fluid, is dissolved into a Species of Mucus, without either Form or Shape; as is obvious from the Observations of *Malpighi*, in the Generation of a Chicken in the Egg. In the Fœtus, also, when born, there are many Membranes, and soft Parts, which are afterwards converted into the most solid Bones: This is sufficiently obvious in the Bones of the Head, which, for a long time, retain the Nature of a Membrane, in that Part of the Vertex, called the *Fontanel*, which in some continues membranous till the eighth Year of their Age: And, which is still more surprising, the Teeth, which afterwards become incredibly hard, when latent in the Jaws of new-born Infants, resemble a soft Mucus, lubricated by an incredible Number of small Vessels. In the original State, therefore, of the Bones, that is, when they are soft, and not indurated, they may be subject to the same Disorders with those incident to the softer Parts: And even after they have acquired that Degree of Solidity, which renders them subservient to the various Purposes of the human Body, and are not entirely hard and dry as in Skeletons, but are, in some measure, succulent, they are still lubricated and moisten'd by a large Number of Vessels, which convey Fluids not only through the Substance of the Bones, but, also, through their Cavities: Hence, in consequence of these containing Vessels, and the Fluids contained in them, the same Disorders may happen to the Bones with those incident to the softer Parts. Hence it is, also, obvious, that the Bones are most obnoxious to such Diseases, when they most approach to the Nature of the softer Parts, that is, in young Persons, which is, also, confirmed by daily Experience: Hence, the Spina Ventosa is almost only found in young Patients. And in decrepit Old-age, the Bones, when dry and sapless, are broken by the slightest Cause; but such Patients are generally little subject to the other Disorders of the Bones.

Besides, it is certain from undoubted Facts, that, by means of Diseases, the Bones have been so changed, as, losing their Solidity, to acquire the Softness of Flesh: An Instance of which we have in *Petit's Traité des Maladies des Os, Lib. 1. Cap. 4.* where that justly celebrated Author informs us, that he has often observed a similar Degeneration of the Bones into a soft and fleshy Substance. From all which Circumstances it is sufficiently obvious, that the Diseases incident to the softer Parts may, also, happen in the Bones; which is still more effectually proved from anatomical Observations, with respect to the Fabric and Structure of the Bones.

For the Interstices of the Bones are lined with a slender Membrane furnished with the same kind of Vessels, and continually moisten'd by the same Liquors, as moisten the softer Parts.

The celebrated *Clopton Havers*, in *Osteol. Nov.* and *Dominicus Gagliardus*, in *Anatom. Ossium*, have demonstrated, that the Bones

of the human Body consist of Laminæ mutually applied to each other, though in such a manner that they are not always closely united, but leave between them Interstices, through which a large Number of Vessels run. But this appears most conspicuously in the larger hollow Bones, such as those of the Thigh, Humerus, and Tibia; for in that Part of the Bones which is equally distant from both their Extremities, the Laminæ appear closely united, and the Compages of the Bone is there found to be most firm; but, as the Laminæ recede from the Middle to either Extremity of the Bones, the internal Laminæ begin gradually to recede from their incumbent Laminæ, and leave considerable Interstices. The nearer these Laminæ approach to the Extremities of the Bones, the greater Number of them recede from each other, till at last there is only left, in the Extremities of the Bones, a thin bony Crust, which covers and defends that surprising cellular Substance, observable about the Extremities of the Bones; for as the Laminæ mutually recede from each other through all the Bone, its Cavity is gradually lessen'd, and at last entirely filled up at the Extremities with a bony and cellular Substance; for, between the receding Laminæ of the Bones, small bony Ramifications every-where arise, unite the separate Laminæ, retain them in their Situation, and divide the Interstices between them into smaller Cellulæ. But in the smaller Bones, which have not large Cavities, such as the Phalanges of the Fingers, this Union and mutual Concretion of the Laminæ does not appear in the middle Space of the Bones; but many of the interior Laminæ are, thro' their whole Length, distant from the incumbent Laminæ; and not only towards their Extremities, but, also, every-where, form bony Cellulæ, like those observed in the larger Bones: Hence appears the Reason why these Bones are far weaker than others, since the Strength of Bones depends upon the Union and Concretion of many bony Laminæ with each other. The like bony Laminæ, lying above each other, are observed to constitute the Cranium; and in some Craniums manifest Interstices are observable between them.

The Interstices left between these Laminæ, receding from each other, are lined with their proper Membranes, through which a large Number of Vessels are distributed: This was sufficiently evinced by the Injections made by *Ruysek*, and may be palpably perceived in the larger Bones of newly killed Animals; so that it is no Wonder, that the Bones should be subjected to the same Misfortunes with the softer Parts, since they are furnished with the same kind of Vessels, and the same Fluids.

This Structure of the Bones, consisting of Laminæ mutually applied to each other, excellently corresponds to the Phenomena sometimes observable in Diseases. If, as is observed under the Article *CAPUT*, the Pericranium is wounded, and the Bone remains bare for a considerable time, its Colour is gradually changed, and at last a corrupted Scale is separated from the subjacent sound Bone. And, when small Perforations are made in the Bone affected, the live subjacent Vessels spring up through them, separate the corrupted from the sound Part, restore the lost Substance of the Bone, and form a new Periosteum, in the same manner as the Substance lost by means of a Wound is restored in the muscular Parts of the Body. Under the Article *CAPUT* it is, also, shewn, that, in order to this Separation, it is not necessary, that the Perforation should reach the Diploe; for, that there are Vessels there, nobody can doubt; but in slight Wounds shallow Perforations are sufficient, and the live Vessels spring up through them. Hence it is obvious, that between the Laminæ of the Cranium Vessels are distributed, which, when the corrupted Part of the Bone is removed, very soon rise through the Perforations. *Celsus*, in the second Chapter of his eighth Book, when treating of the Cure of Disorders of the Bones, speaks in the following manner, *We must first, says he, lay open the Ulcer, and render the Bone bare; and, if the Disorder of the Bone is broader than the Ulcer, an Incision is to be made in the Flesh, sufficient to lay the affected Part of the Bone bare: Then the actual Caustery is to be once or twice applied, or the Part is to be scraped, till a Discharge of some Blood is made, which is a Sign of a sound Bone; for the Part disorder'd must necessarily be dry.*

The greater the Interstices between the Laminæ of the Bones are, the more, in these particular Parts, the Bones approach to the Nature of the soft and muscular Parts.

For, as the Interstices between these Laminæ have slender Membranes furnished with Vessels, so the larger these Interstices are, the greater will the Number of Vessels be; and the Bone must, of course, in such a Part, approach very much to the Nature and Structure of the soft Parts.

For this Reason, such Parts of the Bones are most subject to the Disorders incident to the soft Parts.

This is sufficiently obvious from what has been said; for in these Interstices there are Vessels and Humours, as well as in the soft Parts; for which Reason a too great Weakness or Strength of these Vessels, and a spontaneous Degeneracy of the Humours they contain, may happen. The Motion, also, of the Humours through

through these Vessels, may be either too quick, or too faint and languid. In consequence of these Circumstances, there may be Obstructions, Solutions of Continuity, Inflammations, and all their Consequences, in the Bones, as well as in the soft and muscular Parts.

Of this Kind are the broader Parts of the Bones near the Joints; whereas they are more compact, and less vascular, in the Middle, or Part equidistant from their Extremities.

We have already observed, that the Laminæ which constitute the larger Bones, are, in that Part of the Bone which is equidistant from its Extremities, so closely united as to leave hardly any Interstices: Hence in such Parts the Solidity of the Bone is greatest, and none, or very few, and small Vessels are distributed between these Laminæ: But as the Laminæ gradually recede more and more from each other, in proportion as they approach to the Extremities of the Bones, and the Interstices are enlarged, so the Bones are enlarged about the Joints, but are at the same time weaker, and more easily injured, because there the external bony Crust, formed by the Union of the Laminæ, is thinnest. *Clopton Havers*, in his *Osteologia Nova*, tells us, that in the Middle of a Thigh-bone, before the Laminæ began to be separated, he observed them five times thicker than at the Top of the Bone. But, says *Van Swieten*, in a Thigh-bone curiously prepared, I observed the Laminæ in the middle Part of the Bone twenty times thicker than the thin bony Crust, with which the Head of that Bone, the Trochanter Major, and the inferior Part at the Articulation with the Tibia, are covered: Hence the Reason is obvious, why near the Joints the Bones are most generally subject to the Disorders incident to the soft and muscular Parts. Hence, also, it is that a more terrible Train of Symptoms attends Fractures happening in the large Parts of the Bones near the Joints, in consequence of the Injury done to the numerous Vessels, and the Effusion and Corruption of their contain'd Fluids. It is requisite the Bones should be more strong and firm in the Middle, than at the Extremities, because, whilst, for Instance, the whole Weight of the Body is supported by the Os Femoris, the greatest Force acts upon the Middle of the Bone, and at the same time there is here formed, in consequence of the close Union of the Laminæ, a Cavity for the Marrow, whilst, by such an Union, the Strength of the Bones is, also, increased; for it is demonstrable, from the Principles of Mechanics, that an hollow Cylinder is broken with greater Difficulty than a solid one, consisting of the same Quantity of Matter.

Hence arises the primary Distinction between the Diseases incident to the Bones.

For the sake of Distinctness, it is necessary to rank the Disorders of the Bones under certain Classes, according as the various Parts constituting their Fabric are affected; for the Effects of these Disorders are quite different, and require different Methods of Cure, according to the various Parts affected. Now the first Distinction of these Disorders, in the large articulated Bones, is taken from the Part affected, the Middle, for Instance, where they are most solid; or their Extremities, where they are indeed larger, but less firm, and of a more cellular Texture.

The Bones, besides the Vessels common to the softer Parts, have, also, in their larger Cellulæ, Vesicles full of a subtle medullary Oil, there secreted and accumulated for certain Purposes: These Vesicles, which about the Joints are pretty large, are about the Middle of the Bone gradually destroyed, and almost vanish into small Ducts, which contain a pinguious Substance.

Since, therefore, the larger Parts of the Bones, near the Joints, approach pretty much to the Structure of the soft Parts, so the Disorders incident to the latter may happen in the former. Besides, another thing often gives Birth to the most terrible Disorders of the Bones; for the thin medullary Oil is lodged in their cellular Part, secreted from the arterial Blood, and collected in Vesicles, which not only communicate with each other, but, also, with the whole medullary System, in the Cavities of the larger Bones; and through the Pores of the Cartilages, with which the Extremities of the articulated Bones are covered, discharge their Contents into the Cavities of the Joints, in order to form, in Conjunction with the glutinous Humour of the Glands of these Parts, a kind of Ointment for rendering the Joints more moveable. Besides, these medullary Vesicles, lodged between the receding bony Laminæ, seem to distribute some Part of the medullary Oil to the bony Laminæ, in order to prevent the too easy Breaking of the Bones: For, as we shall afterwards shew, in these Parts, where the Laminæ are most closely united, the medullary Oil enters their Pores, and is distributed between the Laminæ, adjoining to each other, since in the middle, or most solid Part of the Bones, there is no Space or Room left for the medullary Vesicles. This medullary Oil, therefore, lodged in these Vesicles, seems to answer two Ends, which are, first, to

lubricate the Joints; and, secondly, to diffuse itself between the Laminæ of the Bones, in order to prevent their too great Dryness: Hence, when, either in consequence of decrepit Old-age, or Diseases, this medullary Oil becomes defective, the Joints crackle, and move with Difficulty; the Bones, also, when deprived of this Oil, are easily broken.

How great a Quantity of this medullary Oil is lodged in this cavernous Part of the Bones, is sufficiently obvious in the Bones of Beef, when boiled: For, after all the Marrow contained in the larger Cavities of these Bones is taken out, if their Extremities are split, or struck with a Mallet, a large Quantity of this medullary Oil is discharged. We shall hereafter consider the Structure of these Vesicles, which contain the medullary Oil; since they are similar to those which constitute the Marrow lodg'd in the middle Cavities of the larger Bones, only with this Difference, that, in the cavernous Parts of the Bones, few Vesicles; or perhaps only one, are lodged in the smaller Cavities; whereas the Marrow is a Congeries of many such Vesicles, contained in a common Membrane. Now, where there is a greater Distance between the receding Laminæ, it is sufficiently obvious, that a larger Number of Vesicles may be lodged there: But in the Parts where these Laminæ are contiguous, or, at least, very little distant from each other, there are no such Vesicles, but the thin medullary Oil is either distributed between the Laminæ, by means of small Ducts propagated from these Vesicles, or it enters by the Pores of the bony Laminæ, which we shall afterwards describe.

Hence arises another Class, or Order, of Diseases incident to the Bones.

Another Origin of Diseases in the Bones is, when the Vesicles containing the medullary Oil are affected; in consequence of which, a violent Corruption of that Oil happens, and many Disorders, which shall afterwards be enumerated, will be produced.

The Bones have an external Periosteum, which not only surrounds and covers their convex Part, but, also, conveys the arterial Vessels into their Cellulæ and Marrow, and receives an incredible Number of venous Vessels, both large and small.

Clopton Havers, in his *Osteologia Nova*, has demonstrated, that all the Bones of the human Body are covered with a fine Membrane, of an acute Sensation, and which consists of various Strata of Fibres, applied to each other, tho' not interwoven: These Fibres run parallel to each other, and in the same Direction with the Length of the Bone. In some Places this Membrane is thicker than in others, and seems to consist of Fibres variously decussating each other: But this is produced by the Muscles, and their Tendons, running along the Periosteum, before they are inserted into the Bones: *Clopton Havers*, also, observ'd, that the Periosteum running along the Bones was wanting in those Places, where the Ligaments uniting the articulated Bones arise; and that the Periosteum runs upon the Ligaments, and is thus convey'd to the adjacent Bone: Hence he imagined, that the Periosteum was only a Continuation of one and the same Membrane, which, drawing its Origin from the Dura Mater, covered the Cranium, and is thence extended over the Surface of all the other Bones, and is so perfectly accommodated to all their Cavities and Eminences, that it exactly covers their whole Surface. But that Part of the articulated Bones, which is contained within the Ligaments which constitute the articular Capsulæ, are destitute of the Periosteum, which, there, is separated from them, and runs upon the Ligaments. Nothing, therefore, can be either conveyed to or from the Bones, except by means of the Periosteum: All the Vessels, then, conveyed to the Bones for their Nutrition and Growth, or which penetrate into their cellular Part, or are, through distinct Perforations, carried to the Marrow collected in their middle Cavities, previously pass through the Periosteum. In like manner, the small Veins which return the Blood, pass through that Membrane, which, in consequence of this Circumstance, is of an highly vascular Nature, as *Ruyfch*, in his *Adversar. Decad. 3. Tab. 2. Fig. 8.* has beautifully demonstrated. Besides, the Periosteum is closely united to the Bone by means of the Ramifications of Vessels, convey'd from the former to the latter, and the Veins returning from the latter to the former, almost in every Point: Hence it adheres very firmly to the Bone, especially in young Persons; for in decrepit Old-age, where many of the Vessels are abolished, the Periosteum is observed to adhere but slightly to the Bone. *Clopton Havers*, before the Discoveries of *Ruyfch*, being surpris'd at the firm Cohesion of this Membrane with the Bones, believed, that this happened principally at that Age in which the Bones are soft, and, as it were, glutinous. This Physician, also, observed, that it was united to the Bone by means of small Fibres sent out from it into the Substance of the Bone. But it was afterwards discovered, by the Injections of *Ruyfch*, that these Fibres were small Vessels sent from the Periosteum to the Bone in an incredible Number. Nor are the larger Bones alone cover'd with a vascular Periosteum; but, also,

the small Bones of the Ear, which some great Men have asserted to be without it. The internal Cavity of the Tympanum is, also, covered with its Periosteum, which is furnished with innumerable Vessels, as *Ruyssch*, in *Epist. Anatom.* 9. has shewn by the Figure he there gives of it.

Hence arises a third Series or Class of Disorders incident to the Bones.

Whatever Cause therefore hinders the free Passage of the Humours through the Vessels of the Periosteum into the Bone, or prevents their Return from the Bone to the Periosteum, may produce Disorders in the Bone, though the primary and immediate Cause of these Disorders is not lodged in the Substance of the Bone, properly so called, but in the Periosteum only. The Reason of this is sufficiently obvious, from what has been said in the preceding Paragraph.

The Bones have an internal Periosteum, which lines and covers the Cavities containing the Marrow, distributes the arterial Vessels to the medullary Vesicles, and receives an incredible Number of venous Vessels, both large and small.

The internal Periosteum is not so easily exhibited to the Senses as the external; yet there seems to be such a Membrane, though of an highly tender Nature, since it is safely defended by the Bone which covers it. The Dura Mater covers the Cranium, and serves it instead of a Periosteum: But as this Membrane sends off Vaginae, by which the Nerves arising from the Medulla Oblongata and Spinalis are safely defended, it was necessary its Fabric should be somewhat thicker and stronger. This Membrane, being in the large hollow Bones, defended from all external Injuries, and serving only to cover the internal Surface of the Bones, and receive the Vessels; does not require so great Firmness and Strength as the external Periosteum; and, in consequence of its Slenderness, is with more Difficulty discovered: In those Bones whose internal Surfaces are totally cellular, such a continued Membrane is not easily discover'd, since the Structure and Fabric of such Bones is highly intricate and perplexed. Nor is it easily discovered about the Extremities of the larger Bones, where the receding bony Laminæ form a surprisingly spongy Substance. But this Membrane is principally found in that Part of the larger Bones, which, by a close Union of the bony Laminæ, is most solid, and has a large Cavity in its Middle, destined for containing the Marrow. *Ruyssch*, in *Adversar. Decad.* 3. informs us, that Anatomists often talked at random, with respect to the Membrane which they suppose to surround the Marrow; and affirms, that in those Bones whose Cavities are full of an osseo-spongy, or an osseo-filamentary Substance; there is no common Membrane investing the Marrow found. Nor is this to be wonder'd at, since, in such Bones, the Marrow is not collected into a common Cavity, but dispersed into different Cells. But *Ruyssch*, in *Theaur.* 10. Tab. 3. Fig. 2. describes the Fabric of the Os Humeri of a Child, when longitudinally divided into two, in the following manner, and has given us a Representation of it. *The interior Substance*, says he, *which is of an osseo-spongy Nature, is furnished with a medullary Liquor, and lined with a Membrane as thin as a Spider's Web; and this Membrane is furnished with small Arteries full of Blood, which, by that means, give a redish Colour to the Membrane.* In the Part, also, last quoted, the same Author describes a Portion of the Os Femoris of an Infant, in the Cavity of which, when divided with a Saw, there appears a slender Membrane, like a Spider's Web, which surrounds the Marrow; and, also, the small Arteries dispersed through this Membrane: Hence it is sufficiently obvious, that there is such a slender Membrane in the internal Cavities of the Bones. But it may seem dubious, whether this Membrane belongs to the Marrow, or is the internal Periosteum of the Bone; or whether it answers both these Purposes. But if we consider what *Clopton Havers* has, in his *Osteologia Nova*, advanced, concerning the Structure of the Marrow, it is highly probable, that this Membrane is distinct from it; for that Author informs us, that the entire Marrow is covered with a thin and pellucid Membrane, which, in some Places, is of a redish Colour, as if small Blood-vessels were distributed through its Structure: But, when he cautiously separated this Membrane from the Marrow, which was of a pretty firm Consistence, he often saw entire Vessels running along the Surface of the Marrow. And he says, he was absolutely certain, that these Vessels did not at all belong to the incumbent Membrane, then separated from them. Immediately after, he subjoins, that this Membrane not only adheres to the Bone by small Veins; but that it, also, insinuates itself into the transverse Pores, found in the internal Surface of the Bones. From this Description it is sufficiently obvious, that this tender Membrane adheres to the internal Surface of the Bones; and that, under it, Vessels, formed into another Membrane, run along the Surface of the Marrow; and, consequently, that the internal Periosteum is distinct from the Marrow contiguous to it. The Use, therefore, of this internal Periosteum is not only to distribute the arterial Vessels to

the medullary Vesicles, and receive the venous Vessels returning thence, but, also, by means of the Vessels sent into the Substance of the Bones, and returning thence, to be subservient to the Life and Nourishment of these Bones. This is, perhaps, evinced in the surprising Phenomena observable in some Disorders of the Bones. *Ruyssch*, in *Theaur.* 10. N^o 176. not only describes, but, also, gives us a Figure of an Os Cubiti, rendered carious and corroded; in whose Cavity there was a bony Pipe, entirely separated from the exterior Substance of the Os Cubiti, and capable of being moved every Way. It is not improbable, that, by some Disorder of the internal Periosteum, the interior Part of the Bone, which is principally nourished by that Periosteum, had been affected, and that the tubular internal Part of the Bone had been separated from its external Part.

Hence arises a fourth Division of Disorders incident to the Bones.

For since this internal Periosteum, as we have already observed, consists of Vessels, so Obstructions, Inflammations, and all their Consequences, may happen therein. Hence the contiguous Bone will be affected; and the Misfortune be next communicated to the subjacent Marrow.

The Bones have in their Cavities an infinite Number of Vesicles, filled with a subtle medullary Oil, which they keep, distribute not only among each other, but, also, between the Interstices of the bony Laminæ, the Cavities of the Joints, and this thro' straight Pores. These Vesicles are furnished with Arteries, Veins, Lympheducts, adipose Ducts, small Nerves, and slender Membranes.

We have already consider'd the Vesicles full of a medullary Oil, lodged in the cellular Parts of the Bones about the Joints: But here we treat of the Marrow, properly so called, which is lodged in the Cavities of the larger Bones, and consists of an infinite Number of Vesicles, collected and united in one common Membrane. *Clopton Havers*, as he informs us in his *Osteologia Nova*, observed, that the medullary Oil is not lodged in the Cavity of the Membrane surrounding the Marrow, but is collected into small Vesicles, by the Union of which, larger Lobes, cover'd with a peculiar Membrane, are form'd; and of these Lobes the whole Mass of Marrow observable in the Cavities of the larger Bones is composed. But these minute Vesicles, containing the medullary Oil, seem to communicate with each other, as do, also, the larger Lobes formed by them: Hence this Oil may be convey'd, not only to the Substance of the Bone, but, also, to the Cavities of the Joints, from all, and even the most distant Parts of the Marrow; for, when *Clopton Havers* wounded the Membrane of such a medullary Lobe, he found that the medullary Oil was not all at once, but gradually, discharged; but that the Whole was, however, gradually evacuated by a gentle Compression, without breaking the minute Vesicles. When he, by means of the Fire, melted the harder Parts of the Marrow, he saw it gradually drop away, leaving the Vesicles and Lobes empty: This is, also, confirmed by this, that by an Increase of Motion, and a Defect of Nutrition, the Quantity of the Marrow is decreased; but enlarged by Rest and High-living; as *Du Verney*, in *Academ. des Sciences, Ann.* 1700. says, has been confirmed by various Experiments. The same Author, also, describes the Fabric of the Marrow to be like what we have represented it. But the medullary Oil seems capable of being discharged from its containing Vesicles in three Manners; for it is either derived to the Extremities of the Bones, through the communicating Vesicles and Lobules, and there issues through the Pores of the Cartilages, with which the Extremities of the articulated Bones are incrustated, into the Cavities of the Joints, that thus their Motion, as we have already observed, may be performed, without any Attrition and Abrasion of the Bones moved; hence, also, it is, that, after violent Motion, the Quantity of the Marrow is lessen'd: Or, perhaps, this thin and highly attenuated Oil enters the small absorbent Veins, and is mixed with the Blood; for it is certain, that, in some acute Diseases, we often observe the whole Fat of the Body almost consumed in a few Days: And, in the last Place, this medullary Oil seems to enter the Substance of the Bones, and procure to them a due Degree of Cohesion and Unctuousity. When *Clopton Havers* was investigating the particular Ways, by which this medullary Oil insinuated itself into the Substance of the Bones, he found that their internal Lamina was full of numberless Perforations, thro' which, however, after an exact Scrutiny, he saw, that no Vessels were either conveyed to the Marrow, or returned from it. In the next succeeding Lamina he observed similar Pores, though not corresponding directly to the others, but situated in different Parts: For which Reason the medullary Oil cannot, from the Pores of the internal Lamina, directly enter those of the succeeding Lamina, but, must, after it has entered the Pores of the first Lamina, run between that, and the second, till it meets with similar Pores; after which it runs between the second and third Lamina, till it enters the Pores of the latter; and is thus successively

cessively distributed between the Laminæ of the Bone, till it arrives at its Surface. Those Perforations, which the medullary Oil entered, were, by that Author called transverse Pores; and he called these Passages, thro' which the medullary Oil was convey'd between the Laminæ, before its Reception into the transverse Pores, longitudinal Pores, because they run in the same Direction with the Fibres which constitute the Laminæ of the Bones. The same Author, also, informs us, that these longitudinal Pores are not to be discovered without the Assistance of the best Microscopes, but that they are of all other Parts most easily discovered in the Ribs. He, also, adds, that he could clearly distinguish them in the thickest Part of the Scapula, where the bony Laminæ immediately cohere to each other; and he observed, that the Marrow which entered these longitudinal Pores, adhered to their Sides like Oil. He, also, affirms, that in an human Bone, consisting of eleven or twelve distinct Strata of Laminæ, he observed these Pores. The transverse Pores, then, only transmit the medullary Oil; but those of the longitudinal Kind convey it between the Laminæ of the Bone, so that the Interstices between these Laminæ are lubricated by this Oil. But such a Distribution of the medullary Oil thro' the Substance of the Bone, obtains only in those Parts where the bony Laminæ are contiguous to each other. But about the Joints, where they are at a considerable Distance from each other, are found the medullary Vesicles already described; and which are easily capable of distributing such an Oil.

In consequence of this curious Structure, the medullary Oil is most equably distributed thro' the Substance of the Bone; and since the internal Lamina of the Bone must transmit the Quantity of Marrow subservient to its own Uses, and those of all the incumbent Laminæ, hence there is found in it the greatest Number of transverse Pores, a smaller Number in the succeeding Laminæ; and the Number gradually decreases, in proportion, as the Laminæ approach nearer to the Surface of the Bone, as *Clapton Havers* found upon accurate Observation.

Thus the Bones, the most dry and terrestrial Parts of the human Body, are supply'd with this fine and subtile Oil, by means of which it, perhaps, is, that the Union of the terrestrial Parts is maintain'd, since it is interposed between them, as a kind of Glue; for the Bones, when all the Oil is, by means of Fire, extracted from them, become friable; but when calcined in a strong Fire, and immersed in Oil, they again resume their Cohesion, as is shewn under the Article FIBRA.

Hence the Reason is obvious, why the Bones, which are furnished with such a large Quantity of pinguious Oil, are so good Fuel for the Fire; so that *Herodotus*, in his fourth Book, intituled *Melpomene*, informs us, that the *Scythians*, when they wanted Wood, boiled the Flesh of their Sacrifices, by kindling their Bones; and if proper Vessels were wanting for this Purpose, they threw all the Flesh into their Bellies, with an Addition of Water, after which, they put Fire to their Bones, by which means an Ox, in some manner, boiled himself. Hence, also, appears the Reason why the best-prepared Skeletons, where the larger Bones are perforated, and all the Marrow discharged by boiling, again become not only yellow, but are often moist with a pinguious Oil; for the medullary Oil, distributed between the Laminæ of the Bones, gradually advances to their Surface.

This medullary Oil is separated from the arterial Blood, collected in the medullary Vesicles, and thence discharged for the several Purposes destin'd for it by Nature. *Clapton Havers*, in his *Osteologia Nova*, informs us, that he observed the Arteries distributed to the Marrow quite distinct from those which convey the vital Humours thro' the Substance of the Bones; and that they were, also, convey'd to the Marrow thro' proper Perforations in the Bone, though in such a manner as not to penetrate the Bones in a direct Course, but run obliquely a considerable Way thro' the Substance of the Bone, before they reach'd the Marrow. The same Author observed an Artery of this Kind to run an Inch and an half within the Substance of the Bone, the Thickness of which, in that Part, hardly exceeded the eighth Part of an Inch. But he could not discover, whether this Artery, thro' all its Course, distributed any small Ramifications thro' the Substance of the Bone. After such an Artery comes into the Cavity of the Bones, 'tis generally divided into two Ramifications, each of which runs to opposite Extremities of the Bones, and sends off numberless small Ramifications thro' the medullary Vesicles. But tho', by means of a Microscope, this Author observed many small Blood-vessels dispersed thro' the most minute medullary Vesicle, yet he ingeniously confesses, that he could not discover whether every Vesicle was furnished with such Blood-vessels. And he seems to be of Opinion, that this Circumstance was by no means necessary, since these Vesicles communicate with each other, in consequence of which, the medullary Oil, secreted by the arterial Fabric of some of them, may be convey'd to the others. But, by the Injections of *Rays*, it is certain, that the Whole of the Marrow is furnish'd with such Vessels, in consequence of which, 'tis highly probable, that a similar Apparatus of Vessels is found in all the medullary Vesicles.

After the medullary Oil is secreted, the remaining Blood is convey'd to small Veins, which, being collected into larger Trunks, at last terminate in one Vein, which generally goes out at the

same Perforation at which the Artery enters. The same Author, also, observed, that the minute Veins arising from the Marrow entered the Substance of the Bones, and there disappeared. Perhaps these Veins return the Blood convey'd to the Marrow by the Arteries for its Nutriment, which nourish the Blood; for, in many other Parts of the Body, there is observed a double Apparatus of Arteries and Veins, one of which is subservient to the Secretion of a particular Fluid, and the other to the Life and Nourishment of the Part.

But since these Parts become red by Injections, which were before white and pellucid, 'tis obvious, that there are, in such Parts, small Series of Vessels, and consequently lymphatic Vessels. This is, also, certain from this, that all the Cavities of the Body, whether large or small, are moistened by a fine exhaling Liquor, in consequence of which there must be in these Parts similar absorbent small Veins.

But whether in these there are any adipose Ducts, by means of which the medullary Oil, collected in the Vesicles, is convey'd to particular Parts, *Havers* confesses, he could not discover. He rather thought, that the contiguous Sides of these Vesicles were full of Pores, by means of which they communicated with each other. But he found considerable adipose Ducts, by means of which the medullary Oil was convey'd from the cavernous Parts of the Bones to the Cavities of the Joints. *Du Verney*, in *Mem. de l'Acad. des Sciences*, An. 1700, has demonstrated, that there are Nerves in the Marrow; for he observed, that, in Conjunction with the Vein and the Artery, a Nerve was convey'd thro' the Bone to the Marrow. He, also, observed, that these three Vessels were inclosed in a common kind of Vagina, which was a Production of the Periosteum. Besides, he proved by undeniable Experiments, that the Marrow was furnished with a Sense of Pain; for, in the Hospitals, when, after the Amputation of Limbs, the Dressings were renewed, he often ordered the Marrow to be somewhat roughly touch'd; upon which the Patients immediately expressed a Sense of Pain. And, that this Truth might be the more effectually evinc'd, before the Members of the Royal Academy at Paris, he cut off the Thigh of a live Animal, and, waiting till the Pain of the Operation was, in some measure, abated, he thrust a Probe into the Marrow; upon which the Animal forthwith discovered Marks of the most intense and exquisite Pain.

Hence arises the fifth and last Class, or Division, of the Disorders incident to the Bones.

Since, in the most concealed and internal Marrow of the Bones, there are such a Variety of Humours, and such a Number of Vessels, almost all the Disorders already enumerated may, also, happen here; so that this is another, and the last, Division of the Disorders incident to the Bones. For, first, we considered those Diseases which affect the Substance of the Bone, properly so called; the Differences of which were drawn from their possessing either the broad and cellular Part near the joints, or the middle and more solid Parts; secondly, we considered the Vesicles full of a medullary Oil lodged in the cellular Parts of the Bones, and shew'd, that another Kind of Disorders arose from them; thirdly, we considered the external Periosteum surrounding the Bones, and shew'd, that it might prove the Origin of another Species of Disorders; fourthly, we shew'd, that almost the same Misfortunes were incident to the internal Periosteum; in the fifth and last Place, we have considered the Structure and Use of the Marrow in the Cavities of the larger Bones, according to the Discoveries of the best Anatomists, that by this means the Disorders incident to this Part might be the better known. From these, duly considered, we are better enabled to form the Diagnostic and Prognostic of Diseases of the Bones, and to make Choice of proper curative Intentions, which ought to differ according to the different Natures of the Disorders.

If the medullary Oil stagnates in its proper Vesicles, Emunctories, or in the Interstices of the Bones, and, by the vital Heat and Motion, becomes acrimonious, putrid, and sanious; it will prevent a new Secretion, obstruct the Vessels which convey the Humours to the Part, and those which secrete them, and inflame its proper Vesicles. Then it will produce a Suppuration, or, by a gangrenous Putrefaction, corrupt the Fluids and Solids. Hence the Substance of the Bone, not only destitute of Vessels, and vital Fluids, but, also, corroded by acrid Humours, is changed into a kind of cineritious Calx, where it is most thin and slender, that is, in the Cellulæ of the Apophyses. By this means violent Pain, Heat, Pulsation, Tumor, Abscesses, and Caries, are produced. Such a Stagnation may arise from every Obstruction; but, if it arises from an internal Cause, then the Disorder is called *Spina Ventosa*.

In this Aphorism are considered the Diseases incident to the Bones, when the medullary Oil secreted from the arterial Blood, collected in the Vesicles dispersed through the cellular Parts of the Bones, or accumulated in these Vesicles in the Marrow, becomes stagnant and corrupted.

From what has been said, 'tis obvious, that this Oil is collected in these Vesicles for certain Purposes; and that it, perhaps, stag-

nates for some time, or, at least, moves very slowly in them; for in Animals, kept in a State of Ease, 'tis found to be accumulated in large Quantities, whereas, after violent Exercise, 'tis much diminished. By Stagnation, therefore, is meant such a Condition of the medullary Oil, or of the Parts which contain and convey it, as renders it incapable of performing those Motions, which, in a State of Health, it ought necessarily to perform. For this medullary Oil ought to be capable of discharging itself into the Cavities of the Joints, in order to lubricate them. It ought, also, to insinuate itself into the Interstices of the bony Laminæ; it ought, in like manner, to pass freely thro' these minute Vesicles into those adjacent, till, at last, it is convey'd to the Parts where it is requir'd. By every Cause, therefore, which hinders such a Motion of the medullary Oil, a Stagnation will be produced. But we observe, that the mildest pinguious Substances spontaneously assume a violent Degree of Acrimony, some sooner, and some later. Mild and recent Oil of sweet Almonds, when expos'd to the Summer-heat, in a few Days, becomes so acrimonious, as to burn the Fauces, when it is swallowed. Butter is generally corrupted in the same manner, tho' not so soon. 'Tis true, this Corruption is surprisingly accelerated by the free Access of the Air; so that the Marrow, stagnating in the Cavities of the Bones, requires a longer time before it is corrupted, though, by its Continuance in that State, it will, at last, degenerate. Now, the vital Heat will soon render this stagnant Oil putrid, especially since it has a natural Tendency to Putrefaction; for, in a few Days, the Marrow of the soundest kill'd Animals is generally corrupted, and becomes intolerably ferid; and, its oleous Tenacity being destroy'd, it is dissolved into a thin, but highly putrid Sanies. It will be sufficiently obvious, what terrible Misfortunes must necessarily be the Consequences of this, if we consider the highly tender Fabric of those Parts which secrete, collect, and convey, the medullary Oil; for as soon as the Arteries, convey'd to the Marrow, have reach'd to the Cavities of the Bones, laying aside, in all Probability, their callous Coats, they become so soft and pulpy, that the Marrow of an old Ox may be easily reduced to an oleous Mass between the Fingers. When a Corruption, therefore, is once begun here, the medullary Oil, converted into an acrid Sanies, will corrode the Vesicles which contain it, and, in like manner, destroy the adjacent sound ones. Thus, such a Misfortune, happening in a small Portion of the Marrow, will be soon propagated thro' the adjacent Parts. These small Vesicles may, therefore, be inflamed, and all the Consequences of an Inflammation be produced in the Marrow. But a benign Suppuration can hardly happen here, because putrid Serum is of an highly acrimonious Quality; and tho' such a Suppuration should happen, yet the Pus, collected in a close Place, and not being capable of having itself discharged, would, in like manner, become attenuated and putrid. Hence, when the vital Vesicles of the Marrow are destroy'd, a gangrenous Corruption, of the worst Kind, must necessarily ensue.

Besides, the Malignity of this putrid Sanies, being daily augmented, renders the Disorder worse, acts upon the whole Surface of the internal Cavity of the Bone, and will, consequently, soon destroy the external Membrane of the Marrow, and the internal Periosteum. The Substance, therefore, of the Bones thus destitute of vital Vesicles will be at once corroded and destroy'd by an acrid Sanies. But this will happen soonest in the largest Parts of the Bone, or in the Cellulæ of the Apophyses, where the bony Substance is most tender, and the medullary Vesicles are lodged between the receding Laminæ of the Bone. Hence, in such Places, the corrupted medullary Oil will act upon both Sides of the bony Laminæ, and, consequently, soon destroy them. But, about the most solid Part of the Bones, the bony Substance is more slowly destroy'd, because the Bone is there thicker, and the corrupted Sanies only touches the internal Lamina of the Bone. But, as this Sanies is attenuated in proportion as it becomes acrimonious, it will gradually insinuate itself into the Pores of the external Lamella; and thus it may be convey'd between the bony Laminæ, in the same manner with the medullary Oil. By this means a Corrosion of the Substance of the Bone will happen; so that the most solid Bones, their Cohesion being destroy'd, become a kind of Calk. Thus, under the Article FRACTURA, 'tis shewn, that the largest Bones of the Body, when become carious, are broken by a very small Force.

Since, therefore, an Inflammation, with all its Consequences, may happen in these Parts, and since the Marrow is furnished with a Sense of Pain, the Reason is obvious, why Pain, Heat, and Pulsation, are found in these Parts. Surprising Tumors of the Bones have, also, been observed to be produced by this means, since the bony Laminæ, mutually receding from each other more and more, especially near the Joints, have enlarged the Bones far beyond their natural Size. Hence 'tis obvious, that the more soft cellular Parts, about the Joints of the Bones, often degenerate in a very surprising manner; and that Inflammations and Abscesses may, sometimes, be found in them. But, when the medullary Oil is corrupted, terrible Misfortunes happen, and even a violent Caries of the Bones, which is said to be present, when the corrupted Bone, as it were, moulders into Powder, and no longer resists the Probe. Hence Celsus, in the

second Chapter of his eighth Book, informs us, "That, in a Caries of the Bones, we may know whether the Caries is deep, or superficial, by the Probe's penetrating farther, or less, into it." A Caries, therefore, is the worst of all the Disorders incident to the Bones, since it generally indicates a total Corruption or Corrosion of them; for the slighter Disorders of the Bones are generally cured by an Exfoliation, or a Separation of the corrupted Laminæ; whereas a Caries can never be cured by Exfoliation, but must, by means of the Knife, or actual Caustery, be removed, till we come to the live Parts.

Since, therefore, many Causes of an Obstruction may produce such a Stagnation of the medullary Oil, so 'tis obvious, that the terrible Disorders arising from the medullary Oil may draw their Origins from Causes very various and different. But Compressions or Destructions of the Vessels, by external Causes, are rarely form'd in the Marrow, because it is pretty safely defended by the Bone. 'Tis, however, pretty certain, that the Marrow may be injured by violent Contusions, or Fractures of the Bones. But when a Corruption of the medullary Oil, without any external Injury, arises purely from an internal Disorder, the Disease is generally, by Physicians and Surgeons, called a Spina Ventosa, which, according to Doctor Freind, in his History of Physic, was first described by Rhazes, an Arabian Physician, and received the Name of Spina Ventosa, because it consisted in a Corrosion and Corruption of the Bone, accompany'd with a pungent Pain and Tumor. For when this Disorder, beginning with a Corruption of the Marrow, has corroded the Bone, the Teguments are surprisingly swelled, and the Substance of the Bone often greatly distended. The Name of Spina Ventosa displeased Marcus Aurelius Severinus, who wrote a whole Treatise on this Disorder, and would rather have it called by a compound Greek Word, *Padarthrocace*, which signifies a Disorder of the Joints of Children, because this Disease is most frequently incident to Children, and most generally observed about their Joints. This Author gave the following Definition of a *Padarthrocace*: "This Disorder, says he, in his Treatise de recond. Abscess. Natur. is a corrupted Abscess, or Sphacelation of the Bone, happening about the Joints of Children, in consequence of the primary Sordes of the Sperm, and menstuous Blood, not being sufficiently purged off, but collected and putrefied." He did not, however, deny, but this Disorder might happen to Adults; and in the same Treatise, he gives us an Instance of a Woman, arrived at the Years of Maturity, who laboured under this Disorder. Petrus de Marchettis, in his *Observat. Medic. Chirurg.* affirms, that he has known both Men and Women to labour under this Disorder till the twenty-fifth Year of their Age, but no longer; unless, having before been afflicted with this Misfortune, they were not as yet recovered. But as, in rickety Children, the Tumors of the Bones, about the Joints, are frequently observed without any Corruption of them, the Name of *Padarthrocace* seems rather to be too ambiguous. And Severinus himself, in another Passage, of the same Work, seems to be in a kind of Hesitation, and thinks, we ought not absolutely to assert, that the Spina Ventosa is the same thing with the *Padarthrocace*. 'Tis, therefore, proper to retain the Name of Spina Ventosa, in order to distinguish this Disorder, since it was used by Rhazes, the first Physician who wrote any thing distinct upon this Disorder; and the Meaning of the Word may be sufficiently limited from what has been already said; namely, that it is a Corruption of the Bone arising from a peccant Quality of the Marrow; for which Reason the Corruption begins in the interior Part of the Bone, and is gradually propagated thro' all its Substance, till the Periosteum being corroded or torn by the tumid Substance of the Bone, a Pain and Tumor of the superincumbent Parts are produced. But, when the Corruption begins in the exterior Parts of the Bone, it proceeds gradually to the more internal Parts; and though, at last, it affects the Marrow itself, yet still it may be called a Caries of the Bone; by which means all the Disputes of the Learned, whether the Spina Ventosa of the Arabians was known and described by the Greeks, will be cut off; for that a Caries of the Bones, and a Sphacelation of them, were known to the ancient Greeks, is certain; but we have no Accounts, that that Species of Corruption of the Bones, which arises from a previous Disorder of the Marrow, was known among them.

'Tis obvious, that the Signs of this Disorder, when at its Height, are the same with those of a deep Inflammation, which is not exasperated by the external Touch.

'Tis to be lamented, that this Misfortune is very often not to be discovered, till too late; when, for Instance, the Bone being totally corrupted, the superincumbent Parts begin to be raised in a Tumor. Now 'tis obvious, that a Discovery of this Kind must necessarily be very difficult, if we only consider, that the Disorder is lodged in the Middle of the Bones. The following Considerations may, however, give us some Light in this Affair. If we know, for Instance, that there is such a morbid Cacochymy in the Body, as is most frequently observed to affect the Bones; such as a Lues Venerea, the Scurvy, and, in young Patients, the Rickets, which last Disorder often affords a strong Suspicion of a latent

lues Venerea. From these we know, that the Causes predisposing to this Disorder are in the Body. But the almost only Sign of the Presence of the Disorder is, when a profound, obstinate, and intense Pain affects, as the Patients say, the internal Parts of the Bone, and is accompany'd with a Sense of a slow Corrosion. Besides, this Pain is increased by the Heat of the Bed, by violent Exercise, and the immoderate Use of Aromatics and Wine. But tho' the Part affected is strongly press'd or rub'd, yet the Pain is not by this means increased. Nor is this to be wondered at, since the hard Bone hinders the external Touch from acting upon the Part affected. These are the Signs of the Disorder, when beginning; but when, after the Corrosion of the Bone, the external Periosteum begins to be affected, the Pains are increased, and greatly augmented, by being rudely touch'd; at the same time a soft Tumor of the superincumbent Parts arises, and, for the most part, the Substance of the Bone is previously raised in a Tumor; and, in this Case, the Disorder is easily discovered, but too late, because the whole Substance of the Bone, being already corrupted, admits of no Cure, but will either be spontaneously separated from the live Parts, or must be remov'd either by the Knife, or the actual Cautey.

A difficult Separation, Absterision, and Cleansing of the Part, prognosticate many Misfortunes, and a difficult Cure.

If we carefully consider what has been hitherto said, concerning the Nature of this Disorder, it will be sufficiently obvious, that, in such a Case, the worst Symptoms are to be dreaded, and that the Cure must be highly difficult; for, in the middle Cavity of the hard Bone, is lodged the corrupted medullary Oil, which, in order to the Cure, must be removed, and washed away. But there is no way in which it can be discharged, unless the Bone is previously corroded, or a Perforation artificially made in it. This Oil, in the mean time, will by its Continuance, and the Heat of the Body, become daily more acrid, by which means all the Symptoms will be increased. Besides, if the internal Surface of the Bone should be corroded by this acrid Sanies, tho' the Parts of the corrupted Bone should be separated from the sound live Parts, yet they would remain in the middle Cavity of the Bone, and, by their Bulk and Asperity, injure the tender Marrow, and by that means produce new Misfortunes. 'Tis certain from practical Observations, that surprising Degeneracies of the Bones, intolerable Pains, and Death itself, have been produced by this Disorder.

The Cure of this Disorder is most commodiously attempted, first, by filling all the Vessels with such Decoctions as are not only of an highly penetrating and abstergent Nature, but, also, resist Putrefaction; secondly, by moving all the Humours strongly, and soliciting a Discharge of Sweat, by means of warm Vapours, properly apply'd to the Body; and, thirdly, at the time the Sweat is flowing, by determining the Motion of the Humours to the Part affected, by means of Fomentations, and warm Vapours apply'd to it in particular.

When the Tumor of the superincumbent Parts opened spontaneously, *Rhazes*, according to Doctor *Freind*, in his History of Physic, was for no other Method of Cure, than removing the corrupted Part of the Bone, either by the Knife, or the actual Cautey. *Petrus de Marchettis*, in *Observat. Medic. Chirurg. ravior. Sylloge*, as soon as a Patient complained of a pungent Pain in the Joints of his Hands or Feet, tho' there was no Tumor, yet ordered a deep Incision to be made; and the corrupted Part of the Bone to be removed by the Knife, and the actual Cautey. But, before this cruel Method is used, the following Measures, which have often been attended with Success, may be taken.

1. The Fomes of the Disease is lodged in the Cavities of the Bones, in consequence of which external Remedies cannot reach it, except in so far as, being received into the bibulous Veins, and mixed with circulating Blood, they are along with it convey'd thither. The only Method, then, remaining, seems to be, to fill the Body with a thin Fluid, which is not only penetrating and detergent, but, also, resists Putrefaction. Then let this Fluid be carry'd through the Vessels with an accelerated Motion, and its Efficacy, as much as possibly, determined to the Part affected; for in this Case 'tis highly probable, that such a Fluid being convey'd to the Part affected thro' the vital Vessels lodged in the Substance of the Bone and the Marrow, as yet not destroy'd, the Putrefaction may, by that means be stop'd, the corrupted Parts separated from such as are live and sound, the medullary Oil diluted, reformed by the bibulous Veins, and carry'd out of the Body by Urine or Sweat; for that the putrid Humours, lodged in the Cavities of the Bones, may be reformed by the Blood, is sufficiently obvious from a putrid hectic Fever, which, when rising to a great Degree of Malignity, often infects the Blood with a violent Cacochymy. But the liberal Use of such a penetrating, detergent, and antiseptic Fluid will hinder the absorbed putrid Humours from proving injurious. The best Ingredients for preparing a Fluid of this Kind are those Woods which are furnish'd with an aromatic Fragrance, and a large Quantity of bal-

samic Resin, such as Juniper-wood, Box-wood, Oak, and, what is of all others the most proper for this Purpose, Guaiacum-wood, a Decoction of which, when duly prepared, is gently acid, and highly balsamic. But as these Woods are hard, and contain a large Quantity of Resin, the Water cannot easily penetrate into them, unless they are previously shav'd down, digested for some time in a gentle Heat, and boiled for some Hours in a close Vessel. Sometimes, when these Woods stand in Digestion, a small Quantity of some alkaline Salt is added, that the Water may the more easily penetrate into their Substance; and, towards the End of the Boiling, a few Ounces of rectified Spirit of Wine are to be added, that all the resinous Portion of the Woods may be the better dissolved. Thus:

Take of green and weighty Guaiacum-wood, ten Ounces; and of the Salt of Tartar, half a Dram: After these are digested in six Pints of Water for twenty-four Hours, then boil for two Hours in a Vessel placed within another, (in Diplomate) adding towards the End four Ounces of rectified Spirit of Wine. Then let them boil a little, and keep for Use; and upon the Residuum of the Decoction pour three Pints of fresh Water, and let them boil for four Hours.

Of the former Decoction, let the Patient take four Ounces, four times a Day, in the Morning at Seven o'Clock, then at eleven, then at four in the Afternoon, and lastly at Seven in the Evening.

The weaker or second Decoction he may use for common Drink.

Decoctions of the Woods of Juniper, Sassafras, Box, and Oak, may be prepared in the same manner.

The Fomentations are to be Linen Cloths soak'd in these Decoctions.

In such a Decoction may be infus'd Shavings of the Wood of Sassafras, which, being furnish'd with a kind of volatile Fragrance, cannot bear long boiling without losing its medicinal Virtues. The Patient is to take a few Ounces of this Decoction three or four times a Day, using, at the same time, for common Drink, a weaker Decoction, prepared by an Affusion of Water to the Residuum of the former. A larger or a lesser Quantity of these Decoctions is to be us'd according to the Age, the Temperament, or Strength, of the Patient; but 'tis always beneficial to drink as much of them as he can bear; for by this means the whole Body will be fill'd with a penetrating detergent and antiseptic Liquor, which is the first Intention of Cure.

2. After the Vessels are full, and the Body begins to become tumid by a liberal Use of these Decoctions for some Days, it is expedient to accelerate the Motion of the Humours thro' the Vessels: We may at Pleasure increase the Motion of the Blood by Frictions, for which Intention they are generally us'd; but this Effect is most commodiously produc'd by a warm Vapour surrounding and acting upon all the Parts of the Body, and by that means procuring a Sweat; by which the fluid Drink is dissipated; and a fresh Opportunity afforded of filling the Body again with the same Decoctions: For this Purpose the Patient is to be stript naked, cover'd with a waxed Linen Cloth and exposed to the Steam or Vapour of warm Water, or, which is of all others the most effectual, that of Spirit of Wine. This penetrating Vapour can hardly act upon the Body for a few Minutes, before the Patient begins to become warm, and have his Body cover'd with a profuse Sweat, which is sometimes observ'd to smell of the Decoction drank. By this means so profuse Sweats are excited, that the most robust Patients often fall into Deliquiums, when expos'd for a considerable time to the Steam of kindled Spirit of Wine. For this Reason great Caution is necessary, since we know from Experience, that the Use of this Method, in a *Lues Venerea*, has sometimes destroy'd the Patients, whilst, by unskilful Practitioners, these Sweats have been longer continued, than the Strength of the Patient would admit. In weak Constitutions 'tis sufficient to continue the Sweating for half an Hour every Day, and the most robust and vigorous can hardly bear it for two Hours; for which Reason 'tis expedient, that the Physician should always be present, in order to judge how long the Sweat should be continued. After this the Patient is to have his Body wiped with warm Linen Cloths, and be laid in a warm Bed; by which means he will sweat gently for an Hour or two. But since, after the Sweat, the Access of the cold Air would produce the worst of Consequences, 'tis expedient the Air of the Chamber should be sufficiently warm, which End is most commodiously obtain'd by kindling proper Materials in a Stove. For this Purpose, also, some rather order, that the Patient should be in Bed, without a Shirt, and have the Steam of kindled Spirit of Wine convey'd to his Body, by means of a Funnel under the Bed-clothes; for by this means the Action of the cold Air on the Body will be prevented. But whether the Patient sweats in a Bed, in a Quadrangular Box, or under what is commonly called a *Craticula*, the Head is always to be free and disengag'd for fear of a Suffocation. After the Sweating is over, Broth prepared

of lean Flesh, or a small Quantity of Wine, is to be exhibited, that the Strength, which is often languid after such profuse Sweats, may be recruited.

'Tis sufficiently obvious, that, by an accelerated Motion of the Humours, such a penetrating Decoction must be convey'd thro' the whole Body; but 'tis requisite, the Efficacy of the Medicine should act principally upon the Part affected. There are Means of determining the Efficacy of Medicines, at Pleasure, to any Parts of the Body. This End is obtained by such Measures as increase the Imperus and Quantity of the vital Fluids in the Part to which the Efficacy of the Remedies ought to be determin'd. This Intention is answer'd by diminishing the Resistance of the Vessels in these Parts, and increasing the Velocity of the Circulation in them. The former of these Ends is procured by the Application of warm and soft Fomentations, Cataplasms of a like Nature, or by Cupping-glasses; and the latter by Frictions, and the Applications of stimulating Substances: In Disorders of this kind, 'tis highly beneficial to foment the Part affected, with Woolen Cloths soak'd in a warm Decoction of Guaiacum, and to make the Steam of kindled Spirit of Wine act first upon it.

This Method, if persisted in for a considerable time, often produces happy Effects, especially when us'd in Conjunction with a Diet of an attenuating Nature, and such as resists an oleous Putrefaction.

When all the Circumstances mention'd in the preceding Paragraph concur, such a penetrating and antiseptic Decoction, by an accelerated Motion of the Fluids, is rapidly carried thro' the Vessels, and the corrupted Matter eliminated from the whole Body, and especially from the Part affected, in consequence of the Determination of the Decoction thither by means of Fomentations, and warm Vapours: But such an obstinate Disorder is not to be remov'd in a few Days; for which Reason such Sweats are for three or four Weeks to be daily excited, a due regard, at the same time, being always had to the Strength of the Patient. The Strength is in the mean time to be supported thro' the Whole of the Cure, by the best Aliments, but such as are of easy Digestion, and not pinguious; for, by this Method, the Patients are generally greatly emaciated, and their whole Fat not only dissolv'd, but also, carried off, by Sweat; and, as the principal Malignity of the Disorder arises from the corrupted medullary Oil, 'tis obvious, that pinguious Substances are to be abstain'd from, lest they should increase the Nature of the Disease: Broths, therefore, prepared of Flesh, and the Fat carefully remov'd, Biscuits, Decoctions of Barley, Oats, Rice, and Millet, Panadas, and ripe Summer Fruits, are most proper in this Case: For Drink, Whey, or Milk diluted with three times the Quantity of Water, may be us'd; but a weak Decoction of Guaiacum, render'd palatable by Raisins or Liquorice, is still better, and more efficacious.

All these Measures, duly taken, often produce the desir'd Effect in such Disorders, even after the Extirpation of the Parts has been judg'd necessary. The Remission of the Symptoms, and the Subsiding of the Tumor, are the Signs, by which we know, that the Cure proceeds well; but 'tis to be observ'd, that sometimes the Fabric of the Bones, by means of these Disorders, so degenerates, that thro' the whole Remainder of the Patient's Life there remains a considerable Tumor in the Part affected, tho' the whole Corruption of the medullary Oil is happily remov'd, and such a Tumor is often afterwards attended with no other Inconvenience, than the Deformity of the Part: It has, also, been sometimes observ'd, that, during the Cure, the corrupted Part of the Bone has been happily separated, and, a Suppuration of the soft incumbent Parts happening, extracted, and a successful Cure produc'd.

But, as this Disorder is frequently incident to Children, they cannot always be prevail'd upon to drink a sufficient Quantity of such Decoctions; and, as their tender Bodies are hardly able to bear this Method of exciting Sweats, it is proper once a Week to give an hydragogue Purge; and, on the intermediate Days, gentle Scorbutics. The Part affected is, in the mean time, to be continually wrapt up in penetrating Fomentations prepar'd of Vinegar, Salt, Urine of sound Persons, Rue, and *Alliaria*. Whey is, at the same time, to be us'd for Drink. Thus, says *Van Swieten*, I have known a Cure happily produc'd by the Use of these Measures for some Months: But in such a Case there is almost always a small Perforation spontaneously made in the Integuments, a certain Quantity of Sanies is discharg'd, the Swelling of the Bone gradually subsides, and sometimes the Parts of the corrupted Bone come out, and an hollow Cicatrix remains ever after.

But when this Disorder is become so inveterate, that almost the whole Marrow is corrupted, and the vital Vessels running thro' it totally destroy'd, scarce any happy Effects are to be hoped for from the best Remedies; for the Use of Decoctions will be of no Service, since the Soundness of the Vessels is requisite, in order to convey their medicinal Virtues to these Parts. In such a Situation the worst Consequences are to be

expected, since the corrupted Oil, which daily becomes more malignant, is lodg'd in the Cavity of the Bone: The only remaining Method, therefore, is, to make a Perforation in the Bone, and by that means procure a Discharge of the corrupted Matter; for by so doing we imitate Nature, which, by a Corrosion of the Bone, sometimes throws out all the corrupted Oil; and the best Surgeons furnish us with Instances, in which this Method has succeeded.

If the arterial venous or lymphatic Vessels are obstructed, either thro' a Defect of fresh Fluids, or a Stagnation of those convey'd to them, similar Disorders are produc'd in these Parts, the Order being only inverted and chang'd.

Thus, 'tis obvious from what has been said, what terrible Misfortunes are produc'd, when the medullary Oil becomes stagnant and corrupted in its Vessels, or in the Interstices of the Bones. But that there may be a due Secretion of the Marrow, and that it may be reabsorb'd, perhaps, partly by the Veins, without being consum'd by the Motions of the Body, a quick Circulation of the vital Juices thro' these Vessels, which convey the Fluids to the Marrow, and carry them thence, is requisite. If, therefore, an Obstruction is, by any Cause, produc'd in the Texture of those Vessels, which are distributed among the Laminæ of the Bones, which near the Joints recede from each other, or in those Vessels which run thro' the Periosteum, or the Membrane which externally surrounds the Marrow, the Secretion of the medullary Oil will be disturb'd, and that Part of it, which is already secreted, will become stagnant, since the tender medullary Vessels, and their Emunctories, are compress'd by the adjacent obstructed and tumid Vessels. The same Effect will, also, be produc'd by an Obstruction of the Vessels of the external Periosteum; for we have already observ'd, that it transmits all the Vessels, which are either convey'd to, or return from, the Cellulæ of the Bones, and the Marrow: Thus a Disorder of the external Periosteum may be propagated, not only thro' the whole Substance of the Bone, but, also, thro' the Marrow, only with this Difference, that the Order of the Symptoms is inverted; for when the medullary Oil is first corrupted, being chang'd into an acrid Sanies, it will corrode the Vessels, in which it is contain'd, and their vascular Texture. Hence it will, in like manner, destroy the Membrane of the Marrow, the internal Periosteum, and the Substance of the Bone; and, at last, having corroded the Bone, it will affect the external Periosteum; and thus the Misfortune will be propagated from the internal to the external Parts: But, when the Disorder begins with an Inflammation of the external Periosteum, it proceeds from the external to the internal Parts; and, first affecting the Bone, at last conveys the Taint to the Substance contain'd in its Cavity; for that a Disorder of the Periosteum forthwith affects the Bone, is sufficiently obvious from what is said under the Article *CAPUT*, and *Aristotle in Histor. Animal. Lib. 3. Cap. 13.* observes *ἡ δὲ τῶν ὀστέων σφακελίζει*, "that the Bones become sphacelated when depriv'd of their Membranes." But, how soon the vital Fabric of the Bone may be destroy'd by a Disorder of the Periosteum, is sufficiently obvious in a Paronychia, in which a violent Inflammation, accompanied with intolerable Pain, happens in the Periosteum of the last Phalanx of the Fingers; for such a Disorder hardly continues for a few Hours, till the whole Phalanx is entirely sphacelated, and at last falls off.

The Diagnostics, therefore, Prognostics, and Cure, of these two Species of Disorders are the same.

For when the Texture of the Vessels of the external Periosteum of the Substance of the Bone, and of the internal Periosteum are first affected, the Disorder will at last reach the medullary Vessels; and the same Effects will be produc'd, as if the Disorder had proceeded from a Corruption of the medullary Oil; for which Reason the Method of Cure must be the same in both Cases.

Hence 'tis, also, obvious, that there is great Danger according to the different Parts, in which the Cause of the Disorder is lodg'd; and these things premis'd render the Diseases of the Bones better understood.

Tho' the slightest Inflammation in the external Periosteum may produce those Disorders, which otherwise arise from a Corruption of the medullary Oil; yet 'tis obvious, that such an Inflammation may be more easily cur'd, than when the internal Periosteum, and the Membrane surrounding the Marrow, are inflam'd; since in the former Case happier Effects are to be expected from external Medicines; and since, in many Parts of the Body, the Surgeon's Hand may have immediate Access to the Part affected, by making an Incision in the Integuments; in consequence of which, its Separation, Absterision, and Mundification, may be the more easily obtain'd. It is, therefore, a Consideration of great Moment, in what Part of the Body the first Cause

of the Disorder is lodg'd; and, every other Circumstance being alike, the Danger always bears a direct Proportion to the Depth of the Disease. Thus, from what has been said, we are better qualified not only to know, but, also, to cure, the Disorders incident to the Bones.

1. A slight Inflammation of the Bone is produc'd by an Inflammation of the external Periosteum, the Causes of which are very numerous, as is obvious from what is said under the Article INFLAMMATIO: And its Effects are sufficiently known.

The most slight Disorder, therefore, of the Bones is that which begins in the external Periosteum; which, as we have already observ'd, consists of an Intertexture of numerous Vessels; for which Reason an Inflammation may happen in it from a great Number of Causes specified under the Article INFLAMMATIO; and when an Inflammation is once produc'd, all its Effects will follow; and its various Terminations are to be expected.

2. Such an Inflammation is known by the Symptoms common to a profound or deep Inflammation, the Pain of which is increas'd by being press'd.

As is observ'd under the Article INFLAMMATIO, the principal Signs of an Inflammation are Tumor, Redness, Heat, Pain, and Pulsation, in the Part affected. But, if the external Periosteum alone is inflam'd without the incumbent Parts, 'tis sufficiently obvious, that the Tumor and Redness cannot be perceiv'd; in which Case the Pain, the Heat, and sometimes, also, the Pulsation, are to be accounted the Signs of the Inflammation; but when the Part affected is so press'd, that the Effects of the Pressure reach to the Periosteum, the Pain is augmented; and by this means the Disorder is distinguish'd from an Inflammation of the internal Periosteum, the Membrane surrounding the Marrow, or the Marrow itself; for in such a Case, as we have already observ'd, the Pain is not augmented by external Pressure, because all these Parts are safely defended by the hard Bone. But in those Parts where the Bones are cover'd by strong Muscles, and a large Quantity of Fat, about the Os Femoris, for Instance, the Pain is not augmented, except by a strong Pressure.

3. Many terrible Symptoms are to be expected, unless this Disorder is speedily cured.

For, since all the Vessels conveyed to the Substance of the Bone pass thro' the external Periosteum before their Insertion in the Bone, 'tis obvious how dangerous an Inflammation in this Part must be; for all the Disorders before enumerated may arise from an Inflammation of the Periosteum; and, tho' the Injury done to the Bone is only very slight, yet tedious and long protracted Misfortunes often ensue; for, if the Bone is only corrupted in a small Part, the Periosteum will never grow there again, but the adjacent and incumbent Parts will be irritated by an acrid Sanies, by which means malignant and incurable Ulcers are often produc'd; especially if this happens in those Parts of the Body, where a large Quantity of Flesh covers the Bone, and hinders a safe Incision to the Part affected. Thus, for Instance, when the Periosteum of the Os Femoris, near its Articulation with the Coxa, is inflamed and suppurated; 'tis obvious how difficult the Cure must be, and what a Train of Misfortunes must arise from that Circumstance. Thus, says *Van Swieten*, I know a hopeful Youth, who, after neglecting a deep Inflammation of the Periosteum of the Os Femoris in this Part, which ran between the Interstices of the Muscles, could never have the Part depurated, tho' various Incisions were made in order to procure a Discharge of the Pus. Hence, after an intolerable Degree of Misery protracted for some Years, he at last died of a purulent Tabes. When, therefore, from proper diagnostic Signs, 'tis certain that such a Disorder is present, the most efficacious Remedies are forthwith to be tried, in order to cure the Inflammation by a Resolution. Thus, a Suppuration in these Cases so dangerous, and, which is still more so, a Gangrene, will be prevented.

4. This Disorder is cured like other Inflammations, making it, at the same time, the principal Intention, to carry the peccant Matter from the Bone outwards; which End is obtain'd by Fomentations, and sometimes by Incisions.

In this Case, therefore, all the Measures mention'd under the Article INFLAMMATIO, for the Cure of a resolvable Inflammation, are forthwith to be taken: And as, in this Case, the Corruption of the subjacent Bone is justly to be dreaded, we are by all means to endeavour to draw the Disorder to the external Parts. For this Purpose all those things are to be us'd, which are specified under the Article INFLAMMATIO, as proper for preventing the spreading of that Disorder; a Revulsion,

for Instance, of the Impetus of the Blood to other Parts, by Suction, Friction, Epispastics, and Vesicatories, Fomentations, Baths, Fontanels, Setons, and strong Purging. Thus the softest Fomentations and Cataplasms are to be Day and Night applied to the Part affected; for, by this means, the external Integuments will be render'd flaccid, and the inflammatory Matter is sometimes deriv'd to that Part, where it does far less Harm, than if the subjacent Bone was affected by it: There are many Instances of deep internal Inflammations thus deriv'd to the external Parts, and the Patients by that means greatly reliev'd; and *Hippocrates*, in the forty-ninth Aphorism of his seventh Section, tells us, "That a Tumor and Redness, appearing on the Breast of Patients labouring under a Quinsy, are lucky Omens, since they are Signs, that the Disorder is carried outwards." Hence, in that Disorder, the most skilful Physicians with so great Success foment the Parts with the softest Fomentations, and even sometimes irritate them by Sinapisms. In the most violent Ischiatic Pains, *Hippocrates* ordered the Parts affected to be soften'd with Baths, Fomentations, and Liniments. And, in his Treatise *de Locis in Homine*, Cap. 9. he directed the peccant Matter to be extracted by means of Cupping-glasses. 'Tis, also, well known, that, in the severest Tooth-ach, the Patient is forthwith greatly reliev'd, when the affected Side of the Face becomes tumid and inflated.

But when, after the unsuccessful Use of these Measures, no Relief is observ'd to be afforded, the only remaining Method is, to make an Incision of the Integuments all at once, as far as the Bone, if the State and Condition of the Bone admit of such a Practice. In an highly acute Paronychia, which generally arises from an Inflammation of the Periosteum of the last Phalanx of the Fingers, or of the Tendon affixed to it, unless an Incision is soon boldly made to the Bone, the Bone is sphacelated, and the Phalanx falls off after intolerable Pains, and sinuous Ulcers, which often prey upon all the adjacent Parts, and render the whole Hand rigid and immoveable. In Ischiatic Pains, after Fomentations, Baths, and Cupping-glasses, had been us'd in vain, all the antient Physicians ordered the Part affected to be deeply cauteriz'd. The good Effects produc'd by an Incision of the Teguments of the Cranium, after Contusions and Wounds, in order to hinder the Bone from being affected, are specified under the Article CAPUT.

That such an Inflammation is tending to an Abscess, is known, first, by the manifest Signs of a previous Inflammation; secondly, by the Pulsation, Fever, and irregular Horripilation; and thirdly, by an Absence of the Signs of Resolution.

So long as there are any Hopes, that the Inflammation of the external Periosteum may be cured by Resolution, all the Measures directed in the preceding Paragraph are to be tried. But, when the Disorder tends to a Suppuration, other Methods become requisite; and the following Signs inform us, that an Abscess is to be expected.

1. There is some Hope, that a gentle Inflammation may be cured by Resolution; but when all the Symptoms are violent, and continually augmented, the best Termination of the Disorder, which can be expected, is a Suppuration. An intense Pain, a Perception of a violent Heat, and an acute Fever, are the principal Signs, which inform us, that such a profound Inflammation is incapable of Resolution, and tends to an Abscess.

2. When an Inflammation tends to a Suppuration, all its Symptoms are generally augmented. The Pulsation then will be greater, and more distinctly perceiv'd, in the Part affected; a Fever, also, the Concomitant of every considerable Suppuration, will generally be present. But the principal Sign is the irregular Horripilation, which when present, always lays a Foundation for suspecting a Suppuration in the internal Parts. In this Case the Patients are seiz'd with a Sensation like that produc'd by pouring cold Water on the Body, almost in the same manner as happens in the Beginning of intermittent Fevers. But such an Horripilation is immediately remov'd, and afterwards returns in an irregular Manner. Now 'tis certain from practical Observations, that such irregular Horripilations are present, when any considerable Inflammation is converted into a Suppuration.

3. The Signs of a Resolution are explain'd under the Article INFLAMMATIO: But, in such Cases, the Recency of the Disorder, the Slowness of the Pain, the Smallness of the Fever, and a moderate Sense of Heat in the Part affected, lay a Foundation for the Hopes of a Resolution. If, therefore, Symptoms contrary and opposite to these are present, an Abscess, or a Gangrene, is to be dreaded.

But, that an Abscess is actually present, may be known from the Signs of a deep-lodg'd Suppuration, specified under the Articles INFLAMMATIO and ABSCESSUS.

Unless, from previous Signs, 'tis evident that a violent Inflammation has preceded, the Abscess, subsequent to it, is not easily discover'd. In Abscesses lodg'd near the Surface of the Body,

Body, the Softness of the Part, the Fluctuation of the contain'd Pus, and the Whiteness, are sufficiently shewn under the Article SUPPURATIO: But where the Disorder is lodg'd about those Bones, which are cover'd with a large Quantity of Integuments, the latent Abscess is not without the greatest Difficulty to be discover'd; for sometimes only a small Quantity of Pus, collected between the Bone and the Periosteum, produces no sensible Tumor: It, also, frequently happens, that, in such Cases, the Pain does not remit, tho' the Pus is form'd; because, being gradually increas'd in Quantity, unless it corrodes the Periosteum, it makes a Way for itself, between it and the subjacent Bone; and, thus by a slow Dilaceration, separates the Periosteum from the Bone, a Circumstance productive of the most intense and intolerable Pain: 'Tis not, therefore, to be wonder'd at, if such a latent Disorder should sometimes deceive the most skilful, and remain undiscover'd till too late; that is, till the Bone is corrupted, or the Pus, after corroding the Periosteum, is distributed thro' the adjacent Parts, and produces malignant sinuous Ulcers. But when an Abscess is formed about the Spine of the Tibia, it may be very easily discover'd, whereas in other Places we almost only know, that an Abscess is form'd, by the Signs from which we conclude, that an Abscess will be form'd.

Then the Pus, corroding the Periosteum, will soon lay the Bone bare, deprive it of Vessels, and corrupt it. See the Article SUPPURATIO.

In a Suppuration, as is observ'd under the Article INFLAMMATIO, the small Vessels, infarcted with an inflammatory Matter not capable of Resolution, are broken. When, therefore, this happens in a Suppuration of the Periosteum, the vital Communication is destroy'd in that Part of the subjacent Bone, which receiv'd its Juices from the Vessels already destroy'd by the Suppuration, and consequently a Disorder must necessarily happen in the Bone itself. Besides, the Pus, lodg'd in a deep Part, will become gradually more acrid, and corrode the contiguous Surface of the Bone, by which means all the Symptoms will be soon augmented. And the Quantity of the Pus being enlarg'd; unless, in consequence of a Corrosion of the Periosteum, it is dispers'd thro' the adjacent Parts, it will more and more separate the Periosteum from the Bone; and consequently a larger Portion of the Bone will be depriv'd of its Periosteum, and corrupted. Besides all these Disorders, which happen to the subjacent Bone, from a Suppuration of the Periosteum, all those are also to be dreaded, which are produc'd by Pus, remaining long, and becoming corrupted, in a close Place. See the Article SUPPURATIO.

For this Reason the Abscess is to be forthwith opened, the Pus eliminated; and the Ulcer cleans'd. Then the Bone is to be treated in the manner directed under the Article CAPUT, when the Cranium is denudated, or laid bare.

In order to prevent all these Misfortunes, and cure those others already present, there is no other Method left, than boldly to make an Incision in all the Integuments, that thus the Pus may be discharg'd, and an Access procur'd to the Bone affected. It is difficult, and often highly dangerous, to make such a deep Incision: But, as *Celsus*, in *Lib. 7. Cap. 33.* when speaking of the Extirpation of Members, excellently observes, that "Tis a Matter of no Moment, whether the only remaining Method of Relief be sufficiently safe or not;" but since in such Cases, not only the Reputation of the Physician, but also, the Life of the Patient, is at Stake, great Prudence and Caution are requisite. Anatomy demonstrates the Situation of the large Vessels, and other Parts, which ought to be avoided. 'Tis however, to be observ'd, that, in different Persons, the Situation of the Vessels is often found very different; for which Reason, in difficult Cases, 'tis more expedient, first, to make an Incision in the Fat and Skin, and then to consider, whether, and in what manner, we may safely proceed farther, than to plunge the Knife at once to the affected Bone; for it often happens, that when an Incision is made in the common Integuments, the Pus, having corroded the Periosteum, and diffusing itself thro' the adjacent Parts, finds a way for its own Discharge, and points out a Method of making a safe Incision into the sinuous Ulcer, and arriving at the Part affected. All the Measures taken in the Cure of an Abscess, specified under the Article SUPPURATIO, are, also, to be taken; and since, in Cases of this kind, the Pus generally makes sinuous Passages for itself, and since the Parts on which it acts are sordid, especially when it has remain'd for a considerable time, mild Detergents are generally injected; especially such as are prepar'd of Aloes, Myrrh, Mastich, and Sarcocolla, with an Addition of Honey, Turpentine, and the Yolk of an Egg: For these not only answer the Intention of cleansing the Ulcer; but, also, prove beneficial to the affected Bone. Besides, all those Measures recommended under the Article CAPUT, in the Cure of the Cranium, when depriv'd of the Periosteum, are to be taken in such Cases, when, after an Abscess, the Bone is depriv'd of the Periosteum.

That such an Inflammation is tending to a Gangrene of the Part, is known, first, from the Signs of the highest Inflammation; secondly, from a Freedom from Pain in the Part affected, without a sufficient Cause; and thirdly, from a dense slow-increasing, and not very painful, Tumor of the incumbent Parts.

Under the Article INFLAMMATIO, when treating of the various Events of an Inflammation, 'tis observ'd, that a Gangrene sometimes succeeds it; and the Signs are describ'd, by which a future Gangrene is foreseen, and a present one known; but, among these Signs, there are some, by which a Gangrene is only discover'd in the external Parts of the Body, which, however, are not sufficient for distinguishing a deep-seated Gangrene of the Periosteum; for the Blisters of the Epidermis, the livid, dark, and black Colour, are not present, till all the Parts are corrupted. But here we treat of those Signs, by which a Gangrene of the Periosteum may be discover'd, tho' the incumbent Parts are not as yet affected with a Gangrene.

1. That a terrible Inflammation is present, may be known from the Violence, and sudden Augmentation, of the Symptoms. Now the principal Signs of an Inflammation of the Periosteum, as we have already observ'd, are Pain, Heat, and a Sense of a deep-seated Pulsation; and, if all these are very violent, and increase suddenly, a Gangrene is justly to be dreaded.

2. How fallacious a Sign is the sudden Removal of Pain in violent Inflammations, is shewn under the Articles INFLAMMATIO and GANGRENA, where the Reasons are, also, given, why, when the Vessels are destroy'd by a violent Inflammation, a Cessation of Pain ensues. The same, therefore, will happen in this Case; when the Inflammation is cur'd by Resolution, the Pain is indeed diminish'd, but slowly and gradually; nor will a good Resolution ever happen after a very violent Inflammation, as is obvious from the Article INFLAMMATIO: When, therefore, without a good and laudable Cause, that is, without the Signs of a Resolution, a sudden Removal of Pain happens after a violent Inflammation, it is a bad Sign, and always indicates, that a Gangrene has succeeded the Inflammation.

3. Then the Taint is propagated thro' the incumbent Parts; and, first, the Panniculus Adiposus is affected; which, by very slight Causes, is often rais'd into a large Tumor. But as all the Symptoms of an Inflammation cease, when a Gangrene is present, the Tumor will not have the Hardness and Resistance observable in a Phlegmon; but will be flaccid, hardly sensible of any Pain, and, in this Case, always indicates, that the Tunica Adiposa is, in like manner, becoming gangrenous. See the Article SUPPURATIO.

That a Gangrene is present, may be known, not only from the Signs enumerated in the preceding Paragraph, but, also, from the pale, cineritious, and livid Colour of the incumbent Parts.

For, when those Signs, by which we discover that an Inflammation of the Periosteum tends to a Gangrene, continue, or are increas'd, we know that the latter is either already present, or will soon be so. The chang'd Colour of the Integuments, mention'd under the Article INFLAMMATIO, indicates, that the Gangrene, begun in the Periosteum, is already propagated to the incumbent Parts. Thus *Hippocrates*, in the second Aphorism of his seventh Section, tells us, "That 'tis a bad Sign, when the Flesh becomes livid, in consequence of a Disorder of the Bone."

Then the Bone, being laid bare, and deprived of Vessels, and vital Juices, is by the acrid, putrid, and gangrenous Matter, consum'd and render'd carious; and the Contagion is quickly spread to the adjacent Parts.

For, when the Periosteum is corrupted by a Gangrene, the vital Influx and Efflux of the Humours is totally destroy'd in that Part of the Bone, which was covered with the now corrupted Part of the Periosteum; and consequently the external Lamina of the Bone will become mortified: The intermediate Vessels between this and the succeeding Lamina may receive the vital Juices, either from the Vessels of the internal Periosteum, distributed thro' the Substance of the Bone, or from the Vessels running between the Lamina of the Bone, or those rising from the external Periosteum, which is as yet sound: But the mortified Part, incumbent upon these Vessels, will not only soon suffocate and destroy their Life; but the gangrenous Gore of the mortified Parts will, also, corrode all around it, and by that means produce a terrible Caries of the Bone. Now when all the incumbent Parts, together with the Bone itself, are corrupted, a Sphacelus is present, which soon infects the adjacent Parts: Hence the Reason is obvious, why this Disorder spreads so fast.

For this Reason an Incision is forthwith to be made, in the Part affected, to the Bone; and the Wound is to be cleans'd, and

and the Bone cur'd in the manner directed under the Article **CAPUT**.

The whole Hopes of a Cure consist in this, that, if there is still any Part of the Substance of the Bone alive, this live Part may be separated from the incumbent mortified Parts, and regenerate the lost Substance; or, if all the Vessels dispers'd thro' the whole Thickness of the Bone are already mortified, an Aperture is to be made in the Bone, thro' which the corrupted Marrow may be discharg'd. For 'tis impossible the Marrow should retain a laudable Quality, when the whole Substance of the Bone is mortified. The latent Disorder is, therefore, to be forthwith uncovered, by making an Incision to the Bone; nor is this Practice so barbarous and cruel, as at first it may seem; since all the incumbent Parts are generally gangrenous. *Celsus*, therefore, when in the second Chapter of his eighth Book treating of the Cure of these Disorders, justly advises. "First, to lay bare the Bone, to extirpate the Ulcer, and, if the Disorder of the Bone is larger than the Ulcer, to remove the Flesh, till the Bone appears found on all Hands." For if, as we have before observ'd, there is sometimes a Necessity for making an Incision in the live Parts, covering the inflamed Periosteum, in order to hinder the Disorder from affecting the Bone, such an Incision will be still more requisite, when a Gangrene and Corruption of the Bone are already present; for there can be no Depuration of the affected Bone, unless there is first a Passage outwards made for that Purpose.

After the Incision, therefore, is made, dry Pledges are to be put between the Lips of the Wound, which, when left till next Day, and becoming tumid with the affluent Humours, will enlarge the Orifice of the Wound, and discover the naked Bone to the Eye: We may, also, know from its chang'd Colour, its Roughness and other Circumstances, what Kind and Degree of Corruption is present. See the Article **CAPUT**. *Hippocrates*, in the eighth Chapter of his first Book *de Morbis*, seems to have approved of this Method of Cure; for, when he is treating of a Sphacelus of the Brain, he describes a Corruption of the Cranium in these Words: "If the Brain is sphacelated, a Pain seizes principally the anterior Part of the Head, which becomes tumid and livid, the Patient being in the mean time seized with a Fever and Horror. In this Case, an Incision is to be made in the tumid Part; and the Bone, when cleans'd, is to be scrap'd." Under the Article **CAPUT**, the Method is describ'd of making small Perforations in the Cranium, in order to make way for the subjacent small Vessels, that by this means the corrupted Part of the Bone may be the sooner, and the more easily, separated, and the lost Substance regenerated; and 'tis sufficiently obvious, that this Method must prove beneficial in the like Disorders of other Bones. But, that an happy Effect may be expected from this Method, 'tis necessary the whole Substance of the Bone should not be corrupted; but live Vessels, lying under the mortified Parts, are requisite. When, therefore, a Bone laid bare by Incision is found totally corrupted, *Celsus*, in the second Chapter of his eighth Book, orders the mortified Part to be removed with the Knife, or the actual Cautey; and in this he has been follow'd by celebrated Surgeons: But Nature, assisted with laudable Aliments, and proper Remedies, is sometimes capable of doing a great deal in Cases of this Nature.

An Inflammation of the internal Periosteum proceeds from the same Causes, produces the same Effects with respect to the interior Part of the Bone, and terminates like an Inflammation of the external Periosteum, either in an Abscess, or a Gangrene; but is worse by reason of a want of Exhalation. Hence the whole Marrow, and then the whole Bone, are destroy'd by an highly fetid Putrefaction and Caries.

The internal Periosteum is by the Bone more safely defended, than the external Periosteum; for which Reason the former is less frequently subject to Disorders, than the latter. But since the internal Periosteum is vascular, there may be many Causes of an Inflammation in it, and consequently various Terminations of these Inflammations: And as the external Periosteum distributes numberless Vessels thro' the Substance of the Bone, and receives those which return from it, so this seems to hold true in the internal Periosteum. And as the Disorders of the external Periosteum principally affect the Bone, because, when these Vessels are destroy'd, the Circulation of the vital Juices thro' the Substance of the Bone is of course abolish'd, the same will hold true in Disorders of the internal Periosteum; so that the internal Part of the Bone may be corrupted, whilst its external Part is as yet sound. This seems to be confirmed by the Observation of Mr. *Ruyssch* already mention'd; for, in the Cavity of the cubital Bone, a bony Pipe was lodg'd so entirely separate from its exterior Substance, as to be disengag'd and moveable. Hence, as, in the Bones of the Cranium, the Vessels of the Pericranium touch the external Lamina, and those of the Dura Mater the internal Lamina, so the same almost happens in the larger hollow Bones; and as, in the Diploe between the two

Laminae of the Cranium, these Vessels of the Pericranium and Dura Mater meet, so likewise the same probably happens in the middle of the Bone. *Ruyssch*, as he informs us in *Thesaur.* 10. N^o 176. preserv'd an Os Humeri, in which an osseous spongy Substance, like the Diploe of the Cranium, is found between two Laminae; and he affirms, that he observ'd this in some other Bones. Hence he explains how such a bony Pipe could be separated from the external Part of the Bone. The same Author, in his *Musaeum Anatom.* and *Thef.* 8. N^o 8. Tab. III. Fig. 2, 3, and 4. has a similar Instance for the Confirmation of this Doctrine; for from the Os Tibiae corrupted by an inveterate Caries, by the Force of Nature, there was form'd a Piece of Bone, round and hollow, the Figure of which he has delineated in his Tables. All the Disorders, therefore, which happen to the Bones, in consequence of an Inflammation, Suppuration, or Gangrene of the external Periosteum, may, in like manner, happen, if the internal Periosteum labours under the same Misfortunes. But if we consider, that all the Corruption produced by Disorders of the internal Periosteum is lodg'd in the Cavity of the Bone, and cannot possibly find a way for its Elimination, it will be sufficiently obvious, that Disorders of the internal Periosteum are most to be dreaded; for, by this means, the Marrow will soon be corrupted, and all the Misfortunes before-mention'd produc'd.

Hence 'tis, also, obvious, that whether this Membrane is itself first inflam'd, or afterwards injur'd, by a Contagion communicated from the Marrow before corrupted, the same Disorder, that is, a Caries of the Bone, will soon be produc'd to such a Degree, as hardly ever to admit of a Cure.

For the internal Periosteum covers the concave Surface of the Bones, and is contiguous to the common Membrane, which surrounds the collected medullary Follicles. Hence 'tis sufficiently obvious, that, when the internal Periosteum is inflam'd, the Marrow must soon be affected; for, if this Inflammation terminates in an Abscess, or a Gangrene, 'tis evident, that the Pus or Sanies must corrode the highly tender Fabric of the Marrow; and consequently that it will be soon corrupted, and all the Misfortunes already enumerated produc'd. The Difficulty of the Cure will, also, appear, from what has been hitherto said. Nor do I think, that any one can readily distinguish, whether the Membrane surrounding the Marrow, the Marrow itself, or the internal Periosteum, is inflam'd, since, in either Case, the Signs of a profound Inflammation are present, the Pain is not increas'd by a pretty strong Compression, and the Effects are the same, that is, a Caries of the Bone, and a violent Corruption of the Marrow; for which Reason the same Method of Cure is requisite in either Case.

This Disorder, whilst in a State of Inflammation, may be known; first, from the general Signs of an Inflammation; secondly, from the Depth of the Part affected; thirdly, from an obtuse, fix'd, and continual Pain, which yields to no Medicines, and is not increas'd by Pressure; and, fourthly, from the Increase of such a Pain after muscular Motion.

Since this Disorder is generally discover'd too late, that is, from its bad Effects, those Signs by which it may be discover'd in the Beginning are carefully to be investigated, which, however, is not to be done without great Difficulty.

1. Since most of the Signs of an Inflammation can only be observ'd in external Parts of the Body, so the Heat alone, the Pain, and the Fever, the general Concomitant of considerable Inflammations, are to be consider'd as Signs of this Disorder; for the Pulsation can hardly be discover'd in so deep a Part, for this Reason principally, that the Vessels of the internal Periosteum are highly tender.

2. If these Signs of an Inflammation are present, and, at the same time, no Disorder perceiv'd in the external Parts, 'tis greatly to be suspected, that the Disease is lodg'd in the most internal Parts of the Bones.

3. Patients in this Situation generally complain of a Sensation, as if their Bones were split from the internal to the external Parts. The obtuse Pain, indeed, remains fix'd in the same Part; but is, at the same time, highly uneasy, because it can neither be mitigated by changing the Posture of the Part affected, nor by means of any Fomentations or Cataplasms; and is not, at the same time, augmented by a strong Compression. The Reason of this is obvious, from what has been before said.

4. 'Tis also, obvious, from what has been said before, that the medullary Oil can pass from the Cavities of the Bones into the Cavities of the Articulations of the moveable Bones, where it serves to lubricate and anoint the Extremities and Ligaments of the Articulations, and is consum'd by an Increase of Motion in the Body. Hence, therefore, by such an Increase of Motion, the Fluids, stagnating in the Cavities of the Bones, are put in Motion, and their Motion is render'd brisker, and more accelerated. If, therefore, a Pain arises from an Inflammation of

the internal Periosteum, or of the medullary Membrane, 'tis evident the Pain must be increased by an accelerated Motion of the Humours thro' these Parts. Such an Increase of Pain is always produced in the Patients by this Cause, as, also, by their being heated by a copious Use of Wine, or aromatic Substances.

This Disorder is cured, first, by the general Method used in Inflammations; see the Article INFLAMMATIO: And, secondly, by the Method already proposed, strictly and duly observed, as soon as the Signs of a beginning Resolution appear.

The Cure of an Inflammation by Resolution is, of all others, the best and most desirable, but cannot, in this Case, be obtained, without the greatest Difficulty. For, during the first Days of such a Disorder, Physicians are rarely consulted, whilst the obtuse and deep-seated Pain is either entirely neglected, or treated with external Remedies; which, in the very Nature of the Thing, can hardly be expected to do any Service. But, how much the Recency of the Disorder contributes to the Cure of an Inflammation by Resolution, is obvious from the Article INFLAMMATIO. Besides, Fomentations, Frictions, and Baths, so useful in other Inflammations, cannot, in this, reach the Part affected. Hence, in this Case, nothing remains to be done, but by Venesection, and antiphlogistic Purgatives, to diminish the Impetus and Quantity of the arterial Fluid; and to use a slender Diet, in Conjunction with attenuating and diluting Medicines.

Secondly, If, after the Use of these Medicines, the Symptoms are mitigated, but not entirely removed, the Physician is not to give over his Efforts, but to use his utmost Skill, in order to make a perfect Cure; for the smallest Disorder left in this Part often afterwards lays a Foundation for the worst Misfortunes of an incurable Nature. Though, therefore, the Inflammation is allay'd, yet 'tis still expedient to use the Method before recommended, that is, filling the Body with penetrating Decoctions, and taking the other Measures there prescribed; that, by this means, all Remains of the former Disease may be removed. But since, by this Method of filling the Body with Decoctions of the Woods, an artificial Fever is raised, 'tis sufficiently obvious, that it cannot be attempted, till the Inflammation is cured; otherwise all the Symptoms would be render'd worse.

But if a Suppuration, or Gangrene, should happen in this Part, and be known, not only by the palpable Signs of a previous Inflammation, but, also, by the deep-seated, fixed, and obtuse Pain; then the Method by Decoctions is the only Thing capable of producing a Cure.

But when the Medicines proper for the Cure of an Inflammation by Resolution have not been used at all, or too late; or when the Inflammation is so violent, that it cannot be resolved, tho' all these Medicines have been seasonably applied; we must then expect other Terminations of the Inflammation, that is, a Suppuration, or a Gangrene; for, since there is no Method for the Discharge of the Pus, or the gangrenous Gore collected here, 'tis sufficiently obvious, what terrible Misfortunes must be produced by that means. That these Terminations of an Inflammation are present, may be known from the Absence of the Signs of a Resolution, and the fix'd, deep-seated, and obtuse Pain. In this Case, the only Hope of Relief consists in the Method before recommended, that is, filling the Body with Decoctions, and, by that means, washing off all the corrupted Matter. But if the Disorder cannot be cured by these Measures, and if an Incision can be safely made to the Bone, it is to be perforated to its Cavity, that thus the corrupted Sanies may be eliminated. That this Method has been sometimes used with great Success, is sufficiently obvious from what has been already said. A Salivation, excited by means of Quicksilver, has often been tried in Cases of this Nature; but, says *Van Sweiten*, I never saw it prove effectual. Hence 'tis obvious, that no good Effects can be produced by any other Remedies.

For then the internal Part of the Bone becoming putrefied, tumefied, inflamed, and carious in all its Substance, the external Periosteum is inflamed, distended by the Tumor of the Bone, and corroded by the acrid Matter; and the incumbent Parts, being corrupted by the slow-spreading Contagion, become spongy, tumid, and painful, till the whole Member is at last destroy'd. In such a Situation, Extirpation is the only Method of Relief.

For the Pus, retain'd in a warm and close Place, will become attenuated, putrid, and acrid. See the Article SUPPURATIO. And, if a gangrenous Gore is present, it will still sooner degenerate, and assume a malignant Quality. The medullary Oil discharged, in consequence of its having corroded its containing Vessels, will become stagnant, and acquire a rancid Acrimony, of an highly malignant Nature. Thus the whole Cavity of the Bone will soon be fill'd with an highly putrid and acrid Sanies.

The concave Surface of the Bone will, therefore, be corroded by this acrid Ichor; the Vessels distributed between the Laminae of the Bones will be inflamed; the Laminae, before contiguous, will be separated; a Tumor will happen in the Substance of the Bone; and, at last, all the Parts will be corroded. Whilst these Changes are happening, fresh Pains arise; for all the Parts contain'd in the Cavity of the Bone being corrupted, the former Pain often ceases, or, at least, remains very obtuse: But when the external Periosteum, which is highly sensible, begins to be distended by the Tumor of the Bone, or corroded by the acrid Sanies penetrating to it, the Patient is afflicted with the most intense and violent Pains. Then the soft Parts, incumbent on the Bone, begin to be affected and corrupted by the slow-spreading Contagion; and in these Parts, especially in the Membrana Adiposa, arise Tumors, sufficiently large, but spongy, and yielding to the Touch. Thus the Disorder is gradually propagated to the external Parts, the Whole of which become corrupted by degrees, till at last, the whole Member is destroy'd; for all the Parts, together with the Bone, being mortified, a true Sphacelus is present, which can only be cured by Extirpation. In malignant Gangrenes, and violent Contusions, tho' many of the Parts are destroy'd, yet there is still some Hope, that there are, under the mortified Parts, live Vessels; by means of which, the corrupted Parts may be separated, and the lost Substance regenerated. But, in this Case, the subjacent Parts are first corrupted.

A Venereal or Scorbutic Quality of the Humours, or their Tendency to that Disorder call'd the Rickets, are frequently the Causes of this Disorder. Hence we may understand what Gummata, Tophi, Nodes, Exostoses, Abscesses, a Caries, and a Spina Ventosa of the Bones are.

Tho' an Inflammation of the internal Periosteum, of the Membrane surrounding the Marrow, and of the Follicles containing the medullary Oil, may arise from almost all the Causes capable of producing an Inflammation in other Parts of the Body; yet, since these Parts are so safely defended, an Inflammation is rarely produced in them by the common Causes. But 'tis observable, that, in some Disorders, a Cacochymy generated in the Blood is deposited in the Bones, and corrupts their Fabric. Of this Kind is

A Venereal Quality of the Blood. 'Tis certain, from frequent Observations, that, in this Disorder, the subtle Contagion, mix'd with the Blood, is afterwards deposited in various Parts of the Body, where it gradually corrodes all around it; and is, at the same time, possess'd of such a Quality, as to corrupt the sound Humours, and so transform them into its own Nature, that, by their means, the like Misfortunes may not only be produced in the Neighbourhood of the Part affected, but, also, in remote Parts; for it is certain, that the Venereal Poison surprisingly insinuates itself into the oleous and mucous Parts of the human Body: 'Tis not, therefore, to be wonder'd at, if it insinuates itself into the pinguious Oil, whether dispersed thro' the Substance of the Bones, or collected in their Cavities; and then, by a generally slow Corrosion, corrupts all the Parts. The worst, and most malignant Disorders of the Bones are frequently observed to arise from a Lues Venerea; especially when it is inveterate, and has taken deep Roots; for the Bones are rarely affected by this Disorder, when recent. But, when the Disease is of long standing, those intolerable and obstinate Pains arise, which often yield to no Remedies; but, becoming milder by a Salivation, or Decoctions of the Woods, afterwards return. The Marrow is, also, affected by the Lues Venerea; and 'tis certain from numberless well-vouch'd Observations, that this Disease often produces very terrible Disorders of the Bones. Thus *Van Sweiten* informs us, that he saw the Ribs, the Sternum, and the Clavicles, consumed by a Lues Venerea, the Vertebrae of the Neck corroded by a Venereal Ulcer of the Pharynx, and the outward Plate of the Right Bregma render'd so carious by a Lues Venerea, as to fall off. These Observations are sufficient to prove, that a Lues Venerea is frequently the Cause of Disorders in the Bones.

As for a Scorbutic Quality of the Humours; the first Signs of a Scurvy generally appear about the Gums and Teeth: And 'tis well known, not only that the Teeth, being render'd carious by this Disorder, fall out by Pieces, but, also, that the bony Part of the Maxilla is greatly affected by it; and the obstinate Ulcers of the Legs, so frequent in scorbutic Patients, are often accompanied with a Caries of the Bones. In the most malignant Species of this Disorder, all the Bones have been found carious; an Instance of which we have in *Mem. de l'Acad. des Sciences, An. 1699.* And *Petit*, in his *Traité des Maladies des Os, Tom. 2.* informs us, that in a great Number of Soldiers, who died of a Scurvy, he found the Periosteum, which was in a great many Parts corrupted entirely, separated from the Bones, and under it a dark-colour'd or blackish Lymph, of an intolerably fetid Smell. Hence 'tis obvious, how unfriendly a Scurvy, especially of the inveterate Kind, is to the Bones; for it has, then, many Symptoms in common with a Lues Venerea, and especially nocturnal Pains.

As for a Tendency of the Humours to that Disorder call'd the Rickets; 'tis obvious that this Disorder has a great Affinity with the

the Scurvy, and often lays a Foundation for suspecting an Admixture of a Venereal Taint; for it most frequently seizes Children procreated by Parents infected with a Venereal Taint, or who have been so unfortunate as to have frequent Gonorrhœas. But we observe, that, in this Disorder, the Bones are severely affected; for the Teeth become black, and, growing carious, fall out; the Epiphyses become protuberant, and are, by a slight Force, separated from the Bones to which they adhered: And, in the highest Degree of the Rickets, a Caries and Spina Ventrosa of the Bones are frequently observed.

From what has been said, we are the better enabled to understand the following Diseases of the Bones; that is,

Gummata, which are Tumors arising out of the Substance of the Bones, of such a tenacious and soft Nature, as to yield to the Fingers, almost like the Gum of Trees, when soften'd by the Rays of the Sun, or before it has acquired its perfect Hardness. In Patients labouring under a Lues Venerea, such Tumors are frequently observed, not only on the Head, but, also, on the middle and most solid Parts of the larger Bones. Now these Tumors seem to be produced, when the Vessels, running between the bony Laminæ, being either obstructed or inflamed, are dilated, and by that means raise the incumbent Laminæ. Perhaps, also, in such Tumors, the Substance of the Bone, properly so call'd, which is naturally hard, degenerates into a preternatural and morbid Softness. There are, in practical Authors, surprising Instances, in which, from latent Causes, not only particular Parts, but, also, the Whole, of the Bones have been render'd soft. From such Observations, 'tis sufficiently obvious, that in certain Disorders, the Bones become soft; and it has, at the same time, been frequently observed, that the Bones, thus soften'd in particular Parts, have there become tumid. Hence appears the Origin of the Tumors call'd *Gummata*.

'Tis, also, obvious, from what has been said, that such a Softness of the Bones sometimes succeeds Abscesses of the adjacent Parts; and that sometimes the Origin of this Disorder is lodged in the Substance of the Bones, and especially when they are affected with a Lues Venerea. Such *Gummata* have, however, been sometimes observed on the Bones, when no adequate Cause could be discover'd. Perhaps the acid Cacochymy of the Blood may sometimes prove the Cause of a Softness of the Bones. Thus in weak Children, whose Aliments are, for the most part, of the ascendent Kind, and whose Vessels and Viscera are, at the same time, so weak, that they cannot subdue the Quality of the Chyle generated from their Aliments, the Rickets, and a preternatural Flexibility of the Bones, are so frequently produced. *Ruyfch*, in his *Theſaur.* 4. N^o 38. informs us, that when the Liquor, in which he preserv'd a Fœtus, was made too acid, the Ribs were so soften'd, that they could not only be bended any way, but even ty'd in a Knot, like a Rope.

As for *Tophi* and *Nodes*; when Tumors of the Bone arise, harder than *Gummata*, but softer than the Substance of the Bone, they are call'd *Nodes*, or *Tophi*. The celebrated *Boerhaave* used to compare *Tophi* to the Horns of Calves, when as yet under the Skin; and *Nodes* to these Horns, after they appear'd without the Skin, but had not, as yet, acquired the Hardness of an Horn. Hence 'tis obvious, that *Nodes* and *Tophi* only differ from *Gummata* in their different Degrees of Firmness.

As for *Exostoses*; these are Tumors which equal, or, perhaps, surpass, the Bone in Hardness. Sometimes the whole Bone is enlarged into an *Exostosis*, as is sometimes observable in the Bones of the Carpus and Metacarpus, those of the Tarsus and Metatarsus, and the Phalanges of the Fingers. In the larger Bones, this very rarely happens, since only particular Parts of them are generally rais'd into *Exostoses*. The Nutrition and Increase of the Bones, and the Restitution of the lost Substance of the Bones, considered under the Articles *CAPUT* and *FRACTURA*, sufficiently prove, that the hard Substance of the Bone may be restored by means of laudable Humours convey'd in a due Quantity, and with a proper Impetus, thro' sound Vessels. Besides, in the Cure of Fractures, it is often observed, especially in young Patients, that the Callus generated is rais'd above the Surface of the Bone, and often remains an hard and bony Tumor, during the whole Life of the Patient. But that Substance which unites and consolidates fractured Bones, and restores the Substance lost, is first soft, and only gradually acquires a bony Hardness. See the Article *VULNUS*. If therefore, by any Cause, those Vessels are dilated, which convey the Matter by which the Bone is nourished, and the lost Substance repair'd, there may be an Enlargement of the Bulk, and a Tumor produced in the Bone. And since between the Laminæ of various Strata, of which the large Bones consist, 'tis highly probable, that such Vessels are distributed, as is observed under the Article *CAPUT*, so the Bulk of the Bone may be enlarged in these Interstices, and the Laminæ of the Bone separated farther from each other; in consequence of which, the Thickness of the Bone will, in these Parts, be augmented.

Now, according as these Tumors protuberate to the external or internal Parts, according as they affect different Parts of the

Bone, according to the Diversity of the adjacent Parts injured by these Tumors, and according to their different Bulk and Figure; so various, and often surprising, Misfortunes are produced by them, as we learn from practical Observations.

Ruyfch, in *Theſaur.* 10. N^o 178. Tab. II. Fig. 4. and 5. informs us, that, by means of a Saw, he longitudinally divided a Part of the Os Tibiæ, affected with an *Exostosis*; upon which he found, that an hollow *Exostosis* had arisen from the internal Surface of the Bone, and render'd the Cavity, in which the Marrow was contain'd, narrower. Hence 'tis obvious what Misfortunes might arise from such an *Exostosis*; since, by its means, the Marrow might be compress'd and injur'd; and consequently all the Symptoms arising from that Circumstance, and already enumerated, were to be dreaded. The *Exostoses* arising in the middle and most solid Part of the large Bones are generally pretty hard in all their Parts; but such as appear near the Joints, have sometimes been found only with their external Parts hard; and, under this hard Crust, surprising Degeneracies of the soft Parts lodged between the receding bony Laminæ, into fungous Flesh, Pus, Sanies, and Mucus, have been observed. See *Petit Maladies des Os*, Tom. 2. If the interior Lamina of the Cranium is rais'd into such a Tumor, 'tis sufficiently obvious, that, in consequence of the Compression of the Brain, Epilepsies, Palsies, and Apoplexies, are to be dreaded. But, as *Exostoses* arising on the external Surface of the Bone slowly distend the incumbent Periosteum, highly intense, and sometimes long-protracted, Pains are produced by that means; which, however, cease sooner, if the Tumors are of an acute Figure.

Such Tumors of the Bones sometimes succeed external Injuries; and are, also, observed to proceed from internal Causes; but from none more frequently, than from a Lues Venerea. In a malignant Scurvy, the Ulcers of the Legs, so often incurable by all Remedies, are frequently accompanied with a Caries, and sometimes with *Exostoses* of the Bones. *Exostoses* arising from external Causes are generally pretty mild, tho' not to be cured without great Difficulty; whereas those arising from internal Causes sometimes disappear, or, at least, are much diminished, when the Disorder producing them is removed, as is frequently observed in Venereal *Exostoses*. 'Tis, also, certain, that *Exostoses* may be produced by slight Contusions, especially in those Parts where the Bones are only cover'd with a few Integuments. Hence such Tumors are so frequently observed in the Spine of the Os Tibiæ. And as this Part is much obnoxious to external Injuries, *Petit*, in his *Treatise des Maladies des Os*, informs us, that there are few Men who have not some Asperities in the Surface of that Bone. What surprising *Exostoses* may be produced by strong Contusions, is obvious from a Case recorded in *Mem. de l'Acad. des Sciences*, An. 1720.

Exostoses produced by external Injuries are rarely cured, unless they can be removed by a surgical Operation; but, as they are generally of a pretty mild Nature, this Method, which is always difficult, and sometimes dangerous, is not advisable, unless by their Bulk, Figure, or Situation, they are productive of considerable Inconveniences.

But *Exostoses* arising from internal Causes are often cured, or, at least, much diminished, when these Causes are removed. But if, after the Cure of these Disorders, the *Exostoses* should remain, as is sometimes observable after the Cure of a Lues Venerea, an Incision is to be made in the Integuments, and the *Exostoses* removed either by the Knife, or the actual Caustery, if any terrible Misfortune is to be dreaded from suffering them to remain. Yet, says *Van Swieten*, I have seen many Cases, in which, after the Cure of a Lues Venerea, the *Exostoses* have remain'd for many Years, without any farther Disadvantage than the Deformity of the Part. The most commodious Method of removing *Exostoses* is found in *Petit's Traité des Maladies des Os*, Tom. 2.

As for *Abscesses*; under the Article *SUPPURATIO* is described what is meant by an Abscess of the soft Parts; and 'tis obvious, from what has been already said, that the Bones are subject to similar Misfortunes. 'Tis, also, certain from practical Observations, that not only in the cellular Parts, near the Joints of the Bones, but, also, in the middle Cavities of the large Bones, Inflammations have degenerated into Abscesses. Besides, an Abscess is said to happen in the Substance of the Bone, when one or more of those Laminæ, by the Union of which the Bone is form'd, becoming mortified and corrupted, are disengaged and separated from the subjacent live Vessels, and a Substance like the separated Laminæ regenerated; and, on this regenerated Part, a new Periosteum is form'd, by which means the Substance lost is restored. See the Article *CAPUT*, where 'tis said, that *Hippocrates*, in Wounds of the Head, observed, that a denuded Bone, or the Remains of a Weapon left in the Bone, were generally separated from that Part of the Bone which was still furnished with Life and Blood. We may, also, refer to Abscesses of the Bones, those surprising Observations of *Ruyfch*; since in the middle Cavities of the large Bones a round bony Pipe was found, separate from the rest of the Bone.

As for a *Caries* of the Bones; this is a Disorder far more terrible, and entirely distinct from an Abscess of the Bones; for,

In an Abscess of the Bone, it still retains its Cohesion, and is generally separated in the Form of a Lamina; whereas, in a Caries, the Substance of the Bone is so corrupted and corroded, that it moulders away into a kind of Powder; so that a Caries indicates a far greater Corruption of the Bone, and a far greater Difficulty of Cure. How a Caries of a Bone, cover'd with Flesh and Ineguments, may be known, we shall hereafter specify: But when the Bone may be either seen with the Eyes, or touch'd with a Probe, the Caries is easily discover'd. *Celsus*, in the second Chapter of his eighth Book, informs us, "That we may soon, by means of a Probe, discover a Caries of the Bone; since the Probe will penetrate farther, or less, according as the Caries is deeper, or superficial;" for the carious Part of a Bone has scarce any Solidity, but yields to the Probe; and, when the Probe comes to the sound Part of the Bone, a Resistance is perceived. Hence *Celsus*, in the same Part, after, for the Cure of these Disorders, he has order'd the Bones to be ras'd, adds; "But we must rasp them no longer, than till we have arriv'd at a white or solid Part of the Bone; for 'tis certain, that the Blackness is removed, when we come to a white, and the Caries, when we come to a solid Part of the Bone." As for a *Spina Ventosa*, which is the worst Species of a Caries of the Bones; since the Marrow, corrupted by an internal Cause, corrodes them, we have already treated of it.

Hence we know why a carious Bone so variously changes its Colour, from a whitish-blue, to a pinguious white, a yellow, a cineritious, a livid, and a black Colour, and what Degree of Corruption each of these Colours denotes.

When, under the Article *CAPUT*, those Signs are considered, by which we know that the Cranium is affected, it is observed, that, in live Persons, the Colour of sound Bones is somewhat reddish or bluish; and that the first Sign of a vitiated Bone is a Change from this Colour to a white, a yellow, a dark, and at last, a black Colour. The same, also, holds true in the other Bones; and generally the greater Degree of Corruption is indicated, the more they recede from their natural Colour. The first Change of Colour is, when the Bone becomes white, which, as it were, denotes a beginning Mortification in the Bone. Hence, when small Perforations are made in a Cranium thus affected, the first Sign, that the Cure succeeds happily, is, when the white Surface of the Bone begins to assume a reddish Colour. But since we have already demonstrated, that the medullary Oil passes thro' Pores of the Laminæ mutually applied to each other, to the external Surface of the Bone, where it is, perhaps, received by the small Veins of the Periosteum, and mix'd with the Blood; 'tis sufficiently obvious, that when the vital Fabric of the Bone is destroy'd, the Oil convey'd thither must be accumulated, become stagnant, and corrupted. For this Reason the Bone will become pinguious and yellow, as *Celsus*, in the second Chapter of his eighth Book, excellently observes, when speaking of the Disorders of the Bones. "The vitiated Part, says he, generally first becomes pinguious, and then either black, or carious." In proportion as the Disorder increases, the Colour becomes cineritious, livid, and at last black, which indicates a perfect Mortification, and a violent Corruption of the Bone. This successive Change of Colour is, also, observed in the Teeth, when they begin to be corrupted; for, first, they become pinguious, then yellow, then dark-colour'd, and, last of all, black; when, becoming carious, they fall out by Pieces.

From what has been said, 'tis obvious, why a carious Bone is unequal, rough, spongy, friable, soft, and easily broken; for the external and internal Arteries no longer compress the Laminæ of the Bone.

'Tis obvious, from what has been already said, that the Bones consist of Laminæ mutually applied to each other; and that between these Laminæ Vessels are distributed, which convey the vital Humours, requisite to the Life and Nourishment of the Bones; and especially in those Parts of the Bones, where large Interstices are left between these Laminæ. The small Arteries, therefore, lying between the exterior Laminæ of the Bone, and the next succeeding one, when in their Diastole, endeavour, almost in every Point, to raise the external Laminæ; but the small Arteries dispersed thro' the Periosteum, when dilated by an equal, or perhaps a greater Force, resist the Elevation of this Lamina. When, therefore, by whatever Cause, the Periosteum is corrupted, the Action of the Arteries running between the Laminæ of the Bone will prevail, and the external Lamina will be elevated; and 'tis sufficiently obvious, that the same may happen in all the Interstices between the Laminæ of the Bone. Perhaps the Action of these small Arteries may appear too inconsiderable for elevating an hard Lamina of Bone, and separating it from its subjacent Lamina; but if we consider, that these small Arteries, almost in all Points of such a Lamina, repeat their Pulsations four thousand times in an Hour, it will not, perhaps, appear so surprising, that so small a Force, so often applied, should produce such an Effect. When, in Wounds of the Head, the Surface of the

Cranium, divested of the Pericranium, is disorder'd by the Access of the Air, or the Application of pinguious Substances, the corrupted Lamina has often, in a few Days, been separated by the Force of these Arteries. See the Article *CAPUT*.

The Reason, therefore, appears, why the internal Arteries, that is, those which run between the Laminæ, elevate these Laminæ externally, as soon as the Pressure of those Arteries ceases which were capable of acting upon the external Surface of these Laminæ. For this Reason, the Surface of the corrupted Bone is rough, and, in consequence of the Laminæ receding from each other, becomes spongy, more friable, and loses a great deal of its natural Solidity; for, in sound Bones, the firmest Part is that in which the bony Laminæ are most contiguous to each other; which is generally in the middle of the large Bones; and, on the contrary, the Bones are far more spongy, soft, and easily broken, near their Extremities, where the bony Laminæ are at great Distances from each other. But the Friability of carious Bones is much augmented, because the Humours, becoming stagnant and acrid, corrode the Substance of the Bone; and this Effect is principally produced by the corrupted medullary Oil. Besides, the Cohesion of the Bones seems to depend upon the Interposition of the Oil, which, like a kind of Glew, unites their terrestrial Parts; for, as we before observed, the Bones become highly brittle, when, by means of an open Fire, their whole Oil is exhaled; and such Bones, render'd thus friable by long Calcination, again cohere firmly, when immersed in Oil. Since, therefore, the attenuated medullary Oil is consumed by Putrefaction, and the Bone, at the same time, corroded by acrid Humours, the Reason is obvious, why carious Bones are so friable as to moulder into Dust upon the slightest Touch of a Probe.

Hence, also, the Reason is plain, why from such a Bone an highly fetid Smell, like that of rancid Bacon, is exhal'd.

This fetid Smell is so strong, that skilful Surgeons are able, from it, to tell that there is a Caries of the Bone below the Ulcer. 'Tis, therefore, expedient to know this Smell, which cannot, in the very Nature of the Thing, be described by Words, but approaches to that of corrupted and rancid Bacon. When the Caries of the Bone reaches to the Marrow, this fetid Smell may be easily accounted for; but 'tis, also, perceived, when the Corruption of the Bone is only superficial. We have already observed, that the medullary Oil passes thro' the Pores of the Laminæ, and is carried in their Interstices to the external Surface of the Bone: Though, therefore, the exterior Laminæ should only be carious, the medullary Oil, convey'd thither, will become stagnant, corrupted, and produce the same fetid Smell.

From what has been said, we also understand, why in an ulcerous Part, by means of a subjacent Caries of the Bone, the superincumbent Flesh is soft, flaccid, fungous, inflated, and tumid, and the Lips of the Ulcer inverted; the Sanies clear, subtile, hardly at all glutinous, fetid, and full of small black Scales; as, also, why the Disorder returns, without any apparent Cause; and the Ulcer proves obstinate against the best Medicines for other Ulcers.

We now come to consider these Symptoms which generally accompany a Caries of the Bone, the Presence of which often discovers such a latent Disorder to the skilful Surgeon.

Why in an ulcerous Part. When, in consequence of a previous Disorder, and Corruption of the Bone, the incumbent Parts are affected and exulcerated, they are generally corroded by degrees, and raised into a soft and flaccid Tumor, as is always observed by Surgeons; and, in a particular manner, appears in the *Spina Ventosa*, which seems to have received its Name from this Circumstance; for the Putrefaction of the subjacent Bone diffuses a malignant Exhalation thro' all the adjacent Parts; by which means the *Membrana Adiposa*, naturally so prone to become tumid, is soon inflated. Nor is it, in this Case, tumid with an inflammatory Hardness, but soft, lax, and, as it were, fluctuating under the Fingers. For this Reason, when skilful Surgeons examine old Ulcers, they always search with their Fingers, whether all the adjacent Parts appear firm and sound; for the incumbent Parts do not adhere to the corrupted Bone, nor can they, by any means, be made to grow to it, till all the corrupted Part is first removed: When the Teeth become carious, the Gums are separated from them, and never after grow to them. We have already observed, that, in Patients who died of a malignant Scurvy, the Periosteum is found not to adhere to the Bones: Hence, also, in Wounds of the Head, we know that the Cranium is affected, if, about the seventh Day, the Flesh is separated from it, a Pain is felt, and the Pus is thin and fetid, which discovers the Malignity of the Wound. See the Article *CAPUT*. Perhaps, also, the elastic Matter, for the most part generated by the Putrefaction, increases the Tumor of the incumbent Parts.

Why the Lips of the Ulcer are inverted. The Lips of a Wound are retracted, in a sound and robust Body, by a rising of the *Membrana Adiposa*, when unconfined by the Skin. By the same Cause, therefore, the Lips of such an Ulcer will be inverted by the

the inflated *Membrana Adiposa*. But in a Wound, the Lips are of a live red Colour; whereas in such Ulcers, they are sordid, pale, and often livid; and, as *Hippocrates* justly observed, with respect to Wounds of the Head, accompanied with a Corruption of the Bone, the Lips resemble Flesh macerated with Salt.

Why the Sanies is clear and subtil. Under the Article SUPPURATIO, 'tis observed, that *Galen* and *Hippocrates*, sometimes, used the Word Putrefaction, in order to denote a Suppuration; but they accurately distinguished a Suppuration from a Putrefaction, properly so call'd; since the former was a Sign that Nature was Conqueror, and the latter, that she was conquered. Hence *Galen* justly concluded, that a Suppuration was not simply Putrefaction, but had something of Concoction in it; and that by the remaining Power of the Vessels, those Humours which would otherwise become putrid, were converted into Pus. And the same Author adds, that in Ulcers there is generated a Liqueur, more or less degenerating from the Nature of good Pus, according as the concoctive Powers are stronger or weaker; and according as the Matter to be converted into Pus, is more or less obstinate. Since, therefore, in an Ulcer, attended with a Caries of the Bone, there is a malignant Putrefaction, produced by a Corruption of the medullary Oil, and since the incumbent and adjacent Parts are flaccid, soft, inflated, and often almost half gangrenous, it is obvious, that the Matter to be converted into Pus is highly obstinate, and the concoctive Powers, at the same time, excessively weak. It is not therefore to be wonder'd at, if instead of a laudable Pus generated by the superior Force of Nature, which is white, thick, smooth, equal, and inodorous, there should here be formed a Sanies which is thin, fetid, sometimes dark-colour'd, and highly acrid. For the most part the black Scales of the corrupted Bone are discharged along with this Sanies, which Surgeons justly take for the most infallible Sign of a carious Bone: For this Reason, in Ulcers of long standing, they always carefully view the Plasters and Pledgers, upon renewing the Dressings; and if on these there is any Blackness, and if they have a fetid Smell, a Caries of the Bone is justly suspected.

As for the Return of the Disorder, without any apparent Cause; unless the affected Bone is previously depurated, the Fomes of the Disorder always remains, though the Ulcer should be healed up; for which Reason it will always return. Nor is a laudable and firm Cicatrix ever formed upon such Ulcers, since it is always soft, elevated, and infirm; and the Place will afterwards, sooner or later, become open. When corrupted Teeth produce a Caries in their Sockets, there is often a sudden Inflammation and Suppuration produced in the Gums. Upon the opening of the Abscess, a fetid Pus is discharged, and the Disorder seems cured; but it generally recurs in a few Months, unless by an Extirpation of the Tooth, and a sufficient Depuration of the Part affected, a thorough Cure is made. Thus *Van Swieten* informs us, that he knew a Boy, who, after the Cure of the Small-pox, was seized with Tubercles full of Pus, in various Parts of the Body, and in the Forehead with an obstinate Ulcer, which frequently appeared to be healed, by means of drying Medicines; but soon after broke out afresh, till about two Years after, the corrupted Part of the Bone being separated, the Ulcer was perfectly cured in a few Days.

As for the rebellious and obstinate Nature of the Ulcer. No Ulcer can be perfectly cured, till it is reduced to the State and Condition of a clean and pure Wound; for any mortified or corrupted Part remaining in the Ulcer, is an heterogeneous Body, which will hinder the Union of the separated Parts, so long as it remains there. Under the Article CAPUT, the various Methods, and the most efficacious Remedies for removing such Sordes are specified. Surgeons often find, that in seemingly inconsiderable Ulcers, a long-continued Application of such Medicines, produce no happy Effects; in which Cases they always find that the Bone is carious. *Hippocrates*, in *Aph. 45. of Sect. 6.* informs us, *That if Ulcers continue a Year, or longer, they must of Necessity affect the Bone; some Part of which being separated, will leave deep and hollow Scars.* Sometimes these Disorders of the Bones are so obstinate as to yield to no Medicines at all: And *Hippocrates*, in his Treatise de *Fracturis*, tells us, that when the Os Calcis is corrupted, the Disorder cannot be cured.

From what has been said we, also, understand, why a Caries of the Bone, arising from an external Cause, is most easily cured: Why that arising from an internal Cause is not to be cured without Difficulty: Why a Caries arising from a Lues Venerea, is still more difficult to be cured: And why that arising from a Spina Ventosa is, of all others, the most difficult to be cured.

The Cure of a Caries is easier, or more difficult, according to the various Causes which produce it; for when a Caries arises from an external Cause, a Contusion, for Instance, or a Wound, there is only some Part of the Bone thus corrupted; and the sound Humours, convey'd, by means of entire Vessels, through the remaining Substance of the Bone, will be able to separate the corrupted Part, and restore the lost Substance: Hence, in Wounds of the Head, a Caries of the Cranium is often soon

and successfully cured; provided the Patient is found in every other respect: But when, in consequence of a morbid Cacochymy, the Humours flowing through the Substance of the Bone, are become so acrimonious as to corrode it, it is sufficiently obvious, that the Cure must be difficult; since, after the carious Part is cleansed, the same Cause which first produced it often still remains. The more difficult it is to subdue and correct this Cacochymy, the more difficult the Cure must of course be. Since, therefore, in a Lues Venerea, the Contagion, when once affecting the Bones, is not without great Difficulty to be removed, and since, after the Cures with Mercury, and the Decoctions of the Woods, the latent Disorder often appears afresh; with equal Malignity, some Months after, it is sufficiently obvious, that the Caries, arising from this Cause, is not to be cured without the greatest Difficulty. In a Spina Ventosa, as we have before observed, a Caries of the Bone arises from a previous Corruption of the medullary Oil; for which Reason it hardly appears, till the whole Substance of the Bone is corroded: There are, therefore, no vital Parts under such a Caries, capable of separating the corrupted, and restoring the lost Parts; and the only remaining Method of Cure consists in an artificial Separation of a large Portion of the corrupted Bone. After some Months, or even Years, the corrupted Bone has been sometimes separated from the sound, as is certain from chirurgical Observations. However, it is certain, that the Cure of such a Caries is, of all others, the most difficult.

From what has been said we, also, understand why, in the solid Parts of the Bones, a Caries is bad; in their spongy Parts, worse; and in their Joints, worst of all; the first of these slow, the second quickly spreading, and the third still more so: Why in Children, a Caries spreads quickly, and is with Difficulty cured: And why a Spina Ventosa generally affects a considerable Number of Places, either at one and the same time, or successively.

It is certain, from what has been already said, that the Middle of the large Bones is most thick, and least vascular, and that in proportion as they approach to the Extremities, the bony Laminae recede more from each other, and leave greater Interstices, which are filled with a great Number of small Vessels, and Vesicles full of Oil. It is, also, before shewn, that in those Parts of the Bones which constitute the Joints, and are cover'd by a Capsula of Ligaments, which unite the Articulations, such a cavernous Substance is found in the largest Quantity, and only cover'd with a thin bony Crust, which, even in the Os Femoris, hardly surpasses the Thickness of one's Nail. If, therefore, there is a Caries in the most solid Part of the Bone, it is bad; but at the same time, there is great Hope, that the Separation of the carious Part may be obtained, nor will the Substance of the Bone, here so firm, be so soon corroded as in other softer Parts. But, when a Caries of the Bone arises in a spongy Part of the Bone, this thin bony Crust will soon be destroyed, and the subjacent soft Parts corrupted: Hence a violent Putrefaction, and, what is in a particular manner to be dreaded, a Corruption of the medullary Oil will follow. But since about the Joints the Substance of the Bone is most tender, and the Number of the Follicles containing the pinguious medullary Oil greatest, the worst Symptoms will follow. If at the same time we consider, that the putrid Sanies collected here, after corroding the Surface of the Bone, may fall into the Cavity of the Articulation, the Reason will be obvious, why a Caries produced here, must be followed by the worst Consequences, which can hardly ever be removed, except by the Extirpation of the affected Part.

From what has been said, the Reason is, also, obvious, why a Caries slowly consumes the thick and solid Part of the Bones; the spongy Part sooner; and soonest of all, that cavernous Substance of which the Extremities of the large articulated Parts of the Bones consist.

But, because obstinate and numerous Disorders of the Bones, happen in their most vascular, and, consequently, softest Parts: Hence the Reason is obvious why, in Children, a Caries of the Bones spreads fast, and is cured with Difficulty; for in young Patients, there is a far greater Number of Vessels in all the Parts of the Body; many of which are, as Age advances, abolished, and concreted, after an Expression of their Contents, as is observed under the Article FIBRA. Hence in the Bones of Children, the Number of Vessels is greatest; for which Reason their Substance is soft, in consequence of which they are easily injur'd, and soon corrupted. It is, also, certain from Observation and Experience, that a Spina Ventosa, or that Caries of the Bones which arises from a Corruption of the medullary Oil by internal Causes, is not generally confined to one Part, but affects several Parts; and these often removed at a considerable Distance from each other: Thus *Van Swieten* informs us, that, in the Finger called the Index, he knew a Spina Ventosa, affecting the middle Phalanx, a few Weeks after the same Disorder appeared in the Tarsus, and afterwards in the Os Jugale: A considerable time after, the corrupted Part of the Bone was separated, and the Disorder cured, but in such a manner as to leave an unseemly and deep Cicatrix. Hence

it is, also, obvious, that we are not rashly to proceed to the Extirpation of a Spina Ventosa in one Part, since it generally springs up and appears in some others. The Reason of this seems to be, that a Spina Ventosa draws its Origin from an internal Cause, and of all others most frequently, as we have already observed, from a venereal, scorbutic, or rickety Cacochymy, which is generally deposited, not in one, but in various Parts. Besides this Disorder happening in one Part, may infect the sound Humours acting on the Part affected; and, by this means, propagate the Disorder through the whole Body, as is particularly observable in a Lues Venerea, which often affects the Genitals first, and then the whole Body.

If, to what has been said, we add the Doctrine of Contusions, Luxations, and Fractures of the Bones, delivered under their respective Articles; as, also, what, under the Article CAPUT, is said concerning Wounds of the Head, which injure the Bone, we shall have both the History and Cure of the principal Diseases of the Bones; especially if to these we add an Anchylosis, which is an Immobility of the Joint, attended with an hard Tumor, and principally produced by a Callus of a Bone, fractured at the Articulation, an Inspissation of the Mucilage of the Joints, mentioned by *Clopton Havers*, a Rigidity of the Ligaments, and an Exostosis at the Joints. The Cure of this Disorder, which is highly difficult, is to be adapted to the Diversity of Causes, from which it proceeds.

From what has been already said, we may understand the principal Diseases observable in the Bones, especially if we consider what is advanced concerning the Bones, under the Articles CONTUSIO, FRACTURA, and LUXATIO: For under the Article CONTUSIO are enumerated the Disorders subsequent to Contusions: Under the Articles FRACTURA and LUXATIO are many Things relating to the Diseases of the Bones: And under the Article CAPUT there are various Observations relating to the Knowledge and Cure of Diseases of the Bones. Yet we shall here say something concerning the Anchylosis, since it frequently arises from Disorders of the Bones, though it may sometimes happen without them; when for Instance, the Ligaments of the Joints become rigid; or when the Mucilage which lubricates the Extremities and Ligaments of the Articulations, is inspissated and accumulated.

Under the Article LUXATIO, when treating of an Anchylosis as the Consequence of a Luxation, it is observed from *Celsus*, that Contractions of the Joints, by means of recent Cicatrixes, are by the Greeks called *ἀγκύλας*; but that *Paulus Aegineta* called an Immobility of the Joints *ἀγκύλας*, and *ἀγκυλώσεις*, the Causes of which were, according to him, an Infarction of the Humours, or a Contraction of the Nerves. Now it is certain, that this Misfortune, which may be justly defined, An Immobility of the Joints, accompanied with an hard Tumor, may arise from a Disorder of the Bones. When this Disorder arises from the luxuriant Callus of fractured Bones, or an Exostosis near the Joints, it is sufficiently obvious, that an hard Tumor is present. But, when it arises from a Rigidity of the Ligaments, or an Inspissation of the Mucilage of the Joints, this Mucilage must gradually be accumulated in the Cavity of the Joint, since, in consequence of its Immobility, it is not consumed. For this Reason the Mucilage will distend the articular Capsula, and produce a Tumor, which, when the thinner Parts of the accumulated Matter are dissipated, may become pretty hard. For this Reason an hard Tumor generally accompanies an Immobility of the Joints, or at least succeeds it, if it does not appear in the Beginning of the Disorder. There is, however, one Exception to this: An Instance of which, says *Van Swieten*, I myself saw, where the whole Arm was dried up by a true Marasmus; in which Case, all the Parts being dried, there was an Immobility of the Joints of this Member, without any Tumor. But, in order to the due Mobility of the Joints, a proper Figure of the articulated part of the Bones is necessary; a Lubricity of their Surfaces, where they mutually touch each other, and a due Flexibility of the Ligaments surrounding the Joints: So that an Anchylosis arises from the following Causes.

A Callus of the Bone fractured at the Joint. It is observed under the Article FRACTURA, that Fractures are sometimes succeeded by a Luxuriancy of the Vessels of the Bone, and an Inequality of the Callus, by which means the natural Figure of the Bones is altered and deformed. It is certain from many Observations, that such an unequally Prominence, arising from the Luxuriancy of the Callus, has often continued in the fractured Part, during the whole Remainder of the Patient's Life. If, therefore, the Fracture is near the Joint, it is obvious, that an Immobility of the Joint may arise from such a Change of Figure in the Bone. It is true, in most of the Joints, the Extremities of the articulated Bones are safely defended, and covered with a large Number of Parts; for which Reason they are not to be easily broken, in those Parts contained within the Cavities of the Joints. But in some Parts the Bones are sufficiently bare and ill defended; about the Elbow, for instance, and the Knee; for which Reason an Anchylosis may happen in these Parts. Thus *Petis*,

in his *Treatise des Maladies des Os*, Tom. i. tells us, that in a fractured *Rotula* he knew the luxuriant Callus to produce an Anchylosis, which, however, was afterwards cured, because the Substance of the Callus had not acquired a bony Hardness. When, in such a Case, an Anchylosis is dreaded, skilful Surgeons order the Part affected to be so situated, that the Callus may, by its own proper Weight be determined to some other Part; that Compresses be gently secured, between the Joint and the Fracture, that, by this means, the Callus may be hinder'd from falling to the Joint; and, lastly, that the Joint be gently moved, when the first Dressing is removed, afterwards every two Days, and then every Day: Nor, if the Joint is prudently moved, is there any great Danger left, by this means, the reduced Bones should be removed from their Situation, because, as the Bones are largest about the Joints, the fractured Parts will touch one another in many Points, and, consequently, not be easily removed from their Situation. *Petis*, in the Part last quoted, tells us, that by such a Motion of the Joint alone he removed an Anchylosis already formed by this Cause.

By an Inspissation of the Mucilage of the Joints. That the Extremities of the articulated Bones might move easily, without being injured by their mutual Attrition, they are lubricated by a mucilaginous Liquor, the Nature and constituent Parts of which are accurately described by *Clopton Havers*, to whom we owe so many beautiful Discoveries, with respect to the Fabric and Structure of the Bones. *Hippocrates*, as is observed under the Article LUXATIO, informs us, that there is naturally in all Joints such a mucilaginous Liquor; and that the Joints are found when this Liquor is pure: Now this mucilaginous Liquor, as is obvious from the last quoted Article, consists of three distinct Liquors, that is the universal perspiring Matter, the medullary Oil, and the Mucilage secreted from the Follicles situated in these Parts: If, therefore, by whatever Cause this Mucilage is not dissipated or resorbed, it will be gradually accumulated, so as to fill the Cavity of the Joint, and hinder the free Motion of the articulated Bones. In the mean time the thinnest, and most subtle Part of this Mucilage will be dissipated, and the Remainder, of course, render'd thicker: And as the Motion of the Joint is the principal Cause by which this Mucilage, after it has perform'd its Office, is dissipated, so, when such a Motion is either hindered, or totally abolished, there will be a greater Accumulation of the Mucilage; and the Disorder will become incurable, partly by the Inspissation of the Matter, and partly by the Acrimony it has acquired by Stagnation, and which will be capable of corroding and corrupting the smooth cartilaginous Surfaces of the Bones, and the Ligaments which secure the Joints.

This Disorder is known by a Tumor of the Joint, which is at first soft, and then gradually enlarged, but not extending itself beyond the Joint. This Misfortune is most frequently observed in the Joint of the Knee.

Hippocrates, in the twenty-fifth Aphorism of his fifth Section, tells us, that *Those who have Tumors, and Pains of the Joints, without Ulcers, are greatly relieved by throwing large Quantities of cold Water upon them.* And celebrated Physicians have since approved of this Method. Perhaps in the Beginning of the Disorder it may prove beneficial, by suddenly contracting the Parts, by means of the Cold; in consequence of which the Humour beginning to be accumulated, may be repelled, provided it is sufficiently thin: But where the Humour is already thick, and its Quantity large, it is not probable that a great deal of Relief can be afforded by this Method. But often repeated Frictions, Motion of the affected Joint, penetrating Fomentations of Wine, Salt, Vinegar, and the Urine of sound Persons, with an Addition of aromatic Herbs, such as Horehound, Scordium, and Rue, and Cataplasms prepared of the like Substances, will prove beneficial. In the most difficult Cases, Embrocations of warm mineral Waters, falling slowly, and from an Height, upon the Part affected, have not only afforded great Relief, but, also, sometimes produced a perfect Cure. The want of mineral Waters may be supplied by the penetrating Fomentations just recommended, and applied by way of Embrocation. *Petis*, in his *Treatise des Maladies des Os*, Tom. i. informs us, that he saw happy Effects produced by Quick-lime-water, with a Lixivium of Sal Ammoniac, poured from an Height upon the Part affected; for by this means there is instantaneously produced an highly penetrating Spirit of Sal Ammoniac, which is justly esteem'd the most powerfully attenuating Medicine. But when the Quantity of this accumulated Mucilage is so large, that it cannot be dissipated by all these Methods, *Petis* orders the most depending Part of the Tumor, to be laid open with a Lancet, to the very Cavity of the Articulation, that the contained Liquor may be thus discharged; after which he orders the Use of the Medicines before prescribed.

A Rigidity of the Ligaments. That the articulated Bones may move freely, 'tis requisite that the Ligaments should be sufficiently firm to secure the Joints, and, at the same time capable of yielding, and being lengthen'd, whilst the Joints are bending. When, therefore, by whatever Cause the Ligaments are become rigid, tho' all the other Parts of the Joint are in their natural Condition, there will be an Immobility produced, which will afterwards

afterwards be succeeded by a Tumor, because the Mucilage, accumulated in the Cavity of the Joint, is not, as in a sound State, dissipated by Motion; in consequence of which, there will be a perfect Anchylosis. This Disorder may be produced by all the Causes capable of producing too great a Rigidity in the solid Fibres, as, also, by the Causes capable of producing the same Effect in the small and large Vessels; see the Article FIBRA. Thus we observe, that decrepit old Persons have almost all their Joints stiff and rigid, partly through a Defect of the pinguious Oil, destined for the Lubrication of the Bones, and partly because the Ligaments are become callous, and sometimes bony. These Effects are, also, observed in those Men, who, before they have arrived at a great Age, have laboured intolerably hard, whilst, by too strong a muscular Motion, the firm Parts of the Body are indurated. This Disorder, also, frequently succeeds violent and ill-cured Inflammations of the Ligaments, since the Fluid, becoming stagnant, and coagulating, is concentered with the Vessels which contain it. Hence those who have been frequently afflicted with the Gout, are so often subject to an Immobility of the Joints. Besides, it is shewn under the Article FIBRA, that too great a Distraction of the solid Parts renders them weak, and that the Weakness arising from this Cause, is cured by every thing which removes their too great Distraction. When, therefore, the Ligaments, in consequence of the Immobility of the Joints, are not stretched, they are generally spontaneously contracted, and become so rigid, as afterwards totally to hinder the Motion of the Joint. After Fractures and Luxations, unless, during their Cure, the Joints are sometimes mov'd, an Anchylosis frequently arises from this Cause, as also, in paralytic Members; and, in this Case, as the Flexor Muscles are generally stronger than those called the Extensors, the Joints are somewhat bended and become rigid, not only on account of the Induration of the Ligaments, but, also, because, by the long State of Rest, the Flexor Muscles are gradually contracted and shorten'd, so as to become almost incapable of being lengthen'd any farther.

'Tis, therefore, obvious, that a preternatural Rigidity of the Ligaments is, of all others, the most frequent Cause of an Anchylosis; but, at the same time, there are, for the most part, great Hopes that such a Disorder may be cured, provided it is not of too long standing, nor draws its Origin from Causes which cannot be surmounted by any Art, as in decrepit Old-age: For Instance, If soft Aliments are used, and the Part affected, frequently exposed to aqueous Baths, and especially Vapour-baths. If after these the Part is well cleansed, and rub'd with emollient Oils, and the Motion of the Joint attempted, by bending and extending it as much as possible, without producing any considerable Pain, Diseases of this Kind are, by these Measures, often cured, when they were thought desperate. But these are more fully considered under the Article FIBRA. A memorable Instance of the Power and Efficacy of this Method is found in *Mem. de l'Acad. Royale des Sciences, An. 1721*. See ANCYLE. *Paulus Aegineta* gives a Cure of the Anchylosis, pretty much the same with this, whilst, in the 55th Chapter of his fourth Book, he orders the Part affected to be anointed with Hydrelæum, in which Linseed, Marsh-mallows, and Fenugreek, have been boiled. Then he orders it to be anointed with Liniments, composed partly of emollient, and partly of aromatic Ingredients, and to be covered with Plaisters of a like Nature. He, also, commended gentle and continual Friction, in Conjunction with this Method, and frequent Attempts to bend and extend the Joint.

An Exostosis about the Joints. Since, to the due Motion of the Joint, a certain determinate Figure of the Extremities of the articulated Bones is requisite, 'tis sufficiently obvious, that this Figure being changed by the Exostosis, the Motion of the Joint must, of course, be hindered. 'Tis obvious, from what has been said, that there may be such Tumors about the Joints. To this Species of Disorders, we may, also, refer a Concretion of the articulated Bones, whether by an Inpissation of the Mucilage naturally lodged between them, or a Consolidation of their rough, and, perhaps, corroded contiguous Surfaces; memorable Instances of which are found in *Hildanus de Ichore & Meliceria, Cap. 25. Hist. de l'Acad. des Sciences, An. 1716. and Columbus de Re Anatomica, Lib. 15.*

That an Anchylosis is not to be cured without great Difficulty, is certain from what has been already said: But the prognostic Signs vary according to the Diversity of the known Cause; for if it proceeds from a Callus of a Bone fractured near the Joint, and if that Callus has acquired a bony Hardness, the Disorder is incurable, as, also, when it arises from an Exostosis, or Concretion of the articulated Bones. But when it arises from an Inpissation of the Mucilage of the Joints, or a preternatural Rigidity of the Ligaments, there are still Hopes of a Cure to be entertained, if the Disorder is not inveterate. *Van Swieten.*

In the Works commonly ascribed to *Hippocrates*, the Caries is said to be a dried Phlegm between the Laminæ of the Bones, or Earth dried by Heat, or a Defect of the Mucus. The Account of the Symptoms is very incomplete. The Prognosis is as superficial; for I see no more, than that, in tedious Ulcers, the Bones are affected, and the Cicatrices are hollow; and livid Flesh, in a diseased Bone, is a bad Sign. As to the Cure, Cold is said to be hurtful to Bones, and this Disease is to be treated as a Fracture.

Celsus gives no Opinion of the Cause of the Caries, and describes very few of its Symptoms; but is very particular in his Directions concerning the Cure.

His Method is to lay all the carious Parts bare; and, if it be then doubtful how deep the Caries goes, to pierce with the Trepan, or pyramidal Perforator, till the Raspings are no more black. If the Caries be superficial, he orders it to be burnt once and again with an hot Iron, that a Scale may separate from it; or to rasp it till either Drops of Blood issuing out, or the white Surface of the Bone, shew all the carious Part to be taken away, when Nitre, well-pounded, is to be sprinkled on the Bone. When the Caries is deep, he advises a great many Holes to be made through it with the Perforator, till the Bone be quite dry: For thus, adds he, the corrupted Part will be brought off. When the Caries penetrates to the other Side of the Bone, it must be cut out. When the Extent of this deep Caries is not larger than what the Head of the Trepan will cover, he employs this Instrument to take it out. If the Caries be large, he orders Holes to be made round the Edges of it with the Perforator; and then, cutting the Bridges between these Holes thro' with a strong Knife struck with a Hammer, he takes away all the carious Part.

The Medicine which *Dioscorides* principally recommends for bringing away the Scales of Bones, or for what is now called their Exfoliation, is the Powder of the Root of the Peucedanum, and the Juice of Euphorbium; advising the Teguments to be defended with Liniments, or Cerats, when the Euphorbium is to be applied.

Galen defines the Bones to be the hardest, most dry, and terrestrial Parts of the Body, whose Qualities are cold and dry. He thought a Caries in a Bone; analogous to an Ulcer in a soft Part; and that it was occasioned either by the adjacent Flesh generating a bad Sanies, with which the Bones being moistened, were corrupted, or that it proceeded from a mucous Humour drove to the Bones.

In consequence of this general Doctrine concerning Bones, and their Erosion, with the general Axiom, *That Contraries are the Remedies of Contraries*, *Galen* must necessarily have been led to discharge all things which he esteemed cold, and to recommend Driers in a Caries. He is very sparing in his Recommendations of particular Medicines for this Disease; *Opopanax* in Ulcers of Bones, and the Root of Peucedanum for Exfoliation, with some compounded Plaisters, are all he mentions.

The Greek Physicians, after *Galen*, have added little concerning this Disease, except some few Medicines, answering *Galen's* Intentions of Cure. *Paulus Aegineta* has something of a different Formula for making the affected Part of a Bone separate: It is a Cataplasm made of the Leaves of the wild Poppy, and of the Fig-tree, with Barley-flour and Wine; or, instead of it, he recommended equal Parts of the Seeds of Henbane, and of Vitriol.

The *Arabians* added greatly to the List of drying Medicines, most of them actually so, that is, in the Form of Powders, and the greater Number potentially so too; that is, such as, when tasted or applied to Sores, stimulate, raise Heat, and some Degree of Inflammation. They, also, restored the *Celsian* Practice of burning and rasping diseased Bones, which had been neglected by the Greek Physicians, but has been generally mentioned by Writers after the *Arabians*.

One of the *Arabians* (*Albucasis*) advises, in a compound Fracture, where a Bone is bare, to put a Cloth, dip't in black styptic Wine into the Wound; but not to make use of a Cerat, or any thing in which there is Oil, lest it make Corruption happen to it.

Those who wrote on Surgery, when Learning began to be restored in Europe, in the fourteenth and fifteenth Centuries, copy'd mostly the *Arabians*; but, after burning the Bone, which is the Method of Cure in the Caries, that the most eminent of them are fondest of, they applied oily Medicines to the cauterized Bone.

After Chymistry came to be cultivated in the sixteenth Century, other Methods of cauterizing were introduced.

Angelus Bologninus tells us, that some, in his Time, made use of scalding-hot Oil, heated Roots of the Asphodel, kindled Brimstone, and the Water by which Gold is separated from Silver.

Joannes de Vigo, besides Aqua Regia, mentions Oil of Vitriol, Unguentum Ægyptiacum, and Vitriol burnt and mixed with Aqua-vitæ, as Cauteries. After cauterizing, he dressed with Unguentum Absterisivum de Apio; and says, that, by this Method, the Separation of the diseased Part is made in forty Days after Cauterizing.

Vesalius mentions Oil of Sulphur and Euphorbium for the Caries; but prefers a Preparation of Antimony, which he does not describe.

Fallopins agrees with *Vesalius* in the Form of the drying Medicines to be applied, and in the Management of a Bone after it was burnt: The Place, say they, immediately after being burnt, is to be frequently moistened with Rose-water, and the White of an Egg, that Inflammation, and other Symptoms, may be prevented; afterwards the Eschar is to be ripened with Butter, or Unguentum Tetrapharmacum.

Ambrose Paré says, more explicitly than *Albucasis*, that the Application of unctuous and oily, or of moist and suppurating Medicines, corrupts Bones. *Paré* seems, also, fonder of the simple Driers, than is, the absorbent Powders, than those who went before him, whose Driers were as much potentially so as actually.

Fabricius ab Aquapendente reckons *Aqua-vitæ* among the stronger Driers, and recommends the Juice of Leeks with Salt.

Gulielmus Fabricius Hildanus is rather more positive than *Paré*, in forbidding the Application of all moist and oily Medicines to Bones laid bare: He seems, in one Part of his Writings, to expect always an Exfoliation from Bones laid bare, though, in other Places he relates Examples of Bones laid bare, being cured without any Desquamation.

Hildanus introduced the free Use of Euphorbium, and its Tincture, in Spirit of Wine, the Acrimony of which the Writers before him had warned their Readers to guard against.

Marcus Aurelius Severinus takes notice of the shrill Sound, as if a Void was below, which a Piece of Bone has, when struck after its Exfoliation begins. He recommends Oil of Euphorbium, and of Lime, as a proper Application to corrupted Bones.

Soon after *Severinus's* Time, that is, about the Middle of the seventeenth Century, the essential aromatic Oils of Vegetables were introduced.

Nicolaus Tulpinus's favourite Medicine for Exfoliation was Oil of Cinnamon, with Oil of Sublimate.

In the latter Part of the last Century, not only Variety of these Oils were used, and different Tinctures in ardent Spirits; and other Compositions of the Driers of the Antrients, and of the aromatic Oils, were contrived; but the alkaline Salts, both fixed and volatile, such as Salt of Tartar, Spirit of Sal Ammoniac, &c. came to be employed, as well as the acid Spirits, Oil of Sulphur, Vitriol, &c.

While the Generality of Writers at this time, were so fond of the Aromata, Tinctures, Elixirs, Spirits, &c. Some mention their having cured carious Bones by perforating, trepanning, and cutting them out, or by burning and destroying them with Caustics. Others successfully employed watery Medicines, and dry Lint.

Among the Writers of this Time, *Wiseman* is more accurate in relating the Appearances of carious Bones than former Authors: They generally remarked only the black Colour, Greasiness, Roughness, spongy Softness, and stinking Smell, and thin brown Ichor of Bones, when carious, with the spongy Flesh growing out from them: *Wiseman* observes, that carious Bones may be of a white, brown, or black Colour; and adds, *If the white be pory, the Caries may be deeper, and more dangerous, than if it were black and hard.*

His Method of Cure is like to *Celsus's* in several Particulars: He orders all the carious Part to be laid bare, with Caustics applied to the Teguments; then to scrape the rotten Flesh away, or to consume it, with Escharotics: Where that cannot be done, because of large Vessels, Nerves, or Tendons in the Way, he desires the Orifices of the Ulcer to be dilated with Sponge, Tent, Gentian-root, &c. But if the Cure of the Caries is of greater Consequence to the Patient than these Parts are, he advises to cut them through to come at the Bone. When the carious Bone is laid bare, if the Caries be superficial, he would have it rasped, and then to be dressed with the milder Sarcotics, or digesting Ointment: In few Days after the Application of which, he says, you may see the Flesh thrust forth in small Grains, which is Callus. Burning with an hot Iron he frequently used with Success, for hastening the Exfoliation; at other times he pinched away, or broke off the Caries: His Medicines are the Driers, chymical Oils and Escharotics, only that in several Places where the Bone lay deep, he used Injections, composed of the vulnerary Plants, boiled in watery Liquors, with some ardent Spirit, and a little dulcified Spirit of Vitriol.

I took notice before, that *Hildanus* expressed himself as if he thought Bones laid bare must exfoliate: This came to be a general Opinion, as is evident from the Directions which most chyrurgical Authors give for treating Wounds, where Bones were laid bare; and *Belloste* tells us, it was the universal Practice in his time, to dilate such Wounds, and to keep them open, in Expectation of the Exfoliation: He endeavours to shew the Absurdity of this Practice, and recommends to Surgeons to endeavour to prevent Exfoliation in such Cases, and for this Purpose he not only advised what *Felix Wurtz* and *Cæsar Magatus* had done before him, to bring the Lips of the Wound nearer together, and to dress seldom; but, also, proposed, that, when a considerable Space of the Surface of smooth firm Bones is laid bare, there should be a great Number of small Holes, made with a Perforator or a Trepan, as deep as the Diploe, or Cancelli of the Bones; after which he says, fleshy Papillæ rise out from these Holes, and extend themselves all over the bare Surface of the Bones, and the Wound is soon cured, without any Exfoliation: This Practice has been approved by some considerable Men, though, so far as I know, it has not been general among Surgeons. *Belloste* condemns the Application of acid

Spirits to Bones, as increasing the Caries; and being of Opinion, that the Air acts by its Acid on Bones, he insists in rather stronger Terms than most former Writers had done, that Bones should be well defended from the Air.

Petit is the only Author of this present eighteenth Century, whom I need to mention: He names the several Diseases in which Caries most frequently happens, and relates the Symptoms by which it may be judged, that a Bone is corrupted: Such are the deep-seated Pains preceding an Abscess forming near a Bone, with a livid Colour, and Sponginess in the Teguments; an Ulcer continuing long near a Bone; the sprouting Flesh of such Ulcer appearing spongy, of a pale Colour, easily penetrated by a Probe, and bleeding readily without giving Pain; the Quantity of Matter being larger, than commonly comes from an Ulcer of that Extent; the thin Consistence, brownish Colour, and stinking Smell of the Matter; its appearing black on the Plaisters, though there be no Lead in their Composition; feeling the Bone scabrous and unequal.

Petit observes several Appearances that rotten Bones have, which may make so many Species of Caries. 1. The Surface of a Bone may be corrupted; and may, notwithstanding, be pretty firm and smooth, without throwing out much Matter: He calls this a dry Caries. 2. If the Surface of a Bone be very unequal, with a Number of small Holes, discharging large Quantities of Sanies, he names the Caries *Vermouillé* or *Worm-eaten*, from the Resemblance it has to Wood eroded by small Insects. 3. Flesh may grow in the Interstices of the corrupted bony Fibres, and may fill up the Cavernulæ. 4. Sometimes the Bones are imperceptibly wasted in Cancers.

Petit says, the dry Caries is generally the most superficial; and cures more easily by Exfoliation than the other Kinds, which has made him think, *That the Exfoliation of Bones is only made readily, when the carious Part has no more Communication with the Vessels of the sound Bone: This Communication entirely stopped, gives Ground to believe, that the Juices, which move in the Vessels of the sound Part, make an Effort against the corrupted Part; and that these Efforts, redoubled by the Resistance, and repeated every Moment of Life, are the Cause which insensibly separates the corrupted Part of the Bone.*

I perceive soon, says he, *Flesh rising in the Circumference of the corrupted Piece, which grows more and more. I have Reason to believe, that, proportionally as the first Efforts of the Liquors make the Separation, these nutritive Juices congeal, and form Flesh; and that it is the insensible Growth of this Flesh, which completes the Separation of the diseased Bone, and thrusts it outwards. I am the more certain Nature acts thus, because I find this granulated Flesh in the Place where the separated Piece of Bone was; and that the good Qualities of this Flesh make me certain, that the Bone is sound below.*

The Motion of the corrupted Piece of Bone, and the Blood coming out below it, are the Symptoms by which, *Petit* tells us, the Exfoliation may be known to begin.

Our Author remarks, that the Worm-eaten Caries, and that where Flesh rises in the Cavernulæ, may be of different Depths in the Bone, and are more difficult to cure than the dry Caries: When the Quantity of Sanies (which is generally bloody in the latter Species of Caries) is very large, there is Reason, says he, to suspect it comes from the *Cancelli*, where the Marrow is contained, and where the Disease frequently begins; from which if it does not find an Exit, it will kill the Patient.

Petit's Methods of Cure are these: When the Caries is very superficial, and of the dry Kind, he dresses it with Dossils dipped in Spirit of Wine, as he would do a sound Bone laid bare, which he affirms does not always exfoliate. If the Caries is deeper, and an Exfoliation must be hasten'd, he applies to it *Aqua-fortis*, or Spirit of Nitre in which Quick-silver has been dissolved, which he recommends as a favourite Medicine; and afterwards he makes use of Spirit of Wine. He discharges the exfoliating Part to be taken away, till it be quite loose. If the carious Part cannot be separated by these Means, he recommends the red-hot Iron, Rasping, the Perforator, and Trepan, as *Celsus* orders.

After the Caries is thus removed, *Petit* judges by the white, thick, mild Matter, firm Flesh, and hollow hard Cicatrix, that the Bone is sound; or he dreads a Relapse, if the Appearances are otherwise.

The general Practice of our Surgeons is to keep Ulcers with carious Bones, as much dilated as they can, by Dossils, Spongent, and the like, to destroy the spongy Flesh with Escharotics, to apply Spirit of Wine, Tincture of Myrrh and Aloes, Tincture of Euphorbium, and such like, to the Bone, and frequently to all the Sore. As these ardent Spirits are applied to hasten the Exfoliation in a Caries, they are applied for the most part, also, to sound Bones laid bare, as Preservatives, it is said, against their Corruption, and to prevent Exfoliation.

From this historical Sketch of what Authors have said of the Caries, it is evident how little the Circumstances of this Disease have been consider'd, and what a contradictory odd Medley of Practice has been followed. Surely all of it could not have been supported by Observations tolerably made! Of late indeed some

some Species of this Disease have been distinguished, but the Practice is too uniform in all of them. To reform this, it will be necessary to examine more accurately the Appearances of this Disease.

Previous to any Account of the Caries, it will be necessary to remark, that Bones have their Vessels, and circulating Fluids, and; in short, the same general Texture which other Parts have; so that Solidity, and stronger Cohesion of Parts, are the only evident distinguishing Characters of the Composition of Bones. Of this Truth there are many Proofs, such as,

1. Bones are in the State of Membranes and Cartilages, before they ossify.

2. The hardest Bones have sometimes changed back again into a soft State.

3. The granulated Flesh, which rises out from Bones after Fractures, Amputations, the Trepan, or in Exfoliation, differs nothing from what would come from any soft Part; yet in several Cases becomes found solid Bone.

4. When the Texture of Bones is unravelled artfully, and compared with the Texture of the softer Part, it appears alike in each.

5. By a chymical Analysis, the same Principles are obtained from Bones, as other Parts, the Proportions of these Principles being different in different Parts.

6. By comparing the Diseases of Bones with similar ones in softer Parts, as I shall do in considering the different Species of Caries, the general Proposition, of Bones differing only in Solidity, and Cohesion of Parts, from the other softer Organs of the Body, will be further confirmed.

The Species of Caries which I have had Occasion to see, are;

I. What *Petit* calls the dry Caries, where the Bone is pretty smooth and firm, and throws out little Matter. Though the Surface of the carious Part of a Bone in this Species is not of a very dark Colour at first, yet, before Exfoliation, it becomes of a dark-brown or black Colour. An Exfoliation is more easily obtained here, than in any other Kind. Before the corrupted Part can otherwise be observed to separate, one will hear, as *Severinus* remarks, a shrill Sound, when it is struck with a Probe, as if it was hollow; soon after this the Edges of the carious Part rise a little, and Pus, or, if it should be pressed, Blood, is seen coming out below them; granulated Flesh then appears at these Edges, the Bone is more raised gradually towards the Middle, till all the carious Part be separated from the new sprouting Flesh, which arises up on the whole Surface of the Bone below, and seems to push off the carious Scale, so that it becomes quite loose, and can be taken away without any Violence. The Ulcer is then in a fair way of curing, and though a considerable Thickness of Bone is come away, yet, in some time after, little Depression is to be felt on the Surface of the Bone, the new Flesh having gradually become harder, till it supplies, in a good measure, what was taken away.

Whoever has seen the Separation of a gangrened Piece of Skin, or of the Eschar of a Caustic, applied to the Skin, where a Fissure first appears in the Margin of the mortified Part, Pus begins to issue out there; the Division between the sound and mortified Part becomes larger; new Flesh arises; the Separation goes on from the Circumference to the Centre, till the mortified Part drops off, and the new Flesh supplies its Place: Whoever, I say, has seen this, and compares it with the Phenomena of the dry Caries, will judge that, Allowance only being made for the Rigidity of the bony Fibres, which cannot contract, as the Fibres of Skin do, the Appearances are the same in both Cases: And, therefore, I would call the State of the Bones, described above, the gangrenous Caries.

II. The second Kind of this Disease is *Petit's* worm-eaten Caries, in which the spongy, or cavernulous Texture is evident; it has not such a dark Colour as the former, the Quantity of Matter sent out from the Cellules of the Bones is greater than in the former Kind, and is vastly increased when the corrupted Sanies comes out from the Marrow of the Cancelli. Pieces of the rotten Bone may be broken off here, or they may fall away; but no regular Exfoliation is to be expected, unless, when, by Art, it is reduced to the former Species. The gradual Wasting of the bony Fibres, by the Suppuration, is often very remarkable in this Caries; a Piece of Bone, which appeared as large as the End of one's Thumb, and of a solid Substance, shall become less than the Point of the little Finger, and so spongy, that it can scarce be touched without breaking.

The worm-eaten Caries, where the Substance of the Bone only is affected, may be compared to an Ulcer of the soft Parts, which has a Number of little Sinuses in its Sides; such as I have frequently seen, when hard Tumors had only in part suppured, and were not all melted down into Pus; Drops of Matter could be seen drilling out from the numerous Orifices of the small Caverns in its Sides. When the Sanies comes from the corrupted Marrow in the Cancelli, the Disease is analogous to an Abscess, the Matter of which has eroded a Number of small Holes in the Skin.

III. Frequently a spongy, bleeding, fleshy Substance rises in all the little Caverns of the worm-eaten Caries, when it may be

called Carnous; and is much akin to Ulcers, with Hyperæmia.

IV. As the soft Parts are dissolved into a mucilaginous Substance, which destroys their original Form and Texture in the white Swellings, as they are called, so, in this Disease, and some others, the Periosteum becomes thicker, the Bone turns softer; its Surface is eroded, a yellow-red spongy Substance sprouts out, and, proceeding deeper into their Substance, wastes the bony Fibres.

The Difference of the Appearance of this Kind from what I called the carious is, that, in the carious, the spongy Flesh grows out of the Caverns, while the grey, or brown-coloured, spongy, bony Sides of them still remain; whereas, in the other, the bony Fibres disappear where-ever the spongy Flesh comes, so that one can scarce determine, by the Probe, whether or not the Bone is carious. Upon scraping away this Bone-consuming Flesh, the Surface of the Bone appears rough indeed, but not much eroded, nor greatly altered in its Colour. I have seen some Ulcers in soft Parts, where such a consuming spongy Flesh arose.

V. Frequently, upon opening an Abscess, one shall see, at the Bottom of it, a white smooth Bone, without its Periosteum, or Connection to any of the neighbouring Parts, except by its Ligaments at its Extremities. By any Trials we can make, and by what we can judge of the Bone, changing its Colour gradually, as it continues exposed to the Air, and the Necessity of its coming all away, before any Cure can be made of the Ulcer, it appears, that there was no Circulation of Liquors in such Bones, before the Abscess was opened.

This Way of Bones mortifying happens most commonly in scrophulous Patients, in whom something analogous to this is often to be observed in the Glands, round which a flow Suppuration is made, which leaves them almost entirely separated from the surrounding Parts.

VI. In one Species of Exostosis, the tumefied Part of the Bone is softer than the rest of it, and is not composed of regular Fibres, nor cavernous, but as if the ossifying Juice had been thrown out irregularly; over which a cartilaginous or tendinous Substance is spread; and from this a firm, shining, smooth Flesh grows out, which, after the Teguments are removed, sends forth a thin, stinking, acrid Sanies; the Patient complains often of throbbing Pains in it; and sometimes considerable Hæmorrhages are made from imperceptible Vessels in its Surface. May not this be compared to ulcerated Glands?

VII. In the spreading, eating Cancers, of which all Practisers know the Symptoms, the Bones are wasted, as well as the soft Parts; and the Appearances are the same in both, unless that the Bones do not consume quite so fast.

As the Ætiology would lead me into too large a Field of Dispute, and the Prognosis would require so many Suppositions as would be tedious, or would be so general as to be of little more Use than the common Directions laid down by practical Authors, I shall, therefore, proceed to the Cure.

In treating any Caries, it is altogether necessary to examine strictly all Circumstances, and to discover, if possible, what Cause, either general or topical, may have made the Corruption of the Bones, that Endeavours may be used to remove it, if it still subsists. Seeing it would be very improper to pretend to give here Directions for the Cure of the Lues Venerea, Scrophulæ, Scurvy, Gangrenes, Abscesses, Wounds, Contusions, and all the other Diseases which may occasion Caries, I must confine myself to the topical Management of the Caries, without any regard to the Habit of the Patient, or to any other Disease.

A speedy and safe Separation of all the corrupted Part is, then, the principal Indication to be pursued; for executing which, you see from the History, very many Means have been proposed: To know which of these are preferable in the different Cases which may be under our Care, it will be necessary to consider the evident Operation and Effects of the several Medicines proposed, which may be reduced to the following Classes.

1. The insipid terrestrial Absorbents, such as Powder of Coral, Crabs-eyes, and the like, put into an Ulcer, where a Bone is carious, can have little other Effect than to imbibe the Matter of the Ulcer; if they fall into any Cavernaculæ of the corrupted Bone, they may remain so long there, as that the Matter they imbibe may become acrid. Scraped Lint is an Absorbent which has not this Disadvantage.

2. The Powders which have aromatic, or other acrid Particles in them, such as the Powders of the Roots of Birthwort, Bryony, Peucedanum, Aloes, Myrrh, Euphorbium, not only absorb Liquors, but give more or less Stimulus in proportion to their Acrimony; and as the Effect of all Irritation is some Degree of Inflammation, which in Sores is principally removed by a subsequent increased Suppuration, these Powders may assist to separate corrupted from sound Parts. Such of them as have balsamic Particles in their Composition, encourage the Suppuration most. Several of them resist the Putrefaction of animal Substances, and, therefore, may preserve a carious Bone, or the Matter coming from it, from such an high Degree of Putrefaction as they might otherwise go to. Besides these Effects on the

Sore, regard must always be had to their Operation, if any of their Particles are absorb'd into the Blood-vessels; for some of them produce more or less of Fever; others become Purgatives, &c. according to their different Powers, which are known to those who are acquainted with the Virtues of Drugs.

3. Ardent Spirits, as Aquavitz, Spirit of Wine, being liquid, can be introduced further into a carious Bone than Powders; they stimulate Sores, resist Putrefaction, harden the Fibres, coagulate the Liquors, hinder Suppuration, and quicken the Pulse when absorb'd.

4. The Tincture of the Powders above-mention'd, in these Spirits, partake of the Nature of both, principally of the Spirit of which the larger Share of the Composition consists.

5. The essential Oils, as Oil of Cinnamon, of Cloves, and the like, stimulate, erode, resist Putrefaction, and, mixed with the Blood, raise some Degree of Fever.

6. Common Oils, Balsams, Resins, relax, increase the Putrefaction, and are allowed universally to be the most effectual Suppurants and Incarners.

7. Water relaxes the Solids, and dilutes the Fluids, when nearly of the same Heat with Animals.

8. Vinegar stimulates and resists Putrefaction; when weak, enjoys; also, the Virtues of Water; when strong, approaches to the following Class.

9. The natural Salts, Nitre, Sea-salt, Alum, the Vitriols, have different Degrees of Pungency, and proportionally stimulate or erode; otherwise they preserve animal Substances from Putrefaction.

10. Acid Spirits, extracted from Fossils, by the Force of Fire, such as the Spirits of Nitre and Sea-salt, the Oils of Sulphur and Virriol, coagulate the Liquids, and mortify the Solids; by being diluted with Water, they approach to Vinegar.

11. By dissolving metallic Substances in those acid Spirits, generally their corroding, sphacelating Power is increased, and some of them give such violent Pain, as frequently to bring on Convulsions.

12. Metallic Bodies, corroded by Acids, generally erode, when applied to Sores. Some of these, for Example, *Sublimate Mercury*, and some other mineral Substances, particularly Arsenic, have shaken the whole Frame of the Body, when applied externally; and the Mercurial Preparations sometimes enter the Blood, and produce a Salivation.

13. Alkaline Salts and Spirits, as the Salt and Spirit of Hartshorn, Salt and Spirit of Sal Ammoniac, Pot-ash, Salt of Tartar, Oil of Tartar, and the like, stimulate, erode, and increase Putrefaction; when absorb'd, as the volatile ones very readily are, they quicken the Pulse. The eroding Power of these Salts is greatly increased in their Preparations with Quick-lime, as in the common Caustic, which mortifies any Part of a living Animal it is applied to, but with remarkably less Pain than what the Acids, or their Preparations with Metals, give.

14. All Bodies heated beyond a certain Degree, and applied to our Bodies, give us Pain, stimulate, and inflame; when greatly heated, they mortify whatever Part of an Animal they touch.

15. The Effects of rasping, cutting, breaking, and trepanning Bones, are altogether evident.

16. In every Wound, or Ulcer, the Matter discharged into it must be the most constant Application to the Side of the Sore; when this Matter is laudable mild Pus, it is one of the most powerful good Digesters, Suppurants, and Incarners; when it stagnates too long, or when the Liquors or Vessels are faulty, it may become an acrid stimulating eroding Sanies; when absorb'd into the Blood, it infects all the Liquors, stimulates the Vessels, and is capable of producing violent Disorders.

The Effects I have attributed to these Medicines, are such, as are evident to the Senses, and what all who practise know; but do not always consider; when they make use of them; otherwise, they would have adapted them better to the several Species of Caries, and to the different Stadia of each, the Cure of which I now proceed to.

OF THE DRY OR GANGRENOUS CARIES.

When the dark Colour, and dry Surface, of a carious Piece of Bone shew it to be fully mortified; especially, if the shrill Sound, and rising Edges of it, with Pus coming out below them, discover the Exfoliation to be begun, Nature of herself, or with very little Assistance, will make the Cure.

If the Pus be mild, and in due Quantity, it will prove the best Suppurant and Incarners, for making the new Flesh thrust off the carious Piece of Bone; care only being taken not to remove it too frequently, nor to suffer it to remain so long as to become too acrid.

If the Quantity of Pus be too little, it is to be supplied by the Medicines, whose Effects are nearest to it; so that those of the sixth Class are proper. The *Unguentum Basilicon*, the *Linimentum Arcei*, or such-like, every Surgeon employs to hasten the falling out of a Piece of Skin mortified by a Caustic. I have often employed them, with equal Success, in bringing away a Scale of a carious Bone, the Separation of which would

necessarily be retarded by every thing which checks Suppuration, and the Growth of new Flesh, as the common favourite Medicines comprehended under Class third and fourth necessarily do; though it must be acknowledged, that Nature, with the Assistance of the Balsam of her own preparing, Pus, will often get the better of all that Surgeons do against her.

While the Exfoliation is making, the external Opening in the Teguments is large enough, if the Pus be so evacuated, that it neither forms sinuous Ulcers, nor is absorb'd to taint the Blood; for otherwise it hastens the Separation of the carious Part of the Bone, more by being collected upon it, than when it has a free Exit.

If, by the external Orifice being small, either of the bad Consequences just now mentioned happens, the Aperture ought to be enlarged, either by filing it with prepared Sponge, which, expanding itself, stretches the Orifice; or it may be enlarged by cutting with a Knife, or eroding with a Caustic the Teguments which cover the Caries; and they are afterwards to be kept asunder, by filling the Sore with soft Dossils, and pressing them in gently by a proper Bandage.

When the Colour of Part of a Bone is considerably alter'd from what it should be in a sound State, but is not so dark as it can be judged to be entirely mortified, while there are no Signs of its Separation, it may prove a very tedious Task to trust the Exfoliation to Nature; and therefore, after laying all the altered Part bare, if it can be done by the Methods proposed in the preceding Supposition, the Surgeon ought to try with the Perforator, or with the Rasper, how deep the Disease goes. If it be only superficial, a complete Mortification is to be made, by applying a red-hot Iron, or the potential Caustery; after which, the Case, and its Management, are the same as were mentioned already.

If the Alteration of the Bone be deeper than the Action of the Iron, or Caustic, can reach, the Surgeon may cut off all that is suspicious, with a very sharp Instrument struck with a wooden Mallet, which gives little Shock to the Member; after which he is to promote, as much as possible, the sprouting of granulated Flesh, such as rises in Exfoliations, from the whole Surface of the Bone, without which no Cure is made; but the Surface anew alters its Colour, and corrupts. If it were asked Surgeons, what the Medicines are, which would most readily procure the Growth of Flesh, they would readily answer, in general, Pus, and balsamic or unctuous Medicines; and such they would apply in all such Cases, except where the Bones are bare. For what Reason this Exception should be made, I understand not: The Parts which yield new sprouting Flesh with the greatest Difficulty, ought, one would think, to have the most powerful Incarners applied to them: And now, after a great many Trials, I can assure you, that no Medicines so effectually prevent the Corruption of Bones laid bare, and assist to cover them so soon with Flesh, as Ointments, Balsams, and Dressing, seldom, to have the Assistance of the most effectual Balsam of all, Pus. With these we see daily the Extremities of amputated Bones covered over with Flesh; and by this Method I have had the Pleasure to see large Parts of the Skull, Tibia, and other such very solid Bones, covered in a little time with granulated Flesh, after they had been made quite bare by Wounds, made even with bruising Instruments, and, likewise, after their exterior carious Surface had been cut off, as above directed; and a complete Cure was made, without the least observable Exfoliation.

It is plain, that in the Case I now treat of, where the corrupted Part of a Bone has been all cut away, or when sound Bones have been laid bare, and we wish to make a Cure without Desquamation, that all Medicines, which can mortify the exterior Fibres, such are all eroding Medicines, are to be avoided; as are all such as harden and dry Fibres to which they are applied, so as to prevent the growing of Flesh, which ardent Spirits most effectually do; and therefore, of all the Classes of Medicines which I mentioned, there are none except the Absorbents, N^o 1, and 2. the unctuous and balsamic, N^o 6. and Water, N^o 7. which are not opposite to the Indications of Cure. The terrestrial Absorbents are of no Use; Water dilutes and washes away the Pus; so that some of the more active or balsamic Powders, and the unctuous Medicines, can only be the proper Remedies here.

Whoever has taken notice of the Progress of the Exfoliation of a Bone, or of the Cure of a Bone laid bare without Exfoliation, must have seen the granulated Flesh, rising from every Part of the Surface of the Bone to cover it; and that what Flesh grew out from any neighbouring Part, though it may lie over the Bone, and hide it from the Sight, yet it does not grow to the Bone; and no Cure is made, unless by what rises from every Point of the Bone. Surgeons are even often obliged to destroy such overloping spongy Flesh, to promote the Cure; from which it is reasonable to conclude, that *Belloste's* Dressing seldom contributed much more to the Cures he performed without Exfoliation of Bones laid bare, than the Holes he proposes to be made with the Perforator into the Diploe or Cancelli: The Flesh arising from that softer Substance, overspreading the Surface in the

the Circumference of the Holes, can be no better than the spongy Flesh, which hangs over the Bone from the Sides of the Sore.

If, notwithstanding our Endeavours to make Flesh rise from the Surface of a sound Bone laid bare, or of one that has had its mortified Surface cut off, we cannot obtain this wished for Incarnation, and the Surface of the Bone shews its beginning Corruption by a Change of Colour, it must be treated as above directed in the Case, where we supposed a superficial Caries, it must be completely mortified.

When the carious Part of a Bone is too thick for being separated, either by the Rasper, or Chissel, it is to be taken out by the exfoliating Trepan, or by making a great many Holes in the Circumference of the Caries; and then, cutting the Bridges between them through, the middle of it is raised, or cut off; after which the Management is the same as in the preceding Case.

Very often there is not Space enough in the Sore, to apply right the Instruments proper for cutting away the carious Part of a Bone, and it cannot be safely enlarged: When this is the Case, we can only hasten the Exfoliation, by fully mortifying all that is spoiled, by repeated Applications of a red-hot Iron, or of potential Cauteries. When the hot Iron is to be used, the Bone ought to be previously well dried, that the Iron may not be extinguished by the Moisture; and we are commonly desired to guard the Sides of the Sore with wet Rags; whereas, when either the Iron is to be applied from time to time, or we can judge, that the Exfoliation cannot be speedily made, while we wish to continue a large external Opening, the reasonable Practice is of Design to burn the Sides into a fully mortified Eschar, if some Part is not to be hurt, the burning of which might be of very ill Consequence; for, while this dead Eschar remains, less Moisture will be thrown out, to prevent the Effect of the Cautery, and the subsequent Applications of the hot Iron can be made with little or no Pain to the Patient; and the Orifice does not contract. If a carious Bone, which is to be burnt, lies deep, the hot Iron ought to be introduced through a Cannula placed upon the Bone, that the Iron may be rightly directed.

If the potential Cauteries are chosen, rather than the actual, the common Caustic, prepared of Quick-lime and Soap-lees, deserves the Preference to any of those composed of the acid Spirits; for it gives not near so much Pain; and is not so ready to occasion Convulsions; it penetrates better than the dry Forms of eroded Metals; and does not run so much when it melts, as the mere liquid Acids do; it either is not absorbed, or its Effects are not observed in the Blood, whereas the Mercurial Preparations frequently raise an unexpected Salivation. The Reasons given for burning the Sides of such a Sore as I now treat of, are equally good for forming an Eschar all round the Sides, with the potential Cauteries. This Eschar ought to be kept from separating, as long as the Surgeon can: The most effectual way of doing this, is to soak it frequently with ardent Spirits; by which Management the Exfoliation of the Sides (pardon the Expression, which I use to shew the Analogy) may sometimes be near as long in making, as the Exfoliation of the Bone, if the Suppurants, Pus, and digesting Balsams, are rightly applied to it.

When the affected Part of the Bone is fully mortified either of these ways, the Case is reduced to the Supposition I first made, and is to be treated the same way.

Though Necessity obliges to use Caustics, in the very deep dry Caries, yet, because they require so much Time, and so frequent Applications, before they can pierce through any considerable Thickness of a solid Bone, I would prefer the surgical Instruments, with which the whole corrupted Part can be taken away at once, where-ever they can be conveniently made use of.

After an exfoliating Piece of Bone is moveable, the Orifice of the Sore ought to be made so large, by the Methods before proposed for enlarging Orifices of Sores, as the separated Piece can easily be brought out, and without leaving any considerable hollow Ulcer under the Skin; for thus the pricking Pain, which a loose Piece of rotten Bone frequently occasions, when left to work its Way through a small Passage, and the Suppurations, which may be occasioned by its remaining under the Teguments, may be prevented; and there is no Danger of leaving a sinuous Ulcer, which may require more Time and Labour, than is otherwise necessary for a complete Cure of the Sore, which needs no other Treatment, after all the corrupted Bone is brought away, and the sound Part is covered with firm Flesh, than what any common Ulcer does.

The Cases I have supposed may serve for understanding the different Stadia of this dry Caries, with the Management necessary in each; and, therefore, I proceed to the second Species of Caries.

OF THE WORM-EATEN CARIES.

The Cells formed in the eroded Bone, in this Species of Caries, lodging and retaining the acrid putrid Sanies, which in-

creases the Disease, it is necessary to destroy all the affected Part of the Bone, as soon as can conveniently be done. Where-ever the proper Instruments can be applied; Rasing, Chisseling, or Trepanning, according to the Depth or Extent of the Caries, will most speedily answer the Intention. After any of these Operations are performed, the Method of Cure is the same as was proposed, when we supposed these Operations to have been performed in the dry Caries.

When the Sanies comes from the Cancelli of the Bones, the corrupted Sides ought to be taken out by one or more Applications of the Trepan. If the carious Part be of large Extent, the Trepan is to be applied all round the Circumference of it; and, the Bridges being cut through, it is to be all raised up. A Patient was received into the Infirmary at *Edinburgh*, for a swelled carious *Tibia*; the Teguments were all mortified by Caustic, and then cut away; the Operation of the Trepan was performed fourteen times in the Circumference of the corrupted Part, and all the anterior internal Side of the middle of the *Tibia* was taken out; new Flesh rose from the Cancelli, and became firm Bone, before he went from the Hospital.

If less of the firm Sides of the Bone are found to be corrupted, than what, upon opening the Cancelli, we discover them affected, care must be taken, that the Matter within the Bone should be easily discharged.

When, by the Orifice through the Sides of the Bone being in the lower Part of the putrid Cancelli, the Matter easily flows out, or all the affected Cavity can be filled with proper Dressings, the Cure may be made without taking any more off the solid Sides of the Bone. A Girl, after the Small-pox, having an Ulcer very near the internal Malleolus, an Hole was eroded by the Matter through the Bone, large enough to admit a Finger; a Probe was introduced three Inches upwards within the *Tibia*, without meeting any Resistance; but, on directing the Probe downwards, we felt the Bone full of firm Flesh. A Pastil made of Myrrh, Aloes and Honey, had been put every Day into the Bone; and the Girl had a constant Purging, which ceased after I ordered the Aloes to be omitted in the Dressing of the Sore. An Injection composed of Digestive, and Honey of Roses, dissolved in Water, with some Vinegar, was thrown every Day into the Bone; the Pastil of Myrrh and Honey was introduced a little Way; the Cavity of the Bone gradually filled up with new Flesh, and a complete Cure was made.

When the Sanies stagnates, because of the unfavourable Situation of the Aperture in the Sides of the Bone, one or more new Openings must be made with the Trepan, till either the Sanies has a free Exit, or all the Part of the Bone, covering the putrid Cancelli, is taken away, when the common Cures for other Ulcers are to be employed.

If we cannot perform the necessary Operations for removing a worm-eaten Caries, we must burn it frequently with a red-hot Iron; the Directions for which Operation were already given in treating of the dry Caries. The hot Iron seems to be preferable here to the potential Cauteries; because these may sink into the Cells, and erode deeper than we incline, while they might not destroy the exterior Part.

When, in this Species of Caries, the Sanies is in great Quantity, and very fetid, and the Bone cannot be come at, to do what is necessary for a free Discharge, so that there is Reason to be afraid, that not only the Bone may be farther eroded, but that the Sanies may be absorbed, to occasion an hectic Fever, and all its fatal Consequences, it will be fit to encourage the Discharge of the Matter as much as possible, and to apply such Medicines as blunt or destroy its Acrimony. It is, therefore, necessary to dress frequently in this Case, and to wash out the Sanies, at each Dressing, with a proper Liqueur. Ardent Spirits, the Tinctures made with them, and essential Oils, indeed destroy or confound the putrid Smell of such Sanies; and, by contracting the Vessels of any Sore they were put into, lessen the Discharge of the Sanies, which makes them answer the old Theory of their being proper Medicines for the Caries of the Bones; which Disease was supposed to proceed from too much Moisture thrown upon the Bones, whose natural Quality is dry, and, therefore, required drying Medicines to cure them. These, I am persuaded, have been the Reasons, why those Medicines came to be employed for carious Bones: But, from what has been observed of the different Circumstances of Caries, it is evident, that these Reasons cannot be alleged for employing them in all Caries: And in the very Case, which we now consider, and which is the most favourable for using them, there are Objections to them, which make others appear more reasonable to be employed, and which, upon Trial, I have found more successful. The Objections are, that ardent Spirits, and essential Oils, in very small Quantity, or diluted, (for when pure, and in large Quantity, they are caustic, and penetrate too deep) retard the Separation of the corrupted Parts; they render all the Ulcer callous, which is indeed of some Advantage to prevent proud Flesh, whilst the Bone is not separated, but is troublesome to remove afterwards; they are very readily absorbed, and produce more or less Fever, which hurts the Patient. Some of the most common Tinctures employed, that

that of Aloes particularly, frequently brings on a constant Purging. Common Digestive, or Honey, or both, dissolved in Water, with which Vinegar, or some Drops of an acid Spirit, have been mixed, more effectually correct the putrid Sanies, and can be used in any Quantity, to wash it out of the Sore, without either retarding the Separation of the spoilt Bone, or raising the least Disorder, if absorbed; but, on the contrary, preventing the Mischief, which the absorb'd Sanies would otherwise produce. When the Ulcer is deep, this Medicine ought to be thrown into it from a Sprinze, that it may penetrate every-where, and may bring the Sanies away with it when it recoils.

OF THE CARNOUS CARIES, OR ULCER OF THE BONES WITH HYPERSARCOSIS.

This Disease differing only from the immediately preceding in the Addition of spongy Flesh growing in the Cells of the Bone, the general Indications of Cure alter very little; only, as this Flesh bleeds easily, and obstructs the Surgeon's View, the Rasping, Chiselling, and Trepanning, cannot be so proper here as the Cauteries for destroying the corrupted Part; and, seeing the Liquors, constantly oozing from the spongy Flesh, soon extinguish the hot Iron, the potential Cauteries are preferable to the actual Cautery. The Application of the Caustic will require to be frequently repeated, because this kind of Caries is generally very deep; and, therefore, it will be convenient to make an Eschar round all the Sides of the Ulcer, at the first Application of the Caustic, and to keep it as long on, as we can, by soaking in ardent Spirits, that it may serve as a Fence for preventing the future Caustics from spreading too far, or giving Pain. The Moisture which the spongy Flesh in this Disease spews out, especially when irritated, is so great, that I have daily dressed with Powder of common Caustic, removing a considerable Quantity of gelatinous Stuff, which collected on the Surface, where the Caustic had been applied, instead of the Eschar, which uses to be made in drier Parts. If the Caustic makes an adhering Eschar, it is in vain to apply any more Caustic, till that Eschar separates, which is to be hastened by suppurant Ointment. By such repeated Applications of common Caustic, I have, in a very short time, consumed a whole metatarsal Bone of the great Toe of an Adult; and have penetrated into the Cancelli, in the middle of a Tibia, the lesser and more spongy Bones consuming sooner.

What has been said of the two former Species of Caries, will readily make one know, what further is to be done in managing the differing Stadia of this Caries.

OF THE PHAGEDENIC CARIES WITH HYPERSARCOSIS.

The Management of this Caries is nearly the same with the former; only one or two Applications of the potential Caustic are sufficient to mortify some of the Surface of the solid Bone, which seems to reduce it to the dry Caries. But I must observe, that when this Caries is partial, I mean, when it only seizes one Part of the Bone, which seldom is the Case, the Flesh which thrusts off the mortified Scale, is, for the most part, as phagedenic, or bone-consuming, as what appeared at first: And, therefore, even in this most favourable Supposition, the Surgeon should not promise a Cure, unless he has corrected the Habit, or topical Indisposition, by internal Remedies.

When this Disease has taken firm Root, it will spread upon one End of a Bone, which was in Appearance sound when the Cure of the other End attacked with it was begun; and it will creep along from one Bone to another, with this Disadvantage too, that it is far advanced before one can well discover it.

OF THE SCROPHULOUS CARIES.

The spoilt Bones here being conveniently retain'd by their Ligaments, which we seldom can conveniently come at, to cut through, and which are too sensible to be eroded, Surgeons not only lose their Labour, but do considerable Mischief, when they forcibly keep open and dilate the Orifice of Ulcers where such Bones are, by cramming them with hard Dressings, kept in by a firm Bandage; and by wasting down the spongy Flesh with Escharotics, while they are forcibly endeavouring to make the Bone come away; such tender Constitutions, as these Patients have, cannot bear such rough Treatment; they languish and decay under it. What I have always found of most Service, or rather that did the least Hurt, was to destroy fully the Teguments covering the Abscess formed on the Bone with Caustic, to cut the Eschar through the Middle, to evacuate the collected Matter, and to save the Eschar on the Sides as long as I could; to order very mild Applications afterwards to the Sore, and to wash it frequently with Water. Nature at last separates the Bone, which is to be taken out, whenever it is quite loose.

OF THE SCIRRHUS-CANCROUS CARIES.

Actual and potential Cauteries have the same Effect here, as in ulcerated Cancers of the Glands; they don't diminish the Tumor, create great Pain, occasion Hæmorrhages, when their Eschars separate, and the like. Most other Medicines do Mis-

chief, none of them do Good; Extirpation only can make a Cure, which may be done, either by trepanning round the Root of the Escrescence, cutting the Bridges between the Holes, and bringing all away, or the Member is to be amputated. All of them I have yet seen were so situated, that it was impossible to make the partial Extirpation; so that I cannot say positively, how it would succeed. After the Amputation of the Member, the Wound cures as well as in other Diseases; but some of the Patients have since been seized with the same Disease in another Member.

OF THE SPREADING CANCROUS CARIES.

This sort of Cancer seldom cures; it will sometimes get a Skin upon it after cutting or burning, or with gentle drying Medicines, or dry Lint, often breaks out again unexpectedly, and there is no certain Cure yet found for it. I never saw this Disease originally formed in the Bones; they are only affected by being in the Way of the Disease; so that whatever Change the original Disease undergoes, the Bones partake of it. *Montp. in the Medical Essays, Vol. 5.*

CARIES of the BONES, from HEISTER.

The Caries or Corruption of the Bone may be reckon'd among the principal Causes of the Depravity of obstinate Ulcers. For, when a carious Bone is conceal'd in an Ulcer, it is scarce possible to heal it; or, if it should be brought to appear found outwardly, it will soon break out again, unless the carious Part of the Bone be removed.

A Caries of the Bone happens, when the Bone, from whatever Cause, is deprived of its Membrane, or Periosteum; and, having lost its natural Heat and Colour, becomes pinguious, yellow, brown, and, at last, black. This State, which is the first and gentlest Degree of this Disorder, was call'd by the Ancients, *Os vitiatum*, and also *Nigrities*. But the greatest Degree of this Disease is, when the Bone is corroded, and become rough, and sunk into little Holes; when a fetid Sanies is discharged, the Acrimony of which softens, relaxes, or consumes the adjacent Flesh, so that the Bone seems as if it were ulcerated. All the Bones of the Body are subject to this Distemper: And though this Ulcer may sometimes appear to be perfectly heal'd, yet, some time after the Cicatrix has been induced, an Abscess will be form'd, and the Ulcer return, discharging the corrupt, acrid Matter, collected within, from the carious Bone, and producing many dreadful Symptoms, such as Horror, Vomiting, and a Fever, attended with a new Corrosion of the Flesh.

Of this Disorder, and those which are nearly allied to it, there are many different Names and Species. It is denominated Caries, Spina Ventosa, or Spina Ventositas, a Gangrene or Cancer of the Bones; by *Celsus*; and sometimes it assumes the Greek Appellations of *Teredo* and *Pedartbrocates*. But although some Authors have constituted as many Species of this Disease, as there are Names, to many Distinctions appear to me unnecessary; because I can see but two material Differences, which can only make two Species: 1. When the Disorder proceeds from the internal Part of the Bone. 2. When it begins on the Outside of the Bone, or arises from an external Cause. This Species, with the generality of Physicians, I call Caries, and that Spina Ventosa, or, with *Severinus*, when it happens in Children, *Pedartbrocates*.

The Caries of the Bone, properly so call'd, may be produced by two Causes; 1. If, after a Wound, Blow, Contusion, Fracture, or Fall, the Bone should be deprived of its Periosteum, so as to be exposed to the Injury of the external Air, or corrupted with the pinguious oily Dressings, which are commonly applied to simple Wounds, such as the Oil of St. John's-wort, or of white Lilies, *Samaritan* Balsam, and the like. 2. If by external Violence, or an internal Cause, the Circulation of the Fluids be interrupted, and succeeded by Inflammation and Suppuration: Whence the Vessels designed for the Nourishment of the Bone and Periosteum are inflamed and corrupted, and the Bone itself becomes corroded. This Disorder, if not quickly cured, like Ulcers in the soft Parts, spreads, and communicates its Corruption by degrees.

Hence it may appear, that there are several Degrees of Erosion, or Caries of the Bones. The first and mildest is, when the Bone is laid bare, looks greasy, and turns yellowish; but, as soon as it becomes truly yellow, brown, or black, it degenerates into a worse State. The third Degree is, when the Bone comes to be consumed, rough, and uneven. The more the Bone is corroded, the more rough and uneven it is render'd; as, when the Cranium is perforated, or the Os Tibiæ, or Os Femoris, or consumed to the very Marrow, the Caries is reckon'd very severe. But the most malignant, and almost desperate Degree of this Disease, is when the Caries attacks the Joints, or any other Part of the Bone, which lies deep; because the Hands cannot then have Access to clean the Bone, and the Case admits of no Remedy, but Amputation of the Limb.

A Caries may be discover'd two Ways, as it is conceal'd, or as the corrupted Bone appears to View. When the Bones are open

open to the Eye, the Caries may be discovered by the following Signs: The Bone looks pinguious, and degenerates from its natural Colour, to yellow, brown, or black; the Bone is bare, and the Periosteum destroy'd; if a Finger, or a Probe, be applied to the Bone, it will be found uneven, rough, and perforated, or spongy. 2. But when the Bone is concealed by the Flesh, or other Causes, the Caries will discover itself by the following Signs: The discharged Matter will, for the most part, appear oily, brown, or black, and stink like corrupted Bacon: When the Dressings are taken off, they will be tinged, by the corrupted Matter, with a blackish Colour: When there is Room for passing a Probe to the Bone, which is not always the Case, it will be found to be rough and uneven; the neighbouring Flesh will appear flaccid, soft, loose, spongy, and stink like corrupted Bacon: Lastly, when the Bone can neither be seen, nor reached with a Probe, we may reasonably suspect a carious Bone, when the Ulcer frequently breaks out afresh, after it has been healed, without any other manifest Cause.

Hence it may be deduced, that Ulcers of this kind are always cured with great Difficulty, and seldom without Deformity of the Part; that they are subject to spread, especially if the Caries cannot be conveniently reached; and even when they are healed, as was already observed, they frequently break out again; but when the Disorder increases, and extends to a Joint, as the Knee, no Relief can be expected, but from Amputation of the Limb. If the State of the Patient will not admit of this Operation, he is attack'd with a Languor, and slight Fever, which are soon succeeded by Death. A Caries in the Os Femoris, Os Coccygis, Os Sacrum, Os Cranii, Os Tarsi, and Ossa Palati, are extremely difficult of Cure; but when it attacks the Cranium, and, as often happens, even penetrates to the Dura Mater, the Patient is tormented with intense Pains in the Head, continued Watchings, Vertigos, a disturb'd Imagination, with many other such dangerous Symptoms.

With regard to the Cure of a Caries, various Methods have been attempted with Success. The first and easiest Method is used in the slightest Degree of a Caries, by the Application of spirituous Medicines, as the Spirit of Wine, or *Hungary Water*; or by Balsamics, such as the Powder of Birthwort, and *Florentine Orris*, or the Powder of Myrrh and Aloes: Let one or other of these be daily sprinkled on the affected Bone, after the Sanies is wiped off with dry Lint, till the morbid Part of the Bone is almost exfoliated, and the Flesh appears new, sound, and firm. If the Caries penetrates deeper, stronger Remedies are required; such as the Powder or Essence of Euphorbium, prepared with the best Spirit of Wine, which powerfully destroy the Caries; or the Oils of Cloves, Cinnamon, or *Lignum Guaiacum*: These may be applied with a Pledget of Lint, and cover'd with dry Linen. Some use, in the same Manner, and with equal Success, other corrosive Medicines, such as the *Aqua Phagedanica*, or Spirit of Vitriol, or of Sulphur; or a Solution of Mercury in *Aqua fortis*, or the Spirit of Nitre, may be substituted in the room of all the rest. These we have enumerated as the principal Remedies used for this Purpose, without taking notice of those which are too weak for the Intention, or too strong to be admitted with Safety; such as Arsenic, or Sublimate Mercury in Substance. When, by this Method, an Exfoliation of the Bone is procured, you must proceed to incise, and complete the Cure with Balsamics. Therefore, the next Dressings should consist of *Hungary Water*, or the Essences of Mastich, Myrrh, Amber, Aloes; also *Peruvian Balsam*, or Balsam of Capivi, or other Balsams of this Kind; covering the Whole with a Plaster, and proceeding as in the Cure of common Ulcers. See *Ulcus*. *Le Dran* has given us some curious Observations on the Caries of the Bones, especially in the *Cubiti*, *Obs.* 51, 52, 53; in the Loins, *Obs.* 69; after the Small-pox, *Obs.* 70; in the *Os Ilium*, *Obs.* 95; in the greater Trochanter, *Obs.* 97; in the Knee, *Obs.* 102, 103; and in the Leg, *Obs.* 104.

The Cure for the second Degree of Caries consists in perforating the Bone, after being laid bare, with the Perforator, or Instrument, described in *Tab.* XXVIII. *Fig.* 2. or *Fig.* 7. A; or *Tab.* XXXVI. *Fig.* 8. as far as the sound Part, in the same manner as is done after a Wound in the Cranium. The Dressings may consist either of dry Lint, or the balsamic Medicines above recommended. By these means, not only the morbid Part of the Bone will be exfoliated, but new Vessels will shoot into the small Perforations, which, coalescing with the neighbouring Flesh, form a new Covering for the Bone.

When it is certain, that the morbid Bone is black, with a Raspatory, or File, scrape away all the corrupted Part, till the Bone appears white, or red, and sound. *Celsus* advises this Operation to be done vigorously, for Expedition; otherwise little or nothing can be effected by it. *Sculretus* thinks the Raspatory should not be applied, till the Bone lies fairly exposed, or not till it begins to separate from the sound Part, and that the Bone should be dressed only with dry Lint, till this happens; which, however, is not a general Rule. Others, in particular Cases, use a Mallet and Chissel (see *Tab.* XXVIII. *Fig.* 10, 11.) for separating the corrupted Parts from the sound, with or without a Perforation:

But both these Methods have been generally disused by the modern Surgeons; tho' *Petis* affirms, that the best Method is to rasp the Bone, tho' the luxuriant Flesh should be continually sprouting, and afterwards to apply the actual Cautery. And in those Tumors of the Bone, now call'd *Spina Ventosa*, which refuse to yield to Medicine, he directs not only to make frequent small Perforations, but that the Tumor should be taken off with the Mallet and Chissel.

The fourth, which, tho' the oldest, is the readiest and most certain Method of Cure, especially in the higher Degrees of the Disorder, is perform'd by burning the morbid Part of the Bone, with the actual Cautery, having the Instrument adapted to the Place (see different Kinds in *Plate* XXIV.) But particular Caution must be observed, in this Operation, not to injure the adjacent Flesh, and soft Parts. For this Purpose, the Lips of the Ulcer should be held asunder by an Assistant; or, if they are too narrow, they should be widen'd with an absorbent swelling Tent, made of Gentian-root, or a Piece of Sponge; or, otherwise, they must be laid open by Incision, till the Bone fairly appears. The Bone should, likewise, be cleaned with dry Lint, and the fungous Flesh removed, before the hot Iron be applied, lest the Matter should extinguish it, or, at least, weaken its Action. If the Caries penetrates deeper, or spreads wider, so that it cannot be destroy'd by the first Cautery, more Applications must be made; either immediately, or some time after, when it appears that all the morbid Part of the Bone is not removed. If the Caries be wide, the first Application of the Cautery should be in the Middle, thence proceeding towards the Edges. No violent Pain attends this Operation, if the soft Parts are untouched, the Bones having no Sensation of Pain. But, in a Caries of the Bones of the Cranium, there would be great Danger, from this Operation, of injuring the Membranes of the Brain, or even the Brain itself; and a like Danger would arise, if it were perform'd on some of the soft, spongy Bones, as upon the Sternum, or carious Ribs; in both which Cases the Cautery should be avoided. Nor will the Carpus, Tarsus, and other spongy Bones of that Kind, admit of cauterizing; principally, because of the neighbouring Ligaments, Nerves, and Tendons, which can scarcely avoid being injured; and this would be follow'd with dangerous Consequences.

The diseased Part of the Bone being thus cauterized, the first Dressing must be dry Lint; or, if the Patient still feels a Sense of Heat in the Part, the Lint may be moisten'd with tepid Spirit of Wine. The Dressings may, afterwards, consist of the balsamic Remedies before recommended, till the Exfoliation succeeds; and the Vacuity will soon be supplied with new sound Flesh, which will be a Proof, that the Cure is completed. But where the Bone continues bare, or where the new Flesh is soft, lax, and spongy, and does not sufficiently adhere to the burnt Part of the Bone, or where the Bone remains discolour'd, the Disorder is evidently not extirpated. In these Circumstances, the new Flesh must be cut off, or abraded, or consumed with burnt Alum, and red Precipitate, or some other stronger corrosive Medicine; and then the actual Cautery may be repeated; or, according to the Circumstances of the Disorder, some of the other Methods, before recommended, may be used; otherwise, no permanent Cure can be expected.

If the Caries has penetrated even to the Marrow of the larger Bones, *Petis* advises, after the Example of *Meckren*, to make one, two, or more Perforations with the Trepan; and gives us a Case, where, after having used the actual Cautery, he perforated the *Tibia* thrice, and cured the Patient. But this Method can seldom be used in any other great Bone but the *Tibia*, because of the Obstruction occasion'd by the Thickness of the Flesh. He farther informs us, that the Os Pectoris, or Sternum, may be sometimes perforated in this Manner; which not only makes a Passage for the Discharge of the confined Matter, but, likewise, gives an Opportunity of immediately applying proper Remedies, even to the innermost Recesses of the Wound. But this Operation must be perform'd with the highest Caution and Deliberation upon the Sternum; because Respiration may be injured, and other violent Disorders produced. It is proper to observe here, that when the Caries extends to, or begins in, the Marrow of the Bones, (which is call'd a *Spina Ventosa*), it does not always proceed from an internal Cause, but sometimes from the interior Vessels of the Bone being broke by external Violence; and the Blood, being discharged into the Cavity of the Bone, by degrees, degenerates into Pus, and corrodes the Bone. Thus a Caries is produced, which spreads from the Marrow to the exterior Parts.

If the Blackness, or Caries, extends to the other Side of the Bone, so that it seems thoroughly corrupted, *Celsus* advises to take it entirely out. If the lower Part is sound, only what is affected must be remov'd. If a Bone of the Head, of the Breast, or if a Rib, be carious, the Cautery will have no Effect, and it must, likewise, be cut out. This Operation must be expeditiously perform'd; for the Bone must be taken out as soon as it is laid bare, before any inflammatory Symptoms appear; by which means the whole Operation may be perform'd with greater Safety. When a Cartilage is carious, it must be scraped with a Knife, till nothing

thing remains but what is found. I am obliged to *Celsus* for what I have here advanced, who treats on these Subjects better than any modern Writer.

Upon the Whole, we may conclude, that the Cure of a Caries of the Bone principally depends upon removing, in the most proper and expeditious Manner, all the corrupted Part of the Bone: And this, I have found by Experience, may be done in the gentlest Cases, by Spirit of Wine, and *Hungary Water*; in more violent Degrees of this Disorder, by a Solution of Mercury in Aqua-fortis; and in the most malignant, by the actual Caustery, or Amputation. The Cure of the Ulcer may be completed, as in other Ulcers, by the balsamic Remedies so often recommended.

If the Bone be considerably consumed by the Caries, or if it extends itself towards a Joint, as the Knee, or of the Hand, or Foot, so that the affected Part cannot be removed by Incision, Extraction, or Causticizing, consistently with the Preservation of the rest of the Limb, there remains but one Remedy, for the Safety of Life itself, which is amputating the whole affected Member; otherwise the Patient leads a miserable Life, and, after being exhausted with Pain and Trouble, with a Loathing of Aliment, Watchings, a slight Fever, and a long wretched Train of Symptoms, will at last expire: But when only one Side of a large Bone, as the exterior Part of the Os Maxillæ, Humeri, Tibiæ, or Claviculæ, is corrupted; or a Part of a Rib, of the Ulna, Radius, or Fibula, and the like; nor the whole Limb, or Bones, must be immediately removed, but only the carious Part, which may be done in the properest Manner, as we have already directed. When it happens, that more or less of the morbid Bone separates spontaneously from the rest; if it can be laid hold on, and the Ulcer be sufficiently wide, it should be extracted with the Fingers, or the Forceps; but, if the Orifice of the Ulcer be too small, it must be widen'd with the Knife. A remarkable Instance of this we have in *Meckren, Obs. Chir.* 69. where a large Portion of a corrupted Bone was taken out of the Arm; and another in *Ruyfch*, where it was extracted from the Tibia.

OF THE SPINA VENTOSA, PÆDARTHROCAE, AND EXOSTOSIS, WHICH MAY BE CALLED TUMORS OF THE BONES.

That Species of Corruption of the Bones, which proceeds from their internal Parts, which, by degrees, enlarges the Bone, and swells it into a Tumor, is now generally called a *Spina Ventosa*, and, by some, *Spina Ventositas*; tho' these Names were unknown to the Antients, who termed them *Sideratio*, *Gangrena*, or *Cancer Ossis*, and sometimes *Teredo*. Some French Authors use the Appellation *Exostosis*; though this Term more properly belongs to certain preternatural Eminences, or acuminated Excrescences, which arise from a Fracture, Contusion, or other Cause, and are often attended with a Caries; though I have frequently seen Bones with such Eminences, without any Appearance of a Caries. *Spina* seems to have been a Term applied to this Disorder, because it occasions a Pricking in the Flesh, like the Punctures of Thorns, producing very violent Pains; and the Epithet *Ventosa* is added, because, upon touching the Tumor, it seems to be fill'd with Wind, though this is seldom, or never, the Cause of the Distention. Afterwards some Authors, particularly *Pandolphinus*, barbarously distorted the Word into *Spine Ventositas*.

Children are often affected with this Disorder; and then, with *Severinus*, many denominate it *Pædarthrocæ*, from *παις*, a Boy; *ἄρθρον*, a Joint; and *κακόν*, an Evil; intimating, that this Disorder frequently appears about the Joints of Children, and oftener in them than in Adults, because the Bones of Children are more soft and spongy, and, consequently, more easily corroded by peccant Humours, and distended into Tumors, sometimes of a surprising Deformity. *Severinus* makes another Distinction between the *Spina Ventosa* and *Pædarthrocæ*; for the Tumors of the first Kind are frequently attended with Pain, Redness, and all the Appearances of Inflammation; but the *Pædarthrocæ* is accompanied with little or no Pain in the Beginning, as may be often observed in rickety Children. But these Names are now generally used promiscuously, as synonymous Terms for the same Distemper, and not improperly, as *Merklin* observes; for though this Disease, in Children, is, at first, attended with little or no Pain, yet the Pain increases with the Disease.

Other Names have been already mention'd, which agree better with the *Spina Ventosa*, than with the Caries properly so call'd; as, a *Cancer Ossis*, *Gangrena* or *Sphacelus Ossis*, *Sideratio Ossis*, frequently used by the Translators of *Hippocrates*; and, also, *Τεπίδαρ*, or *Teredo*, from its Resemblance to Wood eaten and consumed by a Species of Worms called *Teredines*. All these synonymous Terms of the *Spina Ventosa* may, probably, have been applied to different Degrees of that Disorder, which has been sufficiently proved by *Merklin*, in his Annotations upon *Pandolphinus*. The same Author has, also, demonstrated, that this Disease was not unknown to the Antients, as some have imagined. One Observation remains; that *Petis*, in his Treatise on Diseases of the Bones, *Cap.* 16. comprehends all these Diseases, and

their Names, under that of *Exostosis*; and, at the same time, entirely omits those Names which were better known, and more commonly used. I shall principally use the Term *Spina Ventosa*, as it is now most generally received.

As these Diseases, especially their Difference and Degrees, have been generally imperfectly described, and as many Cases of this Kind have occur'd in my Practice, I intend to illustrate their Distinctions particularly, which may be very serviceable in promoting their Cure. A *Spina Ventosa* is a Corruption, Corrosion, or kind of Caries of the Bone, which is generally produced spontaneously, by some peccant Humours, and seldom arises from an external Cause. It begins not in the Surface of the Bone, but in its Laminæ, or Cells, or within its internal Cavity, proceeding towards the exterior Part, and affecting the Whole, or more or less of the Bone, spreading in Breadth, or rising into a Tumor, (see *Tab. XXXIII. Fig. 16. A B*) which is frequently hard, and sometimes without Pain; sometimes it appears filled with Wind, and is attended with a greater or less Degree of a corrosive pungent Pain; at last it reddens, renders the Patient unable to move, and has a Train of other bad Symptoms; at last, the Bone is corroded, and the Skin, and other Integuments, which were at first sound, partake of the Corrosion, and break out into most malignant Ulcers. When these Tumors of the Bones are hard, without inflating the soft Parts, and without Redness, Inflammation, and Pain, as frequently occurs in rickety Subjects, they do not then so readily ulcerate, nor are attended with such malignant Symptoms, while they remain so. *Severinus* denominates this Species *Pædarthrocæ*, because Children are most subject to it, and in order to distinguish it from the *Spina Ventosa* of the *Arabians*. But when the Tumor is painful, red, and inflamed; to which Children and Adults are equally liable, it is named *Spina Ventosa*, *Cancer*, or *Gangrena Ossis*, and *Teredo*. I call an *Exostosis*, a preternatural acute Eminence of the Bone, or any Excrescence of the Bone, with or without Corrosion. The *Spina Ventosa* differs from the Caries, as it is attended with a Tumor; and from the Rickets, because, in them, the Epiphyses or Extremities of the Bones are affected with deformed Tumors, without Pain or Corrosion.

These Disorders generally begin about the Extremities, Heads, or Epiphyses, of the larger Bones, where they are most tender and spongy, and where the morbid Matter may not only have sufficient Room to lodge in the cellular Substance, but where it will, also, meet with the least Resistance in softening and expanding the Parts. However, they often appear between the Laminæ, in the middle of these Bones, especially in the Tibia. Tophi, and Venereal Gummata, as they are called, in the Forehead, Cranium, and other Bones, especially the Tibia; as they owe their Origin to an internal Cause, may be included in this Species, though they are easily distinguished by nocturnal Pains. The *Spina Ventosa*, therefore, attacks the Bones of the Head, Face, Neck, and Breast; but most frequently those of the Feet, Arms, Fingers, Carpus, Metacarpus, Tarsus, and Metatarsus; and there is scarcely a Bone in the Body, but what is subject to it. Cases of this Kind may be seen in the Notes of *Merklin* upon *Pandolphinus*.

They are commonly produced spontaneously by internal Causes, as by acrimonious, scorbutic, rickety, or variolous Humours; but generally from a Venereal Taint; for, before this Disease appear'd in Europe, they were little known. However, both Reason and Experience inform us, that they sometimes proceed from external Causes, especially in an Habit inclinable to such Disorders; as from a Contusion, Fall, Fracture, Fissure, or other external Violence, by which the Vessels, internal Laminæ, or Marrow of the Bones are injured or lacerated, the Humours are extravasated, and putrefy, corrupt and destroy the Marrow, and soften and corrode the Substance of the Bones. Hence arise Pains, Tumors, Ulcers, and Fistulas, both in the Bones, and external Parts.

The immediate Cause of this Distemper is a Collection or Defluxion of a viscid and tough, or an acrid and corroding Humour, or an Inflammation in the Marrow, or in the cellular Substance of the Bones, which degenerates into an Abscess, and forms Ichor, or Pus. For, as these Humours can find no Evacuation, they stagnate in the Cavities of the Bones, where, in time, they gradually putrefy, become acrimonious, corrode and corrupt the neighbouring Parts, convert the Marrow into a similar Sanies, and, at last, attack and consume the Bone. This Collection of viscid and pituitous Humours, and Swelling of the Bone, sometimes happens without Pain, as in the *Pædarthrocæ*; but the Corrosion of the Parts can never happen without the most intense Pains, proceeding, according to the common Expression, from the inmost Marrow, which Pains are sometimes called *Osteocopi*. When, in the Beginning of this Disorder, it is confined to the interior Part of the Bone, the morbid Part feels no Increase of Pain by an external Touch, or Pressure; but, when the Pain becomes increased by the Touch, the Disease has extended itself to the exterior Parts of the Bone. When this happens, the Periosteum, and other adjacent Parts, together with the Substance of the Bone, and the cellular Coat, are tumefied: Whence arises a Sensation, as if the Parts were inflated. When this Tumor is opened

opened by Incision; or, as it frequently happens, spontaneously, if the morbid Part is exposed to View, it will appear like a Sponge, or a Pumice-stone, full of little Holes, as in the Caries; and from what has been said, the Resemblance of these two Diseases, their Signs and Distinctions, may easily be discovered.

The Spina Ventosa, strictly so called, may be properly divided into three Species: 1. When the Osteocopi, or Pains in the Marrow of the Bone, are incessant, so as to deprive the Patient of Sleep, but without either Tumor, or external Pain; in this State the Disease is confined to the interior Part of the Bone. 2. When these Pains either continue, or cease, and a Tumor gradually appears upon the Bone either harder or softer, and, as it were, inflated, attended with external Pain, which sometimes abates, and sometimes increases. 3. When this Tumor induces an Abscess, which either bursts spontaneously, or is opened by Incision, discharging a ferid Ichor, or a purulent Matter smelling like rancid Butter, or Bacon, this Efflux of Matter continues more or less, as in the carious Ulcer; and that Kind of Ulcer is produced, which the Ancients frequently called an Ulcer with Caries in the Bones. This Species may be called an inveterate Spina Ventosa, and the first an incipient or recent one.

A Pædarthrocace generally begins with a Swelling of the Bone, without any Pain, or external Cause; but, if it continues long, it is often attended with Pain and Inflammation, and at last with an Abscess, Ulcer, or Caries, like the Spina Ventosa, especially about the Joints and Extremities of the Bones. Hence there appears some Reason for reckoning a Pædarthrocace a distinct Disease; which, however, if not timely prevented, will degenerate into a Spina Ventosa; so that they seem to differ only in Degree.

From what has been now advanced, and what we before delivered of the Prognostic of the Caries, it will be no difficult Matter to understand and foretel the Consequences of these Disorders. For when it appears, that the present and corrupt acrimonious Matter is lodged in the Cavity, Laminæ, or Cells of the Bone, which Nature is unable spontaneously to discharge, and which can hardly be evacuated by Art, it must necessarily follow, unless prevented by timely Assistance, that the adjacent Parts will be corroded and corrupted, till at last the Bone itself is altogether destroy'd, so that there can be only one Method left of preserving the Patient, by the Amputation of the whole Limb. What is still worse, if the Disorder proceeds from a vitiated State of the Blood, it is often so malignant, than when it has seized one Part, the Arm for Instance, when this is extirpated, it will then attack the other Arm in the same manner, as in cancerous Affections; but this may be prevented by purifying and correcting the Blood by a proper Regimen and Remedies. The Pædarthrocace, and mildest Degree of the Spina Ventosa, frequently yield to proper Medicines. But the Cure will be difficult, in proportion to the Inveteracy of the Disease, the Progress it has made, the Weakness of the Patient, and the Corruption of the Blood, joined with other violent Symptoms. Sometimes it becomes irremediable, and, the Strength of the Patient being exhausted, he is, as it were, consumed by a slight Fever, and he dies of an inveterate Caries.

There are two Methods of curing a Spina Ventosa, adapted to the different States of the Disease: 1. In the two first or milder Degrees, if the Patient be an Adult, he must daily use, for correcting the Blood, a Decoction of the Woods, as it is commonly called, as of the Roots of Sarsaparilla, China, Scorzonera, and the Woods of Sassafras, Guaiacum, and Juniper, drinking each time eight, ten, or twelve Ounces, according to the Strength of the Patient; taking it warm like Tea, or Coffee. Let him drink this Quantity every Morning in Bed, giving him, in the first Draught, fifty or sixty Drops of the Essence of the Woods, or of white Burnet, or the like, endeavouring to raise a gentle Sweat, that they may thoroughly penetrate the smaller Vessels, or even the bony Fibres, and expel or correct the peccant Humours: They, likewise, greatly promote the Digestion and Diffusion of stagnated Humours and Tumors. 2. This Intention will be greatly forwarded by fumigating, several times a Day, the affected Parts, with the Steam from Decoctions of resolvent or aromatic Herbs. 3. In the intermediate Times, let the Part be rubbed twice a Day with a Mercurial Ointment, and apply to it a Mercurial Plaster. 4. Mercurial Remedies should, likewise, be prescribed inwardly, once in weakly Constitutions, or twice in more robust Habits, in order to raise a gentle Salivation; or not, according to the different Degrees of the Disorder, or State of the Patient: For Experience has convinced me, that nothing can be effected in the Cure of this Disease by other Remedies alone, without the Assistance of Mercurials; which makes it the more probable, that this Distemper is either contracted by a Venereal Infection, or is very nearly allied to it. When, therefore, this Method has been continued some Weeks, (for a short Time is of no Service) the first Degree of this Disorder may be removed; and even in the second Degree, where the osseous Tumors are already formed, they may be digested, or dissolved, or reduced to such a State, that they may continue without increasing, without Pain, or without any great Inconvenience to the Patient. This I have often seen happily obtained, when a

Discussion could not be procured, especially when the Patient used a regular and moderate Diet, living upon Broths, Vegetables, and the tenderest Sorts of Flesh, thereby tempering and sweetening the Blood; and using, for common Drink, small Decoctions of the Roots and Woods above-named, or of Hartshorn, Barley, Oats, and the like watery, soft, thin Liquids.

The same Method is to be observed in the Cure of the Pædarthrocace, or Tumors in the Bones of Children, without any, or, at least, much Pain; exhibiting, at the same time, Medicines for gently opening the Belly, principally prepared with Mercurius Dulcis. If this Disorder is accompanied with the Rickets, Remedies adapted to the Rickets must be prudently exhibited, and frequent Motion and Exercise must be used.

But if either of these Disorders are become so obstinate, as not to yield to the Medicines we have already advised; if the Pains and Tumors of the Bone are increased; if an Abscess appears, and the entire Destruction of the Bone be threatened; you must, if the Abscess be not already burst, lay the Bone bare in the most proper Place, which is generally the lowest, and most painful, without staying for Maturation; or, if the Orifice be too small, after the Abscess has burst, it must, also, be widened by Incisions, or, in the Timorous, by the Caustic. Then, with the small Perforator, (in Tab. XXVIII. Fig. 2. or 7.) penetrate several times into the Marrow of the Bone, in order to open a Passage for the morbid Matter. But, where these small Perforations are not sufficient for discharging the Sanies, then pierce the Bone with the Trepan, as was before directed in the Cure of the Caries; by which means the Matter will not only have a freer Passage, but Medicines for cleansing and healing the Part may more readily be applied. After these Operations, the Decoctions and Essences of the Woods, with antimonial and mild Mercurial Medicines, ought to be prescribed internally, and detergent and balsamic Remedies ought to be outwardly applied; such as the Decoction of Agrimony, Sanicle, St. John's-wort, or Birthwort, with Honey of Roses, and Essence of Myrrh and Aloes, for detarging the Ulcer; or Mercurius Dulcis dissolved in Plantain-water, or Lime-water. Afterwards the Dressings may consist of the Essence just now recommended, or the Essence of Mastic or Amber, spread upon Lint, covering all with a Mercurial, or other proper Plaster, till the Ulcer be healed. Sometimes the actual Caustery, if it can be conveniently applied, is not improper for rooting out the Disorder, when it is confined to the Lamina, especially if it can be conveniently apply'd; otherwise Abrasion may be used, tho' this Operation seems better adapted to the Caries, than the Spina Ventosa.

But if all these Remedies are ineffectual, and the Part be so much corroded and destroyed, that it cannot be preserved, there remains but one Remedy, of saving the Patient, which is Amputation; and this may be performed in different manners, according to the different Circumstances of the morbid Part. When the Disorder is situated in the small Bones, as in the Carpus, Tarsus, Metacarpus, or Metatarsus, or in the Finger, there is no Necessity of extirpating the whole Finger, Hand, or Foot, but only of extracting the small purified Bone. Thus, when the Bone at the End of the Finger, or even that of the middle Phalanx, is corrupted, I have extracted the foul Bone, and preserved the sound Part of the Finger. Thus, from a Boy of ten Years of Age, who had the metatarsal Bone, which supports the great Toe, corrupted, the Toe itself remaining unaffected, I extracted only so much of the Bone as was corrupted, leaving the sound and anterior Part behind, and healed the Wound with Balsamics; and the Boy, afterwards, walked as well as formerly. But when the entire Finger, or only the first Bone of it, has been corrupted, I have amputated the Whole. But when a large Bone of the Shoulder, Thigh, or Leg, or when any of the Joints in the Arm, Knee, or Foot, are affected, no Cure can be expected, except by extirpating the whole corrupted Part, with all the inferior Part of the Limbs, making the Amputation in the sound Part above.

In some Species of the Spina Ventosa, when the Tumors will not yield to the Remedies already proposed, to which the Hand can be readily admitted, Petit advises to lay the Bone bare by a crucial Incision, and to cut off the Extremities of the four Angles of the Shin, and then to dress with dry Lint. The next Day he orders the osseous Tumor to be pierced with the Perforator, and the Holes to be made so near one another, and so numerous, as to represent a Sieve, and then to extirpate the whole Tumor with the Chissel and Mallet. He afterwards fills up the Wound with dry Lint; and, that the diseased Part may sooner separate from the sound, he orders a Solution of Mercury in Aqua-fortis to be apply'd to the corrupted Part, till it be wholly removed: This Method he highly recommends, and prefers it, in my Opinion, not unjustly, to every other Remedy in these Cases, and even to the actual Caustery, if the Corruption be not too deeply situated.

When an acute Eminence, or preternatural Excrecence, appears upon a Bone, which is properly called an Exostosis, and is accompanied with no Trouble, Pain, or Deformity, nor any Symptoms of a Caries, or Spina Ventosa, in such Cases, no Cure, in my Opinion, should be attempted. For the Remedy would

not only be worse than the Disease, but by laying the Bone bare, a Caries, or other Inconveniences, might be occasioned. On the contrary, if it produces any Deformity, Impediment of Action, Pain, or other Mischief, it may be removed by the Methods already prescribed. Various Cases of the Caries, Spina Ventosa, and Exostosis, are given by *Cheselden*, in his *Osteography*; from *Tab. XLI. to the End*; and *Ruyssch*, in his *Observat. p. 94. and in his Theatrum Anat. 8. Tab. III. and Theatrum. 10. Tab. II. Heister.*

OS. The Mouth.

OF THE CANCER OF THE LIPS, AND MOUTH.

Cancers of the Lips, like other Cancers, are either occult, or open. An occult Cancer happens, when a Tumor appears in the Lip, attended with Hardness, Pain, and Heat. An open Cancer is, when that Tumor degenerates to an Ulcer; or when a cancerous, phagedenic, and fetid Ulcer is produced in the Lip without any previous Tumor; discharging an acrimonious Saniem, of a most disagreeable Smell, which not only corrodes the Lip, but frequently the whole Face in a most miserable manner, and is for the most part situated in the under Lip. See *Tab. XLI. Fig. 11. 2 a a.*

This, like other Cancers, is produced by a certain Acrimony of the Blood, and an Obstruction of the spongy Glands of the Lips. Hence a livid painful Tumor, or Wart, which by degrees degenerates into a malignant Ulcer, or open Cancer, quickly dividing the Lip, at first like a small Fissure, which gradually widens. See *Fig. 11.* This Disorder may likewise arise from an accidental Bite, Blow, Puncture, Fall, or from the Lip being affected with an acute Pain in the Teeth.

As little can be effected by Medicine in the Cure of this Disorder, recourse must be had to the Knife. The Incision should be made without Delay; otherwise the Distemper would spread, and produce large Tumors in the Neck and Fauces, so as even to strangle the Patient. But, when the Incision is timely made, there may be some Hopes of a Cure; especially, if the corrupted Blood be corrected by proper Medicines, a Task which is, indeed, difficult to be performed; upon which Account a Relapse generally ensues. This most pernicious Disease is more easily cured in young than in old People; and more easily when it proceeds from an external Cause, than from the peccant Quality of the Blood alone.

The Cure must be adapted to the different States of the Disease. 1. When a small Fissure appears on the upper Part of the Lip, like an Ulcuscle, attended with Heat and Pain; and is produced by the Coldness of the Air, and irrit with the Honey of Roses, and Peruvian Balsam, or Ointment of Lead or Diapompholygos, mixed with a little Mercury; and afterwards apply a Plaister of Lead, or a leaden Plate, rubbed with Quick-silver, to the Part, till the Disorder be entirely removed. In the mean time, a proper Diet, with Medicines for purifying the Blood, ought not to be neglected. I cured a young Woman of this Disorder, by the Application of the Juice of rotten Apples mixed with Mercurius Duleis, and the Use of proper internal Medicines. In *Ephemerid. Nat. Curios. Cent. 6. Obs. 43.* we read of Cancers of this kind being cured by Roman Vitriol, with or without the Oil of Olives. But when neither these nor the like Medicines have any Effect, and the Disorder increases, the readiest Remedy is, with the Knife, or Scissars, to cut out of the Lip all the indurated or cancerous Part; by two or three Incisions, observing rather to take away some of the sound Flesh, than to leave any of the Cancer behind. The Lips of the Wound may be united with two or three Pins, in the same manner as in the Hare-lip; or, if the Fissure be but small, the knotted Suture will be sufficient. This Method I successfully took with the Cancer represented in *Tab. XLI. Fig. 11.*

2. But if the Cancer has not degenerated into an Ulcer, and the Lips are infested with an hard troublesome Tumor near the Skin, some Physicians have advised to destroy the Tumor by corrosive Medicines, afterwards healing up the Wound. But though these Remedies may not be improper, when the Disorder proceeds from an external Cause, or when the Tumor is encysted; yet, as the Application of Corrosives in Cancers is generally dangerous, I would prefer, with the wisest Physicians, Incision with the Knife, or Scissars, which may be performed two ways, according to the Nature of the Tumor. If the Tumor is moveable, open the Skin with the Knife; and, after freeing the Tubercle from its Adhesions, by the Knife, or Scissars, the Wound may be healed in the usual Manner; but if the Tumor is fix'd, immovable, and firmly adheres to the Skin, all that Part of the Lip which contains it, must be cut away, and the Wound must be treated with the Suture, as before directed. Whatever Method of Cure be used, a regular Course of Life, and proper Regimen, must not only be used, but, likewise, internal Medicines, for removing the vitious Affections of the Blood, lessening its Quantity, and destroying its Acrimony; in order to prevent a Relapse, which often happens. Consult *Scaligerus, le Drun, and Garzago.*

Os LEONIS. See ANTIRRHINUM.

OSATIS. The same as ISATIS. Wood.

OSCHEALIS HERNIA. A Scrotal Rupture. See HERNIA.

OSCEDO. A Propensity to Oscitation. Sometimes it imports the same as APHTHE. *Castellus.*

OSCHEOCELE. A Scrotal Rupture. See HERNIA.

OSCHEON, *Ætior.* The Scrotum. The *Amphidium*, or *Os Uteri*, is, also, thus called by *Galen.*

OSCITATIO. Oscitation is performed by expanding, at one and the same time, almost all the Muscles capable of spontaneous Motion; by greatly extending the Lungs; by drawing in gradually and slowly a large Quantity of Air, and gradually and slowly breathing it out, after it has been retained for some time; and relaxed; and then restoring the Muscles to their natural State. Hence, the Effect of Oscitation, or Yawning, is to move, accelerate, and equally distribute, all the Humours through all the Vessels of the Body, and, consequently, to qualify the Muscles and Organs of Sensation for their various Functions. *Boerhaav. Institut.*

A great deal is insensibly discharged, when Nature endeavours to get rid of the retained perspirable Matter, by yawning, and stretching of the Limbs.

To these a Person is most inclined just after Sleep, because, a greater Quantity going off by the Pores of the Skin, than at other times, whensoever a Person wakes, the increased Contraction that then happens, closes a great deal of the perspirable Matter in the cutaneous Passages, which will continually give such Irritations, as excite Yawning and Stretching; and such Motions, by shaking the Membranes of the whole Body, and shifting the Contacts of their Fibres, and the inclosed Matter, by degrees throw it off.

Hence we see the Reason, why healthful strong People are most inclined to such Motions, because they perspire most in time of Sleep, and; therefore, have more of the perspirable Matter to lodge in the Pores, and greater Irritations thereunto.

I cannot here omit the vast Advantages of some little Exercises just after waking in the Morning. At that time, by the Quantity which is gone off during Sleep, the Body is much emptied and lessened, and all the Fibres invigorated with a fresh Stock of Spirits: That Firmness, therefore, and due Tension of the Solids, which are so necessary to a good State of Health, are then most easy to be obtained, because the Fibres at that time may most conveniently be drawn up, and hardened, by any such means as gently contracts them, and at the same time shakes off their grossest and most useless Moistures. Now that Exercise contracts the Solids nothing is more manifest; and, therefore, nothing can be of greater Service, than to use it at these times. But such is the best, as gives a gentle Motion to all the Parts, especially the Membranes, and cutaneous Fibres; and this can be effected no surer Way that I know of, than by the Flesh-brush, which ought to be used just before rising, and putting on any Cloaths; and if now-and-then the Person would leap about, and stretch his Arms with Weights in each Hand, it would wonderfully promote the good Ends which are to be procured hereby. By this means all that Matter which is sufficiently digested for Perspiration, would be drawn out, and the Solids have no manner of Weight left upon them but the necessary Fluids, by which they would be enabled to perform their Offices with Ease and Vigour; and as in a Clock or Watch new cleaned, the several Motions of the whole Machine would go on with great Regularity.

Yawning, and stretching the Limbs after Sleep, is a Sign the Body has perspired very well.

Stretching and yawning, after Sleep, is occasioned by a great Plenty of perfectly well-digested perspirable Matter, which is in Readiness to be thrown off.

The Body, by yawning and stretching, in the Space of half an Hour, perspires more than in three Hours at at any other time.

Such Extensions in general, or of any particular Part, proceed from some gentle and pleasing Irritations of the muscular Fibres: And that such Irritations, or gentle Vellications, are occasioned by a great Quantity of the digested perspirable Matter hanging about the Surface and extreme Parts of the Body, and not thoroughly discharged, is no difficult Matter to conceive. For it appearing, that, in time of Sleep, there is a continual Course and Tendency of a fine thoroughly-digested Matter towards the Circumference, which is discharged thro' the cutaneous Pores; and that, during Sleep, likewise, the Nerves are in a State of Relaxation; it cannot but happen, that when a Person awakes, both the Course of those Streams will be considerably diverted, and the Fibres something more contracted; and, consequently, the perspirable Matter just passing, detained at the Extremities of the excretory Ducts; which, as the Sleep is still shaken off, and the Solids are more and more drawn up, will be squeezed so close, as at last to give those Vellications to the small Fibres composing those Glandules where they stick; and insomuch that sometimes the Muscles themselves are drawn into Consent, and provoked to those Tensions and Conclusions, by which they excite the Stretchings and Yawnings, to which at times we find ourselves inclined. And these Inclinations remain, until all that Matter is thoroughly shook off; which, by this means, is loosened from its small Entanglement,

ment, and dispersed as Water is shaken off a wet Sheet; and this is the Reason why Perspiration is so large at those times.
Sanctorius.

OSEUS, in *Paracelsus*, is the *Scriptum*.

OSMUNDA.

The Characters are;

It produces no Flowers, but bears its Fruit in Clusters.

Boerhaave mentions two Species of *Osmunda*; which are,

1. *Osmunda vulgaris*; &c palustris. *Tourn. Inst.* 547. *Boerb. Ind. A.* 27. *Filix florida*, *Osmunda regalis*. *Offic. Filix florida* sive *Osmunda regalis*. *Ger. Emac.* 1131. *Raii Hist.* 1. 151. *Filix ramosa non dentata, florida*. *C. B. P.* 357. *Filix floribus insignis*. *J. B.* 3. 736. *Osmunda regalis*. *Ger.* 971. *Osmunda regalis sive Filix florida*. *Park.* 1038. OSMUND ROYAL.

This is the biggest of our *English* Ferns, sending forth several large branched Leaves, whose long broad Pinnulæ are not at all indented about the Edges like the other Ferns, they are of a light yellow Colour; among these arise several Stalks, which have the like Leaves growing on them on their lower Parts, but towards the Tops they are full of round, slender, seed-bearing, curled Heads, an Inch or more long when ripe, of a brown Colour, covered with small dusty Seed. These appear in *June*, and ripen in *July*. The Root consists of a great Number of small, long, round Parts, matted together, blackish on the Outside, and green within, covered over with small Fibres. It grows in marshy, boggy Places, particularly in a Bog, at the Backside of *Woolwich*, near the Warren.

The Roots are the only Part used, are accounted good for Obstructions of the Liver and Spleen, and particularly esteemed for the Rickets in Children, as, also, for Ruptures, Wounds and Bruises. *Miller's Bot. Off.*

Lobelius informs us, that the Root of this Plant is highly beneficial in the Cure of Hernias and Ulcers; that it is serviceable in Colics, and Disorders of the Spleen; and that it is somewhat hot, acrid, and of an agreeable Smell.

The middle and whitish Part of the Root is thought highly efficacious not only in recent Wounds, but, also, where the Patients are stab'd, have any of their Vessels ruptured, or have fallen from Eminences, when boiled or bruised, and drank with some Liquor.

The Root of this Plant is thought an effectual Cure for the Rickets, without any other Medicine. In the Rickets, says Doctor *Bowles*, I generally use, with Success, Conserve of Asparagus, or of the tender Buds of Osmund-royal, and the male Fern, or those of Milk-waste, and Hart's-tongue. *Raii Hist. Plant.*

2. *Osmunda*; foliis lunatis. *Tourn. Inst.* 547. *Boerb. Ind. A.* 27. *Lunaria*. *Offic. Lunaria minor*. *Ger.* 328. *Emac.* 405. *Park.* 507. *Raii Hist.* 1. 127. *Synop.* 44. *Lunaria racemosa minor, vel vulgaris*. *C. B. P.* 354. *Lunaria Botrytis*. *J. B.* 3. 709. MOON-WORT.

This is a small low Plant, seldom growing to be above three or four Inches high, having only one Leaf, which is pinnated or cut into several half-round Sections, standing about the Middle of the Stalk, which has, towards the Top, several Bunches of small globular Heads, in which is contained its dusty Seed. It grows in dry hilly Pastures, as in the Warren by *Woolwich* in *Kent*, being in its Perfection in *May*.

Some have a great Opinion of this Plant, and esteem it good for all Sorts of Wounds. The People in *Wales* make an Ointment of it, which, apply'd to the Reins, they reckon a very sovereign Remedy for the Bloody Flux. It is but little used in the Shops. *Miller's Bot. Off.*

According to Doctor *Eales*, it stops the Menstrues, and, according to *Bohart*, puts a Stop to the Fluor albus. *Dale.*

OSOROR. Opium.

OSPRION, ὀσπριον. A Bean; and all Sort of Puls.

OSSA Parallela. An universal Medicine in the Gout. *Rulandus.*

OSSIFICATION. Ossification; that is, the Formation of a Bone. It is either natural, or morbid, as when any Part, which ought to be soft and flexible, becomes bony.

However solid and compact adult Bones are, yet they were once Cartilages, Membranes, and even a mere Jelly. This needs no further Proof, than repeated Observations of Embryos, when dissected: And how much more tender must the Bones be before that time, when neither Knife or Eye is capable to discover the least Rudiments of them? By degrees they become more solid, then assume the Nature of Gristles, and at last ossify: Which is brought about partly by the Bones being, more than any other Parts, exposed to the strong Pressure of the great Weights they support, to the violent Contraction of the Muscles fixed to them, and to the Force of the Parts they contain; which endeavour to make way for their own further Growth. By all this pressing Force, the solid Fibres and Vessels of the Bones are thrust closer, and such Particles of the Fluids, conveyed in these Vessels, as are fit to be united to the Fibres, are sooner and more firmly incorporated with them; whilst the remaining Fluids are forcibly driven out, by the Veins, to be mixed with the Mass of Blood. In consequence of which, we observe, that gradually, as the Bones harden, the proportional Number and Largeness of their Vessels decrease. From

which, again, we can understand one Reason for the Bones of young Creatures sooner uniting after a Fracture, than those of old. From this, also, we can deduce the Cause of Horses, Bulls, and other young Creatures of a large Breed, decaying in their Size, when put too soon to hard Labour.

That the Ossifying of Bones depends much on such a Pressure, seems to be evinced from the frequent Examples we meet with of other Parts turning bony, when long exposed to the compressing Force of the surrounding Parts; or when they are subjected to the like Circumstances by their own frequent and violent Contraction; witness the Bones found so frequently near the Bone of the Heart in some old Men, and in several other Creatures: And the muscular Substance of the Heart has been ossified in such Instances of which *Chefelden* and *Garengot* give us; and the Arteries of old Men often become bony. The Cartilages of the Larynx are generally ossified in Adults. In Beasts of Burden, the Cartilages between the Vertebrae of the Back and Loins very often change into complete Bones, and, being intimately united with the Vertebrae, the Whole appears one continued Bone: Nor is the Periosteum exempted from such an Induration; for *Peyer* tells us, he divided this Membrane into several bony Plates.

To confirm this Argument still further, we may observe, that Bones begin their Ossification at the Places, where they are most expos'd to these Causes, viz. in the cylindrical Bones from a middle Ring; and, in the broad ones, at or near their Centre, from one or more distinct Points: The Reason of which is, that these Parts are contiguous to the Bellies of the Muscles annexed to the Bones, where the Swelling of these moving Powers are the greatest. What the Effects of this may be, let any judge, who view some of the Bones, as the Scapula and Ilium, which are on each Side covered with Muscles; how compact and thin they are in Adults, where the Bellies of the Muscles were lodged, whereas in Children they are thicker. But this being the middle Part of these Bones, where the greatest Number of Fibres is, this particular Place would have been much thicker in Adults, had not this forcible Cause been applied, which has not had such Effects in Children, whose Muscles have not been much exercised. Besides, if we allow, that all the Parts of a Bone are equally increased by the constant Supply of new Particles, each Fibre, and every Particle of a Fibre, will endeavour to make way for its own Growth, by pushing the one next to it; and consequently by far the greatest Pressure will be on the Middle, whereby the Particles there will be made most firm: And here it is, that Bones begin their Ossification. Lastly, the Pulsation of the medullary Arteries, which enter the Bones near to this middle Part, may, as Authors have alleged, contribute, perhaps, somewhat to this Induration.

From the Effects of Pressure only it is, that we can account for the Bones of old People having their Sides set much thinner; yet more dense and solid, while the Cavities are so much larger than in young Bones; and for the Prints of Muscles, Vessels, &c. being so much stronger marked on the Surfaces of Bones, according to their Ages, if they belong to People of near the same Condition of Life, or if they belong to those of the same Age, according to the Labour or Exercise they have had; the Bones of old People, and of those accustomed to Labour, being more strongly impressed than those of young Folks, and of such who have lived in Indolence and Inactivity.

It is, also, probable, that Ossification depends on the Vessels of the Bones being so disposed, and of such Diameters, as to separate a Liquor, which may easily, when deprived of its thinner Parts, turn into a bony Substance; as it seems plain from the Observation of the callous Matter separated after Fractures and Ulcers, where Part of the Bone is taken out; for, in these Cases, this Liquor hardens, and often cements the two Extremities of a Bone, though at a good Distance from each other; as I have seen happen in two or three Cases, and of which there are Abundance of very remarkable Instances handed down by Authors. One, scarce inferior to any of them, was communicated to me by Mr. *Laing*, Surgeon at *Jedburgh*, and is now published, of a Child, whose Tibia he took out, leaving little more than the Epiphyses at each Extremity; all that he took away of the Bone was supplied by a bony Substance, on which his Patient walks easily and firmly.

Perhaps both the Causes of Ossification above-mentioned may be assisted by the Nature of the Climate People live in, and the Food they use: Whence, in hot Countries, the Inhabitants sooner come to their Height of Stature, than in the Northerly cold Regions: And thence seems to have arisen the common Practice among the Ladies, of making Puppies drink Brandy, or Spirit of Wine, and of bathing them in these Liquors, to prevent their growing big. And it has been observed, that much Use of such Spirits has occasioned Parts naturally soft to petresfy in some, and to ossify in other People of no great Age; witness the Causes related by *Littre* and *Geoffroy*.

Whoever is desirous to know, in what Time and Order each Bone, and its several Parts, begin to assume a bony Nature, let him consult *Kerckringius*, who gives us the Delineations of Abortions from three Days after Conception, and traces the Ossification of the Bones from three Weeks and a Month, till the

Time of the Birth : To whom should be added *Caterus* and *Eys-jenius*. A pretty complete Account of this Subject might also be collected out of *Ray's* Works, where some of the Mistakes committed by former Authors are corrected, and several more Particulars, to make the Account of the Osteogonia more accurate, have been since added by *Nesbitt* and *Albinus*. *Monro's Osteology*.

OSSIFRAGA is the same as **OSTEOCOLLA**.

OSSIFRAGUS. The Ossifrage. The Stomach of this Bird, taken internally, is reported to break the Stone. *Dioscorides*, L. 2. C. 58.

OSSISANA. A sandy Stone, said to be found near *Spire* and *Darmstadt*, celebrated for conglutinating fractur'd Bones.

OSTAGRA, from *ὄστρον*, a Bone; and *ἀγρεα*, a thing laid hold of. A Forceps, to take out Bones with.

OSTEOCOLLA. *Offic. Schrod.* 355. *Dougl. Ind.* 66. *Worm.* 53. *Charlt. Foss.* 22. *Osteocollus*. *Aldrov. Mus. Metall.* 626. *Schw.* 387. *Osteocollus crustaceus*. *Gesn. de Rar. Foss.* 30. *Offi-fragus Lapis*. *Boet.* 416. **THE BONE-BINDER**.

This is a Substance of a seemingly middle Nature between Earth and Stone, white, friable, crustaceous, fabulous; in Figure resembling a Bone, and growing out of sandy Places, and other stony Soils: It is highly commended for the speedy Conglutination of Bones, because it quickly affords Matter for a proper Callus; and consequently hastens the Conglutination. *Schrod.* It also stops the Fluor albus, and removes intermittent Fevers. But *Hildanus*, in *Cent.* 3. *Obs.* 90. justly cautions us to be very circumspect in exhibiting it to young Persons furnished with a laudable Habit of Body, because it generally leaves an unseemly Scar; for which Reason he thinks it is only to be used in old and extenuated Patients, whose native Heat is weak and languid. According to *Wormius*, they in some Shops sell for the Bone-binder, a Species of the *Galactites*, which is white, porous, smooth, soft, easily dissoluble into a Liquor, and of a saline Taste. *Dale*.

I find, that *Osteocolla* grows in a sandy, yet not gravelly Soil, and not at all (that I know) in any rich or clayey Ground. It shoots down two Mens Depth under-ground; the Branches most commonly growing strait up; yet, sometimes, also, they spread sideways. The Branches are some of them thicker, some slenderer; and the farther they are distant from the common Stem, the thinner they are; the thickest Stalk usually equalling the Thickness of an ordinary Arm or Leg, and the Branches the Thickness of a little Finger.

Upon the Sand, which is here [at *Frankfort* on the *Oder*] every-where yellowish, there appears a whitish fatty Sand, which, if it be dug into, hath under it a dark, fatty, and (how hot and dry soever the Sand be) a somewhat moist and putrid Matter, like rotten Wood; which Matter spreads itself here-and-there in the Earth, just as the *Osteocolla* itself does, and is called, by those whom I have employed to look for it, the Flower of this Substance. The *Osteocolla*, being thus found, is altogether soft, yet rather friable than ductile: Wherefore, if one has the Curiosity of getting out of the Ground a whole Piece of it with its Branches, he must very carefully remove the Sand every Way from it, and then let it be so awhile; its Quality being, that, remaining exposed to the Sun for half an Hour, or somewhat longer, it grows to that Hardness, as it is found in the Shops.

It seems to be a kind of Marle, or to have great Affinity with it, of which we here have, also, great Store, yet not near those Places, where I have found *Osteocolla*. It, also, requires much Time to come to Maturity; which appears from hence, that, in the very same Place where I digged some of it last Year; I this Year found more; yet with this Difference, that the first grew hard, after the Manner before described, but the last remains still soft and friable, though now in the fifth Month.

The Cause of its being divided into so many Branches, I conjecture to be from the Roots, which spread themselves here-and-there in the Earth, so that the Matter gathers and settles itself about them; and afterwards, according to the Division of the Roots, acquires a plantal Form and Appearance. Whence it seems also to proceed, that through the Midst of the *Osteocolla* there always passes a dark Line, which is thought to be a Piece of the Root. And it often happens, that the Stroke loses itself by little and little, and the *Osteocolla* in the Middle grows clear; which comes to pass, when the Root, by the Corruption begun in the *Osteocolla*, is reduced to Powder. Yet have I found a Place hereabout, where the *Osteocolla* was not hollow at all; but there I observed, that, instead of setting about a big Root, it had gathered itself about many small Fibres: Whence, also, this Sort had acquired Pores through its whole Length, but no Cavity like the other. *Philosophical Transactions*.

OSTEOCOPOS, *ὀστεοκόπος*, from *ὄστρον*, a Bone, and *κόπος*, Labour, or Uneasiness. That Sort of Pain and Uneasiness, excited by too much Motion, which is called a Weariness of the Bones.

OSTEOGENICA. Medicines which promote the Generation of a Callus.

OSTIARIUS. The PYLORUS.

OSTIOLOGIA. Osteology; that is, the Doctrine relative

to the Bones; or a Description of the Bones.

OSTRACITES. *Offic. Ostracites*. *Boet. de Lap.* 393. *Laer. de Lap.* 124. *Gesn. de Lap.* 84. *Plot. Hist. Oxon.* 105. *Monton. Northampt.* 189. *Ostracites maximus rugosus et asper*. *List. Hist. A. A.* 236. *An. n.* 37. *Ejuld. Hist. Conch. App. Lib.* 3. *Ostracites maximus conglobator admodum crassus in argillaceis delitescens*. *Luid. Lithogr.* 26. *N.* 471. *Ostracites rugosus et undatus mediocris subcinereus subrotundus*. *Lang. Hist. Lap. Fig.* 151. *Tab.* 47. 2. *Offrea Labris non crenatis*. *Woodw. Art.* 2. 43. **HOBGOBLINS CLAW**.

Women use the *Ostracites* instead of a Pumice-stone, to take off Hairs. A Dram of it, taken in Wine, stops the Course of the Menstrues; and two Drams thereof, exhibited four Days after the menstrual Purgation, prevent Conception. Applied outwardly, it is effectual against spreading Ulcers, and Inflammations of the Breasts. *Dioscorides*, *Lib.* 5. *Cap.* 165. Taken with Chamomile-flowers, it is esteemed an excellent Lithontriptic. *Dale*.

OSTRITES. A Name for the **OSTEOCOLLA**.

OSTRITIUM, or **OSTRUTIUM**. Names for the *Impe-ratoria*, Masterwort.

OSTRYA. The same as **OSTRYS**.

OSTRYS. *Offic. Ostrys sive Ostria*. *Park. Theat.* 1406. *Ostrya ulmo similis, fructu in umbilicis fo iacis*. *C. B. P.* 427. *Raii Hist.* 2. 1428. *Synop.* 3. 451. *Tragus sepium vulgo Ostrys Theophrasti*. *J. B.* 2. 146. *Carpinus*. *Tourn. Inst.* 582. *Boerb. Ind.* A. 2. 176. *Betulus sive Carpinus*. *Ger.* 1296. *Emac.* 1479. **THE HORNBEAN**.

It grows every-where in Woods and Hedges in *England*, *France*, and *Germany*. The Wood is white, hard, and firm: Whence it is much used by Wheelwrights. Being wounded in the Spring, it discharges a Tear, after the Manner of the Birch; but I find no medicinal Virtues ascribed to this, or any other Part of the Plant. *Ray*, *Dale*.

OSYRIS. *Offic. Osyris frutescens baccifera*. *C. B. P.* 212. *Cassia Poetica Lobelii*. *Ger.* 1110. *Emac.* 1295. *Raii Hist.* 2. 1489. *Cassia Poetica Monspelienfium*. *Park. Theat.* 452. *Cassia lignea Monspelienfium*. *L. B.* 1. 458. *Cassia Poetica Monspelienfium, an Theophrasti?* *Tourn. Inst.* 664. *Cassia Latinorum*. *Alpin. Exot.* 41. **POETS ROSEMARY**.

The whole Shrub has something of an astringent Quality, the Root is hard and woody and covered with a redish, thick Bark, which is very astringent. It grows in *Italy*, and about *Montpelier* in *France*, where *Ray* observed it in great Plenty; and flowers in *January*, and sometimes in *April* and *May*; and the Fruit is ripe in *October*, or sooner.

The whole Plant being astringent, it is likely to be of Efficacy in Fluxes of the Belly, and other Disorders of that Kind. *Ray*. Some Shops, as *J. Bauhine* says, used it instead of the Cassia of the Antients; but it must have contrary Effects, as appears from its astringent Taste, and be more proper for Fluxes of the Intestines. *Dale*.

OTALGIA, *ὀταλγία*, from *ὄστρον*, an Ear, and *ἀλγος*, Pain. A Pain in the Ear.

OTENCHYTES, *ὀτεγχύτης*, from *ὄστρον*, an Ear, and *ἐγχύω*, to pour into. A Syringe for the Ears.

OTHANI. Mercury of the Philosophers.

OTHONNA. See **AFRICANUS FLOS**.

OTIS. The Bustard, a large Bird found in *England*, and other Countries. The Fat is said to be anodyne, and resolvent. The Dung is resolvent, and a good Application for the Itch.

OTITES. A Name for the Finger next to the little Fingers, called, also, *Digitus Auricularis*.

OVAR' A. The Ovaries. See **GENERATIO**.

OVATUS, or **OVIFORMIS HUMOR**. The Aqueous Humour of the Eye.

OVIDUCTUS. The **TUBÆ FALLOPIANÆ**.

OVIS. *Offic. Schrod.* 5. 303. *Schw. de Quad.* 57. *Jonf. de Quad.* 38. *Gesn. de Quad.* 770. *Aldrov. de Quad.* Bisul 370. *Ovis domestica*. *Raii Synop.* A. 73. *Mas Aries dicitur, Fetus Agnus*. **THE SHEEP**. See **ALIMENTA**.

The Parts used in Medicine are the Brain, Gall, the Oesypus, the raw or unwashed Wool (*Lana succida*) the Fat, Lungs, Cawl, Dung, Urine, Bladder, Head, Feet, incinerated Bones, and Renner.

The Brain of a Ram is said to be effectual in preventing immoderate Sleep, in epidemic Diseases, and to facilitate Dentition. The Gall loosens the Belly; applied outwardly, cures a Carcinoma; and is of Service in a Purulency of the Ears: The Gall of a Lamb is prescribed for the Epilepsy. The Oesypus is emollient, resolvent, heating, anodyne, and proper in Luxations, Contusions, and the like. The Wool of a Lamb is good to mitigate and mollify Tumors in the Neck. The raw Wool of a Sheep is heating, emollient, lenient, and has the same Virtues as the Oesypus. The Fat, given in Red-wine, stops Hæmorrhages, and cures a Diarrhœa, Dysentery, and Gripes. The Lungs, applied to the Head, mitigate the Pains, and immoderate Heat thereof, and compose the disordered and tumultuous Spirits; whence it is of principal Service in Phrenies, Want of Sleep, and the like Disorders. The Cawl, applied hot, cures the Pain of the

the Colic. The Dung is refrigerating, drying, aperitive, and discurient: Whence it is of very great Efficacy in the Jaundice, and other Distempers; and, used externally, cures a Tumor of the Spleen, a Thymus, Corns, Warts, and other cutaneous Tumors; and is, also, very comfortable in Ambustions. The Urine, drank, expels the Water in an Anasarca. The Bladder, burnt, and exhibited, relieves those who cannot retain their Urine. The Head and Feet of a Wether, well boiled in running Water, are serviceable in Atrophizæ and Contractions. The Bones of a Lamb, incinerated, promote the Consolidation of Wounds, even of those which are most difficult to be consolidated. The Rennet is good against Poisons; to curdle Milk; and for venomous Bites. Dale from Schröder.

You are to chuse the Flesh, and such other Parts of a Sheep as are young, pretty fat, tender, well-fed, and bred in a pure and dry Air.

Well-fed Mutton yields good Nourishment, and is easy of Digestion.

When it is old, it is dry, hard, and not easily digested.

Mutton contains much Oil, and volatile Salt, in all the Parts of it.

Rams-flesh is seldom eat, because of its unpleasant Smell, and rank Taste, almost like that of an He-goat. The Flesh of an Ewe is a little more used; yet not much in Esteem, because it is insipid, viscous, and subject to produce gross Humours, and bad Juice.

As for what is properly called *Mutton*, which is the Flesh of a Wether, it is much esteemed, because it is tender, well-tasted, very mollifying, full of oily balsamic Parts, and volatile Salts, proper to produce the good Effects we attribute to it. Lemery on Foods.

As the Sheep lives on Vegetables and Water only, and the habitual Exercise of this Animal is very small; in consequence of these, the Juices are not much inclined to an alkaline Putrefaction, especially if it is suffered to bleed sufficiently, and not killed whilst heated by Exercise.

OVUM. See ALBUMEN.

Eggs differ very much, according to the Birds that lay them; according to their Colour, Form, Bigness, Age, and the different Way of Dressing them: Those most used in Food are Hens Eggs. You ought to chuse those that are new-laid. Some Authors, also, require, that they should be very white and long.

Eggs are nourishing and good Food; they increase the seminal Juices, qualify the sharp Humours of the Breast, are good for phthical People, easily digest, ease the Piles, and are looked upon to be good to make the Voice loud and fine.

When Eggs are too old, they heat too much, produce bad Juice, and are more especially noxious to those who are of an hot and bilious Constitution: They contain much Oil and Salt, and agree at all times with any Age and Constitution; provided they are endued with the good Qualities before-mentioned.

REMARKS.

There is no Food more in Use than Eggs: They are good in Sickness and Health, and make a Part of the Composition of several medicinal Remedies. The various Ways of dressing them make them more or less wholesome. In general, if you would have Eggs produce good Effects, they should be moderately boiled; for, when they are done too little, they continue slimy, and, consequently, hard of Digestion; and, when they are done too much, they are hard and heavy in the Stomach; because the Heat hath dissipated their more volatile and exalted Principles, leaving none but the grosser Parts behind, which being close united together, make the Eggs compact and hard; and, therefore, Eggs ought neither to be too slimy, nor too hard, but of a soft and moist Substance.

The Egg consists of two Parts, the White and the Yolk; and these, being taken separately, have different Virtues: The White is full of oily and balsamic Principles, that make it moist, cooling, nourishing, and fit to qualify the Violence of the Juices. The Yolk abounds more in volatile and exalted Principles, by the Help of which it strengthens the solid Parts, increases the Spirits, and keeps the Humours in a just Fluidity. These two Parts of the Egg, though differing in Virtue, fail not to concur together, in producing the good Effects attributed to the Egg.

The freshest Eggs are the best, and most healthful, because they abound more in volatile and exalted Principles; besides, their oily and saline Parts being in a more perfect Union one with another, they yield a more easy Food: Old Eggs, on the contrary, have undergone a Sort of Effervescence, which not only dissipates the more volatile Parts, but, also, destroys the Union between this oily and saline Principle. Therefore such Eggs are very heating, have often an unpleasant Taste and Smell, and produce bad Juice.

Aquapendente relates several Ways how to know whether Eggs are new-laid, or not: He would have them held to a Candle,

and then see whether the Humours contained therein are clear, thin, and transparent; for, if they be otherwise, it is a Sign the Eggs are old; because the Effervescence has embroiled and confounded the insensible Parts of these Humours, and made them dark.

Lastly, Hold an Egg to the Fire, and if a little watry Moisture sticks to it, it is new; but if not, it is old: Because a new-laid Egg is moister than the old; and its Humours, being thinner, work easier through the Pores of the Shell.

Galen, in his third Book of the Nature of Food, assures us, that the best and wholesomest Eggs are those of the Hen and Pheasant; but he disallows of the Use of those of the Goose and Ostrich: But other Authors much extol them.

Hippocrates, in his third Book of Diseases, says, that the White of Eggs, well beaten in Spring-water, make a Drink that is very moistening, cooling, good for those that are sick of Fevers, and for opening the Body. Some assert, that Peacocks Eggs are good for the running Gout; and that those of the Raven are an excellent Remedy for the Bloody Flux.

Aristotle, in Lib. 6. Hist. An. Cap. 2. says, that long Eggs produce the Female, and round the Male Kind. *Scaliger*, in Comm. seems to be of the same Opinion. *Pliny* is of the opposite Side; for he pretends, that the long Eggs are for the Males, and the round for the Females: *Columella* and *Avicenna* agree with him. But these Opinions are supported by no Foundation, as the Authors give neither good Reasons, nor Experiments, to prove their respective Assertions, and it is very likely, that both the round and the long Eggs may indifferently produce Male and Female. Lemery, on Foods.

As a Knowledge of the Nature of Aliments, as well as of Medicines, is of great Importance to Health; since the former contribute very much, not only to the Preservation and Restitution of a sound State, but, also, to the Generation of various Disorders; so we shall investigate the Nature, and make up various Experiments, relating to the Eggs of Animals, especially those of Hens, which are justly accounted the most salutary, and best adapted for nourishing and recruiting the human Constitution.

First, It is, therefore, to be observed, that in Bulk and Weight Hens Eggs greatly differ from each other; but an Egg of an ordinary Size weighs generally about two Ounces, whilst the Shell is, for the most part, about one Dram and a few Grains; the Yolk, about half an Ounce; and the White, an Ounce and an half, that is, by one Third heavier than the Yolk.

Secondly, If a new-laid Egg, weighing two Ounces, is boiled to Hardness, in Water, its Weight is diminished one Dram and an half; an infallible Proof, that, by the Boiling, some Portion of that most subtle Principle, which is the Cause of its Fluidity, is carried off through the Pores of the Shell.

Thirdly, A new-laid Egg, when boiled, does not suddenly become hard, but a Portion of the White appears fluid, like Milk; a Proof, that an highly subtle and fluid Matter is contained in an Egg, and in Process of Time transpires; which is, also, evinced from this; that old Eggs not only become dry and collapsed, so as to leave a certain Cavity within, but, also, easily become rotten, especially in the Summer-time; when, in consequence of the great Heat, this subtle Matter is most copiously carried off by Transpiration: Hence we may lay it down as a Rule, That new-laid Eggs, especially in the Summer-time, are most commodiously kept fresh in a cold Place, or rather in cold Water, impregnated with Salt.

Fourthly, If an unboiled Egg is laid immediately upon live Coals, which are not very hot, a Liquor is observed to sweat through its Pores; for the Heat so increases the Elasticity of the Fluid in the Egg, as forcibly to open the Pores, and protrude the Liquor: Hence we learn, that the Shell of an Egg is a very perspirable Substance.

Fifthly, The White of an Egg, by a very gentle Fire or Warmth, is forthwith resolved, and melted down; but the more the Heat is increased, the more it is inspissated. For this Reason, if we examine incubated Eggs, we find the White highly attenuated and liquid, but never thick. And these so different Effects are to be ascribed to the Augmentation or Diminution of the Degrees of Heat; for the White of an Egg becomes inspissated by an Heat surpassing that of a sound Person: Hence we may justly infer, that poached Eggs are very improperly exhibited in feverish Heats: Hence, also, we learn, that a moderate Heat is more efficacious in softening Tumors, than that intense Heat generally produced by the Application of Cataplasms, and other Topics; for intense Heat, whether external or internal, proves hurtful to the human Fluids, by disposing them to Thickness.

Sixthly, If in a Sand-heat, duly hot, we distil the White of an Egg, inspissated by Boiling, there is first yielded a large Quantity of Phlegm, which, being void of Taste and Smell, is neither acid, nor alkaline. Afterwards, upon augmenting the Fire, there is yielded a Spirit of a yellow Colour, which, by Rectification, yields a Water, a volatile Salt, and, at last, a thin, ferid, and heavy Oil. In the Retort there remains a spongy and insipid Earth, deprived of all fixed and alkaline Salt, and which, in an open Fire, becomes light, spongy, and insipid: Hence we learn,

what

what various Effects the different Degrees of Fire may produce in the same Process, and how great Necessity there is for a cautious Application of these Degrees of Fire.

Seventhly, The White of an Egg, upon an Admixture of highly rectified Spirit of Wine, is strongly coagulated, which, also, happens upon an Admixture of the Oil of Vitriol, or any other Acid: Since, therefore, the nutritious Juices of Animals approach very much to the Nature of the White of an Egg, which affords the first Nourishment to the Chicken, hence it is obvious, how prejudicial Brandy must be to the habitual Drinkers of it; for nothing is more injurious, either to the Life or Health of Animals, than that which coagulates the vital Humours, and destroys their due Fluidity, since they ought continually to be carried through numberless Vessels: For, by this means, various Diseases are generated, and the Viscera disposed to Obstructions, Indurations, and a Scirrhus: Hence, also, terrible chronic Disorders, such as a Phthisis, a Dropsy, a Cachexy, polypose and calculous Concretions, not only arise, but are increased. It is, also, certain from Practice, that spirituous Substances, such as camphorated Spirit of Wine, are not always beneficial in dissolving Tumors; and removing Pains of the Joints; since it is certain from Experience, that, in arthritic Patients, staphaceous Concretions are easily formed by the frequent Application of spirituous Substances. *Hoffman, Observat. Phys. Chym. Lib. 2. Obs. 20.*

OXALIS. The same as *ACETOSA*; which see.

OXALME. See *ACETUM*.

OXELÆUM, ὀξέλαιον. A Composition of Vinegar, and Oil.

OXERUM EMPLASTRUM. A Name for a Plaister, mentioned by *Aetius, Tetrabib. 2. Sermon. 4. Cap. 53.*

OXINES, ὀξίμν. Wine which is sour, but not quite converted into Vinegar.

OXOS, ὄξος. Vinegar.

OXYA. The *Fagus*. Beech-tree.

OXYACANTHA. See *BERBERIS*.

OXYBAPHON, ὀξύβαρον. A Measure. The same as *ACETABULUM*; which see.

OXYCEDRUS. A Name for the *Cedrus*; *folio Cypressi*; *major*; *fructu flavescente*.

OXYCOCCUS. *Offic. Oxycoccus Tournesfortii.* *Rupp. Flor. Jen. 74. Oxycoccus sive Vaccinia palustris. J. B. 1. 525. Raii Synop. 3. 267. Tourn. Inst. 565. Vaccinia palustris. Ger. 1367. Emac. 1419. Raii Hist. 1. 685. Vaccinium palustre. Park. Theat. 1229. Vitis Idæa palustris. C. B. P. 471. MOOR-BERRIES.*

The Plant grows in a marshy and putrid Soil, and flowers in June. The Fruit, which is useful in Medicine, stops a Looseness and Vomiting, quenches Thirst, strengthens the Stomach, mitigates the Heat in Fevers, and resists the Pestilence. *Dale.*

OXYCRATUM, ὀξύκρατον. Oxycrate; that is, Vinegar and Water.

OXYCROCEUM EMPLASTRUM. The Name of a Plaister, described under the Article *CROCUS*.

OXYDORCIA. The Name of a *Collyrium*. See *DACHERON*.

OXYGALA, ὀξύγαλα. Sour Milk.

OXYGARUM, ὀξύγαρον. A Composition of *Garum*, and Vinegar.

OXYGLYCU, ὀξύγλυκυ. This is a Species of Drink prepared of the sweetest Honey-combs, macerated and boil'd. The Combs, from which all the Honey has been express'd, are to be put into a Pot with pure Water, and boil'd, till they seem to have deposited all their contain'd Honey in the Water. This Liquor is kept, and, when diluted with cold Water, is to be drank in the Summer-time, in order to remove Thirst. *Galen, in Comment. 2. de Fracturis, and in Comment. 3. informs us, that the ὀξύγλυκός is the same with the ἀπίμελι; and that it is, by some, made with Honey and Vinegar; and, by others, with Honey-combs and Vinegar. The ἀπίμελι, then, is an acid Liquor, of an inciding and refrigerating Quality.*

OXYLAPATHUM. A Name for the *Lapathum*; *folio, acuto plano*.

OXYLIPES, ὀξύλιπός. An Epithet for Bread, which has a Portion of Vinegar mix'd with it.

OXYMEL, ὀξύμελι, from ὄξος, Vinegar, and μέλι, Honey. A Composition of Vinegar, and Honey. We have already given the Methods of preparing the several Sorts of Oxymel, under the Article *ACETUM*; and, under the Article *ALCALI*, we have spe-

cify'd the Medicinal Virtues of *Oxymel*. See, therefore, *ACETUM*, and *ALCALI*.

OXYMYRRHINE. A Name for the *Ruscus BRUSCUS*. See *BRUSCUS*.

OXYNITRUM. The Name of a Plaister, described by *Aetius, Tetrabib. 4. Sermon. 3. C. 17.*

OXYPETRA. A Sort of Stone, or Earth, of a yellowish white Colour, and somewhat acid, found in the Territories of *Rome*. It is recommended for mitigating the excessive Heat of Fevers, and quenching Thirst. For this Purpose it is infused in Water, and the Water is drank.

OXYPHLEGMASIA. An acute Inflammation.

OXYPHOENICA. An Epithet for Tamarinds.

OXYPHYLLON. A Name for the *Cnicus*, according to *Oribasius, Medic. Collect. L. 12.* But he does not seem to mean the Plant we now call by this Name.

OXYPORON, ὀξύπορον, from ὀξύς, quick, and πορεύω, to pass through. A Name for several Medicines, thus call'd, because they are extremely penetrating.

OXYREGMIA, ὀξύρεγμία, from ὀξύς, acid, and ῥεγνω, to break Wind. An acid Eructation.

OXYRRHODINON. A Composition of Vinegar, and Oil of Roses.

OXYS, ὀξύς. Acute, or acid.

OXYS.

The Characters are;

The Calyx is quinquefid, monophyllous, tubulous, and Bell-shaped; the Leaves are Heart-shaped, like those of the Trefoil, and acid. The Flower is monopetalous, pentapetaloid, and Bell-shaped; containing five inferior, and five superior Stamina, of which the latter are almost concreted to one another, at their lower Part. The Ovary, which is seated in the Bottom of the Calyx, shoots forth five Tubes, and becomes a membranaceous, oblong, quinquecapsular Fruit, furnished with five Valves, which burst asunder from the Base upwards towards the Area, and full of Seeds, involved in an elastic Calyptra, by whose Force they are discharged with Violence.

Boerhaave mentions six Species of *Oxys*; which are,

1. *Oxys*; flore albo. See *ACETOSELLA*.

2. *Oxys*; flore purpurascens. *T. 88.*

3. *Oxys*; lutea. *J. B. 2. 388. T. 88.*

4. *Oxys*; lutea; Americana; erectior. *T. 88.*

5. *Oxys*; bulbosa; Æthiopica; minor; folio cordato; flore ex albo purpurascens. *H. A. 1. 43.*

6. *Oxys*; bulbosa; Africana; rotundifolia; caulibus & floribus purpureis, amplis. *H. A. 1. 41. Boerb. Ind. alt. Plant.*

OXYSACCHARUM. A Composition of Vinegar and Sugar.

OXYSAL DIAPHORETICUM ANGELI SALÆ. This Medicine is prepared in the following Manner.

Take of the best Salt of *Carduus Benedictus*, in Grains; put it in a Pot, and gradually pour upon it Spirit of strong Wine-vinegar, or Spirit of Sugar, prepared by a gentle Heat of a *Balneum Mariæ*, without any empyreumatic Taste or Smell, till the Salt is not only dissolved, and the Vapour, produced by their Conflict, stop'd, but a grateful, and somewhat acid, Taste is acquired by the Mixture; the Humidity of which is to be consumed by a gentle Evaporation. After this, when the Salt is again dissolved in Water, and left in Digestion in *Balneo Mariæ*, for eight Days, a Liquor, of a beautiful and pellucid Colour, is produced, which, when pour'd off clear, into a proper Vessel, is to be again reduced to a dry Consistence, and kept in close-stop'd Vessels, lest, by the Access of the Air, it should be colligated, which it is very subject to. *Angelus Sala.*

OXYSCHOENOS. A Name for the *Juncus*; *acutus*; *capitulis Sørghi*.

OXYTOCA, ὀξύτοκα, from ὀξύς, quick, and τίνω, to bring forth. Medicines which promote Delivery.

OXYTRIPHYLLUM. A Name for the *Lotus*; *polyceratus*; *frutescens*; *incana*; *alba*; *siliquis curtis*; *crassioribus*, *brevioribus erectis*.

OZÆNA, ὀζæνα. A Disorder of the Nose. See *NARES*.

OZE, ὀζή. A Fætor, or ill Smell, of the Mouth.

OZEMAN. The White of an Egg. *Rulandus.*

OZO. Arsenic. *Rulandus.*

P.

FOR the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM. P. in Prescription, sometimes imports a *Pugil*, and sometimes *Paris*.

PACAL. The Name of a Tree which grows in *Peru*, the Ashes of which the Inhabitants use, mix'd with Soap, in order to cure leprous Eruptions in any Part of the Body. *Raii Hist. Plant.*

PACCIANUM. The Name of a *Collyrium* mention'd by *Galen* and *Aetius*.

PACHUNTICA. Incastrating Medicines.

PACHYS, *παχύς*. Thick. *Hippocrates*, in his Treatise of internal Diseases, describes a Disorder, or rather several Disorders, under the Name of *παχὺ σπύγμα*. This Disease is of a very singular Nature; and there are various Species of it: The first is produced by Phlegm and Bile, which, being convey'd to the Stomach, and inflating it, are, with great Violence, discharg'd both by Vomit and Stool. The Patient is seiz'd with Shiverings, and a Fever: The Pain is removed from the Stomach to the Head, and, when it descends to the Intestines, it produces a Suffocation. Sometimes the Patient vomits a sour, and sometimes a saline Phlegm: After Vomiting, he perceives a bitter Taste in his Mouth; a Redness, accompanied with Heat, appears in his Sides; and his Back becomes, in some measure, incurvated; he cannot endure to have any Part of him touch'd; and the Pain he feels is so great, that his Flesh palpitates; his Testicles are drawn up, and the Heat and Pain at the same time affect the Anus and Bladder; his Urine is thick, like that of dropical Patients; the Hairs fall from his Head, and his Feet are always cold: At last the Pain principally affects his Sides, his Back, and the Nape of his Neck; and he imagines, that something is creeping or crawling all over his Skin. This Disorder sometimes remits, and sometimes not. The Skin of the Head becomes red and thick. This Disease lasts six, and sometimes ten Years, and towards its End the Patient is seiz'd with a copious Discharge of fetid Sweat. During his Sleep he is frequently subject to Pollutions, and the Semen he discharges is bloody and livid.

Tho' *Hippocrates* seems here at first to describe a Cholera, or some Species of Colic, yet what he afterwards advances seems to have no Analogy to these two Diseases.

The second Species of this Disorder is produced by Bile alone convey'd to the Liver, and the Head. The Liver is inflamed; and presses upon the Diaphragm. The Head, and principally the Temples are at first seiz'd with Pains. The Patient does not hear well, and often sees but very little. Then, that is, at the Beginning of the Disorder, a Fever and Shivering come on; and the Disease has sometimes considerable, and at other times less Relaxations. The longer the Disorder lasts, the more intense the Pain becomes; the Eye-balls dilate themselves; and the Patient becomes blind, so that, if a Finger is held before his Eyes, he neither perceives it, nor winks. But, if any Degree of Sight is left, he is with his Fingers continually drawing the Knots of Wool upon the Bed-clothes, imagining them to be Filth, or Lice. But when the Liver extends itself farther to the Diaphragm, the Patient becomes delirious, and imagines that he sees before him Reptiles, wild Beasts of all Kinds, or armed Men. All these he is inclined to encounter with, and agitates himself, as if he was in a real Battle. If he is not left to do as he has a mind, he uses menacing Language; and, if he is allowed to walk, he drops down. His Feet are always cold, and, if he sleeps, 'tis with continual Startings. He is frighted by terrible Dreams, and, when he wakes, he relates every thing he has done and seen; at other times he remains in Bed the whole Day and Night without speaking one Word, with a very difficult Respiration. His Delirium is, also, remov'd at certain Intervals, he returns to himself, answers the Questions ask'd him, and hears what is said to him; but soon after relapses into his former Condition. This Disorder is principally incident to Travellers; and those who, having pass'd thro' uninhabited Places, have been frighted by the Sight of some Spectre.

The third Species of this Disorder is produced by Phlegm, as is obvious from the Eructations of the Patient, which smell as if he had eaten Horse-radish. That Species of the Disease, or the Pain accompanying it, begins at the Legs, whence it ascends to the Abdomen; and there communicating itself to the Entrails, produces a violent Noise and Rumbling, which is succeeded by a Vomiting of acrid and putrid Phlegm. But this Evacuation affords no Relief to the Patient; on the con-

P.

trary, he is seiz'd with a Delirium; and an intense Pain of the Entrails; and sometimes a Pain of the Head so acute and fix'd, that he only hears and sees very confusedly. He sweats a great deal, and the Sweat is fetid; but he is relieved by this means. He is of the same Colour with those labouring under the Jaundice. This Disorder is less frequently mortal, than the former Species.

The fourth Species of this Disorder draws its Origin from white Phlegm, and succeeds long and chronical Fevers. This Kind of it begins in the Face, which is inflated; then the Abdomen is affected and elevated. The Patient feels a Pain resembling that produced by too violent Exercise, and the Abdomen is, as it were, loaded with a great Burden; the Feet are also inflated. If Rain falls upon the Earth, the Patient cannot bear the Smell exhaled by that means; and if, by chance, he is expos'd to the Rains, and perceives the Smell of the Earth, he forthwith falls down. This Disorder has its lucid Intervals, but it is longer protracted than the preceding; for it lasts five Years.

Neither the modern Practitioners, nor any who succeeded *Hippocrates*, have describ'd any particular Disease, accompanied at one and the same time with a Train of so seemingly incompatible Symptoms. Some may, therefore, infer, that these Disorders either no longer attack Persons, or that they have never had any Existence, but are describ'd at Pleasure. Neither of these Circumstances are probable; but 'tis far more reasonable to suppose, that the Book here quoted is not the Production of *Hippocrates*, but of the *Cnidian* Physicians, who are by *Hippocrates* condemn'd for the very Fault which reigns thro' this Work; which is, multiplying the Species of Diseases without any Necessity. And this unnecessary Multiplication, and Distinction of Species accounts for the Perplexity and Obscurity with which this Disorder is describ'd. *Le Clerc. Hist. Med. Lib. 3. Cap. 11.*

PACO-CAATINGA. *Marcgr.* A coniferous Species of *Brazilian Canna*.

The Stalk of this Plant, being chewed, attracts Humours from the Head: Thus used, it is heating, and breaks the Stone; and, being chewed frequently in a Day, and the Juice swallow'd, is an excellent Remedy against the Gonorrhœa, which it cures in less than three Days without the Help of any other Medicine. It is offensive to the Stomach by its Acor, and, therefore, the frequent Use of it is to be avoided.

There is a second Species of this Plant, which is distinguish'd by the Sweetness of its Leaves underneath, and its red Flowers; and a third Species, known by its ceruleous, tetrapetalous Flowers. *Raii H. P.*

PACOEIRA. *Pison. Marcgr.* A Name for the *Musa*, or Plantain-tree.

PACO-SEROCA, *Brasiliensibus.* *Marcgr. Piso.* A Species of *Brazilian Canna*, which bears its Fruit in Clusters at the Bottom of the Stalk. The fresh Leaves, as well as the Stalk and Fruit, before it is ripe, being rubbed, give a Smell like Ginger, which is very grateful; and therefore serve instead of Spices. They are, also, used in hot Baths. *Raii H. P.*

PACOURIL. *De Laet.* A vast Tree growing in the Island of *Maragnan*, belonging to *Brazil*; it bears Leaves like those of an Apple-tree, a white Flower, and a Fruit of the Bigness of two Fists. The Rind, or Peel, of this Fruit, which is about half an Inch thick, being boiled, or preserved with Sugar, is reckon'd a Delicacy. *Raii H. P.*

PADRI. *H. M.* A filiquous Tree of *Malabar*, bearing a pentapetalous Flower, and long, narrow, quadrated, inflected Pods.

The Decoction of the Leaves cures the intolerable Rigor of the Viscera; the Juice hereof, mixed with the Juice of Lemons, is a Remedy for a Mania; the Juice of the Bark, worked up with the Fruit of the *Pera*, restrains the immoderate Flux of the Menfes. The Skin, or Peel, of the Root, bruised with *Calamus aromaticus* and Ginger, and mixed with the Juice of the Leaves, is prescribed as a Remedy for the putrefying Bite of the Snake called by the *Malabarians* *Palenga*. *Raii H. P.*

PADUS. See *CERASUS*.
PAEDANCHONE, from *παῖδιον*, or *παῖς*, a Child; and *ἀγχω*, to strangle. A Species of dry Quinsey, familiar to Children.

PÆDARTHROCACE, from *παῖς*, a Boy; *ἀρθρ*, a Joint; and *καὶ*, an Evil. A Disease principally incident to Children, where the Joints swell, and most commonly the Bones are rotten; so called by *Marcus Aurelius Severinus*, in his Treatise *de recondita Abscessuum Natura*. The Joint Evil.

PÆDOPHLEBOTOMIA. The Phlebotomy or Bleeding of Children.

PAENOE. The Name of a very large Tree, which grows in Malabar.

The Resin discharg'd from the Root, Bark, Fruit, and other Parts of this Tree, when boiled either with a large or small Quantity of Oil, is used either for hard or liquid Pitch, and is, in the Indian Sacrifices, sometimes burned instead of Incense.

The Kernels of the Fruit, when bruised, and, in Conjunction with warm Water, levigated on a Marble, corroborate the Stomach, remove a Nausea and Vomiting, allay racking Pains of the Belly, and cure the Cholera. The Resin of this Tree, when melted with the *Oleum Sessami*, is an excellent vulnerary Balm. When reduced to a Powder, and exhibited, it, also, powerfully cures Gonorrhoeas, and other Venereal Symptoms.

Raii Hist. Plant.

PÆONIA.

The Characters are;

It arises from a Seed, like a monocotyledinous Plant; the Root is tuberous and thick, and the Calyx polyphyllous. The Flower is like a Rose, very large, polypetalous, and furnished with very numerous Stamina. The Fruit consists of a Multitude of horned Pods, whose Number is uncertain, incurvated downwards, cover'd with Down, and gaping lengthwise; the Seeds are commonly globular, and contain a small Kernel.

Boerhaave mentions twelve Species of *Pæonia*; which are;

1. *Pæonia*; mas. *Offic. Ger.* 830. *Emac.* 980. *Boerb. Ind. A.* 262. *Park. Theat.* 1381. *Parad.* 341. *Raii Hist.* 1. 693. *Pæonia* mas præcoccior. *J. B.* 3. 492. *Pæonia folio nigricante splendido, quæ mas*, *C. B. P.* 323. *Tourn. Inst.* 273. **MALE PEIONY.**

This Peiony has several large branched Sections, usually five, of long round brownish-green Leaves, somewhat hairy underneath, not indented about the Edges, growing on a round Foot-stalk. The Stalk on which the Flower grows, is about two Feet high, having one or two smaller Leaves, and on the Top a large deep-red Flower, made of five or six pretty big round Leaves, set about a triangular greenish Head, encompassed with yellow Chives. When the Flowers are fallen, the Head swells into two or three Seed-vessels, which are angular, whitish, and hairy, bending downwards, and opening Lengthways; when ripe, shewing the large black oval Seed. The Root consists of a Number of Tubers, some round, and some longer, that hang by Strings to the main Head; it is planted in Gardens, and flowers in April and May.

The Roots, Flowers, and Seeds, are cephalic, and counted good against the Epilepsy, Apoplexy, and all Kinds of Convulsions, and nervous Affections, both in Young and Old; as, also, in hysteric Cases, the Obstructions of the Menfes, and the Retention of the Lochia. The Root and Seed are hung about Childrens Necks, to prevent Convulsions in breeding their Teeth. *Miller's Bot. Off.*

Peiony, or Glycyfide, is by some called *Pentorobon*; and some call the Root *Idæus Daçylus*. *Discoarides*. It is called *Pæonia* from *Pæon*, the Physician, who with this Plant, as *Homer* says, *Odyss. E.* cured *Pluto*, when he was wounded by *Hercules*.

I saw, says *Galen*, a Boy who was freed from the Epilepsy for eight whole Months after he had worn the Root of Peiony; but when by chance it had fallen off from his Neck, about which it had hung, he was immediately seized with the same Disorder, which was again removed by hanging another Root about his Neck. I then resolved, he says, for the surer Trial, to take off the Root again; which being done, and the Boy relapsing into Convulsions, we hung a large and fresh Piece of the Root about his Neck, from which time he was never troubled with any Disorder of that Kind. This Experiment of *Galen* is confirm'd by *Montanus*, *Fernelius*, and *Apollonius Mosimbenus*, in his Book de *Alice*, Cap. 7.

By what Property, or Quality, inherent in Peiony, this was effected, remains a Doubt; but, whatever it were, says *Julius Alexandrinus*, in his Notes on *Galen de S. M. F.* we are frustrated in our Hopes of the like Success at present. Either, therefore, our Peiony is not so effectual as that of some other Countries; or Diseases in the Time of *Galen* were less severe than in our Days, perhaps on account of the Change in Regimen for the worse. Some pretend that the whole Affair depends on taking up the Root under a certain Position of the Stars; and this is an Opinion which seems to border too much on Magic, and superstitious Vanity. And *C. Hoffman* makes a Question, whether *Galen's* was of such Virtue in its own Nature, or as it was *resuscipium* (*tetelesmene*), conjur'd; for the Devil in many Things helps or hinders Nature. *Sylvius* says, that he had seen nothing extraordinary effected by virtue of the Root and Seed of this Plant, tho' he had very often used them. *Raii H. P.*

2. *Pæonia*; communis; vel fœmina. *C. B. P.* 323. *Tourn. Inst.* 274. *Boerb. Ind. A.* 294. *Pæonia fœmina*. *Offic. Ger.* 830. *Emac.* 981. *Raii Hist.* 1. 694. *Pæonia fœmina vulgaris, flore simplici*. *Park. Theat.* 1380. *Parad.* 490. *Pæonia fœmina vulgarior*. *J. B.* 3. 492. **FEMALE PEIONY.**

This Peiony has larger, taller, and greener Leaves than the Male; and arises higher, bearing very large red Flowers, consisting of a great Number of Leaves, the outermost large and broad, but the innermost composed of various Magnitudes, some very narrow and slender, others broader, and sharp-pointed, set about a double whitish woolly Seed-vessel, in which sometimes grows round black Seed, less shining than in the Male. The Roots grow after the same Manner as the former, and, indeed, being more increasing, and easier to be had, they are generally sold for the Roots of the Male; they are cultivated in Gardens, and flower in April and May. The Root and Flowers are used.

They are accounted useful for all Distempers for which the Male Peiony is serviceable, and indeed they generally supply its Place.

Official Preparations from the Peonies are, the *Syrupus Florum Pæonia*, and the *Syrupus Pæoniae compositus*, the *Aqua Simplex*, and the *Aqua Pæoniae compositus*. Both the Seed and the Root are put into the *Pulvis ad Guttetam*. *Miller's Bot. Off.*

3. *Pæonia*; fœmina; altera. *C. B. P.* 323. *M. H.* 3. 455.

4. *Pæonia*; peregrina; flore saturatè rubente. *C. B. P.* 324. *M. H.* 3. 455.

5. *Pæonia*; peregrina; flore saturatè rubente; maxima.

6. *Pæonia*; folio subtus incano; flore albo, vel pallido. *C. B. P.* 323. *M. H.* 3. 454.

7. *Pæonia*; tenuius laciniata; subtus pubescens; flore purpureo. *C. B. P.* 323. *M. H.* 3. 455.

8. *Pæonia*; folio maximè laciniato; flore kermesino simplici. *An Pæonia, aquilina foliis*. *C. B. P.* 323. *M. H.* 3. 454.

9. *Pæonia*; fœmina; flore pleno, rubro, majore. *C. B. P.* 324. *Tourn. Inst.* 274. *Boerb. Ind. A.* 295. *Pæonia*. *Offic. Pæonia fœmina multiplex*. *Ger.* 831. *Emac.* 981. *Pæonia fœmina vulgaris flore pleno, rubro*. *Park. Theat.* 1380. *Parad.* 341. *Pæonia flore pleno, rubro*. *J. B.* 3. 493. **COMMON PEIONY.**

It is frequent in Gardens, and flowers in May; the Flowers, which are the Part used in Medicine, agree in Virtue with those of the Male Peiony.

10. *Pæonia*; flore pleno, coloris ex rubro & roseo variegati.

11. *Pæonia*; flore exalbido pleno, major. *C. B. P.* 324.

Raii Hist. 1. 695. *Tourn. Inst.* 274. *Boerb. Ind. A.* 295.

Pæonia flore albicante. *Offic. Pæonia flore pleno albicante*.

Park. Parad. 342. *Pæonia fœmina Polyanthos flore albo*. *Ger.*

831. *Emac.* 982. *Pæonia albo flore pleno, sive Polyanthos alba*

fœmina. *J. B.* 3. 494. **WHITE-FLOWERED FEMALE PEIONY.**

The Virtues are the same with those of the Male Peiony.

12. *Pæonia*; tenuifolia; cæsia; flore pleno, ex petalis latioribus & angustioribus. rubro, *Boerb. Ind. alt. Plant.*

The Root, Flowers, and Seeds of this Plant discover, by the Taste, an aromatic and somewhat astringent Quality, attended with a Viscidity; whence it is effectual in all Disorders proceeding from too great Laxness of the Brain, and in nervous Affections. The Root is taken up in the Month of March, about the New or Full Moon, dried, and cut into Slices, and may then be preserved for a considerable time. A Dram of this Root, given every Morning to an epileptic Person, will prevent the Fit, as I have made the Experiment in Children; but, as soon as you desist from giving it, the Fit returns; for Peiony has not Virtue sufficient for eradicating an Epilepsy. *Dr. Grew* observed, that the inner Kernel is a strong Cathartic; but, while it remains involved within its Cortex, has no Operation at all. The Root is hung about the Necks of Children, to prevent an Epilepsy; and the Seeds are strung as Beads, to make a Necklace for the same Purpose. Of the Flowers are prepared a Conserve, and a distilled Water; half an Ounce of the Syrup of the Flowers, given three or four times a Day, is an excellent Remedy for Children affected with the Epilepsy. Some prepare Emulsions of the Seeds with proper Waters. The Virtues I have mentioned, belong, in a more eminent manner, to the first Species, which cures all Sorts of Convulsions, Palsies, Tremblings, nocturnal Frights in Children, and Apoplexies. *Hist. Plant. adscript. Boerhaav.*

PÆPALE, *var. alba*. Exquisitely fine Flour. *Goræus.*

PAGANINA. An Italian Word, by which are meant the first Excrements of Infants, reduced to a very fine Powder; which, taken for many Days together, is a most approved Remedy for the Epilepsy. *Castellus.*

PAGOYUM. A *Paracelsic* Term, signifying that spiritual Being which is the Author of occult Diseases, or those which depend on Incantment. On this imaginary Subject *Paracelsus* has written a Treatise, which he calls *Pagoyus. Castellus.*

PAGRUS, sive PHAGRUS, πάγρος ἰχθύς. A kind of Fish living near the Shores, reckoned by *Galen, de Aliment. Fac. Lib. 3. Cap. 31.* among Fish which have an hard Flesh, are difficult of Concoction, and generate thick and salt Juices in the Body.

PAGURUS. A kind of Crab, good to eat, but difficult of Digestion: It contains much Oil, and volatile and fixed Salt; and is aperitive and pectoral. The Shell, Claws, and the Stone in its Head, are aperitive and alkaline, good for the Stone, to provoke Urine, for Disorders in the Throat, to stop a Looseness and Hemorrhages: The Dose is from half a Scruple to a Dram. *Lemery des Drogues.*

PAIANELL. H. M. A tall filiquous, or Pod-bearing Tree of *Malabar*, of which there are two Species.

1. *Palega Paianeli*, which has an Heart-shaped Leaf, and a very large oblong flat Fruit, containing a membranous Seed. The Bark of this Tree, bruised, and applied with Wine, consolidates Fractures and Cuts; a Decoction of the Root is good for a Dropsy; and the tender Leaves, bruised, and applied, with Saffron of *Malabar*, to Ulcers, conduces to their Cure.

2. *Paianeli*, with the larger mucronated Leaf, which principally distinguishes it from the former. The Root of this Tree, bruised, and boiled in Oil, serves to anoint the Head under a Pain or Cold. The Bark of the Root, given in a Decoction, is good to resolve Tumors; and a Decoction of the Bark and Leaves, bruised together, is used to anoint the Body affected with Pustules and Ulcers. *Raii Hist. Plant.*

PAIOMIRIOBA, Raii. A Name for the *Senna orientalis*; *fruticosa*; *Sophora ditia.*

PAI-PAROCA, seu Couradi. H. M. A bacciferous Shrub of *Malabar*, with a flat, round, hairy Fruit, containing four Stones; it is an Ever-green, flowers in *July*, and the Fruit is ripe in *November*. An Apozem is prepared of the Leaves, Roots, and Fruits, boiled in Water, which is said to be of excellent Use in the Gout. *Raii Hist. Plant.*

PALA. A very tall filiquous Tree of *Malabar*, pentaphyllous, and lactescent, with very long and narrow Pods. The Bark, bruised, and given in Decoction, is good to mollify the Belly; and, with an Addition of a little Salt and Pepper, to corroborate the Stomach, to discuss Flatulencies, and allay the immoderate Heat of the Liver; the same bruised, and taken in warm Water, kills Worms; bruised, and applied with Water, it cleanses and heals Ulcers, and mitigates the Pain of the Gout; and, boiled in Oil with the Seed of *Cudu Pariti*, and infused into the Ears, it cures Deafness. *Raii Hist. Plant.*

PALÆSTE, παλαίστη. A Greek Measure of Length, the same as *Dochme*, or *Doron*, being four Fingers-breadths, or *Digits. Arabum.*

PALÆTYRUS, παλαίτυρος, from *παλαίος*, old, and *τύρος*, Cheese, is old Cheese. *Blancard.*

PALATINÆ Glandula. Conglomerated Glands adjoining to the Tonsils. *Castellus.*

PALATUM. The Palate.

The Palate is that Arch and Cavity of the Mouth, surrounded anteriorly by the alveolar Edge and Teeth of the upper Jaw, and reaching from thence to the great Opening of the Pharynx. This Arch is partly solid and immoveable, and partly soft and moveable. The solid Portion is that which is bounded by the Teeth, being formed by the two *Ossa Maxillaria*, and two *Ossa Palati*. The soft Portion lies behind the other, and runs backward like a Veil fixed to the Edge of the *Ossa Palati*, being formed partly by the common Membrane of the whole Arch, and partly by several muscular Fasciculi, &c.

The Membrane that covers all this Cavity, is like that which lines the superior and middle Portions of the Pharynx. It is very thick-set with small Glands, the Orifices of which are not so sensible as in the Pharynx, and especially in the Ragæ of the superior Portion thereof, where *Heister* observed a considerable Orifice, and a Canal proportioned to that Orifice, which he could easily inflate with Air. This is certainly the best way of beginning these Kinds of Inquiries, especially if the Pipe be held at first only very near the Part, without endeavouring to force it in. To immerse the Parts in clear Water, is, likewise, a very good way to discover small Orifices by the Help of a Microscope. Small Ducts, of the same Kind with what I have now mentioned, may be supposed to lie along the middle Line, or Raphe, of the Arch of the Palate; and along the alveolar Edge, because of some small Tubercles, or Points, which appear there.

This Membrane, together with that of the posterior Nares, forms, by an uninterrupted Continuation, the anterior and posterior Surface of the soft Portion, or *Septum Palati*; so that the muscular Fasciculi of this Portion lie in the Duplication of a

glandulous Membrane. The Muscles composed of these Fasciculi shall be presently described.

The *Septum*, which may likewise be called *Velum*, or *Vatula Palati*, terminates below by a loose floating Edge, representing an Arch situated transversely above the Basis or Root of the Tongue. The highest Portion, or Top, of this Arch, sustains a small, soft, and irregularly conical glandulous Body, fixed by its Basis to the Arch, and its Apex hanging down without adhering to any thing, which is called *Uvula*.

On each Side of the *Uvula* there are two muscular half Arches, call'd *Columnæ Septi Palati*. They are all joined to the *Uvula* by their upper Extremities, and disposed in such a manner, as that the lower Extremities of the two, which lie on the same Side, are at a little Distance from each other; and so as that one half Arch is anterior, the other posterior, an oblong triangular Space being left between them, the Apex of which is turned toward the Basis of the *Uvula*.

The two half Arches on one Side, by joining the like half Arches on the other Side, form the entire Arch of the Edge of the *Septum*. The posterior half Arches run by their upper Extremities, more directly toward the *Uvula* than the anterior. The anterior half Arches have a Continuation with the Sides of the Basis of the Tongue, and the posterior with the Sides of the Pharynx. At the lower Part of the Space left between the lateral half Arches on the same Side, two Glands are situated, termed *Amygdalæ*.

The half Arches are principally made up of several flat fleshy Portions, almost in the same manner with the Body of the *Septum*. The Membrane which covers them is thinner than the other Parts of it towards the Palate, Pharynx, and Tongue. Each Portion is a distinct Muscle, the greatest Part of which terminates in one Extremity in the Substance of the *Septum*, and of the half Arches; and by the other Extremity, in Parts different from these.

As Anatomists used formerly to ascribe all these Muscles, as far as they knew them, to the *Uvula*, without any regard to the *Septum*; they term'd them in general, either *Ptery-staphylini*, or *Peri-staphylini*. The last Part of these two compound Words expresses the *Uvula*; the first Part of the first Word is an Abridgment of *Pterygoïdes*, and expresses the Insertion of these Muscles; but the first Part of the second Word signifies no more than *round*, or *about*.

I should be very glad to make use of the Term *Peri-staphylini*, as a general Denomination for the Muscles belonging to the *Septum*; and then to add the other Terms, of which these Names have been made up by modern Writers. But, lest I should be thought to affect a Language different from the common, I shall retain the ordinary Names, only desiring the Reader to take notice, that, by the Term *Staphylini*, I do not mean precisely the *Uvula*, but only the Parts round it. If we could be allow'd to form Names of Greek and Latin Words compounded together, we might, for Example, say, *Glossopalatinus*, instead of *Glossostaphylinus*. I shall call the Muscles that go to the *Uvula*, simply, *Staphylini*, or *Epistaphylini*, because that Part resembles a small Bunch of Grapes, according to the Signification of the Greek Word. From what has been said, I name these Muscles in the following Manner:

Glossostaphylini.

Pharyngo-staphylini.

Thyro-staphylini.

Pterygo-staphylini.

Spheno-salpingo-staphylini, commonly called *Peri-staphylini Externi.*

Pterygo-staphylini Superiores.

Pterygo-staphylini Inferiores.

Pterygo-salpingo-staphylini, commonly called *Ptery-staphylini Interni.*

Staphylini sive Epistaphylini.

The *Glossostaphylini* are two small Muscles, fixed each in the lower and lateral Part of the Basis of the Tongue; whence they run up obliquely backward, along the anterior half Arches of the *Septum Palati*, and terminate insensibly on each Side near the *Uvula*, some of their Fibres being spread through the *Septum*. The Thickness of the anterior half Arches is principally produced by these two Muscles.

The *Pharyngo-staphylini* are likewise two small Muscles, each of them being fixed by one Extremity to the lateral Part of the Musculi *Thyro-pharyngei*, as if they were Portions detached from these Muscles. Thence they run up obliquely forward along the two posterior half Arches of the *Septum*, and terminate in the *Septum* above the *Uvula*; where they meet together, and seem to form an entire Arch by the Union of their Fibres. The Thickness of the two posterior half Arches is produced by these Muscles.

The Thyro-staphylini are two small Muscles, which accompany the Pharyngo-staphylini very closely, through their whole Course, except that their posterior Extremities are fixed in the Thyroide Cartilages near the other Muscles. They likewise contribute to the Thickness of the posterior half Arches, and are inserted in the Septum in the same manner with the former. These two Pairs of Muscles may be made one Pair, and may be called *Thyro-pharyngo-staphylini*.

The Spheno-salpingo-staphylini are each fixed by one Extremity, partly to the Sphenoidal Side of the bony Portion of the *Eustachian* Tube, partly to the nearest soft Portion of the same Tube. Thence it runs toward the external Wing of the Apophysis Pterygoidea, into which one Portion of this Muscle is inserted. The other Portion runs to the End of the Wing, and turns round to the forked Extremity thereof, as over a Pulley, and is afterwards inserted in the Septum Palati, near the Uvula.

I look upon these two Portions as two distinct Muscles, one of which, ending in the Wing, seems only to serve for the Dilatation of the *Tuba Eustachiana*. The other Portion is a true Spheno-staphylinus, and, as it has likewise an Insertion in the Tube, it may be termed *Spheno-salpingo-staphylinus*, or *Staphylinus Externus*. This is the Muscle commonly called *Peri-staphylinus Externus*.

The Pterygo-staphylinus Superior is only the external Portion of the Muscle last described; and this Name may, also, be given it, because it has a small Insertion in the upper Part of the Apophysis pterygoidea, besides that in the sphenoidal Part of the bony Portion of the Tube. The Pterygo-staphylinus Inferior, on each Side, is a small Muscle inserted by one Extremity in the Uncus pterygoideus; and, by the other, in the Septum near the Uvula. This Observation we owe to Mr. *Heister*.

The Petro-salpingo-staphylini, or Salpingo-staphylini Interni, are those which are commonly call'd *Peri-staphylini Interni*. Each Muscle is fixed by one Extremity, partly, to the inner Side of the bony Portion of the *Eustachian* Tube, or that next the Apophysis petrosa; partly along the cartilaginous Portion of the same Tube. Thence it passes a little Way under the soft membranous Part, and toward what I call'd *The half Pad of the Tube*; and then, turning toward the Septum, is fixed in the Edge, and partly in the upper Side thereof.

The Staphylini, or Epistaphylini, are two small fleshy Ropes, closely united together, as if they made but one Muscle; but in some Subjects they are distinguished by a very fine white Line. They are fixed by one Extremity in the common Point of the posterior Edges of the Ossa Palati, and from thence run downward and backward along the Middle of the Septum, and likewise along the Middle of almost the whole Uvula. These Muscles have been term'd *Azygos Morgagnii*, from the Discoverer; but he considered them as one Muscle. The Pterygo-staphylini Inferiores are of the same Kind, and might be term'd *Staphylini*, or *Epistaphylini Laterales*, and these last *Medii*.

The Septum Palati serves to conduct the lachrymal Lymph, and that which is continually collected on the Arch of the Palate, into the Pharynx. It serves for a Valve to hinder what we swallow, and especially what we drink, from returning by the Nares. The Uses of the different Muscles of the Septum are not as yet sufficiently known, nor the different Motions of which it is capable, as may be observed by looking for some time into the Mouth of an healthy Person wide-open'd. *Winslow*.

OF ULCERS OF THE PALATE.

These Ulcers are of so malignant a Nature, that sometimes they not only consume the soft Parts, but corrode the Bones, and extend themselves even to the Nose. The Voice of the Patient becomes not only alter'd and broken, but whatever he drinks is immediately discharged by the Nose with very great Uneasiness. These Ulcers proceed from a scorbutic Acrimony, or a Venereal Infection, in the Blood; and, if the Cause is not speedily removed, not only the Palate, but, likewise, the Nose, will be in a miserable manner destroy'd.

The first Intention of Cure, therefore, must be either to alleviate, or entirely remove, the Acrimony of the Blood, or the Venereal Malignity, by proper internal Medicines. If the Palate is not yet perforated, or consum'd by the Caries, let it be cleansed with frequent Gargarisms, Ointments, and Injections. For this Purpose, first, make a Decoction of Agrimony, St. John's-wort, Ladies-mantle, and the like vulnerary Herbs; then mix it with Honey of Roses, or, if more powerful Detergents are necessary, with Unguentum Ægyptiacum, or Fulcum. The Honey that swims a-top of the Ægyptiacum, and, also, *Fallopian's* Alum-water, are excellent Detergents, even when the Caries has affected the Bones. As often as the Ulcer is thus cleansed, it will not be improper soon after to apply to the ulcerated Part with Lint, or a Pencil, Honey of Roses, Oil of Myrrh per Deliquium, Elixir Proprietatis, or *Peruvian Balm*.

If the Caries has already seized the Bones, the morbid Part may be separated from the sound, by the Remedies already recommended, especially if the Part be carefully anointed with the Oil of Cloves, or with Honey of Roses acidulated with Spirit of Vitriol, the internal Medicines being constantly continued. But, when these do not succeed, the actual Caustery ought to be gently apply'd to the morbid Bone, after having carefully cleansed the Ulcer with dry Lint, and secured the Tongue from Injury, by covering it with wet Linen Cloths, and applying the Speculum Oris. After the Cauterization is completed, continue the Application of balsamic Remedies, till the Bone is again covered with Flesh, and the Ulcer entirely cured. But those Perforations, which penetrate through the Palate to the Nose, can never again be naturally closed.

THE METHOD OF STOPPING PERFORATIONS THROUGH THE PALATE TO THE NOSE.

When by these Perforations the Voice is injured, and Liquids are discharged by the Nose, as Nature cannot stop them up by a new Supply of Bone and Flesh, we must have recourse to Art. A Plate, therefore, of Gold, or Silver, must be adapted to the Perforation, having a Tube or Handle with Holes (see *Tab. XXXII. Fig. 4. 5.*) A Piece of Sponge must be fix'd to the End of this Handle, which, being inserted in the Perforation, prevents the Plate from falling down from the Palate, by which means the natural Voice of the Patient will not only be restored, but likewise the Power of Deglutition, in the same manner as if the Palate was entire. However, he should be provided with two of these Instruments, that they may be changed, and the Sponge washed in Water every Day, lest the Humours attracted by it should putrefy, and grow fetid. I once saw a large Perforation of the Palate, occasioned by a leaden Bullet, in an Officer, which was remedied in this manner. *Heister. Chirurg.*

PALE, *πάλη*. Besides its common Meaning, which is Collocation, whence the Word *Palæstra*, a Place for gymnastic Exercises, it signifies, also, the same as *Papale*, the finest of Flour. *Hippoc. Lib. 1. & 2. in Morb. Mul.*

PALEAR. The same as *CALLÆON*; which see.

PALEGA-PAIANELL. See *PAIANELL*.

PALIMBOLOS, *παλιμβολος*, from *παλιν*, an Adverb, implying Recourse, or Repetition; and *βάλλω*, to attack or seize, in *Hippocrates*, 6 *Epid. Sect. 6. Aph. 16.* is an Epithet applied to such Diseases as are of a mutable and fluctuating Nature, or easily degenerate into others; or, as *Galen* understands the Word, which flatter the Patient with Hopes of Relief, but retain a secret Malignity. *Foesius*.

PALIMPISSA, *παλιμπισσα*, from *παλιν*, importing Repetition, and *πίσσα*, Pitch, is a Name, as *Dioscorides* says, *Lib. 1. Cap. 97.* given by some to dry Pitch, because it is prepared of Pitch twice boiled.

PALINCOTOS, *παλινκωτος*, from *παλιν*, again, and *κωτος*, a Term importing a great Uneasiness in the Mind, excited by Anger mix'd with Indignation, is an *Ionic*, and highly poetical Epithet, frequently apply'd by *Hippocrates* to a Disease, which, contrary to Hope, returns upon the Patient with renew'd Violence and Malignity. *Foesius*.

PALINDROMIA, *παλινδρομία*, from *παλιν*, again, and *δρομή*, to run, is a Term used to express the preternatural Recourse, or Regurgitation, of the peccant Humours to the inner and more noble Parts. The Verb *παλινδρομέω*, from whence the Word is immediately derived, is often used by *Hippocrates* in the Sense before given. *Foesius*.

PALINGENESIA, *παλιγγενεσία*, (from *παλιν*, again, and *γενεσία*, or *γένεσις*, Generation) Regeneration, is a Word by which the Chymists have presum'd to express the Revivescence, or returning Greenness of dry Plants, by virtue of some Mercurial Water. *Theat. Chym.*

PALINIDRYSIS, *παλινιδρυσις*, from *παλιν*, again, and *ιδρύωμαι*, to be placed, or settled, is a Resettlement, and a Word used by *Hippocrates*, *Lib. de Humor.* to express the Subsiding again, and Resettlement, of those Humours which before were elevated; and oppos'd to *Meteorismus*, *μετεωρισμός*, Exaltation. *Foesius*.

PALINOPTOS, *παλινόπτω*, from *παλιν*, again, and *ὄπτωμαι*, to see, is expounded, in *Galen's Exegetis*, averse, or turned from the Sun.

PALIRRHŒA, *παλirrhaia*, from *παλιν*, again, and *ῥέω*, to flow, in *Aræteus de Cur. Morb. Acut. Lib. 2. Cap. 4.* is the Reflux, or retrograde Course, of the Humours, as in the Cholera Morbus, under Black Vomings.

PALIURUS.

The Characters are;

It has long and very sharp Spines, disposed in regular Order. The Calyx is monophyllous and pentaphylloidal; the Flower rofaceous,

roseaceous, pentapetalous, and furnished with five Stamina. The Ovary in the Bottom of the Calyx becomes a Fruit, resembling a Bonnet, or Target, and surrounding another almost globular and tricapular Fruit, containing in each Capsula, or Cell, one round Seed.

Boerhaave mentions but one Sort of *Paliurus*; which is, *Paliurus Dodonæi*. *Turn. Inst.* 616. *Boerb. Ind. A.* 2. 236. *Paliurus*. *Offic. Ger.* 1153. *Emac.* 1336. *Raii Hist.* 2. 1708. *Paliurus* *frut. Rhamnus tertius Dioscoridis*. *Park. Parad.* 607. *Rhamnus* *frut. Paliurus folio Jujubino*. *J. B.* 31. *Rhamnus folio subrotundo fructu compresso*. *C. B. P.* 477. *Paliurus* *frut. Rhamnus tertius Dioscoridis*. *Park. Theat.* 1006. **CHRIST'S THORN.**

We are very much inclin'd to believe with *J. Baubine*, that this Plant is the *Paliurus* of *Theophrastus*, and the same with what *Dioscorides* in one Chapter makes a third Species of *Rhamnus*, and, in another, the *Paliurus*. It grows about *Vesona*, *Bergamum*, and other Parts of *Italy*, and about *Montpelier* in *France*. It delights in open, plain, and uncultivated Places, and flowers in *May* and *June*; the Fruit is ripe in Autumn, and adheres to the Tree all the Winter. It is called *Christ's Thorn*, because, as some imagine, our Saviour's Crown of Thorns was composed of it; and, indeed, you shall hardly find any Species of *Rhamnus*, or other Shrub, arm'd with sharper or stiffer Spines, or more dangerous to the Touch: Whence quick-set Hedges were usually planted of it, as being a most commodious Fence against the Incurfions of Men or Beasts.

The Leaves and Root of the *Paliurus* are astringent, stop a Looseness, and digest and cure Tubercles; and the Fruit is so powerfully inciding, as to diminish the Stone in the Bladder, and promote Excretions from the Breast and Lungs. The Seeds bruised are commended against the Cough, and the Physicians of *Montpelier* prescribe their Use in Disorders from Sand and Gravel. *Raii H. P.*

PALLAX. A Name given by some Chymists to an imaginary fictitious Stone, composed of the Heaven and Earth, of the Moon, with an equal Weight of the Sun. *Theat. Chym.*

PALLIATIO. A Palliation. Physicians call it a *Palliation*, or a *palliative Cure*, when in desperate and incurable Diseases, after predicting the fatal Event, they prescribe some Remedies for mitigating the Pain, or some other urgent Syptoms, as in ulcerated Cancers, or cancerous Fistulas, and the like. *Castellus*.

PALLIUM PURPUREUM, a purple Cloak, is a Title bestow'd by *Basil Valentine* on a certain Solar Powder, prepared of an Amalgama of Gold and Mercury put into a Retort, where the Mercury being separated, what remains is calcined with Sulphur, and turned a purple Colour. *Castellus*.

PALMA.

The Characters are;

The Fruit, under an eatable Pulp, has an hard stony Nucleus, like the Stone of a Plum.

Boerhaave mentions nine Species of *Palma*; which are,

1. *Palma major*, *C. B. P.* 506. *Boerb. Ind. A.* 2. 169. *Palma*. *Ger.* 1333. *Emac.* 1517. *J. B.* 1. 351. *Raii Hist.* 2. 1352. *Palma vulgaris*. *Park. Theat.* 1545. *Indis Mahabadi*. *Herm. Mus. Zeyl.* 69. **THE PALM, or DATE-TREE.**

The Palm-tree grows in *Barbary*, *Egypt*, and *Syria*, and other hot Countries, being a large Tree, having a rough scaly Bark. The Leaves, which all grow at the Top, are large and wrinkled, made of divers stiff, nervous, hard, single Leaves, about the Breadth of a Reed, set together like a Fan. The Flowers grow among the lower Leaves, in a long Skin, or Sheath, which, opening in the middle, shews a great Number of three-leaved white Flowers, hanging on long Foot-stalks, which are succeeded by the Fruit or Dates. The Date is a round longish fleshy Fruit, of a yellow Colour, but frequently reddish on one Side, of a pleasant sweet mucilaginous Taste, inclosing in a thin white Skin an hard cylindrical Stone, having a Chink, or Furrow, running its whole Length. *Miller's Bot. Off.*

The Vagina, or Sheath, which incloses the Flowers and Rudiments of the Fruits, was called by the ancient Writers *Elate* and *Spatha*; and that tender and medullary Substance, which grows on the Top of the Palm-tree, called by *Theophrastus* *ἐγκεφάλος*, (*Encephalus*) the Brain, and by *Dioscorides*, improperly, *ἐνκαρδιον πρεμνυ*, (*Encardium Premnu*) the Heart and Marrow of the Trunk, is nothing but a large Bud, producing, as *Theophrastus* himself says, both Leaves and Fruit; if the Tree be deprived of this Part, it is rendered barren, and, in a short time, perishes. It appears, in many Places of the ancient Writers, that this Part is eatable; and *Xenophon*, in his second Book of the Expedition of *Cyrus*, says, that the Soldiers, in such a Place, first fed on the Brain of Palm-trees, which allwither'd after being deprived of it: *Galen* also relates, that some, rather

than starve, used to eat it; and *Diphilus Siphnius*, in *Athenæus*, says, that it causes a Plethora, affords too much Nourishment, oppresses the Stomach, is very difficult of Distribution, excites Thirst, and binds the Belly. *C. Baubine* tells us, that the *Egyptians* in *Alexandria* feed on it, and even eat it raw; and that the *Egyptian* Peasants search out barren Palm-trees, in order to cut off their Tops, and take out this Pith, or medullary Substance, and sell it.

Dates, or the Fruit of the Palm-tree, when thoroughly ripe, and not too pinguious, are grateful to the Stomach, highly nutritive, and generally render those who use them, fat; but they are of difficult Digestion, and most of the ancient Physicians agree, that they excited Pains of the Head: But *Aretæus* alone asserted, that all sweet Meats were prejudicial to the Stomach, except Dates, Figs, and Grapes.

The Antients, by infusing Dates in Water, prepared a Wine, the Method of making which is delivered by *Dioscorides*; according to whom, the Date is sour and astringent, and consequently proper for stopping Fluxes, and immoderate Discharges of the Menfes, if drank in austere Wine. It, also, stops Hæmorrhages, and conglutinates Wounds, if the Parts affected are anointed with it. Recent Dates are of a more astringent Quality, than such as are dry; but they produce Head-achs, and, when eaten too copiously among Aliments, intoxicate the Persons who use them. Dry Dates eaten afford Relief to those who labour under Spittings of Blood, Pains of the Stomach, and Dysenteries; when triturated with Quinces, and the Ceratum Oenanthinum, and used by way of Ointment, they are beneficial in Disorders of the Bladder. The *Palmæ Caryotæ*, if eaten, remove Asperities of the Fauces. A Decoction of *Theban* Dates, if drank, allays burning Fevers; and, if taken with old Hydromel, restores the Strength. This Species of Dates, also, produce the same Effect, when used as an Aliment. A Wine possessed of the same Virtues is, also, prepared from them. Decoctions of them, by themselves, either drank, or used by way of Gargarism, are highly astringent.

The Kernels of Dates, burn'd in a new earthen Vessel, and extinguished, and washed in Wine, supply the Place of Putty, for adorning the Eye-lids. They are of an astringent Quality; brace up the Pores of the Skin; are good against Pustules of the Eyes, Staphylomata, and shedding the Hairs of the Eyebrows. In Conjunction with Wine, they repress fungous Flesh, and bring Ulcers to a Cicatrix.

Apothecaries, in preparing their Ointments, use the Spatha of the Palm-tree. The best Species of this Spatha is fragrant, astringent, weighty, close, and internally pinguious. It is of an astringent Quality, stops spreading Ulcers, and strengthens relaxed Joints, if triturated, and mixed with Malagmas and Cataplasms: When mixed with proper Cataplasms, 'tis, also, beneficial in Disorders of the Præcordia, Weakness of the Stomach, and Diseases of the Liver.

A Decoction of it, frequently rubbed on the Hairs, renders them black; and, when drank, relieves Disorders of the Kidneys, Bladder, and other Viscera. It, also, stops Fluxes, the Menfes, and Hæmorrhages of the Uterus. A Decoction of it, whilst as yet tender, with Resin and Wax, cures the Itch, if applied to the Parts affected, for twenty Days. The Fruit, also, contained within it, called *Elate* and *Borassus*, produces the same Effects, and is a proper Ingredient in Ointments.

The Virtues of the Palm-tree, and its several Parts, are described by *Pliny*, *Galen*, and others of the Antients, and *J. Baubine*, *Hist. Lib.* 3. *Cap.* 159.

Among the Moderns, *Prosper Alpinus* enumerates the Medicinal Uses of the Fruit of this Tree, in the following manner: In the Fruit, says he, there are three Things principally used in Medicine; that is, the Spatha, the Powder contained in the Spatha, and the Dates themselves: The Spatha is used both in Powder and Decoctions. The Powder, taken internally, is highly beneficial in stopping Diarrhoeas, Lienteries, and Dysenteries, as, also, all other Discharges of Blood, or other Humours, especially the Hepatic Flux, the Hæmorrhoids, the Menfes, and a Spitting of Blood. This Powder is, also, used by the *Egyptians* in stopping Spreading Ulcers, removing a Relaxation of the Uvula, and fixing the Teeth, when loose. They, also, use the Decoction for all the same Purposes; but often mix the Powder with it. It, also, surprisingly strengthens such Joints as are weak, and subject to Defluxions. The white Powder found in its proper Covering in the Spring, when the Palm-tree begins to flourish, when mixed with Sugar, is by the *Egyptians* very frequently used against Hoarseness, Coughs, and Inflammations of the Eyes. This Powder is, also, sweet, and somewhat astringent; for which Reason 'tis frequently used by the Women, for stopping immoderate Discharges of the Menfes, and procuring a Retention of the Fœtus. Unripe Dates, both used in Aliments and Decoctions, are by them, also, used against

against Spittings of Blood, and for stopping all Evacuations of Blood, Lienteries, Diarrhoeas, Dysenteries, Vomiting of Blood, and Haemorrhoids, as, also, for curing simple Ulcers and Wounds. For the Cure of these Disorders, they, also, frequently use a Syrup prepared of unripe Dates. They, also, use the Dates when perfectly ripe; at which time they are highly sweet, and somewhat astringent; for which Reason they are frequently used in Hoarseness, Coughs, Dyspnoeas, Pleurifies, and Peripneumonies. A Decoction of them is, also, frequently used for promoting the Eruption of the Small-pox. *Prosp. Alpin. Raii Hist. Plant.*

2. *Palma major, Dactylifera, folio flabelliformi, pedunculo, ad latera durissimis, magnisque, spinis armato. Carnaiba, 1. Pisan. 126.*

3. *Palma, humilis, Dactylifera, radice repenti, fobolifera, folio flabelliformi, pedunculo spinoso. Boerb. Ind. A. 2. 169. Chamærhypes. Offic. Palma minor. C. B. P. 506. Palma humilis Hispanica spinosa & non spinosa. J. B. 1. 370. Raii Hist. 2. 1369. Palma humilis sive Chamærhypes vel Palmites. Park. Theat. 1545. Palmites sive Chamærhypes. Ger. 1335. Emac. 1519. THE DWARF PALM.*

The Fruit of this Species is of an astringent Quality, and for that Reason exhibited against all Fluxes. *Raii Hist. Plant.*

4. *Palma, humilis, Dactylifera, radice repentissima, fobolifera; folio flabelliformi, pedunculo vix spinoso.*

5. *Palma, Chamærops; Plinii, sive Chamærophes, spinosis foliis. Park. Theat. 1546.*

6. *Palma, foliis longissimis, pendulis, absque ullo pedunculo ex caudice glabro enatis. See DRACONIS SANGUIS.*

7. *Palma, Guineensis, vinifera. Belgis Christiaan Wiin Boom, & Krissia Boom. Bosman. An Palma vinifera. Lugd. 1834. Palma, vinifera, Theveti. C. B. P. 507.*

8. *Palma, Japonica, spinosis pediculis, Polypodii folio. Boerb. Ind. A. 2. 170. Sagou. Offic. Palma Indica caudice in annulos protuberante distincto, fructu pruniformi. Raii Hist. 2. 1360. Palma referens Arbor farinifera. C. B. P. 508. Arbor farinifera. Park. Theat. 1646. Zagu seu Arbor farinifera. Jonst. Dendr. 144. Todda-panna, seu Monta-panna. Herm. 3. 9. Tab. XIII. &c. Cannel. Flor. Mal. 264. THE SAGO-TREE, INDIAN BREAD, or LIBBY-TREE.*

The Pith of these Trees, being well beat in a Mortar with Water, forms an Emulsion, the Fæcula of which, dried, is Sago. It is a very kindly and nourishing Food, never fermenting in the Stomach, and very proper in Hætic Fevers. It is very much used in England. *Geoffroy.*

The Inhabitants of Malabar eat the Fruit of this Tree with Sugar; otherwise it renders them costive. The Juice expressed from the recent Leaves, and exhibited, allays racking Pains of the Intestines, mitigates the preternatural Heat of the Stomach, and cures a Vomiting of bloody Matter. The Cone which bears the Fruit, when bruised, reduced to the Form of a Cataplasm, and applied to the Region of the Loins, removes nephritic Pains, and checks an involuntary Effusion of Seed in Gonorrhœas. A Decoction of its tender Fruit with Water excites a Vomiting, and excellently cleanses the Stomach. The Gum of the Tree, taken internally, resists all Poisons; and, when mixed with Hens Dung, surprisingly cures the Bites of Vipers, if applied to the Part affected. The Inhabitants of Japan, of the Trunk of this Tree, make a kind of Meal; of which they prepare a Species of Bread, by them called *Sagou*. *Raii Hist. Plant.*

9. *Palma, Indica, coccigera, angulosa. C. B. P. 508. Boerb. Ind. A. 2. 170. Coccus. Offic. Palma Indica nucifera Coccus dicta. Raii Hist. 2. 1356. Palma nucifera Arbor. J. B. 1. 375. Palma coccifera, seu Nux Indica, Indis Lubi. Camel. Syllab. 43. Palma sive Nux Indica, vulgaris ferens Coccus. Park. Theat. 1506. Nux Indica Arbor. Ger. 1338. Emac. 1522. Cocceira Indica. Pis. 63. (Ed. 1648.) Inaja-Guacuiba, vulgò Coccus. Ejusd. Pis. 130. (1658.) Inaja-guacuiba, cujus Fructus Inaja-guaca. Marg. 138. Tenga. Hort. Mal. 1. p. 1. Tab. I. II. III. IV. Polgaba. Herm. Mus. Zeyl. 50. THE COCO, or COCKER-NUT-TREE.*

From this Tree is extracted a Liquor, by the Indians called *Suri*, which, when drank, intoxicates, like Wine. It is of a grateful Taste, resembling that of a Mixture of sweet, saline, and acid Substances: When 'tis newly extracted, 'tis pretty sweet, but, in Process of Time, becomes more acid, and is of a whitish, somewhat green, or pale Colour. From this Liquor is distilled a Water, or Spirit, which burns in the Fire. There is, also, a Vinegar, and a Species of Sugar, by the Inhabitants called *Jagra*, prepared from it. The Method of extracting this Liquor is accurately described by the Authors of the *Hortus Malabaricus*. They make an Incision in the Top of the Capsule, which bears the Flowers or Fruit, and which they call the Breast of the Tree, and hang a Vessel to it. About four Inches below the Top of the Capsule, they

make an oblique Incision in the Bark, which they raise by way of *Beard*, as they call it, over which the *Suri* may drop into the Vessel.

In the Morning and Evening, and sometimes, also, in the middle of the Day, they remove the Vessels with the *Suri*. That obtained in the Morning is sweet, that in the Evening somewhat acid, and that obtained next Day acedent; but that on the third Day, entirely acid, without any Sweetness at all. In order to make Vinegar of the *Suri*, they put the Vessels, in which it is received, among Calx, for fifteen Days, by which a violent Fermentation being excited, much Froth thrown up, and a whitish Matter subsiding to the Bottom, the *Suri* is changed into Vinegar.

The Species of Sugar called *Jagra* is prepared thus: They put into the Pots a sufficient Quantity of Calx, to tinge the *Suri* distilled into them of a redish Colour; then they boil this Liquor, continually stirring it with a Spoon, till it is inspissated. Then a red Sugar is produced, which they render White by reiterated Dissolutions and Boilings.

The exterior Covering of the Nut is at first said to be eatable, of a pretty sweet Taste, good for corroborating the Stomach, stopping Diarrhoeas, and curing Surfeits.

The Liquor, or Wine of *Suri*, is said to be highly beneficial to phthical Patients, and those who labour under any Disorder of the Kidneys, or a Difficulty of discharging their Urine. From the bruised Kernels is expressed a Milk without the Assistance of the Fire, eight Ounces of which drank every Morning, with the Addition of a little Salt, are highly efficacious in killing Worms, especially in Children.

Upon Water boiled with the Shavings of these Kernels there floats a sweet liquid and transparent Oil, not unlike that of sweet Almonds. When six or eight Ounces of this Oil, with an Addition of Water, in which Tamarinds have been steeped, are drank, they gently cleanse the Stomach and Intestines, evacuating principally melancholic and pituitous Humours; whereas the Kernel itself is said to render Patients costive; but this Oil must be used when recent. It is highly beneficial in Wounds; for it not only stops the Effusion of Blood, but, also, washes away the Sanies, mitigates the Pain, and at last induces a Cicatrix. From the small Fragments of the Kernels, is extracted an Oil fit for burning in Lamps, preparing Rice, relaxing the contracted Nerves, and killing Worms.

The Liquor contained in the Kernel is proper for extinguishing Thirst and Fevers, for curing and cleansing the Eyes, and for washing the Skins of Women. It, also, purifies the Blood; cleanses the Stomach, and urinary Passages; and removes Disorders of the Breast. It is of a grateful Taste, affords much Nourishment, and is an excellent Drink in biliary Fevers. *Hernandez. Raii Hist. Plant.*

Besides the foregoing Species of *Palma*, *Dale* mentions the following Sorts.

1. *Palma oleosa. Offic. Palma foliorum pediculis, fructu pruniformi, luteo, oleoso. Cat. Jamaic. 175. Hist. 2. 117. Raii Dendr. 1. Arbor exotica fructu Dactylis simili. C. B. P. 508. Palma Guineæ. J. B. 1. 369. Nucula Indica racemosa. Germ. Emac. 1554. Park. Theat. 1596. THE PALM-OIL-TREE.*

This is a kind of Palm-tree, which grows upon the Coast of *Guiney*; from whose flatish Fruit, about the Size of a small Plum, covered over with a fibrous Coat, they express the Palm-oil, which, when fresh, is of an Orange-colour, as thick as Butter, of a pleasant, soft, sweet Scent, of little Taste.

The Natives use this Oil with their Food, instead of Fat, or Butter: With us it is only used outwardly, being of a strengthening Nature, good for all kinds of Pains, and Weakness of the Nerves, Cramps in the Limbs, and for Strains and Bruises. *Miller's Bot. Off.*

This Tree grows spontaneously in *Guiney*. The only Part of it used is its Oil, or rather a thick Ointment of an Orange-colour, and fragrant Smell, obtain'd from the Fruit in the following manner: To the Pulp taken out of the Kernels, they add a large Quantity of boiling Water. Then they for a long time agitate the Pulp in a Kettle over the Fire, till it is intimately mixed. Then taking the Kettle off the Fire, they let the Matter stand, till its more sordid Parts subside to the Bottom. Then they skim off the Oil floating on the Surface of the Water; and, when they have taken all the Portion then floating on it off, they repeat the same Operation by pouring boiling Water on it again. This Oil is best when recent, not rancid, of an Orange-colour, a fragrant Smell, and of the Consistence of Butter. Externally used, it is anodyne, strengthens the Nerves, allays arthritic Pains, removes Weariness, and relaxes contracted Parts. *Dale.*

2. *Palma coccifera figura Ovali. See COCCUS DE MALDIVA.*

3. *Palma Haira. See EBENUS ÆTHIOPICA.*

4. *Palma Arctifera. See ARECA.*

5. *Palma*

5. *Palma Sanguinem Draconis fundens altera*. See DRACONIS SANGUIS.

6. *Palma sylvestris Bdellicifera*. Kemph. Amœn. Exot. 668. THE BDELLIUM-PALM.

This is the *Palma Nucifera*, folio Flabelliformi. *Kempherus* imagined, that it was the *Bdellicifera Chamæriphe* of *Serapion*. Dale.

Beside the foregoing Species of *Palma*, *Ray* takes notice of the following:

1. *Palma vinifera Theveti*. J. B. C. B. This is a tall, beautiful, ever-green Tree, bearing small austere and acid Dates, which are scarce eatable. The wild *Ethiopians* bore the Trunk two Feet from the Ground, and thence extract a Liquor of a very sweet Taste, and of *Anjouin* Wine: This they keep in earthen Vessels, and call it *Mignol*; and, the better to preserve it from Corruption, they season it with some Salt, otherwise it easily turns sour: It is of an excellent Flavour, and very proper to quench Thirst. The ancient *Egyptians* sprinkled the Bodies of the Dead three or four times with this Juice, before they embalmed them, in order to preserve them the more securely from Putrefaction. This Species of Palm-tree grows plentifully at *Cape Verd*.

2. *Palma Javanensis longissimo Folio*. C. B. *Palmae Indicae Genus Lantor dictum*. J. B. This bears a small Fruit, of the Bigness of a Cherry, of an Orange colour, and containing a Kernel, which they call *Cucos*. Of this Fruit they make a very fine Oil, of an Orange-colour, pleasant to the Taste, and very wholesome to those who are us'd to it.

3. *Pindoba Brasiliensis*. Marggr. *Pindova*. Pison. *Inaia Brasiliensis*, *Palma Brasiliensis cortice glabro*, *Fructu Ovi gallinacei Magnitudine & Figura*. Of the Saffron-colour'd Pulp of the Fruit they make an Oil of the same Colour, which is us'd in Lamps; and from the Kernel they express a very limpid Oil, which, while fresh, is good to season Food; and, when stale, serves to burn. They are both of a cold Quality, and what is expressed from the Kernels serves instead of Oil of Roses. The Leaves serve to cover the Houses, and of the same they make Mats, Baskets, and other Things; from the Top of the Tree distils a pellucid, sweet-scented, and very beautiful Gum, which sometimes serves instead of Gum Arabic: In the same Top is contained a medullary Substance, of a whitish Colour, tasting like a recent Walnut, and affording very good Nutrient, if eaten with Bread and Salt.

4. *Palma Brasiliensis quinta seu Tucum Pisoni*. Pal. Brasil. *aculeata*, *Fructu Pruni Damasceni Magnitudine & Figura*. The Trunk, Branches, and Leaves, are prickly; the Wood black, and extremely hard, and us'd by the Natives to sharpen their Arrows; its Fruits are produced two or three hundred or more in a Cluster; Swine and Monkeys feed upon them, and a very limpid Oil is expressed from them, which serves to the same Uses, as that from the Nuts of the *Pindova*, and is very much esteemed. The Fruit is blackish on the Outside, and contains a Kernel which is not ill-tasted, especially when new: From the filamentary Substance the *Brasilians* spin a very fine and strong Thread, very like red Silk.

5. *Palma Brasiliensis septima seu Aquæ Pisoni*. *Palma Brasil. vinifera*, *Foliis cinereis*. It bears its Fruit in Clusters of the Size of a moderate Plum, yellow when ripe, of a very sweet Taste, and containing a white and very delicious Kernel, from which the Inhabitants prepare a Wine. The Negroes call this Tree, in their own Tongue, *Catole*.

6. *Palma Brasiliensis octava Iraiba dicta*. Pisonis. Pal. Brasil. *farinifera*, an *Yri Lerii*; id est, *Palma Americana Fructu racemoso*. C. B. In the Branches about the Top of the Tree is contained a very white medullary Substance, which, boiled with Flesh or Oil, is esteemed good Food; they yield also an harder and white Substance, which they bruise, and make up into Lumps like Dough, of which Cakes are made of no ungrateful Taste; and of the Juice they prepare a very sweet and pleasant Spoonmeat. The Fruits are sweet and savoury, and serve to satisfy the Hunger of those who travel through these Woods, and vast Deserts.

7. *Palma nobilis seu regulis Jamaicensis & Barbadenis*. *Palmiste Franc. & Rochefort*. THE CABBAGE-TREE, or PALMETO ROYAL. This is a vast tall stait Tree, growing sometimes to the Height of two hundred and fifty, or three hundred Feet. The Top of the Trunk contains a white, very tender and savoury medullary Substance, which, eaten raw, tastes like a Walnut; but, boiled and pickled with the Multitude of tender and white Leaves, which cover and involve it on all Sides, is reckon'd one of the finest Dishes that is prepared in the *Leeward Islands*. The *French*, and our People too, call this medullary Substance, with the Leaves which involve it, *Chou de Palmiste*, that is, the Cabbage of the Palm-tree, because they boil it in their Broth, instead of Cabbage, and other Herbs. On the very Top of the Trunk grows the *Involucrum*, or Sheath, of the Flower and Fruits

called *Spatha*. The Fruits are round, and about the Size of an Hen's Egg.

8. *Urucuri-iba*. Marggr. & Pison. *Palma Brasiliensis farinifera*, *Fructu Pruni*, *Capulce insidente*. Of the Fruit is prepared an Oil, which is very medicinal, and particularly against the Punctures of the Ray-fish; nor do I think there is a better Remedy against that Misfortune.

9. *Palma Brasiliensis nona Miriti dicta Pisoni*. It bears a single Fruit, which is eatable and sweet, and of the Size of an Hen's Egg.

10. *Palma Brasiliensis decima Miraiiba dicta Pisoni*. Its Fruit is of the Size of a Pigeon's Egg, eatable and savoury enough.

11. *Jocara & Jucoara Brasiliensis*. Marggrav. *Jocara Pisoni*. *Palma coccifera minor Brasiliensis*. This has nothing singular, but in its very small Fruit growing in Clusters, and of the Figure of the Coco-nut.

12. *Katou-Indel*. H. M. *Palma sylvestris Malabarica*, *Folio acuto*, *Fructu Pruni Facie*. D. Commelin. See KATOU-INDEL.

13. *Palma Facie cuciofera*. J. B. *Palma cujus Fructus Cuci*. C. B.

The *Cucioferon*, *κυτιόφορον*, of *Theophrastus*, is different from the Palm-tree; for the Palm-tree rises up with one single and individual Trunk, but the other, after it is somewhat grown, becomes bifid, and each Member is again subdivided into other Branches: The Fruit is as big as a Man's Fist, round and oblong, of a yellowish Colour, and of a sweet and very grateful Taste, not cluster'd, like that of the Palm-tree, with other Characters, which shew that the *cucioferous* Tree of *Theophrastus* is not a Species of *Palma*; but, because all Botanists refer it thither, we, in Compliance with them, have reduc'd it under the Genus of Palm-trees. The *Nux Indica minor* of *Cordus*, which answers to the *Cuci* of *Theophrastus* in all things but the Size and Shape, seems to me to agree with the *Coco-nut*. I find no Description of the *Arbor cuciophora*, among the Moderns; but the Fruit shews it to be a Species of *Indian Palm-tree*, and particularly of the *coccifera angulosa*. C. B.

14. *Palma Indica Folio bicomposito*, *Fructu racemoso*, *Schunda-pana*. H. M. The distinguishing Character of this Tree seems to be the Leaves growing by Pairs, and across each other.

15. *Palma vinifera Fructu ex Arboris Trunco spinoso*. C. B. The Fruit of this Tree hangs from the Trunk, after the manner of Pine-nuts and Ananas, whereas in other Palm-trees they proceed from the Head of the Trunk, and are included in a *Spatha*.

The three following Species are reduc'd by *Ray*, together with the *Caranaiba*, which may be found under its proper Article, to a subordinate Genus of *Palma*, distinguished by its pliable Fan-shaped Leaves.

16. *Palma coccifera*, *Folio plicatili Flabelliformi Fœmina Carimpana*. H. M. *Palmeira brava Fœmina Lusitanis*. The Female *cocciferous* *Palma* with the pliant Fan-shaped Leaf.

17. *Palma coccifer Folio Flabelliformi mas*, *Ampana*. H. M. *Lusitani Palmeiro bravo macho*. The Male *cocciferous* *Palma* with the pliant Fan-shaped Leaf.

18. *Palma montana Folio plicatili Flabelliformi maximo*, *semel tantum frugifera*, *Codda-panna*, *five Palma montana Malabarica*. H. M. *Cingalensibus Talagas & Talagalla*, & *Talipot*. An *Palmam referens Arbor farinifera*. C. B? The Mountain Palm-tree, with the pliable Fan-shaped Leaf of the largest Size. The Leaves of this Tree are said by Captain *Knox*, who lived twenty Years a Captive in the Island of *Ceylon*, to be very tenacious, and soft like Parchment; and, tho' large enough, when extended, to cover twenty Men, yet to be pliable like a Fan, to such a Degree as to be contracted and reduced to no bigger Size than that of a Man's Arm, and besides to be extremely light, so as, when divided into Parts, to be easily carry'd in the Hand.

19. *Palma humilis spinosa*, *Atitara Brasiliensis dicta*. Marggrav. The prickly Dwarf Palm-tree.

20. *Palma Manicam Hippocraticam referens*. C. B. *Palma succifera*. Clus. The Dwarf Palm-tree resembling *Hippocrates's* Sleeve. These two last are in *Ray* the second and third Species of the *Palma humilis*, or Dwarf Palm-tree. The first of them you have under the Title *Palma humilis*. Raii H. P.

To make Palm-wine, take ripe common Dates, and put them into a Vessel, [which has an Hole bored at the Bottom, and stopp'd with a pitch'd Reed, bound about with Linen, to cover the Hole. Then, to ten Choenices of Dates, pour three Congii of Water [See the Articles CHOENIX and CONGIUS]: if you would not have your Wine very sweet, pour on five Congii of Water on your Dates, and let them alone to macerate for ten Days. On the eleventh Day, take off the Linen Cloth from the Reed; and, receiving the thick and sweet Wine in proper Vessels, set it aside for Use.

This Wine is pleasant, but noxious to the Head; it is good for Defluxions because of its astringent Quality, and is for the same Reason proper in Disorders of the Stomach, the Coeliac Passion, and an Hæmoptoe. Some add the like Quantity of Water a second time, and so draw it off: They do the same the third, fourth, and fifth time, but no more; for afterwards it grows sour. *Dioscorides, Lib. 5. Cap. 40.*

PALMA signifies, also, the Palm of the Hand.

Palma-pinus seu canifera. The Name of a large Tree, resembling both a Palm, and a Pine.

PALMARIS MUSCULUS. The ancient Anatomists mention but one Muscle belonging to the Palm, the *Palmaris longus*; but *Fallopianus* describes the *Palmaris brevis*, communicated by *Joannes Baptista Cammanus*, an eminent Anatomist, his Cotemporary; and was first published by *Valverde*, in his Anatomy written in Spanish.

The *Palmaris Longus*, otherwise called *Ulnaris Gracilis*, is a small Muscle, lying between the *Os Humeri* and the *Carpus*, on the Inside of the fore Arm, its Body being small and slender, its Tendon very long and fat.

It is fixed by its fleshy Portion in the small Crista of the inner Condyle of the *Os Humeri*, sometimes closely united to the *Ulnaris Internus*. From thence it runs down fleshy for some Space, turning a little obliquely towards the middle of the fore Arm, and ends in a long narrow thin Tendon.

This Tendon passes down the middle of the fore Arm, over all the other Muscles, to which it slightly adheres; and, advancing over the large internal annular or transverse Ligament of the *Carpus*, is inserted in the Surface thereof, sending off some radiated Filaments to the *Aponeurosis Palmaris*.

I have found this Muscle fixed to the Condyle of the *Os Humeri*, by a Tendon about a Finger's-breadth in Length, to which the fleshy Body was joined toward the Middle of the fore Arm.

I have also seen the inferior Tendon inserted in the *Os Scaphoides* of the *Carpus*, without communicating with the large annular Ligament; and I have seen the *Aponeurosis Palmaris* arise from this Ligament; from all which it may be reasonably concluded, that that *Aponeurosis* has no essential Dependence on this Muscle.

Sometimes this Muscle appears to be only a Production from the *Ulnaris Internus*.

The *Palmaris brevis*, otherwise called *Palmaris cutaneus*, is a small thin Plane of fleshy Fibres, situated transversely, or more or less obliquely, under the Skin of the large Eminence of the Palm of the Hand, between the *Carpus* and the little Finger; its Fibres adhering to the Skin, and being, in some measure, interwoven with the *Membrana adiposa*.

These Fibres are fixed along the Edge of the *Aponeurosis Palmaris* from the large Ligament of the *Carpus* toward the little Finger; and they run in for some Space on the Plane of the *Aponeurosis*; but without any Connection with the Bones of the Metacarpus. Near the *Aponeurosis* these Fibres are more or less tendinous, and some of them often cross each other. They are sometimes so thin and pale, as hardly to be sensible; and, in some Subjects, this Muscle seems to be divided into several Parts.

The *Ulnaris Gracilis* seems to be an Assistant to the *Ulnaris* and *Radialis Interni*, in bending the Wrist; and it seems, also, particularly to assist the *Radialis Internus* in the Motion of Pronation. *Winslow.*

PALMATA. A Name for several Species of ORCHIS.

PALMOS, παλμος. A Palpitation. See **PALPITATIO**.

PALMULA. A Date. *Palmula* is, also, a Name for the broad and flat End of a Rib. *Blancard.*

PALPEBRÆ. The Eye-lids.

PALPITATIO, Palpitation, is a Disease affecting the Heart, in which it labours under a sort of Concussion, and trembles and palpitates. The Greeks call this Disorder *παλμὸς τῆς καρδίας*, "a Vibration or Trembling of the Heart;" and we (the Latins) *Palpitatio*, a Palpitation: The Arteries throughout the Body are affected with a vehement Pulsation, and sometimes are, also, dilated; especially those above the Clavicles. The Disease frequently intermits, especially whilst the Body enjoys Rest; but after immoderate Exercise, drinking strong Wines, Indulgence in Venery, hot Bathing, or a Fit of Anger, returns upon the Patient. If a Palpitation of the Heart continues long, it threatens sudden Death; it is as much to be dreaded, if it often seizes the Patient, and that after the Solution, or going off, of other Distempers; and comes attended with a great Nausea and Vomiting, and is not at all alleviated thereby. Those on whom this Disease recurs after some Months, or even after a Year, never arrive at old Age, all dying either of acute Fevers, or suddenly of a Syncope. It is most incident to Persons who are between forty and fifty Years of Age, and to such as are molested with melancholy Flatuosities, or a Tumor of the Spleen from

black Bile. A Palpitation of the Heart precedes a Syncope, and often degenerates into it. *Lemmii Med. Obs.*

Some spasmodic and convulsive Disorders affect the whole nervous System, and destroy almost all the Functions of the Body, whilst others are confin'd to particular Parts, which they frequently exagitate with terrible Violence. Of this latter kind is the Palpitation of the Heart; which may be defin'd, A violent Twitching, or Convulsion, of the Heart, which is a muscular Substance; or a Removal of it from its natural Place; arising from an impetuous Influx of the fine nervous Fluid into the cardiac Nerves, and a too copious Impulse of the Blood into the Right Ventricle of the Heart; or from an Acrimony of the Humours; or from some other Cause.

That this Definition is just, will appear from what is afterwards to be said; but it is to be observ'd, that it is only applicable to a morbid and uneasy Palpitation of the Heart, which is frequently chronical, and which differs from a Tremor, or slight Palpitation, of the Heart, which happens in sound Persons, and is soon remov'd; for a Tremor of the Heart arises from a quick Influx of the nervous Fluid into those nervous Fibres, which, in the same Direction with the Vessels, especially the Coronary Arteries, surround the external Surface of the Heart, or from a too slow Influx of that Fluid into some Ramifications: Hence *Lower*, in his Treatise de Corde, Cap. 2. observ'd that the Heart of a Dog, upon tying the Eighth Pair, was immediately seiz'd with a Tremor. Hence, also, the Reason is obvious, why this Tremor is observ'd to happen partly after violent Commotions of Mind, and an excessive Use of Venery; and partly why it succeeds a Loss of Strength, and sometimes prognosticates Deliquiums, sometimes accompanies malignant Fevers, sometimes succeeds large Hæmorrhages, and sometimes afflicts those who are just about to die. There is, also, a more frequent Palpitation or Motion of the Heart, which happens in those who run fast, jump, play at Ball, use the hot Baths, indulge themselves in excessive Joy, or discompose and ruffle themselves by exorbitant Passions; and this Species of Palpitation is no more than a quick and speedy Systole of the Heart and Arteries, arising from too great a Commotion, and too expeditious a Circulation, of the Humours through the Cavities of the Heart. This quick Systole of the Heart, when free from an Hardness of the Pulse, is distinguished from a febrile Pulse, which is hard and frequent. A Palpitation of the Heart ought, also, to be distinguished from that which is sometimes perceived, especially in Women, about the last Months of Gestation, in the epigastric Region of the Abdomen, and which is nothing but too great a Repletion and Pulsation of the Arteries, situated there, especially of the Coeliac Arteries, by means of too large a Quantity of Blood, which cannot quickly enough return through the splenic Veins. This Species of Palpitation is most commodiously cured by Venesection; and an Instance of it is found in *A. N. C. Dec. 1. An. 6.* But of these we do not treat, since we only consider such as frequently, and without any evident or external Cause, seizes the Patient, and is performed with so great a Contraction and Agitation of the Heart, that it is moved out of its natural Seat, and either forced more to the Left Side, or thrust so violently against the Ribs, Sternum, and Præcordia, that the Pulsation raises the external Integuments, and may be, sometimes, perceived without the Cloaths, according to *Foressus*, in *Obs. Lib. 17. Obs. 10.* and *Christophorus a Vega*, in *Lib. 3. de Art. Med. Cap. 8.* *Rivinus*, also, in his Treatise de Palpitatione Cordis, Sect. 13. informs us, that, in a Patient labouring under a Palpitation of the Heart, he found a red Spot in that Part of the Breast; where, upon applying his Hand, he found the Pulsation; and that, in another Patient, he found a Callus in the same Part.

In the historical Description of this Disorder, there are some Circumstances, which deserve a particular Consideration. Those, then, are more subject to this Disorder than others, who are of firm Habits, sanguine melancholy Temperaments, delicate Minds, such as are subject to Frights, young Persons who abound in Blood and Juices; those whose Evacuations of Blood, whether artificial or natural, are suppressed or neglected; and especially Women whose Menes are not duly discharged, or who have Hæmorrhages of the Nose suppressed. Hence *Ballonius*, in *Lib. 1. Consil.* uses these Words: "As in young Men entering into a State of Puberty, and accustomed to frequent Hæmorrhages, a Palpitation of the Heart may happen, if these Hæmorrhages are suppressed, so it may also happen to young Women, in whom the Menes have not as yet begun to flow, because in this Case the Blood regurgitates to the superior Parts." The Palpitation is sometimes more gentle, and sometimes more violent; sometimes shorter, and sometimes longer; sometimes it attacks the miserable Patients when asleep, so as to awake them suddenly; sometimes it, also, seizes them by Day, and is often increased after eating; sometimes violent Anxieties of the Præcordia precede

precede this Palpitation, and under the immediate Paroxysm the Breathing is quick and difficult: It is sometimes accompanied with a Tremor of the Heart; and what is particularly remarkable is, that tho' the Pulse is intermitting, it does not, nevertheless, correspond to the Motion of the Heart; but is languid and diminished. Besides, according to *Timæus a Guldenklec*, in *Epist. 23.* the Pulse is not at all to be perceived in the Wrist. Under a violent Paroxysm, a great Uneasiness is perceived in the Region of the Præcordia, on account of the Disorder produced in the Diaphragm, by the Force, and palpitating Motion, of the Phrenic Nerve, situated about the Left Side of the Heart. A considerable Languor of the Body, and a Tremor of the Joints, remain after the Palpitation is over.

As for the Causes and Seat of the Disorder, the formal Cause is always so violent a Contraction and Convulsion of the Heart, that it is moved out of its natural State; but the material and proximate Cause is a certain Stagnation of the Blood, especially in the Right Ventricle of the Heart, and a too great Congestion of it to the same Part; on account of which there happens an impetuous Influx of the nervous Kind into the Cardiac Nerves and Fibres of the Heart, and a preternatural Contraction of them. But, that these Things may be the better understood, we shall premise something concerning the Structure of the Heart.

First, then, *Johannes Maria Lancisi*, in his Treatise *de Motu Cordis & Aneurysmatibus*, contrary to the Opinion of most Physicians, who think that the Nerves of the Heart are very small, and hardly considerable, has shewn, from accurate anatomical Researches, that very considerable and numerous Nerves are communicated to the Muscles of the Heart; for, in each Side, the Right as well as Left, there are five Pairs of Nerves to be found; the first of which, called the *Par Vagum*, arising in the Brain, between the Nates and Testes, is propagated among the small Ramifications of the Carotid Arteries, and, in the same Direction with the Vena Cava, is convey'd to the Pericardium; and, spreading its small Ramifications to the Auricles and Arteries, terminates in the Rete Nervosum, to be found between the Aorta and Pulmonary Artery in the posterior Basis of the Heart. The second, called the Superior intercostal Pair, arises from the same Origin with the former; and, being sent from the Head through the Perforation of the Os Petrosum, descends above the Aorta; and, dividing itself into three Ramifications, communicates one to the external Part of the Heart, and the other two to what is commonly called the Reticular Contexture. The third, called the Vertebral Pair, arising within the Brain near the tenth Pair, and running off with the Vertebral Artery, proceeds through the bony Canal; and, going out about the seventh Vertebra of the Neck, is inserted in various Parts of the Heart, and is at last distributed to the Rete Nervosum. The fourth, called the Inferior Intercostal Pair, arises from the Spinal Marrow, between the third and fourth Vertebra of the Neck; and, sending off some Ramifications to the Auricles, and both Veins, often concurs in the Formation of the Plexus Nervosus. The fifth, called the Phrenic Pair, arising from the last Vertebra of the Neck, and first of the Back, distributes Nerves to the Auricles and Ventricles, and spreads through the Plexus Nervosus, from which numberless Ramifications are distributed through the whole Substance of the Heart. Hence we learn, why the Heart is possessed of a Degree of Strength superior to that of all the other Muscles of the Body; as also, why, when one Nerve is tied, the Heart, by reason of the irregular Influx of the nervous Fluid into the other Pairs, trembles; and why its Motion is not totally interrupted. 'Tis, also, to be observed, that three Pairs of these Nerves form Ganglions, of which the other two are free. By these last, the regular and natural Motion of the Heart is performed; and, by the three former, its violent and irregular Motions succeeding the Passions of the Mind. Hence the Reason is obvious, why the Passions of the Mind are so powerful in altering the Motion of the Heart. 'Tis, also, to be observed, that the Vena Cava is furnished with more Nerves than the other Vessels; because it stands in need of a great Degree of Strength, in order to return the Blood of whole Body.

'Tis, also, to be observed, that the Heart is a Muscle, or rather a Congeries of Muscles; for, as Anatomy informs us, that it is formed of numberless Fibres, and fleshy Columns, so 'tis certain, that each of these is compounded of numberless other small Fibres, every one of which, as it is a Congeries of the smallest Fibres, deserves the Name of a Muscle, especially since each is covered with a very fine Membrane, prepared of a Contexture of the nervous Fibres and Arteries. Hence it follows, that the Heart, both internally and externally, is highly nervous, sensible, and capable of being vellicated to a Contraction by every thing lodged in it. Besides, the Heart is a disengaged Muscle, suspended by four large Vessels; for which Reason it may, by preternatural Commotions, be drawn to any Side, and removed from its natural Seat. The Use of the Heart is to promote the Circulation of the Blood through the whole Body,

concerning which we shall observe the following Circumstances, as most necessary for our Purpose. The Blood from all Parts of the Body is, by means of Veins, which are at first small, and then larger, convey'd into the Vena Cava, and enters its large Sinus, which it forms near the Right Auricle of the Heart; and, being convey'd thence, enters into the said Auricle, as being an hollow Muscle at that time dilated; the Chyle, at the same time, from the Subclavian Vein, enters the same Auricle by means of the Vena Cava Descendens. This Auricle, therefore, being full of Humours, is solicited to a Contraction; by which it forces the Blood into the Right Ventricle of the Heart, which is either totally relaxed, or, according to *Lancisi*, in the End of its Diastole, and Beginning of its Systole; but the Right Ventricle, in consequence of its nervous Structure, is, by the large Quantity of Blood contained in it, stimulated to a strong Constriction, and forces the Blood into the pulmonary Artery every-where distributed through the Lungs; the Return of the Blood into the Auricle being prevented by the Tricuspid Valves. Hence, the Passages being every-where free, it is convey'd to the pulmonary Vein, and is, in the same manner, received by the Left Ventricle of the Heart; from which it is convey'd, through the Aorta, to all the Parts of the Body. When the Blood is expressed from the Heart, its empty Ventricles are restored to their natural State, which is the Diastole; and, as soon as they are again filled with Blood, they are again necessarily contracted. Thus the Systole and Diastole of the Heart last as long as Life, which consists in an entire and perfect Circulation of the Humours.

From what has been said, 'tis obvious, that to the natural Motion of the Heart there are requisite, first, a just Proportion between the Fluid to be moved and the solid Part, that thus only such a Quantity of the former may be convey'd, as is capable of being surmounted by the natural Force of the Heart: Secondly, a just Temperature, and natural Mixture, of the Fluids: Thirdly, a due Strength of the Heart, and consequently a sufficient Influx of the nervous Fluid, and of the arterial spirituous Liquor: Fourthly, a right Disposition of the Ducts and Vessels which convey and return the Blood to and from the Vessels of the Heart, and a Freedom of their Cavities from all preternatural Obstructions. If these are not in a natural State, they alter the Motion of the Heart in various Manners. But since we only treat of a violent Palpitation of the Heart, in order to distinguish it from other Motions of the Heart, we are to observe, that it is always requisite, first, that something offensive be lodged in the Right Ventricle of the Heart: Secondly, that, in consequence of this, there should be a greater and more impetuous Influx of the nervous Fluid into the Cardiac Nerves: And, thirdly, that, in consequence of this, there should succeed a preternaturally great and violent Subfultus, and Contraction of the Heart, which, being often and quickly continued, does not cease till the foreign Impediment is removed: Fourthly, that, by so violent an Agitation, the Heart should be moved out of its natural Seat, because it is disengaged and pendulous: Fifthly, that it should frequently be protruded principally to the Left Side, because the Impulse happens from the Right to the Left Side: And, sixthly, that the Progress of the Humours through the Arteries should be irregular, and sometimes absolutely cease for some Minutes. Hence, in the Wrist, the Pulse is generally perceived intermittent, weak, small, or absolutely none at all. Deliquiums, also, frequently accompany this Disorder.

We now come to inquire into the mediate Causes of a Palpitation of the Heart; for which Purpose we shall first inquire into the Phenomena which present themselves upon laying open the Carcases of those who have died of this Disorder. We shall not mention the Polypuses, the Stones, and other preternatural Substances found in Hearts, and the Cavities of the Vessels, since these Facts are sufficiently attested by Authors: Nor shall we mention the preternatural Quantity of Water tinged with Blood in the Pericardium after Death, which we shall afterwards account for; but we shall only specify what kind of Constitution of the Heart has been found upon dissecting such Patients: Thus, in *A. N. C. Dec. 2. An. 9. Obs. 44.* we are told, that, upon opening such a Carcase, the Heart appeared preternaturally large; its Right Ventricle dilated, and filled with a very black Blood; the Arteries collapsed, and the Vena Cava Ascendens elevated into a very large Tumor. The same is evinced by *Willis*, in *Tr. de Medicament. Oper. Sect. 7. Cap. 3.* where, besides the Infarction of the Right Ventricle, and Auricle of the Heart, the Lungs were also infarcted with a black, stagnant, and extravasated Blood. *Joh. Cousin*, in *Nov. Astmat. Hist. 3.* informs us, that he had found some Hearts as large as that of an Ox.

Upon investigating, therefore, the mediate Causes which contribute to produce a Palpitation of the Heart, we find that they are either lodged in and about the Heart, or in remote and distant Parts: Among the former Class, the most frequent and considerable are polypous Concretions, which are always fibrous

and membranous, generated principally in the Ventricles and Auricles of the Heart, then reaching into the Veins, and thence, frequently, forced into the Arteries. Where these Concretions produce a Palpitation of the Heart, we generally find these Signs: The Palpitation is immediately increased after violent Exercise, going up Stairs, or the slightest Commotion of the Blood. There is a great Anxiety about the Præcordia, accompanied with a weak, unequal, and sometimes a plainly intermitting Pulse; the Patient breathes with so much Difficulty, that there is often Danger of Suffocation; the Disorder is, also, frequently accompanied with Deliquiums, continues long, and yields to no Medicines. Such a Concretion, when lodged in the Cavities of the Heart, according to its various Situation, admits sometimes more, and sometimes less, of the Blood, convey'd through the Vena Cava. Hence, according as the Quantity of Blood is greater or less, the Pulse is sometimes strong, and at other times weak and obscure. When such a Polypus remains immovable in the Place to which it adheres, we observe no Palpitation; but if, when separated from the Part where it was first formed, it fluctuates freely in the Ventricles of the Stomach, hence it may possibly be conveyed, along with the Blood, into some wide Blood-vessel, where, being firmly impacted, it totally closes it up, and hinders the Progress of the Blood, till it is again resolved; then the Pulse is not only intermittent and silent; but, also, the Vessels being thus obstructed, and the perpetual Afflux continuing to the Right Ventricle of the Heart, the Blood stagnates there, distends it, and thus stimulates the Heart to a violent Concussion, or Palpitation, which does not cease, till a free Circulation of the Blood is again restored.

Hence, in those who die of a Palpitation of the Heart, arising from a Polypus, the Right Ventricle and Auricle of the Heart, together with the Vena Cava, are found strangely dilated by the Blood stagnating within them. See *M. N. G. Dec. 2. An. 6. Obs. 233.* and *At. Berol. Dec. 2. Vol. 7.*

A Palpitation of the Heart, also, frequently arises from some Fault of the Fluids; especially when their Bulk is so great, as to render them superior to the Force of the Solids; for, when the Humours are redundant, not only the Vessels in which they are contained, but, also, more especially, the Ventricles of the Heart, when these Humours are thrown into violent Commotions, or, by Spasms, carried impetuously, and in too large a Quantity, to the superior Parts, must be distended, relaxed, and stimulated to a Palpitation. In such a Case, the Countenance is red and florid, the Vessels turgid with Blood, and the Pulse large. This Species of the Disorder is principally incident to young Persons of sanguineous Constitutions, who, when young, were subject to large Hæmorrhages of the Nose; upon the Cessation of which, they perceive Compressions, and Uneasiness of the Breast. The same Misfortune is, also, frequently observed to happen to those, who, at the stated Times, neglect their usual Evacuations of Blood. Hence we can account for the Instances of those, who, at stated Times of the Year, prevent a recurring Palpitation of the Heart by Venesection alone: An Example of this we have in *Zacutus Lusitanus, M. P. H. Lib. 2. Hist. 39.* The same is, also, asserted by *Stalpart Vander Wiel*, who, in *Obs. Rarior. Cent. 1. Obs. 36.* gives us a Case, from *Galen*, of a certain young Man, who, being, for three Years successively, afflicted with a Palpitation of the Heart, always felt Relief from Venesection; but, on the fourth and subsequent Years, totally preserved himself from it by seasonable Venesection.

But it more frequently happens, that a Palpitation of the Heart is induced by too large a Congestion of Blood, and viscid Serum in it; for 'tis to be observed, that thick and viscid Humours are, in their Circulation, first of all, stoppt in the Liver; then, stagnating in the Viscera of the lower Abdomen, and the nerve-membranous Parts, they stimulate them to spasmodic Strictures. When the Abdomen is constricted, the Blood is more copiously forced to the Præcordia, and from the Vena Portæ the blackest Blood is forced thro' the Vena Cava into the Right Ventricle of the Heart, in such a Quantity, that the natural Systole is hardly sufficient for propelling it; but a Blood so thick and viscid frequently leaves in the Heart a stagnant Portion, to the Expulsion of which the Palpitation is often opposed. Hence the first Rudiments of a Polypus are almost always laid. And hence a Reason may be given, why hypochondriac, scorbutic, and cachectic Patients labour under a Palpitation of the Heart, as one of their most troublesome Symptoms; as, also, why young Girls, on account of the great Compression of their Abdomen by their Stays, are greatly subject to this Disorder. Hence 'tis, also, obvious, why Men, by a Suppression of the Hæmorrhoids, are afflicted with this terrible Symptom; and why cacochymic Girls, about the first Eruption of their Menstrues, when they are not duly evacuated, as, also, Women, whose Age renders them incapable of such an Evacuation,

are much subject to this Disorder, under which they generally labour about the more remarkable Changes of the Moon. In this Case, where the vital Juices are thick, a Palpitation of the Heart is a familiar Symptom to those who labour under a flatulent or nephritic Colic; for, whilst the Flatulencies and Spasms compress and distend the Vessels of the lower Abdomen, and, by that means, force the Blood in a greater Quantity to the Præcordia, the Reason is obvious, why a Palpitation of the Heart should thence be produced.

A Palpitation of the Heart is, also, frequently produced by a certain subtle acrid and caustic Matter, which, not only acting on the Precordial and Cardiac Nerves, renders Respiration difficult; but, also, being carried along with the Mass of Humours to the Heart, and its dilated Coronary Vessels, adhering to the nervous and fleshy Fibres, it, by vellicating them, disposes them to violent concussory Motions. Thus, there are numberless Instances of Persons who have been seized with a Palpitation of the Heart, in consequence of an Itch, or Purple Fever, either repelled, not sufficiently appearing, or receding; as, also, other exanthematous Disorders preposterously repelled, or Ulcers too soon consolidated. The same Observation holds equally true, with respect to the arthritic or gouty Matter, when forced inwards. *Simon Pauli*, in *Quadripart. Botan.* gives us a remarkable Instance of a violent Palpitation of the Heart, produced by a Suppression of a Fœtor of the Feet: Of this kind are, also, the Instances of Persons who have fallen into this Disorder by fetid and poisonous Vapours. Thus *Godofredus Schultzzius*, *Tr. de Natur. Tinct. Bezoard. Cap. 5.* informs us, that this Disorder was produced by the Fumes of Antimony received into the Lungs.

This Disorder may not only be induced by these Faults of the Humours, but, also, by a Defect of Blood; as we find from many Instances. Thus 'tis certain from Experience, that not only Tremors, but, also, genuine Palpitations, of the Heart have been produced after large Discharges of Blood, whether from the Uterus in Abortions, or Child-birth, or by the Menstrues, or by a Spitting of Blood from the Lungs, or from any other Parts of the Body; for, as, in order duly to perform the Systole and Diastole, a due Influx of the nervous Fluid, and arterial Blood, into the Heart, and its Vessels, is requisite; so when, in these Cases, his Influx is lessen'd, the Strength of the Heart is weaken'd, and its Contraction rendered insufficient. Hence, by the Blood rushing in, Grumes and Coagulums are gradually left in the Cavities of the Heart; and, being accumulated, not only hinder the free Circulation of the Blood, the Cause of Deliquiums, so frequent in these Disorders, but, also, stimulate the Heart to that Commotion commonly called Palpitation. But, in this Case, the Disorder is found slight, tho' frequently recurring.

Among the Causes of this Disorder, the most considerable are immoderate Perturbations of Mind, which operate in various Manners, since some of them throw the Humours into brisk Commotions, and force them from the interior Parts to the Surface of the Body, such as Anger, and Joy; whilst others, constricting the exterior Parts, rather force the Humours inwards, such as Fear, Terror, and Grief. Thus, according to Experience, and the Observation of *Gabelcoverus*, in *Cent. 4. Curat. 84.* Anger, and profuse Joy, rarely induce a true Palpitation of the Heart, but only such a Motion as consists in a quick Systole and Diastole of the Heart and Arteries, and is widely different from a true Palpitation. Fear will frequently produce a Tremor of the Heart, and may, also, be the Cause of a Palpitation, according to *Baglivi*, in *Prax. Med. Lib. 2.* But 'tis certain from daily Experience, that Dread, or Terror, is very powerful in exciting a Palpitation of the Heart; the Reason of which seems to be this, That, whilst the Force of Terror is such, that, constricting the external Parts, it forces the Humours to the internal Parts; these rush more copiously to the Heart, which they distend beyond its natural Degree of Dilatation and Force, to a preternatural Resistance, which produces a Palpitation. I have, also, frequently observed, that hypochondriac Men, and those of weak nervous Systems, were seized with a Palpitation of the Heart after intense Meditation, a previous Refrigeration of the Extremities, and a Vertigo. Hysterical Women are, also, afflicted with a Palpitation of the Heart, upon the Smell of Perfumes.

Among the more remote Causes of a Palpitation of the Heart, are flatulent Aliments, especially when eaten by those of a weak and languid Digestion, such as hypochondriac Patients are; for such leguminous and oleraceous Aliments leave a mucous Lentor in the Stomach and Intestines; the Vapours arising from which not only distend the Intestines, and thus hinder the free Circulation of the Blood through the Vessels of the Abdomen; but, also, by expanding the Stomach, hinder the due Descent of the Diaphragm, and the Course of the Blood through the Lungs, and retard its Motion through the Cavities of the Heart. Thus *Malpighi*, in *Epist. ad Borellium*, informs

informs us of himself, that he had been frequently afflicted with violent Palpitations of the Heart, by eating leguminous Substances. Hence, also, the Reason is obvious, why hypochondriac Patients are principally afflicted with a Palpitation of the Heart after eating, and why many of the Antients placed the Cause of this Disorder in Flatulencies: So that *Hippocrates*, in *Lib. 2. Epidem. Sect. 5.* affirmed, that all Palpitations of the Heart were accompanied with Flatulencies. Nor, among the accidental Causes of this Disorder, are we to overlook the Strictures of the lower Abdomen, Thighs, and Legs, and too tight Clothes; since these, by forcing the Humours upwards, contribute to the Production of this Disorder, in those who are previously disposed to it, as *Gabelcoverus*, in *Cent. 3. Curat. 114.* informs us; and *Forestus* gives us a memorable Instance of one, who, falling asleep about Noon, with his Garters too tight, was seized with a Palpitation of the Heart; which was forthwith removed, upon loosing his Garters. In those, who from too great a Thickness of Blood, or polypous Concretions, are subject to Palpitations of the Heart, nothing more contributes to recal the Disorder, than all Commotions of the Humours, whether produced by violent Passions of the Mind, or hot Aliments and Liquors; an Instance of which, produced by Aliments too high-season'd with Spice, is found in *M. N. C. Decad. 1. An. 3. Obs. 134.* or by violent Motion of the Body, which is always observed to be injurious to such Patients.

Before we leave the Pathological Consideration of this Disorder, we shall briefly deliver our Sentiments concerning the Water of the Pericardium. 'Tis, therefore, certain from many Observations, that, in those who have died of a Palpitation of the Heart, a large Collection of Water has been found in the Pericardium: This is evinced by various Instances, to be found in *Carolus Piso, de Morbis a serosa Colluvie*; *Olaus Borrichius, in Aët. Hassn. Hollerius, in Schol. Lib. 1. Cap. 39. Tulpus, Lib. 4. Cap. 20. Fernelius, Lib. 5. Pathol. Cap. 12.* Many Physicians have, also, assigned this Water in the Pericardium, for the Cause of the Palpitation; but I am rather of Opinion, with *Lower, in Tr. de Corde, Cap. 2.* that it is the Effect of the Palpitation; for, as 'tis certain from many Observations, that the Blood, when stagnating in any Part, deposits its more serous and subtle Portion, as in the Brain, the Intestines, the Uterus, and the Bladder; so 'tis equally certain, that Blood stagnating in the Ventricles and Auricles of the Heart, and put into violent Commotions, deposits its more subtle Part, which is extravasated into the Pericardium. Hence we observe, that not only a Dropsy of the Pericardium, but, also, of the Breast, is generated, and succeeds the Palpitation of the Heart.

As for the Prognostic of this Disorder, *Galen*, in his Treatise *de Locis affectis*, informs us, That: "those, who in Youth, or the Declension of Age, were seized with a violent Palpitation of the Heart, rarely live long, but die soon." And, *Avicenna, Fen. 3. Primi L. Doct. 5. Cap. 1.* has these Words: "The Person who is often afflicted with a Tremor of the Heart, ought to dread a sudden Death; because, as this Symptom affects a principal Part, it is easily changed into a Syncope, which terminates in Death." Nor is this Disorder neglected, from whatever Cause it proceeds; for it often terminates in a mortal Suffocation or Syncope, if the Heart is so distended beyond the Sphere of its Elasticity, that it cannot again contract itself. It is, also, easily converted into a dangerous Hæmoptysis, a Phthisis, a Cachexy, a convulsive Asthma, a Dropsy of the Breast, and an Anasarca. An unlucky Termination is to be dreaded, if the Palpitation is frequent, large, and accompanied with a Difficulty of Breathing, Deliquiums, and an unequal Pulse. In general, both in making the Prognostic, and accomplishing the Cure of this Disorder, the Physician must carefully observe, whether the Palpitation is idiopathic, or has its Cause within the Heart, or, at least, the adjacent Vessels; or whether it is symptomatic, or appears as a Symptom of spasmodic, convulsive, hysseric, and hypochondriac Disorders. The former can hardly be cured, whereas the latter totally ceases when the primary Disorder is removed.

THE CURE.

The more inveterate a Palpitation of the Heart is, the more difficult it is to be cured; for, if the Fibres of the Heart are often preternaturally vellicated and distended, they are at last so weakened, that the Disorder becomes habitual, and is excited by the slightest Cause: So that, if the Beginnings of any Disorder are to be seasonably check'd, much more ought the Rudiments of this to be opposed; because, tho' in the Infancy of the Disorder a perfect Cure may be obtained, yet when it is inveterate, and especially when it is of the idiopathic Kind, a palliative Cure can only be hoped for. The Intentions of Cure, to be pursued, are:

First, By proper Methods to allay the preternatural Commotions of the nervous Parts and Fibres of the Heart and Vessels.

Secondly, To hinder the Stagnation of the Blood about the Heart and Lungs, by deriving its Afflux to these Parts elsewhere, and rendering the Circulation more free. And,

Thirdly, Out of the Paroxysm to remove the Causes which excite the Disorder.

As for the Paroxysms, a rational Physician is to inquire what occasional Cause has contributed to induce them: When, for Instance, he is ascertained, that it proceeds from an Ebullition of the Humours, the most valuable Medicines are such as correct this Ebullition, and, at the same time, allay the preternatural Motions of the solid Parts. This Intention is best answered by the antispasmodic Powders prepared of Crabs-eyes, diaphoretic Antimony, depurated Nitre, Cinnabar, Amber, the Tooth of the Sea-horse philosophically prepared, Hartshorn prepared without Fire, and a small Quantity of the Extract of Castor: The precipitating Powders, also, either alone, or in Conjunction with the anodyne mineral Liquor, exhibited in a Draught of cold Water, is highly beneficial in correcting the Orgasm of the Humours. When the Palpitation proceeds from Flatulencies of the Intestines, or when the Patient is costive, the Skin dry, and the Feet cold, besides the above-mentioned internal Medicines, we are, also, to use external Remedies; and especially the Flatulencies and Fæces are to be eliminated by the Anus, by means of oleous and gently carminative Clysters. The Feet must also be immersed in limpid Water, but with this Caution, that, if they are excessively cold, they are previously to be rubbed with warm Cloths. When violent Hæmorrhages have preceded a Palpitation, and the Patient is excessively weak, and subject to frequent Deliquiums, to the tempering Medicines, already mentioned, we are to add Analeptics; such as Mixtures prepared of the Waters of Lily of the Valley, and Turkish Baum, Cinnamon-water prepared without Wine, Black-cherry-water, the Pulvis Marchionis, Crabs-eyes, the anodyne mineral Liquor, and some analeptic Syrup, such as that of the four cordial Flowers. The Essence of Amber is, also, of an excellent analeptic and corroborative Virtue in this Case. Nor, in the Cure of Palpitations of the Heart, are we to neglect the Use of external Remedies; among which are discutient and balsamic Fomentations, and Bags applied to the Præcordia, and Pit of the Stomach: These may be prepared of Rosemary, Mint, Baum, the Flowers of Roman Chamomile, and other Ingredients; which are to be sprinkled with vinous Baum-water. *Forestus* highly commends green Baum with Borrage warmed, and applied with Rose-water, and a little Vinegar. This Intention is, also, answered by anointing the Præcordia with the Balsam of Life. If there is a Redundance of Blood, and Venesection has for a long time been neglected, and if the Disorder will yield to none of the above-mentioned Remedies, nothing remains but to open a Vein in the Foot; or, if other Circumstances permit, in the superior Parts of the Body; in which Case, a sufficient Quantity of Blood is to be taken away; for, by this means, the Præcordia are freed from the preternatural Load of Humours, and a due Equilibrium is restored between the solid and fluid Parts. Thus *Horstius*, in *Lib. 3. Obs. 16.* affirms, that Venesection proved surprisingly beneficial in the Paroxysm of a Palpitation. Some Persons, by inclining the Right Side to the Earth, can alleviate, and even totally remove, the Paroxysms of this Disorder. Instances of this I have frequently seen, and a memorable one is found in *A. N. C. Dec. 1. An. 2.* The Reason of this is sufficiently obvious; for, by this incurvated Posture of the Body, the too quick Afflux of the Blood through the Vena Cava Descendens is intercepted.

Out of the Paroxysm, the whole Intention of Cure consists in removing, or, at least, diminishing, the Causes which foment and support the Distemper. For this Purpose, the Physician is diligently to guard against an Increase of the Humours, except when the Disease derives its Origin from a Defect of Blood; for by this means we not only prevent a Redundance and Spissitude of the Humours, but, also, retard the Growth of Polypuses, if they are already formed. This End is most effectually answered by Venesection, which not only affords signal Relief in the Paroxysm, but is, also, highly beneficial in preventing fresh Returns of the Disorder. Hence *Galen*, in *Lib. 5. de Locis affectis, Cap. 2.* does not hesitate to affirm, that all Patients who labour under a Palpitation of the Heart, may be cured by Venesection, and the Use of attenuating Aliments and Medicines. This same Opinion is espoused by *Antonius ab Altomari, Cap. 45. Capivacius, Lib. 2. Pract. Cap. 8. Vellor Trincavelius, in Pract. de Compos. Medicament. & Cap. de Palpitatione Cordis; Stalpart Vander Wiel, Obs. Varior. Cent. 1. Obs. 36. Zacutus Lusitanus, M. P. H. Lib. 2. Hist. 39. and Verzasz, Obs. 90.* These Measures are not only the most effectual in Palpitations of the Heart arising from a Redundance, or Spissitude,

tude, of the Blood, but almost the only Means which can afford Relief to those afflicted with polypous Concretions in the Heart.

Besides, stronger Attempts are, also, to be made for the Removal of the Causes; for answering which Intention, if the Palpitation is symptomatic, we are, in the Cure, to direct our Views to the primary Disorder. If this is of the hypochondriac Kind, the same Measures are to be taken with those recommended under the Article HYPOCHONDRIACA PASSIO; but a particular Regard is to be had to the Thickness of the Humours, which, as it lays a Foundation for polypous Concretions, so it requires the same Method of Cure; only with this Difference, that, in a simple Spissitude of the Humours, the Disorder is to be totally removed; whereas in Polypuses it is only to be removed, in order to prevent greater Dangers. But, in both Cases, it is the principal Intention of Cure, both by Aliments and Medicines, to preserve the due Fluidity of the Humours, and a regular Evacuation of the salutary Excretions. For this Purpose we are to prescribe aperient, attenuating, and resolvent Infusions and Decoctions, and thin Broths prepared with the Roots of Succory and Grass, and the Herb Chervil. *Rhodus*, in *Lib. 2. Obs. 40.* in such a Palpitation of the Heart, which he calls melancholic, recommends Whey. But the Virtues of all other Medicines are surpassed by mineral Waters, especially the *Caroline Springs*, which excellently attenuate and resolve thick, coagulated, and viscid Humours, carry off the impure Juices by Excretion, and happily remove Infarctions of the Viscera. And I know some Patients, who, being afflicted with a Palpitation of the Heart, seemed to have polypous Concretions in it, and who, by the annual Use of Venesection, and the *Caroline Springs*, have preserved themselves alive for many Years.

When a Palpitation of the Heart derives its Origin from a Retention of the Menfes or Hæmorrhoids, it is expedient to reduce these Excretions to Order; which is done by temperating, antispasmodic, diluting, and gently laxative Medicines, by Venesection, by bathing the Feet, by Baths, hot Springs, and other Things adapted to the various Circumstances of the Patient. But if Ulcers, the Itch, an arthritic Matter, or other exanthematous Disorders, are repelled, after evacuating the Sordes lodged in the Primæ Viæ by gentle Laxatives, we are to sheath up the acrid subtil Matter distributed through the Mass of Blood, dispose it for an Evacuation, and then eliminate it through the cutaneous Pores: Which Intention is excellently answered by Absorbents, and fixed Diaphoretics, or acidulated Medicines, such as the Mixture Simplex, with the anodyne Liquor; first alone, and then with the Spiritus Bezoardicus Suffii, or the succinated Spirit of Hartshorn. This Intention is, also, answered by warm Infusions, to be drank in the Morning, in Bed; using, at the same time, a diaphoretic and temperate Regimen; but when the Disorder consists in the Heart, and its preternatural Constitution, such as a bony Hardness, Excrescences, or Abscesses, the Art of Physic is absolutely of no Use. However, the most proper Measures to be taken, in order to satisfy the Patient, are those recommended in *Polypuses*.

The most effectual Method of preventing this Disorder consists in a careful avoiding its occasional Causes, and a right Use of the Non-naturals: For which Reason, those who seem to be afflicted with Polypuses, are to be advised to avoid all, and especially violent, Motions of the Body; lest, by this means, the Humours being thrown into a Commotion, the fibrous Concretions should perhaps be torn away, and, by fluctuating freely in the Vessels, produce a speedy and fatal Event; as *Gabelcoverus*, in *Cent. 3. Curat. 114.* observes; who, also, advises that loose Clothes should be used, especially by Women, for the Abdomen, Thighs, and Legs. *Crato*, in *Lib. 5. Consil. 12.* uses these Words: "Tight Clothes about the Abdomen are to be condemn'd; the Stomach and Breast are to be well defended from the cold Air: Nor is it safe to remain in a cold Air, for any time; the Night Air is, also, to be avoided; and, when the Palpitation begins, a Clyster is to be suddenly applied, and the Hands and Feet to be rubbed." The Aliments and Drink must also be of an attenuating Nature, and every Species of stultent Food is carefully to be avoided: But, in a particular manner, the Patient is to guard against the Passions of the Mind, especially Anger and Terror, as also, from Venereal Pleasures, and too pensive a State of Mind; since these Things are, in their own Nature, capable of producing a Palpitation. And, lastly, Care is to be taken, that the Excretions of the Body be preserved in due Order; so that the Faces be duly eliminated, and the Perspiration kept free.

CAUTIONS.

In Palpitations of the Heart some Authors greatly extol Opiates; but in this Disorder we are to take care not to exhibit vaporous and strong Narcotics, such as Opiates are,

especially when not sufficiently corrected; since these, especially when exhibited to Patients exhausted by large Hæmorrhages, are so far from relieving the Patient, that they rather render the Disorder worse; but in hysteric Women, where the Paroxysms are accompanied with a Palpitation of the Heart, we, with great Advantage, apply to their Nostrials vaporous fetid Substances, such as Castor, Asa-fetida, and burnt Feathers. On the contrary, in these Cases, we are to abstain from Perfumes, since these not only increase, but recal the Disorder.

As in all spasmodic Disorders, it is an infallible Rule to use Venesection in the Feet, and bathe them; so 'tis to be observed, that these are not to be used, if the Feet are cold, since by this means the Disorder is increased. This Caution is, with equal Care, to be observed in Palpitations of the Heart. The Humours are rather, by Fomentations and Frictions, to be derived to the Feet; and then Bathing and Venesection may be used.

When a Palpitation arises from a Penury of the Humours, in consequence of Hæmorrhages, Analeptics, and such Things as restore Strength, are to be used; only they ought not to be of too hot a Nature, lest they should induce Orgasms. This Intention is most commodiously answered by Essence of Amber mixed with the anodyne Liquor. The Patient is, also, to be relieved with nutritive Aliments, Preparations of Milk, and such Emulsions as quickly generate Blood. And, that the Digestion may be render'd the keener, we are to the other Medicines to add such as corroborate the Tone of the Stomach, such as the Elixir Viscerale Balsamicum. In a chronic Palpitation of the Heart we recommend a Change of Air and Place.

In Palpitations of the Heart we are carefully to avoid drastic Purgatives and Emetics, such Things as throw the Humours into a Commotion, as, also, too aromatic and acrid Substances; since these throw the Humours into too great Commotions, and induce Spasms of the Stomach, which are immediately succeeded by an Afflux of the Humours to the Præcordia. As Baths of sweet Water may possibly throw the Humours into Commotions, so they are very cautiously to be used, and can only prove beneficial when used very tepid, and when the Paroxysm is remitting. On the contrary, mild Diaphoretics are principally to be used when exanthematous Disorders are repelled; since these, by provoking a gentle Diaphoresis, expel the peccant Matter, and recal the Efflorescence to the Surface of the Body.

When a Palpitation of the Heart arises from a considerable Plethora, and the Face appears pretty turgid with Blood, it is sometimes expedient to take a sufficient Quantity of Blood from the Jugular Vein; but, lest there should be too great an Afflux of Humours to the superior Parts, 'tis expedient, both before, and in the very Time of the Operation, to use pretty warm Foot-baths. Sometimes 'tis, also, necessary, previously to open a Vein in the Foot, and then to open the Jugular Vein. *Hoffman*.

Actuarius tells us, that a Palpitation of the Heart may be caused by too great an Heat or Plenitude of the Blood; or by Vapours. If it proceeds from the first, the Pulse will be unequal; but there is no Necessity, that it should be so in the latter Case: What he says of the Inequality of the Pulse, we find often, by Experience, to be true. And it is not only a Forerunner of a Palpitation, but often of a Syncope, and sudden Death; and indicates some Obstruction about the Heart; as *Galen* prognosticated in the Case of *Antipater* the Physician, who died soon after in this manner. The Pulse is not only unequal, as to Time and Strength, but, frequently, intermitting. In a Fit of very strong Palpitation, the Distance between the Pulsations is greater; and the longer the Interval, the more violent they are. This is the Case in great Fulness of Blood: Hence *Galen* observes, that, upon this Account, those are most subject to Palpitations, in whom the Hæmorrhoids, or Menfes, are suppressed. A Palpitation may, also, be owing, either to an excessive Rarefaction, or too great Cohesion, of the Particles of the Blood, or to any large Quantities of Wind, which oppress and distend the Chest, or the lower Belly. A Palpitation is a familiar Symptom in hypochondriac and hysteric People: And *Hollerius* describes a Case relating to this Disease, where the Pericardium was swelled with Wind alone, to a vast Dimension. For the Cure, *Actuarius* lays the greatest Stress upon Bleeding and Purging; which last is first mentioned by *Actuarius*. Alteratives must, also, be adapted to the Cause of the Complaint and Constitution of the Patient. *Piso* recommends both this, and Bleeding. *Salvus* seems to be in the right, when he advises Bleeding, whether there is a Plenitude or not.

In symptomatic Palpitations, which arise from the Menfes, or Hæmorrhoids suppressed, as soon as ever Nature recovers her usual Course, this Disorder of the Heart goes off. Even the sudden Eruption of the latter, where it has not been habitual, seldom fails of removing this

this Complaint. When an Excess of Water in the Pericardium causes a Palpitation, Bleeding and Purging are ineffectual; but how an hot Loaf, a warm Electuary, or an aromatic Bag, should disperse or waste this Water, is not conceivable. This *Sennertus* proposes; nor is it comprehensible, how blistering upon the Sternum, which some advise, should draw off this Water.

The Cure of an original Palpitation has been omitted by most of our Writers in Physic, who have generally directed all their Rules of Practice to those of the sympathetic Kind only.

Galen advised Bleeding, universally, in Palpitations; and it is a remarkable Case he gives of one, who, every Spring, was seized with a violent Palpitation: Bleeding every Spring three Years successively in the Fit, took it off, which the Patient observing the fourth Year, he prevented the Fit by Bleeding earlier, and had the like Success for several Years after. *Freind's Hist. Phys.*

In a Palpitation of the Heart arising from a Perturbation of the Spirits, *Boerhaave* commends the Water of Baum, made by repeated Cohobations.

Of PALPITATIONS, and what they portend in Diseases.

By Palpitation, properly so called, *Galen*, and other Greek Physicians, as we are inform'd by *Galen* himself, *de Symptom. Caus. Lib. 2. Cap. 2.* understand a depraved kind of Motion, and not the Pulsation of the Arteries, which, however, was the Sense that some Antients affix'd to the Word, as the same Author assures us, in 3 *Prorrh. T. 52.* where he, also, defines Palpitation to be a preternatural Dilatation and Distention of some Part. And, *Lib. de Trem. Convuls. & Palpit. Cap. 5.* he tells us, that Palpitation is a kind of Distention, and Subtidence, which either affects the whole Body, as was observed by *Hippocrates*, 3 *Epid. Ægr. 4.* in the phrenetic Patient, or only one Part, or many Parts together. Palpitations, for Instance, are generated, or excited, as *Galen*, in the above-cited Book, observes, in some Part of the Belly, Hypochondrium, Heart, or other Regions of the Body; and, indeed, in every Part thereof, which will admit of Dilatation; but especially in the Skin, or Place between the Skin and Flesh. And this Kind of Affection is more incident to the Muscles, from the Wide-ness of their Passages, which disposes them for the Reception of gross Flatulencies, which are the Cause of Palpitations. That Palpitations are excited by a gross Vapour, obstructed in its Passage, we are taught by *Galen*, in the Place just cited, where he says, "The Cause of Palpitations I take to be a gross and vaporous Spirit, obstructed in its Passage; and this Spirit, I say, must be collected into no very small Cavity, that the Part may have a sensible Distention." And, to the same Purpose, in 1 *Prorrh. T. 29.* he says, that Palpitation proceeds from a flatulent Spirit; and that Flatulencies are generated by gross and crude Humours; and that those Flatulencies and Humours are collected on account of the Coldness of the Parts. That the Heart and Stomach are frequently affected with Palpitations from the Stimulations of bilious and highly putrid Humours, and, also, from poisonous Vapours infesting the Mouth of the Stomach, and especially the Heart, appears from the same Author, *Lib. de Trem. Convuls. & Palpit.* above-cited. Some make this Affection to be the same with *Cardialgia*, and *Cardiaca Passio*; but Palpitation is a different Disorder.

These things being premised, let us come to the Prognostics: And here, first of all, it seems Matter of Inquiry, whether in acute Diseases there can be observed any Palpitation at all, from which we may predict a Recovery. It is really a very doubtful Case, since the slight Palpitations of some Parts portend nothing certain of themselves, tho' they are sometimes critically excited after the same Manner as a Vertigo, Pains, Anxieties, and the like critical Symptoms, are excited before the general and critical Perturbation. Palpitations, then, sometimes appear as critical, and are easily distinguished as such, by the Signs of a future Crisis. Of these we read, 1 *Prorrh. 36.* where it is said, that "Palpitating or throbbing Pains about the Navel have something in them predictive of a Delirium; but a vehement and plentiful Spirit, with a Distention of the Parts, is observed near a Crisis." And, in the same Treatise, *T. 144.* "Palpitations about the Belly, with an oblong swelling Tension of the Hypochondrium, foreshew an Hæmorrhage with a Shivering." Hence it appears, that there are some salutary critical Palpitations. These excepted, all Palpitations in Diseases are bad, and not only in acute Disorders, but are even

to be dreaded when attended with no other Indisposition, especially such as affect the Heart and Stomach; but most of all in the *Cardiaca Passio*, which proceeds from poisonous Humours and Vapours, and ends in a Syncope. To this last Kind of Palpitations, perhaps, *Hippocrates* had a respect, 2 *Aph. 41.* where we read, that "They who are frequently and strongly, without manifest Cause, seized with fainting Fits, die suddenly;" as he, for Instance, who, as *Galen* says, while he was in his fainting Fit, was affected with a violent Palpitation of the Heart. In short, all strong Palpitations, which frequently affect the Heart, and are attended with Fainting from no manifest Cause, prove mortal in a short time, according to *Galen, de Loc. affect. Lib. 5. Cap. 2.* nor can those who are affected with this Symptom live many Years.

We shall proceed to observe, that, in acute Diseases, all Palpitations, critical ones excepted, are bad, and, most of all, those which are perpetual, and infest the whole Body, or any one of the principal Viscera, or several of them together; and for this Reason, because they indicate a Refrigeration of the natural Heat, as being occasioned by a Refrigeration, according to *Galen, in 1 Prorrh. T.* Now all Refrigerations in hot and dry Diseases are very much to be dreaded; whence a Coma, or Lethargy, succeeding a Phrensy, prove mortal. Of this Nature were the Palpitations which *Hippocrates* observ'd in many of his dying Patients, as we read in the *Epidemics*, particularly, *Lib. 1. Ægr. 2.* in *Silenus*, of whom we read, that, "From the Beginning to the End, he had a great and rare Respiration, with a perpetual Palpitation of the Hypochondrium."

Palpitations in all Parts of the Body are very bad, as indicating a very great Diminution of the natural Heat. Under these universal Palpitations, the Patient is in Danger of dying speechless, as we find it hinted by way of Query, 1 *Prorrh. 30.* on which Place *Galen* commenting, says, "If Palpitation affect the whole Body, it is very possible, that the Patient may lose his Voice, before he expires, on account of Refrigeration, the Muscles of the Larynx being deprived of Motion, or the Nerves which serve them being no longer able to perform their Function." Of these Kinds of Palpitations it is, perhaps, that *Hippocrates* speaks, 1 *Epid. Ægr. 4.* as affecting the Wife of *Philinus*, when he says, "About the fourteenth Day she was affected with Palpitations, and her whole Body was pained [as if he had said, she had palpitating Pains over all her Body]; she talked much*; and, for some little time, she had the Use of her Reason, but was soon delirious again; about the seventeenth Day she lost her Voice, and died on the twentieth." And, more clearly to the Purpose, he says of the phrenetic Patient, 3 *Epid. Ægr. 4.* "The Day after he was taken, in the Morning, he lost his Voice, had a high Fever, sweated, had no Intermission, was affected with Palpitations all over his Body, and at Night with Convulsions; on the third Day, all the Symptoms were exasperated; and, on the fourth Day, he died."

From the Premises it appears, that, in acute Diseases, all Palpitations, which for a considerable Time, and in an high Degree, affect the whole Body, are very bad and mortal; and that of Palpitations, which affect only some Parts, those which are observ'd in the Region of the Heart, are, in such a Case, no less fatal; since, under a Disorder of so very hot a Nature, they indicate a Refrigeration, which in acute Diseases is always a Proof, that the natural Heat is, in a manner, extinguished. This, perhaps, was the Case of the young Man of *Melibæa*, 3 *Epid. Ægr. 16.* of whom *Hippocrates* says, "That he laboured under a continual Palpitation of the Heart, which never left him; and that his Urine was oily." All Palpitations, therefore, critical ones excepted, in acute Diseases, are bad; but those in particular, which for a considerable time affect the whole Body, or some one of the principal Viscera, are pernicious to the last Degree. But the perpetual Malignity of those Palpitations is confirm'd by other bad Signs, such as those which indicate the crude State of the Distemper, or portend a fatal Event, as it happen'd in the above-mention'd Cases of *Selinus*, the Wife of *Philinus*, the phrenetic Patient, and the young Man of *Melibæa*, where those Palpitations appear'd in a crude State of the Disease, and attended with other mortal Signs.

PALTIFERA ARBOR. *De Laet.* A large Tree, which grows in *America*, bearing a Fruit like a Pear, which the *Peruvians* call *Palta*; and which is preserved with Sugar, and given to the Sick; I suppose, as a Cooler.

PALUDAPIUM. See **APIUM**.

PALUMBUS. *Offic. Schrod. 5. 312. Schw. A. 313. Bellon. des Oyse. 308. Gefn. de Avib. 272. Jonf. de Avib. 63. Palumbus torquatus. Will. Ornith. 135. Raii Ornith.*

* In the *Geneva* Edition, Fol. 1657, we read, *παλμοὶ δὲ ἔλα τὴν σάμαλον, λόγοι πολλοί, &c.* "She had Palpitations over all her Body, talked much, &c."

185. Ejulf. Synop. A. 62. Charlt. Exer. 85. *Palumbus major seu torquatus*. Aldrov. Ornith. 2. 484. Mer. Pin. 175. THE RING-DOVE.

It is an Inhabitant of the Woods; the Virtues are much the same with those of the common Pigeon, or Dove; the burnt Feathers are said to cure the Jaundice, and to be good for the Stone and Dysury. Dale from Schroder.

PAMPATHES. The Name of a Plaister described by *Paulus Aegineta*, L. 7. C. 17.

PAMPHILION. The Name of a Plaister described by *Galen*, de Comp. M. p. G. L. 1. C. 17. and L. 3. C. 14.

PAMPINIFORME CORPUS. The Veins and Arteries of the Testicles, included in a common Coat, which are curled and knotty, resembling the Tendrils of Vines.

PAMPINUS. A Leaf, or Tendril, of a Vine.

PANACEA, *πανακία*, from *πᾶν*, the Neuter of *πᾶς*, all, and *ἄκος*, a Remedy. A pompous Title of many Remedies both among the Antients and Moderns: Thus the *Arcanum Duplicatum* is call'd *Panacea Duplicata*. Many Preparations of Antimony are, also, called by this Name: Thus, besides that given by this Title, under the Article ANTIMONIUM, there are two others, one of which is thus prepared:

Take of Antimony, six Ounces; Nitre, ten Ounces; common Salt, one Ounce and an half; and of Charcoal, one Ounce. Let them all be made into a fine Powder, and well mixed, and be put into a red-hot Crucible, by half a Spoonful at a time: Continue the Fire a quarter of an Hour after. Then either put it into a Cone, or let it cool in the Crucible; and there will be three Substances, as, in the Bottom, a little Regulus; above that, a compact Matter, something like the Liver of Antimony; and, upon the Surface, a more spongy Mass. Separate them from one another, and put by the Regulus: Powder the other two, and wash them apart, till they have no Taste of the Salts: Dry them gently, and keep for Use.

The uppermost Substance is counted the best, and is of a fine golden Colour, when wash'd; the middle Substance is not of so pleasant a Colour, and works more churlishly. The Regulus is equal to the Regulus of Antimony. The Operation is emetic and cathartic; and it is given in the Pox, Gout, Dropsy, Scurvy, and all obstinate chronic Cases. The Dose is from two to five or six Grains. This is the Basis of Mr. *Lockyer's* Pills, which have so long been a celebrated Purge. If ten Grains of the finer Sort of this Panacea be mixed with white Sugar-candy, one Ounce, in a fine Powder, and made up into a Mass, with the Mucilage of Gum Tragacanth, it may be divided into an hundred small Pills; of which one, two, or three, may be taken at a time, and they will gently work by Vomit and Stool.

The other antimonial Panacea is thus prepared:

Take of Antimony, four Ounces; grind it to a most subtile Powder; put it into a Matrafs; and pour upon it one Pound of strong capital Lees of the Soap-boilers. Set them to digest on warm Sand for four or five Days, and shake them often; then add some warm Fountain-water; shake it well about; let it stand for two or three Seconds of Time, and pour it off into a clean Pan; repeat that Ablution, till all the brown Powder is separated from that which appears like crude Antimony; to which put more capital Lees, and proceed in all things as before, till all the Antimony is brought into a subtile brown Powder; which wash well from its Salts, dry it, and keep for Use.

This is not distinguishable from the *Russel's* Powder in its Operation; and as the present State of the Fluids is, it proves either emetic, cathartic, diaphoretic, or diuretic. Its Dose is from five to thirty Grains.

There are, also, several mercurial Panaceas.

PANALETES. The Name of a Plaister described by *Actius*, *Tetrab.* 4. *Serm.* 3. *Cap.* 13.

PANARITIUM. A Whitloe. See PARONYCHIA.

PANATA, or PANATELLA. Panada.

PANAX ASCLEPIUM. A Name for the *Ferula*; minor ad singulos nodos umbellifera.

PANAX CHIRONIUM. A Name for the *Helianthemum*, vulgare, flore luteo.

PANAX COLONI. A Name for the *Galeopsis*; palustris; Betonicae folio; flore variegato.

PANAX HERCULEUM. A Name for the *Pastinaca*; Olu-fatri folio.

PANCALA AUREA. The Name of an Antidote described by *N. Myrepsus*, *Secl.* 1. C. 445.

PANCARPIA, *παραρπία*. The Name of a sort of Cake,

much used at *Alexandria*, which was covered with Paper, in order to make it keep the longer.

PANCASEOLUS. A Name for the BULBOCASTANUM.

PANCHRESTOS. A pompous Name for several Collyria, mentioned by *Galen*, and *Paulus Aegineta*. It imports, Good against every thing.

PANCHRYSOS is, also, an Epithet for some Collyria, importing, all golden.

PANCHYMAGOGUM, *πανχυμαγωγόν*, from *πᾶς*, all; *χυμός*, Humour; and *ἄγω*, to bring away. The Name of some cathartic Extracts, which have the Reputation of purging off all Kinds of Humours. The most celebrated of which are that of *Crollius*, and that of *Hartman*.

The Extractum Panchymagogum of *Crollius* is thus prepared:

Take of the Pulp of Coloquintida, one Ounce and an half; of the Ingredients which compose the *Pulvis Diarrhodon Abbatis*, good Agaric, of each one Ounce; of black Hellebore, two Ounces. Powder them all grossly, and put them into a Matrafs; pour upon them Rain-water distilled, four Fingers above the Mixture; stop the Matrafs close, and set it in Digestion in hot Sand, or in Horse-dung, three or four Days, and shake the Vessels every now-and-then. After this, pass your Infusion through a Cloth: Pour upon the Residue a like Quantity of the same Liquor; let it infuse as before; then strain and express it strongly; mix your Infusions; and let them settle, until they become clear; decant them, and evaporate the Liquor in an earthen Pan, in a Sand-heat, with a little Fire, to the Consistence of a Syrup; then mix with them of Rosin of Scammony, half an Ounce; of Extract of Aloes, two Ounces: Evaporate the Whole to the Consistence of an Extract: You will have four Ounces of it.

This is much recommended by some in hypochondriacal and maniacal Affections, to be frequently repeated from one Scruple to two in Pills; tho' I believe it is not ready made in the Shops.

The Panchymagogum of *Hartman* is thus prepared:

Take of Sena-leaves, two Ounces; of the best Rhubarb, one Ounce and an half; Root of black Hellebore, one Ounce; white resinous Turpeth, Polypody of the Oak, Trochisci Albandal, and Troches of Agaric, of each half an Ounce; of the internal Part of the Seeds of Carthamus, and of the best red Myrrh, each three Drams; of the *Species Aromatica Caryophyllata*, and of the *Species Diambra*, each one Dram; and of Citron-peel, one Dram.

After these Ingredients are cut and bruised, make an Extract of them with Spirit of Wine, and Cinnamon-water, each a Pint and an half; then express the Liquor; then let another Extract be made from the Faeces, with weak Cinnamon-water alone; and strain it off. To this Extract, add three Ounces of the Extract of Aloes, prepared with Water of Betony, or Male Speedwell. Mix all together, and inspissate to a due Consistence, adding ten Grains of the Oil of Cloves.

The Dose is from half a Scruple to a Scruple and an half. *Hartman in Crollium. Schrod. Pharmacop.*

PANCOENOS, *πᾶνκοινός*, from *πᾶν*, all, and *κοινός*, common. The same as *Epidemus*, Epidemical.

PANCRATIANUS PULVIS. The Name of a Powder described by *Marcellus Empiricus*, *Cap.* 31.

PANCRATIUM. A Name for the *Scilla vulgaris*; radice rubra. PANCRATIUM was the Name of an Exercise, which was used by the Antients, and consisted of a Mixture of Wrestling and Boxing.

PANCREAS. The Pancreas is a long flat Gland, of that Kind which Anatomists call conglomerate, situated under the Stomach between the Liver and the Spleen. Its Figure resembles that of a Dog's Tongue, and it is divided into two Sides, one superior, the other inferior; two Edges, one anterior, the other posterior; and two Extremities, one large, which represents the Basis of a Tongue, and one small, and a little rounded, like the Point of a Tongue.

The Pancreas is situated transversely under the Stomach, in the Duplication of the posterior Portion of the Mesocolon. The large Extremity is connected to the first Incurvation of the Duodenum, and from thence it passes before the rest of that Intestine, all the Way to its last Incurvation; so that a great Part of the Duodenum lies between the Pancreas, and the

the Vertebrae of the Back. The small Extremity is fixed to the Omentum, near the Spleen.

The Pancreas is composed of a great Number of soft glandular Molecules, combined in such a Manner, as to exhibit the Appearance of one uniform Mass on the Outside, the Surface of which is rendered uneven, only by numerous small Convexities more or less flattened. When these Molecules are separated a little from each other, we find, along the Middle of the Breadth of the Pancreas, a particular Duct, in which several smaller Ducts terminate laterally on each Side, like small Branches in a Stem.

This Canal, named *Ductus Pancreaticus*, or *Ductus Virgungi*, from the Discoverer of it in the human Body, is very thin, white, and almost transparent; and the Extremity of the Trunk opens commonly into the Extremity of the Ductus Cholidochus. From thence it diminishes gradually, and terminates in a Point, next the Spleen. The small lateral Branches are, likewise, pretty large near the Trunk, and very small toward the Edges of the Pancreas, all of them lying in the same Plane, like the Branches of the common Filix, or Fern.

The Pancreatic Duct is sometimes double in Man, one lying above the other. It is not always of an equal Length, and sometimes runs in a winding Course, but always in the same Plane; and it is nearer the lower than the upper Side of the Pancreas. It pierces the Coats of the Duodenum, and opens into the Ductus Cholidochus, commonly a little above the prominent Point of the Orifice of that Canal; and sometimes it opens immediately into the Duodenum.

In Man I observed, that where the great Extremity of the Pancreas is connected to the Curvature of the Duodenum, it sends out an Elongation, which adheres very closely to the following Portion of the Intestine; and, upon a careful Examination, I found a particular Pancreatic Duct, ramified like the large one, which ran toward and intersected this great Duct, into the Extremity of which it opened, after having perforated the Duodenum. This Portion I term Pancreas Minus, and it sometimes opens separately into the Duodenum, in which we, likewise, observe several small Holes round the Ductus Cholidochus, which answer to the Pancreas.

The Arteries of the Pancreas come from the Pylorica Duodenalis, and principally from the Splenica, which adheres very closely to the whole lower Side of the Pancreas near the Posterior Edge; and it sends off in its Passage a great many Ramifications, named Arteriae Pancreaticae; which go off from each Side, more or less transversely. It receives also some small Ramifications from the Gastrica major, and Mesenterica superior.

The pancreatic Veins are Branches of the Splenica, one of the principal Branches of the Vena Portae major, or Ventralis. This Vena Splenica runs likewise along the lower Side of the Pancreas, near the Edge, in a shallow Depression, formed in the Substance of the Gland. These Veins answer to the Arteries of the same Name, and there are likewise other small Veins, corresponding to the small Arteries, which are Productions of the great Mesaraica, &c.

The Nerves of the Pancreas come partly from the Plexus Hepaticus, partly from the Plexus Splenicus, and partly from the Plexus Mesentericus superior; and it likewise receives some from the flat Ganglion, or plexiform Intertexture, spoken to under the Article NERVUS, and mentioned by the Name of the transverse Rope.

The pancreatic Duct is not only double in some Subjects, as has been said, but the collateral Branches have Communications in form of Islands, in several Places within the Body of the Pancreas. See HEPAR. Winslow.

The Pancreas, by means of its glandular Structure, secretes, from the Coeliac Arteries, an Humour into one common Duct, which terminates in the Duodenum, into which it discharges all the Quantity of Lymph secreted.

This pancreatic Juice is almost insipid, or but gently saline, limpid, continually secreted in large Quantities by the Motion, Pressure, Warmth, and Contiguity of the Heart; but 'tis most copiously discharged, when during Digestion the Stomach is turgid. It is neither acid nor alkaline, but bears a great Resemblance to the Saliva, not only with respect to its Origin, but also with respect to its Qualities, and the Vessels subservient to its Generation. In those who are alive, this Juice is mixed and incorporated with the Bile; and, being lodged in the same common Duct, produces no Marks of any intestine Motion, but is equally mixed with it, or is discharged alone, and by itself, into the empty Intestines. Hence the Uses of the pancreatic Juice, when mixed and incorporated with the Chyle, the Faeces, the Bile, and the Mucus, are to dilute the thick Parts of the Fluids, to produce a due Mixture of them, to render the Chyle capable of mixing with the Blood, to fit it for its Passage thro' the Lacteals, to correct the acrimonious Parts of the Fluids, to correct the Viscidity and

Bitterness, and to change the Colour of the Bile, and to mix it intimately with the Blood, to serve as a proper Menstruum, or Vehicle, so to change the Tastes, Smells, and Qualities of Aliments, as that they assume nearly the same Nature; and, lastly, to go and return, and consequently answer all these Ends, with the utmost Expedition. Boerhaav. Instit.

The antient Anatomists denied, that the Pancreas had any Kind of Action; and asserted, that it served to support the Vessels, and prevent their Rupture; and that it was a kind of Pillow or Cushion to the Stomach, to prevent its being hurt by the Vertebrae, when it was too full: But more modern Anatomists have ascribed a very considerable Action to it, which is that above specify'd. The Pancreas is subject to Diseases capable of greatly injuring the whole Body: But, like the Mesentery, it is in a peculiar manner subject to Obstructions and Tumors, like other glandulous Bodies.

Riolanus observed a Scirrhus of the Pancreas in the celebrated Historian Augustus Thuanus, who, during four Years before his Death, among other Symptoms, perceiv'd a continual Sense of Weight about the Region of his Stomach, especially when he stood or walk'd; but his Hypochondria were neither hard nor tumid. Upon laying open his Body, his Pancreas was found as large as his Liver, entirely scirrhus, and full of a large Number of Globules resembling a Pigeon's Egg.

But, as the Pancreas is covered by the Stomach, the Tumors of it are with Difficulty discovered by the Touch; and this is the Reason why such Tumors are scarcely ever mention'd by practical Authors, and even such of them as are mention'd have not been discover'd till after the Death of the Patients. But the Presence of Tumors in the Pancreas may be pretty probably guess'd at, from the Symptoms mention'd by Riolanus in Thuanus; if, for Instance, there is a Sense of Weight in the Region of the Stomach, without any Tumor or Hardness in the Hypochondria, whilst, at the same time, there are other Marks of latent Obstructions, such as those mention'd under the Articles HEPAR, LIEN, and MESENTERIUM. To these Signs we may, also, add a Pain, and other Disorders, of the Stomach, by reason of its Contiguity to the Part affected; and a Difficulty of Breathing, in consequence of a Compression of the Diaphragm. By these Signs I prognosticated, that a certain Gentleman of Distinction labour'd under a Scirrhus of the Pancreas; nor was I deceiv'd; for, as the Patient was very lean, by pressing with my Hand near the Side of the Stomach, I perceiv'd a certain Hardness, which, when compress'd with the Fingers, excited an intolerable Pain. And I have observ'd, that these Tumors of the Pancreas, are most generally incident to scorbutic Patients, since in them a Difficulty of Breathing, an Oppression and Sense of Weight in the Region of the Stomach, are for the most part observ'd; and these are, by *Eugalenus*, *Sennertus*, and others, propos'd as the pathognomic Signs, of a Scurvy.

Practical Authors furnish us with some Instances of Abscesses in the Pancreas, which, however, were not discover'd till after the Death of the Patients: But such Abscesses may be, in a great Measure, guess'd at from the Symptoms of the Patients; some of which are the same with those accompanying a Scirrhus of the Pancreas; but to these Signs may be added, a slow Fever, the almost inseparable Concomitant of internal Abscesses, long-protracted Watchings, short Sleeps; and after them, Weariness, Faintings, and cold Sweats.

The Cure of Obstructions, Scirrhuses, and Abscesses of the Pancreas, is the same with the Cure of those Misfortunes in the Liver, Spleen, and Mesentery. See HEPAR, LIEN, and MESENTERIUM. *River. Prax. Med. Lib. 13. Cap. 4.*

If the Patient has a Tumor under the Region of the Stomach, that is indolent, and it is attended with an obstinate Costiveness, we may be sure there is a Scirrhus of the Pancreas; especially, if any of the Causes of a Scirrhus have preceded. The pancreatic Juice dilutes the Faeces, and perhaps stimulates the Intestines, in some measure, to an Expulsion of their Contents; therefore, when there is a Defect of this, the Patient must be costive.

When a Person has a Cancer in the Pancreas, when fasting, he will feel a great Weight under the Stomach; after eating he is in extreme Pain, but more so, if he vomits; he will have a Diarrhoea, and then fall into an Atrophy, and die.

A copious Use of Cherries, perfectly ripe, is very much recommended in a Scirrhus of the Pancreas; and they are preferable to Currants, which, have something acrimonious in them, and are prejudicial to hysterical Women.

PANCRENE. A Name for the PANCREAS.

PANDALEON. This is a Medicine appropriated to Disorders of the Breast and Lungs, invented by the *Arabians*; and later Physicians; consisting of grateful Ingredients, answering the

the same End with a Linctus, but different from it in Form, in which it agrees with Troches; from which, however, it differs in this, that Troches are made in a certain Figure, whereas the *Pandaleon*, after the Sugar is duly boil'd, and the Ingredients sufficiently mix'd, is pour'd into a Box, and becomes indurated; and a sufficient Quantity of it is to be taken, either in a Spoon, or on the Point of a Knife.

The *Pandaleon*, therefore, is a solid Medicine like a Cake, receiving its Form from the Box into which it is pour'd; consisting of Powders, pectoral Conerves, and Lozenges of Sugar, and answering the same Ends with a Linctus. *Morelli Method. prescrib. Form. Remed.*

PANDALITIUM. The same as PARONYCHIA.

PANDEMIUS. Epidemical.

PANDICULATIO. Pandiculation, or Stretching. See OSCITATIO.

PANDIPAVEL. A Name for the *Momordica*; *Zeylanica*; *pampinea fronde*; *fructu longiori*.

PANEM-PALKA. A spurious Species of Nutmeg-tree.

PANJA-PANJALA. H. M. The Name of a very tall Tree, which grows in great Plenty in *Malabar*, producing a kind of Cotton.

The Flowers, and tender Fruits, boiled, and reduced to the Form of a Cataplasm, are apply'd to the Crown of the Head, as a Remedy for the Head-ach and Vertigo. *Raii H. P. 1899.*

PANICULA. A Panicle. See the Explication of Terms under the Article BOTANY.

Panicula is, also, a Diminutive of PANUS. A Species of Tubercle.

PANICUM.

The Characters are;

The Spike consists of innumerable thick Seeds disposed in lesser Spikes, so as to appear like a Cluster.

Boerhaave mentions nine Species of *Panicum*; which are,

1. *Panicum Germanicum*; five *Panicula minore*. *C. B. P. 27. Theat. 516. Raii Hist. 2. 1247. Tourn. Inst. 515. Boerb. Ind. A. 2. 158. Panicum. Offic. Panicum sylvestre. Ger. 79. Panicum vulgare. Ger. Emac. 85. Panicum album vulgare. Park. Theat. 1139. PANIC.*

This is a Grain rarely seen in *England*; it grows to be as tall as Wheat, with much broader Leaves, and firmer, thicker Stalks, bearing an Ear, or Spike, four or five Inches long, and above an Inch broad, composed of a great Number of loose, hairy lesser Spikes, full of small round Seed, less than Millet, and not so shining; it is sown in divers Parts of *Germany*.

Panic is reckoned to be drying and binding, and good for those who are troubled with Spitting of Blood, and for all Sorts of Fluxes. *Miller's Bot. Off.*

Panicum, called by the Greeks *ελυμος* (*Elymus*) and *μελινν*, (*Meline*) has its Name, as *Pliny* says, *Lib. 18. Cap. 7. à Paniculo*, from its Panicle.

In Taste, Qualities, and Virtues, it answers to Millet, and may be used instead thereof, in Food, Bread, and Medicine; whence it is in much Request, as *Clusius* says, throughout *Germany*, *Hungary*, and *Bohemia*; for it makes Part of their Aliment, and Puddings are prepared of its husked Seed, which have no ill Taste. But *C. Baubine* says, after the Antients, that it is of bad Juice, difficult of Digestion, generates Flatulencies, binds the Belly, and is of a drying and refrigerating Quality; for which Reasons Millet is preferable to it on all Accounts. Milk mixed with it, in Puddings, has been found salutary, as removing, or at least diminishing, the aforesaid Inconveniences. A Pudding, or Ptsan, prepared of it with Milk, is commended for Pains of the Head proceeding from Bile, for an Hamoptoe, and nocturnal Pollutions. *Galen* says, that it is of some Efficacy, as is also Millet, in Fluxes of the Belly: For this Purpose, *Pliny* tells us, it must be boiled in Goats-milk, and taken twice a Day; and, being so used, it cures also the Gripes: Externally apply'd, in form of a Cataplasm, it dries and refrigerates. *Raii H. P. 1248.*

The Plant is aperitive, and, boiled, like Rice, in Milk, is good to correct the Acrimony of the Humours. *Hist. Plant. adscript. Boerhaav.*

2. *Panicum, Italicum*; five *Panicula majore*. *C. B. P. 27. Theat. 519.*

3. *Gramen, Paniceum*; Spica divisâ. *C. B. P. 8. Theat. 136. Panicum Herbariorum, sylvestre. Lob. Ic. 42.*

4. *Gramen, Paniceum*; five *Panicum sylvestre*; aristis armatum. *C. B. P. 8. Theat. 137. M. H. 3. 189.*

5. *Gramen, Paniceum*; *Panicula simplici*; *ελυμαγρωσις*, *C. B. P. 8. Theat. 138. M. H. 3. 189. Panicum sylvestre dictum, & Dens Caninus. 1. I. B. 2. 443.*

6. *Gramen, Paniceum*; spicis nigris. *C. B. P. 8. Theat. 140.*

7. *Gramen, Alopecuroïdes*; spica rotundiore. *C. B. P. 4. Theat. 56. See ALOPECUROS.*

8. *Gramen, Alopecuroïdes major*; spica longiore. *C. B. P. 4. Theat. 58.*

9. *Gramen, Alopecuroïdes*; aquaticum, geniculatum. *Boer. Ind. alt. Plant. Vol. 2. p. 158.*

PANIS. Bread. This is a Preparation of Grain, not only useful as an Aliment, but, also, a Medicine highly proper in many Cases. Thus *Hippocrates*, in his Book *de salubri Dieta*, advises Persons accustomed to a laborious Life, when seiz'd with Fluxes, in which the Excrements discharg'd resemble crude Aliments, to eat toasted Rye-bread soak'd in Wine. 'Tis sufficiently known from Experience, that Bread made of fine Flour, when toasted and soak'd in generous Wine, with the Addition of a little Cinnamon or Sugar, is a Medicine of the greatest Power and Efficacy, in restoring lost and impair'd Strength. This is an Analeptic of all others the most proper and beneficial for those, who, in consequence of uncommon Fatigue, or violent Hæmorrhages from Wounds, require a speedy and seasonable Recruit of their Strength. For this Reason, the Prophet *David*, in *Psalms 104. Ver. 5.* tells us, that Wine cheers the Heart of Man, and Bread supports it. *Henricus ab Heer*, in *Obs. 18.* informs us, that by the Use of these two powerful Analeptics, Bread and Wine, he restor'd a certain Man to his usual Strength, after he had by immoderate Venery brought himself to the very Brink of the Grave; whereas, if, according to the Advice of another Physician, he had used Venesection, he had certainly fallen a Sacrifice to that preposterous Piece of Practice. *Boerhaave*, in his *Materia Medica*, in Fevers and other Disorders, highly extols the analeptic Virtues of a Decoction of Bread, which he orders to be prepar'd in the following Manner.

Take of wheaten Bread, sufficiently fermented, with the Bran, eight Ounces, and of pure Spring-water, three Pints: Boil for an Hour, in a new earthen Vessel close stop'd. Then strain it thro' a Sieve; and to each Pint of the strain'd Decoction, add half an Ounce of Citron-juice; distill'd Cinnamon-water, two Drams; of Rhenish Wine, four Ounces; and of Sugar, a Quantity sufficient to render it palatable.

Reusnerus, in his Observations, gives us a memorable Instance of a Woman, who, after having her Life several times endanger'd by Abortion, at last, about the Middle of her Gestation, began every Morning, upon an empty Stomach, to eat a small Piece of Bread soak'd in Malmsey Wine; by which means Abortion was happily prevented. *Velschius*, also, informs us, that, after a certain Woman had, notwithstanding the most proper Medicines, suffer'd Abortion seven times, he prevented the like Misfortune, by Bread and Malmsey Wine used in the same Manner as in the former Case. I have often observ'd, that butter'd Toast used for Breakfast, by correcting the violent Acid in the Primæ Viæ, removes Uneasiness of the Præcordia, Vertigoes, Head-achs, and Faintness. I can also, from Experience, justly recommend the same Breakfast in epidemic, morbid Constitutions of the Weather, in which the Atmosphere is impregnated with Effluvia and Exhalations of a noxious Quality.

As Bread, taken internally, is of an highly cordial and analeptic Quality; so, when externally used, it also produces surprising Effects. Thus *Diogenes Laertius*, in *Lib. de Vit. Philosoph.* informs us, that the incomparable *Democritus*, when very old, and perceiving his Death fast approaching, at his Sister's Request, protracted his Life for three Days, by no other means, than the Smell of recent Bread. This Doctrine is, also, confirm'd by *Laurentius Joubertus*, who informs us, that Persons are recover'd from Deliquiums, by applying Bread to their Nostrils. I have, also, found from Experience, that Bread bak'd with Caraway-seeds, when cut up, and applied to the Ears, as soon as 'tis taken out of the Oven, is an excellent Remedy for Deafness. This is, also, confirm'd by *Riverius*, in *Frax. Med. Lib. 3. Cap. 2.* And *Hieronymus Reusnerus*, in *Obs. Med. 55.* informs us, that *Henry Count of Stolberg*, when render'd deaf by the Noise of Cannons, was greatly reliev'd by applying to his Ears, every Morning, recent Bread bak'd with Juniper-berries. The outer Crust of household Bread, cut round, moderately excavated, and sprinkled with good tepid Wine-vinegar, with an Addition of Cloves and Nutmegs, applied to the Abdomen, immediately stops Vomiting and Fluxes attended with Gripes. Besides, in order to prevent Abortion, there is hardly any more efficacious Medicine, than toasted Bread soak'd in generous Wine, with an Addition of aromatic Substances apply'd to the Navel. *Hoffman de Remed. Demeft. Præstantia.*

PANIS CUCULI, in Botany, is the ACETOSELLA.

PANIS PORCINUS is the CYCLAMEN.

PANITSJICA. The same as **JANIPABA.**
PANNICULUS ADIPOSUS. See **CELLULOSA MEMBRANA.**

PANNICULUS CARNOSUS This is thus described by *Drake.*

Immediately under the Fat lies the *Panniculus Carnosus*, which consists of a double Membrane, the upper of which makes the *Membrana Adiposa*; the under, which is, also, call'd *Membrana Musculorum Communis*, or *Musculosa*, is, in some Places, interwoven with pretty thick muscular Fibres, which are suppos'd to contract and corrugate the Skin; tho' this Action of it is visible no-where in an human Body, except on the Forehead, or, in some, the whole Scalp. It is spread all over the Body, but very unequally in point of Thickness; and has its Arteries, Veins, and Nerves, from those of the adjacent Parts.

The particular Use of it is to support, and be, as it were, a Basis to the Globules of Fat. It serves, in general, as all other Membranes do, to wrap, defend, and connect the Parts together. Its different Names, taken either from the Structure, or the Situation, have occasion'd some to multiply it, tho' through Mistake only.

But *Winslow* denies the Existence of the *Panniculus Carnosus*. Besides the *Cuticula*, *Cutis*, and *Membrana Adiposa*, the Antients, says he, reckon'd two others, the *Panniculus Carnosus*, and *Membrana Communis Musculorum*.

The *Panniculus Carnosus* is found in Quadrupeds, but not in Men, whose cutaneous Muscles are in a very small Number, and most of them of a very small Extent, except that which I call *Musculus Cutaneus* in particular; but even that Muscle cannot, in any tolerable Sense, be reckon'd a common Integument.

There is no common Membrane of the Muscles, which covers the Body like an Integument; it being no more than particular Expansions of the Membranes of some Muscles, or aponeurotic Expansions from other Muscles.

The Elongations of the Lamina of the *Membrana Adiposa*, or *Cellularis*, may also have given Rise to this Mistake, especially in such Places, where this Membrane is closely united to the proper Membrane of the Muscles. *Winslow.*

PANNUS. Besides the common Signification of this Word, which is Woollen Cloth, it imports a Disorder of the Eye, (see *Oculus*) and, also, a Spot, or Mark, upon the Skin, either arising from a Venereal, or any other Cause. *Castellus.*

PANOCHLÆ. Bubos in the Groin. *Fallopins.*

PANTAGATHOS ANTIDOTUS. The Name of an Antidote describ'd by *Nicolaus Myrepsus*, *Secl. 1. Cap. 271*, and 273. It imports, Good for every thing.

PANTAGOGUS; from *πᾶν*, all; and *ἄγω*, to bring away. A Medicine which brings away all Sorts of Humours.

PANTHÆ. Pensile Beds.

PANTHERA. See **PARDUS.**

PANTICES. The Intestines. *Castellus.*

PANTOLINUS PASTILLUS. The Name of a Pastil, or Troche, describ'd by *Nicolaus Myrepsus*, *Secl. 42. C. 156.*

PANTOLMIUS. The Name of a Troche, in *Paulus Ægineta*, *L. 7. C. 12.*

PANUS, PANIS, PANICULA, and **PANULA**, all import a sort of crude Bile.

PANYGRON. The Name of a sort of Ointment, describ'd by *Oribasius*, *de Locis affectis*, *L. 4. 121.*

PAPAVER.

The Characters are;

The Leaves are alternate; the Calyx is biphyllous and caducous: The Flower is rosaceous, tetrapetalous, surrounding the Base of the Ovary, and furnished with very numerous Stamina: The Fruit is oval, and cover'd with its own Tube, (which is of a very singular Figure, being a radiated Lid) and divided by a thin Membrane, into as many Capsules, or Cells, as there are Rarii in the Lid: The Seeds are minute, numerous, and adhere to the Membranes which form the Partitions, as to their Placentæ.

Boerhaave mentions thirty-four Species of *Papaver*; which are,

1. *Papaver*; hortense; femine albo; sativum Dioscoridis; album Plinio. *C. B. P. 170. Raii Hist. 1. 853. Tourn. Inst. 237. Boerb. Ind. A. 279. Papaver album. Offic. Papaver sativum album. Ger. 296. Emac. 369. Papaver simplex album sativum. Park. Theat. 365. Papaver sativum. J. B. 3. 390. WHITE POPPY.*

The white Poppy, which is cultivated for medicinal Uses, has many large and long whitish-green Leaves, very much torn, and cut in about the Edges. The Stalk is smooth and round, growing to be five or six Feet high, having the Leaves which grow on it shorter and broader, and somewhat encompassing it: Towards the Top, it is divided into three or four Branches,

having at the End of each a round Head, hanging down at first; but, as the Flower comes on to open, it grows erect. The Flower consists of four large white Leaves, inclosed in a Couple of green, skinny Husks, which soon drop off, when the Flower opens: When the Flowers are fallen, which soon happens, the Seed-vessel grows to a great Bigness, being frequently as big as a large Orange, round, and having a denticillated Crown on the Head: It is divided into several membranous Partitions, to the Sides of which grow the small white Seed. The whole Plant is full of a bitter Milk, of a strong, virose, unpleasant Smell; it is sown in Fields and Gardens, and flowers in *June*, and the Heads are fit to be gathered at the End of *July*. From these Heads the Opium is produced, whereof the best comes from *Turky*; there being vast Quantities of these Poppies sown in the Fields of *Natolia*. See **OPIMUM.**

Of the dry Poppy-heads, infused and boiled in Water, is made the *Syrupus e Meconio*, or *Diacodium*.

The Seeds are much used in Emulsions, being cooling and good in Fevers, and inflammatory Distempers; as, likewise, for the Strangury, and Heat of Urine. *Miller's Bot. Off.*

The distilled Water of Poppy, and its Oil, but especially Opium, are narcotic and anodyne: These Qualities proceed not from its Coldness, as some will have it; for its bitter Taste, rank Smell, Inflammability, and exulcerating Effects, evince the contrary; but from some other Property as yet unknown. It is, however, of excellent Service in the *Diarrhoea*, *Dysentery*, *Catarrhs*, and Coughs, and other Disorders; tho' it is to be used with the greatest Caution. For the most severe Pain of an Ophthalmy, *Sennertus* prescribes, as an effectual Remedy, an Emulsion of the Seeds of Poppy, with Milk, Water of Lettuce, and Decoction of Fenugreek. *Raii H. P.*

2. *Papaver*; hortense; femine albo; flore leviter purpureo. *C. B. P. 170.*

3. *Papaver*; hortense; femine albo, flore cinereo, ungue purpureo. *C. B. P. 170.*

4. *Papaver*; hortense; femine albo; flore candido, rubris maculis infecto. *C. B. P. 170.*

5. *Papaver*; hortense; femine nigro; sylvestre Dioscoridis, nigrum Plinio. *C. B. P. 170. Raii Hist. 1. 853. Tourn. Inst. 237. Boerb. Ind. A. 279. Papaver nigrum. Offic. Papaver sativum nigrum. Ger. Emac. 370. Papaver sativum simplex nigrum. Park. Theat. 366. BLACK POPPY.*

This Poppy does not grow so tall as the white; but, in other respects, is much like it. The principal Difference is in the Flower, which, in this, is of a purple Colour, with a black Bottom; and in the Heads, which are much less than the white, and contain a black Seed. The Roots, both of this and that, are sticky, and perish when the Seed is ripe; it is sown in Gardens, and flowers in *June*.

The Heads are now rarely used, being left out of the *Syrupus e Meconio*, in the last Edition of the Dispensatory: But the Leaves are put into cooling Ointments, being accounted good for Burns and Inflammations, and hot Swellings, and are an Ingredient in the Unguentum Populeum. *Miller's Bot. Off.*

6. *Papaver*; flore pleno, rubrum. *H. Eyf. Æst. o. 12. F. 7. Fig. 1.*

7. *Papaver*; flore multiplicato, incarnato. *H. Eyf. Æst. o. 12. F. 8. Fig. 1.*

8. *Papaver*; flore multiplici, purpurascens. *H. Eyf. Æst. o. 12. F. 9. Fig. 2.*

9. *Papaver*; laciniatum, rubrum, unguibus purpureis. *H. Eyf. Æst. o. 12. F. 9. Fig. 2.*

10. *Papaver*; laciniatum, rubrum, unguibus albis. *H. Eyf. Æst. o. 12. F. 9. Fig. 2.*

11. *Papaver*; multiplex, album, oris rubicundis. *H. Eyf. Æst. o. 12. F. 10. Fig. 2.*

12. *Papaver*; flore miniato, pleno. *H. Eyf. Æst. o. 12. F. 10. Fig. 2.*

13. *Papaver*; flore pleno, argentei coloris. *H. Eyf. Æst. o. 12. F. 10. Fig. 2.*

14. *Papaver*; flore pleno, album. *C. B. P. 171.*

15. *Papaver*; flore pleno, violaceo. *C. B. P. 171.*

16. *Papaver*; flore pleno, eleganter striato, laciniato. *H. Edinb.*

The Characters of the following single Species are;
 A very large Capsule and Flower, and a very hairy, indented, and dark-green Leaf.

17. *Papaver*; Orientale; hirsutissimum; flore magno. *T. Cor. 37.*

The Characters of the following fourteen Species are, a lesser Capsule and Flower, and dark-green Leaves, with deeper Jags.

18. *Papaver*; erraticum; majus; *poies* Dioscoridi, Plinio, Theophrasto. *C. B. P. 170. Tourn. Inst. 238. Boerb. Ind. A. 279. Papaver rubrum, Rhæas & erraticum. Offic. Papaver, Rhæas. Ger. 299. Emac. 377. Raii Hist. 1. 855. Papaver erraticum Rhæas, sive sylvestre. Park. Theat. 367. Papaver erraticum rubrum campestre. J. B. 3. 395. Papa-*

ver laciniato foliis, capitulo breviori, glabro, annuum, Rhæas diſtum. Raii Synop. 3. 308. RED POPPY, or CORN-ROSE.

The Leaves of this Poppy are very rough and hairy, divided into seven or nine narrow indented Sections, that at the End being the largest: The Stalk is rough and branched, beset with the like Leaves; having on the Tops of the Branches large four-leav'd scarlet Flowers, with a black Spot on the Bottom of each Leaf. The Head is but small, covered with a denticillated Cap, or Crown, containing very small brown Seed. The Stalks and Leaves are of a yellowish-bitter Juice, of a strong Smell, but not so viroſe as the two former; it grows every-where among the Corn, and flowers in June and July.

The Flowers of this Poppy are of a cooling, anodyne Nature, and useful in all inflammatory Fevers, particularly the Pleurisy and Angina: They are, in some measure, hypnotic, and causing Rest; and may be given when the Preparations of the former may not be ventured on: They are a noted Remedy against Surfeits, especially the Infusion of them in Brandy, or the Tinctura Papaveris Officinarum.

Official Preparations from the red Poppy are the simple Water, the Syrup, and Conserve of the Flowers, and the Tincture. *Miller's Bot. Off.*

The Flower of this Plant, which is the principal Part used in Physic, is glutinous, and gives much such a faint-red Colour to the blue Paper, as the Solution of Opium, by which it seems the Salt of the one is analogous to that of the other; but, in Opium, this Salt (which seems pretty near to Sal Ammoniac) is mixed with a great deal of fetid Oil; whereas, in the red Poppy, the Proportion of the Oil is much less than that of the viscous Phlegm. Thus the Flowers of this Plant are emollient, and good for Expectoration in Defluxions of the Breast, in Rheums, and in a dry Cough. They stanch Blood, and are gently sudorific. The distilled red Poppy-flower Water is prescrib'd, from three to six Ounces: The Tincture is given by Glass-fuls, for Defluxions of the Breast. This Tincture is impregnated sometimes with three or four Infusions, in each Quart of which is dissolved one Ounce of Sugar-candy. The following Ptilan is very good for a dry Cough: Boil three Ounces of Bugloss-root, and as much of that of Dog's-grass, in two Quarts of Water; pour the Decoction, boiling, upon one Ounce of red Poppy-flowers, and three Heads of white Poppy, cut small, and put up in a small Bag, so that they may be squeez'd: The dried Flowers of the red Poppy are drank in the Manner of Tea; there is, also, a Conserve and a Syrup prepared of them. *Martyn's Tournefort.*

Some apply the Herb to the Region of the Liver, in order to stop an Hæmorrhage from the Nose; and the same Virtue is ascribed to the Root. The Decoction of the middle Bark, or Rind of the Sambucus, or Ebulus, with the Syrup of Poppy, is a most effectual Sudorific; where we may observe, that Narcotics, added to Diaphoretics, or Diuretics, are of extraordinary Efficacy in provoking Sweat. *Raii Hist.*

19. Papaver; erraticum; majus; foliis florum variegatis. *H. R. Par.*

20. Papaver; erraticum; majus; flore albo. *C. B. P. 171.*

21. Papaver; erraticum; majus; flore carneo. *H. Edinb.*

22. Papaver; erraticum; majus; florum unguibus albis. *H. Edinb.*

23. Papaver; erraticum; flore pleno. *C. B. P. 171.*

24. Papaver; erraticum; flore pleno miniato. *H. R. Par.*

25. Papaver; erraticum; flore pleno igneo. *H. R. Par.*

26. Papaver; erraticum; flore pleno igneo, marginibus candidis.

27. Papaver; erraticum; flore pleno purpurascens. *H. R. Par.*

28. Papaver; erraticum; flore pleno phœniceo, unguibus albis.

29. Papaver; erraticum; minus. *C. B. P. 171.*

30. Papaver; erraticum; Pyrenaicum; flavo flore. *C. B. P. 171. Prodr. 92.*

31. Papaver; Orientale; tenuiter incisum; ad caulem floridum. *T. Cor. 17.*

The Characters of the three following, and last Species are, small, very finely jagged, and dark-green Capsule Flowers, and Leaves.

32. Papaver; erraticum; capite oblongo, hispido. *T. 238. Argemone, capitula breviori.* *C. B. P. 172.*

33. Papaver; erraticum; capite longiore, hispido. *T. 238. Argemone, capitula longiori.*

34. Papaver; erraticum; capite longissimo, glabro. *Tourn. Inst. 238. Boerh. Ind. A. 280. Argemone. Offic. Argemone capitula longiore, glabra. Raii Hist. 1. 856. Papaver laciniato foliis, capitula longiore, glabra; seu, Argemone, capitula longiore glabra. Raii Synop. 3. 309. LONG-HEADED POPPY.*

It grows by the Sides of Ditches, flowers in June, and the Leaves and Juice are used in Medicine. A Cataplasm of the Leaves, as *Dioscorides* says, absterges the Albugo, and Films in the Eye, and mitigates Inflammations.

The Plant, says *Dale*, which I here exhibit for *Argemone*, comes nearest to, if it be not the very same with, the *Argemone* of *Dioscorides*, whose Description of it is as follows: *Argemone*, says he, has, in the Whole, the Appearance of the wild Poppy; but has Leaves like those of *Anemone*, divided; a red Flower; an Head like that of the red Poppy, but more oblong and wide at the Top; a round Root; and yields a Saffron-colour'd acrimonious Juice. *Dioscorides, Lib. 2. Cap. 208.*

The Name *Papaver* is from *Pappa*; that is, *Pap*; because, in former Times, Nurses mixed this Plant with their Childrens Pap-meat, as a Remedy against the Pain of the Colic.

The Plant deserves the highest Commendations, if it be rightly used. The Garden-Poppies, tasted in hot Weather, while they are in their full Vigour, have a very aromatic Savour; the Juice is very aperitive; and the Bitterness of its Taste, which exceeds that of Bile itself, is not easily remov'd from the Palate. All the Parts of this Plant, if gathered in an hot Season, send forth a very strong Smell, which flies to the Head, and induces Sleep, by their volatile Mucus, in Conjunction with something of Acrimony and Bitterness. Poppies are all gently discutient; moderately inraſſating, lenient, demulcent, and narcotic; for which Reasons they are proper in Catarrhs proceeding from an acrid Lymph; for a Cough, Hoarseness, Spitting of Blood, Head-ach, excessive Hæmorrhages, an immoderate Flux of the Menſes, and the flatulent Colic. The Head of this Plant consists of two Parts: the Head, which gives the Taste; and the Seeds, which are of a very mild Nature, and oily, but induce no Sleep. The Oil of the Seed tastes like Oil of sweet Almonds, and has the same Virtues: Hence in *Germany*, and other Countries, they are put in Cakes, which are very well tasted. What is just now said, is to be understood of the sixteen first Species. Some Physicians have been surpris'd at my prescribing four Ounces of Poppy-seeds, and said, they were enough to make a Person sleep to Death; but they were afraid without Reason, for the Seeds have the Taste of Almonds, and are endued with the same Virtues. The twelfth Species only is perennial; but, tho' it be very full of Milk, it affords no Opium. Those from the twelfth to the thirty-first, inclusive, are not very soporific; and the three last are not soporiferous at all. The Leaves of the Garden Poppies, bruised with Salt, or boiled, and made into a Cataplasm, and apply'd to Places afflicted with a Pain or Inflammation, mitigate the same, and are remarkably aperient; whence they are proper in the Rheumatism, Gout, and Sciatica. Of the Seeds are prepared Decoctions and Emulsions, which have nothing of a soporific Virtue, but are only demulcent. The Heads, when in a good State of Maturity, and without their Seeds, boiled in Milk, and taken to the Weight of an Ounce or two, very gently induce to sleep. Two Ounces of the Heads are equivalent to one Grain of Opium. *Hist. Plant. adscript. Boerhaav.*

A METHOD OF PREPARING THE EXTRACT AND SYRUP OF POPPIES.

That this *British* Opium may be got to the greatest Advantage, both as to Quantity and Quality, the Culture and Management of the Poppies are to be taken care of. What I have found most successful, is to trench a Spot of new rich Ground, where Poppies had not grown the preceding Year; for, if they are continued several Years on the same Ground, they degenerate; and, chusing the ripest and whitest Seed of the great single-flowered *Turky* Poppy, I sow it in *March*, very thin and superficially, in Drills at two Feet Distance each, to allow room for Weeding. As soon as the young Plants spring up, I take most of them away, leaving only the strongest most thriving Plants, at about a Foot distant from each other. When the Heads of these come to their full Growth, but before they are ripe, I chuse a calm, warm, and Sun-shine Day to cut them off, at an Inch or less Distance from the Top of the Stalk, going backwards from the End, at which I begin the Lopping, to the other End. The Design of this Caution is, to save the milky Liquor, which rises to the cut Part of the Stalk, from being spilt by the Motion which the Wind or my Cloaths would make, and that the Heat of the Sun may make it thicken soon. What Heads are small, and with the Appearance of growing larger, are left to be cut afterwards. All the Heads are put into a Basket as they are taken off, and are allowed to lie there together for about two or three Days, till the Drops of Liquor, which runs out of them, thicken, and thereby are saved; after which they may be spread out on a Floor, or hang'd up on Strings to dry. Two or three Days after, I, in the same Manner, lop off such other Heads

Heads of the Poppies, as are become large enough; and, at the same time, cut off Pieces of two or three Inches Length from the Stalks of those formerly cut. This cutting of Heads and Pieces of Stalks I perform every second or third Day, till I observe no more Juice rise in the Stalks, keeping them always in a Basket some Days, and drying them afterwards as the first Heads were, that all the Juice may be saved; only preserving some few of the best-grown Heads, and allowing them to ripen fully, that I may have Seed for sowing next Year.

The dried Heads and Stalks being cut and bruised, I infuse them some Hours in boiling-hot Water, and then boil them three or four Hours; after which, I strain the Liquor strongly out, and allow it to depurate, by the grosser Parts subsiding, for a Day or two. The clear Liquor, which is poured off, I clarify with Whites of Eggs, and boil in the common Way of making Extracts, till it comes to the Consistence of Honey. Some of it I keep in this Form; but I put the greater Part near to a Fire, or in a Sand-heat, till it becomes as thick as the Extract of Opium, taking great care, that it shall contract no Empyreuma. Out of five or six Pounds of the dried Heads, and Cuttings of the Stalks, I have had a Pound of the Extract, which is of much less Price than Opium.

The Dose of this Extract must be double to that of Turkey Opium, to answer the same Intentions, which it does, without inclining Patients to those Ravings, or giving them the Nausea or Giddiness which common Opium does. This I attribute to the grosser viscous Parts being separated by subsiding, and with the Whites of the Eggs.

I prefer the Syrup of Poppies made with this Extract, to any made in the common Way; for, besides that I can make it with much less Trouble than the common Syrup, and therefore prepare it fresh more frequently than Apothecaries will incline to make the common Syrup, so that mine has no Chance of turning sour, or of candying; mine has other Advantages: For it does not ferment, as the other does, when moved, or in a warm Place; and what principally makes me prefer it is, that I am certain to have it always of the same Strength; whereas the Dose of the other must be very uncertain, since different Poppies have very different Proportions of the narcotic Juice.

In preparing the Syrup with this Extract, I mix such a Proportion, as that an Ounce of the Syrup shall contain two Grains of the Extract, equal to a Grain of common Turkey Opium.

That Part of the Decoction, which I mentioned to be preserved in the Consistence of Honey, is nearly half so powerful as the Extract; and is kept to save the Trouble and Time of dissolving Opium, or the Extract, when prescribed in Electuaries, Liniments, Plaisters, and the like, where the Opium requires to be intimately and equally mixed with the other Ingredients of the Composition. *Medical Essays.*

PAPAVER CORNICULATUM. A Name for several Sorts of GLAUCIUM.

PAPAVER HERACLEUM. A Name in *Boerhaave* for the *Cyanus*; *Segetum*; *flora cœruleo*.

PAPAVER SPUMEUM. A Name for the *Lychnis*; *sylvestris*; *quæ Been album vulgo*. See *BEHEN ALBUM*.

PAPAYA.

The Characters are;

The Trunk is simple, or without Branches, and only shoots forth Pedicles for Leaves, which are jagged like those of the *Ricinus*. The Flower is male, naked, tubulated, and multifid, consisting of five long narrow Segments, which are expanded in the Form of a Star. This Flower is furnished with a Multitude of Stamina, and grows on a separate male Plant.

On another Plant, which is female, the End of the Pedicle opens into a small, dentated Calyx, on which grows the Resemblance of a pentapetalous Flower (if it ought not rather to be called a Pericarpium) destitute of Stamina. In the Bottom of this Flower, or Pericarpium, is seated the Ovary, furnished with a quinquefid open Tube, (the Segments evolved into foliaceous Fimbriae) which becomes a carnos, striated Fruit, like that of the Melon, with a thick Rind, and a Pulp every-where abounding with striated Seeds, covered with an Involucrum.

Boerhaave mentions two Species of *Papaya*; which are,

1. *Papaya*; fructu *Melopeponis effigie*. *Plum.* 659. *Papayamarum*. *H. Mal.* 1. 23. *Platanus*, *secunda*, seu *Arbor*, *Platani folio*, fructu *Peponis magnitudinis eduli*. *C. B. P.* 431. *Papaye Peruvianis*. *J. B.* 1. 147. *Mamæra fœmina*. *Park.* *Theat.* 1649. *Raii Hist.* 2. 1370. **THE FEMALE PAPA-TREE.**

Some eat the Fruits raw; but those of a more delicate Taste eat them prepared with Sugar. They strengthen the Stomach, and promote Concoction. *Raii H. P.*

2. *Papaya*; mas. *Mamæra*; mas. *Park.* *Theat.* 1649. *Raii Hist.* 2. 1370. **THE MALE PAPA-TREE.** *Boerb. Ind. alt. Plant. Vol. 2.*

PAPAYAMARUM. A Name for the *Papaya*; fructu *Melopeponis effigie*.

PAPILIO. A Butterfly. Hence certain Flowers are call'd Papilionaceous; because, in some measure, they resemble a Butterfly, with its Wings expanded. They always consist of these four Parts; the *Vexillum*, or Standard, which is a large erect Segment, or Petal; the *Alæ*, or two Wings, which compose the Sides; and the *Carina*, or Keel, which is a concave Petal, or Segment, resembling the lower Part of a Boat; this Keel is sometimes entire, and sometimes it consists of two Petals, or Segments, adhering pretty closely together. Of this Tribe are Peas, Beans, Kidney-beans, Vetches, and other leguminous Plants. *Miller's Dictionary, Vol. 1.*

PAPILLA. The Nipple of the Breast. See *MAMMA*. *Peyer* calls the Intestinal Glands by the Name of *PAPILLÆ*.

In the Skin there is an infinite Number of *Papillæ pyramidales*. They are the Ends of all the Nerves of the Skin, each of which are inclosed in two or three Covers of a pyramidal Figure, and these Covers are each above another. They may be easily seen and separated in the Skin of an Elephant, and in the Skin of the Feet of several other Animals. *Keill's Anatomy.*

PAPILLARE OS. The *Os Sphenoides*.

PAPILLARES PROCESSUS are the Extremities of the Olfactory Nerves, inserted into the mucous Membrane of the Nose.

PAPIO, or PAVIO. A large Species of Monkey, which is found in *Ethiopia*; the Fat of which is said to be resolvent. *Lemery des Drogues.*

PAPPA. Pastebord. *Heister. Chirurg.*

PAPPUS. The Down of the Seeds of Plants. Hence Plants, whose Seeds, when ripe, are furnish'd with Down, are call'd *Pappose*, or *Pappescent*.

PAPULA. A Pimple, or ulcerous Tubercle.

PAPYRUS. *Offic. Papyrus Nilotica.* *A. B.* 2. 506. *Ger.* 37. *Emac.* 40. *Raii Hist.* 2. 1302. *Papyrus Nilotica Alpina.* *Berd Egyptiis dicta*; *Biblos Syriaca quorundam.* *Chab.* 195. *Papyrus Nilotica sive Egyptiaca.* *C. B. P.* 19. *Theat.* 334. *Papyrus Antiquorum Nilotica.* *Park. Theat.* 1207. *Cyperus Niloticus vel Syriacus, maximus papyraceus.* *Hist. Oxon.* 3. 239. **THE PAPER-TREE.**

Of the *Papyrus*, in antient Times, was made Paper for the Use of Writing; the Way of Preparation may be found in *Pliny, Lib. 13.* The *Papyrus*, also, before the Discovery of Fruits, was the Food of the *Egyptians*: On this they fed both raw, boil'd, and roasted, chewing it in their Mouths, and swallowing the Juice; but spitting out the rest. Of the *Papyrus* they made Furniture for their Beds, Sails for their Shipping, Utensils for their Houses, and Shoes for their Priests; and, of its Flowers, they made Garlands to crown their Gods; and the Root served for the same Purposes as Wood. Their Surgeons, as we are informed, by *Prosper Alpinus*, now use the medullary Substance of the Leaves, to dilate the Mouths of Ulcers: The Trunk, burnt to Ashes, cures recent Ulcers, and prevents the Increase of Malignity in others, being sprinkled thereon; and the distilled Water of the recent Trunk is very effectual against Cataracts, and Dimness of Sight. *Raii Hist. Plant.*

PAR, when applied to Days, imports even. See *ARTIOS*. When used in Prescriptions, it signifies, *a Pari*, or *Two*. Some Medicines are call'd *sine Pari*, without an Equal, on account of their supposed Virtues.

PARA, *παρά*, a Preposition of much Use and Significance in medicinal Terms, which are compounded, wherein it generally destroys or diminishes the Force of the simple Word, or implies some Deficiency, or Degeneracy from a State of Integrity, tho' still with a Reserve of some Measure of Goodness. Instances to this Purpose will appear in some following Articles.

PARABOLANI. A Name given to those who attended the Necessities of the Sick in the Hospitals established by the first Christian Emperors: The most natural Derivation of the Word, is, from *παράβολοι*, *Parabolos*, signifying bold, hard, venturous; because those poor People exposed their Lives and Health in attending the Sick, especially when they laboured under contagious Distempers.

Godofridus supposed the *Parabolani* to be some of the Clergy, or Ecclesiastics; because there is mention made of that Office in the Code, under the Title *de Episcopis & Clericis*; Perhaps some Ecclesiastics had taken upon them such an Employment; but it is probable, they were not the only Persons; It is possible, also, as some learned Men have thought, that those who entered into that Order, did it in consequence of some Vow, or from a Principle of Religion. But the Reason why the *Parabolani* are mentioned in the Code, under the Title abovesaid, is, because the Election of these People depended upon the Bishops. The Number of *Parabolani* for the City of

of Alexandria was regulated at six hundred, as may be infer'd from the Law in the Code, which, also, obliges them to be upon continual Duty near the Sick, or in the Hospitals, whence they were never to depart, in order to be present at the Shews to which all the People were invited, or to go to the Palace to hear Causes tried, which was permitted to all Sorts.

Further, it appears by the proper Terms in which the Laws speak of the *Parabolani*, that the Word was in Use, and the Office established, before the Laws were made; so that the Emperors *Theodosius* and *Justinian* seem to have done no more than regulate the Manner of Elections, the Number, and the Office of those People, whose Name might be very antient, tho' the Regulation concerning that Office might be new.

Another thing worthy Observation is the gross Mistake of those who took the *Parabolani* to be Physicians, properly so called. What gave Occasion to this Error, is the Word *curare*, in the Laws where mention is made of the Business about which they are employ'd, which signifies as well to cure, as to take care of; but it is evident, that the Word in that Place can only be taken in the latter Sense, and that *Curare Debiliū agra Corpora*, which are the very Words of the Law, mean no more than to take care of the weak and infirm Bodies of the Diseased. To this may be added, that if the *Parabolani* had been Physicians of the Hospitals, their Elections would not have depended on the Bishops and Priests: The *Archiatri*, or principal Physicians, of the great Cities would have been the Persons concerned in chusing them; because these *Archiatri* were themselves oblig'd to visit the Poor. *Le Clerc, Histoire de la Médecine.*

PARABOLICUS IGNIS. The Heat of the Sun, collected by means of a concave Mirror. *Collect. Chym. Leidenf. Prolegom. Cap. 2.*

PARACELSUS. The Name of a celebrated Physician and Chymist, an Abstract of whose Life and Doctrine we have given in the Preface.

PARACENTESIS, *παράκέντησις*, from *παράκέναι*, to make a Perforation. The Name of a surgical Operation, which consists in making a Perforation in the Abdomen, in a Dropsy, in order to evacuate the Water in an *Ascites*. See *HYDROPS*. The Perforation of the Breast, in order to let out extravasated Blood, Water, or Pus, is, also, called *Paracentesis Pectoris*.

PARACMASTICOS, *παράκμαστικός*. Declining. See *ACMASTICUS*.

PARACME, *παράκμη*, from *παρά*, and *ἀκμή*, which see. The Decline, us'd generally with respect to a Disease, or the Age of a Person.

PARACOE, *παράκοη*. Dulness of Hearing.

PARACOLLETICUS, *παράκολλητικός*. Agglutinating.

PARACOPÉ, *παράκοπη*, from *παράκωπαι*, to be delirious. In *Hippocrates*, it imports a slight Delirium, or any Alienation of Mind.

PARACRUSIS, *παράκρυσις*, from *παράκρῖναι*, to be a little delirious. This imports much the same as *Paracope*. Hence the Adjective, *παράκρυστος*, somewhat delirious.

PARACYNANCHE. A Species of Quinsy. See *ANGINA*.

PARADISI GRANA. See *CARDAMOMUM*.

PARAGOGE, *παράγωγη*, from *παρά*, importing near to, and *άγειν*, to bring. An Approximation or Reduction of the Bones.

PARALAMPSIS, *παράλαμψις*. A Cicatrix in the transparent Part of the Cornea of the Eye; from *παράλαμψαι*, to shine a little.

PARALIUS. A Species of *Tibymalus*, mentioned by *Dioscorides*, L. 4. C. 165.

PARALLAXIS, *παράλλαξις*, from *παράλλασθαι*, to change mutually. A mutual Change in the Situation of the Parts of a broken Bone, as when the two Fragments slip to the Sides of each other. See *FRACTURA*.

PARALLELA. A sort of Scurf, or Leprosy, affecting only the Palms of the Hands. It is a Symptom of the Venereal Disease. *Castellus* from *Forestus*.

PARALOPHIA, from *παρά*, near, and *λοφία*, the Eminence of the Back, is the lower and lateral Part of the Neck, according to *Keil*.

PARALYSIS, from *παράλυσις*, to dissolve, or weaken. A Palsy.

Among the Diseases arising from the Want of a due Tone of the Viscera, and solid Parts, none are more considerable than such as affect the Head, and Parts situated therein: And, of these, the most important are, those Resolutions of the Nerves, commonly, by Physicians, called an Apoplexy, an Hemiplexy, and a Palsy; which three Disorders are so nearly connected, that we shall consider them in one joint View.

That all these Disorders affect Sensation and Motion, the primary Organs of which are, the Nerves, and the nervous and membranous Parts formed of them, is universally allowed.

Now a Nerve is composed of tender Ducts, which convey an highly subtle Fluid, and are covered with a Membrane arising from the Meninges of the Brain. This Membrane, which surrounds them, is furnished with all kinds of Vessels, those of the lymphatic Kind not excepted; for which Reason it is capable of being inflamed, and rendered tumid, according to *Boerhaave*, in *Prax. Med.* and *Bartholomæus de Moor. Pathol. Cerebr. Cap. 10.*

What Cause communicates Sensation and Motion to the Body, by means of the Nerves, is much disputed; but, in my Opinion, it can be no other than an highly subtle and lymphatic Fluid, impregnated with a pure aerial, ethereal, and elastic Substance; which, being secreted within the small Ducts of the Brain, Cerebellum, and spinal Marrow, is convey'd not only into the small Tubes of the nervous Fibres; but, also, from these to the Nerves themselves; and, at last, to all the nervous Parts of the Body. This Fluid, when convey'd in a due Quantity, and with a proper Impetus, to the Nerves, and nervous Membranes, produces a certain Tension thereof; and, when this Tension is in its due State, Sensation and Motion are rightly performed thro' the whole Body; and the Nerves themselves are said to be possessed of their natural Tone and Elasticity. The Nerves are said to be robust, when their most minute constituent Particles cohere in such a manner, that they are capable of surmounting the natural, or perhaps, a somewhat greater Force of the Fluids; but if, in consequence of a too lax Cohesion, they are overcome by this Force, the nervous System is said to be weak.

A Nerve naturally tense is always full of its proper Fluid: Hence, when its most remote Extremity is but gently touch'd, according to the Laws of Hydraulics, it, with an incredible Celerity, conveys the Motion impress'd upon it to the Brain, and Common Sentory, just as a small Tube full of Water, and covered at each End with a Piece of Bladder, has the Motion of its contained Fluid instantaneously convey'd to one End, upon pressing the other with the Finger. This is, properly, what we call Sensation. The Instruments of voluntary Motion are the Muscles, which are composed of nervous, tendinous, and fleshy Fibres, every-where interwoven with nervous Fibrils, and which perform their Offices in the following manner: The nervous, tendinous, and fleshy Fibres ought to be so stretched and filled with Lymph, as in some measure, to retard the Blood passing thro' the Muscle. And the Blood, thus stopping, inflates the Belly of the Muscle; and this becoming turgid, the Muscle is shortened, and its Extremity, together with the moveable Parts adhering to it, are down towards its Origin. Hence, when the Muscle is in Action, it is harder, and, as, it were, resists the Touch. Hence we infer, that, in order to Motion, a greater Force, and more copious Influx, of the nervous Fluid are requisite, than to Sensation.

From what has been said, 'tis certain, that, by a Diminution of the Influx of the nervous Fluid into the Nerves, their Action, both as to Motion and Sensation, must be either totally abolish'd, or, at least, in a great measure, hinder'd. From this Cause arise the Disorders comprehended under the common Name of a Resolution of the Nerves; by which we understand an Inability of performing Motion and Sensation, arising from a diminished Influx of the nervous Fluid into the Nerves. Of this there are various Degrees, of which we shall consider two, as the most general; for either the voluntary Motions, the animal Actions, and the Use of Reason, are destroy'd, and the Patient drops down, as thunderstruck; or, the Causes and Reason remaining entire, the voluntary Motions, and animal Actions, or at least the Sense of Touch, become languid, or are totally destroy'd: In the former Case, the Patient is apoplectic; and, in the latter, paralytic.

Of Apoplexies, there are three Degrees, the highest, and universally mortal Degree of which is, when, together with the Senses, and all the animal Motions, all the vital Actions of the Body are at once destroy'd. See *APOPLEXIA*. Another Degree of this Disorder removes the Use of the Senses, voluntary Motions, and Reason; but does not destroy the vital Actions, nor always terminate in Death; but is generally converted into an Hemiplegy. The third and slightest Degree of this Disorder, which we call a spasmodic Apoplexy, discovers itself by the same Signs with the second; only it is removed in a shorter time, and does not so often degenerate into paralytic Disorders. And this slighter Degree of an Apoplexy we shall principally here consider.

This Species, therefore, of Apoplexy discovers itself by these Marks: It is, for a considerable time, preceded by a Weakness of the Senses, especially the Sight and Hearing; a Vertigo, a Listlessness of the Joints, a Tremor, a Torpor of the animal Actions, and, generally, hypochondriac and hysteric Disorders. During this State, the Patient, being suddenly and unexpectedly deprived of his Reason, all his Senses, and animal Motions, drops down; his Feet, and inferior Limbs, are cold, his Skin dry

and spasmodically constricted, his Face and Eyes red and turgid with Blood, and his Pulse strong and quick. Patients labouring under such a Paroxysm for some Hours either spontaneously vomit up a large Quantity of viscid Sordes, or have their whole Bodies covered with a Sweat; after which they return to themselves, and recover their Reason, Senses, and a Power of Motion. Many inform us, that under such a Paroxysm their Fauces have been constricted, a Power of Deglutition destroy'd, and their Breasts, as it were, confined with Cords: Such a Paroxysm, unless cured; returns frequently, and at last terminates in a fatal Hæmorrhage of the Brain.

On the contrary, an Hemiplegy is, when the Reason and vital Motions remaining, the Power of voluntary Motion, or with it, the Sense of Touch, is weakened. That such an Hemiplegy, or Palsy, is universal, or affects the whole Body, I deny, unless perhaps under an Apoplexy: Nor do I believe, that a Paraplegy can affect the whole Body, the Head remaining unaffected; at least, such a Disorder never occur'd to me in Practice; for every Palsy rather affects the Whole of one Side of the Body, and deprives it of Sensation, or is only confined to one particular Part. It is called an Hemiplegy, when the Half of the Head and Face is paralytic; and, in the other Case, it is called a Palsy of either Side; and, in the last Case, it is called a particular Palsy; which is either genuine, or spurious: The former has its Seat sometimes in the superior, sometimes in the middle, and sometimes in the inferior Parts of the Spinal Marrow; in some measure, deprives the Patient both of a Power of Sensation, and Motion; and arises from a Translocation of the Humours to the Nerves, which are compressed by them.

An Hemiplegy either succeeds an apoplectic Fit, or happens without it; and begins with a Refrigeration of the Side to be affected, and a preceding Vertigo; and gradually terminates in an Abolition of Sensation and Motion. The sound Side is often racked with spasmodic and convulsive Motions; the Mouth is frequently distorted, like that of a Dog; and as the Disorder proceeds, the Functions of the Mind, and especially the Memory, begin to be weakened. According to *Cælius Aurelianus*, in *Chron. Lib. 2. Cap. 1.* a particular Palsy is preceded by a Sensation of Weight in the Part about to suffer, a slow Motion accompanied with Stupor, Paleness, and Torpor; the Part affected is lax, flaccid, soft, and cold to the Touch, as it is affected with an Atrophy, or an cedematous Tumor. But we are by no means to confound that Inability of voluntary Motion, which accompanies a Palsy, with that which is sometimes joined with rheumatic and arthritic Disorders; for we often find this last Inability accompanied with Spasms and Convulsions, Symptoms quite foreign to paralytic Indispositions.

A particular Palsy affects various Parts; for sometimes the inferior Limbs, together with the Parts of the Abdomen, are deprived of Motion, and sometimes both of Motion and Sensation, whilst the Parts above the Diaphragm remain entire; then the Urine and Fæces are discharged involuntarily, after which an cedematous Tumor, a slow Fever, and, at last, Death, succeed; sometimes the Arms and Hands are afflicted with a Palsy; which, if spurious, or happening after a Colic, is called a Palsy arising from the Colic; but, when it arises from other Causes, it is call'd a Palsy of the Hands: There is, also, a Palsy of the Eye-lids, in which Case they cannot be separated, and there is an involuntary Discharge of the Tears: A Palsy of the Tongue is called *APHONIA*; which see. When the Pharynx is affected with a Palsy, all Deglutition is destroy'd; and this Species of Palsy is different from Spasms of the Pharynx. In dying Persons, the Oesophagus, Stomach and Intestines, become paralytic; and, in this Case, every thing swallowed, especially Liquors, descend with a kind of Noise and Rumbling: A Palsy of the Sphincter Ani discovers itself by a Falling down of the Intestinum Rectum, and an involuntary Discharge of the Fæces; that of the urinary Bladder, by an involuntary Evacuation of the Urine; that of the spermatic Vessels, by a perpetual Effusion of the Semen; and that of the Muscles of the Penis, by the want of a due Erection. *Cælius Aurelianus*, in *Chron. Lib. 2. Cap. 1.* informs us, that *Herophilus*, among the Antients, mentioned a Palsy of the Heart succeeded by sudden Death, without any evident Causes. And, among the Moderns, *Boerhaave*, in *Prax. Med. P. 5.* affirms, that the same may happen.

That the proximate and formal Cause of these Disorders consists in a more or less intercepted Influx of the nervous Fluid into the Nerves, is sufficiently obvious from what has been already said: Hence, also, appears the Reason, why some Palsies are legitimate, and others spurious; for the latter happens more readily than the former, because an Abolition of Sensation supposes an almost total Defect of the nervous Fluid; whereas an Inability of Motion is produced by a diminish'd Influx of this Fluid into the Nerves. 'Tis, therefore, necessary we should care-

fully investigate the several Causes capable of retarding such an Influx: Many Physicians have accused an Obstruction of the Nerves; but that this Opinion is false, is evident not only from the Smallness of the Nerves, but, also, from the Subtlety of the Fluid they contain, as *Bartholomæus de Moor*, in *Path. Cer. Cap. 10.* has demonstrated at large. But the true Cause is rather a Solution of Continuity in the Nerves, as in Wounds, and violent Contusions, or a Compression of the Nerves, or their Origins, by any thing preternaturally acting upon them. But as all Palsies proceed from this common Cause, which, however, produces different Effects, we must inquire, to what this Diversity is owing.

That this, therefore, is to be accounted for from the Diversity of the Parts affected, is obvious, not only from Reason; but, also, from the anatomical Dissections of those who have died of these Diseases; for all who have made Observations of this Kind, such as *Willis*, *Bonetus*, and *Wepfer*, have universally observ'd, that, in Persons who died of an Apoplexy, the Cause of the Disease was lodged in the Brain, and its Ventricles, as, also, in the Cerebellum. *Brunnerus*, in *A. N. C. An. 1. Decad. 3. Obs. 153. & 154.* gives us two celebrated Histories of Apoplexies, which prov'd mortal, the one proceeding from a Dropy of the Brain, and the other from Blood extravasated in it. On the contrary, the same Authors inform us, that in hemiplegic Patients, one Side of the Origin of the spinal Marrow is found overflowed with extravasated Serum, or compressed by Tumors. *Bonetus*, in *Sepulchr. Lib. 1. Sect. 15.* gives us Instances of the Extravasation of Serum in these Parts. And *Wepfer*, in *Austriæ, Hist. 14.* and *Brunnerus*, in the Work already quoted, *Obs. 154.* inform us, that they saw encysted Tumors there. 'Tis needless, in Confirmation of this Doctrine, to mention Abscesses, Wounds, and Ulcers, which, by affecting the spinal Marrow, have produced an Hemiplegy; and, by penetrating into the Brain, an Apoplexy. Besides, if from Anatomy we find, that the Nerves destin'd for the vital Functions arise from the Cerebellum, those subservient to the Senses from the Base of the Brain, and those subservient to the voluntary Motions, and the Sense of Touch, principally from the spinal Marrow, we may readily infer, that, in all Apoplexies, the Cause compressing the Nerves is within the Brain; but in a Palsy, within the spinal Marrow; and particularly that, in an Hemiplegy, it is lodged about one Side of the Origin of the spinal Marrow.

But, among the Causes which produce a Compression of the Nerves in the Brain, and intercept the Influx of the highly subtle and moveable nervous Fluid into them, the most considerable is generally a Stagnation of the Blood in the Vessels of the Membranes of the Brain: And this Stagnation arises from a retarded Motion of the Blood through the Veins, and venous Sinuses, and its slow Return to the Heart; for, when the Blood is convey'd to the Head with a greater Impetus and Effort than that it can be received into the Veins, on account of the too great Distention and Expansion of the Vessels it becomes stagnant; and this principally happens in plethoric, hypochondriac, nephritic, and hysseric Patients, on account of the violent Spasms of the inferior Parts. Sometimes a gentle Species of Apoplexy, call'd *Spasmodic*, is produced by this Means, because in this, when the Spasms remit, the Mass of Blood is derived to the inferior Parts, and the free Circulation of the Humours through the Vessels is restored, the Force of the Disease generally forthwith remits. And this principally happens when a Vein is seasonably open'd, and the Body render'd soluble by a Clyster. Under such a Paroxysm, the Face is generally red, the Pulse quick and full, Motion and Sensation are abolished, and sometimes the whole Body is covered with a profuse Sweat.

But if this Stagnation continues long, and happens in Patients who abound with Serum, the thinner serous Juices are gradually secreted through the Pores of the preternaturally expanded Vessels, act upon the Nerves, and compress them. If this happens in the Base of the Brain, an Apoplexy is produced. The other Degree of an Apoplexy, produced by a Conveyance of Serum to either of the Crura of the Medulla Spinalis, generally leaves an Hemiplegy after it. This Disorder is from the same Cause generated without any previous Apoplexy, if the Serum separating from the stagnant Blood immediately falls upon the spinal Marrow. Such an Hemiplegy is called *Serous*, and principally seizes pituitous, sanguine, and phlegmatic Persons. Under it, the Pulse is languid and weak, the Face pale, and the Patient afflicted with a kind of Drowsiness, and Torpor of the Senses. Physicians, and, among the rest, *Cælius Aurelianus*, in *Chron. Lib. 2. Cap. 1.* have justly observed, that it is most familiar to old Persons, especially in the Autumn and Winter.

Among the more remote Causes, which, according to the Diversity of Constitutions, produce sometimes a serous, and sometimes a bloody Hemiplegy, the most considerable is too large a Quantity of Blood in active Persons, and such as have the

the Misfortune of a lax and spongy Habit of Body. This Redundance of Blood is the more ready to induce these Disorders, the more the Humours are put into a Commotion; for these, when in too violent an Ebullition, too much expand the tender Vessels of the Brain, and are sometimes absolutely extravasated. Hence 'tis easy to assign a Reason, why plethoric Patients are suddenly seized with these Disorders after an immoderate Use of Venery, liberal drinking of hot Wine, the Use of too hot Baths, violent Exercise in an hot Air, or exposing themselves to the Sun, as we are told by *Prosper Martianus* in his Comment; as, also, why these Disorders are brought on by violent Commotions of Mind, and Surfeits, especially if the Body is exposed to Cold: And I myself know Instances of Persons, who, after drinking too copiously of Wine or Ale, and exposing themselves to the Cold, have suddenly died of Apoplexies.

Besides, a Redundance of Blood contributes to bring on Palsies, when the Blood, by Spasms of the inferior Parts, produced by any Cause, is forced to the superior Parts, and especially the Head, and there stagnates. Hence we are to account for a spasmodic Apoplexy, and a sanguineous Hemiplegy, which happen to hypochondriac and hysteric Patients; a memorable Instance of which is found in *Fred. Hoffman. Consult. Med.* For this Reason 'tis, also, often observed in Practice, that the Menfes, and hæmorrhoidal Discharge, when not duly carried on, contribute much to the Production of Palsies. Paralytic Disorders scarce ever fail to be excited by a sudden Stopping of any Evacuation of Blood, when actually flowing; so that they are very often brought on under the Menfes, Hæmorrhoids, and Lochia, by violent Frights, excessive Cold, and the preposterous Use of Astringents, Repellents, and Opiates.

Thus the Blood by its Stagnation produces Palsies and Apoplexies, though, for the most part, of the sanguineous and transitory Kind; but, in Process of Time, serous and longer protracted Palsies and Apoplexies. But these are immediately produced by a serous Colluvies, too copiously congested in the Head, and acting on the Origins of the Nerves. Hence 'tis certain from Experience, that violent Palsies are produced by suddenly checking and suppressing serous Excretions, critical Sweats, insensible Transpiration, an immoderate Discharge of the Saliva, whether spontaneous, or excited by Mercurials, serous Discharges from the Ears, Eyes, and Nostrils, inveterate Ulcers, Fontanels, and a fetid Discharge from the Feet. For this Reason Infants, otherwise free from such Misfortunes, are subjected to paralytic Disorders: Thus an Instance of a Palsy produced in a Boy of two Years old, by a Suppression of Transpiration, is found in *Fred. Hoffman, Consult. Med. Sect. 1. Cap. 26.* For the same Reason, long Walking, or continuing in cold and moist Places, contributes to the Production of Palsies. Memorable Instances of this are found in *Forestus, Lib. 10. Obs. 83. & 84.* To this, also, belongs that memorable Case in *A. N. C. Decad. 3. An. 7. & 8. Obs. 203.* where we have an Account of a Man of Seventy, who, after a Deafness suddenly ceasing, was seized with an Apoplexy of the Right Side; which was only owing to a Translocation of the Serum the first Cause of the Deafness, to the spinal Marrow of the Right-Side.

These Disorders will be the more terrible, if the Serum conveyed to the Head is acrid, scorbutic, and preposterously rec'd from the Joints and Skin by repellent and sulphureous Ointments: Hence there are various Instances of Achors, Crusta Lactæas, Tineas, Itches, and Purple Fevers, which, when repel'd, have been immediately succeeded by Palsies: The same holds true with respect to arthritic, gouty, and rheumatic Disorders, which, as is sufficiently known, are supported and cherished by an acrid Serum lodged about the membranous Parts of the Joints; for if this Serum is either by Opiates, or Astringents, used to alleviate the Pain, repelled, or if it recedes through a natural Imbecillity, it proves the Cause of the most obstinate Palsies. Thus an Instance of an Hemiplegy, arising from a rheumatic and arthritic Disorder, is found in *Fred. Hoffman. Consult. Med. Cas. 21.* To this Class evidently belongs the scorbutic Palsy, which is always spurious, and derives its Origin from an acrid scorbutic Serum stagnating about the Beginnings of Nerves, and compressing them. Such, also, is the Nature of Mercurials, that, when preposterously used in weak and impure Habits, in order to promote a Salivation, they induce Palsies; for Mercury, when mixed with the saline and excrementitious Particles of the Body, acquires a strongly stimulating Quality, by which it principally acts on the nerveous Substance of the Glands, and excites a greater Afflux of the salival and lymphatic Humours. If the Discharge of these from the Mouth is by any Cause suddenly stoppt, it easily happens, that, whilst the Afflux continues, these Juices are too copiously convey'd to the Origins of the spinal Marrow, and

the Nerves themselves, where by stagnating, and compressing them, they hinder the Influx of the nervous Fluid into them.

Spasms of the Membranes surrounding the Brain, and spinal Marrow, also, frequently lay a Foundation for hemiplegic and apoplectic Disorders: The Reason of which is no other than this, that the nervous Membranes, agitated by so violent Motions, are weaken'd, relaxed, and render'd incapable of hindering the Juices which enter them, however lymphatic and thin, from stagnating in the Vessels of the Membranes, and compressing the medullary Substance. Hence Experience informs us, that an Epilepsy is frequently succeeded by an Hemiplegy, which, if fatal, always terminates in an Apoplexy. And what should be the Cause, that a great Fit of Anger is sometimes succeeded by paralytic Affections, but that, by means of this violent Passion, there is a stronger Constriction of the Nerves and Vessels, producing that Stagnation of the Humours, which is so subject to intercept the Influx of the nervous Fluid?

All these Causes exert their pernicious Force with the greater Ease and Certainty, if they meet with a Flaccidness of the Brain, and a Debility of the nervous Frame: For, if the nervous Parts are too lax, they are the less able to resist an Inundation of Humours; but, on the contrary, are in a surprising manner disposed for their Stagnation and Extravasation. A Weakness of the Nerves may be known from antecedent Causes, such as Old-age, a sanguine Temperament, and from thence a lax, soft, and spongy Habit of Body; a sedentary and idle Life; too scanty an Use of Liquors, or too great an Indulgence of thick hopt Malt Liquor, or Wine; rich and plentiful Feeding, too much Sleep, as well as immoderate Wakefulness, much Study and Meditation, Indulgence in Venereal Pleasures, Sorrow and Grief of long Continuance, an Habitation in cold and moist Places, and a wintry Season. Bodies thus weaken'd, are by the slightest Cause, and what seems not worth Attention, disposed to Palsies and Apoplexies; as it happen'd, for Instance, to a certain Person, who, after drinking the *Selteran Waters*, tho' in a regular Manner, and with a Body well prepared, was seized with an apoplectic Fit, which left behind it a spurious Palsy.

Having premised these things relating to an Hemiplegy, we are now to treat of the particular Species of a Palsy. And here, those which deserve our chief Attention are, such as affect the lower Parts of the Body, or only the Legs and Feet, or the Abdomen, and all the Parts seated below the Diaphragm, the Parts above it remaining sound and unaffected. In the latter Case, the Cause is lodged in the spinal Marrow, about the first Vertebrae of the Loins, as is sufficiently demonstrated by the Dissections of the two Patients who died of this Disorder, and the Accounts of which we have in *A. N. C. Vol. 2. Obs. 51. & 120.* In one of these Patients the spinal Marrow, about the first Vertebrae of the Loins, was shatter'd and dissolv'd for more than half its Thickness. In the other, the spinal Marrow, thro' the whole inferior Part of the Spine, was so flaccid, and destitute of Juice, that there was a considerable Interstice between it and the Bone. This Disorder arises either, first, from external violent Causes, such as Fractures, Laxations, or Wounds of the Spine, at the same time affecting the Marrow; two Cases of which Kind are found in *A. N. C. Cent. 10. Obs. 8. & Dec. 1. An. 3. Obs. 66.* or, secondly, from internal Causes, and especially rheumatic, or convulsive Disorders of the Back; as is obvious from the memorable Case before quoted from *A. N. C. Vol. 2. Obs. 102.*

Sometimes the Cause is lodged within the Os Sacrum; in which Case the Disorder discovers itself by an Inability of Walking, and a Palsy of the Legs and Feet. This Species of the Disorder is sometimes hereditary, and depends upon a preternatural State of the Marrow contained within the Os Sacrum: Instances of this Kind arising from original Tumors within the Os Sacrum, which afterwards became exulcerated, and proved mortal, may be seen in *Hist. Morb. Wratiss. Ann. 1701.* The same happens after acute and intermitting Fevers, which terminate ill, if the Patient uses a bad Regimen, or indulges himself in Passion. And, in these Cases, the Cause of the Misfortune is a peccant Serum, by Translocation convey'd to the Marrow of the Os Sacrum. The same Disorder is incident to Women after difficult Labours, Abortions, and Retentions of the Lochia; nor does it proceed from any other Cause, than Blood too copiously convey'd by the Spasms to the Os Sacrum, there becoming stagnant, and, unless Relief is seasonably afforded, suffering its serous Part to be secreted through the small Pores of the Vessels.

There is a remarkable Species of Palsy incident to the Arms, which, when it succeeds a Colic, unseasonably check'd by Anodynes and Opiates, is called a *Paresis arising from the Colic.* The Cause of it is a peccant and acrid Serum, by a Translocation convey'd to the nervous Parts of the Arms, and especially those of the Carpus. Thus, in *A. N. C. Decad. 3. An. 7.*

Append. ad Obs. 308. we have a memorable Instance of such a Palsy succeeding a Colic stop'd by Opiates: And in the same Work, *An. 4. Obs.* 30. we have an Account of a Palsy succeeding a Colic, produced by drinking Wineedulcorated by Litharge. This Disorder is very familiar to those who work in Lead Mines, who after a violent Colic, accompany'd with an obstinate Costiveness, induced by the unfriendly Steams, fall into a Palsy of the Arms. This Disorder may, also, arise from other Causes, and sometimes proceeds from a scorbutic State of the Humours; an Instance of which is found in *A. N. C. Decad. 1. An. 3. Obs.* 334. Sometimes the Cause of this Disorder is lodged within the Vertebrae of the Neck, and superior Vertebrae of the Back, from which the Nerves are distributed to the Arms. A Case of this Kind, arising from a Blow of a Stone on the Neck, is described by *Forestus, Lib. 10. Obs.* 95. This Disorder, also, sometimes succeeds a Dropsy of the Breast, as *Carolus Piso, in Tr. de Morb. ex serosa Colluvie, Sect. 3. Cap. 7.* observes; in which Case the Cause is Lymph, stagnating within the small Vessels distributed through the Membrane of the Nerves, by reason of its obstructed Motion to the Thoracic Duct, and compressing the Nerves.

As for the Prognostic of paralytic Disorders, 'tis to be observed, that a spasmodic Apoplexy, and a sanguineous Hemiplegy, are easily cured; but, unless prevented by proper Measures, frequently return, and, at last, terminate in an Hemorrhage of the Brain. The other Species of Palsies, and a serous Hemiplegy, do not suddenly prove mortal. But the Cure is more difficult and intricate, the more the internal or external Senses are injured; and these Disorders frequently afflict the Patients during the whole remaining Parts of their Lives. When Infants are seized with Palsies, we sometimes observe, that they are freed from them about the Years of Puberty; but such a lucky Change rarely or never happens in Adults. An Hemiplegy of the Left Side is more dangerous than one of the Right, by reason of the Aorta, and its more numerous Ramifications in the former than in the latter. If the Part affected is as yet painful, capable of Sensation, not too cold, nor extenuated, there are some Hopes of a Recovery, which is still the more to be expected, if there is a Sensation of Formication and Puncture in it. A Palsy of the Abdomen, and inferior Limbs, is generally mortal, and frequently accompanied with a Gangrene of the affected Parts. Paralytic Disorders, of all Kinds, are more easily cured in the Spring and Summer, than in the Autumn and Winter.

A Fever succeeding a Palsy is said to cure it; but this is rather to be understood of an artificial, than a natural, Fever; and rather holds good with respect to a serous, than a sanguineous Palsy; for, if there is a natural Fever, it must either be continual, which is always dangerous; or intermittent, which hardly removes the Disorder: But, by an artificial Fever, we mean an increased Motion of the Heart and Arteries artificially excited; by which means the Circulation of the Blood is render'd brisker, and the Juices stagnating about the Nerves, and their Origins, dissolved, and, as it were, resorb'd. Such an artificial Fever is brought on by Medicines somewhat hot and acrid, by nervous and volatile Substances, by violent Exercise, especially in the Heat of the Sun, and by Baths, especially those of *Laughfad*, and the *Caroline Springs*. But these must by no means be used in a sanguineous Palsy, already attended with a febrile Motion; but only in serous Palsies, where the Circulation of the Humours is languid.

In the Cure of paralytic and apoplectic Disorders, there are two Intentions to be principally pursued. The former is to remove the proximate, as well as the remote Causes, which contribute to intercept the Influx of the nervous Fluid into the Nerves. The second is to strengthen and corroborate the Part affected, and whole nervous System, so as to restore them to their former and natural Tone. 'Tis of great Importance to know, whether the Disorder is recent, or confirm'd; because, in these different States, different Methods of Cure are to be pursued.

If, when the Physician is call'd immediately after the Invasion of the Disorder, he finds the Pulse quick, and the Face red, there is no more present and efficacious Method of removing the Cause of the Disorder, which is a Stagnation of the Blood in the Head, than Venesection, which is forthwith to be used, either in the Arm or Neck, making a pretty large Incision, that the Blood may flow in a large Stream; or, if the Patient is plethoric, a Vein is first to be open'd in the Foot, left, a Vent being given to the Blood in the superior Parts, the Humours should by that means flow more copiously from the inferior Parts to them. Then the Venesection is to be repeated, either in the Arm, or Jugular Veins. It is sometimes requisite, that this Venesection should be twice, or oftener, repeated in a pretty large Quantity.

Then, in order to make a Revulsion of the stagnant Humours, somewhat acrid and stimulating Clysters, composed of the ner-

vous Herbs, Rue, Marjoram, Savory, Thyme, Mother of Thyme, Flowers of Lilies of the Valley, Oil of Chamomile, and, for the sake of the greater Stimulus, a proper Quantity of Sal Gemmae, Sal Ammoniac, or human Urine, are to be injected as often as the State of the Patient requires. Bathing the Feet, also, pretty deep in warm Water impregnated with the nervous Herbs, and the Flowers of Chamomile, the Tops of Yarrow, and Pot-ash, is of singular Service in these Disorders.

After Venesection, Spasms of the internal Parts, and, as it were, a febrile Ebullition of the Humours, sometimes remain; for alleviating which, we are to use fixed Diaphoretics, in Conjunction with precipitating and nitrous Substances, such as the Powders of diaphoretic Antimony, Crabs-eyes, Mother of Pearl, Cinnabar, Nitre, and Amber, exhibited in Water of Lilies of the Valley, or in the Water prepared of the Flowers of the Lime-tree; to which may be, also, added a proper Quantity of the Syrup of Citron-juice: For by such Medicines Transpiration is assisted; by which means we often find apoplectic and paralytic Paroxysms terminated. Nor in alleviating the Spasms of the internal Parts is there any Medicine more efficacious, than a proper Quantity of the anodyne mineral Liquor mixed with the bezoardic Liquor, or the volatile Spirit of Tartar; which Medicine ought to be given alternately with the above-mentioned Powders, and exhibited twice a Day. The Patient is, also, to abstain from all Malt Liquors, and only use Decoctions, pure Spring-water, or *Selteran Water*, mixed with a little Wine.

By a seasonable Exhibition of these Things, such Disorders, if recent, and as yet only supported by a Stagnation of the Blood, may be soon remov'd. But when there already seems to be a Secretion of the Serum, the sole Intention ought to be to discuss and derive it to other Parts. And in this Case, if the Patient is, as it were, lethargic, and snores, I with great Success use and exhibit an Emetic in a diluted Form, mixed with Analeptics; by which means the vital Motions are roused, and the Patient restored to the Exercise of his Senses and Reason. I generally use the following Formula:

Take of theinous Water of Lilies of the Valley, of the Waters of Lime-tree-flowers, Primroses, Cinnamon, and distilled Vinegar, each two Ounces; of the succinated Spirit of Hartshorn, one Dram; of diaphoretic Antimony, Cinnabar, and Crabs-eyes, each half a Dram; of emetic Tartar, two Grains; and of the Syrup of Orange-bark, two Drams. Make into a Mixture; two Spoonfuls of which are to be taken every other Hour.

Then, in order to discuss the stagnant Serum, volatile urinous Substances, applied to the Nostrils, are of singular Service: Of this Class the most considerable is, Spirit of Sal Ammoniac prepared with Quick-lime, and mixed with Oil of Marjoram, or Rue. Sternutatories, especially of the nervous Kind, are, also, beneficial in such Cases, since they not only convey Motion to the Nerves, but, also, eliminate the serous Matter by the Nostrils. The following may serve as a Formula for this Purpose:

Take of Marjoram, and Flowers of Lilies of the Valley, each two Drams; of Syrian Marum, Flowers of Benjamin, and Cloves, each half a Dram; and of powdered Castor, ten Grains: Mix together for a Powder, to be used instead of Snuff.

In obstinate paralytic Disorders, in order to derive the stagnant Serum, nothing is more efficacious, than actual Cauteries applied between the second and third, or third and fourth Vertebrae of the Neck: And this Method was not only highly approved of by the Antients, but is, also, recommended by the Moderns, especially *Erndtoli*, in *Warsavia physice illustrata*: But, in our more delicate Age, we generally substitute, in the room of this apparently cruel Method, Setons in the Nape of the Neck; or, if the Patient is disgusted at these, Vesicatories may be applied to the Nape of the Neck, or the Feet; which last are in delicate Patients to be prefer'd to the former, since, by Vesicatories applied to the Nape of the Neck, it has been found, that convulsive Motions of some Part before not affected have been excited.

If the Disorder is inveterate, besides the above-mentioned Remedies, proper Evacuants are to be called in, in order to make a Revulsion of the Humours from the Head. And these Evacuants must be balsamic Purgatives, the most considerable of which are the Pills prepared of the Extract of Coloquintida, Aloes, black Hellebore, Resin of Ladanum, Aloes-wood, Flowers of Benjamin, Salt of Amber, Myrrh, and *Peruvian Balsam*; each one Scruple; of Mercurius Dulcis, half a Dram; of Camphire, and volatile Salt of Hartshorn, each four Grains: Let

twenty-four Pills be form'd out of each Scruple, and let fourteen of these Pills be exhibited for a Dose. Among diaphoretic Medicines the most proper are, the succinated Spirit of Hartshorn, the anodyne mineral Liquor, with an Addition of a proper Quantity of the Essence of Castor, and Decoctions prepared of Guaiacum, Sassafras, Saunders, and China Root. Nor, in serous Disorders of the Head, can we enough commend the Virtue of diuretic Medicines, especially of the succinated Kind, the most considerable of which is Essence of Amber, with acrid Tincture of Antimony.

They who have for a long time laboured under paralytic Disorders, and are at the same time afflicted with a Weakness of the nervous System, ought to be treated with corroborative Medicines, and have a proper Regimen prescribed them. For this Purpose, one Part of the urinous Spirit of Sal Ammoniac, mixed with three Parts of Water, is a Medicine highly efficacious. A nervous Mixture may be, also, prepared of the Essences of red Gentian, and Cascarilla-bark, acrid Tincture of Antimony, the anodyne mineral Liquor, and the Oils of Mace or Cinnamon. And this Medicine may be exhibited in an Infusion of Baum prepared with Citron-peel. They who are afflicted with a languid Appetite, and a Weakness of the Stomach, receive great Benefit from the Elixir Viscerale, or an Electuary prepared of the Peruvian Bark, and that of Cascarilla. To old Persons nothing is more beneficial than a few Drops of the Balsam of Life, exhibited in the Morning in an Infusion of Baum.

Various external Medicines are recommended for recovering Sensation and Motion. In the Days of Antiquity, strong Frictions of the Part affected, with rough Cloths, were greatly extol'd; or, if Sensation was destroy'd, they used either to irritate the Skin with Nettles, or, previously using Friction with a Squill cut through the Middle, they applied Cupping-glasses without Scarification. It is, also, of singular Service to anoint the paralytic Parts with Spirit of Sal Ammoniac, and camphorated Spirit of Wine. Excellent Effects are produced by old *Rhenish* Wine digested in a gentle Heat with Rosemary, the Flowers of common Chamomile, Spike and Cloves, and with folded Linen Cloths applied to the Spina, Dorsi, the Os Sacrum, and the Joints. After Baths, or Frictions, it is beneficial to apply to these Parts nervous Liniments composed of human Fat, Galbanum, Turpentine, Balsam of Capivi, *Peruvian* Balsam, and the expressed Oils of Lavender, Juniper, Marjoram, Rue, Rosemary, Amber, and Nutmegs; for distil'd Oils alone are improperly used, because by drying and indurating the Nerves too much, they do more harm than good. The Head is to be covered with discutient and corroborating Caps; apoplectic Balsams are to be applied to the Temples; but these must not be of too agreeable a Flavour. The Head must be shav'd, and Powder of Amber sprinkled upon it. The hinder Part of the Head is, also, with great Advantage wash'd with spirituous Liquors prepared of the volatile Spirit of Hartshorn, Spirit of Worms, the *Aqua Anabatina*, the Essence of *Peruvian* Balsam, the Essence of Castor, and the Oils of Nutmegs and Cloves.

In paralytic Disorders Baths are had recourse to as the last, and most important Medicine. Among these the most considerable are the hot Baths moderately used, among which the most celebrated are these of *Toeplitz*, *Emsen*, *Wiesbaden*, *Aix la Chapelle*; and in *Misnia*, those of *Wolkenstein*, which are to be used when the Disorder is inveterate; but those of *Laughstad*, on account of their chalybeate astringent Principle, are only proper in a recent Palsy, or one already subdued, and which only discovers itself by a Weakness of Motion: But the Virtues of these are surpassed by Baths artificially prepared, the most efficacious of which is, that made with the Scorix of Metals. Next to these are the Baths prepared of nervous Herbs, and Ants. For this Purpose, the most commodious Herbs are Mother of Thyme, Ironwort, Southern-wood, Origanum, Mint, Hyssop, Rosemary, Marjoram, and Chamomile-flowers; which, wrapt up in a Bag, and boiled in a small Lixivium, are to be immerged in tepid Water, and the Parts affected are to be fomented with them. Among Liniments, the most efficacious is that prepared of *Venice* Soap, and camphorated Spirit of Wine, with an Addition of the Essences of Galbanum and Bdellium.

In paralytic Disorders arising from a Redundance of Blood, Venesection, especially in the Beginning, is of great Service. The Antients, and among the rest, *Archigenes*, according to *Aetius*, *Celsus*, *Caelius Aurelianus*, and *Aretaeus*, affirm, that the Practice of letting of Blood immediately, was authorized by a Tract of faithful and constant Experience. But Venesection is injurious in an inveterate serous Palsy where the Strength is impaired, and the Appetite languid. For this Reason *Balloonius*, in *Lib. 6.* advises not to open a Vein in Palsies, where a cold Humour is in Motion; and confirms the Disadvantages of such a Practice by an Example. *Trallian* affirms, that, in the

Cure of a Palsy, Venesection is never to be used, unless when a manifest Redundance of Blood appears. A Vein is not to be open'd in the Feet, if they are cold, and spasmodically constricted. Men who have fallen into a Palsy from a retarded or suppressed hæmorrhoidal Discharge, after Venesection, may with great Advantage have Leeches applied to the Anus. And in the *A. N. G. Vol. 3. Append.* we have an Instance of an Hemiplegia speedily cur'd by applying Leeches behind the Ears, and Vesicatories to the Calves of the Legs.

Those who, by paralytic Disorders, have their Heads greatly weaken'd, and their internal Senses, especially, their Memories, injur'd, ought to abstain from an incautious internal Use both of the hot and cold mineral Waters; for these Waters pass slowly through the too much relaxed minute Vessels of the Head, and lay a Foundation for a greater Stagnation of the serous Humours. Nor have I found the Acidulæ mixed with Wine, for ordinary Drink, salutary, because the Head is too much filled with the spirituous Vapour. But if the Patient is young, and the Disorder has arose from the hypochondriac Passion, the more temperate of the *Caroline* Springs, or even cold Mineral Waters warm'd, may be used: But when the Patient drinks these Waters, which ought to be used in a small Quantity, he ought to guard against Cold, Grief, and Fatigue of Mind; he is not to indulge himself in too much Sleep, but carefully to use Exercise, and nervous and balsamic Medicines. In general, 'tis to be observed, that the drinking of these Waters is far more proper when the Disorder is in its Decline, than when in its Vigour.

Artificial Baths prepared of Ants, and nervous Herbs, are the more efficacious, the lighter and finer the Water of which they consist, is. For this Reason, the best is thought Rain-water; or, if that cannot be had, Water is to be taken from a River after a large Fall of Rain. But all artificial Waters are surpassed by those of *Toeplitz*, which, in Lightness, surpass Rain-water, and by their discutient, and diaphoretic Virtue, restore the Tone and Strength of the affected Parts. We, also, know from Experience, that suffering these Waters to drop on the Beginning of the spinal Marrow has frequently been of singular Service in dissolving the stagnant Humours.

For paralytic Disorders, especially of the inveterate Kind, cold and gently astringent Baths are deservedly recommended; as, also, Fomentations, prepared of the Roots of the greater Confound boil'd in Water. In this Case may be used chalybeate medicinal Springs, such as those of *Frogenwalden*, those of *Laughstad*, and those prepared of the Scorix of Metals: But they must be applied only tepid; otherwise, by throwing the Mass of Blood and Humours into too great Commotions, they excite Anxieties, Cephalalgias, and Palpitations of the Heart. These Waters, by exciting an artificial Fever, augment the Disease, since, by constricting the exterior Parts of the Body, they render the Motion of the Blood and Humours greater to the internal Parts, and especially to the Heart, and large Vessels, which surround it. Hence the Systole of the Heart and Arteries is render'd quicker and stronger; and, consequently, the Circulation of the Humours through the minute Vessels, brisker. Hence it may easily happen, that Obstructions are removed, viscid Juices resolved, and Stagnations dissolved. But these Baths are not to be used by Persons turgid with Blood, such as labour under a Dyscrasy of the Humours, or those afflicted with a Weakness of the solid Parts, such as old Persons.

Washing the Head, in paralytic Disorders, is of singular Service, especially in those accustomed to it; but they who are not accustomed to it, are to begin with a Lixivium which is not very acrid, and has nervous Herbs boil'd in it. Then let the Root of Asarabacca, and the Herb Rosemary, be inclosed in a Bag, and boil'd in the Lixivium. But these Medicines are not to be used, till the Patient is previously purged.

In a scorbutic Palsy, which is generally of a particular and spurious Nature, little Good is done by external Remedies. It is rather expedient by diluting Decoctions and Infusions, both hot and cold, used as ordinary Drink, to correct the Acrimony of the Humours, and subdue it by antiscorbutic Specifics, of which the most considerable are Earth-worms, either in Powder, or their Juice exhibited in Whey. Then the grosser Parts of the Sordes are to be eliminated by Stool, by laxative Preparations of Manna and Rhubarb. But the more subtil Parts of the Sordes, fluctuating in the Blood, are to be carried through the cutaneous Pores, by means of the diaphoretic Powders; for unless the whole Mass of Humours be purged, there can be no perfect Cure.

A Palsy of the Eye-lids is produced by a Translation or Stagnation of the Humours; and, unless soon removed, becomes incurable. I have observ'd, that the most effectual Method of removing this Disorder was to anoint the Eye-lids Morning and Evening with the Balsamum Vitæ warm, or with Oil of Cinnamon and Cloves, mixed with some pinguious Sub-

stance. Neither are we to neglect the Derivation and Evacuation of the peccant Serum, which may be obtained by Laxatives, Diuretics, and Veficatories. Hence, in *A. N. C. Vol. 1. Obs. 140.* we have an Account of such a Palsy of the Eyes, happening after the Measles, cured by Veficatories.

A Palsy arising from a Colic requires such Medicines, as by Transpiration eliminate the peccant Serum from the Blood. Externally, singular Service is done by the Skins of newly kill'd Animals applied hot to the Parts affected; which may be, also, rubbed with an Ounce of human Fat, mixed with a Dram of the Oil of Cloves. In this Disorder great Service is, also, sometimes done by the Application of blind Cupping-glasses, by which we have an Instance of such a Palsy cured in *A. N. C. Decad. 1. An. 3. Obs. 308.*

In paralytic Disorders a serene and temperate Air is of great Use: Hence *Cælius Aurelianus*, in *Lib. 2. Cap. 1. Chron.* orders the Patient to be laid in a light Place, so that the Chamber must be neither too hot, nor too cold, but temperate. The Aliment ought, also, to be light, and of easy Digestion, especially in the Beginning, when the Palsy is, for the most part, an acute Disorder, and the Force of the Stomach always languid. Nor are Wines, or Malt Liquors, of any Kind, to be used, especially in the Beginning: But, when the Disease is of a longer Standing a fuller Diet may be allowed.

For washing the paralytic Parts when dry, or affected with an Atrophy, we are by no means to use Spirit of Sal Ammoniac, which is rather to be used when the Parts are swell'd; in which Case it is, also, expedient to inclose the tumid Parts in a small Sack, filled with the following Species:

Take of Bran and Millet, each four Handfuls: Mix them in any Kettle, or proper Vessel; dry them over a gentle Fire; put them in the Bag, which is to be applied warm to the Part affected, when the Patient goes to Bed.

Violent Disorders of the Head, such as Lethargies, Apoplexies, and Hemiplegies, are very familiar to old Persons, and almost incurable. For the sake of Prevention, therefore, it is expedient, they should carefully abstain from all those things, which can weaken the nervous System, or render the Circulation of the Blood through the Head slower; and particularly from Cold, especially when the Body is disposed to sweat, from liberal drinking of spirituous Wine, from Grief, from Terror, and from the Intermittion of usual Venesection. Old Persons ought, also, to abstain from the excessive Use of Tobacco, vaporous Preparations of Wormwood, thick Ale, and a moist and vapid Air. That in old Persons these Disorders are rarely cured, is, in my Opinion, owing to this, that their Blood abounds with a pituitous and glutinous Humour, which greatly contributes to hinder the Reflux of the Blood through the small Veins, and venous Sinuses of the Brain, the former of which it obstructs by its Viscidity. But 'tis no easy Task to remove those Obstructions, which are deep-seated in the Vessels of the Brain.

Paralytic Patients, when abounding with Fat, and a Redundance of peccant Humours, are not easily restored to Health and Strength, unless they use a drying Regimen, which consists in abstaining from Broths, boiled Meat, and moist Substances; in using little Drink, especially of the thick Kind. They are only to use a small Quantity of the Decoction prepared of China Root, Shavings of yellow Saunders, Safafras, and Raisins. They may, also, drink a moderate Quantity of generous Wine. They must eat no Flesh, but what is roasted; and may be allowed stoned Raisins. The Body, and its various Members, ought, also, to be carefully exercised. *Hoffman.*

A Palsy is such a lax State of the Muscles, as is sufficient to produce an Immobility not to be surmounted by any voluntary or vital Efforts. In this Disorder Sensation is sometimes absolutely destroy'd; at other times, a small Degree of it, accompanied with a Stupor, and, as it were, a slight punctory Pain, remains.

The most immediate Cause of this Disorder is always found to be an intercepted Influx of the nervous Fluid from the Brain, or of the arterial Blood into the paralytic Muscle.

This Disorder may therefore arise,

1. From every Cause capable of producing an Apoplexy;
2. From every Circumstance which renders the Nerves unfit for transmitting the animal Spirits; and,
3. From every Circumstance which hinders the Ingress of the arterial Blood into the Muscle. Hence we understand the respective Natures of a Paraplegy, an Hemiplegy, and a Palsy of a particular Part.

A Palsy may therefore be produced by an Apoplexy; a slight Parapoplexy; an Epilepsy; Convulsions; intense and long-protracted Pain; a Retention of any of the usual Evacuations, attended with a subsequent Vertigo; such as, a Suppression of the hæmorrhoidal and menstrual Discharges; the stopping of

Abcesses and Fistulas; the Retention of the Fæces, Urine, and Saliva. This Disorder is, also, produced by Translations of any morbid Matter, either in acute or chronical Diseases; by whatever injures the Nerves, either by Obstruction, Solution, Compression, Ligature, Distortion, Distraction, or Constriction: Hence a Palsy may be produc'd by gross Humours, Wounds, Erosions, Abcesses, Gangrenes, inflammatory Tumors in the Integuments of the nervous Medulla, in the Ganglions, and the Nerves themselves; by serous, purulent, ichorous, and scirrhus Tumors; by strong and tight Ligatures; by Fractures, Luxations, highly astringent Aliments, Medicines, and Poisons. Hence a Palsy may be generated by excessive Cold, intense Heat, a cold and moist State of the Air, the continual and excessive Use of warm Water, and the Steams of Antimony, Arsenic, recent Lime, Mercury, and other Poisons.

The immediate and remote Causes already enumerated, and concurring to the Generation of a Palsy, produce various Effects, according to the different Seats where they reside; according to their different Strength; according to the Diversity of the Part affected, as it is more or less, more mediately or more immediately, necessary to Life; for, from these Circumstances, the Disorder may be reckoned more or less mortal, curable or incurable.

A Palsy of the Heart, Lungs, Muscles subservient to Respiration, and the Throat, soon proves mortal: A Palsy of the Stomach, Intestines, and Bladder, arising from internal Causes, is highly dangerous: A Palsy of the Muscles of the Face is bad, and easily convertible into an Apoplexy: A Paraplegy is highly dangerous, prognosticates an Apoplexy, and, when the latter happens, the former proves mortal: An Hemiplegy is bad, partakes of the Nature of a Paraplegy, and, consequently proves mortal, when an Apoplexy happens: A Palsy, accompanied with Coldness, Insensibility, and Atrophy of the Part, is bad, and rarely curable: A Palsy, accompanied with violent Convulsions, and an intense Heat of the opposite Part, is bad; but, from the Symptoms opposite to these, 'tis known what Palsies are curable and less dangerous; as, also, what in this Disorder are the Causes of so sudden Deaths, which happen without any previous Sign, or almost any concomitant Symptom.

The Physician who applies what has been said to all the Muscles, whatever their Functions are, will understand the Causes, and know the Diagnostics and Prognostics, of an almost infinite Number of surprising, and, otherwise, unaccountable Diseases.

Nature cures a Palsy, by attenuating and dissipating the morbid Matter, by a bad Crisis deposited in the exterior Parts of the Brain, its Ventricles, about the Medulla oblongata, the Medulla spinalis, and the Egress of the Nerves from the Marrow, by resolving the impacted Matter by a violent supervening Fever, by moving the impacted Matter by a convulsive Tremor of the Part, and by eliminating this Matter by a copious and long-protracted Diarrhoea.

The Cure requires a Removal of those Causes which hinder the Functions of the Nerves and Arteries; and then a Restoration of the free Circulation of the Fluids.

The Causes hindering the Functions of the Nerves and Arteries are removed by various Methods, easily applicable to these Causes previously known.

If the internal Cause of a Palsy is a gross and stagnant Matter, such Medicines must be used, as are capable of producing those Circumstances, by which Nature cures this Disorder.

The Cure of a Palsy is to be attempted,

1. By attenuating and dissipating Medicines; such as aromatic, cephalic, nervous, and uterine Vegetables, the express'd Juices, Infusions, Decoctions, Spirits, or Preserves of which may be used: By fixt Salts obtained from these, by Calcination; by volatile Salts obtained from them, by Distillation or Putrefaction: By Oils obtained from these, by Expression, Coction, Infusion, and Distillation: By saponaceous Substances artificially prepar'd of a Combination of these: By the strong-scented Parts of Animals, and the Juices, Spirits, Oils, Salts and Tinctures of Insects: By fossile Salts, metallic Crystals, and such Compositions as principally consist of these Substances: By all these so judiciously mix'd, as that they shall mutually assist each other: By these means the Attenuation and Dissipation of the Matter, together with a febrile Heat, are obtain'd.
2. The Cure is to be pursued by strong Stimulants, and such Substances, as, by exciting a nervous, tremulous, and convulsive Motion, powerfully dissipate the impacted Matter: Of this Kind, the most considerable are strong Sternutatories and Emetics, especially when frequently repeated.
3. The Cure is to be attempted by hot, resolvent, aromatic, or fossil and acrid, metallic, mercurial and antimonial Purges; and consequently strong Hydragogues exhibited in large Doses, and for several Days successively repeated; by which means

means a copious, and sometimes a long-protracted Diarrhoea may be excited.

4. By filling the Vessels of the Body with large Quantities of attenuating Liquors; and then exciting a greater Degree of Motion and Sweat, by means of the Steam or Vapour of kindled Spirits.

Hot, dry, external Frictions to a Redness of the Part, or Frictions with penetrating and stimulating animal or vegetable Spirits, or with nervous Oils, Liniments, Balsams, and Ointments, are beneficial in the Cure of this Disorder. Vapour-baths, and Immersions; acrid, aromatic and attractive Plasters; Cuppings; Scarifications; Vesicatories; Fustigations; and such Things as excite Pain, and a gentle Inflammation, as Nettles, are also serviceable in the Cure of a Palsy. Formulæ for this Purpose are these following.

Take of Mastich, Olibanum, and Amber, each half an Ounce; mix up into a Powder: Let half a Dram of this be sprinkled on live Coals, and when the Steam arising is receiv'd into an hot and dry Linen Cloth, let the Parts affected be strongly rubbed with it.

Take of the Spirit of Lavender, three Ounces; of Sal Ammoniac, two Drams; of the Tincture of Castor, four Drams; and of distil'd Lavender-water, six Ounces: Make into a Mixture, with which the Parts affected are to be rub'd.

Take of Cumin-plaster, Melilot-plaster, and pure Galbanum, each one Ounce; and of the Oil of Castor, half an Ounce: Make into a Plaster, to be applied upon Leather to the Part affected, after previous Friction.

Take of the Oils, by Infusion, of Wormwood, Dill, Chamomile, Nep, Rue, sweet Trefoil, Castor, Saffron, Orris, Earth-worms, Spikenard, and Earth, each one Dram; and of the Unguentum Agrippæ, the Unguentum Arantæ, the Unguentum Martiatum, and the Unguentum Nervinum, each six Drams: Make up into a Liniment, to be applied to the Parts affected.

Acrid Plasters are the Cumin-plaster, the Galbanum-plaster, the Melilot-plaster, and some others.

But we are above all things to take care, that all these Remedies may, if possible, be applied to the Seat of the Cause, when detected. Now the Part affected, the various Parts labouring under the same Disorder, a Knowledge of the Muscles and Nerves, of their Unions, Origins, and Distributions, and a Knowledge of the Functions depending on each of these, when compared with each other, clearly indicate and point out the latent Seat of the Disorder. *Buerhaave Aphorism.*

A PALSY IN THE IRIS.

The excessive Contraction and Dilatation of the Iris are occasioned by a sort of Palsy in its Muscles. The Dilatation proceeds from a Palsy of the circular Muscle; the Contraction is caused by a Palsy in the radial Muscle. The general Cause of these Palsies must be deduced from an Obstruction in the Nerves of the Choroides; which, by their Communication with the Nerves of these Muscles, produce their Motion. It happens, tho' seldom; that the Pupil is almost deprived of any Motion, either of Contraction or Dilatation while the Sight, tho' weak, still remains. In this Case, 'tis to be observ'd there is a Palsy in the nervous Filaments of the Iris; and that the Impression of the Object is convey'd to the Optic Nerve, by means of its close Union with the Choroides. I have always remarked, that the Palsy of the Choroides is attended with that of the Iris; and that the Palsy of the nervous Fibrils of the Iris does not damage the Choroides, tho' it weakens the Sight; which seems to be occasioned from the too great Dilatation or Contraction of the Pupil, which, by admitting either too many or too few Rays, renders the Sight imperfect.

A PALSY OF THE UPPER EYE-LID.

The upper Eye-lid becomes paralytic, when it is drawn down, and cannot be rais'd; or when it is rais'd, and cannot be brought down. In the first Case, the Elevator Muscle is affected; in the second, the Orbicular, or Depressors. This Palsy is either perfect, or imperfect: It is said to be perfect, when the Eye-lid is almost destitute of Motion; and imperfect, when the Eye-lid has some Motion. This last Sort has several Degrees, which differ only in their having more or less Motion. When the Eye-lid remains always open, and without Motion, it is what the Antients called the Hare's Eye.

In the Palsy in general, both Sense and Motion are often lost; but, in this sort of Palsy, the Defect is in the Motion; whilst the Sense is not injured, or, at least, very seldom.

As Palsies are generally the Effects of an Apoplexy, this may be called a sort of slight or insensible Apoplexy. The Matter which causes it is thrown upon, obstructs, and compresses the Nerves, that supply the Fibres which move the Eye-lids. Purgatives, and all Remedies used for the Palsy in general, are proper in the present Case. The hot mineral Waters, the Success of which we daily experience, are equally beneficial in this Palsy. I have cured several of this Disease by Purges, Sudorifics, and, above all other Remedies, with Viper-broths.

The following Fumigation receiv'd in the Eye, and the neighbouring Parts, may be used. It is made of Rosemary, Thyme, Sage, and Wine boiled in a Coffee-pot: Let the Pot be covered with a Funnel; the broader Part of the Funnel must fit the Coffee-pot exactly: Let the Eye be placed before the Steam, which comes out of the End of the Funnel, as from a little Chimney; this must be done Night and Morning, for about a Quarter of an Hour. It is of the same Efficacy, as the pumping of hot mineral Waters on paralytic Parts: Care must be had to place the Eye at a due Distance, to support the Heat. The following Method must be used at the same time: Take a little pewter Pan, that will cover the Eye-lid, with a Pipe at its Bottom in the Form of an Handle, about four Fingers in Length. Let this Pipe be filled with Spirits of Wine distilled several times on Cloves, Lavender, Origanum, and Thyme: Afterwards lay the Pan on the Eye, and heat the Handle with your Hand. The Spirit thus rarefied bears on the Part, and there excites the animal Spirits in the moving Fibres. Care must be had to repeat this three times a Day. Several have been cured by these Means, especially when the Disease has not been inveterate.

The Eye-lids are likewise attacked with a quick, involuntary Motion, or Vibration, which I take to be a convulsive Motion of the Eye-lids. When this Accident happens seldom, it is of no Consequence; and is cured by rubbing the Palm of the Hand with Hungary Water, and applying it afterwards to the Part, for some Moments, three times a Day.

This convulsive Motion degenerates, sometimes, to a total Convulsion of the Eye-lid; then the Eye-lid remains shut about a Minute, and is afterwards rais'd; this happens often in the Day: During the Time of this Convulsion, the Fibres of the orbicular Muscle, which it affects, become stiff and tense. It may be compared to that Sort of Convulsion commonly called the Cramp, which seizes the Leg in the Night, and continues some time before the Position of the Leg can be altered. The Cause of this Convulsion must be deduced from the irregular Motion of the animal Spirits, which, flowing with too great Rapidity into the Fibres of the orbicular Muscle, obstruct, for a short time, the Action of the Musculus attollens.

This Convulsion may be instantaneously removed, either by rubbing the Hand round the Orbit and the Eye-lids, or making the Persons sneeze in the Time of the Fit.

Although either of these Methods give immediate Ease, yet they do not prevent the Return of the Convulsion; for which Reason proper Remedies, both internal and external, must be employed, as Bleeding, Purges, and Antiepileptics; such are, Piony-roots and Seed, a Decoction of the sudorific Roots and Woods, the Mistle of the Oak, Cinnabar of Antimony, the volatile Salts, and the like. Among all these Remedies, I have not found a more efficacious one; than the sublimed Flowers of Sal Ammoniac, mixed with the Caput Mortuum of Oil of Vitriol; they must be wash'd in common Water to carry off their Salts, and afterwards they must be dried; three Grains of them must be taken every Morning in the Confection Hyacinthi. This Medicine commonly removes the Fits of the Convulsion before the eighth Day. As to external Remedies, let the upper Part of the Eye-lids be rubbed with an Ointment made of the Oil of Earth-worms, mixed with some Drops of Sal volatile oleosum, or compound Baum-water. The distilled Water of Elder-flowers is, likewise, very beneficial in the Convulsion and Palsy of the Eye-lid.

When the Eye-lid remains shut, and cannot be rais'd, there is an Operation which takes off Part of the Skin of that Eye-lid. When the Wound is healed, and the Skin is less extended, the Musculus attollens of that Eye-lid recovers its Motion, the Disease is cured, and the Person opens and shuts his Eye-lid at Pleasure. *St. Yves.*

PARAMERIA, παραμρία. The internal Parts of the Thighs.

PARAMESOS, παραμέσος. The Ring-finger; that which is next to the Little-finger.

PARA-

PARANOEA, *παράνοια*, from *παράνοος*, to be delirious. A Delirium, or Alienation of Mind.

PARAPAR. Clus. A sort of Indian Kidney-Bean. *Raii Hist. Plant.*

PARAPECHYON, *παρὰπύχον*. The Radius, a Bone of the Arm.

PARAPHIMOSIS.

When the Prepuce is either naturally so short; or so swelled and contracted; that it cannot be drawn over the Glans, a Disorder is produced, called by the *Greeks* Paraphimosis. By this Stricture of the Prepuce, the Circulation of the Blood in the Glans is generally so much obstructed, that not only a Tumor of the Glans is occasioned, with violent Inflammation, and most acute Pains, but a Sphacelus is induced, and the Penis must be subjected to Incision. Those are most affected with this Disorder, who have naturally a Prepuce too narrow, and who exert themselves too vigorously in Coition, especially with Virgins, in whom the Vagina is strait. Young Husbands are sometimes egregiously mistaken, when, after the Embraces of a new Spouse, they find themselves affected by this Disorder; and therefore imagine her to have been unchaste and infected, while the real Cause was, the natural Stricture of Virginity. Sometimes those Youths, or Boys, are affected by this Disorder, who, having a very tight Prepuce, lasciviously draw it back, while the Penis is in a State of Flaccidity; by which means, an Erection being occasioned, the Glans becomes tumid, and the Prepuce cannot be returned. Thus have I seen a surprising Tumor of the Prepuce occasioned behind the Glans. Nor is it to be denied, that those are, sometimes, liable to a Paraphimosis, who have engaged in impure Embraces; for while the Penis, and interior Skin, are infected and corroded by the virulent Matter, the Prepuce may very readily be attacked with an Inflammation, Tumor, and those other Disorders before-mentioned.

The Cure of a Paraphimosis principally consists in reducing the Prepuce so, that the naked Glans may again be covered; for such a Reduction is immediately followed by a Remission of the Pain, and other Symptoms. Meanwhile, because a violent Inflammation seizes the tumid Part of the Penis, which renders the Return of the Prepuce difficult, and often impossible, it will not be improper to apply to the Penis digestive and emollient Fomentations or Cataplasms, or warm Wine, or camphorated Spirits of Wine; if, upon renewing the Application, no Erection appears, the Prepuce may be attempted to be drawn over the Glans; which being effected, all the other Symptoms immediately vanish. But because Wine, and camphorated Spirit of Wine, by their acrimonious Quality, and the emollient Cataplasms by their emollient Power, produce a Flux of the Blood towards the morbid Part, and, consequently, increase the Distention of the tumefied Penis, some prefer the Application of cold Water; for, when the Penis is immersed in the Water, and when it is plentifully sprinkled on, or applied by Compresses to the Abdomen or Scrotum, and if, at the same time, copious Bleeding be used, the Tumor and Erection generally soon subside. The Penis, thus becoming flaccid, should be lubricated with the Oil of Olives, or with Butter: Then let the Surgeon take the Penis between his fore and middle Fingers of both Hands, and with his Thumbs strongly repress the naked Glans, while the Prepuce is, at the same time powerfully drawn forwards with his Fingers, till the naked Glans be again covered. During this Operation, the Patient is obliged to suffer excruciating Pain, and he makes miserable Outcries; which, however, the Surgeon should entirely disregard, or, as *Celsus* advises, dispatch his Business the sooner, upon which all Complaint ceases; for, after returning the Prepuce, little or nothing else is required for completing the Cure. If the Penis is affected with a slight Inflammation, where there is little Virulency, it generally suffices to bathe it in warm Water.

But if the tumefied Penis, by reason of the violent Inflammation, or long Continuance of the Disease, tends towards a Gangrene, it will be most proper, first, to bleed in the Arm, and afterwards, in the superior Part of the Penis, till it becomes flaccid; then the Prepuce may be returned as before directed, and the Bleeding stopt. *Petit* used a different Method in curing the Paraphimosis. He compressed the tumefied Glans with a narrow perforated Bandage, and, extending the Prepuce, he again brought it over the Glans. Sometimes the Prepuce is so distended with the serous Part of the Blood, that it appears like a Blister produced by a Burn, or a Vesicatory; and the contained Humour is conspicuous to the Eye, much obstructing the Reduction of the Prepuce over the Glans. In this Case, the distended Skin should be opened with a Knife, or a Lancet: Thus the Serum being discharged, the Wound must be cleansed with warm Wine, and the Skin may be again stretched over the Glans. In order to prevent the wounded Skin from growing to the Glans, the Patient, as often as he

makes Water, should retain it a little between the Prepuce and the Glans; he should likewise frequently draw the Skin backward and forward, till all Danger of its Cohesion with the Glans disappear. The same Intention may, also, be answered, by often injecting warm Spirit of Wine between the interior Skin of the Prepuce, and the Glans; or by interposing soft Lint between the Glans and the Skin. If the Prepuce already adheres to the Glans, they should be forthwith separated by a Tooth-picker, a blunt Lancet, or a Knife armed with a Button; but particular Caution must be used to avoid wounding the Glans, which would occasion a large Hemorrhage. The Prepuce and Glans, being thus discharged, their reuniting must be prevented, by the Methods above directed. The Skin and Glans ought to be the more carefully kept asunder, while they are so; because, if once they are firmly united, they cannot be separated without the greatest Difficulty. After the Operation, the Penis should be bound up to the Belly, left, by its hanging downward, the Afflux of the Blood being easier, an Inflammation and Tumor might be induced. I have sometimes seen the Prepuce, after it has been drawn back over the Glans, affected with a large hard Tumor, which could by no means be dissolved.

When all these Remedies prove ineffectual, *Petit* directs the following Method: Introduce a small crooked Knife between the Penis and Prepuce, with its Edge turned upwards towards the Prepuce, till the swelled, constricted Part of the Skin can be conveniently divided by it. If the Prepuce be constricted and tumefied in more Places, as in two, three, or four, like so many Rings, the Operation must be as often repeated, as the Nature of the Disorder requires. All the constricted Parts of the Prepuce being thus divided, the Penis must be fomented and wash'd with warm Wine; and, the Prepuce being drawn over the Glans, the Part must be carefully bound up, and healed as before. *Heister Chirurg.*

PARAPHORA, *παράφορα*, from *παράφορος*, to deprave. A slight Delirium, or a Delirium in general.

PARAPHRENITIS. An Inflammation of the Diaphragm, or Parts adjacent.

If a Disease similar to the Pleurisy seizes that Part of the Pleura which surrounds the Diaphragm, or affects the Diaphragm itself, a terrible Species of Disorder, call'd *Paraphrenitis*, is produced.

This Disease is far more frequent than is commonly believ'd, since, when present, it either remains undiscover'd, is neglected, or treated as if it was another Disorder.

A *Paraphrenitis* is known from an highly acute and continual Fever; an inflammatory Pain of the Part affected, intolerable on account of the nervous Membranes. This Pain is greatly augmented during Inspiration, Coughing, Sneezing, Repletion of the Stomach, a Nausea, Vomiting, and a Compression of the Abdomen in discharging the Fæces, or the Urine. Hence the Disorder is accompanied with an erect, small, quick, and suffocating Respiration, performed only by the Action of the Thorax, the Abdomen remaining at Rest; with a perpetual Delirium; a Revulsion of the Hypochondria, inwards and upwards; the Rîsus Sardonius; Convulsions; Madness; and a Gangrene.

A *Paraphrenitis* terminates in the same manner with a Pleurisy; but, in consequence of the great and continual Motion of the Part affected, its Necessity to Life, and the Tension of the nervous Membranes, all the Symptoms are quicker, and more fatal. Hence arises a purulent Ascites.

Hence the Cure of a *Paraphrenitis* requires the same Distinctions and Cautions with that of a Pleurisy, and almost the same Remedies, such only excepted, as the Situation of the Part affected cannot admit of. Emollient Clysters, in consequence of their acting on the Parts next to that affected, are often beneficial.

But when the Diaphragm, previously inflam'd, comes to a Suppuration, and the Abscess, breaking, discharges its Pus into the Cavity of the Abdomen, the Pus is there collected, congested, and putrefied, produces a Tumor, a Corrosion of the Viscera, a violent Tabes, and, at last, Death.

This Species of *Paraphrenitis*, tho' known, is yet absolutely incurable. *Beerb. Aphorism.*

PARAPHROSYNE, *παράφροσύνη*, from *παράφροος*, to be delirious. A Delirium, or Alienation of Mind.

PARAPLEGIA, *παράπληγία*, from *πᾶρα*, importing somewhat injurious; and *πλησσω*, to strike. A Paraplegy, or Palsy of all the Parts below the Neck, as it is now understood; but in *Hippocrates* it seems to import a Palsy of any particular Part, in consequence of an Apoplexy, or Epilepsy. See *APOPLEXIA*, and *PARALYSIS*.

PARARMA, *παράρμα*. The Lift of Cloth. *Galen, in Hippocrat. de Arte.*

PARARTHREMA, *παράρθρεμα*. A slight Luxation.

PARAR-

PARARRHYTHMOS, *παράρρυθμος*. An Epithet for a Pulse which is not suitable to the Age or Nature of a Person.

PARASCHIDES, *παράσχιδες*, from *παράσχω*, to cleave. The Fragments, or Splinters, of fissur'd Bones. *Hippocrates, de Fract.*

PARASEISMA, *παράσεισμα*. A Concussion of the Body, esteem'd a Species of Exercise. *Hippocrates de Dieta, L. 2.*

PARASITICAL PLANTS are such as are produced out of the Trunk or Branches of other Plants, from whence they receive their Nourishment, and will not grow upon the Ground, as the Mistletoe and others.

PARASPHAGIS, *παράσφαγίς*. The Part of the Neck contiguous to the Clavicles.

PARASTATÆ, *παράσταται*. This, in *Hippocrates*, signifies the *Epididymis*. But *Herophilus*, and, after him, *Galen*, call'd these the *Varicose Parastatæ*, in order to distinguish them from the *Glandulose Parastatæ*, now call'd *PROSTATÆ*. The Word is deriv'd from *παρίστημι*, to be situated near.

PARASTREMA, *παράστημα*, from *παράστροφω*, to distort, or pervert. A Perversion, or convulsive Distortion, of the Mouth, or any Part of the Face. *Hippocrates, Protrhet. L. 2.*

PARASYNANCHE. A Species of Quinsy. See *ANGINA*.

PARATHENAR.

PARATHENAR MAJOR.

This is a pretty long Muscle forming Part of the outer Edge of the Sole of the Foot. It is commonly termed *Hypothenar*, but very improperly, according to the Signification of that Word.

It is fix'd backwards, by a fleshy Body, to the outer Part of the lower Side of the *Os Calcis*, from the small posterior external Tuberosity, all the Way to the anterior Tuberosity. There it joins the *Metatarsus*, and, at the Basis of the fifth Metatarsal Bone, separates from it again, and forms a Tendon, which is inserted in the Outside of the first Phalanx of the little Toe, near its Basis, and near the Insertion of the *Parathenar minor*.

PARATHENAR MINOR.

This is a fleshy Muscle fixed along the posterior Half of the outer and lower Side of the fifth Bone of the *Metatarsus*. It terminates under the Head of the Bone, in a Tendon which is inserted in the lower Part of the Basis, of the first Phalanx of the little Toe.

The tendinous Insertion of this Muscle is very closely united to the cartilaginous Ligament of this Part. The same thing is to be observed, concerning the other Muscles, which go to the lower Parts of the Basis of the first and second Phalanges of the Toes. In aged Persons, some Parts of these Ligaments are often turned to Bone, and thereby form these bony Portions, which are taken for distinct Sefamoid Bones.

The *Parathenar major* serves, particularly, to separate the little Toe from the rest; and the *Parathenar minor* bends the first Phalanx of that Toe. Both these Muscles seem to be too large and strong for the necessary Motions of so small a Part on so weak a Joint: But as the little Toe makes a Part of the outer Edge of the Sole of the Foot, which is very much exposed to external Violence when we walk bare-footed; and no Part of it so much exposed as the little Toe, very powerful Muscles were necessary to strengthen it on these Occasions.

Besides the two Uses already mention'd, the great and small *Parathenar* may have another, in which they may, also, be assisted by the *Thenar*; and that is, to bend the Sole of the Foot according to its Breadth, which Action is very requisite in walking a Tip-toe, in going up a Ladder, and in climbing; on which Account, the two *Parathenars* deserve the Name of the *Tiler's Muscles*, much better than the *Transversalis Pedis*. *Winslow.*

PARDALIANCHES. The *Aconitum Pardalianches* is, according to *Boerhaave*, a Name for the *Ranunculus*; *folio Cyclaminis*; *radice Asphodeli, major*.

PARDUS. Offic. *Jonf. de Quad. 81.* Aldrov. *de Quad. Digit. 64.* Charlt. *14.* *Pantherus, Pardalis, Pardus, Leopardus.* Gefn. *de Quad. Digit. 824.* *Pardalis.* Raii *Synop. A. 166.* **THE LEOPARD.**

The Fat is esteem'd one of the best Cosmetics. *Dioscorides.*

PAREAS. The Name of a Serpent said to be found in Syria, some of which are of the Colour of Brass; others, blackish. The Bite is not mortal, but only excites an Inflammation. *Castellus from Forestus.*

PAREDRIA, *παρεδρία*, from *παρά*, importing near; and *εδρα*, a Seat. An Affociation, Vehemence, or Assiduity (of a Disorder, or Disorders.) *Hippocrates Præcept.*

PAREGORICUS, *παρηγορητικός*, from *παρηγορέω*, to console, or mitigate. Mitigating, lenient; an Epithet for Medicines which relieve Pain.

PAREIRA BRAVA. Offic. *Mont. Exot. 7.* Dale *Differt. Med. Cod. Med. 89.* Chomel. *261.* *Caapeba, Pareira, Brava.* Lochn. *Sched. p. 29.* *Caapeba Brasiliensisbus.* Worm. *Mus. 158.* *Caapeba.* Pif. *1. 94.* *Caapeba sive Convolvulus Colubrinus.* Ejusd. *2. 312.* *Caapeba Brasiliensisbus, Lusitanis.* Erva de Noffa Sennora, aut Cipo de Cobras. Marceg. *25.* Raiz, & Erva de Noffa Sennora. Worm. *Mus. 157.* *Convolvulus Brasiliensis flore octopetalo monococcus.* Raii *Hist. 2. 1331.* *Pareira, Ambutua, Butua overa Brutua.* Ind. *Med. 89.* *Butua overa Brutua, Pianta Indiana.* Zan. *Hist. 59.* *Butua sive Pareira Brava Lusitanica.* Geoff. *Tract. 286.* *Pareira Brava.* Chom. **WILD VINE.**

This Root is commonly about the Bigness of the little Finger; tho' sometimes larger. It is of a brown Colour, wrinkled both ways on the Surface; but its inner Substance is fibrous, like the *Thymelæa*. *Zanoni* says, that, when cut transversely, it represents the Sun, and its Rays; but this Conceit is without Foundation. It is of a sweetish Taste, with a disagreeable Mixture of Bitter, and without any Smell. Authors pretend that this Root comes from *Brasil*, for this Reason, because we get it from the *Portuguese*: But it is much more probable, that it is of *East-India* Growth; for a Surgeon sent it from *Surat* to *M. de Jussieu*, by the Name of *Boutua* Root; and wrote, that it grew along the Coast of *Malabar*.

This Root is much celebrated by the *Portuguese*, as an Alexipharmic, and an Antidote against all poisonous Plants. It is, undoubtedly, a very good Diuretic, and very proper in Nephritic Colics.

The Way of using it is, Boil about a Quarter of an Ounce, scraped or rasped, in two or three Pints of Water, till reduced to a Pint; of which the Patient is to drink a Glass every half Hour, in a warm Bath, his Body being before prepared by Bleeding and Clysters.

A small Quantity of the Syrup of the Five opening Roots may be added to the Decoction; and, by this Method alone, *Geoffroy* the elder cured the great *Abbé Bignon* of a Stone-colic, and made him void a very large Stone. When given in a large Dose, it heats considerably. It seems to act by dissolving the slimy Matter contained in the Kidneys and Bladder; and has been given with great Success, mixed with Balsam of Capivi, in Gonorrhœas, after sufficient Evacuations. The Decoction already mentioned has, also, done Wonders in hepatic Colics, arising from an Obstruction of the Orifice of the Gall-bladder, a Glass being drank every three Hours, to the Quantity of a Quart. The *Portuguese* use this Root powder'd, for Quinsys and Diseases of the Thorax. *Geoffroy.*

There is, also, another Sort of *Pareira Brava*; which *Dale* thus distinguishes:

Pareira Brava alba. Geoff. *Tract. 287.* *Pareira Species secunda.* Lochn. *Sched. 32.* **THE WHITE WILD VINE.**

This is said to come from *Brasil*. It is more woody than the former, composed of Fibres, of which some are longitudinal, the rest orbicular. The Bark of this Root is white, but the Substance within yellow, like Liquorice. *Geoffroy.*

PARENCEPHALIS. The *Cerebellum*.

PARENCHYMA, *παρεγχυμα*, from *παρεγχύω*, to pour into. A Term introduc'd, as is said, by *Erasistratus*, importing all that Substance, which is contained in the Interstices betwixt the Blood-vessels of the Viscera, which he imagin'd to be extravasated and concreted Blood. The Moderns, having discover'd all the Viscera to be vascular and glandulous, have rejected this Term, together with the Doctrine.

PAREISIS, *πάρεσις*, according to the Definition of *Areteus*, *Chron. L. 1. C. 7.* is a Palsy of the Bladder, when the Urine is either suppress'd, or discharg'd involuntarily.

PARIETALIA OSSA. The Temporal Bones. See *CAPUT*.

PARIETARIA.

The Characters are;

The Flower is male, tetrapetaloid, stellated, furnished with four Stamina, and with Testiculi, having a small Apex in the Centre without an Ovary. The Flower is female, consisting of a foliaceous, trifoliated Calyx, in whose Centre is a conoidal Ovary, furnished with a fimbriated Tube in another Place of the Plant. The Floscules and Ovaries are closely collected in thick Nodes to the Stalks.

Boerhaave mentions two Species of *Parietaria*; which are, 1. *Parietaria*; *Officinarum*, & *Dioscoridis.* *C. B. P. 121.* *Tourn. Inst. 509.* *Boerb. Ind. A. 2. 92.* *Helxine, Parietaria.* Offic. *Parietaria.* Ger. *261.* *Emac. 331.* *J. B. 1. 976.* Raii *Hist. 1. 206.* *Synop. 66.* *Parietaria vulgaris.* Park. *436.* **PELLITORY OF THE WALL.**

Pellitory of the Wall has several smooth, redish, succulent Stalks, half a Foot or a Foot high, with roundish, sharp-pointed Leaves, set on alternately upon long Foot-stalks, of a Deep-green above, and lighter underneath. The Flowers are small and

and flammous, redish before their Opening, white afterwards, growing among the Leaves all along the Stalks; it grows upon old Walls, flowering in May. The whole Herb is used.

It is cooling, opening, and cleansing, abounding in nitro-sulphureous Salt, and is accounted very good for the Stone, Gravel, Stoppage and Heat of Urine; and for these Purposes the Juice, or Decoction, is given in Draughts, or in Glysters; some commend the same for Coughs. *Miller's Bot. Off.*

By the chymical Analysis, Pellitory yields a great deal of Oil; a great deal of fix'd Salt, and Earth, and several Liquors, of which some are acrid, and the rest acid: As for the volatile Salt, one obtains none that is concrete from this Plant; but it yields an urinous Spirit.

Dioscorides affirms, that it lenifies and resolves, and is good to stop Tetters, and spreading Ulcers: They applied it, in his Time, to the Parts affected with the Gout; they gave the Juice to drink in an old Cough, made a Gargarism of it for the Diseases of the Throat; and injected it into the Ears to appease their Pain. *Cæsalpinus* says, it provokes Urine, and opens the Kidneys; *Tragus* very much commends the Decoction, to remove Obstructions of the lower Belly. Take, according to him, Pellitory of the Wall and Water-cress-leaves bruised; add a sufficient Quantity of Wine; mix, and put them in a Frying-pan; apply them in Form of a Cataplasm, moderately hot, to the lower Belly, for Suppression of Urine. *Dodonæus* only makes a Cataplasm of the Leaves, and Oil of sweet Almonds. *Hildanus* uses Oil of Scorpions, instead of Oil of sweet Almonds. *Tragus* makes another Cataplasm for Contusions, frying it with Bean-meal, Mallows, Wheat-bran, Oil, and Wine. *Camæarius* prescribes it bruised with Vinegar, and applied hot to the Testes, in case of Ruptures. *Aurelius Victor* says, that *Constantine* gave the Name of this Plant to the Emperor *Trajan*; because his Statues and Inscriptions were on all the Walls of Rome, like Pellitory. It is now used in all detersive and lenitive Decoctions, and Semicupiums. The Syrup of Pellitory gives great Relief to hydropic Persons. *Martijn's Tournefort.*

Parietaria absterges, and is somewhat astringent and cooling; it is seldom used internally; yet some commend it for the Cough: Externally, it is of Service in Tumors, Erysipelas, and Abscessions; and, being slightly bruised and apply'd, it is said to be very effectual for the Cure of recent Wounds. The Powder of the dry'd Herb, taken in Honey, or drank in Beer, or Posset-drink, is an excellent and approved Remedy for an inveterate Cough, and Consumption of the Lungs; and was usually prescribed by the Antients for the Cough and Asthma. The Decoction in Wine, or Hydromel, is conducive to the same Purposes; but the Powder is more effectual. This Plant affords a nitro-sulphureous Salt, as well as Borage and Bugloss. That it abounds with nitrous Salt, is evident from its detorsory Virtue.

It is called *Parietaria*, and *Muralis*, from *Paries*, or *Murus*, a Wall, because it grows on Walls: *Helxine*, from *ἑλξω, ἑλξω (helco, helxo)* to draw or attract; because its rough Leaves and Seeds draw and tenaciously adhere to Cloaths: *Perdix*, from *Perdix*, a Partridge, because Partridges usually feed on it: *Vitriaria* and *Urceolaris*, because, by its *Mucousness*, it is of Service for scouring and cleansing Pots and Glasses. *Raii H. P.*

2. *Parietaria*; minor; *Ocymi*. *G. B. P.* 121. *Boerb. Ind. alt. Plant. Vol. 2.*

PARILI. H. M. The Name of a tall Tree, which grows in Malabar.

The Root and Leaves are said to correct a melancholy Disposition of the Blood; and to temperate acid and salt Humours. Of the Leaves, together with the Leaves of the *Carretti*, boiled in the lacteous Juice of the Coco-nut, a Potion is prepared, which mitigates the Pains of the Piles, either Internal, or external.

PARIS HERBA. See HERBA PARIS.

PARISTHMIA. *παρίσθμια.* The Tonfils; or Disorders of the Tonfils. See TONSILLÆ.

PARITI, or TALI-PARITI. A Species of *Alcea*; which grows in Malabar, the Flowers of which, bruised in Milk; are put into the Ears, as a Remedy for Pains of the Head.

PARKINSONIA.

The Characters are;

It hath a polypetalous, anomalous Flower, consisting of five dissimilar Leaves, from whose Cup arises the Pointal, which afterwards becomes a rough-jointed Point; each Knot or Joint containing one Kidney-shaped Seed.

Miller mentions but one Species of this Plant; which is, *Parkinsonia aculeata, foliis minutis, uni costæ adnexis.* *Plum. Nov. Gen.*

This Plant was discovered by Father *Plumier*, in America, who gave it this Name, in Honour to the Name of Mr. *John Parkinson*, who published an universal History of Plants, in English, in the Year 1640.

It is very common in the Spanish West-Indies; but, of late Years, it has been introduc'd into the English Settlements in

America, for the Beauty and Sweetness of its Flowers. This, in the Countries where it grows, naturally rises to be a Tree of twenty Feet high, or more; and bears long slender Branches of yellow Flowers, which hang down after the same manner as the *Laburnum*. *Miller's Dictionary.*

PARNASSIA.

The Characters are;

The Leaves are roundish, and disposed in a Circle; the Calyx is pentaphylloidal; the Flower roseaceous, one on a Stalk, consisting of greater and smaller fimbriated Petals. The Ovary becomes a small conoidal Fruit, opening into three or four Keel-shaped Cells, full of minute Seeds.

Boerhaave mentions but one Sort of *Parnassia*; which is the *Parnassia*; palustris & vulgaris. *Tourn. Inst.* 246. *Boerb. Ind. A.* 243. *Raii Synop.* 3. 355. *Hepatica alba.* *Offic. Gramen Parnassi.* *Ger. Emac.* 840. *Raii Hist.* 2. 1049. *Gramen Parnassi vulgare.* *Park. Theat.* 429. *Gramen Parnassi, flore albo simpliciter.* *C. B. P.* 309. *Gramen Parnassi Dodonæo, quibusdam Hepaticus flos.* *J. B.* 737. *Cistus humilis palustris, Hederæ folio, perfoliata nostras.* *Pluk. Almag.* 108. *Pyrola rotundifolia palustris nostras flore unico ampliore.* *Hist. Oxon.* 3. 505. **GRASS OF PARNASSUS.**

It grows in putrid and marshy Places, and flowers in August: The Parts used in Medicine are the Root, Herb, and Seed.

The Juice of the Leaves, and Decoction of the Root, are most approv'd Medicines for the Eyes. The Seed is a powerful Provocative of Urine, and stops a Looseness and Vomiting. *Dioscorides.* It strengthens the Liver, and frees it from Obstructions. *Chab.* It is vulnerary and astringent, and is said to be effectual in stopping Hæmorrhages. *Hist. Plant. adscript. Boerhaav.*

PAROCHETEUSIS, *παροχέτευσις*, from *παρά*, and *ὄχευσις*, of *ὄχευσις*, a Canal; or Duct, Derivation, is used by *Hippocrates* to signify a Derivation of the Humours from one Part; in order to evacuate them by another not far distant. The Laws of Derivation, in *Hippocrates*, *Lib. de Humoribus*, are thus express'd: *Παροχέτευσις ἐς κεφαλὴν, ἐς τὰ πλάγια, ἢ μάλιστα πρὸς τὴν* "Derivation is made to the Head, to the Sides, and where there is the greatest Tendency." Or, otherwise, 6 *Epid. Sect. 2. Aph. 5.* *παροχέτευειν πρέπειεν ἀπὸ τῶν αὐτῶν ἀπὸ τῶν αὐτῶν* "Derivation is to be used, when you have done something immediately towards a Revulsion, and Reintences are to be subdued (or mollified)." *Galen* very well explains *Derivation*, in his Comment on these Words: "*Hippocrates*, says he, uses the Word *Parocheteusis*, Derivation, when an Humour requires to be evacuated, and does not take its Course the Way which it ought to do, nor yet very remote from the proper Passage, nor to the most contrary Place; for Instance, when the Urine tends to Evacuation through the diseased Kidneys and Bladder, it may be best, in that Case, to make a Derivation of it by the Intestines, in the same Manner as when the Course of the Humours is directed towards the Intestines, if the Intestines are vitiated; a Derivation is to be made by the urinary Passages. Thus, in Women, Derivation is to be made, sometimes, to the Uterus, or the contrary; sometimes a Derivation is to be made of an uterine Flux towards the urinary Passage, or the Intestines." And, *Lib. 1. ad Glauc.* he says, "While the Humours are in a flowing State, Revulsion, ἀπὸ τῶν αὐτῶν; as *Hippocrates* calls it, is the proper Remedy; but, when they are settled and fixed on some particular Part, Derivation is to be attempted."

PARODONTIDES, from *παρά*, frequently signifying, in Composition, the same as the Latin, *prater*, by, nigh to; by the Side of; and *ὀδὸς*, Tooth. The same as **PARULIDES**; which see.

PARONYCHIA, in Surgery, is a Whitloe.

By a *Paronychia*, or Whitloe, is meant an intense, corroding Pain which affects the Phalanges, and especially the Ends of the Fingers, and which is attended with a violent Pulsation, and preternatural Heat. The Fingers are, for the most part, tumefied; and sometimes there is no Tumor, when the Disorder lies deep, or about the Bone: Sometimes these Pains extend to the Cubitus, or Shoulder; because of the Connection between the Fingers and those Parts by the Flexor Muscles: Sometimes the Pain is gentle or moderate; and sometimes the Pain is so violent and intolerable, that the Patient is obliged to pass both Day and Night without any Sleep, in a miserable Condition: Nor is it altogether unusual, to see those of more delicate Constitutions so tormented with the Pain of a Whitloe, that a Fever, Faintings, Convulsions, great Heat and Deliriums, with a violent Inflammation of the Arm; an Abscess, or Spacelus, are induced; and, unless timely Assistance intervene, Life itself is endangered.

As, therefore, the *Paronychia* is more mild, or more violent, according to the different Parts affected by it, several Species of it have been constituted by Surgeons. *Garengot* reckons

four, and *Gouty* five; but I can see no Reason for making more than three. 1. When the Disorder arises in the Skin or Fat, in the back, or fore Part of the Finger, or even under or near the Nail; in this Case, the Pain may be severe, but the Symptoms are usually not malignant. 2. When the Periosteum is attacked, inflamed, or corroded; and then the Patient is tormented with most violent Pains, which, however, are more or less intense, as that tender Membrane is more or less affected. 3. The most malignant Species is, when the nervous Coats of the Flexor Tendons of the Fingers, or the Nerves near them, are seiz'd with this Disease; for then it is attended with the most excruciating Pains, the most malignant Symptoms, and the Patient is every way disordered.

The immediate Cause of a Paronychia appears to me to be, an Inspissation of stagnated Blood, whence proceeds an Inflammation of the adjacent Parts; and this is evident from the Heat and Pulsation of the Part affected. This Inspissation may be produced, partly by internal Causes, as a Crudity and Acrimony of the Blood; and, partly, by various external Causes, as the Prick of a Pin, a Thorn, or a Splinter, or by a Contusion or Bruise, and other like Accidents: So that a Paronychia is more or less dangerous and troublesome, in proportion to the Degree of the Wound or Inflammation, or the Sensibility of the morbid Part. Some Physicians have asserted, that in Fingers thus affected Worms have been observed, to which they ascribed the Cause of the Disorder; and, perhaps, upon this Account, the *Germans* named it the Worms in the Fingers.

In the Beginning of the first Species, the affected Part of the Finger swells, with a slight Hardness, but little or no Pain. Afterwards Redness, with Inflammation and Pain, appears, which are gradually succeeded by the Symptoms already mention'd: But, tho' the Tumor wonderfully increases, the Pain and other Mischiefs seldom become intolerable in this Species, or extend themselves beyond the affected Finger, as in the other Kinds. In this Sort, the peccant Matter is so far from being lodged deep, that it is often perceptible to the Eye: But the nearer the Inflammation reaches to the Periosteum, or Tendons of the Fingers, the more intense are the Pains, so as, sometimes, to affect the whole Arm; and in lax, delicate Constitutions, induce almost continual Watchings.

The second Species of Paronychia may be distinguish'd from the first, by the intense Pain, either in the End of the Finger, or over its whole Extent, accompanied with great Heat, a Fever, Watchings, Convulsions, and sometimes with a Delirium. The Tumor and Inflammation scarcely appear outwardly, nor does the Pain reach the Wrist.

The third Sort of Paronychia may be known by the following Symptoms. There is either no Tumor about the End of the Finger, or it is very small; especially if the Inflammation affects the interior Coat or Vagina of the Tendon, more than the exterior. Here the Pain is so intense and intolerable, that the Patient is in extreme Agonies: Nor is the Finger only affected, but the whole Hand and Carpus; especially that Part of the Hand near the Carpus, under the transverse Ligament of the Hand. The Pain even extends over the Arm, to the internal Part of the Elbow, where the Flexor Muscles of the Fingers have their Origin; and is sometimes propagated to the Top of the *Humerus*, inducing almost continual Watchings, with a Fever and Convulsions.

If the corrupted Matter is lodged in the Coat of the Tendon, its hard and compact Substance makes little or no Swelling upon the Fingers, excepting towards the Joints, where it is but moderate. The Hand is more swelled than the Fingers, but its Pain is milder; and sometimes the Arm has become so surprisingly tumid, that *Garengot* says, he has seen it as large as the Thigh.

The Paronychia terminates variously, according to its different Degrees and Symptoms. In the first Species, there is generally little Danger: If the Parts about the Nail be affected, the Nail generally separates from the Finger, occasioning much Pain to the Patient; tho' sometimes only that Half of the Nail comes away, which is nearest to the Whitloe. But if the morbid Matter is lodged under the Nail, or extends itself towards a Tendon, the Patient is tormented with very intense Pains. In the Paronychia of the second Kind, the Pains and other Mischiefs are so violent, that, as some affirm, the Life of the Patient is sometimes endangered; tho' I have seldom seen the Disorder increased to such a Degree. Sometimes, after the Inflammation and Suppuration, I have seen the Bone attacked with a Caries; and, if this happens in the last Joint, it will be more likely to come away entire, as being very small, than that the carious Part should separate from the sound. But the third Species of Whitloe is the most dangerous, and the most malignant. If, in this Case, an Abscess or Gangrene happens, the Pains are so excruciating, and attended with a Fever, Tumor, and Inflammation of the Arm, and other pernicious Concomitants, that, unless timely Assistance be administer'd, a mis-

erable End may be put to the Patient's Life. If an Abscess should be formed in the Arm, near the *Musculus Quadratus* of the Radius, under the annular Ligament, *Garengot* is of Opinion, that, without Incision, the Case ought to be deem'd incurable; and, even then, the Patient may be in danger of losing the Use of the morbid Finger, notwithstanding the most prudent Treatment; and then the inevitable Consequences of the Disorder are often, by the Ignorant or Malevolent, imputed to the Negligence or Unskillfulness of the Surgeon.

With regard to the Cure of a Paronychia, *Garengot*, without mentioning any other Remedy, directly proposes Incision. But I think it more prudent, as in other Diseases, according to the Advice of *Hippocrates*, (*Secl. 8. Aphor. 6.*) first to try the Effects of Medicine, before I assume the Knife, so much dreaded by the Patient. In this Practice, I am confirmed by Experience, not only in other Diseases of this Kind, but even in the Paronychia itself, when I have exhibited Medicines proper for digesting the inspissated, stagnant Blood; and for mitigating the Inflammation. For this Purpose, let the Patient often hold his Finger, for some Hours at a time, in the best Spirit of Wine, or camphorated Spirit, mixed with a little *Venice Treacle*. A Decoction of Garlick in Milk, or of an Handful of Sabine and Germander, may answer the same Intention; in which warm Liquor the Finger should be constantly immersed, or fomented very frequently with it. The Academy of Sciences at *Paris*, in their Memoirs for 1707. have advised to dip the morbid Finger often in boiling Water, for a small Space of Time. Others prescribe a Plaister of *Asa-fœtida*, thick spread on Linen, to be apply'd to the Part. Others recommend, from Experience, the thin, white Membrane between the Shell and Substance of a boiled Egg, to be apply'd like a Plaister. *Riverius* says, that a Whitloe may be easily cured, by a frequent Intrusion of the diseased Finger into the Ear of a Cat. If, during the Use of these Remedies, the Fever and Inflammation are violent, proper internal Medicines, and Bleeding, ought not to be neglected. If by any of these Means the Patient finds Relief, he should persist in the Use of them till the Finger be without Pain, and perfectly recovered: But if these Remedies operate but slowly, or have no Effect, so that a Suppuration seems to be advancing, Recourse must be had to Incision, as the safest Remedy. Meanwhile, as the Patients are apprehensive of Incision, because of the great Pain it produces, it will not be improper, in the first or milder Species of the Paronychia, to apply a Plaister of *Diachylon cum Gummis*, or, the like, for ripening the Suppuration, till the Situation of the morbid Matter becomes more conspicuous, and the Operation may be performed with less Pain. But in the two other severer Species of this Disorder, the least Delay is dangerous; because the Periosteum, and small Bones, are soon corroded by the malignant Matter, which may induce more intense Pains, larger Abscesses, a Caries, or a Gangrene of the whole Arm, and, probably, the Death of the Patient.

For the easier Cure of a Paronychia, its Species should first be considered: If it be of the mild, or first Kind, and has not penetrated deep, the Cure may, without Difficulty, be obtained. As soon as the purulent Matter becomes prominent, like a Tubercle, or Blister, let the Surgeon place a Finger on each Side of the affected Part; and, stretching the Skin, by drawing it, on both Sides, from the Whitloe, make the Incision: Thus will the Matter be discharged, and the Finger will generally heal spontaneously. *Hildanus*, in *Cent. 1. Obs. 97.* gives the following safe and ready Method of curing a Paronychia, which he had frequently tried with Success. He first fermented the Finger, several times, with the Decoction of the Flowers of the Chamomile, and Melilot, and Fenugreek, and Quince-seeds, boiled in Cows-milk; then he gradually cut off the Surface of Skin, where the Pain was. The Skin being thus removed, some red Specks appeared, in which, upon Incision, he found one or two small Drops of a red Water; and, this being discharged, he applied a Linen Cloth moistened with a Solution of *Venice Treacle* in Brandy; the Pain immediately ceased; and, next Day, the Finger was found.

If the Disorder is seated near the Roots of the Nail, beneath it, or at either of its Sides, the Whole, or Part of the Nail, is generally lost. If the purulent Matter is concealed under the Nail, it affects the adjacent Parts with Inflammation, and most intense Pains. In this Case, *Solingen*, with other Surgeons, advises, first, to remove that Part of the Nail, under which the morbid Matter stagnates, either by extirpating it intirely, or by making an Incision in it; and, having expressed the Matter, the Wound may be easily healed, by the Application of Lint moistened with Spirit of Wine, or Lime-water.

If the peccant Matter lie deeper under the Skin, it must, also, be discharged by Incision, without Delay; for otherwise it would, probably, rather affect and consume the subjacent Bone, than

than burst the external Skin, which is generally both thicker and harder than in other Parts. If the Patient is unwilling to undergo the Operation, the Danger to which he exposes himself, should be remonstrated to him, and the Surgeon should be cleared from the Blame that may arise from the Consequences. In the mean time, in order to ripen the collected Matter, and bring it to Suppuration, apply to the Part a Plaster of Diachylon with the Gums. If, by this Method, the external Skin bursts, the Orifice must be immediately widened, if it be too narrow; and the Wound may be deterged by some digestive Ointment, or the Liniment of *Arcaus* warmed, and mixed with Spirit of Wine; and then apply the before-mentioned Plaster with a proper Bandage; but, if the Patient be willing to submit to a surgical Operation, it is to be thus performed. Let the morbid Finger be laid on a Table, with the affected Part upwards; then let a strong able Assistant firmly hold the Hand and Arm of the Patient, left, being almost unable to sustain the intense Pain, he should suddenly retract his Arm, which, in the Operation, would be extremely detrimental. Then let the Operator penetrate through the Middle of the affected Part, with a strong sharp-pointed Knife, to the very Bone. Thus the Skin and Fat being laid open to the Extremity of the Finger, the stagnant Blood, or corrupted Matter, may be discharged, though the Quantity be sometimes but small, and the Bone will be preserved from Infection.

In the second Species of Paronychia, when the Periosteum is corroded, and the peccant Matter has penetrated to the very Bone, an Incision should be made for its Discharge, according to the preceding Directions; but particular Care must be taken, that the Knife reaches to the Bone. Although little, and sometimes no Matter, appears to be evacuated, because the Quantity is sometimes extremely small; yet, if the Pain gradually remits after the Operation, it is a Signal of a speedy Cure.

Some Authors advise, always to make the Incision in one of the Sides of the Finger, and never in the fore or back Part of the last Bone, to avoid wounding the Tendons: But this is an unnecessary Caution; partly, because it is plain, that the Tendon reaches no farther than the Beginning of the last Bone of the Finger; and, partly, because we learn from Experience, that an Incision may be safely made, either in the fore or back Part of the Finger. *Garengot*, however, without offering any Reason for his Opinion, advises, that the lateral Method of Incision should be strictly observed; he likewise directs, that if the Pain does not abate, after the Operation is performed upon one Side, it must likewise be performed on the other, and upon this Account, because the Pain, continuing after the Incision, intimates that the true Seat of this Disorder had not been laid open. But, in my Opinion, the lateral Incision should only be used, when a Tumor appears on the Side of the extreme Phalanx of the Finger, or when it arises in the second and third Phalanges towards the Hand: On the contrary, I think, the Wound is better made in the Middle of the Extremity of the Finger, when all that Phalanx is affected, or when the morbid Matter indicates its Situation there. Besides, it will neither be agreeable to the Inclination of the Patient, nor the Reputation of the Surgeon, to make two Incisions, when Reason and Experience shew, that one may be sufficient.

The Incision being thus performed, the Blood should not only be suffered to flow out; but should, also, be carefully expressed. Then let the Wound be filled with dry Lint, over which apply a Diachylon-plaster, and the Compress in the Form of a *Malta* Cross, dipped in warm Spirit of Wine, securing the Whole with a proper Bandage. When the Dressings are taken off next Day, there generally appears a little fungous Flesh, which often alarms an unskilful Surgeon, but without a Cause; for it is no bad Symptom, and may, without Difficulty, be removed by the Scissars, by a corrosive Medicine, or by digestive Ointments mixed with a gentle Escharotic. The Wound may then be healed, like those in which the Bones are affected, with the Essence of Myrrh, or Amber, or with *Peruvian* Balsam. If the Bone appears to be corroded, the Wound should be filled, and kept open, with Lint moistened with the Essence of Myrrh, or of round Birthwort, till an Exfoliation of the morbid Part is procured, or, which often happens, the Bone comes away entire; for, till the first Bone be removed, the Wound cannot be healed.

The third Species of Paronychia, when the malignant Matter is lodged in the Vagina or Coat of a Flexor Tendon, has rarely occurred to my Observation. *Garengot* first laid down the Method of Cure in the following manner: In the small Tumor, which, with the intense Pain, generally discovers the concealed Matter to be lodged at the End of the Finger, must be made a longitudinal Incision, so as to penetrate the Vagina of the Tendon. After this Operation, some Lymph will be discharg'd, to the great Ease of the Patient;

but both the Disorder and Pain, contrary to all Expectations will soon return. Sometimes the morbid Matter will spontaneously burst the Coat of the Tendon, and make its Way through the external Skin; and then the State of the Patient is the same as above. Near the Orifice, by which the Humour is discharged, appears a small Caruncle extremely sensible, which is continually moistened by Humours flowing from the Hand to the Fingers. He, therefore, orders a Director to be introduced through the external Orifice within the Coat of the Vagina; and then with a Knife, or Scissars, expeditiously to lay open the Flesh lying above the Director; by which means, a thick, inspissated Matter will be discovered at the Bottom of the Sinus. If, after this Operation, the Seat of the Disorder is not found, the Director must be again introduced, and the Operation repeated, till the Seat appears. If the Sinus of the Paronychia is situated in the middle Phalanx of the Finger, and the Incision is carried to the Middle of the first Joint, *Petit* advises to continue the Incision about a Quarter of an Inch into the Hand, in order to remove the Stricture which that Part of the Tendon, at the Extremity of the Finger, occasions, where it is hard, and, as it were, cartilaginous; but where the Tendon continues soft and membranaceous, there is no need for continuing the Incision into the Hand.

If the Disorder extends to the membranous Part of the Vagina in the Hand, and proceeds under the transverse and annular Ligaments of the Hand to the Arm; so that the Fat upon the *Musculus Quadratus* of the *Radius* begins to degenerate into a purulent Matter, the Director must be gradually and gently introduced into the Abscess, towards the transverse Ligament, and an Incision must be made into the incumbent Flesh, till it reaches that Ligament; which done, the Patient's Hand must be bent to relax the Parts; and then the Director being convey'd under the Ligament, an Incision must be made into the Skin and Flesh, as far as the Director can be perceived to reach. The Aperture being thus made, and sufficiently enlarged, the Tendons and Muscles about the Carpus must be with great Caution disengaged, so that the Abscess will gradually come in View, and sometimes a copious Discharge of the purulent Matter will be made. In the next Place, as *Garengot* informs us, *Thibaut*, late an eminent Surgeon at *Paris*, rightly advised, that, as is usual in making a Seton, we should convey a proper Cord through a Passage previously marked out by a Probe; since, by this means, at every fresh Dressing, the Matter collected in the Ulcer may be commodiously eliminated, and the Ulcer itself cleansed, whilst the Ligament is preserved entire. But if, by these Measures, a Remission of the Pains, the Fever, and other Symptoms, is not obtained, the most proper, and, at the same time, the most expeditious Method of the Relief is, according to *Petit*, forthwith to raise the Tendon that is most affected above the Ligament, and cut it off near to the Muscle; by which Method, he asserts, the Pain has instantly ceased, and the Patient been happily cured. He, also, thinks, that the transverse Ligament should be used in the same manner, if it is found to be affected with the purulent Matter and Inflammation, so as to excite acute Pains; the Success of which Practice is confirmed by the Instances of *Arnaud*, formerly a celerated Surgeon of *Paris*. But, if the Probe cannot be readily convey'd under the transverse Ligament, an Incision should be made between the Radial Artery, and the Tendons of the Muscles, called *Perforatus*, and *Perforans*; which being cautiously enlarged, the Abscess should be searched, and the inclosed peccant Matter discharged. To recommend this Practice, *Garengot* relates an Instance of a Patient of *Arnaud's*, whose Case was so desperate, that the Surgeons judged that the Arm should be amputated, for the Preservation of the Patient's Life; but, upon *Arnaud's* dividing the transverse Ligament, the Patient was, in a sudden and surprising manner, cured. One Caution must be particularly observed, that the Hand be not extended during the Operation, nor for some time after; for, when the Hand continues bent, the divided Ligament will more readily unite, and the Hand recover its usual Motions: But if the Hand be imprudently extended, the Tendons under the divided Ligaments may start out of their Places, and the Hand never recover its proper Motions.

With regard to the Dressings, if the Vagina of a Tendon be opened, lay several oblong Dossils of dry Lint on each Side of the Tendon, by compressing of which the Hæmorrhage may be stopped. But if one of the large Blood-vessels be cut, so that the Bleeding is very copious, it ought to be stitched up with a crooked Needle and Thread; for corrosive and styptic Medicines, proper for suppressing Hæmorrhages in other Cases, cannot be safely used here. Warm emollient Cataplasms must be applied to the Hand and Arm, and carefully secured by the Eighteen-headed Bandage, represented *Tab. XXX. Fig. 4. B B.* The Advantage of this Bandage over the long ones is evident;

evident: because, when it is used, the Dressings may be removed at Pleasure, without moving or stretching the Parts. To finish the Dressing completely, the entire Part of the Bandage should be applied to the sound Part of the Limb, opposite to the Wound; and thus will the Dressings be more effectually secured by the Heads of the Bandage. *Heister's Surgery.*

PARONYCHIA.

The Characters are;

The Root is perennial, the Calyx shaped like a Baſon, and divided into five Parts, which are shaped like a Capucin. The Flower consists of five Stamina, and the Ovary, which is seated in the Centre of the Calyx, produces a single erect Tube, and becomes with the Calyx a pentagonal Fruit, pregnant with a single Seed. The Flowers are surrounded with a Multitude of very thin Silver-colour'd Spangles, disposed in a Circle.

Boerhaave mentions two Sorts of *Paronychia*; which are,
1. *Paronychia, Hispanica. Clus. Hisp. 478. Polygonum, minus, candidans. C. B. P. 281.*
2. *Paronychia, Hispanica, nivea: polyanthos. Barr. Obs. 137. Polygonum, montanum, niveum, Polyanthos. Barr. In. 725. Berb. Ind. alt. Plant. Vol. 2.*

It is called *Paronychia*, from *παρά*, *para*, near to, or importing Resemblance, and *ὄνυξ*, a Nail; because it is of a shining, Silver-like Colour, or, probably, from *Paronychia*, a malignant Ulcer, affecting the Part about the Nail; but, whether this Herb be of any Effect towards curing that Disease, I cannot say; only, that it is a remarkably emollient Plant. *Hist. Plant. adscript. Boerhaav.*

Paronychia rutaceo folio. A Name for the *Saxifraga; verna, annua, humilior.*

PAROPIÆ, παροπίαι. The external Angles of the Eyes.

PAROPTESIS, παροπίσις, from *πείνω*, to roast. A Provocation of Sweat, by making the Patient approach a Fire of live Coals, or by placing him in a Bagnio, or Stove.

PARORASIS. An Imbecillity of Sight.

PAROTIS, παροτίς, from *παρά*, importing near, and *τίς*, the Ear. One of the salivary Glands. See **SALIVA**. An Inflammation, or Abscess of the parotid Glands, is, also, call'd *Parotis*. See **ABSCESUS**.

Alexander Trallianus lays down a very good Rule, in relation to a *Parotis*; that is, at first to be sure to bleed, before any discussing or drawing Application be made; that those who have been forward in doing this without Bleeding, have been the Instruments of strangling their Patients. And, upon the same Principle, he very justly explodes the Use of strong Repellers, and Astringents; such as Solanum, Alum, &c. He describes the Medicines which are proper to make these Parotids yield to Discussion: An Application which ought always to be attempted, where the Case is capable of being cured by it, rather than Suppuration: But if, upon this, the Tumor does not in the least subside, and the Pain continues, all Endeavours, he says, should be used to bring it to suppurate; and 'tis a Sign, that Matter is making, if a Rigor and Fever, which were not before, come on unexpectedly, and the Pain increases. And in this he agrees, in the main, with *Celsus*, who gives us a very good Distinction to guide our Practice in the Point; which is, when the Swelling comes originally of itself, without any other Distemper, to try moderate Repellents first, and Discutients; but where it attends or follows upon another Disease, as no Case is more frequent, it must then be brought to Maturation, and opened as soon as possible; for, in this Case, the Swelling is critical, and solves the Distemper. And *Hippocrates* pronounces those Parotids, which succeed long Fevers, mortal, unless they suppurate. When these are obstinate, and can't be ripen'd by external Applications, there have been Instances, where Burning has brought them to suppurate. And *Severinus*, and *Valesius* before him, have given an Account how they have tried this Practice in malignant Parotids, with Success. *Freind's History of Physic.*

There is a Species of Tumors, which arise with Inflammations in particular Parts of the Body; for Instance, under the Armpits, in the Groin, or under the Ears, in the parotid Glands; whence they are called *Parotides*; but, in the other Place, *Bubos*.

These Tumors are either mild, or malignant; they are said to be mild, when they arise spontaneously, without any preceding contagious or pestilential Disease, as they frequently do in growing Children; and these are generally not dangerous. Of this kind, also, are those which arise after gentle Fevers, being a critical Translation of the Disease. Those *Bubos* are called malignant, which happen in the Pestilence, or Venereal Disease; whence they are denominated Pestilential or Venereal *Bubos*.

The mild *Bubos* are produced, like all other Inflammations, proceeding from internal Causes, from a Stagnation of the

Blood, in a viscous inspissated State; and they differ from other Inflammations only in their Situation, under the Armpits, in the Groins, and below the Ears, in pinguious, glandular Parts.

The Diagnostic is easy, if we consider, whether they are preceded by a venereal or pestilential Infection.

The mild, or less dangerous, Species are seldom attended with any ill Consequences, as they may either be discussed; or brought to a Suppuration; but a speedy Discussion or Suppuration of them becomes more difficult in Persons of an ill Habit; and sometimes, from their Suppuration, proceed Fistulas, which cannot be easily cured. The Parotides are brought to a Suppuration with great Difficulty, the Inguinal *Bubos* with more Ease, and the Axillary, with very little Trouble.

Against those *Bubos*, which are unaccompanied with any other Disease, as in Children, the most effectual Remedies are Purgatives mixed with *Mercurius Dulcis*, which must be often repeated: By these Medicines, the glutinous inspissated Blood is discussed, and drawn from the Part affected. Other Medicines for attenuating the Blood should be, also, used; but, if the Tumor be attended with a slight Fever, a Physician should be consulted, in order to treat the Fever with proper Medicines.

When the Inflammation is very gentle, and a Discussion may be expected, for this Purpose, digestive Plaisters, as simple Diachylon, the Plaister of *Sperma Ceti*, Galbanum, Soap; or of Frogs with Mercury, may be outwardly applied.

If the Inflammation be more violent, and attended with more intense Pains, so that digestive Plaisters are of no Effect, it must, without Delay, be brought to a Suppuration; and for this Purpose apply a Plaister of Diachylon with the Gums. But, if the Pain be extremely severe, digestive Cataplasms often laid, warm, upon the Part affected, will not only mitigate the Pain, but, also, promote a Discussion. These Cataplasms may be made of the Crums of Wheat-bread boiled in Milk to a proper Consistence, with the Addition of a little Saffron; or of Meal, with Honey, and fresh Butter, mixed over the Fire, to which a little Treacle may be added.

These, and Cataplasms of the like Nature, should be often applied to the Tumor, till it appears to be suppurated; and then, without Delay, it must be opened either with a Caustic, or a Knife. But, in Incision, great Care must be taken to avoid wounding any of the large Blood-vessels near the Abscess, which might occasion a fatal Hemorrhage. After the Abscess is opened, it may be treated as directed under the Article **ABSCESUS**. A Plaister of Diachylon will be very proper to soften and discuss any remaining Hardness about the Mouth of the Ulcer. *Heister.* See **SUPPURATIO**.

PAROXYSMUS, παροξυσμός, from *παροξύω*, to irritate, or render sharp. A Paroxysm; Access, or Fit, of a Disease.

PARTHENIASTRUM. Bastard Feverfew.

The Characters are;

It has a radiated discous Flower, consisting of several Florets, which occupy the Disk; but are barren: The Half-florets, which are shaped like an Heart, are succeeded by black Seeds, which are naked, having no Down adhering to them: To which may be added, the Flower-cup is simple, and cut into five Parts to the Bottom.

Miller mentions two Species;

1. *Partheniastrum artemisiae folio, flore albo.* Acad. Reg. Scien.

2. *Partheniastrum helenii folio.* Hort. Elth.

The first Sort grows wild, in great Plenty, in the Island of *Jamaica*, and in some other Parts of the *English* Settlements in the *West-Indies*, where it is called wild Wormwood, and is used by the Inhabitants as a vulnerary Herb.

The second Sort grows plentifully in several Parts of the *Spanish West-Indies*, whence the Seeds have been brought into *Europe*. They are both annual Plants. *Miller's Dictionary.*

PARTHENIUM. The same as **MATRICARIA**; which see.

PARTUS. A Birth. See **OBSTETRICATIO**.

PARVIBULUS. See **BRACHYPOTÆ**.

PARULIS, παρulis, from *παρά*, near, and *ῥλον*, a Gum. A Boil, or Abscess, of the Gums.

A painful Tumor of the Gums, with Inflammation and Swelling of the Cheek, more or less, is sometimes occasioned by the Tooth-ach. These Tumors are called, by the *Greeks*, *Parulides*. They must be treated in the same manner with other inflammatory Tumors, by digestive Medicines. If these are not effectual, or if the Disorder be neglected, it sometimes degenerates into an Abscess, or Fistula. If the Disorder be recent, in order to alleviate the Pain, which will not suffer the Patient to sleep, and to discuss the Tumor, boil Chamomile, Sage, the Flowers of Elder, and the like digestive Herbs; and let the Patient often hold, for a considerable time, a little of the warm Decoction in his Mouth. Outwardly let him apply a

Bag

Bag filled with the same Herbs, or a Plaster of Mehlol, or simple Diachylon with Camphire; or, if these cannot be readily procured, apply a warm Cloth to defend the Part from the Cold, and obtain an easy Resolution; not omitting internally, diaphoretic and resolvent Medicines. If by these means a Resolution cannot be obtained, recourse must be had to Emollients, as Marshmallows, Mallows, Mullein, Figs, and the like, boiled in Milk, and frequently held in the Mouth. To accelerate the Maturation, apply half a Fig, roasted upon the Coals, to the Tumor; and outwardly an emollient Cataplasma upon the Cheek. As soon as the Softness indicates a Suppuration, an Incision must be made into the Tumor, with all Expedition, though the Matter should not be entirely matured; lest, by its Continuance there, the Bone should be affected and corroded; whence the most malignant Fistulas are often produced. The Ulcer being opened, the corrupted Matter must be carefully expressed with the Fingers; and then let the Ulcer be often cleansed with warm Wine, or a Decoction of Agrimony, and St. John's-wort, mixed with Honey of Roses; and the Wound will heal spontaneously. If the Disorder has penetrated deep, let the Decoction be injected with a Syringe; and, the Liquor being carefully pressed out, apply a Compress to the Bottom of the Ulcer, which must be secured with a Bandage, that it may begin to heal from the Bottom. But if the Ulcer should degenerate into a Fistula, which is often accompanied with a Caries of the Bone, after using the above-mention'd Injections, a little of the Oil of Myrrh *per Deliquium*, or of the Elixir Proprietatis, should be intilled into the Ulcer for deterring and healing it. By this Method I have not only cured simple Ulcers of the Gums, but likewise a Fistula attended with a Caries of the Bone, even after it had continued above a Year. But, if none of these Medicines succeed, the Fistula must be laid open by Incision, and the Caries extirpated either by Medicines, the Rasp, or the actual Caustery. Sometimes a Fistula may be occasioned in the Gums by a corroded Tooth, which are usually called *Fistulas of the Teeth*, or *Maxillary Fistulas*; the Tooth, therefore, must be first extracted before the Application of proper Medicines. The Miscellanea Berolienfis contain some particular Observations on the Parulides: Whence it appears, that suppurating Medicines have but little Effect; and that, if these Tumors are not quickly laid open by Incision, and the Tooth extracted, they degenerate into Fistulas. It is, therefore, a better Method, as we have already directed, to discharge the Matter early by Incision, although crude, than, by delaying it, to endanger a Caries of the Bone. *Schelhammer*, in 1692. published an excellent Dissertation *de Epulide & Parulide*, very proper to be consulted: See EPULIS. *Heister. Chirurg.*

PARUS. Offic. Bellon. des Oyse. 369. *Parus major*. Aldrov. Ornith. Gefn. de Avib. 578. Jonf. de Avib. 86. Charlt. Exer. 96. Mer. Pin. 178. *Parus carbonarius*. Schw. A. 318. *Parus carbonarius major*. Schrod. 5. 322. *Fringillago seu Parus major*. Raii Ornith. 240. Ejusd. Synop. A. 73. Wil. Ornith. 174. THE TITMOUSE.

This Bird is celebrated for its Virtues against the Stone in the Kidneys, and colic Pains, if eaten as Food, or burnt, and taken as a Medicine.

PASIONIS PASTILLUS. The Name of a Pastil, described by *Galen*, *Oribasius*, *Aetius*, and *Nicolaus Myrepsus*.

PASMA. The same as CATAPASMA.

PASSA. An Epithet for Grapes, importing their being dried in the Sun.

PASSA, in *Paracelsus*, is a Whitloe.

PASSAVANTICUS PULVIS. The Title of a cathartic Powder, described by *Schroder*, L. 2. Cap. 77.

PASSER VULGARIS. Offic. Schrod. 5. 322. *Passer*. Gefn. de Avib. 581. Bellon. des Oyse. 362. *Passer domesticus*. Aldrov. Ornith. 2. 534. Jonf. de Avib. 65. Schw. A. 321. Mer. Pin. 175. Wil. Ornith. 182. Raii Ornith. 249. Ejusd. Synop. A. 86. *Passer domesticus vulgaris*. Charlt. Exer. 86. THE HOUSE SPARROW.

Because it is a very salacious Bird, it is recommended, especially the Brain of it, as a Strengtheners and Incentive to Venery.

PASSER TROGLODYTES. Offic. Schrod. 5. 322. Aldrov. Ornith. 2. 655. Mer. Pin. 177. Gefn. de Avib. 588. Schw. A. 324. Jonf. de Avib. 82. Bellon. des Oyse. 341. Will. Ornith. 164. Raii Ornith. 229. Ejusd. Synop. A. 80. THE WREN.

The Bird is very much commended for its Virtue in the Attraction and Expulsion of the Stone; whether it be taken whole, and eaten raw season'd with Salt; or burnt to Ashes, and so exhibited. *Schroder*.

PASSERINA. The Name of a Plant, which *Parkinson* calls, *Passerina*, *Linaria folio*, Sparrows Toad-flax. Some make it a Species of *Linum*; others of *Lithospermum*.

PASSIO. A Passion, Affection, or Disease. Thus there

are the Hiac Passion, the Hysteric Passion, and many others, distinguished by their proper Epithets.

PASSULÆ. See UVA.

PASSULATUM. The Form of a Medicine, consisting of the Pulp of dry'd Grapes (*Passæ*) passed through a Sieve.

PASSUM, γλυκὺ, Raisin-wine; that is, Wine made of dry'd Grapes, or of Grapes suffer'd to remain upon the Vine, till they are much wither'd by the Heat of the Sun.

PASTA, πᾶσα. A kind of Aliment, prepared, according to *Hesychius*, of unsalted Cheese, fine Flour, and Sesamum. It is, also, explain'd, a sort of Gruel, made of bruised Puls, mixed with Meal; and, Pottage, thicken'd with Flour.

PASTA REGIA. A Lozenge.

PASTA EPISPASTICA. The blistering fine Paste:

Take of Cantharides in Powder, and Wheat-flour, each as much as you please; and of strong Vinegar, a sufficient Quantity, to make into a fine Paste.

PASTÆTUM. A Pasty; a well known Species of Aliment.

PASTILLUS. A Troche, or Pastil.

The *Pastillus ex Seminibus* is thus described by *Paulus Aegineta*, L. 7. C. 12.

Take of the Seeds of Anise, Bishops-weed, and Fennel, each four Drams; of the Seeds of Smallage, and Henbane; and of Opium, each two Drams. Bruise them in Water for Pastils.

PASTINACA.

The Characters are;

The Root is thick, carious, and succulent; the Leaves are large and broad, and strengthen'd by a thick Rib. The Seed is oval, large, thin, marginated, and casts its Husk.

Boerhaave mentions eight Species of the *Pastinaca*; which are,

1. *Pastinaca sylvestris latifolia*. C. B. P. 155. *Raii Hist.* 1. 409. Synop. 3. 206. *Tourn. Inst.* 319. *Boerb. Ind.* A. 66. *Pastinaca sylvestris Elaphoboscum*. Offic. *Pastinaca latifolia sylvestris*. Ger. quoad Descript. 870. Emac. 1025. Park. Theat. 944. *Pastinaca Germanica sylvestris, quibusdam Elaphoboscum*. J. B. 3. 149. *Bancia*. Offic. Volck. 320. WILD PARSNEP.

The wild Parsnep is much less than the Garden Parsnep, both as to the Thickness of its Roots; and the Height of its Stalks; which are not so much branched as those of the other. The Leaves are smaller, hairy; and of a strong Smell. The Flowers are small and yellow, growing not only on the Top, but coming forth from the Sides of the Stalks, at the Setting on of the Leaves, and are succeeded by the like Seed: It grows frequently by Hedges, and Way-sides, and flowers in June. The Root and Seed are used, though but seldom.

They are said to open Obstructions of the Liver and Spleen; to expel Wind, and help the Colic; to provoke Urine, and the Menes; and to be useful against the Bittings of venomous Creatures. *Miller's Bot. Off.*

It agrees in Virtues with the Garden Parsnep; which, as *J. Bauhine* thinks, differs from it only in Cultivation.

2. *Pastinaca sativa latifolia*. Ger. 870. Emac. 1025. *Raii Hist.* 1. 410. Park. Theat. 944. *Parad.* 506. *Raii Synop.* 3. 206. C. B. P. 155. *Tourn. Inst.* 319. *Boerb. Ind.* A. 67. *Pastinaca*. Offic. *Pastinaca sativa latifolia Germanica luteo flore*. J. B. 3. 150. PARSNEP.

The Parsnep is a Root well known to every one, being large, running deep into the Earth, not much branched, white in the Inside, of a pleasant sweet Taste; it has many large, winged, hairy Leaves, of a dull-green Colour, divided into several tripartite Sections. The Stalks grow to be five or six Feet high, much branched and channelled, beset with several smaller Leaves, which grow at the Divisions; on the Tops grow Umbels of yellow five-leav'd small Flowers; and, after them, come smooth, flat, oval Seed, two growing together, as in other umbelliferous Plants: It is planted in Gardens, and flowers in June and July. The Root is only used.

Parsneps are more used for Food than Medicine, being a pleasant nourishing Root, tho' somewhat windy; and thought to be Provocatives to Venery. *Miller's Bot. Off.*

It is said, that the Seeds of the wild Parsnep, twice sowed in a rich and fat Soil, produce Garden Parsneps, in the same manner as Garden Carrots are produced from the Seeds of the wild Carrots. *Casalpinus* relates, that an Electuary is prepared of the Roots with Sugar, which is very much in Use among the Peasants for Women in Child-bed, and Persons recovering from Sickness, to renew their Strength; it, also, creates an Appetite. That it is of an inciding, attenuating, deterring, and deobstruent Quality, is evident, says *J. Bauhine*, from the very Taste and Smell. They who pull the Roots in Winter, says the same Author, must beware of the *Cicuta*, or *Cicutaria*;

Ciataria; because, while he was at *Mompelgard*, he saw two Families, who were almost dead with eating the Roots of these Plants instead of Parsneps; but they recover'd by the Help of Vomiting, *Theriaca Andromachi*, *Pulvis Saxonicus*, and some Purgatives. It is an Opinion among our People, says *Ray*, that old Parsneps, which have endured Years in the Ground, induce Deliriousness and Madness; for which Reason they give them the Name of MADNEPS, that is to say, MAD PARSENEPS. *Raii Hist. Plant.*

3. *Pastinaca*; *sylvestris*; *altissima*. *T.* 419. *Panax costinum*. *C. B. P.* 156.

4. *Pastinaca*; *Olusatris folio*. *Boerb. Ind. A.* 67. *Panax Herculeum*. *Offic. Panax Herculeum majus*. *Ger.* 850. *Emac.* 1003. *Raii Hist.* 1. 410. *Panax Pastinacæ folio*. *C. B. P.* 156. *Panax Herculeum*. *Hist. Oxon.* 3. 315. *Panax Herculeum alterum sive peregrinum Dodonæi*. *Park. Theat.* 948. *Pastinaca sylvestris altissima*. *Tourn. Inst.* 319. *Spondylion vel potius Pastinacæ Germanicæ affinis Panax vel Pseudocostus flore luteo*. *J. B.* 3. 156. **HERCULE'S ALL-HEAL.**

This is a large tall Plant, growing to be two or three Yards high, having many large Wings, of a yellowish-green Colour, a Foot or more long divided into five or seven Divisions, of longish round-pointed rough Leaves, crenated about the Edges, having one Side of the Leaf growing lower and deeper toward the Bottom than the other. The Stalk is hollow, having several Joints beset with the like Leaves; and on the Top roundish Umbels, of small yellow five-leav'd Flowers, each of which is succeeded by two broad flat oval Seeds. The Root is large, branched, of a yellowish Colour on the Outside, and white within. This Plant grows naturally in *Syria*, as, also, in *Italy*, *Sicily*, and the Southern Parts of *France*, though in these last Places it yields but little Gum. See *OPOPANAX*. *Miller's Bot. Off.*

The Roots of this Plant are said, by those who import it, to be effectual in all cold Affections of the Brain and Nerves, for Disorders of the Breast, and tormenting Pains of the Stomach; for all Obstructions of the Viscera, and Diseases of the Kidneys, Bladder, and Womb; on which Account, they are of Service in inveterate Pains of the Head, Vertigo, Epilepsy, Stupor, Lethargy, Convulsions, Palies, Asthma, Cough, Jaundice, and Dropsy: They expel Wind, kill Worms, provoke Urine, and the Menfes, break the Stone, and promote the Birth. The Decoction is given in Clysters, for the Colic and Sciatica. *Raii Hist. Plant.* The *Opopanax* is the concreted Juice of this Plant; an Account of which see in its proper Place.

5. *Pastinaca*; *folio quasi Libanotidis latifolia*. *Panax, folio glabro, nitente, lato*. *Ind.* 16.

6. *Pastinaca*; *femine longissimo*. *Panax, folio glabro, nitente, lato, altior*. *Ind.* 16.

7. *Pastinaca*; *sylvestris, altissima*. *T.* 319. *Hoc nomine mist D. Salvadore; differt à tertia, foliis majoribus, scabris, asperis*.

8. *Pastinaca*; *fativa*; *radice turbinatâ*. *Vaill. Boerb. Ind. alt. Plant.*

This Plant has its Name *Pastinaca*, à *Pastu*, from Feeding, because its Root is much used in Food; it is, also, called *Elaphoboscum*, from *ἐλαφος*, (*Elaphos*) a Stag, and *βόσκω*, (*bosco*) to feed, because Deer eat the Herb.

It is a Plant of great Note in Medicine: The Seed hereof, with the Seed of the *Daucus*, are very serviceable in breaking the Stone. Hence there was a very celebrated Physician, who prescribed the Flour of these Seeds, together with the Root of Liquorice, reduced, also, to a Flour, in Cases which required Lithontriptics: It is, also, good for the Pain of the Colic proceeding from Phlegm; for the Strangury, Hiccups, and Obstructions of the Menfes; it is hurtful in nephritic Disorders proceeding from a cold Cause. The second Species has a Root which is eatable, on account of its soft Pulp; and, boiled in Milk, is good for consumptive and lean Persons, being very nourishing. The third Species is by some taken for the Original of the *Opopanax*; its Seeds are not remarkably acrid. But the fourth is the true Plant whence the *Opopanax* proceeds; of which I made an Experiment this last Summer, when upon making a Wound in it, there flowed out a Juice, which, being a little inspissated in the Sun, had the perfect Smell and Taste of *Opopanax*. *Hist. Plant. adscript. Boerhaav.*

PASTINACA AQUATICA. A Name for the *Sium, latifolium*.

PASTINACA ECHINOPHORA. A Name for the *Echinophora*; *Pastinacæ folio*.

PASTINACA SYRIACA. A Name for the *Tordylium*; *Orientalis*; *Secatul Arabum dictum Rauwolfia*.

PASTINACA TENUIFOLIA. A Name for several Sorts of *DAUCUS*.

PASTINACA, is, also, the Name of a Fish, which is thus distinguished by Authors:

Pastinaca. *Salv. de Aquat.* 144. *Rondel. de Pisc.* 1. 331.

Pastinaca marina. *Offic. Charit. Exer.* 10. *Aldrov. de Pisc.* 424. *Jonst. de Pisc.* 19. *Gesn. de Aquat.* 679. *Pastinaca marina laevis*. *Bellon. de Aquat.* 95. *Pastinaca marina prima Rondeletii*. *Raii Ichth.* 67. *Pastinaca marina laevis Bellonii*. *Ejusd. Synop. Pisc.* 24. *Aquila Piscis, seu Pastinaca marina*. *Mer. Pin.* 185. **THE POISON-FISH, FIRE, or FIERCE-FLAW.**

It is taken in the main Sea; the Parts of it used in Medicine are the Liver, and the Prickle, which grows out of its Tail. The Liver is said to be good for the Itch; and, boiled in Oil, deterses the Lichen and Leprosy; the Prickle, as *Dioscorides* says, cures the Tooth-ach, by breaking and expelling the grieved Tooth.

PATELLA. The Knee-pan.

PATETHEISÆ, or **PATETÆ UVÆ**, *πατιθῆσαι*, or *πατεται σαφῶς*, Grapes suffered to remain on the Vines, till they are much wither'd, and dry'd by the Sun.

PATHEMA, *πάθημα*. An Affection, or Disorder.

PATHETICUS. An Epithet of the fourth Pair of Nerves, so called, because they direct the Eyes to intumescence the Passions of the Mind.

PATHOGNOMONICUS, *παθγνωμονικός*, from *πάθος*, a Disorder; and *γινώσκω*, to know. An Epithet for a Symptom, or Concourse of Symptoms, that are inseparable from a Distemper, and are found in that only, and no other.

PATHOLOGIA, *παθολογία*, from *πάθος*, a Disorder; and *λέγω*, to speak, or commemorate. That Part of Medicine, which explains the Nature of Diseases, their Causes and Symptoms.

PATIAS. The same as *Squama Eris*. *Rulandus*.

PATIENTIA. A Name for the *Lapathum*; *hortense*; *folio oblongo*; sive *secundum Dioscoridis*.

PATIENTIÆ MUSCULUS is a Name for the *Levator Scapulae proprius*, otherwise called *Angularis*.

PATOR NARIUM. The Sinus, Cavity, or Chasm of the Nose. *Scribonius Largus*.

PATOS, *πάθος*. The same as *ΡΗΥΡΟΣ*; which see.

PATRIMONIUM. The Genitals are sometimes called by this Name. *Castellus*.

PATURSA. The Venereal Disease. *Castellus* from *Fallopianus*.

PAVATE. *Acoftæ*. *Lugd. Caff. Ap. Arbor Erysipelas curans Lusitanis, Vasaveli Canarin.*

This is a Shrub which grows on the Banks of the Rivers *Mengate*, and *Cranganor*, in *America*.

The *Indians* use its Wood and Root, as Specifics against an *Erysipelas*. They reduce them to Powder, and infuse the same in a Decoction of Rice, till it becomes sour; and with this Liqueur they foment the *Erysipelas*, and make the Patient drink it twice a Day, after they have purged the Stomach. They give it, also, to those who labour under burning Fevers, Inflammations of the Liver, and Fluxes of the Belly. *Lemery des Drogues*.

PAUCIFERUS. An Epithet of Wine, importing the same as *Oligophorus*.

PAVEL. A Name for the *Momordica*; *Zeylanica*; *pampinea fronde*; *fructu breviori*.

PAVIA. The scarlet-flowering Horse-chestnut.

The Characters are;

The Leaves are like those of the Horse-chestnut, and conjugated; but so disposed, as to have every consequent Order cross the preceding. The End of the Pedicle becomes a long tubulous red Calyx, of the same Colour with the Flower, with a Margin divided into six Segments. Within the Calyx grows an anomalous pentapetalous Flower, so disposed, as, with its five Petals, to resemble a monopetalous bilabiated Flower; for the two upper Petals, in Conjunction, form a kind of Galea; the two lateral ones, the Jaws, and the under one, the Beard. The Flower incloses eight Stamina, each furnished with its Apex, and the Flowers are disposed in Spikes. The Ovary in the Bottom of the Calyx shooting forth a long, cylindrical, red Tube, becomes a tricapsular, triccoccus Fruit, containing globular Seed.

Boerhaave mentions but one Sort of *Pavia*; which is,

Pavia. An *Ricinoides*, *Americana*, *Castaneæ folio*. *Plum. T.* 656. *Saâ mouna Pisonis*. *Plukn. Phyt.* 56. 4. *Boerb. Ind. alt. Plant.*

The Flowers are like those of *Brank-Ursine*. Many Authors will have it to be the *Ricinoides Americana*; but their Flowers do not agree. I am unacquainted with the Virtues of this Plant; but it is of an acrimonious Quality, like the *Tithymalus*. *Hist. Plant. adscript. Boerhaav.*

PAULA. The Name of a Plaster described by *Paulus Aegineta*, *Lib. 7. Cap. 17.*

PAULADADUM. A Name for the *Terra Melitæa*, otherwise called *Terra Sigillata Sancti Pauli*. *Dorneus* says, *Pauladadum* is a Species of Seal'd Earth, which is found in *Italy*.

PAVO. Offic. Schrod. 5: 322. Aldrov. Ornith. 2: 8. Mer. Pin. 172. Schw. A. 323. Gefn. de Avib. 393. Jonf. de Avib. 37. Charlt. Exer. 80. Will. Ornith. 112. Raii Ornith. 158. Ejusd. Synop. A. 51. *Pavus & Pavo*. Bellon. des Oyle. 234. THE PEACOCK.

What is used in Medicine is the whole Bird, the Fat, Gall, Dung, Feathers, and Eggs. The Broth of a Peacock, especially if it be fat, is said to be a Specific against the Pleurisy; the Fat, with the Juice of Rue, and Honey, is an excellent Medicine for the Colic. The Gall cures Dimness of Sight, represses Defluxions of the Eyes, and cures the Asperities of the Eyelids. The Dung, dried and pulverized, and the Weight of a Dram macerated at Night in Wine, and exhibited for many Days together, has a peculiar Virtue of curing the Vertigo and Epilepsy. The Feathers are used in Suffumigation, for the Hysterics; and the Eggs are prescribed for the Cure of what they call the *Erratic Gout*. Dale from Schrod.

PAVOR. Besides Fear, the usual Signification, it sometimes imports the Itch. *Castellus*.

PAUSIS, *παυσις*, from *παύω*, to cease. A Remission, or Cessation, of a Disease.

PAYCO HERBA. *Monard*. The Name of a Species of *Peruvian* Plantain.

The Powder of it, taken in Wine, is said to remove nephritic Pains proceeding from Flatulencies, or a cold Cause; and the Plant itself, boiled, and applied in Form of a Plaster to the Part affected, is said to work the same Effect; which *Monardes*, as he assures us, found to be true by Experience. *Raii Hist. Plant.*

PECHEDION, *πυχέδιον*. The *Perinaeum*.

PECHYAGRA, *πυχάγρα*. The Gout in the Elbow.

PECHYS, *πύχυς*. The Elbow.

PECHYTYRBE. An Epithet for the Scurvy. *Castellus* from *Forestus*.

PECTEN. The Pecten. In Zoology, it signifies a Shell-fish, called a Scallop. These are esteemed a good Food, and are recommended as deterfive, aperitive, and carminative, and are said to increase the seminal Juices. The Shells agree with those of the Oyster in Virtues.

PECTEN VENERIS. A Name for the *Scandix*; *Cretica*; *minor*. Shepherd's Needle, or Venus's Comb.

PECTINÆUS MUSCULUS. This is a small flat and pretty long Muscle, broad at the upper Part, and narrower at the lower, situated obliquely between the Os Pubis, and upper Part of the Os Femoris. It is commonly a single Muscle; but I have sometimes found it double.

It is fixed above by fleshy Fibres to all the sharp Ridge, or Crista, of the Os Pubis, and to a small Part of the oblong Notch, or Depression, on the fore Side of that Crista; in which the upper Extremity of this Muscle is lodged.

Thence it runs down obliquely towards the little Trochanter, under, and a little behind which, it is inserted obliquely by a flat Tendon, between the superior Insertion of the Vastus Internus, and inferior Insertion of the Triceps Secundus, with which it is united.

The Pectinæus is an Assistant to the Psoas and Iliacus, in moving both the Thigh, and the Pelvis. It may, likewise, assist in bringing the Thigh inward, or toward the other, whether it be extended, or bent, at the same time. *Winslow*.

PECTINATIO. Combing the Head. This is recommended by some as an Exercise conducive to Health, and considered as a Species of Friction; it is certainly very useful, not to mention that, by cleaning the Head from Scurf and Dirt, it prevents Obstruction of the cutaneous Pores.

PECTORALIS. Pectoral; an Epithet for Medicines appropriated to Disorders of the Breast and Lungs.

The Pectoral Decoction is thus directed in the College Dispensatory:

Take of stoned Raisins, one Ounce; of Dactyls, No. six; of fat Figs, No. eight; of Barley cleansed, one Ounce: Boil these in three Pints of Spring-water to the Consumption of a third Part; towards the End putting in, of Liquorice-root, half an Ounce; of the Leaves of Maiden-hair, Ground-ivy, Scabious, and Coltsfoot, of each one Handful. Let them stand in Infusion a quarter of an Hour, and then strain out the Liquor.

PECTORALIS MAJOR.

This is a large, thick and fleshy Muscle, covering the fore Part of the Breast, from the Sternum, where it is very broad, to the Axilla, where it contracts in its Passage to the Arm. It is naturally divided into two Portions, one superior and small, which may be termed *Clavicular*; the other inferior and large, which we may call *Thoracic*.

The Clavicular Portion is fixed by a fleshy Insertion in almost half the Clavicle next the Sternum, ending under the Insertion

of the Sternal-mastoidæus. Thence it runs obliquely down toward the Axilla, contracting by small Degrees, and ends in a flat Tendon, or tendinous Band. In this Passage, it borders on the anterior Edge of the Deltoides, from which it is distinguished only by a pinguious or cellulous Line, and a small Vein, named *Vena Cephalica*.

The Thoracic Portion is broad, and, in some measure, radiated. It is fixed by its anterior Circumference in the lateral Part of the Outside of the Sternum, in the Outside of the Cartilages, and in a small Part of the Bones of all the true Ribs, and of the first, and sometimes of the second, small Ribs. All these Insertions are like so many Digitations.

The Insertions in the Sternum end by a great Number of very short Tendons, which run toward the Middle of the Bone, meeting, and decussating those from the same Muscle on the other Side.

The lower Insertions are most distinctly digitated, and they mix with those belonging to the Rectus, and Obliquus Externus, of the Abdomen; there being, likewise, several Fasciculi of Fibres common to the Pectoralis, with these Muscles. This Portion is, also, fixed to the Ribs by internal fleshy Strata, covered by the external Insertions, and forming together with them the Thickness of the Muscle.

From thence all the fleshy Fibres contract in Breadth, and approach each other in their Passage to the Arm: The superior Fibres run downward, joining those of the Clavicular Portion; those next them run less obliquely; the following, more or less transversely; and the inferior run upward in the same manner. This whole Portion ends at length in a flat Tendon, joined to that of the small Portion, and folded back upon it in the following Manner:

The inferior fleshy Fibres of the Thoracic Portion, before they reach the Tendon in their Passage to the Arm, are gradually turned inward under each other, and then run up behind the Extremities of the superior Fibres. By this Turn, the lower Part of the Tendon answers to the superior fleshy Fibres, the middle Fibres of both to each other, and the upper Part of the Tendon to the lower fleshy Fibres; and so on: Thus the Tendons of both Portions, adhering closely by their flat Sides, and united at their Edges, form a double tendinous Plane; the Fibres crossing each other. The anterior, or external Plane, belongs to the Clavicular Portion; the internal, or posterior Plane, to the Thoracic Portion.

The Tendon thus formed is inserted according to its Breadth, at about one fourth Part of the Length of the Bone from the Head, in the osseous Ridge of the great Tuberosity, that is, in the outer Edge of the Groove or Chanel, the Cavity of which it lines in Conjunction with another Tendon, by a Stratum of very thin, shining transverse Fibres. This Insertion lies between that of the Tendon to the Deltoides, which it touches, and that of the Latissimus Dorsi, which is on the other Side of the Groove.

This Muscle, together with the Deltoides, sends off an Aponeurosis, which, joining that of the Biceps, is spread over the Muscle of the Arm. It partly covers the Pectoralis minor, and Serratus major; and by its broad Tendon it covers transversely the Brachial Chanel, and the Tendon of the Biceps lodged there. Lastly, it forms the anterior Border of the Hollow of the Axilla, as the posterior is formed by the Latissimus Dorsi.

The Pectoralis major serves in general to bring the Arm near the Ribs, to press it strongly against them, and to carry it towards the fore Part of the Thorax. This last Motion may be performed without separating the Arm from the Ribs, as when one Arm is crossed over the other; and it may likewise be done with the Arm raised, as when the Hand of one Side is laid over the Shoulder of the other Side; and in that Case the anterior Portion of the Deltoides may assist this Muscle in great Efforts.

By means of the Fold in its Tendon, the superior and inferior Portions may act as two distinct Muscles, that is, one may act without the other. The superior fleshy Portion, which answers to the lower Portion of the Tendon, serves chiefly to raise the Arm forward.

The inferior fleshy Portion, which is joined to the upper Portion of the Tendon, by its Insertion in the Os Humeri, and by the Connection of that Bone with the Scapula, may depress the Shoulder, or keep it from rising, with more or less Force, much after the same manner as the inferior Portion of the Latissimus Dorsi; the inferior Portions of these two Muscles concurring in the same Use; as when we support ourselves upon our Hands, or walk with Crutches.

It is, likewise, by means of the lower Portion of this Muscle, that we can suspend the whole Body by the Hands grasping the Branch of a Tree in climbing, and the like. In this Case, also, the Latissimus Dorsi acts in Concert with the Pectoralis; and this Co-operation the Painters and Carvers have taken Care to express in Crucifixes.

The inferior Portion of this Muscle cannot perform these two Uses, without the Assistance of the Muscles of the Abdomen, which, by pulling the Ribs downward, become, in a manner, a Continuation of the Insertion of this Portion. The same thing may be observed concerning that Part of the inferior Portion of the Latissimus Dorsi, which is inserted in the false Ribs.

The Uses of the superior Portion of all the Body of the Pectoralis cannot take place without the Co-operation of the Muscles, which move the Scapular on the Trunk, especially the Serratus major; because the Scapula must be securely fixed, before it can be a Fulcrum for the Os Humeri to move upon. The same thing is to be observed concerning the Deltoides, and all the other Muscles, which move the Os Humeri on the Scapula. *Winflow.*

PECTORALIS MINOR.

This is a small fleshy Muscle, something of a triangular Shape, situated at the superior, lateral, and anterior Part of the Thorax.

By its Basis it is inserted in the external Labium of the upper Edge of the second, third, fourth, and fifth true Ribs, near their Union with the Cartilages, by the same Number of Digitations, or separate fleshy Portions, because of the Intervals between the Ribs; and for that Reason it has been called *Serratus minor Anticus*.

From thence these Portions run up more or less obliquely toward the Shoulder, and form a fleshy Belly, which contracts as it passes before the two first Ribs; and then, becoming a short, flat, and broad Tendon, is inserted in the upper Part of the Apophysis Coracoidea of the Scapula, reaching all the Way to the Point of that Process.

This Muscle is covered by the Pectoralis major, and adheres very closely to the external intercostal Muscles. The Digitations commonly taken notice of cover and hide several others, by which the Number of Fibres, and Thickness of this Muscle, are increased. Its Tendon unites a little, at the Apex of the Coracoide Apophysis, with the Insertion of the Coracobrachialis, and with that of one Portion of the Biceps.

The Pectoralis minor assists the Rhomboides and Angularis, as Moderators of the Action of the Trapezius, and Serratus major, in turning the Point of the Acromium upward, the superior Angle downward, and the inferior Angle forward.

It is, likewise, an Assistant to the Rhomboides and Angularis, in restoring the Scapula to its natural Situation; when the Trapezius and Serratus major cease to act; by drawing downward the Apophysis Coracoidea, in which it is inserted.

It has been reckoned among the Muscles employ'd in Respiration, by some who imagine, that, in some Cases, the Shoulder may be kept so steady, as that this Muscle may be able to raise the Ribs in which it is fixed. But as the Serratus major, which must principally be employ'd in keeping the Shoulder in a fixed Position, is partly inserted in the same Ribs, and in this Action must keep them depressed, it will be impossible for the Pectoralis minor to raise them. *Winflow.*

PECTUNCULUS. Offic. Schonef. Ichth. 55. *Pectunculus vulgaris, albidus, rotundus, circiter 26 Striis majusculis, & planioribus donatus.* List. Hist. A. A. 189. *Capite minore, rotundiore, & magis aequali margine.* Ejusd. Hist. Conch. N. 171. *Concha striata altera.* Rondel. de Aquat. 2. 21. *Concha striata altera Rondeletii.* Aldrov. de Exang. 449. *Concha cordiformis aequaliter umbone cardinum unito striato.* Lang. Meth. Test. 60. **THE COCKLE.**

The Fish is esteemed a delicious Food, either raw, or boil'd. Of the Shells calcin'd; and powder'd, excellent Dentrifices are prepared. *Dale.*

PECTUS. The Breast. See **THORAX.**

PEDAGRA. Tartar. *Rulandus.*

PEDETHMOS, *πυλινθίος.* The Beating, or Pulsation, of the Arteries. *Hippocrates.*

PEDICULARIS. See **ALECTOROLOPHUS.**

PEDICULATIO. The lousy Evil. See **PHTHIRIASIS.**

PEDICULUS. Offic. Schrod. 5. 345. Aldrov. de Insect. 542. Jonf. de Insect. 89. Mouff. 259. Charl. Exer. 52. Mer. Pin. 202. **THE LOUSE.**

Lice are taken by the Country-people, as a Remedy against the Jaundice, and an Atrophy. *Schroder* takes notice of a very whimsical Use of this Insect, which is, to put it into the Beginning of the Urethra, in order to excite Urine.

PEDICULUS, in Botany, is the Foot-stalk. See the Explanation of Terms under the Article **BOTANY.**

PEDILUVIUM.

This Word signifies no more than a Bath for the Feet, which may be prepared of the same Ingredients with other Baths; and, as it requires a less Apparatus, is for that Reason frequently used as a Succedaneum to them; for a Bath for the Feet may either consist of pure light Water alone; or, in order to correct the Qualities of heavy and hard Waters, a Lixivium, or Bran of

Wheat, or Chamomile-flowers, may be added; or such Waters may be mixed with Milk. But, tho' Baths for the Feet are only immediately applied to the inferior Parts and Extremities of the Body, yet their Virtues and Efficacy diffuse themselves farther, and alleviate violent Disorders in remote and distant Parts of the Body; for, whilst the Feet are cherished with such a warm Liquor, the nervous, tendinous, and muscular Fibres, by the Intertexture of which they are formed, are relaxed and unbended; the Pores and Ducts, before constricted, are enlarged; the Blood has Access to the Parts; and the Return of the Humours from them is rendered free and uninterrupted. By this means, the Impetus of the Blood on other Parts is diverted; and, to the surprising Relief of the Patient, derived to the inferior Parts. Besides, Baths for the Feet, by their temperate Heat, act upon the Blood and Humour, which, during their Use, pass through the Vessels of the Feet, render them more thin and diluted, and by that means qualify them for passing more expeditiously through all the various Ducts and Parts of the Body. Hence it is, that, if pretty hot Baths for the Feet are used, they increase the Pulse, and excite a Sweat over all the Body. Besides, the Consent of the Feet, as being nervous and tendinous Parts, of an exquisite Sensation, is so great with all the other nervous Parts of the Body, especially those of the Abdomen, that, if the Feet are only rendered thoroughly cold, a Colic is forthwith produced, the Patient becomes costive, the Skin is render'd rough, Perspiration is intercepted, and the salutary Evacuations from the Uterus, and hæmorrhoidal Veins, stop. For this Reason, 'tis not to be doubted, but when the Feet are fomented, and their spasmodic Stricture removed by means of a tepid Liquor, the salutary Effect must, also, be propagated to those remote Parts of the Body, with which they have so near and immediate a Consent.

Baths for the Feet are certainly highly expedient for the Purposes of Derivation in those Diseases which arise from Congestions of the Humours to the Head and Breast, produced by Spasms of the inferior Parts, and, especially of the Hypochondria. Among this Kind, besides lethargic Diseases, we may reckon almost all Disorders of the Head, such as Madness, melancholy Cephalæas, Hemicranias, the Clavus Hystericus, Vertigos, Tooth-achs, Pains of the Ears, a Gutta Rosacea, Inflammations, and Defluxions of saline Humours on the Eyes; immoderate Hæmorrhages from the Nose, and long Watchings. Of this Kind are, also, some Disorders which affect the Breast, such as convulsive Asthmas, Dyspnoeas arising from a Plethora, Palpitations of the Heart, dry Coughs, and Spittings of Blood. Besides, Baths for the Feet, in consequence of their singular Efficacy in relaxing Spasms, are highly beneficial in spasmodic and convulsive Disorders, in Pains; Cardialgias, Colics, especially of the hæmorrhoidal Kind, Gripes produced by the Stone, and Inflation of the Stomach, accompanied with an Uneasiness of the Præcordia. Besides, Baths for the Feet promote the salutary Excretions by Perspiration, Urine, and Stool, together with those made from the Uterus, and hæmorrhoidal Veins, by procuring a free Circulation of the Blood, attenuating the Humours, and soliciting them to the Emunctories of the Body. Baths for the Feet, also, remove and prevent very terrible Disorders of the Head and Breast, especially those which return at certain Periods; and I myself, says *Hoffman*, have known the daily Use of these Baths for the Feet remove the most terrible and obstinate Cephalalgias. Some, also, in intermittent Fevers, advise the Use of these Baths, tho' not on the Days of Remission. And this Piece of Practice is productive of very salutary Effects, as is obvious from *Obs. 144. Decad. 2. An. 6. Miscell. Nat. Curios.* where we have an Account of a Quartan Fever cured by means of Foot-baths, and *Kozak de Salib. Sect. 12. Cap. 10.*

But 'tis to be observed, that Baths for the Feet produce far more happy Effects, if, before they are used, the Quantity of Blood is lessen'd by Venesection in the Feet; if they are used about Bed-time, and the Feet not exposed to the Cold after them, but kept duly warm, till the Patient gets to Bed; by which means the Perspiration, all over the Body, is increased. But Baths for the Feet must not be used about the Time the Menses are about to flow, or already present, because, by diverting the Course of the Blood from the Uterus, and soliciting it to the inferior Parts, this salutary Discharge is either stopped, or prevented. On the contrary, Baths for the Feet, used some Days before the stated Period for the menstrual Discharge, excellently promote it, especially if, at the same time, the Pilulæ Becheri, or temperate Emmenagogues, are used. We must, also, carefully abstain from astringent, aluminous, and sulphureous Baths, in order to prevent a Sweating of the Feet, discuss oedematous Tumors, cure Ulcers, or remove arthritic Pains; since by means of such astringent, aluminous, and sulphureous Baths, the virulent Matter is repel'd to the internal and more noble Parts. And because the common hot Spring in the *Caroline* Baths, commonly call'd *Der Prudel*, is

possessed of an highly repellent Quality; so bathing in it ought to be very cautiously used in all Disorders affecting the Surface of the Body, and more especially in gouty and arthritic Pains. *Hoffman.*

PEDION, *πεδιον*. The Sole of the Foot.

PEDORA. The Sordes of the Eyes, Ears, and Feet. *Castellus.*

PEDRO DEL COBRA. See COBRA DE CAPELLO.

PEDRO DEL PORCO. See HYSTRIX.

PEDUNCULUS. The same as PEDICULUS, with respect to both Significations.

PEGANELÆON, *πηγάλαον*. Oil of Rue.

PEGANERON, *πηγανερν*, according to *Gorræus*, is the Name of a Plaister, described by *Actius*, and *Paulus Ægineta*, in which Rue is an Ingredient.

PEGANUM. A Name for the *Ruta, sylvestris, minor*.

PEGANON, *πηγανον*. Rue.

PEGE, *πηγή*. A Fountain. But the internal Angles of the Eyes are call'd *πηγαί*. *Pega.*

PEGERNUS. Mercury. *Rulandus.*

PELA. A Name for the *Guajava; rubra; acida; Fructu rotundiori.*

PELADA. A kind of Alopecia, or shedding of the Hair, from a Venereal Cause. *Castellus* from *Forestus*.

PELAMYS, *πελαμύς*. The Tunny-fish. See THUNNUS.

PELARION, *πηλάριον*, from *πηλός*, Mud. The Name of a Collyrium, described by *Paulus Ægineta*, *Lib. 7. Cap. 16.* and of a Plaister, in the same Author, *Lib. 7. Cap. 17.* See EDESSINUM.

PELECANUS. The Pelecan. See ONOCROTALUS. An Instrument for drawing Teeth, is, also, called a *Pelecan*.

PELECANUS. A Pelecan, or Vessel of Glass, formerly used in Chymistry, for the Digestion and Circulation of Liquors, poured in at their narrow Necks, which were afterwards Hermetically seal'd. The Figures of the Peleicans were various; some were round, and others long. But, at present, we use, instead of the Pelecan, two Matraffes, the Neck of one of which enters into that of the other. *Lemery Pharmacop. Univers.*

PELECINUS.

The Characters are;

It is, in all respects, like the *Astragalus*, except that the Pod is flat, long, bicausal, bivalve, and full of Kidney-shaped Seeds.

Boerhaave mentions but one Sort of *Pelecinus*; which is, *Pelecinus vulgaris*, *T. 417. Lumaria, radiata Robini. J. B. 2. 348. Securidaca peregrina. Clus. H. 238. Boerb. Ind. alt. Plant. Vol. 2.*

There are no Medicinal Virtues ascribed to this Plant at present, that I know of.

PELIAS. The Name of a Serpent, mentioned by *Actius*, *Tetrabib. 4. Serm. 1. C. 32.*

The now quoted Author informs us, that the Symptoms attending the Bites of the *Pelias* were so generally known, that no Author before him had described them. Those, however, says he, who are bit by the *Pelias*, have a Pain and Putrefaction about the Part affected, which, nevertheless, are not dangerous. They are, also, afflicted with a Dimness of Sight, in consequence of a Distribution of the Poison to their Eyes. Patients labouring under this Misfortune are cured by the Juice of Pusan, and Oil, exhibited in some proper Liquor, by way of Drink; as, also, by a Decoction of the Oxylapathum, and the simple Remedies proper in a Jaundice. The Eyes of such Patients are to be washed with the Urine of young Persons who are Strangers to Venery, both by itself, and when mixed with Brine. Their Heads are, also, to be anointed with the same. Then, after purging the Body, their Eyes are to be anointed with Opobalsam and Honey, or with some Collyrium capable of increasing the Sight, and removing the Obstructions of the Vessels; for, by this means, the Poison will be discharged along with the Tears. But, if this Practice should be succeeded by a Pain of the Eyes, it must be allay'd by means of mild Collyriums, which operate without inducing a Stupor of the Parts. See ELAPS.

PELICIDE. Boiled Honey. *Rulandus.*

PELIOMA, *πελιωμα*. A livid Sugillation.

PELLICULA. A Pellicle, or thin Membrane.

PELLIS. A Skin of an Animal. In a Dropsy, or Inflation of the Uterus, *Riverius* directs the Skin of a Sheep just killed, and sprinkled with generous Wine, to be applied to the Belly. Some of the French Writers in Midwifery advise to involve the Belly in a warm Sheep-skin, after a difficult Labour; and the same is an excellent Application, by way of Fetus, in case of inflammatory Pains of any of the Viscera.

PELMA, *πέλμα*. The Sole of the Foot, or a sort of Sock adapted to the Sole of the Foot, made of Leather, or any other Substance.

PELORIS. The same as Chama.

PELTATIS CARTILAGO. A Name for the Scutiform Cartilage of the Larynx.

PELVIS. A Name for the inferior Part of the Cavity of the Abdomen. See ABDOMEN. It is formed by the *Ossa Iliæ*, and *Ischia*, the *Os Sacrum*, and *Os Coccygis*, and the *Ossa Pubis*. See INNOMINATA OSSA. If the Pelvis is too small, or too flat and narrow, it is evident, that these Circumstances must occasion a difficult Birth: But *Henricus à Deventer* says, that a too great Wideness of the Pelvis is frequently an Obstruction to the Birth, and of bad Consequence. By too large a Pelvis, says this Author, I mean one, which, when compared with the Fœtus, and the Uterus, is so large, as without any Pains easily to suffer the Head of the Infant, together with the Uterus, as yet closed up, to fall down to the Lips of the Pudenda. In consequence of such a large and capacious Pelvis, the superior Parts of the Uterus are either not sufficiently, or not at all, surrounded and retain'd. Hence, neither the Head of the Fœtus, nor the Waters, can, by the Force and Impression of Pains, act sufficiently on the Mouth of the Uterus, to open it; so that the Pudenda alone must retain the Uterus, and hinder it from falling entirely out of the Body along with the Fœtus. In a Case of this kind, the Waters are generally perceived to possess a large Space; and their containing Membrane is sometimes found to protuberate so much without the Lips of the Pudenda, that the Infant seems ready to be discharged, and brought into the World with them; and, when this Circumstance happens, it is attended with little Danger, and renders the Labour easy: But, sometimes, the Mouth of the Uterus is thick and hard, whilst, at the same time, the Vagina is lax. Hence the former is with Difficulty, and the latter with Ease, dilated: In which Case the Waters, tho' not possessing a large Space, are yet discharged from the Body, with a great Impetus; and the Mouth of the Uterus penetrates far into the Pudenda. Then the Membrane being broken, not only the Head of the Infant appears without the Lips of the Pudenda, but, also, the Mouth of the Uterus; and, unless this latter is duly retained, it falls so far down, in consequence of the excessive Relaxation of the Vagina and Ligaments, as to pave a Way not only for a Falling out of the Vagina, but, also, of the Uterus. For this Reason, 'tis the Duty of the Midwife, as soon as possible, to replace and retain the Mouth of the Uterus, before it falls down so far; for, in this Case, the Hands of the Midwife must perform the Office of the Vagina. *Heur. à Deventer Operat. Chirurg.*

PELVIS AURIUM. The Cochlea. See AURIS.

PELVIS CEREBRI is the Infundibulum. See CEREBRUM.

PELVIS is, also, a Name for the Cavity of the Kidneys, which receives the Urine, and conveys it to the Ureters. See RENES.

PEMPHIGODES, or Pempingodes, *πεμφιγώδες ἢ πεμψιγώδες πυρετός*. Fevers, distinguished by Flatulencies and Inflation, or a windy Spirit; in which we feel a sort of aerial Effluvia passing through the Skin of the Patient, in manner of an Exhalation, and striking upon the Touch. This is the Sense which *Galen* seems to chuse among various others, which he gives us of the Word *πεμφιγώδες*, in his Comment on 6 *Epid. Sect. 1. Aph. 17.* where it is used by *Hippocrates*; Sometimes by the Term *Pempingodes*, as *Galen* says, is meant, a Fever attended with pustulous Eruptions, and; therefore, of a pestilential kind; sometimes a Fever which seems to strike the Touch, like Sparks of Fire, penetrating through the Skin; and sometimes a Fever attended with a Delirium, according to the various Significations of the Word *πεμφιγώξ*, which he there gives us. *Πεμφιγώδες πυρετός*, in *Galen's* Exegesis, are expounded to be Fevers in which there is a Redundance of Humidities, or Flatulencies. The Author of the *Definitiones Medicæ* tells us, that *πεμφιγώδες πυρετός*, is a Fever, which, by the Intensity of its Heat, excites Pustules in the Mouth; and *πεμφιγώξ*, in *Varinus*, is a Breath, Spirit, and Ray of the Sun. Some will have *πεμφιγώδες πυρετός*, to be a Synochus, not of the putrid Kind, but proceeding from a Redundance of hot Blood, by its Fervor and Ebullition distending and inflating the Veins; and, therefore, it is called, by Practitioners, an Inflation Fever. *Foessius.*

PEMPTÆUS, *πεμπταῖος*. An Ague, the Paroxysm of which returns every fifth Day.

PENICILLUS. A Pledget, or Tent.

PENIDIUM SACCHARUM is thus prepar'd. Dissolve Sugar as much as you please, and clarify it with the White of an Egg; then strain and inspissate it gently; or slowly, till great Bubbles appear: This done, take it off the Fire, till the Bubbles subside; and then pour it out upon a Board, which has been rub'd over with Oil of Almonds; and, when it is somewhat harden'd, take it up with your Hook, and with your Hands, sprinkled with Starch, speedily reduce it into its proper Form, and lay it up for Use. *Schroder.*

PENIS. Having given, under the Article GENERATIO, a general Account of this Organ, I shall, in this Place, insert the curious Remarks of Mr. *Cowper*, relative thereto.

Regnerus de Graaf, in his elaborate Treatise of the Organ of Generation, has accurately describ'd this Part; and *Ruyfch*, in

in his late Anatomical and Chirurgical Observations, demonstrated the Structure of its Glans, which the Former has not so well observed; to which I shall add what a strict Inquiry on this Subject has given me occasion to discover.

I shall not here repeat those many synonymous Appellations, which lascivious Wits, or other sedulous Authors, have invented. The *Penis* is an Organ contriv'd by the Author of Nature, for the Ejection of the Seed, and Emission of Urine, composed of certain spongy and cavernous Bodies, with their Vessels and Integuments, of which in their Order. First, of its external, or common containing Parts, as the *Cuticula*, *Cutis*, and *Membrana Carnosa*.

In the *Cuticula*, we could never observe any considerable Difference from that of other Parts, except on the Glans, where we find, by the Assistance of a Microscope, that its exterior Surface is villous or downy.

The true Skin, or *Cutis*, in this and the Scrotum, is much thinner than we find it in other Parts; and both have a peculiar Disposition of their Blood-vessels: The Arteries are called here *Pudenda*, which, arising from the external Branch of the *Iliac*, and running under the superior Part of the Skin of the *Penis*, divide themselves into many Branches, the larger of which are still subdivided, till they become capillary; from whose Extremities are continued so many Veins, which, again, uniting into larger Branches, pass into those that partly arise from the *Corpora Cavernosa Penis*; and, marching under the common Integuments, empty themselves into the upper Part of that continued from the *Saphena Vein* of the Foot: These, for Distinction, we call *Vena Præputii*.

Besides the Blood-vessels now mention'd, it has Lympheducts, which I had first an Opportunity of observing, by injecting this Part with prepar'd Mercury; which confirms the Opinion of *Schellhammer*, and the accurate *Nuck*, concerning the Origin of these Ducts: But whether they arise here from that Part of the *Canalis Sanguineus* call'd the Artery, or the Vein, did not appear from my Experiment; since I made Injection into both promiscuously: I observ'd divers Trunks on each Side, passing under the common Integuments accompanying the *Vena Præputii*, which (as I suspect) afterwards empty themselves, like those arising from the inferior Parts, into the *Glandula Inguinales*. This Contemplation may serve to inform us, how the morbid Matter comes to be convey'd more particularly to those Glands in Venereal Cases, and cause those Tumors that frequently happen on that Occasion, commonly called *Buboes*; which Conception is the more confirm'd, by observing those Phenomena that are previous to that Effect, as Ulcers and Inflammations on the Prepuce, and by the too early Use of astringent Topics, which probably may inspissate the reflux Lymph, and render it unfit to pass through those *Vesiculæ Glandosæ* into their exporting Lympheducts; from which Obstruction begun, a Tumor may arise: Hence an Account may be, also, given, how soon the Malignity may be sometimes convey'd into the Mass of Blood, by the common Passages of the Lymph; and a very good Reason offer'd for the Practice of opening those Tumors before the usual Time of Suppuration.

In that Part where the *Præputium* is contiguous to the *Balanus*, my very good Friend, that judicious Anatomist Dr. *Tyson*, has discover'd certain small Glands, which he calls, from the great Scent their separated Liquor emits, *Glandula Odorifera*: Their Number is uncertain; in those that have the *Præputium* longer than ordinary, they are not only more, but, also, larger, and separate a greater Quantity of their Juice, which, being lodged there, often grows acrid, and corrodes the Glans. They are very conspicuous in most Quadrupeds, particularly in Dogs and Boars, in the latter of which, their separated Liquor is contain'd in a proper Cist, at the Verge of the *Præputium*; out of which there is a large Aperture, whereby it is remitted again to lubricate the *Penis* of that Animal.

The third common Tegument is the *Membrana Carnosa*; this Part commonly wanting Fat, for divers Reasons: First, lest its Erection into that necessary Stiffness should be thereby hinder'd: Secondly, lest it should be too bulky; and, lastly, it would have dull'd the Pleasure the Male is affected with in Venereal Enjoyments: But whether these Considerations induced the Author of Nature to frame this Part without a *Membrana Adiposa*, does not appear, since its want of Fat may not unlikely depend on its great Alteration from that Flaccidity when it is not erected, to that Extension of it when it is. In the former, tho' we can conceive no great Obstacle, why its Adipose Cells should not be supply'd with their Oil, except its too great Laxity should retard the influent Blood in its Passage through its Papillary Arteries; yet, in the latter, its great Extension may not unlikely compress them to void their contained Oil; which may be the Cause, why the Interstices of the Muscles, and other Parts most quiescent, are subject to be fill'd with Fat. And in the *Penis* itself in Children, before Erection has been frequent, I have observ'd its *Membrana Adiposa* to be extended with Fat;

but, afterwards, tho' the Membrane remains, yet the Increase of Fat is hinder'd, and therefore we find it commonly without: Yet, in some Subjects, and those adult too, I have found it almost cover'd with Fat; but what Inconvenience the Party suffer'd when living, was not my Fortune to be acquainted with.

I come next to take notice of its Ligaments; first, of that called the *Frænum*, which ties the Prepuce to the lower Part of the Glans. This, in some, we have found so short, that we have been obliged to divide it to procure a complete Erection; in others, I have been oblig'd to do the like, where a Cicatrix has been made after large Ulcers on it, which frequently happens in Venereal Infections.

The next Ligament which I shall speak of, I call *Suspensorium*: Altho' it has escap'd the Observation of Anatomists, yet it is very conspicuous, and of remarkable Use; of which hereafter, when we come to give an Account how this Part becomes erected. It ariseth from the anterior Part of the *Os Pubis*, and is fix'd to the upper Part of the *Dorsum Penis*, on each Side its great Vein. The rest of the Ligaments are such as compose its Capsulæ, or divide them as their Septums: These we shall mention in treating of its internal or contained Parts; which are, the two *Corpora Cavernosa Penis*, the *Corpus Cavernosum Urethrae*, their Septums, Muscles and Vessels, of which as they appear in Dissection.

First, of the Vessels that carry Blood to it, as, the Arteries. They arise, sometimes, from the *Rami Iliaci interni*; at other times, from the inferior Parts of the umbilical Arteries: Whence an Account may be given, why this Part is less than usual, by tying the Umbilical Rope too close to the Belly; and that not only from the Retraction of the *Urachus*, but by the Constriction attending these Arteries by the great Extension of the Umbilical ones, from which they have their Rise; whereby may be denied that Plenty of influent Blood; but this we leave to future Observation. As these Arteries pass towards the *Penis*, they send forth two or three Branches on each Side, the two inferior of which run to the *Musculi Directores Penis*: The two superior administer Blood to the adjacent Parts, particularly to the *Musculi Elevatores Ani*, between which, and the *Marsupiales Femorum*, these great Trunks pass; but, marching over the Cavernous Bodies of the *Penis*, they are both subdivided into two large Branches, the two inferior of which pass to the Bulb of the Cavernous Bodies of the *Urethra*; but the two superior are both subdivided again, the external running on the superior Surface of the Cavernous Bodies of the *Penis*; the internal, entering the Capsulæ, pass through the Middle of each Cavernous Body; wherein they divide themselves into innumerable Branches, from whose Capillary Extremities are continued so many Veins, in the Canals of which are divers Apertures into as many Cells, which communicate with each other, and empty themselves into the larger venous Ducts running on the superior Surface of the *Penis*, some of which join with those of the Prepuce; others make one large Trunk, which we call *Vena ipsius Penis*, marching on the *Dorsum Penis*, immediately under the Ligament that ties the *Os Pubis* together internally, whereby it is compress'd in Erection; but, proceeding farther on the Prostatæ, it is there bifurcated, and enters the *Rami Iliaci Interni*, on each Side. The Veins which arise (in like manner) from the *Corpus Cavernosum Urethrae*, pass from its Bulb through the *Musculi Acceleratores*, whereby they are compress'd when those Muscles are in Action.

The Nerves that belong to this Part, are derived from the Trunk, composed by the Coalection of the Third of the *Os Sacrum*, and a Branch remitted from the great Crural Nerve; which, after their Union, provide Nerves for Testes, Perinæum, and Muscles of this Part, ascending on the Cavernous Bodies of the *Penis*, and, expanding themselves on its superior Surface, are distributed to all its Parts. Its Lympheducts we mention'd in describing its external Integuments: Wherefore we proceed, next, to its Cavernous Bodies.

The *Corpora Cavernosa Penis*, by *De Graaf* called *Nervosa*, by others *Nervosa Spongiosa*, are two Capsulæ, or oblong Folliculi, every-where outwardly fenc'd with a thick Membrane, by *Vesalius* and *Columbus* suppos'd to be like Ligaments, whose external Surface is cover'd with Nerves and Blood-vessels. They spring with two distinct Originals from the lower Side of the *Os Pubis*; whence, stretching forwards, they meet each other, leaving an Interstice before their Conjunction, in which the *Urethra* is convey'd, where they leave the *Os Pubis*; they are each cover'd with a Membrane, and are afterwards joined to each other by the Intervention of a *Septum intermedium*, which, the nearer it approaches the Glans, is more diminished; and, before it arrives to the Middle of the *Penis*, its Fibres ascend from the *Urethra* to the *Dorsum Penis* like the Teeth of a Comb, as *De Graaf* has well observ'd; but is not obliterated, and the two Cavernous Bodies united near the Glans, as he would persuade us; but, on the contrary, rather grows thicker

thicker and narrower, as *Ruyfch* has well observed. In Inflation the Wind, I confess, may sometimes pass from the Cavernous Bodies of the Penis to that of the Urethra, which yet will not always happen; which Communication depends on the Mediation of their Blood-vessels, as our last-named Author also takes notice. Anatomists differ concerning the internal Constructure of these Cavernous Bodies: *Vesalius* accuses *Galen* for his Inadvertency herein. *Columbus* first observ'd their Arteries, which, proceeding strait to their Extremities, disperse themselves into innumerable Branches; which escap'd the Observations of former Anatomists, as he writes. Dr. *Whorton* imagines they are partly compos'd of glandulous Flesh; others conceive they are intertext with divers Nerves, from whence the Name of *Nervosa* was first impos'd on them. *Diemerbroeck* supposes they are not a mere Texture of Vessels intricately interwoven in the manner of a Net, as *Bauhine*, *Riolan*, and *Veslingius*, imagine; but their Substance is fibrous, fungous, and cavernous, like the Lungs, receiving into their hollow Interstices Blood and Spirits, from the Vessels that are dispersed through their Substance: the Inquiries I have made inform me, that there is a great Analogy between the Structure of this, and that of the Spleen, which *Columbus* also remarks; in both which the Sides of the Veins have large Apertures, or Cells, which most plainly appear in the Bulbus of a Dog's Penis; but, in an human one, they are here much less, and larger in the Spleen, and also open into each other: Wherefore, when the refluxent Blood is stop'd, the Penis becomes equally distended thereby, and it is driven forwards towards the Glans, when its Muscles contract.

Under these Cavernous Bodies of the Penis lies the Urethra, which has also its *Corpus Cavernosum*, differing very much in Figure from that of the two former, they being less at each End, and largest in the Middle; whereas this, on the contrary, is there least, and largest at its two Extremes; neither is its proper Tegument so dense. The superior Part of it, lying between the two Crura of the former, we call, from its Figure, *Bulbus*, which is cover'd with the *Musculus Accelerator Urinae*. It possesses the lower Part of the Urethra, extending itself in the Perinaeum; and is divided in cutting for the Stone, in which Operation Caution ought to be had to its Arteries, which enter that Part of the Bulb towards the Anus laterally. It has, also, a *Septum intermedium*, (though not hitherto taken notice of by Anatomists) dividing the Right Side of the Bulbus from the Left, which, descending to the End of the bulbous Part, is there obliterated. The Office of this Septum, we conceive, is to direct the refluxent Blood to the exporting Ducts, its two Veins mentioned before. As this *Corpus Cavernosum* descends on the inferior Part of the Urethra, it is lessened; but, when it approaches the Extremities of the two former, it again dilates itself, and covers them, composing that Body which we call *Glans*, or *Balanus*, which *De Graaf* had mistaken for fleshy Substance distinct from either. This *Ruyfch* has well described and figured in his above-mentioned Century of Observations. Its Cells in the Glans are much less than those of the former; but towards its superior Part, or Bulbus, they equal them. Having already described the Muscles of this Part, we shall proceed to give an Account how it becomes erected.

Galen, and the former Anatomists, not knowing the Circulation of the Blood, or that it pass'd from the Arteries into the Veins, were extremely deceived in their Ideas of the Erection of the Penis. *Columbus*, who has given an almost complete Description of that grand Work, still conceiveth the Arteries of this Part pour out Spirits with great Force into it, by which means it is extended. *Caspar Bauhine* supposes, in a Venereal Appetite, the Blood and Spirits flow into this Part in great Plenty; and, being fill'd, like a Gut, with Wind, it begins to swell, and grows hard, which he imagines is done by a Sphincter Muscle constricting the Neck of the Bladder, and Roots of its Cavernous Bodies. *De Graaf* assigns two Kinds of Vessels, with its Muscles, for the Performance of this Office: The Nerves, by which the animal Spirits flow into its membranous Parts, and render them more rigid and tumid; and the Arteries carrying Blood to distend the *Corpora Cavernosa*: "For, as he reasons, we are firmly persuaded the principal Extension of the Penis is from Blood; first, by injecting Water into its *Corpora Cavernosa*, by its Arteries, in a dead Body, we see it extended to the same Dimensions as when the Animal was living: Secondly, in firmly tying a Dog's Penis in Coitus, and afterwards examining it, we find nothing but Blood to distend it." To which may be added, that in Criminals which hang long after Death, this Part becomes erected, the Blood in that Position of the Body falling to the inferior Parts: And, by inflating the Blood-vessels of a dead Animal, it will also erect; which we first practis'd in a human Body, by inserting a Blow-pipe into the *Vena Saphena*, whereby it was not only erected, but afforded a Prospect of the external Disposition of its Blood-vessels, particularly its Veins; which

suggested to us a Contrivance in Nature in this Action, which has hitherto escap'd the Reflection of Anatomists. *De Graaf*, not considering the Use of the adjacent Parts, assigns its Erection to its Muscles; imagining that, by the Intumescence of their Bellies, they not only compress the *Corpora Cavernosa*, and drive the contained Blood towards the Glans, but likewise the Passages through which it ordinarily flows back; which latter we can by no means admit in the Cavernous Bodies of the Penis itself, since the *Musculi erigentes* are so remote from their great Vein. Our Hypothesis, founded upon the Observation above-mentioned, and compar'd with the Structure and Situation of its Parts, is as follows: The Penis is approximated to the *Ossa Pubis*, when those Muscles act, by means of the *Ligamentum Suspensorium*; whereby the Blood is not only driven forward towards the Glans in greater Plenty, and its Veins distended; but their great Trunks, running over the *Dorsum Penis*, are compress'd as they march close under the *Ligamentum Transversum* of the *Ossa Pubis*. The like cannot happen in the Cavernous Body of the Urethra, since there is no Bone whose Position can have that Effect upon its Veins, as the *Ossa Pubis* have upon those of the Penis itself: Wherefore the *Musculi Acceleratores*, compressing those of its Bulb, do that Office: Hence it happens, in an imperfect Erection, the Glans is not equally extended with the Penis itself, and, at other times, is soonest relax'd; but, when Muscles act, the Blood contained in the Bulb is driven forwards towards the Glans, whereby it becomes more extended: So in a Piece of Gut, which if fill'd with Water, or Wind, and either End compress'd, the opposite being tied, we shall see it strut out, and be more distended, as *De Graaf* instances after *Caspar Bauhine*. The Blood, thus hinder'd in its Return, distends the Cavernous Bodies, which is thereby erected; the Arteries which before were flaccid, having then their Trunks also extended, do more plentifully import Blood into this Part: But since it is absolutely necessary some Part of the detained Blood should be still passing off, lest it become grumous, and unfit for a Reflux; to this End, the *Venae Praeputii* are joined to those of the Penis itself, as above noted, and are placed under the Skin only; and, running over the *Ossa Pubis*, carry off Part of the impell'd Blood to give way to a fresh Supply from the Arteries; and preserve the Circulation uninterrupted. I remember, once, in an obstinate Priapisma, which would not yield to ordinary repeated Phlebotomy, I opened the Vein of the Penis itself, not without the expected Success, it immediately losing its troublesome Rigidity, by which I was confirm'd in my Conjecture.

This elegant Contrivance in disposing these exporting, sanguiferous Ducts, that some are liable to be compress'd, while others remain altogether free, is not only observable in the Penis of Men, and Clitoris of Women, but in that of all Animals which have hitherto fell under our Examination, as well as in the Pudenda of all Females; and is, indeed, an Artifice that deserves our Admiration.

PENNA. A Feather. It, also, signifies a submarine Plant, which grows upon the Rocks, resembling a Bird's Wing. It is call'd, likewise, *Mentula Alata*.

PENO-ABSOU. An American Tree, the Bark of which is very fragrant. The Fruit is about the Size of an Orange, and contains six, and sometimes ten Nuts, of the Size of an Almond; which are each furnish'd with a Kernel, or small Almond, from which an Oil is drawn by Expression. This Fruit is poisonous. The Oil is said to cure the Wounds made by Arrows, and other Wounds, if apply'd thereto.

PENTADACTYLON. A Name for the *Palma Christi*. *Blancard*.

PENTAMOERON. The Name of an Ointment describ'd by *Aetius*, *Tetrabib.* 3. *Serm.* 4. *C.* 44. It consists of Stryax, Mastich, Wax, Opobalsamum, and Ointment of Nard. This is, also, describ'd by *Paulus Aegineta*, *L.* 7. *C.* 20. under the Title of *Pentamyron*.

PENTAMYRON. See **PENTAMOERON**.

PENTANEURON. A Name for the *Plantago*; *angustifolia*; *major*.

PENTAPHARMACUM. A Medicine consisting of five Ingredients. It was, also, the Name of a favorite Aliment of the Emperor *Adrian*, as *Aelius Spartianus* informs us, which consisted of the *Sumen*, or Udder of a Sow; a Peacock, Ham, a sort of Paste or Cake, and Brawn; the five Ingredients from which it acquir'd the Name.

PENTAPHYLLOIDES.

The Characters are;

It agrees, in every thing, with the Cinquefoil, only the Leaves are not radiated to one Centre, but rather dispos'd in the Form of Alæ, or pennated; and terminate in an odd Lobe.

Boerhaave mentions nine Species of *Pentaphylloides*; which are,

1. *Pentaphylloides*; *palustre*; *rubrum*. *T.* 298. *Quinquifolium palustre rubrum*. *C. B. P.* 326.

2. *Pen-*

2. Pentaphylloides; majus erectum; flore luteo; ternis foliis, Fragariae instar hirsutis. *M. H.* 2. 193. *Fragaria, Pentaphylli fructu.* *M. H.* Bælf.

3. Pentaphylloides; Ulmariae facie. *M. H.* Bælf. 291. *Quinquefolium fragiferum.* *C. B. P.* 326.

4. Pentaphylloides; rectum; fruticosum; Eboracense. *M. H.* 2. 193.

5. Pentaphylloides; argenteum; alatum; seu Potentilla. *Tourn. Inst.* 298. *Boer. Ind. A.* 41. *Argentina, Potentilla, Anserina.* *Offic. Argentina.* *Ger.* 841. *Emac.* 993. *Raii Hist.* 1. 617. *Potentilla.* *C. B. P.* 321. *Park. Theat.* 593. *Potentilla seu Argentina.* *J. B.* 2. 398. *Pentaphylloides, Argentina dicta.* *Raii Synop.* 3. 256. **WILD TANSEY.** *Dale.*

This is a low Plant, which never arises up to the Stalk, but creeps upon the Ground, emitting Fibres from the Joints, by which it roots in the Earth, and spreads very much; the Leaves are made up of several Pinnæ set opposite; each being about an Inch long, and not half so broad, serrated about the Edges, and having several small Pieces among them like Agrimony, cover'd over with a shining silver-colour'd Down: The Flowers grow at the Joints, on long Foot-stalks, of five yellow Leaves like Cinquefoil. The Root is slender, with many Fibres of a dark-brown Colour. It grows in moist barren Places, and where Water has stood, all the Winter, flowering in May.

The Leaves only are used, and are accounted refringent and vulnerary; good to stop all Kinds of Fluxes, and preternatural Evacuations, to dissolve coagulated Blood, to help those who are bruised by Falls: Outwardly, it is used as a Cosmetic, to take off Freckles, Sun-burn, Morpew, as, also, in refringent Gargarisms. *Miller's Bot. Off.*

This Plant is of an herby Taste, a little saltish, but styptic; it gives a very deep Tincture of Red to the blue Paper; which makes us conjecture, that the acid Part of the natural Salt of the Earth, filtrating itself through the Texture of this Plant, produces there, with the Earth, a kind of Salt very aluminous, united with a little Sulphur.

All Authors agree, that the wild Tansey is astringent, vulnerary, and deterfive. They infuse it a whole Night in Wine: They drink it after the manner of Tea: They prescribe it in Ptisans, and Broths, for the Looseness, Bloody-flux and Hæmorrhages. I have seen it have wonderful Effects upon the Whites, especially if seven or eight Cray-fish are added to each Decoction of wild Tansey. It abates the Inflammation of the Kidneys and Bladder, and tempers the Heat of Urine. Its distilled Water is good for the Blearedness and Ulcers of the Eyes; for Tanning and Redness of the Face. *Martyn's Tournefort.*

It is moderately refrigerant, but more powerfully astringent, drying and binding; whence it is good for an Hæmoptoe, Diarrhoea, and other Fluxes of the Belly and Uterus: It is, also, an excellent Lithontriptic, and very serviceable in the Cure of Wounds and Ulcers. Externally, it is much in Use for the Tooth-ach, putrid Gums, and for mitigating the Heat in Fevers; for which Purpose it is of great Efficacy, being bruised, and apply'd to the Soles of the Feet, or to the Wrists. The Women in England use the distilled Water as a Remedy for Itch, Freckles, Sun-burns, and other cutaneous Defections. In *Yorkshire*, about a Town call'd *Settle*, it is customary for the Boys to dig up the Roots, which they call *Moors*, and eat them, for they are of a sweet Taste, and as grateful as a Parsnep, as I have been credibly assured, says *Ray*, by an Apothecary who lived in those Parts. *J. Agricola*, by a remarkable Experiment, found the Juice of this Herb, with the Powder of the common *Colchicum*, to be a Cure for the Disease of the Anus, called the *Marisca*. *Caster Durantus* advises to put it in the Shoes of those who labour under a Dysentery, and assures us, that not only the Dysentery, but all preternatural Fluxes of the lower Belly, as well as an immoderate Flux of the Menfes, and even an Hæmorrhage, at the Nose may be cur'd by the same Experiment; *Sim. Paulus.* *Hartman* affirms, that this Remedy was effectual in a Dysentery which had eluded the Prescriptions of Physicians: And the same is the celebrated Arcanum of *Petr. Borellius*; *Cent.* 1. *Obs.* 12.

Diuretics are sometimes beneficial in Fevers, among which *Anserina* is specifically adapted to such a Purpose; and so is the Salt of *Anserina*, which I regard as a Specific. *D. Soame* from *Doleus.* *Raii H. P.*

6. Pentaphylloides; supinum. *J. B.* 2. 398. *Quinquefolio fragifero affinis.* *C. B. P.* 326. *Fragaria, vesca.* *Ger.*

7. Pentaphylloides; orientale; erectum; Pimpinellæ folio, & facie. *T. Cor.* 21.

8. Pentaphylloides; Canadensis; folio Agrimoniz. *Saracen.*

9. Pentaphylloides; erectum. *J. B.* 2. 398. *Boerb. Ind. alt. Plant.*

The fifth Species is most commended, and has its Names *Argentina* and *Potentilla* from its noble and potent Effects. It

is endu'd with the Virtues of the *Peruvian Bark*; for if the Herb be bruised, and the express'd Juice taken an Hour before the Paroxysm of an intermitten Fever, it removes it with one or two Doses, if the Disease be of a kindly Sort, as well as the Bark. If there be any Malignity in the Fever, it is externally apply'd; if an Ulcer or Wound bleed excessively, being apply'd in the Form of a Cataplasm, it rarely fails of answering the Purpose. Internally, it is of Service in all Diseases which consist in Openings of the Vessels, and Evacuations of the Liquids; whence it cures the Dysentery, which has its Original from Liquids. Outwardly, it is consider'd, also, as an Antiphlogistic: If any one has his Feet inflamed with too much Walking, this Plant, apply'd thereto, cures him. If Infants have their Ears oppress'd with Sordes, the Remedy is the bruised Leaves of this Herb mix'd with a little Cerus. There is prepar'd a Conserve of this Herb, which is well worth the keeping, but the distilled Water is of no Use. The Seeds and Root are astringent, for which Reason they cure the Diarrhoea and Hæmorrhages. A Decoction of the Plant, with River-crabs, is a very good Remedy in the Fluor albus; and the Seeds have the same Effect in an immoderate Flux of the Menfes, and an Inflammation of the Bladder. *Hist. Plant. adscript. Boerb.*

PENTAPHYLLUM. A Name for several Species of *Quinquefolium* and *Pentaphylloides*.

PENTAPHYLLUM PEREGRINUM. A Name for the *Sinapisrum*; *Lusitanicum*; *triphyllum*; *flore rubro*; *siliquis corniculatis*.

PENTAPLEURUM. A Name for the *Plantago*; *angustifolia*; *major*.

PENTATHETON. The Name of a Plaister describ'd by *Oribasius*, *Synop. L.* 3. and mention'd by *Actius* and *Actuarius*.

PENTOROBUS. Peony. *Actius, Tetrabib. 1. Serm. 1.*

PEPASMOS, πεπασμός, or PEPANSIS, πεπανσις. Concoction. See *Coctio*.

PEPASTICA. Digestive Medicines. *Blancard.*

PEPITAS DEL PERU. The Name of a *Peruvian* Fruit, to which I find no Virtues ascrib'd.

PEPLION, PELOS, πέπλιον, πέπλος, were Medicines much of the same Kind and Quality, and prescrib'd by the ancient Physicians as Cathartics for evacuating the Body of Bile and Phlegm. This is evident from *Dioscorides*, *Ruffus Ephesius* in his Fragment of Cathartics, and *Actuarius*, who says, also, that those Medicines, after evacuating black Bile and Phlegm, expel Flatulencies, especially such as give Rise to Melancholy; and even that they cure Inflammations of the Spleen, Uterus, and larger Intestines. *Hippocrates* usually prescribes *Peplium* as a Purge for black Bile, which, as *Galen* says, it evacuates, as well as black Hellebore, and is more effectual in expelling Flatulencies. It is prescribed also, by *Hippocrates*, as a Purge in an Erysipelas of the Lungs, and the first Appearance of a Consumption. The *Peplon*, *Lib. 2. Epid.* was order'd to be taken by *Scopus* afflicted with a Swelling of the Spleen, and a great Distention of the Hypochondria, and lower Parts of the Belly, from Flatulencies; and, *Lib. de Superfæt.* it is recommended for mollifying the Orifice of the Uterus. In *7 Epid.* the *Peplon* is prescribed under the Name of *Meconium, μωκόνιον*, as a Purge for Bile and Phlegm, as, also, *Lib. de R. V. I. A.* And, in the Book *de Mulier. Morbis*, it is recommended under the Names of *Mecon*, *Meconium*, and *Meconis*. *Peplium*, in *Galen's* Exegeſis, is expounded to be the same with what is, also, called *Peplis*, and wild *Andrachne*, which Names are taken from *Dioscorides*, *Lib. 4. Cap.* 169. We find, in the same Exegeſis, the *Peplon* to be the same with what is called, also, *Chamaſyce*, *Papaver Spumeum*, and *Meconium*, which *Pliny* also writes, *Lib. 27. Cap.* 12. *Erotian* says, that *Peplon* is a kind of Herb which some call *Peplion*, and others *Symphytum*. *Foefius.*

Hippocrates used to add *Peplium* to black Hellebore, but it is not certain what Kind of Plant it was: Many refer it to the *Esula*, and *Matthiolum* assures us, that there is, at this Day, in *Italy*, a Species of *Esula*, which they call *Pepla*, or *Pepla*. Because *Hippocrates*, in some Places, gives it the Name of *Meconis*, *Dioscorides* seems to call it *Papaver spumeum*, tho' the Marks he there gives of it leave us at an Uncertainty to what Species of the *Papaver* we are to apply the Name of *Peplion*. It is a Question whether it be not the *Papaver album* of *Hippocrates*, because it is reckon'd by him as a Purgative; and this, indeed, seems probable, because there is a Species of *Papaver*, which *Pliny* says is called *Tithymalus*. *Schultzei Hist. Med.*

PEPLIS. A Name for the *Tithymalus*; *annuus*; *erectus*; *folio oblongo, acuminato*.

PEPLUS. A Name for the *Tithymalus*; *rotundis foliis, non crenatis*.

PEPLYMENON. The Name of a Cerate mentioned by *Celsus*, *Lib. 5. Cap.* 18.

PEPO.

The Characters are ;

The Flower consists of one Leaf, which is Bell-shap'd, expanded at the Top, and cut into several Segments: Of these Flowers, some are male, and some are female, as in the Cucumbers and Melons. The female Flowers grow upon the Top of the Embryo, which afterwards becomes an oblong, or round, fleshy Fruit, having sometimes an hard, rugged, or uneven Rind, with Knobs and Furrows; and is often divided into three Parts, inclosing flat Seeds, that are edged, or rimmed about, as it were, with a Ring, and fix'd to a spongy Placenta.

Boerhaave mentions fifteen Species of *Pepo*; none of which have any particular Medicinal Virtues ascrib'd to them, except the first; which is,

Pepo; oblongus. *C. B. P.* 311. *Raii Hist.* 1. 641. *Tourn. Inst.* 115. *Boerb. Ind. A.* 2. 78. *Pepo*. *Offic. Park.* Parad. 526. *Pepo maximus oblongus*. *Ger.* 773. *Emac.* 919. COMMON POMPION, or MELON.

The Pompion takes up a great Compass of Ground, with its large, thick, creeping Stalks, furnish'd with large Claspers; its Leaves are very large and rough, in Shape like those of Melons. The Flowers are large, in Shape and Colour like a yellow Lily. The Fruit is of a great Bigness, having large, white, oval, flatish Seed. The Pompion is sown in Dunghills, being ripe in September and October; it is rarely used in Physic.

The Seed is cooling, and of the Nature of the Melon, and other cold Seeds; and may serve very well to make Emulsions. *Miller's Bot. Off.*

All the Kinds of Pompions are cooling; moistening, allay sharp Humours, and quench Thirst.

They are hard to be digested, weaken the Stomach, and cause Wind and Colic.

Pompions contain much Phlegm, a middling Quantity of essential Salt, and a little Oil.

They agree in hot Weather with young, bilious People; but Persons of a cold and phlegmatic Constitution ought to abstain from them.

They usually mix the Pompions with some aromatic Herbs, such as Parsley, Onions, Mustard, Pepper, and several other sharp and volatile Things, fit to attenuate the viscid Phlegm of this Fruit in the Stomach.

They preserve Pompions with Sugar, in order to make them more pleasing to the Taste, and more wholesome. In short, they rarefy their gross Substance by boiling them well; and besides, the Sugar, wherewith they are mix'd, gives them a little sort of pricking Quality, that makes them less insipid to the Taste, and more easy of Digestion. Preserv'd Pompions may be used in Distempers of the Breast, in order to allay the Sharpnesses that are there.

Pompions contain a great many Seeds, which are flat, oblong, cover'd with an hard Rind, that is a little woody, whitish or greyish. Under this, there is a small sweet and very pleasant Kernel, which contains a great deal of Oil, that may be easily press'd out of it; and is proper to soften the Skin, and make it more smooth. *Lemery on Foods.*

PEPTICOS, πεπτικός. Digestive, or promoting Digestion. It is used with respect to the Digestion of the Aliments, the Concoction of the Humours, or the Formation of Matter.

PEQUEA, or PEKIA. *Pison. I. De Laet.* The Name of an Indian Tree which bears a Fruit somewhat larger than an Orange, the Juice of which is extremely sweet and delicious, and esteem'd by the Europeans as good in Disorders of the Breast. *Raii Hist. Plant.*

PERAGU. *H. M.* The Name of a Shrub, which grows in Malabar. The Root, taken in acid Milk, or Wine, is said to be good for a Lientery, the Colic, and Gripes; and the Powder thereof is said to dry up Pustules. The Juice of the Leaves, taken internally, kills Worms of the Intestines. *Raii Hist. Plant.*

PERCA. *Offic. Schrod.* 5. 331. *Rondel. de Pisc.* 2. 196. *Mer. Pin.* 190. *Perca fluviatilis*. *Bellon. de Aquat.* 295. *Gefn. de Aquat.* 698. *Raii Ichth.* 291. *Ejusd. Synop. Pisc.* 97. *Salv. de Aquat.* 296. *Perca major*. *Charlt. de Pisc.* 41. *Jonst. de Pisc.* 47. *Perca fluviatilis major*. *Aldrov. de Pisc.* 622. *Perca major* *Schonef. Ichth.* 55. THE PEARCH.

This Fish is very frequently found in Rivers; and the only Parts of it used for medicinal Purposes, are the Bones found in the Head near the Beginning of the Spina Dorsi, and in the Shops called *Lapides Percarum*; which, in Virtues, agree with the other testaceous Powders, and are used in dissolving the Stone, and cleansing the Kidneys. Externally they are, also, used in Dentifrices, and for drying Wounds. *Schrod. Dale.*

There are two Sorts of this Fish; the River and Sea-Pearch: The latter, in Latin, is called *Perca marina*, and is of a red-brown, or blackish Colour; it is smaller than the River Pearch: They find it near Rocks, where it preys upon smaller

Fish: It is hard, like Leather, viscid, not easy of Digestion, and ill-tasted, according to *Rondeletius*: They do not use it for Food, and so we shall say no more of it here. The River Pearch is subdivided into two sorts, the great and small one, which are both of them excellent Victuals. You are to chuse those that are fat, well-fed, middle-aged, tender, yet firm and well-tasted; and they should be such as are caught in fine clear Rivers.

The Pearch is nourishing, produces good Juice, and easily digests.

It is pretended, that when this Fish is too fat and old, it has an ill Taste, and is hard of Digestion; they, also, say the same thing of that which breeds in Marshes, and muddy Places.

Ausonius reckons the Pearch of the Number of those Fishes that have a delicious Taste. It may be said, in general, that the Pearch has but few gross Humours; that it produces many good Effects, and but a few bad ones: And the Reason is, because this Fish lives generally, and out of Choice, in pure, clear, and rapid Waters, rather than in those that are muddy, and run slowly. Moreover, it feeds upon good Food, and is very active, which, also, contributes to make it more delicious and wholesome. It is nourishing, and affords good Food, because it contains many balsamic Parts, and most pure Juice. It is, also, easy of Digestion, when middle-aged; for then 'tis of a middling Consistence: When, on the contrary, 'tis too young, or too old, 'tis soft and viscid, or else hard, like Leather. *Lemery on Foods.*

PERCEPIER.

The Characters are ;

The Calyx is quadrifid; the Flower is produced in the *Alae* of the Leaves; the Seeds are produced single in each Seed-vessel, which is formed by the Calyx.

Boerhaave mentions but one Sort of *Percepier*; which is, *Percepier Anglorum*, quibusdam. *J. B.* 3. 74. *Boerb. Ind. A.* 2. 93. *Percepier*. *Offic. Percepier Anglorum*. *Ger. Emac.* 1594. *Raii Hist.* 1. 209. *Synop.* 67. *Polygonum. Selinoides*. *Park.* 448. *Chærophylo nonnihil similis*. *C. B. P.* 152. *Alchimilla montana minima*. *Tourn. Inst.* 508. PARSLEY-PIERT.

This is a small low Plant, lying generally upon the Ground, whose round hairy Branches are seldom an Hand-breadth long; they are full of small Leaves, set alternately at the Joints, a little hairy, narrow at the Stalk, and broadest at the Ends, cut into three round Sections; the Flowers are small, and staminate, growing in Clusters at the Joints, among the Leaves; they consist of four Leaves, and are succeeded by small round Seeds. The Root is full of Fibres. It grows in dry Places, and in fallow Fields, as, also, among Corn.

Parsley-piert is not an official Plant, and is seldom prescribed by Physicians; but the Vulgar have a great Opinion of it, as a Breaker or Bringer away of the Stone and Gravel, and a Provoker of Urine; and it is given by them for that Purpose, either in Powder, or a Decoction of it in White-wine. *Miller's Bot. Off.*

It is said to be a very speedy, as well as potent Provoker of Urine, and to break the Stone: It is eaten raw, as a Green; and is, also, preserved in Pickle. The distilled Water of this Plant is very useful. *Raii H. P.*

PERCEPIOLUM. An approved or tried Remedy for a Disease. *Dorn. Diet. Paracels.*

PERDETUM, in *Paracelsus*, is the Root of Skirret.

PERDICUM. A Name for the *Parietaria*, Pellitory of the Wall.

PERDITIO sometimes imports a Miscarriage.

PERDIX. *Offic. Schrod.* 5. 323. *Perdix cinerea*. *Aldrov. Ornith.* 2. 140. *Jonst. de Avib.* 46. *Charlt. Exer.* 83. *Will. Ornith.* 118. *Raii Ornith.* 166. *Ejusd. Synop. A.* 57. *Perdix minor fulva*. *Bellon. des Oyse.* 258. THE COMMON PARTRIDGE.

The Parts of this Animal, used for medicinal Purposes, are the Flesh, Marrow, Blood, Liver, Gall, and the Feathers. The Flesh, if eaten, augments the Quantity of Semen and Milk, and proves a Stimulus to Venery. The Marrow, as, also, the Brain, when drank in some proper Liquor, are said to afford Relief to those who labour under a Jaundice. The Gall is, by some, highly extolled in Disorders of the Eyes. The Blood is used as an Ointment for the Eyes, when they are Blood-shot, and in recent Wounds of them. The Liver, dried before the Fire, and reduced to a Powder, stops an Epilepsy; and is accounted an highly efficacious Medicine against Fevers, if frequently exhibited in Yarrow-water. *Crato.* The Feathers, used by way of Fumigation, and applied to the Nostrils, are beneficial in a Suffocation of the Uterus, as, also, for alleviating, mitigating, and removing Colics, and other Pains of a like Nature. *Schrod. Dale.*

There are several sorts of Partridges, which ought to be chosen while they are young, tender, well-fed, and of a good Taste. When a Partridge is old, his Flesh is hard, like Leather, not easy of Digestion, and disagreeable to the Taste.

The Partridge, in all the Parts of it, contains much Oil, and volatile Salt.

It agrees, in cold Weather, with any Age and Constitution, but, more especially, with Persons recovering from Sickness, and those who are of a cold and phlegmatic Temper.

The Partridge's Flesh is firm, and full of viscous Moisture; and, for that Reason, 'tis very well tasted, good in Diarrhoeas, and for pituitous and phlegmatic People. The eating of Partridge increases Seed, is very nourishing, and wholesome for Persons recovering from Sickness; not only because it contains many oily and balsamic Parts, that are fit to unite with the solid Parts, and to restore them; but, also, by the Assistance received from its volatile Salts, which keep the Liquids in a just Fluidity, and increase the Animal Spirits.

A Partridge ought not to be eaten as soon as it is killed; but should, for some time, be exposed to the Air; for by that means its Flesh will grow more tender and short. *Lemery of Foods.*

PERDIX. Schw. A. 327. Gesn. de Avib. 606. *Perdix rufa*. Mer. Pin. 173. Charlt. Exer. 83. Jons. de Avib. 46. Aldrov. Ornith. 2. 139. Will. Ornith. 119. Raii Ornith. 176. Ejust. Synop. A. 57. *Perdix major rufa*. Bellon. des Oyse. 256. THE RED-LEGGED PARTRIDGE.

It agrees in Virtue with the preceding.

There is, besides, another Species of Partridge, called

PERDIX ALBA, or LAGOPUS: This is a Bird whose Legs are hairy, and resemble those of an Hare; there are two Species of it, one as large as a Pigeon, cover'd with Feathers as white as Snow, except those of the Tail, which are variegated with some black Spots: Its Beak and Feet are, also, of a blackish Colour.

The other Species resembles a Quail; but is larger, and covered with Feathers, partly white, and partly of a yellow Saffron-colour.

Both Species are found in the Alps, and Pyrenean Mountains, and delight in Snow. They are excellent Food, and contain a large Quantity of volatile Salt, and Oil. They are, also, of a restorative and corroborating Quality. *Lemery des Drogues.*

PERDIX MARINA is the Sole. See SOLEA.

PERDONIUM. Wine medicated with Herbs. *Dorn. Dist. Paracels.*

PERELLE. A sort of scaly Earth, brought from *St. Tour in Auvergne*. *Lemery des Drogues.*

PERESKIA.

The Characters are;

It hath a Rose-shaped Flower, consisting of several Leaves, which are placed orbicularly, whose Cup, afterward, becomes a soft fleshy globular Fruit, beset with Leaves; in the middle of the Fruit, are many flat roundish Seeds, included in a Mucilage.

Miller mentions but one Species of *Pereskia*; which is, *Pereskia aculeata*, flore albo, fructu flavescente. *Plum. Nov. Gen.*

This Plant grows in some Parts of the Spanish West-Indies, from whence it was brought to the English Settlements in America, where it is called a Gooseberry; and, by the Dutch, it is called *Blad-apple*. *Miller's Dictionary, Vol. 2.*

PERETERION. The perforating Part of the Trepan.

PERFOLIATA.

Boerhaave mentions three Species of *Perfoliata*; which are, 1. *Perfoliata*, vulgarissima, five arvensis. C. B. P. 277. *Boerb. Ind. A. 72. Perfoliata*. Offic. *Perfoliata vulgaris*. Ger. 430. Emac. 556. Raii Hist. 1. 470. Park. Theat. 580. *Perfoliata simpliciter dicta*, vulgaris, annua. J. B. 3. 198. *Bupleurum perfoliatum rotundifolium annuum*. Tourn. Inst. 310. Raii Synop. 3. 221. THOROW-WAX.

Thorow-wax has a small, fibrous, sticky Root; from which spring smooth, and frequently redish Stalks. The Leaves are of a bluish-green Colour, of an oval Shape; smooth, and not indented about the Edges; full of Nerves, which run obliquely from the Centre to the Circumference of the Leaf: They are perforated by the Stalk, which runs through them, and is divided towards the Top into several Branches, at the Ends of which grow small Umbels of yellow Flowers, usually five together upon one Stalk, with as many small Leaves under each Umbel; the three outermost being the largest: Each Flower is succeeded by two oblong striated Seeds. It grows only among the Corn, and flowers in June and July. The whole Plant is used.

Thorow-wax is reckoned among the vulnerary Plants, and is especially serviceable in green Wounds, Bruises, Ruptures,

Contusions, as also, for old Ulcers and Sores, either given in Powder, or the Decoction. *Miller's Bot. Off.*

It is reckoned among Plants of a consolidating and conglutinating Quality. The Decoction of the Herb in Wine, or the Powder of the Leaves, is exhibited for the Cure of internal Affections, as Ruptures, or Bruises by Falls. It is much recommended in Hernias, especially of Children, and particularly, according to *Schroder*, an umbilical Hernia, whether taken inwardly, or fresh bruised, and applied outwardly, in a Cataplasim, with Wine and Flour; in the same manner it resolves stumous Swellings. *Schwenckfeld* affirms, that it is of great Efficacy in Fractures, Hernias, and the Erysipelas.

The following Prescription, says *S. Paullus*, is a sovereign consolidating Remedy for the *Exomphalon*, or Prominence of the Navel: Take *Perfoliata*, Root and all, one Handful, Mouse-ear, Rupturewort, Plantain, Moss, *English Acacia*, of each half an Handful: Boil them in a sufficient Quantity of red Wine, and apply them to the Place affected. *Raii H. P.*

2. *Perfoliata*, annua, longioribus foliis. J. B. 3. 198. M. H. 3. 290. *Bupleurum perfoliatum, longifolium, annuum*. T. 310.

3. *Perfoliata*, montana, latifolia. C. B. P. 277. *Bupleurum montanum latifolium*. T. 310. *Boerb. Ind. alt. Pant. Vol. 1.*

PERFORANS MANUS. The Name of a Muscle of the Fingers.

This Muscle is very like the *Perforatus*, or *Sublimis*, and it is situated much in the same manner; only it lies lower, and is covered by the *Perforatus*: It is composed of four Muscles, which at first seem to make but one Mass, and afterwards terminate in four Tendons.

The fleshy Portions of the first and largest, and, also, of the second, are fixed in the superior Parts of the Ulna, and interosseous Ligament, down to their Middle; the fleshy Portion of the third is joined to the Tendon of the *Ulnaris Internus*, by a sort of common Aponeurosis; and that of the fourth is fixed along the Ulna.

The four Tendons have often several small collateral Tendons, sometimes five in Number, united to the Tendons of the neighbouring Muscle, as they pass under the large annular Ligament of the Carpus; but the Tendons themselves are separated from the others by thin Septa, which form a kind of particular Rings. Being thus strengthened, they separate, and, running along the Palm of the Hand, in distinct membranous Vaginae, like those of the *Perforatus*, by which they are covered, they enter the ligamentary Vaginae of the first Phalanges, together with the former; and, having passed through the Fissures thereof, and through the ligamentary Vaginae of the second Phalanges, they are inserted in the flat inner Side of the third, near the Basis.

The ligamentary Vaginae of the second Phalanges appear sometimes stronger near the Bases, near the Heads of the Bones.

The *Perforans* bends particularly the third Phalanges, in which it is inserted; and by the same Motion it may likewise bend the first and second Phalanges. We may apply to this Muscle all that is said concerning the tendinous Septa in the *Perforatus*, and concerning its Action, which is sometimes common to all the four subaltern Muscles, sometimes peculiar to one or more of them.

It may, likewise, be esteemed an Assistant to the *Ulnaris* and *Radialis Interni*, in great Efforts; and these Muscles may reciprocally be looked upon as Assistants to the *Perforatus* and *Perforans*.

Each of these four Tendons passes under a distinct annular Ligament, as under a Pulley; for, having accompanied that of the *Perforatus* through the great Ligament of the Carpus, through the Furcae of the Aponeurosis *Palmaris*, and through the ligamentary Vaginae of the first Phalanx, and having passed through the Slits of the *Perforatus*, it leaves this Tendon, and continues its Course to the third Phalanx through the ligamentary Vagina of the second.

In its Passage through the Slit of the *Perforatus*, it is liable to no Compression, even in the most violent Efforts of that Muscle. The reciprocal Contortions of the two flat Portions of the Fissure, and their crucial Insertion in the flat Side of the third Phalanx, hinder the little oblique Grooves, mentioned in the Description, from closing, and the two lateral Portions of the Fissure, from coming together, even after the Tendon of the *Perforans* has been removed; and the more this Part of the Tendon is pulled, the more perfectly does the Fissure form a sort of a Chancel with solid Sides, and with the two Ends cut obliquely.

Without such an artful Structure as this, the Tendon of the *Perforans* would have been continually exposed to Compressions and Contusions by the Sides of an ordinary Fissure; and, without passing through the Tendon of the *Perforatus*, it could not have been inserted in the middle of

of the flat Side of the third Phalanx, but near one of the Edges.

In the Insertion of these two Tendons in the Phalanges, we may observe still a farther Contrivance. This Insertion is angular in both, that is, the Extremities of the Tendons are not inserted according to their Breadth, in a transverse Line; but the Sides of their Breadth make an Angle with the Middle.

PERFORANS PEDIS, SIVE FLEXOR DIGITORUM LONGUS.

This is a long Muscle, fleshy above, and tendinous below; lying on the back Side of the Leg, between the Tibia and the Flexor Pollicis longus, covered by the Soleus, and covering the Tibialis posticus.

It is fixed, above, by fleshy Fibres, to a little more than the Middle third Part of the back Side of the Tibia, near its external Angle, below the Insertion of the Soleus; and, also, to a kind of Ligament, which runs down from the Middle of the Tibia. It afterwards ends in a Tendon, which passes behind the inner Angle on one Side, and a little behind the Tibialis posticus, in a separate annular Ligament.

From thence it runs under the Sole of the Foot, sending off a Detachment, by which it communicates with the Flexor Pollicis longus. There it is divided into four small flat Tendons, which go to the third Phalanges of the four small Toes, in the same manner as the Perforans of the Hand.

These four Tendons agree, likewise, in this, with those of the Hand, that they give Insertions to the Lumbricales; but they differ from them in this, that before the Separation they are joined, laterally, by an auxiliary fleshy Body, which I name *Flexor Digitorum accessorius*.

The *Perforatus*, or *Flexor Digitorum brevis*, binds the second Phalanges; and the *Perforans*, or *Flexor longus*, the third; the Use of these Muscles being nearly the same with the *Perforatus* and *Perforans* of the Hand. *Winslow*.

PERFORATA. A Name for the HYPERICUM.

PERFORATIO. Sometimes signifies a *Seton*.

PERFORATUS MUSCULUS.

PERFORATUS MANUS, VULGO SUBLIMIS.

This Muscle is considerably large, lying along the Inside of the fore Arm, fleshy for the greatest Part near the Articulation of the fore Arm with the Os Humeri, and near the Carpus terminating in four distinct Portions, which become the same Number of long small Tendons. The Name of *Sublimis* has been given to it; because it lies almost on the Surface of the fore Arm; and that of *Perforatus*, from the Slits found near the Extremities of its Tendons.

It is commonly made up of four Muscles, closely united by their fleshy Portions, representing there one large Body of Muscles. It is fixed above to the superior internal Parts of the Ulna and Radius, (this last Bone being considered in its natural Situation) and to that of the interosseous Ligament. A little below the Middle of the fore Arm, this large fleshy Body is divided into four distinct Muscles, which, on the lowest Quarter of the fore Arm, end in four flat Tendons of different Sizes.

These four Tendons are inclosed in a common membranous, or mucilaginous Vagina, which, likewise, furnishes each Tendon with a particular thin Vagina. In this manner they advance to the Carpus, and pass under the large annular transverse Ligament: Beyond this Ligament, they spread again, in the Palm of the Hand, still retaining their particular Vagina, and run between the Aponeurosis Palmaris and Metacarpus, toward the Fingers, separating more and more by degrees. Sometimes there are at first only three Tendons, one of them being afterwards divided into two, in their Passage to the Fingers; sometimes they communicate, by a kind of Detachment, with the Tendons of the Perforans.

Having reached the Heads of the metacarpal Bones, they pass under the four Arches, or Fræna, formed by the Furca of the Aponeurosis Palmaris, and particular Septa of the great transverse Ligament of the Palm of the Hand; and then each Tendon, having got beyond the Head of one metacarpal Bone, and beyond the Basis of the first Phalanx, enters the ligamentary Vagina, and the flat, or inner Side of that Phalanx; and is inserted in the flat Side of the second Phalanx, near its Basis, the membranous Vagina accompanying it to its Insertion. The ligamentary Vagina is stronger towards the Basis, than towards the Head of the first Phalanx.

In passing along the Inside of the first Phalanx, the Tendon is divided by a long Slit, which gives Passage to a Tendon of the Perforans, and from thence the Names of these two Muscles are taken.

This Fissure, or Opening, is contrived in a very singular manner: The Tendon is, first of all, divided in two flat Portions,

and each Portion is contorted on the flat Side of the Phalanx; so that the Edges, which were nearest, become opposite, and the opposite Edges are joined together all the Way to the Extremity of the Tendon. By this Contortion, the Fissure seems to form two small oblique Grooves, which surround the Tendon in opposite Directions; one Groove being covered by the Tendon, and the other covering it.

This is not all: The two Portions, having formed this double Groove by their mutual Contortion, are not united, only by simply approaching each other at their Extremities; for each Portion is at that Place again divided into two others, smaller and shorter than the former; so that, in all, there are four narrow Portions, the two nearest of which cross each other, and join the other two, so that from the four narrow ones are formed two broad Portions anew, which are joined by their Edges, and afterwards inserted in the Bone at a small Distance from each other.

The *Perforatus* serves to bend the second Phalanges of all the Fingers, except the Thumb; and the particular Muscles, of which it is made up, may act separately, by reason of their distinct Insertions in these Phalanges. The Union of the fleshy Bodies by intermediate tendinous Septa may have several Uses, the principal of which is, that these Septa, being very broad and thin, give Insertion to a great many fleshy Fibres in a very small Compass, and thereby supply the Place of four large Tendons, which would have taken up much more Room; but by this Union these four Muscles are more disposed to act jointly than separately.

They not only bend the second Phalanges on the first, but, also, the first on the metacarpal Bones, and the Metacarpus and Carpus on the fore Arm. To conceive the Mechanism and Force of these Muscles, which is very great, and necessary in certain Circumstances, it must be observed, that as, in the Muscles of the Scapula, every Muscle, which can move a Bone in any given Direction, is, likewise, able with the same Force to keep it immoveable in any Situation, against whatever tends to move it in a contrary Direction. The following Examples will sufficiently illustrate this Observation.

It is by bending the Fingers that we raise the greatest Weights, that Sailors pull large Oars, that Printers turn the Screws of their Presses, and that Climbers support their whole Bodies, even with an additional Burden upon them. It is by means of the Fingers, when bent, that we tear, pull up, bruise, and the like, things that require great Force to be so treated.

The Strength of Muscles depends on the Multitude of their fleshy Fibres, and the Extent of their Motions, on the Length of these Fibres; and, consequently, where-ever Strength is more necessary than large Degrees of Motion, there we find the Fibres of Muscles proportionably increased in Number; and, where-ever there is more Occasion for a large Degree of Motion than for Strength, the fleshy Fibres are of a proportionable Length.

In the *Perforatus* we meet with both these Contrivances, a great Number of Fibres for Strength of Motion, and a great Length of Fibres for Extent of Motion. The different tendinous Septa serve to give Insertions to a Number of moving Fibres, sufficient for the Strength required in the Cases already mentioned.

Large Degrees of Motion are, likewise, sometimes very necessary in this Muscle, as for Instance, when we bend the Fingers at the same time that the Metacarpus and Carpus are bent on the fore Arm; and, in this Case, certain Fasciculi of Fibres are chiefly employ'd, which appear to be longer than the rest.

The particular Use of the Tendons of this Muscle is best understood with that of the *Perforans Manus*.

PERFORATUS PEDIS, SIVE FLEXOR DIGITORUM BREVIS.

This is the undermost of all the common Muscles of the Toes, being situated immediately above the Aponeurosis Plantaris, which it resembles something in Figure; and hence we see, that it has been very improperly termed *Sublimis*.

It is fixed by fleshy Fibres to the anterior and lower Part of the great Tuberosity of the Os Calcis; and to the neighbouring Part of the upper Side of the Aponeurosis Plantaris.

From thence it runs forwards, being divided into four fleshy Portions, which terminate in the same Number of Tendons, split at their Extremities in the same manner as those of the *Sublimis*, or *Perforatus* of the Hand, and inserted in the second Phalanges of the four small Toes, a little nearer the Inside, than in the Hand. *Winslow*.

The Uses of this Muscle are mentioned under the *Perforans Pedis*.

PERFRICTIO. A great Shivering, or Coldness.

PERIAMMA, or PERIAPTOS, from *πείνω*, to connect, or bind to. An Amulet.

PERIBLEPSIS;

PERIBLEPSIS, *περίβλεψις*, from *περίβλεπω*, to stare about. That kind of wild staring Look, and Instability of the Eyes; which is perceived in People labouring under a Delirium.

PERIBOLE, *περίβωλη*, from *περίβάλλω*, to surround. In *Hippocrates, de decenti Habitu*, it signifies the Dress, Garb, or Cloathing of a Person. In other Places it imports a Translocation of the Humours, or morbid Matter, to the Surface of the Body. Thus, when a Disorder is relieved by a copious Eruption of Pustules, this is a *Peribole*, or Removal of the morbid Matter from the internal Parts to the Surface.

PERICARDIUM. See *COR*.

PERICARPIUM, *περικάρπιον*, from *περί*, about, and *καρπός*, Fruit. Whatever surrounds the Fruit of Vegetables, whether Membrane, Husk, or Pulp. Some restrain the Signification to the soft and moist Pulp, which covers the Seeds, as in Apples, Pears, and Peaches. But,

PERICARPIUM, from *περί*, and *καρπός*, the Wrist, imports a topical Medicine apply'd to the Wrist.

PERICHAREIA, *περιχάρεια*. An Excess of Joy, which has been sometimes known to produce sudden Death.

PERICHRISIS. A Liniment.

PERICLASIS, from *περί*, about, and *κλάω*, to break. A Fracture with a great Wound, wherein the Bone is laid bare.

PERICLYMENUM.

The Characters are ;

It has the Appearance of the Honeyfuckle. The Flower is monopetalous, resembles, in some measure, a Tube, and has its upper Part divided into several almost equal Segments. The Ovary has its Top adorned with a dentated Crown, and becomes a soft Berry, full of a compressed, roundish Seed.

Boerhaave mentions but one Sort of *Periclymenum*; which is, *Periclymenum*; *perfoliatum*; *Virginianum*; *sempervirens*, & *florens*. *H. L.* 484. 485. *Jo. & Descr. Boerb. Ind. alt. Plant.*

There are no particular medicinal Virtues ascribed to this Plant at present, that I know of.

PERICLYMENUM is, also, a Name for several Sorts of *CAPRIFOLIUM*; which see.

PERICNEMIA, from *περί*, about, and *κνήμη*, the Tibia, or Leg. The Parts about the Tibia.

PERICRANIUM, *περικράνιον*. The Name of a Membrane, which covers the Bones of the Skull. See *CAPUT*.

PERIDROMOS. The extreme Circumference of the Hairs of the Head.

PERIESTECOS, *περιεστηκός*, from *περιεστημι*, to surround, or guard. An Epithet for Diseases, Signs, or Symptoms, importing their being salutary, and that they prognosticate the Recovery of the Patient.

PERIGRAPHE, *περιγραφή*. An inaccurate Description, or Delineation. In *Hippocrates, de decenti Habitu*, it seems to import, a Characteristic. In *Vesalius, Perigraphæ* are certain white Lines and Impressions, observable in the *Musculus Rectus* of the *Abdomen*.

PERIN, *περίν*. A Testicle. Some explain it, the *Perinæum*; others, the *Anus*.

PERINÆUM. The Space betwixt the *Anus* and Parts of Generation, divided into two equal lateral Parts, by a very distinct Line, which is longer in Males, than in Females. This Part is subject to Laceration in a difficult Birth. See *OBSTETRICATIO*. And in this Part an Operation is perform'd, call'd *The Puncture of the Perinæum*. See *ISCHURIA*.

But the principal Disorders to which this Part is subject, are Abscesses, and Fistulas.

A FISTULA OF THE PERINÆUM.

Sometimes, after the Operation of Lithotomy, or after a Puncture of the *Perinæum* or Bladder, or from an Abscess in the *Perinæum* near the Urethra, or from a Scirrhus in the *Glandula Prostatata*, or when, by the bad Habit of the Patient, a Wound or Ulcer can by no means be healed, but its Lips become callous, a Fistula is formed, through which the Urine is preternaturally discharged with great Uneasiness to the Patient. These Fistulas are sometimes generated in the *Perinæum* by malignant Abscesses, which spread amongst the Fat under the Skin, to the *Intestinum Rectum*, and *Scrotum*, the Urethra remaining entire; but these cannot be called *Urinary Fistulas*, because no Urine is discharged by them. The urinary Fistulas are often occasioned by the Use of Tents, or Pipes, which have been too long retained in the Wound after extracting the Stone; or when the *Perinæum* has been greatly distended, lacerated, or burst, by a large rough Stone; or when, by the Obstruction of a Stone in the Urethra, the Acrimony of the Urine corrodes the adjacent Parts, and at last the Skin, especially if the Patient be of an ill Habit of Body.

The Cure of this Fistula varies according to the Habit of the Patient, and the Degree of this Disorder. When the

Fistula is large, and has consumed a great Part of the Urethra, and the Patient is of an ill Habit and weak, a Cure is not without great Difficulty, and very seldom, obtained; and the more callous, or inveterate, the Fistula is grown, the harder is the Task to remove it. On the other hand, if the Fistula is small, and not much indurated, if the Patient is young, and of a good Habit, the Cure may proceed with Ease and Expedition. But if a Scirrhus is produced in the Prostate Glands, before a Cure can be effected, the Scirrhus must first be removed, which I have learned by Experience to be a most difficult Task.

There are four Methods of treating these Fistulas: 1. The Tent-pipe, or whatever is contained in the Wound, which occasioned the Fistula, must be immediately removed. Then the Patient must be laid upon the Bed, or a Seat, in the same Position as is required for performing the Operation of Lithotomy; and the indurated Sides of the Fistula must be extirpated with great Dexterity. After the Application of a vulnerary Balsam, or Powder, the Lips of the Wound must be brought into Contact by an adhering Plaister, and over it should be laid a narrow Compress on each Side of the Wound, and the Whole must be secured with a tight Bandage. After the Operation, the Patient should be confined to his Bed, with his Knees tied together, and strictly enjoined to abstain from Motion, that the Lips of the Wound may more easily coalesce. For a few Days a very little Drink must be allowed him, that he may not be often excited to make Water. The Dressings ought not to be renewed till the second or third Day, or as long as the Patient can contain his Urine. The Wound being, by these means, almost conglutinated, the Patient may be treated in the same manner, as if he had been cut for the Stone; and, if he has Youth in his Favour, he may begin to walk about gently, and by degrees. Thus, if the Fistula is not malignant, he may be restored to his former Health. 2. Another Method of Cure is, by consuming the indurated or callous Lips of the Fistula with corrosive Medicines; and, after removing the Eschar with Basilicon, or a digestive Ointment, the Wound may be conglutinated by a vulnerary Balsam, and adhesive Plaister, as before. The most proper Corrosives in this Case are, the Troches of red Lead, the Lapis Causticus, or Infernalis, or white Precipitate mixed with *Arcaus's* Balsam; or, in a recent Fistula, a Piece of Blistering-plaister, according to *Chefelden's* Method, as we are told by *Douglas*, in the Appendix to his History of the lateral Operation.

It is to be observed, that the Cure of these Fistulas sometimes advances slowly, especially if the Orifice be wide; if the callous Parts are not totally extirpated or consumed; and if the Patient cannot sufficiently refrain from Motion, or observe a proper Diet. If from these, or the like Causes, the Fistula is not removed, but begins to renew its Callosity, the Operation must be repeated, till the Parts appear sound. 3. Sometimes these Fistulas may be cured, by bringing the Lips of the bleeding Wound, after the callous Part is cut off, into Contact, with a proper Suture, of two or more Stitches. The Dressings may be those before directed; and, as the Lips of the Wound appear to conglutinate, the Threads may be cut and extracted. 4. It may be sometimes necessary, during the Cure, to keep a Catheter in the Bladder and Urethra, by which the Urine may be discharged, and its Course turn'd from the Wound, the Conglutination of which it would greatly obstruct. If the Orifice of the Fistula be too small to admit of these Methods, it may be dilated with a Sponge-tent, or enlarged by Incision.

I shall only mention another Way of treating these Fistulas, which is called *The palliative Method*. For this Purpose is the Instrument described by *Nuck* and *Solingen*, and proposed by *Winslow*, which, while the Fistula is compressed, and closed by it, prevents the Efflux of the Urine that Way; and thus the Disorder, when a perfect Cure cannot be obtained, may at least be mitigated. But Experience informs us, that this is not to be depended upon, as the Urine easily escapes through it, and it is troublesome to the Patient. *Heister. Chirurg.*

In August 1725. Mr. La Serre, Apothecary to the King, recommended an English Officer to me, who was sixty-six Years of Age, and in a declining Condition.

He had the Scrotum very large and hard, covered with fistulous Sinuses, through which Pus and Urine were discharged; which extended from the Anus to the Root of the Penis, and the Number of them daily increased.

As it was the Urine that occasioned all this Ravage, to prevent its escaping this Way, I endeavoured to introduce the Algaly; and was fortunate enough to pass it into the Bladder, though with much Difficulty, the Canal of the Urethra being very callous and winding in its whole Extent. You know, that, in Fistulas in *Perinæo* of a short Date, the Canal loses its Pliancy, becoming hard and uneven; that it, also, loses its Figure, growing crooked in proportion to the Number of Callosities.

lofities. I was obliged to change the Direction of my Probe every Inch, in order to advance it: At length, having penetrated into the Bladder, I judged it most proper to leave it there five or six Days, to form the Passage. During the Space of three Weeks I did nothing more than to withdraw the Probe sometimes to clean it, and to introduce another of the same Shape immediately. The Size of the Scrotum was much diminished in this time, and no more Fistulas were formed; some even closed up, and other fresh Callosities were resolved, those only remaining which had so long subsisted.

These not being curable without an Operation, I had a Consultation with Mr. Petit, Mr. Malaval, and Mr. Boudou; when we agreed to make a Passage that should go directly to the Bladder, that we might introduce a Cannula into it, and to take off as much of the Callosity as we could, being persuaded, that the Remainder would dissolve by an ample Suppuration.

I placed the Patient upon the Edge of his Bed, in the same Posture as for Lithotomy; and, instead of the Algaly, introduced a Catheter, and thrust the Point of the Incision-knife cross the Perinæum into its Groove. As the Callosity was two Inches thick from the Skin to the Urethra, I could not feel the Cuttature of the Probe with my Finger at the Perinæum; and as I cut, was obliged to put my Finger into the Wound sometimes, to seek for the Urethra, that I might not carry the Point of the Incision-knife on one Side the Catheter. The Point being lodged in its Groove, I made an Incision in the same manner as in the Operation for the Stone; and then, ordering an Assistant to hold the Catheter, I removed a Part of the Callosity; then, taking the Catheter into my own Hand, I introduced a Gorget into the Bladder, by means of its Groove, that I might the more easily pass the Cannula.

The first Week a slender Dissolution of the Callosities was procured by the Suppuration; and the Circumference of the Wound, becoming less, made the Dressing more difficult; when, very fortunately, an Abscess was form'd in the Scrotum, on the Right Side, near the Suture. I open'd it, and, taking Advantage of the Opportunity, extirpated all the Callosity between the fresh Wound, and that I had made eight Days before: Then I withdrew the Cannula, and substituted a round Piece of waxed Linen in its stead, as thick as my little Finger, covered with Mucilage-plaister and Diachylon with the Gums mixed together. I lessen'd the waxed Cloths by Degrees, that the Canal might contract a little, and leave a free Passage for the Urine through the Wound.

The whole Urethra being distemper'd, I judged it proper to suppurate that also: To this end, I thrust an Algaly into the Penis; and, passing it through the Wound, put a Seton into the Eye of it at the Extremity; and, withdrawing the Algaly, conducted the Seton through the Penis.

During the first Week, I armed the Seton with the *Unguentum Fuscum*, to consume the Callosities, and to procure a large Suppuration; then armed it afterwards with Diachylon, mix'd with Ointment of Marshmallows: I dressed the Wound at the same time with *Unguentum Fuscum*, or with Diachylon with the Gums melted; with which I armed both Dossils and Pledgets. In short, I desisted from the Use of the Seton, and waxed Linen; in three Weeks, all the Callosities being entirely dissolved.

Now I began to think only of a Reunion, and introduced a leaden Algaly into the Bladder, that the Urine might not pass through the Wound whilst it was healing, (was it possible to effect it) or, at least, till the Canal was form'd.

During all this time, we had terrible Symptoms to encounter. Notwithstanding the exact Regimen observed, the Patient had a very violent Fever for ten Days, his Pulse was intermittent, and the Buttocks almost mortified, by being obliged to lie upon them continually, and the Difficulty attending his being removed. Bleedings proportioned to the different Necessities and Strength of the Patient, a proper Regimen, with Emulsions, and other Remedies, at length quieted all these Symptoms.

While the leaden Algaly was in the Urethra, an Erysipelas came upon the Right Knee, which spread over the Thigh and Leg to the very Foot. I prescribed resolving Fomentations, and in eight Days the Erysipelas terminated by an Abscess of the Bigness of a Crown, covering a Part of the Rotula, and Part of the Ligament that fastens it to the Tibia.

I open'd it when the Matter was form'd, and was surprised to find a Stone with the Pus as big as a Lentil, the sixth Part of an Inch thick, and very rugged, resembling a Piece of carious Bone. Moreover, a large Quantity of small Gravel was mixed with the Pus, which adhered to some small Lumps of indurated Fat. I cut off a Part of the Lips of the Wound, making it flat and oblong: For the Space of a Fortnight, at each Dressing, I took out a Quantity of incrustated Gravel, the third Part of an Inch within the *Pannicula Adiposa*, round

the whole Circumference of the Ulcer; and then it took an happy Turn, and advanced in healing.

During this time the Urine passed by the leaden Algaly, and the Wound in the Perinæum visibly lessen'd.

The Quality of this gravelly Abscess, and that of the Urine, which was very muddy, and loaded with Films, proving a Disposition in the Blood to form Concretions and Petrefactions, I apprehended the Patient would become subject to the Stone, provided the Urine had not a very free Passage; therefore I changed my Opinion as to the Management of the Fistula in the Perinæum, and resolved to keep it open instead of healing it. Then, withdrawing the leaden Algaly that was in the Bladder, I put a Cannula into the Wound, whose Extremity reached beyond the bulbous Part of the Urethra, near the Prostate. This Cannula, supporting the Sides of the Fistula, which daily approached, suffered the Urine to pass with greater Facility, than by the Canal of the Urethra, which could not have been suppurated without being a little contracted. This Cannula did not confine the Neck of the Bladder; so that the Patient kept his Urine as long as he pleased: He wore it a considerable time, only drawing it out sometimes to clean it.

Eight Months after, he came to see me, and to inquire what Method it was most proper to take. He had drawn out the Cannula a Week before, because it was inconvenient when he sat; and could not introduce it again. I examined the Fistula, which was a little contracted, and seemed to be cicatrized: As no Matter issued from it, and he told me the Urine evacuated freely, both by the Fistula, and the Penis, I judged that these two Orifices would be sufficient for it, and prevent the Formation of a Stone; and therefore thought it unnecessary to continue the Cannula.

I saw the Patient about a Year after, when the Fistula was so contracted, that no Urine passed through it, but was freely discharged by the Penis. *Le Dran*.

It has been always an Axiom, that to heal a Wound by the Art of Surgery, or to perform an Operation belonging to it, a thorough Knowledge is requisite, both of the natural and preternatural State of the Part: I go still farther, and say, that the Operation should be performed two or three times in the Surgeon's Imagination, before he comes to the Patient; and that it is an improper Time to take his Measures for the Operation with the Instrument in Hand. The Distemper, which is the Subject of the following Observation, is one of those Cases, whereon (because they are not out of the general Rule) we cannot too much reflect before we begin.

In 1727. I had cut a Boy of twelve Years of Age for the Stone, extracting one considerably large; and he went from the Hospital perfectly cured. In 1729. he felt a Pain in making Water; and the Pain increasing for several Days, a small Hole was at length formed in the Perinæum, by which a Part of the Urine was discharged, the rest evacuating by the Penis. In May 1730. he was brought to *La Charité*; they examined his Distemper, and found a Stone of the Bigness of a Pea, fixed in the Fistula of the Perinæum, just under the Skin, which they easily extracted.

When I went to the Hospital to dress those Patients I had cut, Mr. Morand committed this Lad to my Care again. I examined him, and found a small Orifice in the Perinæum, surrounded with Callosities; and could only introduce a very small Probe into the Bladder, which was then confined in the Passage, as though it was in a Case. I endeavoured to introduce an Algaly into the Penis; but the Extremity of the Instrument, with my utmost Endeavours, would go no farther than the Bulb of the Urethra, because the callous, or fungous Flesh, had either broke, or turned the Passage, by possessing the membranous Part of the Urethra.

The Distemper seeming to me of no small Consequence, I deferred the Operation till the next Day. Having well reflected upon the Structure of the Parts, and upon the present Condition, to which the urinary Passage was reduced by the Cicatrices and Callosities, I placed the Lad upon his Bed, in the same Attitude as for the Operation of Lithotomy, with his Hands fastened to his Heels, and supported by assistant Surgeons. First, I introduced an Algaly into the Penis as far as it would go, and ordered it to be held by an Assistant, in such a manner, that the Handle made a right Angle with the Body of the Lad. Then I introduced a very slender Probe into the Bladder, and upon this an hollow one open at the End, so that, embracing the small Probe, it could not err, and withdraw'd the other.

The Groove of the Probe being turned towards the Symphysis of the Os Pubis, I conducted a long strait Bistoury by it to the End of the Probe, observing that the Edge directly answered the Extremity of the Algaly; so that all between the two Instruments was divided. I withdrew the Bistoury, and, turning the Groove of the Probe towards the Intestinum Rectum,

Rectum, I made a second Incision. This being performed, I passed a Gorget into the Bladder by means of the same Probe; and, by the Assistance of the Gorget, introduced a leaden Cannula. The same Day the Urine, a Drop whereof had not passed by the Penis for three Months before, resumed its natural Course, Part discharging by the Penis, and Part by the Cannula. Perhaps the sudden Thought I had, at the time of the Operation, of turning the Edge of my Bistoury towards the Extremity of the Algaly, occasioned the Success; and that, by this means, I opened and renewed the Communication from the Neck of the Bladder, to the nervous Part of the Urethra. If it had not been the first Day, it could not be done after the Dissolution of the Callosities. I continued the Use of the Cannula for the Space of eight Days, during which time I dissolved and destroyed the Callosities by the Assistance of Escharotics. At the End of this Term, I took out the Cannula, and left the Cicatrization of the Wound to Compresses and Bandage; and he was perfectly cured the twentieth of June.

AN ABSCESS OF THE PERINÆUM.

On the nineteenth of September 1726. a Gardener, about twenty-two or twenty-three Years of Age, leaving his Work in the Evening, was seized with an acute Pain in both Groins, which gave him a Difficulty in Breathing the whole Night. He sent for his Surgeon the next Day, who, having examined the painful Part, found neither Tumor, nor Inflammation: He bled the Patient, who was attacked with a Shivering some Hours after Bleeding, which was followed by a Fever. In the Evening he was bled again, and the Pains were a little quieted; but the third Day the Shivering and Fever returned about the same Hour; and then the Pain fixed upon the Perinæum. He was again twice bled the two following Days, and, at each time, his Pains went off, and began again soon after.

This induced his Surgeon to bleed him again the sixth Day. The Patient still complained; and, though neither Elevation nor Inflammation appeared upon the Part, they applied anodyne Cataplasms, which were continued for several Days: In this Interval, the Fever was become continual, the same Pains subsisted, and yet nothing appeared externally. The Surgeon gave the Patient several Clysters, and purged him, substituting emollient Fomentations instead of the Cataplasms. The Patient remained in this Condition till the Beginning of October, when a Tumor began to appear in Perinæo; and, on the seventh of that Month, he came to the Hospital.

Till this time he could not make Water, but with infinite Pain, and only by a Drop at a time; at length he had a total Suppression of Urine, and was obliged to be probed in the Night.

In the Morning I found the Tumor in Perinæo inconsiderable, and probed him to know in what Condition the Urethra was; and, the Catheter not passing without Difficulty, there was Reason to presume it was affected either by the Pressure or Inflammation.

To hasten the Suppuration, I applied a maturing Cataplasm, which occasioned the Tumor to rise considerably in the Night; and, finding a Fluctuation in the Morning, I open'd it, first introducing the Algaly into the Bladder, that I might not lose Sight of the Urethra. A great Quantity of serous Pus issued from it; and though the Incision was large, having dilated as much as possible, both above and below, all the Sinuses were not open'd, some extending beyond the Reach of my Finger: Then I dressed the Wound according to Art. The Patient made Water freely after the Operation, the Urethra not being affected, and no longer compressed. He was bled again that Day.

When the first Dressing was removed, all the Sinuses appeared, which furnished a large Quantity of Pus. There was one which passed from the Neck of the Bladder, even towards the Bottom of it, in the Cellular Texture that surrounds it, and another that extended behind the Tuberosity of the Ischion.

The Patient was bled again, but the Fever never left him; besides, he had a yellowish Complexion. I used detensive Injections to all the Sinuses in vain; the Wound was always of a bad Colour. The sixth Day after the Operation, he was seized with a Shivering, which was followed by many others very irregular; and, the Suppuration diminishing, he died on the ninth.

I opened the Body, and found, besides the Sinuses that extended by the Side of the Bladder into the Cellular Texture that surrounds it, the Os Pubis, and Os Ischion, so extremely carious, that you might crumble them between your Fingers, like a Piece of Touchwood.

REMARKS.

It is not surprising, that the Bone should be so far destroyed in so short a time; for the Os Pubis is of a spongy Texture,

like the Extremities of the large Bones; and their Cells are always lined with a Membrane furnished with Vessels and Glands, that separate the Succus Medullaris from the Blood. This being taken for granted, ought these Parts to be less susceptible of critical and symptomatic Abscesses, than those which are softer? Because the Membranes, lining those little Cells, are not exposed to external Injuries, are they less exempt than others from an Erysipelas or Inflammation? No, certainly; all the Difference is, that they are concealed from us, and lie beyond the Reach of Chirurgial Relief. For this Reason, a Distemper in them ruins the spongy Texture of the Bone, before any certain Sign makes it externally manifest; and, even when it becomes manifest, it is too late to stop its Progress, the Bone being destroy'd.

For this Reason Collections of Pus in the Cellular Texture of the Bones cannot be called *critical*, although the Mass of Blood may be depurated by them, as well as by Matter collected in the softer Parts. Therefore I shall call them symptomatic, since they can only cause the Loss of a Limb, when they are formed upon Parts that may be amputated.

With regard to the Method of Cure in such a Case, the Inflammation that preceded the Putrefaction of the Membranes, might have been dissipated by copious and repeated Bleedings. It is true, that the Patient was bled five times in five Days; but the Relief he received from each Bleeding, is a certain Proof, that, if these five had been performed the first Day, the Inflammation would have entirely yielded.

Though nothing appeared externally, yet there was a deep acute Pain; and whereforever that is found, it is sufficient to fear an Inflammation, if not already begun, at least at hand; and to act accordingly.

The Blood may, without doubt, be disposed to be inflamed, and fix indifferently upon one Part or another; but its Quantity, its rapid Course to one Part more than another, for Reasons of which we are ignorant, these two, jointly with the small Diameter of the Vessels, are what cause the Disturbance, which must of Necessity augment, while the same Causes subsist. We must, therefore, not only diminish the Quantity of Blood, and divert its Course, when it threatens any Part, by a convenient Regimen, but by copious and quickly repeated Bleedings.

Four Bleedings, in twenty-four Hours, often stop the Progress of an Inflammation, that twenty would not cure, when once arrived to a certain Degree. *Le Dran's Surgery.*

N. B. An Algaly is a sort of hollow Probe or Catheter.

PERIN-KARA. *H. M.* A wild Olive-tree of a vast Bigness, growing in *Malabar*, and bearing Fruit in Form, Size, and Substance, resembling the larger Sort of Olives; when ripe, they are of a purplish-azure Colour, of a sweetish acid and grateful Taste; but, when immature, they are of a yellowish Colour, and of an austere and bitterish Taste.

The Fruit is accounted a Delicacy, and preserved with Sugar, or kept, like Olives, in Pickle, to serve as Sauce for other Foods at Dinner and Supper, being strengthening to the Stomach, and greatly promoting Digestion. *Raii H. P.*

PERIN-NIROURI *seu Ma Nirouri. H. M.* A *Malabar*ian bacciferous Shrub, with a brittle Stone containing six Kernels.

PERIN-PANEL. *H. M.* A bacciferous *Indian* Shrub, bearing its Flowers in Clusters, and an oblong Fruit, containing four Seeds: It grows in *Malabar*, and is always green, and with Flowers and Fruit upon it. Of the Leaves dry'd, and put upon Coals, is made a Suffumigation, which is said to give a most effectual Relief in hysteric Paroxysms. *Raii H. P.*

Of the Flowers, Fruits, and Roots, boiled in Water, with Long-pepper, and the Seed of Cumin, is prepared a Drink, which is highly commended for the Asthma, Cough, Phthisis, and the like Affections of the Lungs. The Leaves with the Bark, boiled in an Infusion of Rice, and reduced to the Form of a Cataplasm, and thus applied to a Tumor, are said to be powerful Ripeners of the same. Of the Bark of the Tree boiled with Milk, Honey, and Butter, is prepared a Balsam, which, taken inwardly, and applied outwardly to the Place, is said to cure the Pleurisy. The *Tijerin Nirouri*, the Authors of the *Hortus Malabaricus* tell us, is very like the preceding; and they have given us no distinguishing Characters of it, nor added a Cut. *Raii H. P.*

PERINYCTIDES. Pustules, or Pimples, which break out in the Night.

PERIODEUTES, *περιόδευσις*. A Mountebank.

PERIODUS. The Period of a Disease is the Time betwixt the Access of one Fit, or Paroxysm, and that of the next, including the entire Exacerbation, Decline, and Intermission, or Remission. These, in some Diseases, are frequently very regular and constant, as in Fevers; but in chronical Disorders,

more irregular and uncertain, as in Epilepsies: Hence such Diseases are called *Periodical*.

The Period of the Blood is its Circulation.

PERIOSTEUM. The fine sensible Membrane of the Bones. See O s.

PERIPHIMOSIS. The same as PARAPHIMOSIS.

PERIPLEUMONIA. The same as PERIPNEUMONIA.

PERIPLOCA.

The Characters are ;

The Flower is monopetalous, and rotated ; the other Characters are the same with those of the scandent *Apocynum*.

Boerhaave mentions five Species of *Periploca* ; which are,

1. *Periploca* ; foliis oblongis. T. 93. *Apocynum, folio oblongo*. C. B. P. 303.

2. *Periploca* ; *Monspeliaca* ; foliis rotundioribus. *Tourn. Inst.* 93. *Boerb. Ind. A.* 315. *Scammonia Monspeliaca*. Offic.

Scammonia Monspeliaca foliis rotundioribus. C. B. P. 294. *Scammonia Monspeliaca dicta*. Park. Theat. 164. *Scammonia Monspeliaca flore parvo*. J. B. 2. 136. *Scammonia Valentina*. Ger. 716. Emac. 866. *Apocynum latifolium*. *Scammonia Valentina*. Raii Hist. 2. 1088. ITALIAN, or

FRENCH SCAMMONY.

It is cultivated by the Botanists, and flowers in August. The concentered Juice, which is useful in Medicine, requires to be given in a larger Dose than that of the true Scammony, as being less effectual. Dale.

3. *Periploca* ; *Monspeliaca* ; foliis acutioribus. T. 93. *Scammonia Monspeliaca affinis, foliis acutioribus*. C. B. P. 294. *Apocynum latifolium, amplexicaule*. J. B. 2. 135. M. H. 3. 611.

4. *Periploca* ; foliis *Scammonia* acutissimis.

5. An *Periploca* ; foliis atro-viridibus, maculatis, *Scammonia* latioribus? *Boerb. Ind. alt. Plant.*

The Plant is of a poisonous Quality, especially the fourth Species ; but not to such a Degree as the *Apocynum*. The Juice of the second is a Species of Scammony, and operates almost in the same Manner. Hist. Plant. adscript. Boerb.

PERIPLUSIS, περιπλυσίς. A Diarrhoea, when the Excrements discharged are extremely thin and watery, is sometimes called by this Name.

PERIPNEUMONIA VERA. A true Peripneumony, or Inflammation of the Lungs ; from περί, about, and πνεύμων, the Lungs.

When in those pulmonary Vessels which are susceptible of an Inflammation, a true Inflammation is form'd, the Disorder is called a *Peripneumony*.

The Vessels susceptible of such an Inflammation are the Bronchial and Pulmonic Arteries, and their lateral lymphatic Vessels.

Hence we may conceive two different Kinds of Peripneumonies, one of which has its Seat at the Extremities of the Pulmonary Artery, and the other in the Bronchial Arteries.

It is sufficiently obvious, that the former is far more dangerous than the latter ; that the more dangerous may arise from that which is less so ; and that they have many Causes in common.

These numerous Causes may be reduced,

1. To the general Causes of all Inflammations throughout the whole Body.

2. To those which in a particular manner affect the Lungs, such as an Air too humid, dry, hot, cold, heavy, or light ; or an Atmosphere impregnated with caustic, astringent, or coagulating Exhalations, and consequently unsalutary ; a thick, dry, and viscid Chyle, either mixed with acrid Particles, or free from such a Mixture ; violent Exercises of the Lungs by Running, Wrestling, Efforts, Singing, Crying, or Riding hard against the Wind ; coagulating, caustic, and astringent Poisons introduced into the Veins running to the Heart ; violent Perturbations of Mind ; a Quinsy accompanied with an Oppression of the Breast, and an Orthopnoea ; a violent Pleurisy, and an excessive Paraphrenitis.

If these Causes have once excited the Disease, it will produce various Effects, according to the Diversity of the Part affected ; for a Bronchial Inflammation, by Compression and Contagion, inflames the contiguous Extremities of the Pulmonary Artery.

When the Extremities of the Pulmonary Artery are inflamed, the Blood becomes stagnant, the Vessel is extended, the most liquid Part of the Fluids is, as it were, expressed by Transudation ; the thicker Part of the Fluids is accumulated ; and all the Blood, as yet capable of Circulation, is collected between the Right Ventricle of the Heart, and the Extremities of the Pulmonary Arteries : Hence the Lungs become oppressed, incapable of expanding themselves, and livid ; the Left Ventricle of the Heart is deprived of Blood ; a great Weakness is brought on ; the Pulse is small, soft, and highly unequal ; the Respiration is small, frequent, difficult, hot, accompanied with a

Cough, and incapable of being performed but in an erect Posture ; the Blood about the Right Auricle and Ventricle of the Heart stagnates ; the Face, Eyes, Countenance, Fauces, Tongue, and Lips, become unusually red ; and, at last, a suffocating Death, attended with an unsurmountable Anxiety and Delirium, ensues.

If a Peripneumony strongly affects both Lobes of the Lungs at once, a sudden and inevitable Death will ensue ; since, in such a Case, Nature can be assisted by no antiphlogistic Medicine.

But if a Peripneumony affects only a small Part of one of the Lobes of the Lungs, and does not proceed from violent Causes, there are some, though not infallible Hopes, that it may be happily cured.

From what has been said, we may deduce the diagnostic and prognostic Signs of a Peripneumony ; especially if we consider, that the Terminations of this Disorder are the same with those of an Inflammation. Hence it has, also, various Stages, according to the different Times of its Duration ; so that it may terminate in a Recovery, some other Disease, or in Death.

A Peripneumonia is cured,

1. By a benign Resolution ; if the Habit is lax, the Humour mild, the Viscidity not too great, and the Part affected, whether in the Bronchial, or Pulmonary Arteries, not considerable.

2. By a speedy, free, and copious spitting of yellow thickish Matter, mixed with a little Blood ; in consequence of which the Pain is alleviated, Respiration amended, the Pulse render'd larger and fuller, and the Spit itself soon transformed into a mild Nature, and changed into a white Colour. This principally happens, when the Seat of the Disorder, whether in the Bronchial or Pulmonary Artery, is not very large.

3. By a bilious Flux, which affords Ease, and in which a Matter, almost resembling the Spit already described, is eliminated.

4. By a copious, thick, and hypostatic Urine, which affords Ease, has, at first, a red, and then a whitish Sediment, discharged before the seventh Day. In this Case, the Respiration becomes easy, the Fever mild, and of a good Kind ; the Thirst is removed ; and the Heat, Moisture, Laxity, and Softness, are equal all over the Body.

A Peripneumony may terminate in some other Disease, depending either on the Nature of an Inflammation, or of the Lungs themselves, according as they are by this means deprived of their proper Action.

Hence, in the first place, a Peripneumony may terminate in a Suppuration ; which happens, when the inflammatory Matter, being neither resolvable by Nature, nor corrected by Art ; but, however, being mild, stagnant, hot, and acted upon, breaks the small Vessels, resolves them into Pus, and, by extending or corroding the Sides of the Vessels in which it is confin'd, forms an Abscess, or Apostem, within fourteen Days.

That this is about to happen, may be known from the following Signs :

1. If the sure Signs of a pretty severe, though not of the most violent Peripneumony, have previously appear'd.

2. If a Resolution, and its Signs, have not appear'd soon enough ; that is, before the fourth Day.

3. If the Symptoms are neither reliev'd by a concocted Spit, evacuated on the critical Days, which are the third, fifth, seventh, ninth, eleventh, and fourteenth, which indicates that the Cure is begun, by the successive Change of the Spit ; nor by Venesection, nor by Medicines, and a proper Regimen.

4. If on the contrary, the Symptoms, of themselves not very violent, obstinately remain, and are accompanied with a soft undulating Pulse, and a continual Delirium.

That an Apostem is really forming, may be known,

1. If the Signs above enumerated are present.

2. If slight, wandering, and often recurring Horripilations happen without a manifest Cause ; if the Pain remits, and the Dyspnoea continues ; if the Cheeks and Lips are red ; if a Thirst is present, and a Fever, especially towards the Evening, afflicts the Patient ; and if the Pulse is weak and soft.

That an Apostem is already form'd, may be known,

1. From the preceding Signs :

2. From the obstinate and dry Cough, which is increased after eating ; the difficult, small, and wheezing Respiration, which is accompanied with a kind of Noise, and increased after Eating or Exercise ; a Capacity of lying with Ease only on one, and that is the affected, Side ; a continual periodical Fever augmented after Eating, Drinking, or Exercise, and attended with a Redness of the Cheeks and Lips ; a Loss of Appetite ; an excessive Thirst ; Night Sweats, especially about the Breast and Forehead ; frothy Urine ; Paleness ; Extenuation ; and, lastly, from the extreme Weakness of the Patient.

An Apostem already formed has various Terminations ; for

1. It either suffocates the Patient by a Tumor possessing the whole

whole Lungs, and which either compresses, or hinders those Parts of them, which were before free; or,

2. An Apostem suffocates the Patient by an Eruption of Pus, the Apostem discharging itself into the Aspera Arteria all at once; or,

3. An Apostem is dissipated by purulent Spit, which consumes it, and frees the Patient from the Disorder; or,

4. An Apostem is terminated by a Falling of the Pus into the Cavity of the Thorax, or the dilated Vacuities of the *Mediastinum*: And,

5. Hence arise Consumptions, of various Kinds, and an Empyema, which generally proves mortal.

A Peripneumony terminates in some other Disease, if the purulent Matter, becoming inflammatory, is resorb'd into the Pulmonary Veins, mixed with the Blood, and deposited on some particular Parts. Hence the Lungs are freed, and some other Parts loaded; and, if these are less requisite to Life, the Translocation is good; but, if the Translocation is to the Liver, Spleen, or Brain, the Event is generally fatal. Hence peripneumonic Abscesses are form'd about the Ears, Legs, and Hypochondria.

That such Abscesses are about to be form'd, may be known,

1. By an Observation of the Signs of a Peripneumony not of the worst Kind; accompanied with a Fever, neither violent nor malignant, though continual; with a Pain, Anxiety, and Heaviness of the Thorax, and a Dyspnoea, which are not violent, and without being attended with the Signs of a Resolution.

2. If, in Conjunction with these Signs, the Pulse is greatly and continually fluctuating; and,

3. By the Pains, Redness, Heat, and Tension, about these Parts.

That such Abscesses are about to be form'd about the Legs, may be known,

1. If the Signs of future Abscesses are present; and

2. If, together with these, the Signs of a slight Inflammation about the Hypochondria are observed.

That such Abscesses are about to be form'd about the Ears, may be known,

1. If the Signs already enumerated are present; and,

2. If the Hypochondria are at the same time soft.

That the Matter of an Abscess is convey'd to the Liver, may be known,

1. If the before-enumerated Signs are present; and,

2. If there is a permanent Pain of the Liver, accompanied with a Discharge of yellowish Urine, and a yellow Colour of the Skin. Hence, an Apostem of the Liver arising, terrible Disorders are produced.

If these Abscesses in the Legs, and about the Ears, relieve the Lungs, and remove the Fever; if they remain purulent, running, and fistulous; and if they happen soon enough, that is, before the ninth Day; they are always salutary: But, if they arise after the Spit is already purulent, though not very yellow, and without affording Relief, they are bad; but if, after they are form'd, they disappear, the Disease being crude, and the Peripneumony returning, they are absolutely mortal.

A Peripneumony may, also, terminate in a callous or scirrhous Tumor of the Lungs, if an impacted Matter, and other Conditions, contributing to the Generation of a Scirrhus, concur. See INFLAMMATIO. Hence the Patient's Respiration during the whole remaining Part of his Life is difficult, attended with a Cough, cannot be performed but in an erect Posture, is increased after Eating and Exercise, and unaccompanied with the already described Signs of a latent Apostem. Hence arises the Adhesion of the Lungs to the Pleura.

If the Bronchial or Pulmonary Artery are, either from an internal or external Cause, seized with a violent Inflammation, a Gangrene soon arises; and hence a Sphacelus, on account of the Quantity and Motion of the Blood, and the continual Motion of these slender Viscera. That a Gangrene is about to happen, may be known,

1. By the Signs of an highly violent Peripneumony, not relieved by any Accident, or Art.

2. By the great and sudden Weakness, principally discovering itself in the Pulse; and,

3. By a Coldness of the Extremities. But that a Gangrene is already form'd, may be known, if these Signs have preceded, and if the Spit is ichorous, thin, cineritious, livid, black, and fetid. This State is soon succeeded by Death.

These various Changes of a Peripneumony are to be learned from an Observation of the History of the Disease, and a Dissection of the Carcasses of those who have died of it.

Hence 'tis obvious, that the Disorder which the Antients described under the Name of a *Peripneumony*, is a true Inflammation of the Lungs.

The Prognostic, therefore, will be clear and just, when we assert, that a Peripneumony is always dangerous, on account

of the great Necessity of the Function of the Lungs to Life, and the Correction of the inflammatory Matter; on account of the Quantity and Impetus of the Blood continually convey'd to the Lungs; on account of their perpetual Motion; on account of their Situation, which prevents the Application of Remedies; on account of the Tenderness of their small Vessels, which are easily destroy'd; and, lastly, on account of the Impossibility of a Revulsion, so requisite to the Cure of an Inflammation.

From what has been said we understand, when, why, and with what Symptoms, a Peripneumony proves mortal: For if the whole Lungs, together with the Heart, are inflamed; if the Heart falls to the Side; if the Patient is seized with a Paraplegy, becomes cold, and is deprived of Sensation; then he dies on the second or third Day. If, in the Beginning of the Disease, the Urine is good, and duly concocted, but thin after the fourth Day; if, in the Height of the Disorder, the Patient is obliged to sit erect; if he discharges Pus by Stool; if the Disease is of the dry Kind, and accompanied with an Heat and Noise in the Throat, proceeding, as it were, from a Stuffing of the Lungs; if the Disease is violent in very dry, hard, and callous Habits; and such as have been accustomed to Exercise; if it is of a bad Kind, and accompany'd with a Stillecidium of very red Blood; if it is of the dry Kind, accompanied with red Spots on the Breast; if a Coryza, or excessive Sneezing, either precedes or follows it; if it arises from a burning Fever; if a bilious Spitting with Pus begins immediately after the sixth Day; if from the Beginning the Spit is very bloody, entirely yellow, white, and round, very frothy without affording Relief; if it is dark-coloured, clayish, like the Lees of Oil, black, livid, unequal, or æruginous; and lastly, if neither the Fever, nor the Difficulty of Respiration, remit; the Patient dies on the seventh or ninth Day. And, when such Patients die, their Pulse fails, all the Parts of their Bodies become cold, except their Breast, Neck, and Head, which are intensely hot, and their Cheeks become red and livid.

The Cure of a Peripneumony is to be varied according to the different Stages of the Disease, and its Symptoms; so that what is beneficial at one time of the Disorder, is injurious at another.

If, therefore, in a Peripneumony, the Habit is lax, the Humour mild, the Viscidity not great, and the Part of the Bronchia and Lungs affected, not considerable, the Patient is to use Rest of Body and Mind, a tepid moist Air, a Vapour-bath of pure Water, applied to the pulmonary Region, the Nostrils, the Mouth, the Feet, and the Legs, slender Aliment, and light Drink; aqueous, nitrous, farinaceous Medicines, and Preparations of Honey. Thus,

Take of Barley-water, forty Ounces; of Nitre, two Drams; and of Oxyemel, four Ounces: Mix, and let the Patient drink two Ounces warm every Quarter of an Hour.

But if, in a Peripneumony, a speedy, free and copious Expectoration of yellow thick Spit, which alleviates the Pain, amends Respiration, renders the Pulse larger and fuller, and gradually becomes more mild and white, the last-mentioned Medicines are not only to be used, but, also, such as are of an emollient and depurating Nature, such as promote Expectoration, and are gently restorative, and Steams. In this Case we are to abstain from Venesection, Purgatives, Sudorifics, and every other thing capable of disturbing Expectoration.

Take of Pellitory of the Wall, Agrimony, and Dandelion, each one Handful; of the bruised Seeds of white Poppies, and Fennel, each one Ounce; and of Liquorice, one Ounce and an half: Boil in fifty Ounces of Water, and exhibit in the same manner, and for the same Purposes, with the former.

If a Peripneumony is attended with a bilious Flux, which affords Ease, and in which the Matter eliminated resembles the Spit above described, mild and emollient Clysters are to be used; gentle Fomentations are to be applied to the Abdomen; emollient and gently laxative Decoctions are, also, beneficial; taking, at the same time, the other Measures before recommended.

If, in a Peripneumonia, a copious, thick, and hypostatic Urine, with a Sediment at first red, and then gradually becoming whitish, is, to the Relief of the Patient, discharged before the seventh Day, let all the Measures already prescribed be taken; but let Baths for the Feet be added, and Fomentations of the Kidneys by internal emollient Clysters, and the Application of Linen Cloths externally: Let the Patient, also, drink Decoctions of a gently abstergent and diuretic Nature. For this Purpose,

Take of the Roots of Grafts, Butchers-broom, Parsley, and Fennel, each two Ounces; of Masterwort, two Drams; and of the bruised Seeds of Burdock and Parsley, each one Ounce: Boil with forty Ounces of Water, and exhibit for the same Uses with the former.

If the Inflammation is recent, great, and dry, in a robust Habit, a little before found, and habituated to Exercise, it may be discovered by the Signs already enumerated; and we are forthwith to have recourse,

1. To speedy and copious Venesection, which is to be instituted according to the Degree of the Disease, and duly repeated, that the Quantity of thick Blood may be lessened, and proper Room made for diluting Liquors.

2. To Vapour-baths of an emollient Nature, continually applied to the Pulmonary Region, and frequently to the other Parts of the Body.

3. To diluent, resolvent, emollient, laxative, antiphlogistic, nitrous, and anodyne Decoctions, to be often drank warm, and in small Quantities.

4. To mild antiphlogistic Clysters: And,

5. To a slender Diet, consisting of antiphlogistic Juices.

If the Inflammation, being great, accompanied with a Fever, and other violent Symptoms, lasts beyond the third Day, and if the Signs of an Inflammation tending to a Suppuration are present, there is always much Danger, though the Disease may be protracted so long, as to afford a due Time for the Cure. In this Case,

1. We are to use no Venesection; or, if some important Circumstance call for it, only a small Quantity of Blood is to be taken away.

2. We are to use slender Food, but somewhat incrassating, and consisting of maturing Substances, as Pot-herbs, farinaceous Vegetables, Peas, and ripe Autumnal Fruits.

3. Till the fifth Day, from the Beginning of the Disorder, we are to use Baths for the Region of the Lungs, consisting of emollient and maturing Ingredients.

4. On the fifth and sixth Days, we are to use these Baths, adding Sorbitions, which gently excite a Cough, and produce Repletion, that thus, on the seventh Day, the Part may be relieved by a Discharge of concocted Pus, the Vessels attenuated, and Life sustained. For this Purpose,

Take of the Vinegar of Squills, six Drams; Oxymel of Squills, three Ounces; Sal Polychrestum, one Dram; Barley-water, eight Ounces; and distilled Hyssop-water, four Ounces: Mix all together; and let the Patient drink one Ounce every Half-hour.

Take of Coffee, two Pints; of Honey, two Ounces; and of Elder-vinegar, half an Ounce: Mix all together, and let the Patient drink as much of it as he pleases warm.

If sufficient Signs inform us, that an Abscess is formed in the Lungs, its breaking into the Aspera Arteria is to be accelerated; after which the ulcerated Part is to be quickly and safely depurated.

The breaking of the Abscess is brought about, if, after the Use of many soft and subpinguious Aliments, and soft Wine, the Lungs already suppurated, and prepared by warm Steams, are agitated either by Crying, Coughing, Expectorants, Concussion in a Ship, or Coach.

But as soon as there are any Signs, that the Apostem is broken, we are to use a Milk, and a mild, and not easily putrefying, vegetable, Diet: Then, in the Day-time, we are to use aperient and deterfive Medicines; and, towards Evening, gentle Opiates: Emollient Steams, sailing in a Ship, riding on Horseback, or in a Coach, are, also, to be used.

Medicines of an aperient and deterfive Quality, proper for open Ulcers of the Lungs, are these following: The Leaves of the common, black, white, and golden Maidenhair, Agrimony, Lady's-mantle, Brooklime, Betony, Meadow-daisy, Borrage, Oak of *Jerusalem*, Bugle, Spleenwort, Germander, Ground-pine, Succory, Dandelion, Endive, Hedge-mustard, Fennel, Fumitory, Ground-ivy, Noble Liverwort, Star Liverwort, Alexanders, St. John's-wort, Hyssop, Woad, Lettuce, Harts-tongue, white Horehound, Devil's-bit, Moneywort, Rest-harrow, Primrose, Self-heal, Sage of *Jerusalem*, Soapwort, Scabious, Water Germander, Solomon's-seal, Flix-weed, Coltsfoot, Garden and wild Valerian, Vervain, Veronica, Periwinkle, and Goldenrod.

The same Intention is answered by Gum Ammoniac, Galbanum, Opopanax, Sarcocolla, Mastic, Myrrh, Olibanum, and Turpentine.

Take of the recent Leaves of Agrimony, Goldenrod, Betony, and Garden Valerian, each one Handful; of white Horehound, one fourth Part of an Handful; of the Five

aperient Roots, each one Ounce; of the Flowers of the Lesser Centaury, Agrimony, and St. John's-wort, each one Handful: Boil in four Pints of Water; of which let the Patient drink two Ounces every two Hours: Or,

Take of the Roots of Burdock, China, and Sarsaparilla, each three Ounces: Boil in Water for half an Hour; then add three Ounces of Sassafras-wood; and when they have boiled a little, add to three Pints of the Decoction, two Ounces of the Syrup of the Five aperient Roots. Its Use is the same with that of the preceding.

Take of the best and most transparent Myrrh, two Drams; and of the Yolk of a new-laid Egg, one Scruple: To these, when duly triturated together in a glass Mortar, add of the best Frankincense, two Scruples: Make into Pills, consisting of three Grains each, of which let the Patient take one or two before the Use of the Decoction.

Take of the best Myrrh, two Drams; and of Sperma-ceti, one Dram: Make into a Powder, to be divided into twelve equal Doses; one of which let the Patient take every Morning and Evening with the Decoction.

Take of Myrrh, and Olibanum, each one Dram; and of the purest Honey, two Ounces: Mix, and let the Patient take one Dram every Hour.

Gentle Opiates, to be used in the Evening, are these following:

Take of the Pilulæ de Cynoglossa, one Scruple; form into six Pills; of which let the Patient take one or two in the Evening, before going to Bed.

Take of the Styraz Pill, the same Quantity: To be used in like manner, and for the same Use.

Take of Opium cut into thin Slices, and gently dried, one Grain; of red Coral, twelve Grains; and of Olibanum, six Grains: Make into a fine Powder, to be used like the others, before going to Bed.

Taste of the Syrup of Diacodium, half an Ounce; of the Aqua Vitæ of *Matthiolum*, one Dram; and of distilled Hyssop-water, one Ounce: Make into a Draught, to be taken in the Evening.

Take of Opium, one Grain: Make into two Pills; one of which is to be taken in the Evening.

Take of Opium, one Grain; of the Syrup of Maidenhair, four Drams; and of the Water distilled from the Flowers of the red Poppy, one Ounce: Make into a Draught.

For an emollient Steam:

Take of the Leaves of Mallows, Marshmallows, and Pellitory of the Wall, each two Handfuls; and of the Powder of Linseed, two Ounces: Boil in Water; and let the Patient receive the Steam, as he draws in the Air.

If there appear Signs, that the inflammatory Matter is become purulent, resorb'd by the Veins in the Lungs, thence convey'd to the Blood, and deposited on some other Part, whence the Lungs are relieved, and the Part which receives the Matter oppress'd, without any Certainty whether the Matter will tend, then the Patient is to use a light, fluid, gently aromatic, and somewhat vinous Diet. His Body is to be preserved in a State of Rest: Let his Medicines be emollient, and gently aperient: Let his Lungs be treated with Emollients: Thus the peccant Matter will either be determined to some other Part, or farther dissolved and eliminated: For this Purpose,

Take of the expressed Juice of recent Chervil, and of sweet Milk, each four Ounces; and of the Syrup of Hyssop, one Ounce: Make into a Mixture; of which let the Patient drink one Ounce every two Hours.

But if to the Signs which indicate, that such Abscesses are about to be formed, those which signify a Determination of the Matter are join'd, the last-mentioned Measures are to be taken; and, at the same time, the Parts indicated for the Deposition of this Matter, whether Ears, or Legs, are to be so treated by Suction, Relaxation, Stimulants, and Aperients, that they may resist less, and attract the Matter more.

If the Matter is determined to the Liver, the same Measures are to be taken with those prescribed when the Abscess is absorb'd, without any certain Prognostic whether the Matter tends: But, at the same time, let Aperients somewhat stronger, saponaceous

ceous and hepatic Substances, be used : Then let Clysters, and Fomentations of the like Ingredients be, also, prescribed.

Take of the greater Soapwort, two Handfuls ; of recent Endive, four Handfuls ; and of the Flowers of wild Succory, three Handfuls : Boil in three Pints of Water ; and of the expressed Decoction, let the Patient drink two Ounces every two Hours.

When a Peripneumony terminates in a callous or scirrhus Tumor of the Lungs, it is rarely susceptible of a Cure ; tho' it may sometimes yield a little to external and internal Emollients, to riding on Horseback, or in a Coach.

When a Peripneumony degenerates into a Gangrene, it is absolutely incurable.

If in a Peripneumony, beginning to be carried off by Spit, the Expectoration is stopt, we are immediately to use all our Endeavours to recal it. The Causes which retard this Expectoration, are generally an excessive Cold, suddenly admitted to the Body ; and excessive Driness of the Parts all over the Body ; a burning Fever succeeding ; heating Medicines ; a Discharge of Stools, which does not prove critical ; excessive Sweating ; and violent Commotions of Mind.

Immediately upon this, a fresh Inflammation arises from a Suppression of the Matter, and an Increase of it from Congestion : Hence are forthwith produced the same Symptoms which arise from a primary Peripneumony ; but Accidents of this Nature generally soon prove mortal to Patients already weakened.

When a Suppression of Spit in a Peripneumony, beginning to be carried off by that means, happens, the Misfortune is prevented, by the Steam of some hot, moist, and emollient Substance, continually drawn into the Mouth and Nostrils, and by that means convey'd to the Lungs ; and by an Air artificially rendered simlar, or of a like Quality, with this Steam : The liberal Use, also, of Liquors of a like Nature, especially when prepared with Honey and Vinegar, is highly beneficial. The same Intention is, also, promoted by gently resolvent antiphlogistic Medicines, such as diaphoretic Antimony with fixed Nitre ; by gentle Opiates ; by avoiding Sweat ; and, principally, by preserving the Calmness and Tranquillity of the Mind. For this Purpose,

Take of simple Oxymel, three Ounces ; of the Syrup of the Five aperient Roots, two Ounces ; of a Decoction of Ground-ivy, ten Ounces ; and of pure Nitre, one Dram : Make into a Mixture ; of which let the Patient take one Ounce every Hour.

Take of pure Laudanum, two Grains ; of the Flowers of Sulphur, Sperma-ceti, and unwashed diaphoretic Antimony, each one Dram : Reduce to a fine Powder, to be divided into twelve equal Parts ; one of which the Patient may take every three Hours, with an Ounce or two of the preceding Mixture.

Take of the Flowers of Sulphur, two Drams ; of Olibanum, one Scruple ; of Sperma-ceti, half a Dram ; and of unwashed diaphoretic Antimony, one Dram. Reduce to a Powder, to be divided into twelve Doses, of which let the Patient take one every Hour, with an Ounce of the Mixture.

Take of the recent expressed Oil of Sweet-almonds, one Ounce and an half ; of the Syrup of Violets, Virgin-honey, and the Yolks of new-laid Eggs, each half an Ounce ; form into a Mixture ; of which let the Patient take half an Ounce every Hour, till the Expectoration returns.

PERIPNEUMONIA NOTHA. A spurious Peripneumonia.

This Disorder is frequently produced in the Winter by an Excess of Cold, and in the Spring by an Excess of Heat. It generally arises from a viscid Phlegm form'd in the Blood,

1. By farinaceous, crude, austere, and ill concocted Aliments :

2. By a Want of laudable Blood :

3. By a Weakness of the Vessels, Viscera, and Bile :

4. By a Diminution of animal Motion :

5. By a Dissipation of the more liquid Parts of the Fluids, in consequence of a Relaxation of the Secretory Vessels :

6. By a Retention of the grosser Parts of the Fluids, in consequence of a Weakness of the Instruments of Excretion.

This Phlegm gradually stuffs the Lungs, till the Disorder degenerates into this terrible, and, often unexpectedly, mortal Disease.

When this Disorder is of a considerable Standing, it produces various Effects in the Body, and especially those peculiar

to a slow Peripneumony : Hence its Cure must necessarily be difficult.

For Venesection, celebrated so much as is necessary, in some Cases of a true Peripneumony, is in this Disorder highly prejudicial, on account of the Weakness of the Viscera, and a Viscidity of the Juices : Hence, what at first seems to afford Relief, soon after increases the Symptoms.

Attenuants in this Case so much esteemed, whilst they augment the Impetus on the Pulmonary Vessels, often increase the Thickness and Impaction of the obstructing Matter ; by which means they soon render the Disorder mortal.

This Disorder is frequently incident to old Persons, those of pituitous, cold, and catarrhus Habits, or such as labour under frequent Coryzas. It is generally produced by all those Causes, which, by quickly moving the stagnant Matter, act upon the Lungs, such as Running, Crying, Singing, Drinking hard, especially of heating Liquors, high Feeding ; the Heat of a Fire, of a Bath, or of the Sun, especially if the Body is suddenly exposed to Cold after such an Heat.

This Disorder at first deceives the unwary Patient by its fallacious Lenity ; for, beginning with a slight Sensation of Fatigue and Weakness, a Prostration of almost all the Faculties of the Mind, a Difficulty of Breathing, and an Oppression of the Breast, it excites so gentle Commotions, that the Heat and Fever scarcely indicate any Danger. Soon after, wandering Horripilations, and the Paroxysms of a gentle Fever, appear. Hence the Difficulty of Breathing, and Weakness, suddenly increasing, Death happens, tho' hardly any Signs of it could be discovered, either in the Urine, or the Pulse.

This Disorder is most prudently cured,

1. By letting Blood from a large Orifice :

2. By a seasonable Injection of Clysters, which are to be repeated daily, till the Symptoms evince, that the Lungs are relieved. For this Purpose,

Take of Honey, three Ounces ; of Nitre, one Dram ; one Yolk of an Egg ; and of Barley-water, eight Ounces : Make into a Clyster.

3. Let the Patient use a slender Diet of Flesh-broth, especially such as are impregnated with mild Acids ; and let him drink a thin Liquor consisting of Water and Honey.

4. Let him use the Steams and Suffumigations described under the Article PERIPNEUMONIA VERA : He must, also, drink diluting, detergent, and gently aperient Decoctions : His Legs and Feet are to be bathed, and large Veficatories applied.

Take of the Roots of Fennel, two Ounces ; of the Roots of Grass, four Ounces ; of the Leaves of Pellitory and Agrimony, each one Handful and an half ; of the bruised Seeds of white Poppy, one Ounce ; and of Liquorice, an Ounce and an half : Boil for a Quarter of an Hour in two Pints and an half of Water ; of which let the Patient drink two Ounces every two Hours.

From what has been said, the Reason is obvious, why a Peripneumony is rarely incident to Children and Women ; as, also, why it hardly ever happens to those whose Solids are very lax ; why in such it is easily, and almost spontaneously, cured ; and, on the contrary, why it is otherwise in robust Constitutions, and those inured to Exercise. From what has been said, it, also, appears, that this Disorder is, for the most part, generated by some other Disease, which precedes it, before the Patient dies of it ; and consequently, that a Peripneumony is the immediate Cause of Death, and almost the last Effect of all mortal Disorders. *Boerhaave's Aphor.*

A Fever, attended with several peripneumonic Symptoms, arises every Year towards the Beginning ; but more frequently at the Close of Winter. It principally attacks such as are of a gross Habit of Body, middle-aged Persons, but oftener those who are more advanced in Years, and too much addicted to spirituous Liquors, especially to Brandy. For as the Blood of such Persons hath been loaded with phlegmatic Humours collected in the Winter, and is put into fresh Motion by the approaching Spring, a Cough is hereby immediately occasioned, whence these Humours hurry to the Lungs ; and then, if the Patient happens to live irregularly, and drinks more freely of spirituous Liquors, the Matter, occasioning the Cough, grows thick, and stops the Passage of the Lungs, and the Fever preys upon the Mass of Blood.

At the Beginning of the Fever, (1.) The Patient grows hot and cold alternately. (2.) Is giddy. And (3.) complains of an acute Pain in the Head, when the Cough is most troublesome. (4.) He vomits up all Liquids, sometimes with, and at other times without, Coughing. (5.) The Urine is turbid, and intensely red. (6.) The Blood taken away resembles pleuritic Blood. (7.) He breathes quick, and with Difficulty : If he be advised to cough, his Head aches, as if it would burst ; for

for so the Patient commonly expresses himself. (8.) A Pain of the whole Breast generally accompanies the Disease. And (9.) a Wheezing is heard by the Attendants, whenever the Patient coughs, the Lungs not being sufficiently dilated; so that the vital Passages seem to be closed by the Swelling; whence the Circulation is so intercepted, that there are no Signs of a Fever, especially in gross Habits; tho' this may, also, happen from the Abundance of the phlegmatic Matter, whereby the Blood is so surcharged, that it cannot rise to a perfect Ebullition.

In order to the Cure of this Fever, I judge it proper (1.) To take away that Blood which inflames the Lungs, and endangers Suffocation: (2.) To open and cool the Lungs by pectoral Medicines: And (3.) to abate the Heat of the whole Body by a cooling Regimen. But as, on the one hand, the Collection of the phlegmatic Matter contained in the Veins, and daily affording fresh Supplies for the Inflammation of the Lungs, should seem to indicate frequently repeated Bleeding; yet, on the other hand, I learnt from the most accurate Observation, that this Practice proved very prejudicial in feverish Persons of a gross Habit, especially if they were past the Prime of Life; so that Bleeding with Frequency was often contraindicated. I, therefore, had recourse to frequent Purging in its stead, which is properly enough substituted, where the Patient hath an Aversion to copious and frequent Bleeding.

Accordingly I proceeded in the following Manner: I directed Bleeding in the Arm in Bed, and forbid the Patient to rise till two or three Hours afterwards; because Bleeding, which, in some measure, weakens the whole Body, may, by this means, be more easily born; for the Patient can better bear to have ten Ounces taken away in Bed, than six or seven, when he sits up. The following Day I give this purging Draught in the Morning.

Take of fresh Pulp of Cassia, one Ounce; Liquorice-root, two Drams; three Figs; Sena, two Drams and an half; Troches of Agaric, one Dram: Boil them in a sufficient Quantity of Water, to leave four Ounces of Liquor when strained, in which dissolve an Ounce of Manna, and half an Ounce of solutive Syrup of Roses: Mix the Whole for a purging Draught.

The next Day I usually repeat the Bleeding, and, interposing a Day, I exhibit the purging Draught again, which is to be repeated every other Day, till the Patient recovers. On the intermediate Days of Purging, I advise the Use of a pectoral Decoction, Oil of sweet Almonds, and the like Remedies. In the mean time, I forbid Fleth, and Broth made thereof, but especially all spirituous Liquors; and, instead of these, I allow a Pisan, made of Barley and Liquorice, boiled in Water, for his common Drink, or small Beer, if he desires it.

This is the Method of curing the spurious Peripneumony, caused by an Abundance of phlegmatic Humours collected in the Blood, and by reason of the Coldness and Moisture of the Winter, thrown upon the Lungs; wherein both repeated Bleeding, and Purging, are indicated otherwise than in a true Peripneumony; which I esteem to be manifestly of the same Kind with the Pleurisy, with this Difference only, that a Peripneumony more universally affects the Lungs: And, indeed, both the Distempers are cured by the same Method, namely, by Bleeding principally, and cooling Medicines.

Though the spurious Peripneumony, in some measure, resembles the dry Asthma, both in the Difficulty of Breathing, and some other Symptoms, yet 'tis sufficiently distinguished from it, as being attended with manifest Signs of a Fever and Inflammation, which never appear in the dry Asthma; but they are much less considerable and apparent in the spurious than in the true Peripneumony.

It must be carefully remarked, that when this Disease attacks such as have been great Drinkers of Brandy, and other like spirituous Liquors, it is by no means safe to quit them of a sudden, but they must be left off gradually; for so sudden a Change makes way for a Dropsy: And this should be made a standing Rule in all other Diseases arising from the same Cause: *Sydenham*.

A pneumatic Fever is one of the acute, inflammatory Kind, arising from a Stagnation of the Blood in the Blood-vessels of the Lungs, or the small Ramifications of the Vena Azygos in the Pleura; and accompanied with an acute and pungent Pain of the Side, a Difficulty of Breathing, an immoderate Heat, an hard and frequent Pulse, a dry or a moist, and, sometimes, a bloody Cough: This Disorder is always dangerous.

There is no inflammatory Fever, which is so incident to Persons of all Ages, Sexes, and Temperaments, in cold as well as hot or temperate Climates, or which affects more epidemically, on account of the Inequality and Intemperance of the Air, than that which happens in the Thorax, whether in the Lungs themselves, or in the intercostal Muscles, both internal and external, lin'd internally with the Pleura, which is a nervous

Membrane. But, according as the Inflammation seizes different Parts of the Thorax, it not only receives different Names; but, also, differs widely with respect to the Symptoms, the Event, and the Method of Cure. The Antients, who were destitute of an accurate anatomical Knowledge of the Parts, thought the Pleura the Seat of a Pleurisy and Peripneumony; for which Reason they gave the Name of Pleurisy to almost every Inflammation in the Thorax: But *Hippocrates* made a Distinction between a Pleurisy and a Peripneumony. For this Reason all the antient Physicians, those of the intermediate, and those of the present Age, are of Opinion, that in a Peripneumony the Lungs were affected, whereas in a true Pleurisy the Lungs were not at all affected, but only the Pleura, and the Muscles which it lines. But this Assertion is false; for *Petrus Servius*, according to *Welschius*, in *Decad. 1. Curat. 4.* upon dissecting three hundred Subjects who died of a Pleurisy, always found one of the Lobes of the Lungs affected, and fill'd with Matter, whilst the Pleura was not sensibly, or at least but very little, corrupted. Hence, in my Opinion, the different Seats of an Inflammation in the Thorax are to be determin'd; that, if it only seizes the external Parts, a spurious Pleurisy is produc'd; if, like an Erysipelas, it seizes the Surface of the membranous pulmonary Substance, a true Pleurisy is produc'd; and the farther it penetrates into the Substance of the Lungs, the more violent the Pleurisy is, and what is called a Peripneumony is produced.

These different Species of Inflammations in the Thorax are, therefore, by the Physician, to be carefully distinguished, by certain peculiar and characteristic Marks: For, in a spurious Pleurisy, there is an acute and pungent Pain of the Side, which is increased by being touch'd; lying on the affected Side is difficult; there is a dry Cough without any Expectoration of the pituitous or bloody Matter, which, however, if it is violent, augments the Pain. It is, also, accompanied with a Fever, and a Pulse somewhat hard, depress'd, and frequent. It is produc'd not so much by a Stagnation of the Blood, as of the Serum, in the Extremities of the small Arteries, and Veins connected with the Vena Azygos, and in the Extremities of the small Ducts in the Pleura, or in the Periosteum of the Ribs, where the Sense is still more acute and intense. Hence 'tis no more than a Species of Rheumatism, and for that Reason incident to those who are subject to Catarrhs, rheumatic or arthritic Pains, or who are now-and-then afflicted with an Hemicrania, especially when they remove from an hot to a cold, or from a cold to an hot Air, particularly in the Evening: Nor, for this Reason, is Venesection necessary, but only a Diaphoresis, and an increased Perspiration; by which means it is generally easily terminated about the seventh Day, and is free from Danger.

But a true Pleurisy is a sanguineous Inflammation, arising from a Stagnation of Blood in the small Ducts of the Bronchial Vessels discover'd by *Ruyfch*, and which are only subservient to the Nourishment of the Membranes, Vesicles, and Vessels, which constitute the Fabric of the Lungs. Hence, in this Disorder, the Lungs are principally affected; tho' only as to their more external and superficial Part. Hence there is, in this Disease, a greater Difficulty of Breathing than in a spurious Pleurisy; there is, also, a Discharge of bloody Spit, and the Disease is terminated by Expectoration. It is, also, accompanied, for the most part, with a Fever, tho' of a more acute Kind than that attending a spurious Pleurisy. There are, also, Pains in the affected Side, tho' not so intense, nor capable of being augmented by the Touch; for the Pleura, which lines the Thorax, is, also, drawn into Consent; both because the exterior Pulmonary Membrane is form'd of the Pleura, and because in most Men the Lungs, at least on one Side, adhere to the Pleura.

In a Peripneumony the Pain is rather tense, obtuse and pressory, than acute, and is propagated to the Back and Scapulæ: But there is a greater Anxiety and Difficulty of Breathing, and a more painful Expectoration, in which Spit of various Colours is discharg'd; for, in a Peripneumony, the Vessels of the Lungs, which convey the Blood from one Ventricle of the Heart to the other, are affected, infarcted, and obstructed, by a thick Blood, which, in Process of Time, assumes a solid Nature. For this Reason it is attended with greater Danger, and soon destroys those whom it seizes, especially if they are old, or if seasonable Venesection is omitted.

But tho' the Antients were not very accurate in distinguishing the Inflammations of the Thorax; yet because this Misfortune was very frequent in those Parts where *Trallian*, *Arctæus*, *Caelius Aurelianus*, and others of them, liv'd, a more exact History of the Symptoms of the Disease may, perhaps, be drawn from them than from the Moderns. But, among all the others, *Arctæus* seems to be the most distinct, who, in *Lib. 1. Cap. 10. Acut.* speaks in the following manner: "It is accompanied, says he, with an acute Pain ascending to the Throat, and an intense Heat: But the Pain, in some Patients,

"ients, extends to the Back and Scapula; a Difficulty of Breathing, also, ensues; Watchings, Loathing of the Aliments, a Redness of the Cheeks, a dry Cough, a Spit which is discharged with Difficulty, pituitous, pretty bloody, or yellowish. It is still worse, if a bloody Spit is not expectorated, and if the Patients are delirious or comatous." The same Author, also, informs us, that the Patients die or recover within the seventh or fourteenth Day, according as the Symptoms are violent, or gentle; or, if the Disease is protracted to the twentieth Day, that they are seiz'd with an Empyema. He adds, that the Disorder is most frequent in the Winter, less frequent in the Autumn, still less in the Spring, unless it should happen to be very cold, and least of all frequent in the Summer. He, also, tells us, that old Persons are most subject to this Disorder; whereas Children are either not at all subject to it, or not endangered by it, because their Bodies are moist, rare, and subject to copious Exhalations.

But since the violent Symptoms, which accompany a pneumonic Fever, are only founded on the Inflammation of the pulmonary Substance, we may readily perceive, that all things which hinder the free Circulation of the Blood through the Vessels of the Lungs, either by an Obstruction of the Ducts, by a Redundance of thick Matter, or a strong spasmodic Constriction of them by a thin, acrid Matter, are subject to generate this inflammatory Fever, especially when many antecedent, procaccatic, and remote Causes concur to the Production of this Effect. Those, therefore, who by gross and impure Aliments, the Use of spirituous Liquors, a Defect of Moisture and Exercise, have a large Quantity of thick Blood, which Sydenham, by way of Distinction, calls pleuritic Blood, easily, when other procaccatic Causes concur, fall into this Disorder; especially when the Body, by intense Exercise, hard Labour, warm Baths, or the drinking of spirituous Liquors, is rendered excessively hot, and afterwards exposed to a cold Northern Air; or, which is still worse, when cold Liquors are greedily drank. This Disorder is, also, quickly generated in sanguineous and plethoric Habits, by the Omission of seasonable Venesection. The same Misfortune happens to Women, whose Menstrues flow either immoderately, or too sparingly, or if, through Age, they are entirely suppress'd; as, also to Men, in whom the hæmorrhoidal Flux is either not duly carried on, or entirely suppress'd.

I have frequently observed, that Gripes, Spasms, colical and hypochondriacal Pains, accompanied with a violent Costiveness, have been succeeded by Inflammations of the Lungs, especially in plethoric and cacochymic Habits; for such is the Nature and Quality of these, that by compressing the Vessels, especially the Veins, they hinder the free Circulation of the Blood, render its Motion greater, and its Congestion, especially to the superior Parts, more copious. By which means it afterwards happens, that the Blood is not only urg'd to those Ducts, which, on account of the Smallness of their Diameters, generally neither receive nor convey the Blood; but, also, remaining impacted in these narrow Channels, interrupts the equable Progress of the Blood, and disturbs all the natural Functions. And because Persons very subject to Hæmorrhages are, for the most part, of sanguineous Habits, and subject to spasmodic Strictures in the Abdomen, hence it is, that young Persons, who have been early subject to large Hæmorrhages from the Nose, Spittings of Blood, or the Hæmorrhoids, occasional Causes concurring, easily fall into Pleuritis or Peripneumonies. 'Tis, also, confirmed by frequent Experience, that Inflammations of the Breast have been produc'd by repelling Itches; by preposterously stopping simple or dysenteric Fluxes; by consolidating old Ulcers; by suppressing a critical and usual Sweat of the Feet, or of the whole Body; and by the Repulsion of chronic purple Eruptions by external Cold; for this recrementitious Matter, of an acrid and caustic Quality, being impacted in the nervous Coats of the Lungs and Thorax, by reason of the spasmodic Strictures it excites, hinders the equal and due Circulation of the Blood. Nor is it uncommon for an Inflammation to be produced in the Thorax after the Small-pox and Measles, since these Disorders always leave some Fault or Weakness in the Lungs.

Besides, in consequence of the preternatural Constitution of the Air and Weather, it frequently happens, that Pleuritis, both of the true and spurious Kind, rage epidemically. This principally happens in a long and cold Winter, as, also, when a warm Air, and a light State of the Atmosphere, is suddenly succeeded by a cold, northerly, and highly elastic State of the Air; and when this last happens, especially in the Spring and Autumn, Fevers, both of the catarrhal, malignant, benign, and pleuritic Kind, rage. After a severe Winter, I have observ'd crude Pleuritis raging, in which the Spit hardly appear'd on the ninth and tenth Day. These Pleuritis are, by Hippocrates, Lib. 2. de Morb. called dry Pleuritis; and, during the first Days of these, the Patients are greatly tormented and wasted with a racking Cough, so that the Discharge of Spit proceeding, the

Patients are hardly able to bear the Expectoration, and with great Difficulty recover: There are, also, endemial Peripneumonies; for it is certain, that a Peripneumony is a very frequent Disease, and proves mortal to many, in *Westphalia, Pomerania, Sweden, Denmark, and Russia*. This, in my Opinion, is owing to the gross and coarse Food, and the Coldness of the Air, in these Northern Climates.

In no Fevers have I more accurately observed the Crises, than in a Pleurisy and Peripneumony; for, in young and robust Persons, a bloody Spit generally appears about the fourth Day; and, on the seventh, the Disorder is spontaneously terminated by a profuse Sweat. In phlegmatic and languid Constitutions, as, also, when the Disorder has a deep Seat in the Lungs, there is a Termination of the Disease on the eleventh or fourteenth Day, partly by Expectoration, and partly by Sweat, the Pulse becoming softer, the Sleep calmer, and the Strength being increased. In an imperfect Crisis, a Sweat, tho' not sufficient, also, appears on the critical Days; for which Reason, it neither relieves the Patient, nor terminates the Disease: And, when the Disorder continues to the twenty-first Day, a dangerous Abscess of the Breast is to be dreaded. It is, therefore, a good Sign, when the Expectoration from the Lungs succeeds well, carrying off, on the fourth Day, a viscid, bloody, then yellow, and, sometimes, a purulent Matter; and the more expeditious the Spitting is, the greater Hopes there are of a Recovery; and, on the contrary, the slower it is, the less Hopes of Safety are to be entertained; only, we are to take care, lest, when the Disease terminates by a copious Expectoration of virulent Matter, it should be succeeded by a Phthisis, or an Hætic: But frequent Stools are never safe: Urine without a Sediment is a bad Sign; as, also, profuse Sweats happening not on the critical Days. But when, on the eleventh or twelfth Day, a moderate Looseness happens, in which a purulent Matter is sometimes discharged, a Recovery is not to be despair'd of. When, also, about the fourth Day, there is an Hæmorrhage from the Nose, it affords singular Relief.

No Inflammation so readily occurs as a pneumonic Fever, especially when deep-seated, and attended with an Abscess. I have known some, who, being hardly recovered, have, by an irregular Diet, and the liberal Use of rich Wine, relapsed in a Month's time; and the Event generally proves fatal. I have, also, known such an Inflammation return twice, thrice, four times, or oftener a Year, in the same Part in which it first appear'd. So that those who have once labour'd under this Disorder, ought always carefully to guard against a fresh Attack, by an exact and proper Regimen.

Those who die of an Inflammation of the Lungs, are suffocated, because they can no longer throw up, by Cough, the Matter lodged in the Vesicles of the Lungs, and the Ducts of the Bronchia. In dissecting such Subjects, the Lungs are found inflated, hard like the Liver; and, because the Vessels are infarcted with a thick and tenacious Blood, they subside when put into Water. I have, also, seen the Lungs full of small Abscesses, and hard Tubercles, whilst the Pleura was inflamed, sphacelated, and adhering to the Substance of the Lungs. I have, also, known Instances, in which polypous Concretions found in the Pulmonary Vein, as, also, in the large Artery, have hindered the free Circulation of the Blood through the Lungs, and brought on an Inflammation, by reason of the too large Quantity of Blood convey'd thither.

Since, therefore, a Stagnation of the Blood, which hinders its equal Circulation, is the immediate Cause of this Disorder, the principal Intention of Cure is, to render it capable of circulating freely; for obtaining which End, the following Measures are to be taken: First, the farther Stagnation of the Blood is to be prevented. Secondly, the Lentor observable in the Blood of pleuritic Patients is to be diluted and colligated. Thirdly, when the Part affected, and rigid by Spasms, Pain, and a copious Afflux of Humours, is soften'd and relax'd, that thus the impacted Matter may be again wash'd away, and put in Motion by the Action of the arterial Blood: And, fourthly, when the Excretion of the viscid, sanguineous, and purulent Matter, lodged in the Bronchia of the Lungs, is facilitated by Spit, and, by that means, an Abscess, and the Generation of an Empyema, prevented.

In order to prevent the Increase of the Inflammation, nothing is more useful than Venesection; which is the more beneficial, the sooner it is administered. For this Purpose, let a Vein be opened in the Arm of the affected Side, and a large Quantity of Blood taken away, if there is a considerable Plethora, and the Blood flows with a considerable Impetus: But if a viscid and glutinous Serum floats in the Blood, and the Respiration continues difficult, the Venesection is boldly to be repeated, especially if there is a Suspicion of a deep inflammatory Stagnation.

Among internal Applications, those are most beneficial, which render the Blood, Serum, and Humours, thin and fluid, colligate those which are thick and inspissated; and, at the same time,

time, promote a gentle Diaphoresis. The most proper things for obtaining these Ends are, an Infusion of Paul's-betony, Chervil, and Sage, each two Handfuls; Liquorice-root, one Ounce; and Fennel-seeds, two Drams; of which let the Patient frequently drink four or five Dishes. Then let him use the following discutient and diaphoretic Mixture.

Take of the Waters of Carduus Benédictus, Scabious, Elder-flowers, and the Egyptian Thorn, each two Ounces; of Treacle-water, half an Ounce; of distilled Vinegar, one Ounce; of Crabs-eyes, one Dram; of diaphoretic Antimony, two Scruples; of the Syrup of red Poppies, or of Saffron, (prepared of dissolved Sugar, an Ounce; and of Extract of Saffron, eight Grains) two Drams. Of this Mixture two or three Spoonfuls are, every two Hours, to be exhibited alternately with the following Powder.

Take of diaphoretic Antimony, or of the Cerus of Antimony, of Crabs-eyes, of the Jaws of the Pike-fish, of the Tooth of the Sea-horse, and of the Solution of Crabs-eyes, each one Dram; of pure Nitre, two Drams; and of Cinnabar, one Scruple: Make into a Powder, of which, half a Dram is to be taken for a Dose.

When the Patient is languid, and the Pleurisy epidemical, and of a bad Kind, to the foregoing Powder we are to add Camphire, which powerfully resists Inflammations, and hinders them from spreading; only we are to observe, that half a Grain is sufficient for a Dose; and that the Patient is to drink after it an Emulsion prepared of the Four greater cold Seeds, Ladies-thistle, Pine-kernels, and a Decoction of Barley and Harts-horn.

The acute Pains are mitigated, and the rigid Fibres relaxed, by the almost continual Application of a Bladder full of a warm Decoction of emollient Ingredients, such as the Flowers of Elder, Melilot, Mullen, Chamomile, Mallows, and white Lilies, the Four carminative Seeds, and Saffron, boiled in Milk. *Aretaus*, therefore, in *Lib. 1. Acut.* in the Cure of a Pleurisy, prudently orders a Bladder full of warm Oil to be applied to the Part affected, provided the Fomentation is not of such a Weight as to increase the Pain. And, certainly, by this Topic, the Pain is considerably alleviated, the Respiration facilitated, and the peccant Matter prepared for Expectoration, which is greatly promoted by the following Linctus.

Take of the Oil of sweet Almonds, half an Ounce; of Sperma-ceti, two Drams; of Saffron, ten Grains; of the Syrup of Violets, and Sugar-candy, each half an Ounce: Make into a Linctus; of which some is to be frequently taken in a Decoction of excorticated Oats, or in sweet Whey.

The principal Part of the Cure depends upon Venesection, concerning which *Aretaus*, in *Lib. 1.* has these Words: "In pleuritic Cases, no Delays are to be used; but we are to have recourse to the most powerful Remedy with all Expedition: For which Reason a Vein is to be open'd in the Arm the very first Day of the Disorder; and, when a moderate Quantity of Blood is taken away, the Patient is refreshed. Then, some time after, the Operation is to be repeated, if the Patient can bear it; if not, it is to be delay'd till the following Day." These Measures are not only useful in Youth, but, also, in old Age, because Persons in this last State abound more with a thick and tenacious Blood, which renders their Inflammations more fix'd, and worse to be discuss'd; for which Reason Venesection is, also, to be repeated in old Persons, if their Strength will admit of it. We are, above all things, to be careful, that the Quantity taken away bear a Proportion to the Strength and Quantity of Blood of the Patient; for, if too large a Quantity is taken, the Expectoration is not only hindered, but, also, the Stagnation of Blood to be dissolved more confirm'd, or the Disorder degenerates into a Sphacelus. But, if too small a Quantity is taken away, little Good is produced; the Blood, acquiring more Room, flows more impetuously to the Part affected; and the Stagnation and Inflammation are increased.

In a Pleurisy and Peripneumony, the Body is to be kept soluble, and the Intestines free from Spasms: This is the Advice of *Trallian*, and of *Hippocrates*, in *Lib. 3. de Morb.* where he tells us, "That, in the first four or five Days, the Body is to be rendered soluble; and so much the more, the slower the Fever, and the slighter the Pains are." For this Purpose, we recommend emollient, paregoric, and domestic Clysters, prepared with Oil of sweet Almonds, by which the Body is not only render'd soluble, but, also, the spasmodic Stricture of the Intestines is relaxed. *Aretaus*, also, justly observes, "That we are not to neglect Medicines applicable to

"the inferior Parts, such as Oil of Rue injected into the Anus of Men, and into the Uterus of Women." Which Experiment may be, also, made, if the large Intestines are spasmodically constricted, or in Cases where Women are afflicted with Spasms of the Uterus.

Trallian, in *Lib. 6.* in such inflammatory Disorders, greatly and justly commends Drinks prepared of Mulfum and Water, as, also, Cremer of Pusan, well boiled with sweet Almonds, and liberally drank. "It must, says he, be constantly exhibited warm, when Aliments, or other Potions, are given; for," adds he, "no other Medicine is found so beneficial to pleuritic Patients, even tho' the Fever is violent." *Hippocrates*, also, always commends his Pusan; and I myself from Experience affirm, that moistening Liquors, used tepid, are preferable to all other Medicines. But, in order to dilute the Humours, nothing is more beneficial than a Decoction of Oats, or Barley, with the Addition of a Quantity of Prussian Honey, and sweet Whey; and the larger Quantity of such a Liquor is taken, especially if the Body sweats much, the more salutary it proves.

As in all inflammatory Fevers, so especially in those of the pneumonic Kind, we are carefully to abstain from too warm a Regimen with respect to Bed, Chamber, and Drink: But we are, also, to guard against Refrigeration, and the Use of cold Liquors. In the Cure of this Disorder, none of those Medicines are to be used, which forcibly provoke Urine, Sweat, or Stools, lest the fine lymphatic Humours, by whose Assistance the Stagnation ought to be dissolved, should be drawn elsewhere; for *Hippocrates*, in *Lib. 3. de Morbis*, when speaking of Stools, justly informs us, "That, if, after the fifth Day, a large Quantity of Matter is discharged by Stool, it proves mortal, since, by that means, the superior Parts are dried, and the Spit not carried upwards. The Body must not, therefore, be too costive, lest the Fever should be acute; nor too soluble, that thus the Spit may be carried upwards, and the Patient's Strength preserved." But when two, or even four, Stools happen spontaneously, they are not to be checked.

In order to soothe the acute Pains, Anodynes and Opiates are generally commended: But they are to be abstain'd from, by those, especially if old, in whom the Humours are thick, and the Inflammation considerable. "We are, says *Trallian*, in such Cases, carefully to avoid Diacodium and Philonium; for they are dangerous, since they render the Humours difficult to be eliminated, impair the Strength, and render the Patient languid." But in young Persons, when the Pain is intense, we are not, except upon urgent Occasions, to exhibit stronger Anodynes, than Preparations of Poppies: Such as an Emulsion prepared of the Seeds and Syrup of Poppies, or the Diascordium of *Fracastrorius*, taking care, at the same time, always to mix nitrous and diaphoretic Medicines with them. Externally, in order to mitigate the Pains, and assist the Discussion, besides the things already recommended, a Fomentation, prepared with the warm Fat of a Capon, in an Ounce of which half a Dram of Camphire is dissolved, is useful.

Expectorating and sweet Substances are not to be too soon exhibited, that is, on the first Days; but only when the viscid Matter is concocted, moveable, and fit for Excretion; otherwise a greater Afflux to the Lungs is excited. Some recommend Sperma-ceti, taken in large Quantities, for dissolving the Blood: But I have observed, that this Medicine is more injurious than beneficial, on account of the Nausea it creates; nor, at the same time, is it of so dissolvent a Quality, as Vinegar mixed with Crabs-eyes.

When, on the critical Day, as it frequently happens unless the Physician imprudently raises Commotions, the Inflammation is terminated by a copious Sweat, which is succeeded by a freer Respiration, Ease of Body, and an Increase of Strength, we are still, for some time, to continue the Use of diaphoretic and diluting Medicines, but not to exhibit them so often. Particular regard is, also, to be had to the Method of Living, lest more should be eaten, than the weak Stomach is capable of digesting, that thus the Remains of the Disease may be consumed, and a Relapse prevented. *Hoffman*.

A PLEURISY.

A Pleurisy is said to be present, when the Patient labours under an acute, continual Fever, accompanied with an hard Pulse, an acute, pungent, and inflammatory Pain, which in Inspiration is greatly increased, but in Expiration, or during the Retention of the Breath, milder; as it is, likewise, when, without any Motion of the Thorax, Respiration is principally perform'd by the Assistance of the Abdomen: This Disorder is generally accompanied with a perpetual Cough, which excites such an intense Pain, as to endanger a Suffocation.

When, with these Symptoms, symptomatic Expectorations are made from the Lungs, the Disorder is call'd a moist Pleurisy; but, when such Expectorations are wanting, it is call'd a dry Pleurisy.

This Disorder affects all the Parts of the internal Integuments of the Thorax, the Whole of the Pleura, the Whole of the *Mediastinum*; and consequently, the anterior, posterior, right, left, superior, inferior, exterior, and deeper Parts, but especially the Sides, are affected by this Disorder.

When the Membrane internally lining the Ribs is the Seat of the Disorder, it is called a *true*, or *legitimate Pleurisy*: But, if the intercostal Muscles, and those lying above them, are farther affected, the Disorder is call'd a *spurious*, or *bastard Pleurisy*.

This Disorder principally attacks adult Persons of sanguineous Habits, those who eat and drink too copiously, who use violent Exercise, who are rarely afflicted with acid Eructations, and who are disposed to inflammatory Disorders in the Spring, especially, when an intense Heat suddenly succeeds a severe Cold; or, in the Winter, when excessively cold Winds blow: And, in such Cases, the Disorder is call'd an *idiopathic Pleurisy*.

But a Pleurisy arising from the Motion of the Matter of a previous inflammatory Disorder, and its Translation to the Parts already mention'd, is call'd a *symptomatic Pleurisy*.

This Disorder, for its antecedent Cause, has

1. Every thing capable of generating an Inflammation of any Kind.

2. Every thing which, in a particular manner, determines this general Cause to the Pleura; such as the Nature of the Patient, according as his intercostal Arteries are narrower or harder; a previous Disease, which leaves a Disposition to the same Misfortunes, such as a Scirrhus or Callus of the Pleura, or an Adhesion of the Lungs to that Membrane; the Nature of a raging epidemical Disorder; a cold Air convey'd forcibly thro' small Chinks to the naked Body, previously over-heated by Exercise, or the Influence of the Fire; cold Liquors copiously and suddenly drank, when the Body is over-heated; and cold Northerly Winds in the Winter-time.

3. A Translation of the inflammatory, ichorous, or suppuratory Matter, before lodged in the whole Body, or in some particular Part, to these Parts of the Thorax; as in the Measles, the Small-pox, ulcerous Tumors, large and broad Ulcers, which suddenly disappear in consequence of an Absorption of the peccant Matter into the Veins.

This History of the Disease, together with an Account of its several Stages, and a Dissection of those who die of it, sufficiently evinces, that it is an Inflammation of the sanguineous Kind in those Parts of the Thorax already mentioned; and generally arising from a preceding acute Fever.

Hence we may easily deduce the History of this Disease; for it often begins with a pretty keen Appetite for Aliments; a Coldness and Horror; a Weakness, Lassitude, and Fever; in Process of Time, it is attended with a moderate Heat, which gradually becomes excessively intense; a Thirst; a total Loss of Appetite; a Pain at first mild, but gradually becoming intolerable; and a considerably injured Respiration: At its Height it is attended with a violent, tho' less perceptible Fever, on account of the Respiration, which is check'd, and almost suffocated, by reason of the intense Pain. Hence the Physician is often shamefully mistaken; and the Disorder terminates in various Manners, which depend upon various Causes, but especially on the Diversity of Changes to which Inflammations are subject, specified under the Article INFLAMMATIO; on the Nature of the Parts affected; and a due Consideration of the following Circumstances: Whether there are more or fewer Parts affected at once? Whether the Impetus of the Blood is violent? Whether the Malignity of the primary Disorder is great, and accompanied with a Train of unlucky Symptoms? And especially, whether the Respiration, Pulse, and Excretions, recede from their natural State?

A Pleurisy, like other Inflammations, terminates in the Recovery of the Patient, some other Disorder, or Death.

This Disorder terminates in the Recovery of the Patient, either by the Assistance of Nature, or of Art, whilst the Disease is as yet simple and recent.

It is cured by the Assistance of Nature, either by means of a benign Resolution, or by a Concoction and Excretion of the peccant Matter.

A Pleurisy is cured by Resolution, when the Humours are mild, their Motion regular, the obstructing Cause not too obstinate and the Obstruction small; for, in this Case, the Benignity of the Symptoms indicates nothing to be done, but only to alleviate the Disorder by light Aliments, mild Aperients, and softening Fomentations.

A Pleurisy is cured by the Concoction and Excretion of the peccant Matter;

1. When, by the hæmorrhoidal Veins, a proper Liquor is in a due Quantity, and at a proper time, discharged.

2. When a copious, thick, hypostatic, strangurios, red Urine, with a white Sediment, is discharged, to the Relief of the Patient, before the fourth Day; such a Discharge of Urine, also, cures a dry Pleurisy.

3. When, before the fourth Day, copious, bilious, and yellow Stools, are discharged, to the Relief of the Patient.

4. When ichorous, purulent, fistulous, or long-flowing Abscesses begin, before the sixth Day, behind the Ears, or on the Legs.

5. When the Pain of the Side is translated to the Shoulder, Arm, or Back, and accompanied with a Stupor, Pain, and Heaviness of these Parts.

6. When the Spit is, in some measure, freely discharged, affords Relief, is unattended with a Coryza, copious at first, resembling Pus, soon after white, appears before the fourth Day, is continued, or returns immediately after its Suppression; for, in these Cases, the Patient recovers, either on the ninth, or the eleventh Day.

When the Signs, accurately observ'd, indicate, that the now described State of a Pleurisy is present; then the Physician is to make no Alteration, but suffer every thing to remain as it is. For this Reason, neither Venesection, nor Evacuation, nor any other Change, are to be attempted. The Patient is, therefore, first, to use soft light Food, Rest of Body and Mind, a temperate hot and moist Air, spontaneous Sleep, or such as is procured by gentle Narcotics, softening, thin, and gently aperient Medicines. Then, secondly, each particular Evacuation, which gives Relief, is to be promoted.

When, therefore, in a Pleurisy, a proper Liquor is in a due Quantity, and at a seasonable Time, discharged from the hæmorrhoidal Veins, the Anus is to be fomented with emollient, laxative, and aperient Fomentations; or, if these should prove ineffectual, Leeches are to be applied.

When the Urine is copious, thick, hypostatic, and such as has been already described, Fomentations, of the same Nature with those now recommended, are to be applied to the Kidneys, Perinæum, and Hypogastrium; lenitive and diuretic Aperients are to be used; the Patient is to be kept in an Air somewhat cool; Sweating, and other Evacuations, are to be avoided; and mild diuretic Clysters to be injected.

If, in a Pleurisy, yellow and bilious Stools are copiously discharged before the fourth Day, to the Relief of the Patient, the like emollient Fomentations are to be applied to the whole Abdomen, laxative Clysters are to be injected, and a laxative Regimen prescribed.

When ichorous, purulent, or fistulous Abscesses appear before the sixth Day, behind the Ears, or on the Legs, and if the Part affected is discover'd, then the Patient is to use a light, fluid, gently aromatic, and somewhat vinous Diet, to remain in a State of Rest, and to have emollient and gently aperient Medicines prescribed him. The Part, also, to which the Matter is determined, ought to be treated with Suction, Relaxation, stimulating and aperient Medicines, that thus it may resist less, and attract more. Then somewhat more strong Aperients may be used; as, also, saponaceous and hepatic Substances; to which may be added Clysters and Fomentations consisting of the same. Then the Aperture made in the Abscesses is to be kept open for some time, by suppurating Medicines.

When the Pain is translated to the Shoulder, Arm, or Back, and attended with a Stupor, Pain, and Heaviness of these Parts, besides the things commonly prescribed, the Parts to which the Pain is translated, are to be fomented with emollient Substances, rubbed gently with hot Cloths, and stimulated by Plasters, in some measure, attractive.

When the Spit is, in some measure, freely discharged, affords Relief, is unattended with a Coryza, is copious, at first resembling Pus, but soon becomes white, or appears before the fourth Day, is either continued, or returns immediately after its Suppression, then the whole Treatment is the same as in a true Peripneumony. See the Article PERIPNEUMONIA.

By Art, a Pleurisy may be cured without any other Disease, especially by the following Method: If a recent Pleurisy, before the End of the third Day, is accompanied with violent Symptoms of the dry Kind, and found in a robust, exercised, and dry Habit, without any Hopes, or Presence, of a Resolution, or of the Concoction and Excretion of the peccant Matter; then,

1. A large Quantity of Blood is speedily to be taken from a large Vein, with a large Stream, and from a large Orifice, the Patient, in the mean time, lying at Rest on his Back, and quickening his Respiration, as the Blood flows, by Coughing and Sighing. The Part affected is, in the mean time, to be fomented, and gently rubbed. The Discharge of Blood ought to be continued, till the Pain is considerably remitted, or the first Signs of a Deliquium brought on. The Venesection is to be repeated, according to the Return of the Symptoms it was intended to remove. The Absence of the Pellicle, formed upon inflammatory Blood, determines when 'tis time to stop. And,

2. We are immediately to use Fomentations, Baths, hot Applications,

lications, Liniments, and Plasters, to relax, resolve, to mitigate, and avert the Pain. See INFLAMMATIO.

3. Then such Medicines are to be exhibited, as dilute, resolve, relax, mitigate, refrigerate, and alleviate, or soothe Pain; which, when taken warm, in a moist Form, in a large Quantity, and determined to the Part affected, are highly beneficial, and may be varied, according to the Symptoms; always taking care, that such Ingredients be chosen, as resist Putrefaction.

4. A light, soft, refrigerating, and antiphlogistic Diet is necessary.

5. Every thing, which dries, heats, or increases the Impetus of the Blood, is to be avoided; such as the Heat of the Air, of the Sun, of the Fire, or of the Bed; as, also, heating Aliments and Medicines. A Fomentation may be prepared in the following Manner:

Take of the Leaves of Mallows, Marshmallows, and Pellitory of the Wall, each two Handfuls; of Garden-poppy, and Henbane, each one Handful; of the Leaves of Elder, Chamomile, and Melilot, each three Ounces: Boil in sweet Milk, for a Fomentation.

Liniments, for anointing the Sides, are these following:

Take of the Sugar of Lead, four Drams; of Vinegar, six Drams; and of the Oil of Roses by Infusion, one Ounce: Make into a Liniment; to be applied to the Side.

Or,

Take of the Unguentum Populneum, two Ounces.

Or,

Of the Emplastrum Diapompholygos, a sufficient Quantity: Spread on Leather, and apply for the same Purpose.

Take of the Leaves of Colts-foot and Mallows, each two Handfuls; of the Leaves of wild Poppies and Marshmallows, each half a Handful; of the Roots of Parsley and Sarsaparilla, each three Ounces; of bruised Linseed, four Drams; of the bruised Seeds of Lettuce and Ladies-thistle, each one Ounce: Boil in three Pints of Water, of which let the Patient drink two Ounces every Hour.

Take of the Four greater and smaller cold Seeds, each three Drams; and of white Poppy-seeds, two Ounces: Make into an Emulsion with Barley-water; with every fourteen Ounces of which mix, of the purest Nitre, one Dram and an half; and of the Syrup of Maidenhair, one Ounce. Let the Patient drink one Ounce every Hour, or every Quarter of an Hour.

Take of the distilled Waters of the Flowers of the red Poppy and Elder, each eight Ounces; of the distilled Water of Borrage, five Ounces; of Crabs-eyes, two Drams; of Sal Prunellæ, one Dram; of the Syrups of the Flowers of red and white Poppies, each one Ounce: Mix, and let the Patient drink two Ounces every Half-hour.

How long these Measures are to be persisted in, or repeated, is to be known from the Obstinacy of the Disease, its Remission, or its Change into a State of Health and Recovery.

A Pleurisy degenerates into other Disorders, first, when the inflamed Part suppurates; which we know, first, from the general Signs of a Suppuration, specified under the Article INFLAMMATIO; secondly, from the Obstinacy of the Pain, Cough, and Fever, beyond the fourth Day; thirdly, from the Absence of the Sign of a Resolution and Cure; and, fourthly, from a Neglect of the proper Measures of Cure.

That an Abscess is already forming, is known from the common Signs specified under the Article INFLAMMATIO; but especially, in this Case, from the often recurring Horror, without any manifest Cause, and the Signs specified in the Article PERIPNEUMONIA. Hence it is, also, known, when an Abscess is actually formed; which sometimes is evacuated by Spit, thro' the Lungs.

But such an Abscess is sometime broken by its own Pus, which drops into the Cavities of the Breast; whilst the Ulcer, as new Pus is formed and accumulated, fills the whole Cavity of the Breast, and consumes the whole Body. That such a Misfortune has happened, may be known from the preceding Signs: From the Duration of the Misfortune beyond the seventh Day; from the sudden Remission of the Symptoms, and their quick Return. Hence arises a Phthisis.

When, therefore, by the Signs already enumerated, we know that the Inflammation is forming into an Abscess, the Part, before painful, when known, is to be corroded by Caustics; an Incision is to be made quite to the Pleura, and kept open by suppurative Medicines, that the Matter, being forced outwards by

the Action of the Lungs, may be discharged from the Pleura; and prevent an Empyema; then the Part is to be softened, till it is quite cleansed.

But if there are Signs, that, the Abscess being broken, the Pus has already form'd an Empyema, the Thorax is forthwith to be opened, the Pus eliminated, and the Wound cured by proper Regimen and Medicines. See INFLAMMATIO and EMPYEMA.

A Pleurisy, also, degenerates into some other Disease, when, for Instance, the Part affected becomes scirrhus, or callous, or when the Lungs adhere to the Pleura; and, when this last Misfortune happens, there is produced an Asthma, a Dyspnoea, and a dry Cough, especially after Eating or Exercise; from which Signs the Disorder is known, if they are present without the Signs of an Abscess or Empyema, already specified; and, especially, if they continue long, without any great Increase of the Disorder.

This Misfortune, when known, is either absolutely incurable, or to be removed by abstemious Living, Exercise, a free Air, in the Country, violent and often-repeated Riding.

Such an Inflammation, also, degenerates into a Gangrene, first of the Side, and then of the Lungs, by reason of the Contiguity of the latter with the former.

This last-mentioned Disorder arises, either from the Violence of the Pleurisy, or from the acrid and putrid Matter accompanying it.

That a Gangrene of the Lungs is about to happen, or is already begun, may be known from various Circumstances: If, for Instance, the Spit is purulent, and somewhat bilious; round, purulent, and somewhat bloody, black, and fuliginous, dirty, or fetid; if there is a great Noise in the Breast, accompanied with a Sadness of the Countenance; if the Eyes are of a yellowish-red Colour, full of Sordes, and dim-sighted; or if the Spit is at first various; then the Patient often dies on the third or fifth Day: If there is a Stertor, none, or a difficult Expectoration, a languid Pulse, and an high-coloured Urine; if there is a Flux, the Matter of which is liquid, fetid, putrid, and symptomatic; if a violent Peripneumony comes on; if a second Paroxysm succeeds the first; if the Blood is highly florid, when flowing from an opened Vein, and without an inflammatory Pellicle, though it comes from a large Orifice, with a full Stream, and is received into a clean Vessel; if the Spitting is suppressed, whilst the Dyspnoea remains; or is increased, and accompanied with Pain, Heaviness of the Breast, an hard, small, quick Pulse, and an intense Heat; for, when these Symptoms are increased on the fifth Day, they prove mortal on the seventh; if the Urine is highly red, and dark-coloured, with a various and indistinct Hypostasis, the Disorder proves mortal within fourteen Days: If the Hypostasis is black, or fuscous, the Disorder proves mortal sooner: If the Pleurisy, being at first mild, is increased on the fifth or sixth Day, the Patient is in Danger on the seventh and twelfth, and are rarely cured, till after the fourteenth; if the Back, Side, and Shoulders are highly red and painful; and if there is a Flux, of which the Matter is green, and highly fetid.

If the Pleurisy is of the dry Kind, on account of the Defect of Strength, the intense Pain, the Unfitness of the Matter for Expulsion, the excessive Contraction and Crispation of the Vessels, and the excessive Use of hot Substances, the Pain, at the same time, tending to the superior Parts; if the Tongue is at first, dry, sordid, livid, or black, with a black Blister on it; if all or most of these Signs happen, the Disorder, which is generally mortal of itself, is not easily cured; but, for the most part, destroys the Patient by a Gangrene of the Part, either in the Side, or in the Lungs contiguous to it.

But when these Signs indicate, that such a Misfortune is already threatening the Patient, the most powerful Remedies are, without Delay, to be used; nor are we to trust to the Assistance of Nature, nor the Influence of gentler Medicines, provided the Patient has a sufficient Degree of Strength remaining.

In this Case, therefore, deep Eschars are forthwith to be excited in the Part affected with the actual Caustery; then they are to be covered with strong, cleansing Medicines, and kept continually warm with penetrating Fomentations; then large Quantities of strong, diluting, aperient, and antiseptic Liquors are to be taken; for by these, if by any, the Severity of the Disorder will be mitigated: For this Purpose,

Take of the Leaves of Scordium, Jack-by-the-hedge, and white Horehound, each two Ounces: Boil in two Pints of Water; with which mix, of the Oxyssel of Squills, eight Ounces; of Nitre, three Drams; and of Treacle-vinegar, one Ounce: Of this Mixture let the Patient, every Quarter of an Hour, take two Ounces as warm as possible.

But if the Violence of the inflammatory Cause produces the most severe pleuritic Symptoms, neither to be removed by the Assistance of Nature, nor by any antipleuritic Medicine, and if these Symptoms are suddenly removed without a Cause, so far

far as they depended on the Inflammation, the Pulse remaining quick, small, and intermittent, and the Sweat being small and cold; it is obvious, that a Gangrene has already seized the inflamed Parts. Hence a Delirium, and soon after Death, happens, especially if the Thorax is of a livid Colour. The same Thing happens, if the Patient, who expectorates a somewhat bilious Spit, is relieved of his Pain, without any manifest Reason; for, in this Case, a Delirium, the Prefage of Death, produced by a Gangrene, is present.

A Pleurisy terminates in Death, when its Causes are so violent, that the Pain produced, suppressing all Motion of the Thorax, soon creates a mortal Peripneumony, by stopping the Circulation of the Blood.

Hence the Reason is obvious, why a Peripneumony succeeds every violent Pleurisy: Why a Pleurisy is generally mortal to old Persons, Child-bed and pregnant Women: And why the Swathing of the Thorax with a Bandage so alleviates the Disorder, as to render it tolerable. *Boerhaave's Aphorisms.*

PERIPSYXIS, *περίψυξις*. The same as PERFRICTIO.

PERIPTOSIS, *περίπτωσις*. A Chance, or fortuitous Accident, by which Remedies for Diseases are sometimes discovered.

PERIPYEMA, *περιπύημα*. A Collection of Matter, surrounding any Part.

PERIRRHEDES, *περιρρέδες*. Bent or broke every Way, or both Ways, or in every Direction. It, also, imports, sprinkled, or irrigated all over. *Hippocrates.*

PERIRRHEPSIS, *περιρρέψις*. The Declination of a Bandage, when it recedes from its due Situation, either to one Part, or to another. *Hippocrates de Officina Medici.*

PERIRRHOEA, *πειρροία*, from *περιρρέω*, to flow from every Part. A copious Flux of the Humours, or morbid Matter, from all Parts of the Body, to the proper Emunctories, in order to their Discharge; or, rather, the Discharge itself.

PERISCELES, *περισκελές*. An Epithet for a Medicine in *Hippocrates*, importing, very hard, irritating, or pungent.

PERISCEPASTRUM. See CATHOLCEUS.

PERISCYPHISMUS.

This Operation, which, according to the Etymology of the Word, imports an Incision round the Cranium, is performed on those, who are afflicted with copious Defluxions on the Eyes, supplied by a large Number of deep-seated Vessels. During this Disorder, the Patients Eyes are extenuated, small, their Sight weak, and their Angles corroded; the Eyelids are exulcerated, and the Hairs fall from them; thin, acrid, and hot Tears are discharged; and an acute and deep-seated Pain of the Head afflicts the Patient, who, also, sneezes in a violent Manner, without Interruption. We are, therefore, in this Case, to shave the Head; and, avoiding the Temporal Muscles, to make a transverse Incision from the Left to the Right Temple: But let the Incision be confined to such Parts, as are possessed of no great Degree of Motion: Thus, for Instance, let it be made a little above the Forehead, taking care, at the same time, to avoid the coronary Suture. *Leonides* orders the Incision to be made in the Middle of the Forehead. When the Bone is denuded, we are to separate the Lips of the Incision by means of Tents, or a large Quantity of Lint; but the Extremities of the Incision are to have proper Dressings applied to them, which are to be moistened with Wine and Oil. When the Dressings are removed, and the Inflammation declining, we are to rasp the Bone, till it begins to produce Flesh, and carry on the Cure by means of incarning Powders. Among which are, that prepared of two Parts of the Flour of Wheat, and one Part of Colophony, the Powder called *Pulvillus Capitalis*, and incarning Compositions of Pumice; for, when the Skin is rendered thick by a Cicatrix of this Kind, the Orifices of the Vessels are shut up, and, by that means, the former Defluxion to the Eyes is prevented. *Paulus Aeginet. Lib. 6. Cap. 7.*

PERISPHALSIS, *περίσφασις*, from *περισφάλλομαι*, to wander about. A Circumrotation of a luxated Bone, in order to its Restitution.

PERISSOSIS, *περίσσωσις*, from *περισσός*, redundant. A Redundance, or superfluous Plenitude of the Humours. *Hippocrates.*

PERISTALTICUS, from *περιέλλω*, to compress, or contract. The vermicular, spontaneous Motion of the Intestines, by which the Fæces are protruded towards the Anus, is called the *Peristaltic Motion*.

PERISTERON. A Name, in *Dioscorides, L. 4. C. 6.* for the *Verbena*, Vervain.

PERISTOLE, *περιστολή*. In *Hippocrates, de decenti Habitu*, it imports a modest and composed Dress, or Habit. But it, also, signifies the compressive Power of the animal Fibres, and the peristaltic Motion of the Intestines.

PERISTOMA. The villose Coat of the Intestines.

PERISYSTOLE. The Interval of Rest betwixt the *Systole* and *Diastole* of the Heart.

PERITERION. The perforating Part of the Trepan.

PERITEXIS, *περιτήξις*. A Colliquation.

PERITONÆUM, *περιτόναιον*, from *περιτένω*, to extend round.

After the Removal of the Muscles of the Abdomen, in Dissection, the first Thing that appears, is a very considerable membranous Covering, which adheres immediately to the inner Surface of the transverse Muscles, and of all the other Parts of this Cavity; and involves and invests all the Viscera contained therein, as in a Bag. This Membrane is named *Peritonæum*.

It is of a pretty close Texture, and yet very pliable, and capable of a very great Extension; after which it can recover itself, and be contracted to its ordinary Size; as we see in Pregnancy, Dropsies, Corpulency, and Repletion.

It seems to be made up, at least, of two Portions, one internal, the other external; which have been looked upon, by many Anatomists, as a Duplicature of two distinct membranous Laminae: But, properly speaking, the internal Portion alone deserves the Name of a membranous Lamina; as being the main Body of the Peritonæum; the external Portion is no more, than a kind of fibrous, or follicular Apophysis of the internal, and may be properly enough termed the cellular Substance of the Peritonæum.

The true membranous Lamina, commonly called the *internal Lamina*, is very smooth and polished on that Side, which is turned to the Cavity and Viscera of the Abdomen, and continually moistened by a serous Fluid, discharged through, almost imperceptible Pores.

These Pores may be seen, by spreading a Portion of the Peritonæum on the End of the Finger, and then pulling it very tight on all Sides; for then the Pores are dilated, and small Drops may be observed to run from them, even without a Microscope.

The Sources of this Fluid are not as yet sufficiently known. Perhaps it comes out by a kind of Transudation, or Transpiration, like that which we observe in Animals newly killed. The whitish Corpuscles, found in diseased Subjects, are no Proof of the Glands, which some Anatomists place there in the natural State.

The cellular Substance, or external Portion, of the Peritonæum adheres very closely to the Parts, which form the Infides of the Cavity of the Abdomen; and it is not every-where of an equal Thickness. In some Places it is in a very small Quantity, and scarcely any appears at the tendinous or aponeurotic Portions of the transverse Muscles, and on the lower Side of the Diaphragm.

In all other Places, it is thicker, and forms Cells expanded into very fine Laminae, which, in diseased Subjects, become sometimes so broad and thick, as to resemble so many distinct Membranes.

In some Places this Substance is every way like a Membrana Adiposa, being filled with Fat, as round the Kidneys, and along the fleshy Portions of the transverse Muscles, to which it adheres. It entirely surrounds some Parts, as the Bladder, Ureters, Kidneys, and spermatic Vessels; and it is, in these Places, improperly termed the Duplicature of the Peritonæum.

Besides these Differences in Thickness, the cellular Substance has several Elongations, which have been called *Productions of the Peritonæum*. Two of these Productions accompany and invest the spermatic Ropes in Men, and the vascular Ropes, commonly called the *round Ligaments*, in Women. There are other two, which pass under the Ligamentum Fallopii, with the crural Vessels, which they involve; and they are gradually lost in their Course downward.

To these four Productions of the cellular Substance of the Peritonæum, we may add a fifth, which is spread on the Neck of the Bladder; and, perhaps, a sixth, which accompanies the Intestinum Rectum. All these Elongations pass out of the Cavity of the Abdomen, and may be termed external, to distinguish them from others, that remain in the Abdomen, and are called *internal*.

The great Blood-vessels, that is, the Aorta and Vena Cava, are likewise involved in this cellular Substance of the Peritonæum. In a word, it involves immediately, and separately, all the Parts and Organs, which are commonly said to lie in the Duplicature of the Peritonæum.

The true Lamina, or membranous Portion, of the Peritonæum is connected, by the Intervention of the cellular Substance, to the inner Surface of the Cavity of the Abdomen; but it does not naturally accompany the external Elongations of that Substance; it only covers the Origin, or Basis, of these Productions, without any Alteration in its own Surface at these Places.

It has, nevertheless, Productions of its own; but they are very different from those of the cellular Substance; for they run, from without, inward; that is, they advance from the convex Side of the great Bag of the Peritonæum, into the Cavity of that Bag, some more, some less, and, also, in different Manners;

ners; as if the Sides of a large Ball or Bladder were thruff inward into the Cavity of the Ball or Bladder.

Of these internal Elongations, or Intropressions of the true Lamina of the Peritonæum, some are simply folded, like a Duplication; some are expanded, like inverted Bags, or Sacculi, to contain some Viscus; some begin by a simple Duplication, and are afterwards expanded into a Cavity, which contains some Organ; some are alternately extended in the Form of simple Duplicatures, and of Cavities; and, lastly, some form only a small Eminence on the inner Surface of the great Cavity of the Peritonæum.

Under the first Species of these Productions we may bring the membranous Ligaments of the Abdomen, such as those of the Liver, Colon, &c. We see the second Species in the external Membrane of the Liver; the third in the Mesentery; the fourth in the Mesocolon; and the fifth at the Kidneys and Ureters.

Besides the external Productions of the cellular Substance of the Peritonæum, it has the same Number of internal Elongations with the true Lamina, which lie between all the Duplicatures, and line the Infides, of all the Cavities, or that Side, next the Viscera, contained in them.

The Uses of the Peritonæum seem to be very evident, from its Description; and the principal Uses are, to line the Cavity of the Abdomen; to invest the Viscera contained in that Cavity, as in a common Bag; to supply them with particular Coats to form Productions, Ligaments, Connexions, Folds, Vaginae, and the like.

The fine Fluid, which transudes through the whole internal Surface of the Peritonæum, prevents the Inconveniences, which might arise from the continual Frictions and Motions, to which the Viscera of the Abdomen are exposed, either naturally, or by external Impulses.

I must here observe, that it is the common Custom to demonstrate four ligamentary Ropes, termed the umbilical Vessels, before the Peritonæum is opened, because they adhere to the Umbilicus, and three of them are really Vessels in the Fœtus, two umbilical Arteries, and one Vein.

Three of these umbilical Ropes, or Ligaments, are involved separately, and sustained by a Production, or Duplication, which the Peritonæum sends into the Cavity of the Abdomen, in the Form of a Falx. *Winslow's Anatomy.*

PERIZOMA, from *περιζωω*, to gird about. A Belt, or Truss.

PERLA. A Pearl. See CONCHA MARGARITIFERA, and MARGARITÆ.

PERNA. A Sort of Shell-fish. See PINNA.

PERNIO. A Chilblain, or Kibe.

Tumors of this Kind are produced, generally, in the Hands and Feet, by extreme Cold; and they are attended with Redness, Inflammation, Heat, pricking Pains, and an Inability of Motion in the Part affected. Sometimes Pustules appear, and then the Ulceration penetrates deep. The Humour emitted is sometimes a little fetid, and either resembles Pus, or Sanies. Frequently the Inflammation degenerates into a Sphacelus. From these Symptoms, in my Opinion, Chilblains may be reckoned a Species of Inflammation; and so much the more, as, like other Inflammations, they excite a Sense of Heat, and terminate in a Discussion or Separation, or degenerate into a Gangrene and Sphacelus.

Chilblains may be known by various Symptoms: 1. The common Appearances of Inflammation are to be observed. 2. It must be inquired, whether the Parts affected have suffered by extreme Cold, as in performing a Journey, or in military Expeditions and Sieges undertaken in the Winter. 3. If the Patient feels an itchy Sensation, attended with Heat, and a pricking Pain, and if the Part becomes stiff and insensible.

When the Chilblains swell and redden, if the Part retains Sensation and Motion, without a great Degree of Heat and Pain, the Disorder is mild. On the other hand, when the Chilblains are livid, and the Part is affected with a Stiffness, Numbness, and pricking Pain, there is great Danger of its degenerating into a Gangrene, or, at least, a deep Exulceration. When Pustules rise upon the Skin, like those after a Burn, they are certain Signs of an immediate Gangrene. Lastly, when the Sensibility of the Part is lost, and it becomes livid, soft, flaccid, or fetid, there is Reason to suspect a Mortification, or Sphacelus.

The principal Cause of Chilblains is certainly Cold; for, by a violent Degree of Cold, as in other Inflammations, the small Blood-vessels are not only constricted, but the Blood is, also, inspissated. Nor is there any Degree of this Disorder, but may be readily accounted for, as a Consequence of these Causes.

Naturalists are not yet unanimous with regard to the true Nature of Cold, which has generally been imagined to be only the Effect of a Privation of Heat; but I am rather of Opinion, that some acrid, rigid, hard, and saline Particles, which were

before rendered soft, subtle, and volatile, by the Heat, are again condensed and indurated by the Cold. Now, when these Particles insinuate themselves into the small Pores of the Body, they constrict the small Blood-vessels; and, upon their bursting, the Blood is inspissated, and stagnates. Hence, in my Opinion, it happens, that the Skin of the Face, Lips, and other uncovered Parts, becomes chapped, broken, and affected with a continual pricking Pain, by the Cold. The slower the Motion of the Blood, and the smaller the Degree of Heat in any Member, the more gently is the Blood impelled into the Vessels of that Member. So that there is no Cause of Wonder, that the Hands, Fingers, Feet, Toes, Heels, Nose, and Ears, are more subject to Chilblains, than the rest of the Body, which are sometimes milder, and sometimes more severe. Sometimes the Cold is so extreme, as to stop the Circulation of the Blood entirely over all the Body; which necessarily occasions the Death of the Patient, and he is commonly said to have perished with Cold.

Chilblains are almost always, in some Degree, dangerous; and the more the Part affected has suffered by the Cold, both the Violence of the Symptoms, and the Danger, are the more increased. The Danger is, also, greater, when a whole Hand, or Foot, has suffered by the Inclemency of the Cold, than when only a single Finger or Toe is affected. But the most troublesome Circumstance is, that those, who have once been afflicted with Chilblains, are almost every Year subject to Inflammations and Pains; or, in an extreme Degree of Cold, to malignant Ulcers, Chaps, and even a Gangrene. Lastly, when Chilblains are unskillfully treated, when they are removed from the Cold, and suddenly exposed to an Heat, or the Fire, or wrapt up in warm Cloths, there is the utmost Danger, that the Part will become black, soft, and putrid, and, having lost all Sensation, contract a Sphacelus.

Hence, then, it may appear, that the principal Part of the Cure consists in restoring the inspissated Blood to its former Fluidity and Circulation; and this Intention must be answered by a Method different from those used in other Inflammations. For warm Applications, which are beneficial, and even absolutely necessary, in other Inflammations, are found to be extremely pernicious in Chilblains. Nor is it safe to expose those, who have suffered by extreme Cold, to a Fire, or Heat; because the sudden Vicissitudes of Heat and Cold produce an immediate Mortification. It seems, therefore, much more safe and convenient, to bring the Patient into a cool or temperate Air, and to order him to exercise his Limbs continually, and then to be gradually introduced into a greater Degree of Warmth. When the Patient is too weak to exercise himself, let the Part affected be well rubbed with Snow, or cold Water, which will seem warm to him; by which means the acrid, saline Particles, sticking in the Pores, will be extracted, and the natural Circulation of the Blood restored. As soon as the Sensation returns, comforting Medicines are gradually to be applied, such as Spirit of Wine alone, or mixed with Treacle, Oil of Petre, and Balsam of Sulphur. When the morbid Part has been well rubbed with these Remedies, the Patient may be gradually brought to the Fire, or put to-bed, afterwards endeavouring to raise a gentle Sweat.

For this Purpose let the Patient gradually drink a few Glasses of warm Wine, boiled with Cinnamon and Sugar; for by this Method the Patient will revive, and grow warm, and the Circulation of the Blood will be restored. Nor will it be improper to give, alternately with the Wine, a little of the following sudorific Mixture:

Take of the Waters of Goats-rue, Rue, and Scordium, each two Ounces; of the Aqua Theriacalis, and the Aqua Vitæ Matthioli, each six Ounces; and of the Aqua Prophylactica Sylvii, half an Ounce; of the Mixtura simplex, or of the Tincture of Bezoar, two Scruples; and of the Syrups of Cinnamon and Cloves, each half an Ounce: Mix all together.

About three Spoonfuls of this Mixture should be given to the Patient every Quarter of an Hour, and the hot Wine as often, till the Sweat appear. If Wine cannot be readily had, Ale boiled with Cinnamon, Cloves, and a little Sugar, may be used. Draughts of this kind must be taken, till the Sweat be kept up for an Hour, or half an Hour, or according to the Circumstances of the Patient. It can scarcely be imagined, how expeditious and effectual this Method of Cure is, in the most violent Degree of this Disorder, even when it tends to a Gangrene. In milder Degrees of Chilblains, those Medicines may not, indeed, be absolutely necessary, but are, at the same time, extremely beneficial.

When the Chilblain tends to Suppuration, it ought to be treated like other recent Abscesses. First cleanse the Wound with a digestive Ointment, or the Unguentum Ægyptiacum; then

then dress it with the Oil of Eggs, and of Wax, and the *Peruvian* Balsam, or the Essence of Aloes and Myrrh; and, lastly, apply a Plaster of Lead, or of Litharge. The Oil of Myrrh per Deliquium may be beneficial; and, also, burnt Mice, if we may believe the *Ephemerides Naturæ curiosorum*. Lastly, Lime-water mixed with camphorated Spirit of Wine, may be, also, used very advantageously, if a Compress dipt in it be applied to the Ulcer, either alone, or after the Application of the Medicines above-recommended. But, if a Gangrene or Sphacelus appears, it must be cured as such.

Those who are subject to Chilblains every Year towards Winter, in order to prevent their Return, carefully anoint the Parts affected with Petroleum, or Oil of Turpentine, during the Winter: Or, if the Chilblains begin to appear again, apply to the morbid Heel or Finger, a Bladder dipt in the fore-mentioned Oils; but the Cold itself should always be carefully avoided, or defended against, with proper Cloths or Coverings. Consult *M. A. Severinus Diff. de Pernionibus in Lib. de Abscessibus. Heister's Surgery*.

PEROLIDUS. A Term used by *Paracelsus*, and *Helmont*, by which they understand the extreme Circumference of the Body of Air surrounding the Earth.

PERONÆUS MUSCULUS. A Name for three different Muscles, the first of which is the

PERONÆUS MEDIUS, VULGO PERONÆUS ANTERIOR.

This is a long Muscle, situated anteriorly on the middle Part of the Fibula.

It is fixed above by fleshy Fibres, to more than the middle third Part of the anterior or Outside of the Fibula, and to the neighbouring Part of the Aponeurosis Tibialis.

It is likewise fixed to a Production from the Inside of that Aponeurosis, which runs to the upper Part of the Tibia, and there serves for a middle Septum, between this Muscle and the Extensor Digitorum longus.

From thence it runs down, and forms a Tendon, which, going in the Direction of the oblique Line on the Fibula, passes behind the external Malleolus, and then through an annular Ligament common to it; and to the Peronæus Maximus; and is afterwards inserted in the Tuberosity, at the Basis of the fifth Metatarsal Bone, sending off a small Tendon to the first Phalanx of the little Toe.

PERONÆUS MINIMUS.

This is a small Muscle, commonly thought to be a Portion of the Extensor Digitorum longus, though it is easily separable from it.

It is fixed by fleshy Fibres in the lower Half of the Inside of the Fibula, between the two oblique bony Lines, on one Side of the lower Part of the Extensor Digitorum longus, to which Muscle it is simply contiguous.

From thence it runs down, contracting in Breadth, and passes, with the Extensor Longus, through the common annular Ligament, forming a flat Tendon; which soon separates from those of the Extensor, and is inserted near the Basis of the fifth metatarsal Bone.

It is distinguished from the two other Peronæi, by a Septum, or Production of the ligamentary Aponeurosis of the Tibia.

The Peronæus Medius bends the Foot; and hinders the Leg from falling back, in the same manner as the Tibialis Anticus. By its Insertion in the Tuberosity of the fifth Metatarsal Bone, it turns the Sole of the Foot outward, at the same time that it bends it, when it acts without the Assistance of the Tibialis Anticus; the Co-operation of which Muscle is likewise necessary to enable it to counterbalance the Force with which the Leg would be carried backward, when we stand upon one Foot.

The Peronæus minimus is an Assistant to the Medius, in the Flexion of the Leg, in preserving the Equilibrium of the Leg, and in turning the Sole of the Foot outward; neither can it perform the first two of these Motions uniformly, without the Co-operation of the Tibialis Anticus.

The uniform Flexion of the Foot furnishes an Example of all the three Kinds of Levers: Of the first, when we bend the Foot, while off the Ground, in which Case the Fulcrum is in the Articulation between the two Extremities of the Lever: Of the second, when we walk upon the Heels, or Toes; for then the Weight is between the Power and the Fulcrum: Of the third, when we raise a Weight by the Toes; for then the Power is between the Weight and the Fulcrum.

PERONÆUS MAXIMUS, VULGO PERONÆUS POSTERIOR.

This is a long penniform Muscle, lying on the Fibula.

It is fixed above, to the anterior and outer Part of the Head of the Fibula, and to a small Portion of the Head of the Tibia; then to the Outside of the Neck of the Fibula, to the upper Half of the external Angle of that Bone, and to the Aponeurosis Tibialis, which, at that Place, makes a Septum between this Muscle and the Extensor Pollicis.

From thence turning a little backward, according to the Direction of the Bone, it forms a considerable Tendon, which, run-

ning down behind the external Malleolus, passes through a kind of hollow Groove, and through an annular Ligament, common to it, and to the Tendon of the Peronæus Medius, which lies before it: It passes, likewise, through an annular Ligament on the outer and anterior Part of the Os Calcis, and under the small lateral Tuberosity sometimes found there.

Afterwards running through the oblique Groove, in the lower Side of the Os Cuboides, it is inserted in the Side of the Basis of the first Metatarsal Bone, and, also, a little in the Basis of the Os Cuneiforme Majus.

The fleshy Body of this Muscle cannot always be distinguished from that of the Peronæus Medius.

When the Peronæus Longus, or Maximus, acts alone, it may extend the Foot, hanging freely in the Air; but, then, this Extension is obliquely outward. Together with the Gastrocnemii and Soleus, it likewise changes their Direction to an oblique Extension outward.

This Muscle, and the Tibialis Posticus, acting without the Gastrocnemii and Soleus, may extend the Foot almost directly; but they can overcome but a very small Resistance. When it acts with the other two Peronæi, the Sole of the Foot is turned more or less directly outward, towards the external Malleolus. *Winflow's Anatomy*.

PERONE. The Fibula. A Bone in the Leg. See **CRUR**.

PERPESSIO, in the Spagiric Phrase, is the Treatment of Metals by Fire.

PERPETUATIO, in Chymistry, is a Reduction of any moveable and volatile Substance to a State of Rest.

PERSEA. Offic. C. B. P. 441. J. B. 1. 169. Raii Hist. 2. 1552. *Persea Arbor.* Ger. 1606. *Persea Arbor Clusii.* Park. Theat. 1514. *Prunifera Arbor, fructu maximo, pyriformi, viridi, pericarpio esculento butyraceo, nucleo unicum maximum, nullum officulum testis, cingente.* Cat. Jamaic. 185. Raii Dendr. 48. *Abavacaquabuitl seu Arbor Querciformis butyraceo fructu.* Hem. 89. Jons. Dendr. 424. *Abavacaquabuitl.* Lact. 226. *Pyro similis fructus in Nova Hispania nucleo magno.* C. B. P. 439. *Pyri facie Aguacat.* J. B. 1. 107. *Nicaragua pomum Nuce rotunda.* Ejusd. 1. 210. *Mala Americana pyri facie.* C. B. P. 433. **SPANISH PEAR.**

The Tree has the Appearance of a Pear-tree, is wide-spreading, and always green; the Leaves are like those of the broad-leaved Laurus: The Flowers, pretty like those of the Laurus Hexapetalus, and growing in Clusters: The Fruit, at first, resembles a Plum; afterwards becomes of an oblong Figure, like a Pear, of a black Colour, and a pleasant Taste, and containing an Heart-shaped Kernel, in Taste much like a Chestnut, or sweet Almond.

The Persea-tree is mentioned by *Theophrastus*, *Strabo*, *Pliny*, *Dioscorides*, *Plutarch*, and *Galen*. Some will have the Persea to be the same with the *Persica Malus*; but they are refuted by *Scaliger* at large, though *Theophrastus* calls both those Trees *Persea*. The Description given of it by this last Author differs in many Characters from that of *Clusius*, given above, who never saw but one Tree, and that near the City *Valentia* in *Spain*, which was supposed to be brought thither from *America*.

Some Authors have written, as *Dioscorides* tells us, that this Tree, in *Persia*, is poisonous; but, being transplanted into *Egypt*, has its Nature so changed and meliorated, as to produce a Fruit fit for eating; *Galen* writes the same. *Pliny* says, that some industrious Authors have written, that this Tree in *Persia* has its mortal Poison attended with tormenting Pains; but, being by the *Persian* Kings transplanted to *Egypt*, in order to be employed as a Punishment, had its Qualities mitigated by the Soil: But this Relation is denied, he tells us, by the most learned Writers, who say, that the Persea-tree was planted at *Memphis*, by *Perses*. *Plin. Hist. Nat. Lib. 14. Cap. 13.* This last Opinion seems to me, says *Ray*, the most probable, though I do not deny, but there may be in *Persia* such a poisonous Tree, of a distinct Species from the *Egyptian* Persea; especially since *Rauwolfius* writes, that a *Persian* Merchant informed him of the poisonous Fruit of such a Tree, called by them *Sepha*, which, for that Reason, they would not meddle with. *Raii Hist.*

The Persea is a Native of *Jamaica*; the Fruit is good for the Stomach: And we are told by *Dioscorides*, that the Powder of the dried Leaves stops Hæmorrhages, being sprinkled on the Part.

The *Laurus Indica Aldini* is the Persea of *Clusius*.

Under the Head of **PERSEA**, *Ray* reduces

Persica Nuci similis Fructus Nucleo venenato Monardis. J. B.

This Fruit is of a cathartic, or rather of a septic Quality: For a certain *Indian*, as *Monardes* tells us, cured a female Negro, whose Legs were full of malignant and inveterate Ulcers, with the Powder hereof sprinkled on the Parts, which consumed the purrid Flesh; with the same Powder put upon Cotton, and applied to the Ulcers, he incarnated and cicatrized them. This Fruit is very common in the Island *Margarites*, and commonly eaten: It is of the Size of an *Adam's* Apple, or Orange, and contains a Nut like the Stone of a Peach, which, burnt to Powder, is good for the Purpose before-mentioned. The Kernel it contains is of so noxious and deleterious a Quality, that, eaten, it is present Death

Death to Man or Beast, without Hopes of a Remedy, as if it were Sublimate, or some Corrosive. It is probable, says Ray, that this Fruit, is the same with that of the *Manga Silvestris*, or *Mangas brava*, described by *Alofta. Raii Hist. Plant.*

PERSICA.

The Characters are;

The Leaves are narrow and oblong; the Calyx is monophyllous, deeply cut into five or six Segments, expanded and hollow. Within the Calyx is seated a roseaceous, pentapetalous or hexapetalous Flower, (the Petals growing on the Inside of the Margin of the hollow Calyx) and furnished with thirty Stamina: The Ovary is seated in the very Bottom of the Calyx, and is furnished with a long Tube, adorned with a globular scabrous Apex, and becomes a pulposus Fruit, almost globous, sulcated or furrowed lengthwise, and inclosing a Stone, adorned with little Pits and Cavities deeply cut, and containing, for the most part, only a single oblong Kernel: The Pedicle is very short.

Boerhaave mentions six Species of Persica; which are,

1. Persica; molli carne, & vulgaris, viridis & alba. C. B. P. 440. *Tourn. Inst.* 624. *Boerb. Ind. alt.* 2. 243. *Persica malus. Offic. Ger.* 1258. *Emac.* 1447. *Park. Parad.* 580. *J. B.* 1. 157. *Raii Hist.* 2. 1515. THE PEACH-TREE.

The Peach-tree is known to be a Tree of no great Bigness, being here, in England, generally planted against Walls: The Leaves are long and narrow, and serrated about the Edges: The Flowers consist of five pale-purple Leaves: The Fruit is covered with a downy Coat, full of pleasant juicy Pulp, having an hard reddish Stone full of wrinkled Cavities: It is planted in Gardens, and flowers in March, or the Beginning of April, and the Fruit is ripe in August and September.

The Flowers are only used in Physic; they are opening and gently purging, and principally given to Children, to carry off thin ferous Humours, and to kill Worms. The Fruit is cooling and moistening, grateful to the Palate, but subject to purify, and cause Surfeits.

The only official Preparation is *Syrupus Florum Persicorum. Miller's Bot. Off.*

Galen and *Paulus* condemn all Kinds of Peaches, as of bad Juice, and hurtful to the Stomach; for which Reason they advise to eat them at the Beginning of Repasts, before other Food, and to drink no Water, but pure Wine, after eating them. But I see no Reason, says Ray, why the Judgment of *Pliny* and *Dioscorides*, that Peaches are good for the Stomach, procure a good State of the Belly; and that nothing more innocent can be eaten, should be wholly condemned and rejected: Nor indeed it is probable, that a Fruit so savoury and delicious, and the most pleasing to our Palate of all Summer-fruits, as if Nature itself had recommended it to our Choice, should be quite noxious and unwholesome. We ought, however, to be careful in chusing these Fruits, and to observe a Measure in eating them. And, therefore, *Amatus* thinks, that what has been said by *Galen*, and others, concerning the bad Effects of Peaches, ought to be understood of those which have a very soft Pulp: For the Case, he says, is quite otherwise with the *Duracina*, (Peaches of an hard and firm Pulp) which emit a most grateful, comfortable, and reviving Smell; for these have a most delicious Savour, mixed with something of Austerity, which is agreeable and strengthening to the Stomach; and all Persons of Quality, in Spain and Portugal, and those of the most delicate Palates, eat them after Meals, though not before they are infused in Wine; and find no ill Effects from them.

Preserved Peaches are extremely grateful to sick Persons, especially to such as are afflicted with Thirst, and Dryness of the Tongue, for they strengthen at the same time they refrigerate; whence they are of excellent Service in all hot Distempers. *Brassavola* used to give his Patient a Peach or two roasted under the Ashes. *Amatus* affirms it to be a most delicious Food, and extremely grateful to sick Persons. The Leaves, on account of their Bitterness, being boiled in Beer, or Milk, destroy and expel Worms in Children. *Galen* says, that they work the same Effect, being bruised, and applied to the Navel. *Parkinson* affirms, that they purge gently, if taken in a sufficient Quantity; the Flowers operate in the same manner, and more effectually than Damask Roses; for which Purpose there is prepared of them a Conserve, to be taken chiefly in the Morning fasting; and a Syrup, also, is prepared thereof, which is very effectual for the same Intentions. The recent Flowers, says *Matthioli*, not only purge, but provoke Vomiting; and, eaten in Salads, prove Hydragogues in Dropsies; but not without disordering the Patient: The distilled Water is a Cosmetic. The Gum of this Tree is commended for Fluxes of the Belly, the Stone, Impetigo, Tumors of the Fauces, Roughness of the Windpipe, Spitting of Blood, Disorders of the Lungs, and the Dyentery. *Matthioli* recommends the Kernels for the Gripes, and to prevent Ebriety, being taken to the Number of six or seven before-hand; and, for the Alopecia, being bruised, and boiled in Vinegar, to a Pap-like Consistence. The Oil of the bruised Kernels, being rubbed on the Temples, procures Sleep, and eases the Hemisrania, or Megrim; drank, or used in Clysters, it cures the Colic; and, taken to the Weight of four Ounces, it gives Relief under the Iliac Passion, and the

Stone. The Water of fifty Kernels of Peaches, with that of an hundred Kernels of Cherries, and an Handful of Flowers of Elder, macerated in three Pints of Malmsey, then buried for ten Days under Ground, in an earthen Pot, and afterwards distilled, expels Stones from the Kidneys in a surprising manner, as we are assured by *Matthioli*. *Raii Hist. Plant.*

2. Persica; vulgaris; flore pleno. T. 624.
3. Persica; malus; Swollana. *Munting. Pract.* 1. 43.
4. Persica; Africana; flore incarnato, simplici. T. 625. *Amys; dalus Africana, vulg.*
5. Persica; Africana; nana; flore incarnato, pleno. T. 625.
6. Persica; succo quasi sanguineo. C. P. B. 440. *Boerb. Ind. alt. Plant. Vol. 2.*

It is called *Persica*, from *Persia*, the Country whence it was first transplanted. An Infusion of the Leaves, after the manner of Tea, is purging and opening, and kills Worms; as do, also, the Flowers. The Fruit is cordial, pectoral, and moistening: The Juice is of Service in burning Fevers: The Kernel is anticolical, and antinephritic: The expressed Oil thereof is good for the Ringing of the Ears. *Hist. Plant. adscript. Boerhaav.*

There is no Tree more common than the Peach-tree; and yet it has furnished *Salmasius* with Matter enough for a large Dissertation. The Greeks, it seems, had learned by a certain Tradition, that the Persians, who were Enemies to the Egyptians, had consulted to convey secretly into Egypt, and there to plant, a certain Tree, called *Persea*, from the Country whence it came, the Fruit of which was of a poisonous Quality: They supposed that the Egyptians, tempted by the Beauty of the Fruit, could not be prevented from eating it: They did indeed make no Scruple to eat it; but the Event was quite contrary to what the Persians expected from it; for the Goodness of the Egyptian Soil had so changed the Nature of the Fruit, by removing its noxious Quality, that the Egyptians could eat it with Safety. The Greeks and Romans, says *Salmasius*, who wrote since *Theophrastus*, as *Dioscorides* and *Pliny*, believed that the *Persea* of Egypt was different from the Persica; because they found, that the Description which *Theophrastus* had given of the first did not agree to the latter. But they did not consider, that there was no Peach-tree in Greece, in the Time of *Theophrastus*; that this Tree was brought thither very late, and from thence into Italy, and, consequently, that *Theophrastus* spoke of it as of an exotic Tree or Fruit. *Salmasius* concludes, that the *Persea* and Persica are the same Tree, because those who make them different, among whom is *Dioscorides*, give a good Description of the last, but by no means of the former, only saying, that it is a Tree peculiar to Egypt; which is a Proof, he says, that they had never seen that pretended Tree; or only spoke of it by Hearsay. The only Difference, according to *Salmasius*, between these two Names of the Tree is, that the first was in Use among the ancient Greeks, and the other among the more modern Greeks, as well as the Romans: He adds, that what has made the *Persea* of *Theophrastus* be mistaken, is, that this Author, instead of describing all the Species of the Peach-tree, has only described the Apricot-tree, which was, also, called *Persea*; but, for Distinction, was afterwards named *Persea praeox*, and by the Latins simply *Præcoqua*; whence the later Greeks formed their *Bepiroxa* (*Bericocca*); whence comes the French *Abricots*. The *Persea*, or Persica, was, also, called *Rhodocinea* and *Rhodacina*, because the first of these Trees had been planted at Rhodes, where *Theophrastus* remarks, that it only flower'd, and bore no Fruit. But that Philosopher might be misinformed, the Fruit in his Time being as yet a great Rarity in Greece; perhaps too the Soil, where it was first implanted, was improper for it. It is probable, however, that those Trees thrived very well afterwards in that Island, and were able to furnish Greece and Italy with Plants, where the Name *Rhodacina* was still preserved; whence, by a Transposition of Letters, which is very common, are formed the Names *Doracina* and *Duracina*, whence the French *Dureau*.

The Peach-tree has, also, been taken for the Lemon-tree, not for any Similitude between those Trees, or their Fruit; but only because the Lemon-tree was not only called *Malus Medica*, but *Malus Persica*. *Le Clerc, Hist. de la Med.* See PERSEA.

PERSICARIA.

The Characters are;

The Flowers are disposed in Spikes, at the Top of the Stalks and Branches: The Calyx is quadrid, though some take it for a tetrapetaloid Flower: The Stamina are six in Number: The Ovary, in the Centre of the Calyx, is compressed, of an oval or orbicular Form, and furnished with a bifid fimbriated Tube: The Seed is flat, and ovally acuminate. A Membrane surrounds the Stalk, at the Rise of the Leaves, and small Branches, opposite to the Leaves.

Boerhaave mentions eleven Species of Persicaria; which are,

1. Persicaria; mitis; non maculosa. C. B. P. 101. M. H. 2. 588.
2. Persicaria; mitis; non maculosa. C. B. P. 101. Flore albo. *Persicaria, Antverpiensis, floribus albis.* Lob. Obs. 171.
3. Persicaria; mitis; maculosa. C. B. P. 101. M. H. 2. 588. *Persicaria, mitis.* J. B. 3. 779. SPOTTED ARSMART.

Dale seems to make this and the first Species the same Plant.

This Arsmart has many round Stalks, two Feet high, or more, full of Branches, having their Joints thick and swelling, and covered with a thin Film, or Skin. The Leaves grow alternately, and are long and sharp-pointed, but broader in the middle, and larger than those of the *Perficaria aurea*; seu *Hydropiper*: They are smooth, and have a dark-brown or blackish semilunar Spot in the middle of each. The Flowers grow at the End of the Branches, in thick round pale-red Spikes, being small and staminate, containing flatish angular, sharp-pointed shining Seed. The Root is a Bush of Fibres; it grows in moist Places, and by Pond and Ditch-sides; and flowers in July. The Leaves are used.

They are said to be of a cooling Nature, and good for hot Tumors, Inflammations, Impositumes, and green Wounds, though they are but seldom used. *Miller's Bot. Off.*

Fuchsius has affirmed, that it is of a very astringent Taste; *Casalpini* found it acerb; *Tragus* and *Lobel* sourish; for my Part, I have found nothing but a little Astringency. This Plant gives a pretty deep-red Colour to blue Paper, which makes us conjecture, that its Salt resembles Sal Ammoniac, loaded with a great deal of Earth, and joined with a little Sulphur; thus this Plant is astringent, deterfive, and vulnerary. It yields a little volatile concrete Salt by the Analysis: The Decoction of the whole Plant is good for a Looseness, and for the Diseases of the Skin. *Martyn's Tournefort.*

4. *Perficaria*; mitis; maculosa; caulibus & ramis nodosissimis; rubris.

5. *Perficaria*; mitis; cum maculis Ferrum equinum referentibus. T. 509.

6. *Perficaria*; urens; seu *Hydropiper*. C. B. P. 101. *Boerb. Ind. a. 2.* 87. *Perficaria non maculata*, *Hydropiper*. *Offic. Perficaria acris* seu *Hydropiper*. J. B. 3. 780. *Perficaria vulgaris acris* seu *Hydropiper*. *Raii Hist.* 1. 182. Synop. 58. *Perficaria vulgaris acris* seu *minor*. *Park.* 856. *Hydropiper*. *Ger.* 361. *Emac.* 445. *Potincoba Lusitanis pulgura*. *Pil.* 221. *An Schoenanna-modela-muccu*. H. M. 12. 147. Tab. 76? LAKEWEED, ARSMART, or WATER-PEPPER.

This Arsmart grows not so much branched as the *Perficaria mitis maculosa*; the Leaves are long, and proportionably narrower, and more like the Leaves of the Peach-tree, whence it takes its Name *Perficaria*; but they are not serrated about the Edges, and they want the Spot that is in the Leaves of the mild Arsmart, and they have a very hot biting Taste, burning the Tongue like Pepper. The Flowers grow in long, slender, loose Spikes, of a paler Colour than the *Perficaria*; mitis; maculosa; but containing like Seed: It grows in like Places with that, and flowers about the same time.

This has been accounted an extraordinary Plant against the Stone, Mr. Boyle having, in his Book of the Usefulness of experimental Philosophy, given to the distilled Water of this Plant a mighty Character for its Virtues against that Distemper. It is commended, also, as very cleaning, and good for old stubborn Ulcers. *Miller's Bot. Off.*

Arsmart is of a very acrid and burning Taste, and gives a lively Tincture of red to the blue Paper. It is full of acid Sulphur and Earth; its Salt resembles that which results from the Mixture of the Salt of Coral with the Sal Ammoniac, loaded with a great deal more Acid than ordinary.

For this Plant, by the chymical Analysis, yields a great deal of Acid, Oil, and Earth, and a little volatile concrete Salt. Arsmart is very deterfive and vulnerary; and it is used in Glysters, for the Dysentery and Tenesmus. They give, at the same time, a Dram of this Powder in a Bolus, or mixed with Wine, thickened into a Syrup, with Sugar. Some carry this Plant in the Shoes; but it were better to boil an Handful of it in lean Broth, and strain it through a Linen Cloth, adding half a Dram of chalybeated Tartar, for the Jaundice and green Sickness. *Martyn's Tournefort.*

It is evidently of an hot and dry Quality, and is principally used externally for Wounds, indurated Tumors, inveterate Ulcers, and the like. *Schroder.* For a pained, hollow Tooth, take Water-pepper, and put it into the Cavity. With this Remedy *J. Heurnius* cured a Woman much afflicted with the Tooth-ach. There is nothing found more effectual for expelling the Flies; for whatever Wounds or Ulcers in Horses or Cattle are rubbed with the Juice of Arsmart, they remain secure from the Injuries of the Flies. *Tragus. Raii Hist.*

7. *Perficaria*; frutescens; maculosa; Virginiana; flore albo & carneo, Parkinsonii. *Theatr.* 857.

8. *Perficaria*; minor. C. B. P. 101.

9. *Perficaria*; major; Lapathi foliis; calice floris purpureo. T. 510.

10. *Perficaria*; Salicis folio; perennis. H. L. 488. *Potamogeton, Salicis folio*. C. B. P. 193. *Potamogeton*. *Dod.* p. 582.

11. *Perficaria*; Orientalis; Nicotianæ folio, calice florum purpureo. T. Cor. 38. *Commel. Rav.* 43. *ic. & Descr. T. Voy.* 2. 316. *Boerb. Ind. alt. Plant. Vol. 2.*

It is called *Perficaria*, because its Leaves resemble those of the Peach; the sixth Species is called *Hydropiper*, from ὕδωρ (Hydor) Water, and πιπερι, (Peperi) Pepper, that is, Water-

pepper; because it is an aquatic Plant with the Taste of Pepper.

The first Species is highly commended by Mr. Boyle, as an incomparable Lithontriptic: An English Nobleman, he says, cured every body of the Stone with the Juice and distilled Water of this Herb, and prepared every Year a vast Quantity of the distilled Water for the Use of the Poor. I have, also, try'd this Remedy, but without Success. A Decoction of the Leaves is of Service in the Diarrhoea, Dysentery, and all cutaneous Diseases. *Paracelsus*, observing an Impression of Spots on the second and third Species, pronounced them extraordinary Vulneraries, and asserted them to be an effectual Preservative for Horses against Galls and Attritions by the Saddle, being placed under the same. *Perficaria* is an astringent Vulnerary, and a Febrifuge; and is good for spitting of Blood, for immoderate Fluxes of the Hæmorrhoids, Menes, and the Fluor albus; the Leaves, bruised, and apply'd, repress an Hæmorrhage of the Nose. The sixth Species is a very burning Plant, and being chewed in the Mouth strikes the Tongue as it were Lightning. The Leaves, bruised, and apply'd to the Skin, raise an Inflammation and Exulceration, in manner of an Escharotic. This Herb deterges and depurates Ulcers, being mix'd with other Things of a more temperate Quality. It is heating, and, on account of its Acrimony, is temper'd with Raisins: Being thus prepared, it is of Service in the Dropsy, Jaundice, and all Obstructions of the Viscera. In Surgery it is a very good Medicine for discussing cedematous Tumors, if they be fomented with a warm Decoction of the Leaves. *Hist. Plant. adscript. Boerhaav.*

PERSICUS IGNIS. A Carbuncle, according to *Sennertus*. But *Avicenna* makes a small Distinction betwixt a Carbuncle and Ignis Persicus, calling that Species of Carbuncle attended with Pustules, and Vefications, an Ignis Persicus.

PERSISTENS FEBRIS. A regular intermitting Fever, the Paroxysms of which return at constant and stated Hours.

PERSIUM. The Peach-tree. *Oribasius, Medic. Collect. L. 1, C. 63.* See PERSICA.

PERSOLATA. The same as *Personata*.

PERSONATA. A Name for the Lappa. See BARDANA.

PERSPIRATIO. Perspiration. Having given an Account of Perspiration, and the Organs destin'd for this Secretion, under the Article CUTIS, I shall, in this Place, farther remark, that Perspiration is less in Women, than in Men; that a redundant Excretion of the perspirable Matter induces great Weakness, in proportion to its Excess, Faintings, and sometimes sudden Death. But if Perspiration is diminish'd, or utterly obstructed, the extreme cutaneous Vessels become dry, and are obliterated; and hence the Vessels, and Glands, destin'd for the Discharge of Sweat, and the oily Humour mention'd under the Article CUTIS, are dry'd; in consequence of which, the Circulation of the Blood is alter'd, the acrid perspirable Matter is retain'd, and Putrefaction, Crudities, Fevers, Inflammations, and Apostemations, ensue. *Boerhaave's Institutes.*

I must, farther, observe, that when the Orifices of the innumerable perspiring Vessels are obstructed, the Blood propel'd from the Heart meets with a stronger Resistance: Hence the Circulation labours, and must quickly cease, unless the Heart contracts itself with greater Force. But because, when the perspirable Matter is retain'd, the Quantity of the circulating Fluid is increas'd, on this Occasion the Blood returns more frequently to the Left Ventricle of the Heart: Hence the Contraction of the Heart is more frequent; and, in consequence of the stronger, and more frequent, Contraction of the Heart, there is a greater Attrition betwixt the Solids and Fluids, and a greater Heat, which we call a Fever.

PERTICE CASMIANA. The Name of a compound Medicine, in *Marcellus Empiricus, C. 20.*

PERTURBATIO ALVI. A Diarrhoea.

PERTUSSIS.

Tho' this Word, according to its natural and most genuine Signification, imports no more than a violent and terrible Cough; yet it is generally appropriated to that Species of Cough, call'd the Chin-cough, a Disorder principally incident to Infants and Children; especially in the Spring and Autumn, at which Seasons it is generally epidemical. The Patients, labouring under this Disorder, have frequent and violent Paroxysms of Coughing, in which the Organs of Respiration being not only oppress'd, but, also, spasmodically affected, variously interrupt, suspend, and pervert their respective Functions. But for the most Part, the Diaphragm convuls'd, either of itself, or by the Impulse of other Parts, so long protracts sometimes the Systole, and at other times the Diastole of the Heart, that Inspiration, or Expiration, being for a time obstructed, the Breath, so subservient to Life, can hardly be drawn; in consequence of which, the Patients are, as it were, suffocated; and, by reason of a Stagnation of the Blood, contract a kind of Blackness of Countenance; and if by chance the Organs, subservient to these Purposes, should not be so strongly convuls'd, as to hinder the free Coughing of the Patients, they are nevertheless forc'd to cough in a violent manner, and till their Strength is worn out.

The concurrent Cause of a Chin-cough seems to consist in these two Circumstances, that there is a frequent and violent Irritation of the Lungs, by which they are almost continually stimulated to throw up the Matter, which proves uneasy to them, by Coughing; and that the moveable Parts of the Thorax, that is, the Nerves, and nervous Fibres, being previously dispos'd to Spasms, as often as they are thus irritated, excite not a regular, but generally a convulsive Cough, and induce some Indisposition opposite to the Function of Respiration.

The Matter which, in all Probability, stimulates the Lungs so frequently to coughing, is Serum, by reason of its too thin Texture continually secreted from the Mass of Blood, and affecting the Parts of the Thorax; because it is not only convey'd thro' the Tracheal Arteries into the Cavity of the Aspera Arteria; but, also, copiously pour'd thro' the pneumonic Arteries into all the adjacent open Ducts.

The spasmodic Disposition of the moving Parts seems, as in other convulsive Disorders, to proceed from an heterogeneous and elastic Matter convey'd along with the nervous Fluid from the Brain through the Nerves into the moving Fibres of the Breast. For this Reason, when the Spirits, lodged in these Fibres, are excited to the violent Motions of Expiration, they fall into convulsive Motions.

As for the Prognostic of this Disorder, tho' a Chin-cough is rarely mortal, or very dangerous, yet it is not to be cured without the greatest Difficulty; and is frequently subdued and remov'd by a Change in the Season of the Year, rather than by Medicines.

The Measures taken for the Cure of other Coughs, are rarely effectual in removing this; for which Reason Nurses and Quacks use various Medicines of their own, such as Cup-mofs, and its various Preparations exhibited internally; and, if any farther Cure is necessary, they put the Child into a Fright, in order to remove its Disorder. But, if all these Measures should prove ineffectual, they generally reject Puffs, Syrups, Julaps, Decoctions, and other Medicines, whether pectoral, or of any other Nature, waiting, till the Disease either terminates spontaneously, or is cured by the succeeding Season of the Year.

Cup-mofs, so far as can be collected from its Taste, is of an astringent Quality, and contains somewhat acrid Particles, which smell strongly of a volatile Salt. Hence we may conjecture, that its Use consists in fixing the Blood; allaying the Defluxions of Serum, and in removing the spasmodic Disposition of the Parts, by volatilizing the nervous Fluid. Cup-mofs may be exhibited either in the Form of a Powder, a Decoction, or a Syrup: Thus,

Take of the Powder of Cup-mofs, one Dram; and of Sugar-candy, one Scruple: Mix all together, and divide into three equal Doses; one of which is to be taken every Morning and Evening, in some proper Vehicle.

Or,

Take of Cup-mofs, two Drams; of Milk of Sulphur, two Scruples; and of the Powder of Anise-seeds, one Scruple: Mix all together, and divide into six Doses; one of which is to be taken every Morning and Evening, in some proper Vehicle.

Or,

Take of Cup-mofs, one Dram: Boil in a sufficient Quantity of Milk; strain the Milk, and drink it every Morning and Evening. For such as do not like Milk, or are injured by it, we may prepare a Decoction of Cup-mofs, in Spring-water, that of Hyssop, or any other pectoral Water; two or three Ounces of which are to be drank twice a Day, edulcorated with Sugar, or some proper Syrup.

Or,

Take one Ounce of Cup-mofs: Boil in two Pints of some pectoral Water, till Half of it is consumed; to the Liquor, when strain'd, add one Pound of Sugar-candy, and let the Whole evaporate in a gentle Bath-marie, to the Consistence of Sugar-candy.

Another empirical Method of curing the Chin-cough, when Medicines prove ineffectual, is, to fright the Child, by putting it in the Hopper of a Mill, which makes a terrible Noise, and the Aspect of whose Wheels is dreadful; and by this Method a Chin-cough is sometimes suddenly cured; the Reason of which undoubtedly consists in this, not only that the animal Spirits, being, by the Fright, forced into new Divisions, leave their former inordinate Motions, but, also, that the Matter producing the Spasms is, by such a Perturbation, either dissipated, or forced into other Nerves, where it proves less troublesome.

But a more rational, and, according to my own Experience, a more effectual Method of curing a Chin-cough, is to begin with Purging; for which Purpose,

Take of the Syrup of Peach-flowers, one Spoonful, and of hysseric Water, one Scruple: Mix together, and exhibit to the Patient, who must, at the same time, use a proper Regimen.

Or,

Take of Calomel, six Grains; and of sulphurated Scammony, and Refin of Jalap, each three Grains: Reduce to a Powder, a small Quantity of which is to be exhibited to a Child of six Years old, the Dose being increased, or diminished, in proportion to the Age of the Patient. Let the Purge be repeated in six or seven Days.

If the Patient, as it frequently happens, is subject to Vomiting;

Take of Oxy-mel of Squills, six Drams; and of Salt of Vitriol, three Grains: Mix together, and exhibit to a Child of six Years old; and, according to this Proportion, the Dose is to be accommodated to Patients of other Ages. I have known an Emetic of this Kind, repeated every Morning for four or five Days successively, produce very happy Effects.

For the Cure of Chin-coughs, Vescicatories are frequently used, and applied sometimes to the Nape of the Neck, sometimes behind the Ears, and at other times to the internal Parts of the Arms near the Axillæ; and, when the Blisters begin to heal in these Parts, others are to be excited in others.

Instead of Ale, the Patient ought to use the following Decoction for ordinary Drink.

Take of China-root, an Ounce and an half; of all the Species of Sanders, each an Ounce and an half; of the Shavings of Ivory, and Hartshorn, each three Drams: Infuse in six Pints of Spring-water, which is to be boiled to the Consumption of one half; adding an Ounce and an half of stoned Raisins, and three Drams of Liquorice.

Or,

Take of the Spirit of Gum Ammoniac, prepared with Sal Ammoniac, one Dram; of the Syrup of Cup-mofs, three Ounces; and of hysseric Water, one Ounce: Mix all together, and give one small Spoonful for a Dose, every Morning and Evening.

Or,

Take of the Tincture of Sulphur, two Drams; of which mix three Drops, with one Spoonful of the Syrup of Cup-mofs; and exhibit for a Dose every Morning.

In Children of hot Constitutions, who, in Coughing, are seiz'd with an intense Redness, or rather a Blackness, of the Face and Countenance, I have sometimes, with great Success, ordered two or three Ounces of Blood to be taken away, either by Phlebotomy, or Leeches; after which the following Preparation is to be used.

Take of well-clean'd live Millepedes, two Ounces; of the Powder of Anise-seeds, one Dram; of Nutmegs, half a Dram; and of the whitest Sugar, one Ounce: Bruise all together, and pour upon them, of Hyssop-water, six Ounces. Agitate them a little with a Pestle, and make a strong Expression of the Liquor, two or three Spoonfuls of which are to be exhibited twice a Day for a Dose. *Willis.*

In a Chin-cough, *Ettmuller* informs us, that the Patients cough so long, that at last they throw up a mucous Matter from their Stomachs by Vomit; after which they are relieved, for some time, perhaps, half a Day, when the Disorder returns in the same manner. A Chin-cough, like most other Coughs of Children, according to *Walschmied*, proceeds from a Disorder of the Stomach, where, according to *Doleus*, it is produced by a tough, viscid, and acid Matter lodged in its Coats. But, according to *Ettmuller*, a Chin-cough is sometimes produced by a certain Salt communicated by the Air to the tender Bodies of Children, and coagulating the Lymph, which, becoming acrid, and stagnating, or overflowing, affects the Larynx in such a manner, as to produce a Chin-cough, which, he says, can hardly be cured without the Use of Emetics, but may be easily removed by Vomiting, which may be promoted by means of a Feather dipt in Oil.

Sydenham informs us, that in Chin-coughs Bleeding affords more Relief than the Use of pectoral Medicines; and affirms, that they may be happily cured by Venesection alone, and due Purging, with mild Cathartics, the Doses of which are to be proportioned to the Age of the Patient. He, also, tells us, that in this Disorder Drinks, and liquid Aliments, ought to be taken in smaller Quantities than usual, whilst, in their stead, the Patient is moderately to use a mild Decoction of Sarsaparilla, China-root, Sanders, the Shavings of Ivory, and calcined Hartshorn, together with diuretic and antispasmodic Ingredients. He, also, tells us, that many have been relieved by the Decoction, or Syrup, of Castor and Saffron, as, also, by a Decoction of the Roots of male Piony, Mistleto, and Hyssop.

Doctor Fuller, in his *Pharmacopœia Extemporanea*, orders the following Preparation for the Chin-cough.

Take of well-cleaned live Millepedes, two Ounces; of the Powder of Anise-seeds, one Dram; of Nutmeg, half a Dram, and of white Sugar, one Ounce: Bruise all together, and pour upon them of Penroyal-water, six Ounces; and of the compound Waters of Bryony and Piony, each one Ounce: Make a strong Expression, and of the expressed Liquor exhibit one Spoonful after every Paroxysm of Coughing, till the Disorder is removed.

Doctor Cheyne, in his Treatise of the Gout, informs us, that a Spoonful of the following Syrup, exhibited at a time, and repeated, infallibly cures the Chin-cough.

Take of Millepedes, a sufficient Quantity; immerse them in White-wine, express the Juice, and add a sufficient Quantity of Sugar to make a Syrup.

For the Cure of a Chin-cough, Turnep-broth is much recommended by old Women and Nurses; and a proper Quantity of Sperma Ceti, in common Broth, is said to be an admirable Remedy for this Disorder. The Flesh of fry'd Mice, eaten, is, also, among the common People, accounted a Specific: And Baglivi informs us, that the Moss which grows upon Trees, especially on the Oak, is from Experience found to be, of all others, the most effectual Cure for a Chin-cough. The *Aurum Mosaicum* is greatly recommended by some for the Cure of this Disorder, but ought only to be exhibited to such as are pretty far advanced in Age. The Oil of Sulphur by the Bell, the *Fulapium Moschatum*, and the *Syrupus ad Tussim Convulsivam*, are sometimes used with Success. Some order fresh Whey to be used for common Drink.

PERVERSIO. The same as **DIASTREMA**.

PERVIGILIUM. Watching, or Want of Sleep; a Symptom very common in Fevers, and always of bad Presage. See **PYRETOS**.

PERVINCA.

The Characters are;

The Branches are long and creeping; the Calyx is monophyllous and quinquefid, being divided into five long slender Segments. The Flower is monopetalous, and much in the Form of a Salver, deeply cut into five Lobes, and furnished with five Stamina adorned with elegantly bearded Heads. The Ovary seated in the very Bottom of the Calyx, between two lateral Placentæ, is bifid, and from the Centre of its Apex shoots forth a slender cylindrical Tube, expanded at the Top into a Circle, from whose Centre rises a beautifully plumous Apex; the Ovary at last becomes a Fruit consisting of two Pods, which contain oblong sulcated, and almost cylindrical Seeds.

Boerhaave mentions eight Species of *Pervinca*; which are,

1. *Pervinca*; vulgaris; latifolia; flore cœruleo. *Tourn. Inst.* 119. *Boerb. Ind. A.* 311. *Clematis Daphnoides major*. C. B. P. 302. *Raii Hist.* 2. 1091. *Synop.* 3. 268. *Clematis Daphnoides major flore cœruleo*. J. B. 2. 132. *Clematis Daphnoides latifolia sive Vinca Pervinca major*. *Park. Theat.* 380. *Clematis Daphnoides*. *Ger.* 747. *Clematis Daphnoides sive Pervinca major*. *Emac.* 894. **THE GREATER PERIWINKLE.**

It grows on Banks by the Sides of Ditches, but rarely flowers, in April; and it agrees in Virtues with the lesser or common Periwinkle, and may be used in its stead.

2. *Pervinca*; latifolia, variegata. T. 120. *Clematis Daphnoides major, flore variegata*.

3. *Pervinca*; vulgaris; angustifolia; flore cœruleo. *Tourn. Inst.* 120. *Boerb. Ind. A.* 311. C. B. P. 301. *Raii Hist.* 2. 1091. J. B. 2. 130. *Vinca Pervinca*. *Offic. Ger.* 747. *Vinca Pervinca minor*. *Ger. Emac.* 894. *Raii Synop.* 3. 268. *Vinca Pervinca vulgaris*. *Park. Theat.* 340. *Clematis Daphnoides, Vinca Pervinca*. *Chab.* 118. **PERIWINKLE.**

Periwinkle, from a stringy, creeping, fibrous Root, sends forth slender, smooth, weak Stalks, having two oval, smooth, shining-green Leaves, set opposite at a Joint. The Flowers grow single at a Joint, on long Foot-stalks, usually purple, sometimes white, in Shape like the Flowers of Jessamine, but more round-pointed, which are sometimes, but very rarely, succeeded by two long and slender Pods; it grows in shady Banks, and dry Ditches, and flowers in Summer. The Leaves are used.

This is a good vulnerary Plant, and of frequent Use in Wound-drinks, for Bruises, Contusions, inward Bleeding, and Wasting, Spitting of Blood, the Excess of the Catamenia, and the Fluor Albus. *Miller's Bot. Off.*

This Plant is bitter, and gives a considerable Tincture of Red to the blue Paper; it is very likely, that the Oil and Earth predominate in the Periwinkle. Its Salt resembles Alum; but it partakes a little of the urinous Salt, and is like the Alum, with which they mix some Urine, to make it crystallize the better. For,

By the chymical Analysis, we obtain from this Plant, besides several acid Liquors, a great deal of Earth and Oil, and very little volatile Salt. Periwinkle is vulnerary, astringent, and febrifugous. For spitting Blood, the immoderate Flux of the Piles, the Terms, or the Whites, pour two Quarts of boiling Water upon three Handfuls of the Leaves of Periwinkle, cover the Pot, remove it from the Fire, and give the Infusion to drink by Glass-fulls. Its Conserve and Extract have the same Virtues. For Bleeding at the Nose, stop it with these Leaves bruised. Milk curdled, with the Decoction of Periwinkle, is very good for the Phthisic: This Milk is prescribed for the Dysentery, and a Gargarism is made of it for the Diseases of the Throat. For the Dropsy they distil the Milk, after having macerated in it a whole Day the Leaves of Periwinkle, Tansey, and Agrimony. This distilled Milk is a much easier Medicine, than the curdled Milk. *Martyn's Tournefort.*

The Leaves of Periwinkle, held in the Mouth, stop Bleeding at the Nose, as we have frequently seen try'd, says *Costaus, Lib. de Stirp. Differ.* The fresh Leaves, spread upon coarse and thick brown Paper, and well-matted and pressed together, then covered with combed Flax, and afterwards suffumigated with Frankincense, being, by the Advice of an old Woman, apply'd to a strumous Swelling, dissolved it in a short time, after it had been, for a whole Year, under the Treatment of a learned Physician, without Effect. The old Woman had, before this, with the same Medicine, cured another, whose Case was reckoned desperate. *Raii Hist. Plant.*

4. *Pervinca*; vulgaris; angustifolia flore albo. T. 120. *Clematis, daphnoides, minor, flore candido*. C. B. P. 301. *Clematis, daphnoides, flore albo simplic.* J. B. 2. 130.

5. *Pervinca*; vulgaris; angustifolia; flore rubente. T. 120. *Clematis, daphnoides, minor, flore rubente*. C. B. P. 301. *Clematis, daphnoides, flore purpureo, simplic.* J. B. 2. 130.

6. *Pervinca*; vulgaris; angustifolia; flore pleno, saturate purpureo. T. 120. *Clematis, daphnoides, flore purpureo, pleno*. H. Eyst. o. 1. F. 8. Fig. 5.

7. *Pervinca*; angustifolia; vulgaris; variegata ex aureo & viridi.

8. *Pervinca*; angustifolia; vulgaris; variegata ex argenteo & viridi; flore purpurascente, pleno. *Boerb. Ind. als. Plant. Vol. 1.*

The Juice of this Plant is bitter, heating, penetrating, saponaceous, opening, deterfive, stimulating on all Sides, and vulnerary: Hence it affords a sovereign Remedy for Infirmities proceeding from pituitous Causes. The Juice, boiled in Water, and drank to a good Quantity, opens the Uterus, provokes the Lochia, and revives the vital Heat. The Leaves cut small, then boiled a little, and expressed, and the Juice taken in the Morning in Wine, is an excellent Remedy for the Scurvy, by depurating the Blood, and deterring the Primæ Viæ. It is proper for Virgins affected with the Chlorosis, and the Dysentery. The Plant is very serviceable in the Phthisis, and in Diseases of the Fauces. The Leaves, used in Butter-milk, are good for the Fluor Albus. *Hist. Plant. adscript. Boerhaav.*

PERUNDIS. See **ZENDA**.

PERUVIANUM BALSAMUM. Balsam of Peru. See **BALSAMUM**.

PERUVIANUS CORTEX. Peruvian Bark. See **QUINQUINA**.

PERYGUA. See **ALATERNUS**.

PERYSIAS, *περυσίας*. An Epithet of Wine, importing, that it is of the last Year's Vintage.

PES ANSERINUS. A Name for the *Chenopodium*; *Pes anserinus*; *primum & secundum Tabernamontani*.

PES CATI. A Name for the *Helichrysum*; *montanum*; *flore rotundiore*.

PES COLUMBINUS. See **GERANIUM**.

PES LEONIS. See **ALCHIMILLA**.

PES LEPORINUS. A Name for the *Trifolium*; *humile*; *spicatum*; *sive Lagopus*.

PES TIGRIDIS. A Name for the *Sclarea*; *Indica, floribus variegatis*.

PESSARIUM, a Pessary, a Medicine proper to be introduced into the *Pudendum muliebre*, for the Cure of several Diseases incident to the Uterus, has had different Names, according to its Variety of Forms.

When it is prepared of the Length of the fore Finger, and the Thickness of the Thumb, with a due Roundness and Smoothness, it is called *Pessarium*, or *Pessus*, "Pessary," and by some, *πριαπισκωτός* (*Priapiscotos*); but Preparations for the same Purpose, which are of a round Figure, like a Nodule, are called *Nasalia*. *Morellus*.

Among other external Remedies employ'd by *Hippocrates*, were *Pessaries**. These were a kind of Suppositories, which they introduced into the exterior Neck of the Matrix; they were prepared of Wool, or Lint, or Linen, mix'd with Powders, Oils, Wax, or other Things, and made round and long like a Finger.

* *Πεσσοί, προσβητά, κολλύρια* (*Pessi, Prosbeta, Collyria*); they were, also, call'd *πριαπισκωτά* (*Priapiscota*), from their Figure; but that Word is not to be found in *Hippocrates*.

The Use of Pessaries was very frequent in ancient Times; for they served almost as an universal Remedy for female Disorders. They were made to answer the Intentions of mollifying, suppling, opening, attracting, stimulating, closing, purging, and cleansing the Matrix, of drying it, retaining it in its proper Place, and for other Purposes. In order to attain those various Ends, they made use sometimes of Oils and Fats, sometimes of Juices of Herbs, sometimes of acrimonious and stimulating Ingredients, as Nitre, Scammony, Tithymalus, Cantharides, Garlick, and Cumia; sometimes of Astringents, as the Bark and Flowers of the Pomegranate, Rhus, or Sumach, Alum, and the like; sometimes of Aromatics, as Myrrh, Castor, and sweet-scented Plants. There was not a Distemper of the Uterus, in which they did not use Pessaries; they were the Remedy for the Suffocation, which they pretended was caused by that Part; with Pessaries they provoked or stopped the Menstrues; they served as Medicines for the Relaxation, or Falling out of the Matrix, for the superfluous Humidities, Ulcerations, and Inflammations of the same, for a Dropsy of the Uterus, and for the Fluor Albus, and Sterility. With Pessaries they facilitated the Expulsion of the dead Child, and the Afterbirth, and promoted the Child-bed Purgations, besides other Services; not to mention, that they made use of them, also, as a Means to procure Abortion.

Pessaries, or Tali, were by the Antients principally used in Disorders of the Uterus, and distinguish'd into three Kinds, that is, the emollient, the astringent, and such as open the Orifices of the Veins. Those of the emollient Kind were used in Inflammations, Ulcerations, Risings, Refrigerations, Distortions, and Inflammations of the Uterus. This Species of Pessaries was prepared of *Tyrrhenian Wax*, the Oleum Cyprinum, or Sufinum, the Fat of a Goose or Fowl, fresh Butter, dry'd Resin, the Marrow of an Hart, Fenugreek, and other Substances of similar Qualities: Such as open the Orifices of the Veins were used, when the Intention was to recal the menstrual Discharge, or remove a Closure, or Contraction of the Uterus. This Species was prepared of Honey, Mugwort, Dittany, the Juice of Cabbage, Liquorice, the Juice of Leeks, Rue, Scammony, and other Ingredients of a like Nature. But astringent Pessaries were used for Purposes quite different from those of the aperient Kind, since the Intention of the former was to check the menstrual Discharge, contract the expanded Uterus, and prevent its falling down. The Consistence of these Pessaries must be somewhat thick and strigentitious. Then a Piece of Wool must be folded up in Form of a Tent, immersed in the Ingredients, and introduced into the Mouth of the Uterus, with a Thread fixed to it, that by this means the Pessary may be the more easily extracted, when it seems expedient. *Paul. Aeginet. Lib. 7. Cap. 24.*

The Moderns have too much neglected the Use of Pessaries of this Kind; but employ Pessaries of various Figures and Materials, many of which are represented in *Tab. LV.* They are principally serviceable in a *Prolapsus Uteri*, and Incontinence of Urine in Females. Their Uses are farther explained under the Articles of the Disorders in which they are employ'd.

PESSOS. A Pessary. See PESSARIUM.

PESSULUS. A Pessary.

PESTICHLÆ. The same as PÉTÉCHLÆ.

PESTIS. The Plague.

The Plague is one of the most acute kind of Fevers, arising from a poisonous Miasma, brought from the Eastern Countries, and which proves mortal, unless, by the Vigour of the vital Motions, the Poison is soon carried off by means of Bubbles and Carbuncles.

The Plague differs from other Fevers of the contagious, malignant, and exanthematous Kind, in this, that it is of all others, the most acute, since it sometimes destroys the Patient on the first or second Day of its Attack. In *Europe* the Plague is neither epidemic, nor sporadic, arising from a preposterous Method of living, or an insalutary Constitution of the Air; but, in our healthy Parts of the World, draws its Origin from a Contagion derived from the sultry, and before infected Eastern Climes. A Plague, also, has this peculiar to it, that it is not, like other malignant and putrid Fevers, terminated by large Sweats, Fluxes, or other Excretions; but the Poison being in a critical and salutary manner, forced to the external glandular Parts, it is terminated by Tumors, which end in Abscesses. Besides, contrary to what happens in other contagious and petechial Fevers, such is the subtle Quality of the pestilential Poison, that it quickly adheres to porous Substances; and, without any Diminution of its Force, may be convey'd to Countries many thousand Miles distant from each other. It is, also, peculiar to this Contagion, that its malignant and spreading, Nature is not only check'd, but, also, totally extinguish'd, by intense Cold. Hence it happens, that in cold Weather, and cold Climates, a Plague is rarely or never observed, whereas it rages frequently and violently in hot and sultry Climates.

But, as, in all contagious and malignant Fevers, the poisonous Miasma, taken in with the Air, insinuates itself into the fer-

mentable Saliva, and exerts its baleful Influence on the Parts through which it passes; so this, in a particular manner, holds true, concerning the pestilential Contagion, which, immediately attacking the Head, Brain, Nerves, and nervous Fluid, excites a Torpor of the Head, a Sense of Weight, Drowsiness, an excessive Pain, a Stupor of the Senses, Forgetfulness of every thing, Restlessness, Watchings, and a Loss of Strength. When this pestilential Contagion is convey'd thro' the Fauces to the Stomach, it excites a Loathing of Food, Nauseas, Uneasiness of the Præcordia, a symptomatic Cardialgia, Efforts to vomit, and actual Vomiting. Then, being convey'd to the Membranes of the Spinal Marrow, and the nervous Coats of the Arteries, it not only produces an Horror, and a languid, small, contracted, and frequent Pulse, but, also, Deliquiums. All these are the ordinary Symptoms of a beginning Plague, and are so much the more violent and quick in their Operation, as the pestilential Poison exceeds that of other contagious and malignant Disorders.

The many violent and terrible Symptoms appearing under a Plague are no-where more fully and accurately described, than in the first Description of this Disorder given by *Thucydides* the Historian, when, in *Lib. 2. de Bello Peloponnes.* he gives an Account of the Plague of *Athens* in the following Words: "For my own part, being ill of it myself, and having seen others afflicted in the same manner, I shall give an Account of it, that, if it should happen again, the Person who reflects on it, may be able to form the better Judgment concerning it. The Year in which it began was universally agreed to be highly salutary, and free from other Diseases; and, if by chance any one was sick before, all his Indisposition terminated in this; and they who before were in perfect Health, were, without any apparent Cause, suddenly seized with a violent Heat in the Head, accompanied with Redness and Inflammations of the Eyes. Their Tongues, Throats, and internal Parts, became immediately bloody, whilst their Breath was fetid, and Respiration difficult. A Sneezing and Hoarseness ensued; and, in a short time, the Pain descended to the Breast, and was accompanied with a violent Cough. When this Pain was once settled in the Stomach, a Vomiting of bilious Matter, of as various Kinds as ever were specified by Physicians, succeeded, but not without the greatest Anxiety and Uneasiness. Many were seized with an Hiccup, that brought up nothing, but occasioned a violent Convulsion, which, in some, went off presently; but in others, continued much longer. The Surface of the Body was neither very hot, nor pale, but redish, livid, and full of small Pustules and Ulcers: But, internally, the Heat was so intensely great, that they could not endure the slightest Covering, though of the finest Linen; but could only be satisfied with absolute Nakedness. It was, also, an infinite Pleasure to them to plunge themselves into cold Water; and many of those who were not well attended, did so, running to Wells, in order to quench their insatiable Thirst, which still remain'd, whether they drank much or little; a great Uneasiness and Restlessness attending them, together with a continual Watching. Whilst this Plague was advancing to its Height, the Patient's Body did not fall away, but resisted the Violence of the Disorder beyond Expectation; so that many died on the ninth and seventh Days, of the internal Burning, some Strength yet remaining; or, if they held out longer, many of them afterwards died of Weakness; the Distemper descending to the Belly, and there producing violent Exulcerations and Diarrhœas: For the Disease went through the whole Body, beginning first in the Head; and, if any one surmounted these terrible Symptoms, violent Disorders of the Extremities succeeded; for the Plague broke out upon the private Parts, the Fingers, and the Toes; and many sustained the Loss of these Parts: Some, also, lost their Eyes; whilst others, immediately upon getting up, were seized with a total Forgetfulness of every thing, neither knowing themselves, nor their most intimate Acquaintances." And, a little after, he adds these Words: "The Disease, therefore, to pass over many surprising Circumstances, which differed in different Persons, was in general such as I have described it. And, as for other usual Distempers, they either did not then appear, or, if they did, they all terminated in this, as Lines do in a common Centre. Some of the Patients died for want of Care; and others, notwithstanding all the Care that could possibly be taken of them: Nor could it be affirm'd, that there was any certain Remedy, which, when used, proved universally beneficial, since, if it did Good to one, it did Harm to another. Nor was there any Difference in different Constitutions, as to Strength or Weakness, to enable them to resist the Violence of this Plague, which swept all away, whatever Care was taken, or whatever Regimen they used. But the most terrible Circumstance of all was the Dejection of Mind in those who found themselves beginning

"beginning to be ill; for, growing immediately desperate, they gave themselves up for lost, without making any Efforts for their own Relief; and one being infected by another, whilst they endeavoured to take care of each other, they died like Sheep. And this Circumstance, of all others, contributed most considerably to the surprising Mortality."

In a Plague, however, the Symptoms are not always of the same Nature, but very considerably different according to different Constitutions; and this Diversity is carefully to be investigated by the Physician. Now, 'tis universally agreed upon by all Authors who have wrote concerning the Plague, that those who are of a spongy, rare, and porous Habit of Body, as, also, those who are fat, of sanguineous and phlegmatic Temperaments, Women, young Persons, and Infants, those of timid and abject Dispositions, those accustomed to poor or unwholesome Diet, those addicted to Surfeits, and who protract their Entertainments till late at Night, are much more readily seized, and more terribly afflicted, with the Plague, than those of bold and resolute Minds, lean Habits, nervous Constitutions, Persons of large Vessels, Adults, those advanced in Years, those obnoxious to the hæmorrhoidal Discharge, and those who have Fontanels, or open Ulcers. 'Tis equally certain from Experience, that nothing lays a better Foundation for receiving or heightening the pestilential Miasma, than Dread, the Fear of Death, and Consternation: So that 'tis certain, that some have not only been seized with the Plague, but, also, died of it, purely through the Influence of Terror; for those Passions of the Mind are the most considerable, which lessen and destroy the vital Motion of the Heart and Arteries, and, consequently, the Circulation of the Blood, whilst, at the same time, they impair the vital, natural, and animal Force, since, by the Benefit of these Motions, the Contagion received is to be exterminated.

'Tis an hard Task to determine the specific Nature of the pestilential Poison *à priori*, because it is hardly subjected to our Senses. But, in as far as we are able to form a Judgment of it *à posteriori*, and an Induction of Facts, it seems to consist partly of a sulphureous, putrid, and multiplicative Nature, like Leaven, and partly of an highly subtle, acrid, and caustic, though, at the same time, more alkaline than acid, Nature. Its putrid and highly foreign sulphureous Nature appears from this, that all malignant Disorders derive their Origins from the putrid Vapours arising from unburied Carcases, putrid stagnant Lakes, and other fetid and excrementitious Sordes; and that this Miasma immediately contaminates the nervous Fluid, stops the systolic Motion of the Solids, and induces a sphacelous Corruption of the Juices. But that this Miasma is, also, possessed of a caustic and subtle Acrimony, is certain from this, that the Ingress of contagious Disorders is not only generally preceded by Swarms of Insects abounding with a caustic Salt, and generated from Putrefaction; but, also, from this, that, by vellicating and corroding the nervous Fibres, it produces a Pain, Tumor, and Inflammation, sufficiently conspicuous in the Buboes and Carbuncles.

This pestilential Poison, as we have above observed, when received into the Body, totally disturbs and perverts its Functions; and, unless suddenly forced from the internal to the external Parts, proves infallibly mortal: Nor is this Effect, as in other malignant Disorders, produced by profuse Sweats, Discharges of the Fæces and Urine, the Hæmorrhoids, or Meneses, nor by Discharges of Blood from the Nose, whether spontaneous, or excited by Art; since these Excretions, especially when profuse, rather prognosticate the Death of the Patient. But the salutary and critical Excretion, by which the Plague is perfectly terminated, is brought on by Tumors appearing on the Surface of the Body: So that, as in an Erysipelas, this happens within the third and fourth Days; and the sooner and more copiously they appear, the Violence of the Disorder is so much the more mitigated; for that these Tumors contain and eliminate a formal Poison, is certain from this, that if the Surgeon opens the Vein of a sound Person with a Lancet, which has been employed in opening one of these Tumors, the sound Person is forthwith seized with the Plague.

These pestilential Tumors are of two Kinds: The one is by the Greeks called *Bubo*, a Name common to all Tumors. These Buboes appear principally on the glandulous Parts, and most frequently on the Groins, under the Arm-pits, on the Parotid, Mammary, and inferior Axillary Glands, under the Chin, as, also, on the Glands adjacent to the Aspera Arteria; and discover themselves by an hard painful tense Tumor of the Glands, accompanied with Heat; and, if they are of a good Kind, they become humid, soft, and are suppurated. The other Kind is far worse than the former, and is by the Greeks called *Anthrax*, which signifies a live Coal, from which the Latins derive the Word *Carbunculus*. Celsus, in Lib. 5. Cap. 28. describes a Carbuncle in the following manner: "It is a Redness of the Part with Pustules not rising far above it;

and these Pustules are generally black, tho' sometimes they are livid, or pale. There seems to be a Sanies in these; and the Bottom is of a black Colour. The Body of them is more hard and dry, than it ought to be naturally; and is surrounded with a Crust, attended with an Inflammation: Nor in the Part affected can the Skin be raised, but adheres to the subjacent Flesh."

Mindererus, who lived where the Plague raged, and has wrote excellently concerning it, describes Carbuncles in the following manner: "When a Carbuncle, of the Bulk of a Mustard or Hemp-seed, happens, it contracts round about it a burning Disk, or Halo, as large as a Trencher, according to the Part affected: The Flesh affected is separated from the sound Parts, and, like an Eschar, or putrid Flesh, falls off; so that the Cavity gapes, as if it had been corroded by that Species of Cancer called *Lupus*." No Part of the Body is free from these Carbuncles; but they most commonly possess the Membranes of the Muscles, and the nervous and fibrous Substance of the Skin, especially in the Back, the Arms, and the Thighs. In the Part affected, the Patients first perceive an exquisite Itching; and, if they scratch, Pustules of a red, livid, whitish, purple, or black Colour appear. These Pustules are very thick, and appear full of Pus; and, under some of them, a cineritious Crust is form'd, which being taken away, the subjacent Flesh appears corrupted and spongy, with an intolerable Pain and Heat of the adjacent Flesh. Then a total Mortification or Sphacelation of the Part ensues.

But, among those to whom the Plague proves mortal, some die, on the first or second Day, of a Syncope, which, no doubt, proceeds from the Terror with which they are struck. But in many, when the Poison either is not expelled, or when expelled, suddenly it returns, and, lodging in the Coats of the nobler Parts, such as the Pleura, Oesophagus, Stomach, Intestines, and Meninges, a Sphacelus is induced, which quickly spreads to the Viscera and Blood; by which it happens, that the Carcases of such Patients immediately become surprisingly fetid, tumefied, and are quickly putrefied. Sometimes, also, when there is too large a Quantity of pestilential Tumors, the Patients, just as in the Small-pox, die of a symptomatic Fever, on account of the Inflammation, Pain, and intolerable Heat.

The C U R E.

Since 'tis certain, that the Plague is not originally generated in Europe, but is imported from other Countries, there can be no more safe and infallible Advice given, than to fly from the Contagion. It is the Advice of *Celsus*, that the Person, who is as yet safe, but cannot long be sure of being so, sail, and travel, which in the Italian Plague, in the Year 1625. were of singular Service, as we are told, by *Natalis Comes, Hist. Lib. 27.* And *Sanctarius, in Med. Stat. Sect. Aph. 138.* informs us, "That they, who, in order to avoid the Plague, advise any other thing than flying from it, are either ignorant themselves, or intend to impose upon others." For the same Reason, those Princes excellently consult the Welfare of their Subjects, who, in the Time of the Plague, use all Methods to prevent its Importation; and, if an House is infected, forbid sound Persons to enter it, and forthwith burn all the Furniture, lest, with it, the Contagion should be propagated to others: But all Persons, when the Plague rages, ought to live very temperately, and every Degree of Excess is to be avoided in the Non-naturals, especially with respect to the Passions of the Mind; and all those things are to be abstained from, which impair the Strength, disturb Perspiration, and generate Crudities in the Primæ Viæ. In a particular manner, the Mind is to be fortified, and Terror, Dread, and Cowardice, are to be banished, since 'tis certain, that these Passions, during a Plague, destroy more than the Contagion itself.

Those whose Business obliges them to live among the Infected, ought to take care, that the Miasma do not enter the vital Juices, nor convert to its own Nature the salival Humours lodged in the Primæ Viæ, which easily happens. For this Purpose, we recommend frequent Vomiting, and Washings of the Mouth, with Wine-vinegar or Wine, or the Drawing these Liquors up the Nostrils; and these are still more efficacious, if they are impregnated with Scordium, Rue, or Citron-peel; for an Acid seems to be the genuine Antidote against a Poison of a putrid and sulphureous Nature, because from Chymistry it is certain, that an Acid fixes and enervates Sulphur and volatile Salts. For this Reason it is far safer to use Acids gently, or contain them in the Mouth, than to chew alexipharmic Roots, such as those of Zedoary, Angelica, and Masterwort. Hence, 'tis, also, expedient to drink *Rhenish* Wine, or to take a few Spoonfuls of bezoardic Vinegar, diluted with Water, or Wine. Thus *Forestus* informs us, "That, when the Plague was raging, he used, when called to his Fellow-citizens, to fortify himself by these Medicines, especially by chewing Citron-peels." The Turks, according to

Cile, Lib. de Morb. Acut. when the Plague rages, frequently use Lemon-juice, large Quantities of which they squeeze into all Kinds of Broths.

Among the external Remedies for this Disorder, many recommend Fontanels; because it has been observed, that those who had chronical and scorbutic Ulcers in their Limbs, remained free from the Plague, and other contagious Diseases. *Hildanus* greatly commends Fontanels for this Purpose; and, in *Cent. 4. Obs. 23.* has these Words: "I do not remember, that any of those who had Fontanels in their Legs and Arms, died of the Plague, except one or two, who were highly cacochymic; and I have found Fontanels to be an efficacious Preservative against the Plague, both in myself and others." I remember the same was, also, told me by the Physicians who were Witnesses to the Plague of *Erfurt*. The Reason of so surprising a prophylactic Effect seems to be this, that the Matter of the received Miasma, which generally firmly adheres to the ferous Parts of the Blood, will, by the Vigour of Nature, be conveyed to the Part where the Fontanel is, and thence eliminated as being weaker. Hence an unusual Pain and Tumor are observ'd about Fontanels. Perhaps, also, the Confidence of the Efficacy of Fontanels may remove the Fear, rouse the Spirits, and work like a kind of Amulet.

In the Cure of a Plague, the following Intentions are to be pursued:

1. To promote the Expulsion of the received Miasma in a proper manner, especially by these critical Tumors, which are to be duly manag'd: And,
2. To rouse and support the languid Strength, which is of so great Importance to Life; and to remove, or relieve, the most urgent Symptoms: But, since I am not experimentally acquainted with the Methods of answering these Intentions, I shall deliver the Method of curing a violent Plague, described by *Johannes Langius, Lib. 1. Epist. 18.* and then subjoin my own Opinion, and such Observations as are most agreeable to Reason and Experience. "You know, says this celebrated Author, that I have cured many of the Plague, whose Recovery was despair'd of, by the following Method: First, if, for some Days before the Beginning of the Disease, little or no Fæces were discharg'd, then I rendered the Body soluble by a Suppository, or a gentle Clyster: Then I exhibited a sudorific Alexipharmic, which, according to the Age and Strength of the Patient, is to promote a Sweat for two or three, or more Hours: Then I applied an Epithem to the Heart. Six or seven Hours after the Sweat, supporting the Patient's Strength mean time, by some proper Broth, I open'd a proper Vein; and, immediately after the Use of the Alexipharmic, exhibited, every Morning and Evening, alterative Draughts, which by their Quality resisted the Poison, and were, at the same time, cordial; such as Decoctions prepared of the Juices of Citrons, Lemons, Oranges, Sorrel, and Bugle, with a little Vinegar and Sugar. In the Decline of the Disease, if the Appetite is languid, in order to carry off the Remains of the Disease, I exhibited a Medicine prepared of Rhubarb, Agaric, Cassia, or *Eleomeli*, or Manna, and Tamarinds. Then I order'd the Surgeons not to precipitate the Consolidation of the Carbuncles and Ulcers; and those who had the Care of the Patients, to exhibit proper Aliments and Liquors at the Time prescribed: By which Method, a large Number of Patients were restored to perfect Health." A little after, he goes on in the following manner: But if Buboes and Carbuncles appear about the Emunctories near the Ears, if Abscesses are formed under the Axillæ, if Buboes are formed in the Glands of the Groin, or if Carbuncles appear in the Arms or Legs, then, as in poisonous Wounds, we are, with all Expedition, to apply to the Part such Medicines as extract the Poison, or Cupping-glasses, or a Plaster of Leaven, Treacle, Meal, Mustard, and Onions, roasted under the Ashes, adding *Opopanax* and *Galbanum* dissolved in strong Vinegar: Then scarify the Abscess before its Maturation, or lay it open, or cauterize it. But, if the Patient dreads the actual Cautery, we may use one of the potential Kind, prepared of Cantharides and Leaven, or the Roots of the *Plammula* bruised in Oil; which, by their heating and burning Quality, not only attract the noxious Humours, but, also, frequently open the Collections made of them."

This Method of curing the Plague is highly congruous to Reason; for, in the Cure of all Diseases, it is to be laid down as a Maxim, that if, for some of the first Days of the Disorder, few or no Fæces are eliminated, the Body is to be rendered soluble by a gentle Clyster, that, by this means, the Intestines may be freed from the Excrements, lest otherwise the Symptoms should be increased, and the Efficacy of the Medicines obtunded. *Langius* is, also, greatly to be commended, for using an Alexipharmic, in order to excite a Sweat for some Hours, since, by this means, the Poison is more expeditiously

exhaled and dissipated. The Application of an Epithem to the Heart is, also, a Circumstance of great Importance; for tho' it does not immediately touch and affect the Heart, but only the Right Orifice of the Stomach, and its nervous and muscular Coats, yet it is of the last Importance, that the Stomach, which is an highly nervous Part, of exquisite Sensation, has an intimate Communication with the nervous Parts of the whole Body, and in which the Poison first exerts its virulent Influence, should be well defended; which Intention is answer'd by such Medicines as are antispasmodic, and, at the same time, corroborative and balsamic; for which Purpose I generally recommend such as are prepared of Treacle, expressed Oil of Nutmegs, Camphire, Saffron, Castor, and *Peruvian Balfam*. After the Use of Alexipharmics, the Opening of a Vein is, also, highly beneficial: For to begin the Cure with Venesection, is dangerous, because, one or two Days after it, the Motion of the Blood to the Surface of the Body, and consequently the Perspiration, is diminished, and the Poison retain'd. Besides, the Dread and Terror with which those who are seiz'd with the Plague are struck, forthwith recal the Blood from the Circumference of the Body; so that Venesection, which produces the same Effect, must, of course, prove prejudicial. But, after the Use of Sudorifics, Venesection may be admitted, if Custom, a Redundance of Blood, a luxurious Diet, or an excessive Use of Wine, requires it, because, the Redundance of the Blood being removed, the Propulsion of the virulent Matter to the Glands is facilitated and promoted; and this is so much the more effectually done, if afterwards the Flux of the Blood to the external Parts is now-and-then assisted by gentle Diaphoretics: Acids, such as Vinegar, the Juice of Lemons and Citrons are, also, justly recommended, since they resist the Poison, prevent the Putrefaction of the Humours, and the Dissolution of the Blood; for which Reason they are preferable to all other alexipharmic and antipestilential Medicines.

When the Disease is on the Decline, *Langius* purges the Patient by gentle Laxatives, which, as in the Beginning of the Plague, and other contagious Disorders, it proves hurtful, by retarding the Motion of the Humours to the external Parts, so it is highly beneficial in the Decline of these Disorders: For, by this means, the Sordes generated during the Disease are eliminated; whereas, if they were retain'd, the Appetite would be destroy'd, slow and purple Fevers induced, the Strength render'd languid, slow Heat brought on, and a new and violent Disorder of the same Kind frequently produced again. Then he orders the Poison, in the pestilential Tumors, to be extracted by Cupping-glasses, Scarification, and Vesicatories; in which he is, also, seconded by the best Authors: For *Riverius*, in *Observat. Cent. 2. Obs. 19.* greatly recommends Cantharides made up with Leaven and Vinegar, and applied behind the Ears, or to the other usual Emunctories; after this, the Patient is to be ordered to Bed; and, in twenty-four Hours, a black and ferous Humour is discharged, by which means the Plague is in a few Days removed. *Langius*, also, justly advises, not to consolidate the Ulcers too soon: But, the Matter being solicited to the external Parts, and a Suppuration brought on, the Tumor is rather to be open'd, and the Ulcer cleansed with the usual Digestives; but it is to be kept long open with a Tent, that the Poison may be sufficiently eliminated, and the Ulcer, at last, brought to a Cicatrix.

Sanctorius, in *Aph. 139. Medicin. Stat.* affirms, "That few of the Nobility are cured even by the Use of Medicines, whereas many of the common People are cured without them." For 'tis certain from Experience, that common People deprived of all the means of Relief, and who use a temperate Regimen, and large Draughts of light Liquors, sooner recover in pestilential and other contagious Disorders, than those in opulent Circumstances, who are ruined by a Redundance of Medicines, and a Variety of Advice; for, in the former, Nature is robust and vigorous, to whom if the Cure is committed, it succeeds far better, than when attempted by Art, which sometimes hinders and disturbs it. But, in Persons of opulent Fortunes, Nature is often disturbed in her Operations, and the Disease terminates unluckily, on account of their irregular Method of Life, and their too liberal Use of Medicines, which are sometimes highly improper.

In the Cure of a Plague, nothing is more prejudicial, than a liberal Use of the alexipharmic Roots turgid with an hot volatile Oil; such as those of the *Carline Thistle*, *Angelica*, *Butterbur*, *Zedoary*, *Virginia Snake-root*, *Masterwort*, *Swallowwort*, *Burnet*; the Essences and Elixirs prepared of these, Treacle, and Mithridate. But still more prejudicial are the so much commended urinous and volatile Spirits; such as those of *Hartshorn*, *Vipers*, and *Soot*, as, also, volatile Salts, and Balfam of Sulphur. For the pestilential Miasma is so far from being expelled by these means, that it is rather retained, and more deeply rooted in the Constitution: For it is a constant Law in the animal Economy, that the Secretions which

which precede the Excretion of the recrementitious Parts, succeed better, when the Humours are moderately and freely convey'd to the Emunctories, than when they are thrown into violent Commotions. Hot Medicines rather increase the Uneasiness about the Præcordia, augment the Heat, promote the Dissolution of the Blood, and easily force the malignant Miasma from the Stomach, and nervous Parts; in consequence of which, they cannot fail to prove prejudicial. This is sufficiently certain from all the Authors, who have liv'd where the Plague raged, and especially from *Hildanus*, *Chald. de Heredia*, and from *Thenerus*, who informs us, "That those who used hot Alexipharmics, died of the Plague."

Nor are we, in a Plague, absolutely to condemn the Use of alexipharmic Roots and Herbs; for they are by no means prejudicial, when corrected with Acids and Nitre. Thus I have been informed, that in the Plague, which in the Year 1682. raged at *Hall*, nothing was more beneficial than a Mixture of the Water of *Carduus Benedictus* with four Spoonfuls of Wine-vinegar, and of Crabs-eyes and Treacle, each a Dram, frequently exhibited. In that Plague, also, which in the Year 1576. raged almost all over *Lombardy*, many, and especially the Inhabitants of *Milan*, were said to be cured by the Juice of Goats-rue mixed with Vinegar, *Carduus*-water, and a little Treacle, covering their Bodies afterwards, in order to sweat. *Thenerus*, in *Observat.* informs us, that in the Beginning of a Plague nothing prov'd so beneficial, as Treacle-vinegar, exhibited in order to provoke a Sweat; and that in the Year 1543. when a malignant Fever raged among the Soldiers, a whole Regiment of them was preserved by this Vinegar, every one recovering who used it, except a few, to whom it was exhibited too late. *Kircher*, also, in his Treatise *de Peste*, informs us, that in the *Roman* Plague so happy Effects were produced by an Infusion of Vinegar with Rue, the Root of Burnet, Betony, Garlick, and Juniper-berries, with the Addition of a little Camphire, that whoever used it, even tho' they liv'd among the infected, escaped the Plague. Besides, in malignant Disorders, as well as in the Plague, the Aqua Prophylactica Sylvii has been always greatly esteemed, because the principal Ingredient of it is Vinegar: For this Reason, *Gesner*, in *Lib. 3. Epist.* 27. advises to exhibit all Alexipharmics in Wine mixed with Vinegar. But these Alexipharmics mixed with Acids are principally proper on the first Day of the Disorder, where Resolution and Sweat are necessary; for *Mindererus* asserts for a Truth, that, unless, twenty-four Hours after the Invasion of the Disease, alexiterial Medicines are exhibited, all Attempts to cure the Patient afterwards prove fruitless.

But 'tis universally allow'd by all who have wrote on this Disorder, that the most present and efficacious Medicines for a Plague, are those of the acid and earthy Kind. Thus *Fracastorius*, in *Lib. 3. de Morb. Contag.* both for preventing and curing the Plague, orders the following Medicine:

Take of the Juice of Wood-forrel, two Ounces; of the Juice of Citrons, one Ounce; of *Diafcoridium* one Dram; of the Cordial Spices, two Scruples; and of Vinegar, one Ounce.

Mindererus, *de Peste*, *Cap. 15.* has these Words: "There is no Putrefaction, no Infection, no Depravation of the Juices, which cannot be subdued by Acids; and, to speak the Truth, if I was debarred the Use of vitriolic Medicines, I should be but ill qualified for the Cure of a Plague." *Fonseca*, *de vera Rat.-curand. Pest.* affirms the same: "For," says he, *Johannes Crato*, *Augenius de Monte Sancto*, *Martinus Rulandus*, and others, affirm, that in pestilential Fevers the Spirit of Vitriol is highly beneficial; and I can from my own Experience affirm, that I have with great Success exhibited it not only with Syrups, but, also, with Conserve of Roses." Among earthy Substances, and those of the fixed bezoardic Kind, the most considerable are, diaphoretic Antimony, the Bezoardicum Minerale, Crabs-eyes, Hartshorn calcin'd, and philosophically prepared, Amber, Seal'd Earth, *Armenian Bole*, and *Cinnabar*. Of these various Medicines may be prepared, and used either alone, or in Conjunction with Acids. But, with respect to these, the Curious may satisfy themselves in *Antonius Schneberg*, in *Catal. Med. Simpl. advers. Pest.* *Henricius*, a *Bra. Unzerus*, *Lib. 2. Antid. Pestil.* and *Mindererus de Peste*, *Cap. 15.*

Among the Medicines conducive to the Cure of a Plague, none are more considerable than Analeptics; for in this Disorder the Strength is greatly impaired, not only by the Constriction and Terror of Mind, but, also, by the Malignity of the Disease. Hence the Physician is carefully to remove every thing, whether of a moral or natural Kind, which is prejudicial to the Strength; and, in the Cure, he must diligently avoid Anodynes, as, also, highly vaporious and fetid Substances. For recruiting the Strength, nothing is better than a Cordial Water, which is prepared in the following manner:

Take of *Turkish Baum*, four Handfuls; of Rose-leaves bruised with Salt, and of the Flowers of Lilies of the Valley, each one Handful; of recent Citron-peel, half an Ounce; of Cinnamon, one Ounce; and of Mace, half a Dram. Pour upon these, of *Rhenish Wine*, one Quart; of common Water, three Quarts; and, by a gentle Fire, draw off two Quarts and an half.

This Water, mixed with an equal Quantity of that of *Carduus Benedictus*, may either serve as a Vehicle for the other Medicines, or it may be exhibited alone with Syrup of Citron-juice, and acidulated with Spirit of Salt.

Nor are Emetics less beneficial in a Plague, since the first Intention of Cure is, with the utmost Expedition, to eliminate the received Poison from the Body. Now the contagious Miasma is first of all mixed with the Saliva, when it descends to the Stomach; whence it is convey'd to the Mass of Blood. Hence 'tis proper, with all Expedition, to eliminate the Poison by the same way it enter'd, and, at the same time, to evacuate, by Vomit, the Crudities of the Primæ Viæ, which greatly heighten its deleterious Quality. But this must be done as soon as any Person finds himself infected, and perceives a Languor and Cardialgia. Thus 'tis certain from Experience, that by these means, and the subsequent Use of Sudorifics, the Plague, and other malignant Disorders, may be checked in their Beginning. To this Purpose, there is a curious and memorable Observation in *Riverius*, concerning a certain Man, who, as soon as he found from the Symptoms, such as a Pain of the Head, and Nausea, that he was seized with the Plague, thrust the End of a Feather, immersed in Oil, into his Fauces; upon drawing which out, he evacuated, by Vomit, a Matter at first serous, then yellow, and at last porraceous. Then, betaking himself to his Bed, he took Broth, sweated, and was forthwith recovered.

The Use of Venesection is not equally agreed upon by all, since some condemn, whilst others approve of it. *Celsus*, in *Lib. 3. Cap. 4.* gives the following excellent Advice: "Pestilential Fevers, says he, require a particular Consideration, since, in these, Hunger, Medicines, or Purges, are by no means useful. But, if the Strength of the Patient permits, Venesection is highly beneficial, especially when the Disorder is accompanied with Pain." *Riverius*, also, affirms, that in a pestilential parotid Tumor, which destroy'd considerable Numbers, he preserved many by moderate and repeated Venesection; a few Ounces, for Instance, being only taken away. Venesection, however, is never to be used in the Beginning, or immediately after the Invasion, when the Patient is rack'd with Terror and Dread. But if there is a Plethora, and the Patient has sufficient Strength, it may be moderately used on the second or third Day. [Other Authors, however, recommend copious Bleeding in the very Beginning, as it should seem, upon very good Grounds.]

Neither are Physicians agreed about the Use of Nitre in a Plague: Those who condemn it think, that it refrigerates too much, and, for that Reason, resists the Expulsion of the Poison; and that the pestilential Poison is stupefactive and putridous, and therefore fatal Diarrhoeas are to be expected from its Use. Those, on the contrary, who approve of it, maintain, that, in Conjunction with Diaphoretics, it must be as beneficial in a Plague, as in other exanthematous, malignant, and inflammatory Fevers: But the Contest is easily decided; for the individual Nature and Constitution of the Patients are to be regarded, and the Symptoms of the Disease duly consider'd. If the Patient is plethoric, the Temperament choleric or sanguineous, the Heat violent, and the Fever intense, accompanied with Thirst, and an Head-ach, nitrous Substances exhibited in small Doses, with the bezoardic Powders, are highly beneficial. But where a Torpor and Drowsiness, a weak Pulse, a Coldness of the Extremities, and an excessive Fear, have preceded, Reason informs us, that nitrous Preparations are to be abstain'd from. But 'tis always safer to associate the Nitre with Camphire, by which Union the vaporious Nature of the Camphire, and the refrigerating Quality of the Nitre, are mutually corrected; by which means a Medicine is produced, which is not only alexipharmic, but, also, effectually resists Inflammation. I remember, when at *London*, to have heard an old Surgeon, who was at *Vienna* when the Plague raged in it, say, that he, with great Success, used what he called *The black Elestuary*, composed of Elder-rob, and Honey, each half a Pound; of Gunpowder and Camphire, each a Dram. The Dose is one or two Drams. And, *Giselerus* affirms, that, in the Plague of *Brunswick*, he, also, with great Success, used Gunpowder.

Besides these, critical Tumors, which terminate a Plague, are to be skilfully treated. Buboes are a good Sign, when they soon appear, and are quickly matured: But, when they immediately recede, Death is either to be dreaded, or, at least, a Train of terrible Symptoms. Thus, if inguinal Buboes disperse,

a Palsy, or a Gangrene of the Side, ensues: If Tumors under the Chin recede, an intercepted Deglutition, both of solid and fluid Aliments, follows, with a Quinsy, which generally proves mortal. Tumors behind the Ears are dangerous; those with Carbuncles on them, still worse; and those surrounded with a livid Circle, mortal. Carbuncles are always worse than Buboës, but they are the more dangerous, the larger, the blacker, and the nearer the Heart they are. In both, Sudorifics, and such Medicines as force the Humours to the Circumference of the Body, are most proper. When Buboës come slowly forward, attracting Medicines, Cupping-glasses, and Vescicatories, are ordered to be applied. If the Buboës are protuberant, the Suppuration is to be promoted by Cataplasms of Figs, white Lily-root, Onions roasted under the Ashes, Meal of Linseed, Honey, and Saffron; or we are to apply suppurating and discutient Medicines at the same time, such as the simple Diachylon-plaster, or that made up with the Gums, the Mucilage-plaster, and the Melilo-plaster. When the Buboës are suppurated, they are to be laid open, and cleansed with the Liniment of *Arcaus*, sometimes mixed with Basilicon; then they are to be consolidated, but not too soon, since 'tis better the sanious Matter should be suffered to flow for a considerable time. To Carbuncles, because the Humour is already subject to Corruption, we are not to apply Suppurants; but we are to endeavour to procure the falling off of the Crust: For which Purpose, the Authors who write on the Plague, order the adjacent Parts to be anointed with a Digestive, and some acrid Plaster, to be laid upon the Carbuncle. When the Crust is fallen off, the Carbuncles are to be treated with the Unguentum *Ægyptiacum*, or the Unguentum *Fuscum Wurtzii*, with Honey of Roses. But if a sphacelous Corruption is present, and seems to spread, it is to be checked by a sufficient Scarification, and the Application of some Liquor which powerfully resists Inflammation and Putrefaction. A Liquor of this Kind, much recommended as highly effectual, may be prepared in the following manner:

Take of rectified Spirit of Wine, four Ounces; of Camphire, two Drams; of Saffron, one Dram; and a Dram of artificial Nitre, which is prepared of urinous Spirit of Sal Ammoniac, and Spirit of Nitre: And let this be perfectly dissolved in Spirit of Wine.

As to the Regimen, it is to be observed, that, as in all exanthematous Disorders, so, much more in a Plague, excessive Heat, both of the Bed and Room, is to be avoided, as highly prejudicial. On the contrary, Cold is to be guarded against; lest, by its means, the Eruption of the Tumors, and the Exhalation of the poisonous Matter through the Pores of the Skin, should be prevented. In this Disorder, all things ought to be temperate, since Danger attends both Extremes. *Hoffman*.

PETALA. Petals; that is, the Flower-leaves of Plants. See the Explication of Botanic Terms, under the Article BOTANY.

PETALODES, *πεταλόδης*. An Epithet for the Sediment of Urine, importing scaly, or resembling Leaves; which is a Sign of an unequal Colliquation of the Parts of the Body, and sometimes of an Erosion, or Exulceration, of the Bladder. In Botany *Petalodes* is an Epithet for those Plants, which are furnished with Flower-leaves, or Petals; whereas those, which have none, are called *Apetalous*, that is, without Petals.

PETASITES.

The Characters are;

The Root is large and perennial; the Leaves are grey, large, and orbicular. The Calyx is cylindrical, multifid, squamous, and contains many Floscules collected into a Flower. The Flowers are disposed in a Thyrsus, and appear before the Leaves; and the Ovaries are furnished with a Tube, which has a clavated, bifid Apex.

Boerhaave mentions four Species of *Petasites*; which are,

1. *Petasites*; major; & vulgaris. C. B. P. 197. *Tourn. Inst.* 451. *Boerb. Ind. A.* 118. *Petasites*. *Offic. Ger.* 667. *Emac.* 813. *Raii Hist.* 1. 260. *Synop.* 78. *Petasites vulgaris*. *Park.* 419. *Petasites vulgaris rubens rotundiori folio*. J. B. 3. 566. **BUTTER-BUR.**

The Roots of Butter-bur are about a Finger thick, long, smooth-branched, and creeping in the upper Part of the Earth, having but few Fibres; they have a strong Smell, and an hot, aromatic, bitterish Taste; from these, early in the Spring, arise thick, hollow, downy Stalks, a Span high, clothed with small purplish Flowers, which consist only of a fistular Thrum, without any Border of Petala, which turn into Down: When these are past, the Leaves appear, which are very large, and roundish, but hollowed in next the Stalks, indented about the Edges, whitish and woody underneath, and green above; it grows by River-sides, and in marshy Grounds. The Flowers appear in the Beginning of *March*.

The Roots of Butter-bur are sudorific, alexipharmic, and good for all kinds of Fevers, and malignant, infectious, and pestilential Distempers; they are cordial, prevent Fainting; and

Shortness of Breath; they likewise provoke Urine, and are accounted good to destroy Joint-worms. They are outwardly applied, in the Form of a Cataplasm, to pestilential Buboës, and Plague-sores; a great Quantity of them are put into the *Aqua Theriacalis*. *Miller's Bot. Off.*

The Plant is extraordinary bitter, but not with an equal Degree of Acrimony. The *Germans* commonly call it the *pestilential Root*, because it is found, by Experience, to be of excellent Service in pestilential Fevers. They put the Roots, stripped of their Bark, in Vinegar, till it be sufficiently impregnated with their Virtues, and then exhibit it with the Juice of Rue and Theriaca; it is, also, recommended for an uterine Lipothymy, Difficulty of Breathing, Cough, and Asthma; and is effectual against the broad Worm, and provokes Urine, and the Menfes. Used outwardly, it is said to be good for Buboës, and malignant Ulcers. *Raii H. P.*

2. *Petasites*; minor. C. B. P. 197.

3. *Petasites*; minor, alter; *Tussilaginis folio*. H. R. Par.

4. *Petasites*; Africanus; *Calthæ palustris folio*. H. L. 488. *Blitum Africanum, Calthæ palustris folio, caule nudo, cubitali spicam pedalem et amplius sustinente*. *Plukn. Phytog.* 182. *Almag.* 68. *Boerb. Ind. alt. Plant.*

The Name *Petasites* is from *πέταος* (*petao*) to extend, because of the Largeness of its Leaves; or from *πέταος* (*petasos*) an Hat, or Bonnet, because the Leaves have a sort of Cavity in the Middle, and have their Margin expanded horizontally round it.

The first Species, in particular, and, also, the second, are officinal. The Root, Leaves, Pedicles, Stalks, and Flowers, have a singular Taste, not to be found any-where else. *Petasites* is heating, aromatic, and balsamic, by which its Virtues are understood. It is aperitive, and, in Cases where a Poison is very moveable, expels it by means of Sweat; whence it cures the Pestilence, and, in all *European* Languages, has a Name from that Disorder. They infuse a Dram, or half an Ounce, of the Root in Water, or Vinegar, and sweeten it with Honey; this procures a profuse Sweat, and so expels the Poison. This Property principally belongs to the Root, which is, also, esteemed an Alexipharmic. The Leaves, stripped of their outer thin Membranes, and applied to the Feet of hydropic or leucophlegmatic Patients, dissipate the watry Matter; for, being of an attenuant, aperient, and resolvent Quality, they excite Sweat, increase Perspiration, and, by that means expelling every thing that is volatile, discuss putrid, alkaline Matter, and exterminate them out of the Body. Preparations of the *Petasites* are, a Powder, Syrup, and Decoction. The Leaves and Flowers have the same Virtues as the Root, which later is to be taken up, before the Leaves come forth, or when the Flowers begin to appear; otherwise its Virtues are exhausted. They scrape off the Bark of the Root, and infuse the Shavings of the rest; then mixing this Infusion with the Juice of Rue, and a little Theriaca, they exhibit it as a most effectual Remedy against the Plague. The Leaves, outwardly applied, discuss Contusions. The Roots are, also, proper in the Pleurisy, when the Pus is concocted, and in Disorders of the Breast. *Hist. Plant. adscript. Boerhaav.*

PETECHIÆ. Red, or purple Eruptions, resembling Marks excited by the Bites of Gnats, or Fleas, which frequently appear in Fevers, and the Small-pox; and are always of very bad Prognosis. *Sydenham*, with great Reason, apprehends, they are very often excited, and exasperated, by too warm Medicines, and an over-heating Regimen.

PETECHIALIS FEBRIS. A Petechial Fever.

Petechial Fevers of the genuine Kind are of an highly malignant and contagious Nature, greatly prejudicial to the Head and Strength, accompany'd with Spots of various Colours appearing on the Skin; they arise from a Corruption of the vital Juices, and, in consequence of their subsequent putrid Dissolution, prove mortal.

These exanthematous Fevers are justly call'd *malignant*, or *poisonous*, since, for the most part, they are produced and propagated by an highly subtle Vapour, or Miasma, of an active and virulent Nature, exhaling from the Bodies of those afflicted with them. Besides, they are not to be cured without the greatest Difficulty; and, in a short time, prove mortal to many. They, also, quickly and greatly impair and destroy that Strength, on which the Motions, which sustain and support Life, depend. And lastly, they at first appear to be of a mild and gentle Nature, and often impose so far upon Physicians and By-standers, as to be mistaken for catarrhal Fevers; but afterwards exert their pernicious Effects with so much the greater Violence.

But the deleterious Nature of Petechial Fevers may be known from the following Signs: At first the Patients generally complain of so great a Weakness, and Loss of Strength, that they can hardly stand upright, or walk, but immediately faint away; whereas such a Weakness is only to be observed in the Vigour and Height of other continued and acute Disorders. The Head is, also, in the Beginning of this Disorder, afflicted with Pain,

Pain, Heat, and a Torpor; the Mind is dejected, anxious, uneasy, loses all Hopes of Recovery, and prognosticates the worst. A continual Watching torments the Patient, nor does he ever enjoy a refreshing Sleep; his Appetite is lost, and his Countenance dejected; his Pulse is languid, small, and unequal; his manner of lying in Bed is preternatural and irregular, since with his Limbs folded, as it were, together, he tosses his Body perpetually. His Breast is oppressed, and this Oppression is sometimes accompany'd with a dry Cough; the Fibres of the Muscles are convulsed by a kind of undulatory and tremulous Motion, whilst the Tendons are contracted, and are affected with Twitchings. Many Patients, labouring under Petechial Fevers, neither complain of Thirst, Heat, Pain, nor Anxiety; but rather affirm, that they are sensible of no Indisposition, except an unusual Languor, and want of Sleep. The Urine is, at first, thin, like that of sound Persons. On the fourth, fifth, or even the seventh Day, appear Spots, frequently of various Colours, especially on the Back and Loins, sometimes more, and sometimes fewer in Number; but, for the most part, without affording any Relief to the Patient; for which Reason they are rather to be esteemed symptomatic than critical.

The Antients gave these Spots the general Denomination of *Exanthemata*; but the Italian Writers have since called them *Petechia*, from the Word *Pedecchio*, because they resemble the Bites of Fleas. The French Authors have call'd them *Purpurata*, from their purple Colour; the Spaniards, *Tabardillo*, from their redish-yellow Colour; and the Germans, *Puncticulæ*, or *Lenticulæ*, because in Figure and Colour they resemble a Lentil; whilst the Hungarians denominate this Disease from the Pain and Delirium which attend it. But, besides the Figure of the Spots, Petechial Fevers differ from other exanthematous Disorders in this, that the Spots in the former not only appear without any Degree of Heat, Itching, Elevation, Asperity, and Exulceration of the Skin, but, also, for the most part, without affording any Relief to the Patient, because the Matter of them is not of a saline and caustic, but rather of a putrid and corrupted Nature.

These Spots are so far from affording any Hopes of Recovery, that, on the contrary, the more numerous they are, the greater Degree of Corruption they discover; and when they are of a livid, leaden, or blackish-green Colour, they are plain Proofs of a sphacelous Corruption. It is, also, to be observed, that those, who escape the Fury of this Disease, are recovered, not by any cutaneous Eruptions, but either by profuse Sweats, of a fetid, acrimonious Smell, or by critical Fluxes. But such an happy Event only happens by the Strength and friendly Concurrence of Nature in those Persons, whose Juices are not as yet greatly corrupted, but are as yet temperate, and retain something of an alexipharmic Quality. Many Patients, labouring under Petechial Fevers, rather die, either of a sphacelous Corruption in the Stomach, Intestines, and other Viscera, or of a Phrenitis, or, which happens more frequently, of an anginous Inflammation of the Fauces and Oesophagus; the Carcases, in the mean time, of such Patients diffusing a most intolerable Stench immediately after their Death. This fatal and unlucky Event is prognosticated by the following Signs: If the Patient's Thirst is either none at all, or insatiable; if the Tongue is dry, furrowed, and blackish; if the Fauces are inflamed, and covered with *Sordes*, and the Deglutition is difficult; if, after the Eruption of the Spots, the Respiration becomes difficult, and the Uneasiness of the Breast not only continues, but is increased; if, after Sweat, or a Flux, the Delirium, and other Symptoms, are augmented, whilst the Urine is neither turbid, nor deposits a Sediment; if the Eyes become dim, the Mind totally delirious, and the Patient pick the Knaps of the Bedcloaths; if there is a subfultory Motion of the Tendons; if the Excrements are involuntarily discharged; if the Patient is covered with a cold Sweat; and, lastly, if Convulsions come on, which put an End to Respiration and Life.

The formal Cause of these pernicious Fevers consists in a putrid Dissolution or Colliquation of the Blood, and vital Juices, and especially in the Contamination, and totally peccant State, of that most subtle, elastic, and lymphatic Fluid, which, being originally contained in the Blood, secreted in the Brain and spinal Marrow, and distributed through the Nerves to the whole Body, conveys Sensation, and a Power of Motion, to all its Parts; for that this poisonous Vapour, by which even sound Bodies are infected, is of such a Nature and Power, as not gradually to induce a putrid Fermentation on the Blood, and other Humours of the Body, but, also, penetrate immediately to the interior Recesses of the Brain, and nervous Parts, and there to corrupt the subtle nervous Fluid, is obvious from this; that, as soon as such a poisonous Vapour is received into the Body, the natural, vital, and animal Strength begins to languish, even in perfectly sound Habits, whilst the Crasis of

the Blood and Humours as yet remains entire, and free from Corruption.

This virulent and contagious Miasma principally enters the Body by the Nostrils, Fauces, and Bronchia; for in no Part of the Body are there more open and less defended Nerves, than those in the Nostrils distributed from the *first and second Pairs*. Whilst, therefore, this deleterious Vapour parties with the Air through these Nerves, it is not surprising, that it should immediately reach the Nerves and Brain, and that the Persons, who have this Misfortune, should be immediately seized with a kind of Intoxication, a Torpor of the Head, a Languor of Strength, and a Vertigo. But this contagious Miasma, most of all, mixes itself with the Saliva, and, with it, descends to the Stomach; which, as being, also, a nervous Part, is generally the first Seat of these contagious Fevers. Hence the first bad Symptoms, for the most part, discover themselves first in the Stomach and Præcordia; such as a Nausea, accompanied with an Inclination to vomit; frequent Stools, accompanied with Gripes; or violent Costiveness; Loathing of the Food; Anxieties of the Præcordia, a Cardialgia, and frequent and copious Eructations of Lymph from the Stomach. And it is evinced by Anatomical Observations, that, in Persons who have died of Petechial Fevers, the Stomach has, beyond all other Parts, been found affected with a sphacelous Corruption. But whilst this Miasma is mixed, not only with the Saliva in the Mouth, but, also, with the Gastric Liqueur, and the Pancreatic Juice in the Stomach, its contagious and propagating Force is much augmented; for it is universally agreed upon, that these salival Juices, subservient to the intimate Digestion of the Aliments, are of so subtle, spirituous, aerial, elastic, and fermentable a Nature, that sweet Substances, with which they are mixed, are forthwith put into a fermentative Motion. Hence these Juices, already in an intestine fermentative Motion, readily conspire with the subtle and putrid Miasma, when conveyed to them; so that the latter propagates itself, and is increased, exactly in the same manner, as a small Piece of Leaven ferments a large Mass of Dough.

Hence the Reason is sufficiently obvious, why, in order to avoid the Contagion of Petechial Fevers, nothing has, by the most skilful Physicians, been observed to prove more effectual, than avoiding the Breath of the Infected, especially when the Disorder is at its Height, and the Putrefaction greatest; frequently discharging the Saliva, and holding such Substances in the Mouth, as have a Tendency to evacuate it; chewing the Roots of Angelica, Zedoary, Masterwort, and Burnet; or smoking Tobacco. Hence, also, the Reason is obvious, why this deleterious Miasma is far most easily received, and soonest exerts its pernicious Force, in a Stomach that is loaded with a large Quantity of Crudities, and pituitous or salival *Sordes*. Hence, also, the Reason appears, why gentle Emetics, in Conjunction with Alexipharmics, in Persons recently infected, are the most effectual Means of checking a Petechial Fever in its Beginning.

I am of Opinion, with *Hippocrates*, that these contagious Fevers derive their first Origin from some common and prevalent Intemperature of the Air; such as a long-continued, moist, rainy, cloudy, as also a close, hot, and moist State of the Atmosphere; which, by reason of the large Quantity of aqueous Vapours, obtund and depress the brisk, elastic, and expansive Force of the Air, which sustains such a Motion of the Solids and Fluids, as is necessary to Life. Hence the salutary Excretions, especially Perspiration, become languid and disturbed; whilst the useless, superfluous, and corrupted Parts are retained in the Habit; which, being accumulated in the Blood and Juices, must necessarily generate a strong Tendency to Corruption and Dissolution. Besides, under such a Constitution of the Weather, Vegetables and Grain acquire a kind of foreign Nature, which is unfriendly to the human Constitution; for it is certain from Experience, that, during a long Tract of moist and rainy Weather, there is found, especially in Rye, a large Quantity of the Darnel, which is of a noxious and almost poisonous Nature. Nor does Rye, produced in such rainy Seasons, yield so large a Quantity of Spirit, nor prove so salutary and nourishing Bread, as that which grows during dry and hot Weather; so that it is not surprising, that such unsalutary and corrupted Aliments should dispose the Body to Putrefaction.

Besides, the Air is rendered insalutary, and unfit for generating putrid Disorders, by frequent and long-continued Inundations; for, in this Case, the Water stagnating, especially by means of the Heat of the Sun, begins to grow putrid, and sends up many noxious Effluvia into the Atmosphere. Large Quantities, also, of various kinds of Insects are generated about stagnant Waters, from which a large Portion of caustic, saline, deleterious, and subtle Matter is exhaled into the Air. Now, that these things are highly prejudicial to Health, is certain from various Observations, which evince, that, after large Inundations,

dations, contagious and almost pestilential Fevers have been produced. See *Hoffman, de Temp. Ann. insalub.* Of the same offensive and insalutary Nature is the Air, when impregnated with Exhalations arising from uninterred and putrefying human Carcases, or from the Excrements of Animals; and especially when such an Air is confined, and deprived of the Access of a more pure Atmosphere.

Not only an impure and insalutary Air, but, also, the particular Habit and Disposition of the Body, contributes to the Generation of Putrefaction, and, consequently, to the Production of Petechial Fevers. Thus it is certain from Experience, that phlegmatic and sanguineous Persons, those of lax and spongy Habits, those of timorous and anxious Minds, and those whose Strength is exhausted by Luxury, the excessive Use of improper Aliments, Drunkenness, Venery, Hunger, protracted Sorrow, Watchings, Fatigue, or Hæmorrhages, are not only easily and frequently seized with Petechial Fevers, but also with Difficulty recover from them; for no other Reason, than that their impure and weak Bodies have a strong Disposition to Putrefaction and Corruption. Cachectic Women, also, and those affected with a Suppression of the Menstrues, those labouring under a Lues Venerea, and such as have the dire Remains of it in their Habits, are not only readily seized with Petechial Fevers, but, also, escape with great Difficulty.

Hence we may easily judge, why these contagious Fevers rage so frequently in Camps, where all the Causes productive of this Disorder generally concur; for the Soldiers are sometimes exposed to a dry and hot Air, and, immediately after, to a moist and cold Atmosphere. They sleep in the open Air, and often in moist and marshy Places. The Excrements of Men and Animals are every-where to be found. Nor, on account of the Intrenchments, is there any Access to the Wind, in order to dissipate the fetid Exhalations. They eat improper, and sometimes absolutely corrupted, or half-boiled Aliments. They drink stagnant and putrid Waters, and have their Strength impaired by Hunger and Watchings. Hence, when, from this laborious and hard Course of Life, they retire to their Winter-quarters, indulge themselves in Ease, and eat copiously, the internal Corruption, gradually contracted, at last increases so far, as to appear in a Petechial Fever; for which Reason Disorders of this Kind are more frequently observed in the Winter-quarters, than in the Camps of Soldiers. For the same Reason these malignant and contagious Diseases are more incident to poor Persons, who live in Filth, and are confined, in small Cottages, to a vapid and impure Air, than to opulent Persons, who have better Opportunities of observing the Rules of Health, with respect to Air and Regimen. These Fevers, also, frequently happen in Hospitals, Nurseries for Orphans, and public Prisons, where many are kept together, and lead a miserable Life, which poses the Body for receiving the Contagion.

The CURE.

In order to preserve ourselves from Petechial Fevers, nothing is of greater Importance, than that, during insalutary Seasons of the Year, fit for generating malignant Disorders, we should carefully avoid an Air impregnated with noxious Vapours and Exhalations, and destitute of a brisk and elastic Expansion. Besides, since, under such a Constitution of the Air, the Bodies of People are weak, and disposed for contracting Diseases, it is highly expedient, that, at such Seasons, we should abstain from every thing, which can either impair the Strength, or render the Excretions more languid; such as violent Commotions of Mind, Grief, Terror, Care, intense Meditation, protracted Watchings, and exposing the Body to Cold, especially in the Night-time, or with thin Cloaths in cold Weather. Besides, the Increase of Crudities in the Primæ Viæ is to be prevented; for which Reason we are to abstain from eating excessively; especially of insalutary Substances, from Surfeits, the continual Smoking of Tobacco, and the profuse Use of Coffee, which, as it is unfriendly to the Stomach, so it is much more the nervous Parts, and the Mixture of the vital Fluids. We are to take care to breathe a salutary and pure Air; for which Reason we are to avoid low Places, in which the Air readily becomes vapid; as, also, Houses, which are not exposed to a free and open Air. The excessive Humidity of the Air is, also, to be corrected by Fires, and Fumigations by Mastich, Amber, and Juniper-berries.

But, among all the Preservatives against Petechial Fevers, I know none more effectual, than the moderate Use of good Wine, especially of the *Rhenish* Kind; for this, drank moderately in the Morning, or even at Meals, surprisingly sustains and recruits the Strength; promotes the Circulation of the Blood, and the several Excretions; assists the Digestion of the Aliments; and excellently resists Putrefaction, especially when moderate Exercise, and some other diluting Liquor, are used in Conjunction with it. I can, from long Experience, affirm, that in epidemic Disorders, arising from a moist Constitution

of the Air, those who observed a good Regimen, and daily drank a moderate Quantity of laudable Wine, escaped: Those, also, who have written concerning the Plague, affirm, that Wine is one of the best Preservatives against that Disorder. And I venture to assert, that, after a Crisis happens in Petechial Fevers, there is no better Medicine, than Wine, for reinforcing the languid Strength, and promoting cutaneous Excretion.

In the Beginning of Petechial Fevers no Medicines are more beneficial than Acids, especially Citron-juice put into Pisans to be drank, in order to extinguish the Heat; and remove the Putrefaction, as, also, Wine-vinegar either simple or distilled, joined with Mixtures of proper Waters, and fixed diaphoretic Powders. Besides these, such Medicines are, also, proper, as, without impairing the Strength, colliquate the Saliva, and free the Breast from Infections; for, with the celebrated *Cramerus*, I have often observed, that hardly any Persons, who had a copious Discharge of Saliva and Spit, died of Petechial Fevers. For this Reason, the Physician now mentioned, in these Disorders, made frequent Use of alexipharmic Mixtures, composed of distilled Vinegar, or Vinegar of Scordium and Cinna-bar, and sometimes of bezoardic Mineral, and Oxymel of Squills. But it is an horrid Practice, in the Beginning of Petechial Fevers, to exhibit volatile bezoardic and sudorific Medicines, with an hot Regimen, and boiling-hot Infusions; for by these means the intestine putrid Motion is increased; an Orgasm brought on; and a greater Loss of Strength produced.

In the Decline of a Petechial Fever, no Excretion is more salutary, than that made by Stool coming on at a proper time: I have found from a Series of more than fifty Years Experience, that Fevers of this kind were rarely terminated by Sweats and Hæmorrhages alone, but more frequently by a Diarrhoea appearing on the seventh, the ninth, or the eleventh Day; and that nothing was more prejudicial, than stopping a violent Diarrhoea, or a critical Flux, in the Beginning. I have, also, found from Experience, that, in Cases where catarrhal, malignant, and exanthematous Disorders have been terminated by Fluxes, the Patients have escaped the white Purple Fevers, which, in the Decline of a Petechial Fever, when the Pulse is become equal, frequently supervenes about the eleventh Day, not without great Danger to the Patient. The most skilful Physicians have long ago adverted to the Salubrity of Fluxes in Disorders of this Nature. Thus *Hippocrates*, in his *Epidemics*, informs us, that those who labour under acute Fevers of this kind, were cured by Fluxes. *Galen*, also, in his *Treatise de atra Bile*, Cap. 4. informs us, that, in a certain pestilential Constitution, a Diarrhoea proved highly salutary. *Gerardus Columbus*, also, in his *Treatise de Pestil. Febr.* highly extols the beneficial Effects of Fluxes, in these Words: "All, who had copious Fluxes, though with the Signs of Crudity, were at last cured; for, as the Flux proceeded, the Signs of Concoction appeared, the Disease became milder, and, the Flux still continuing, the Patients were totally and entirely cured." This Doctrine is, also, confirmed by *Valleriola*, in *Obs. Lib. 6. de Febr. Schenkii*, *Observat. Lib. 6. de Febr. Riverii*, *Observat. Cent. 1. Observat. 47 & 48. and Cent. 2. Obs. 34 & 87. Horstius*, in *Observat. 10. Johannes Rhodius* in *Cent. 2. Obs. 85. Secreta, de Febre castrensi maligna*, Cap. 4. and *Bonetus* in *Thes. Pract. de Febr. putr.* as, also, in his *Treatise de Causo*, Cap. 2.

This is, therefore, the Method of Nature, with which the Physician ought to act in Concert, and which he ought to assist, if weak and defective. I am convinced from Experience, that whatever is to be expected in the Cure of putrid, malignant, pestilential, and Petechial Fevers, consists in a seasonable Use of such Medicines, as, with Safety, render the Body soluble; but these ought principally to be exhibited about the critical Days, that is, from the seventh to the fourteenth; for, if they are used in the Beginning, they do but little Service, because the Matter is not then concocted, and fit for Excretion; but as, in order to render the Body soluble through the whole Course of Petechial Fevers, there is nothing more prejudicial, than those Medicines, which act by a certain caustic Acrimony, Senaleaves not excepted; so nothing is more proper for this Purpose, than such Substances, as have nothing in their Contexture capable of impairing the Strength, but render the Body soluble in a mild and gentle Manner. The most considerable of these is a due Dose of Manna, mixed with a sufficient Quantity of Cream of Tartar, which, on account of its grateful Acidity, is, also, beneficial in these Disorders. This Intention is, also, answered by solutive Syrup of Roses, mixed with a saline Stimulus, prepared of Cream of Tartar, Sal Polychrest. or antimoniated Nitre; and exhibited in a due Dose, at a proper Season, and with some diluting Vehicle, such as Whey duly prepared; or temperate mineral Waters, such as the *Antonian* and *Wildungensian* Springs. No less excellent for the same Purpose is the Pulp of Tamarinds, or Decoctions of them prepared with

with Manna, or Rhubarb. How excellent Effects are, in Petechial and malignant Fevers, produced by Laxatives, we are informed by *Moræus*, in his *Treatise de Malign. Febr.* where he gives us more than twenty Instances, in which he, with great Success, used Pulp of Tamarinds, and an Infusion of Rhubarb, Sena-leaves, Cream of Tartar, and Manna, in the Water of Wood-sorrel.

But, in the Cure of Petechial Fevers, Physicians are not agreed with respect to the Propriety of Venesection; and, indeed, it must be owned, that there is so great a Difference between malignant Fevers, that the most skilful Physicians are often lost and bewildered in investigating their Natures; but it is certainly true, that, when such Fevers afflict plethoric or plethorico-cachochymical Patients, Venesection is highly proper, as a Preservative; as, also, in those accustomed to Venesection, high and luxurious Living, or a sedentary Life; for I have found from Experience, that those, from whom Blood has been previously taken away, either were not seized with those Disorders at all, or were less affected, and more easily recovered, than those who had not the Advantage of Venesection.

But it is carefully to be observed, that both during Petechial Fevers, and in their Decline, the languid Stomach is not to be overloaded with Aliments, much less with those of an insalutary kind, and especially with large Quantities of Flesh. It is a vulgar Error, especially among the common People, to believe, that the Strength is restored by Aliments. But this is one of the principal Causes, why Patients, who sometimes think themselves past Danger, yet find themselves miserably mistaken; since, by this means, the former Disorder returns, and more effectually endangers Life; or a new Disease supervenes. *Hoffman*.

PETIA. A Rag formed into a *Nodulus*, or Bag, in order to contain Medicinal Ingredients. *Petia Oculi* is an Hæmorrhage from the Eye. *Costellus*.

PETICULÆ. The same as **PETECHIÆ**.

PETIGO; the same as *Impetigo*. See **LEPRA**.

PETIOLUS. The Pedicle, or Stalk, of a Fruit.

PETIVERIA. Guinea Henweed.

The Characters are;

It hath a Flower consisting of four Leaves, which are placed almost in the Form of a Cross, from whose Cup rises the Pointal, which afterwards becomes the Fruit, which is bordered and cut at the Top, resembling an inverted Shield, containing oblong Seeds.

Miller mentions but one Species of this Plant;

Petiveria folani foliis, loculis spinosis. Pluk. Nov. Gen.

This Name was given to this Plant by Father *Plumier*, who discovered it in *America*, in Honour to Mr. *James Petiver*, an Apothecary, who was a curious Botanist.

It is a very common Plant in *Jamaica, Barbadoes*, and most of the other Islands in the *West Indies*, where it grows in shady Woods, and all the *Savannas*, in such Plenty, as to become a very troublesome Weed; and, as this Plant will endure a great deal of Drought, so it remains green, when other Plants are burnt up, which occasions the Cattle to browse on it; and, having a most unfavourable strong Scent, somewhat like wild Garlic, it gives the Cows Milk the same Flavour; and the Cattle, which are killed soon after feeding upon this Plant, have a most intolerable Scent, so that their Flesh is good for little. *Miller's Dictionary*.

PETRÆ OLEUM. See **NAPHTHA** and **PETROLÆUM**.

PETRACORIUS LAPIS. Geoff. *Prælect. Angl. Edit.* 179.

THE PERIGORD STONE.
This is a fossil ferruginous Substance, black, hard, and heavy, seeming to contain some Particles of Iron. It is dug in the Mountains of *Dauphiny*, and used only in painting earthen Vessels, and by the Enamellers. *Geoffroy*.

PETRELÆUM. See **PETROLÆUM**.

PETRIFICATIO. See **ANCUBITUS**.

PETROLÆUM. See **NAPHTHA**.

In *Brofely, Bently, Pitchford*, and other Places adjacent in *Shropshire*, there lies over most of the Coal-pits, or Mines, a Stratum, or Layer, of a blackish Rock, or Stone, of some Thickness, which is porous, and contains great Quantities of bituminous Matter.

This Stone, being brought to the Workhouse, is ground small by Horse-mills, such as are used for grinding Flints, to make Glass of; the Powder is thrown into great Coppers of Water, where, by Boiling, the bituminous Matter is separated from the stony, or gritty, this last sinking to the Bottom, the other swimming at the Top.

This bituminous Substance, being gathered together and evaporated, comes to the Consistence of Pitch, and, with the Help of an Oil distilled from the same Stone, and mixed with the Pitch, comes to be thinner, or like Tar; the Uses of both which Materials, either for Shipping, or otherwise, these Substances

are said to supply, and even to excel. This has been tried on several Boats, and it does not crack, like the ordinary Pitch or Tar, but always keeps black, or soft; and therefore is proposed to hinder the Worms from getting into the Ships pitched with it.

There is, likewise, distilled from this Stone an Oil, which may be used for Oil of Petre, or Turpentine, and has been tried in Akes and Pains. *Philosophical Transactions*.

This Oil has lately been advertised as a secret and excellent Topic for Pains, by the Name of *Oil distilled from a flinty Rock*.

PETROMARULA. A Name of a *Cretan* Species of *Rapunculus*. *Raii Hist. Plant.*

PETROSELINUM. See **APIUM**.

PETROSUM OS. The hard Part of the Temporal Bone. See **CAPUT**.

PETUM. Tobacco. See **NICOTIANA**.

PEUCE. The Pine-tree, or *Larix*.

PEUCEDANUM.

The Characters are;

The Root is perennial, deeply sunk, and hairy. The Leaves are winged, narrow, grassy, and divided into three Parts. The Seed is flat, almost oval, slightly striated, and marginated.

Boerhaave mentions three Species of this Plant; which are,

1. *Peucedanum majus*; *Italicum*. *C. B. P.* 149. *M. U.* 36. *Tab. 9.*

2. *Peucedanum majus*; *Italicum foliis longis, angustis. An ferula Orientalis, Peucedani folio?* *T. Cor.* 22.

3. *Peucedanum Germanicum*. *C. B. P.* 149. *Tourn. Inst.* 318. *Boerb. Ind. A.* 66. *Peucedanum*. *Offic. Ger.* 896. *Emac.* 1054. *Raii Hist.* 1. 416. *Synop.* 3. 206. *Peucedanum vulgare*. *Park. Theat.* 880. *Peucedanum minus Germanicum*. *J. B.* 3. 36. *Peucedanum, Pinastrilla, Fœniculum porcinum*. *Merc. Bot.* 1. 58. **HOGS-FENNEL**.

The Leaves of this Plant are large and winged, observing a tripartite Division, and having three Leaves upon one Stalk, which are much broader and flatter than common Fennel. The Stalk grows to be about two Feet high, divided toward the Top, hollow and striated, on which grow broad flat Umbels of five-leav'd yellow small Flowers, which are succeeded by larger and flatter Seed, than that of Fennel. The Root is thick and long, of a dark-brown Colour, being somewhat hairy, or beset with small setaceous Villi on the Top, of a very strong sulphureous Smell: It grows in several Places by the Seashore, and flowers in *July*. The Root is the only Part used, and that not often.

Hog-fennel is accounted good to clear the Lungs of tough viscid Phlegm, and thereby to help old Coughs, and Shortness of Breath; it, likewise, opens Obstructions of the Liver and Spleen, and helps the Jaundice; it, likewise, provokes the Menes, and gives Ease in Labour-pains; the Juice, snuffed up the Head, is commended by the Antients, against the Lethargy, Apoplexy, Epilepsy, and other Disorders of the Head and Nerves. *Miller's Bot. Off.*

The Root, and the other Parts, of the *Peucedanum* are endowed with a cathartic Virtue, as we are inform'd by the Antients; but, on account of its fetid and rank Smell, were not much used.

Peucedanum expectorates tartareous Mucus, and extracts Bile; it provokes Urine, and is said to be good for the Stone. Outwardly it is of Service in the Hemicrania, and other Pains incident to the Head, and proceeding from Catarrhs; in renitent Tumors; and for cleansing old Ulcers. *Raii Hist. Plant.*

The Name *Peucedanum*, is from *Πεύκεν*, (*Peuce*) a Pine-tree, which it resembles in its Leaves.

It is commended by the Antients for discussing inflammatory Diseases; for which Purpose, they prescribe a Decoction of the Root in Water, sweetened with Honey, and drank warm. Hence it is very proper for resolving a Pleurisy and Peripneumony, when they may be remov'd by an Anacatharsis, or Expectoration. They prescribe it, also, for Bloody Urine, and the Stone or Gravel in the Kidneys. It provokes Urine, is an excellent Resolver of Phlegm, and cleanses the Kidneys of every thing which adheres to them; for which Purpose the Root is boiled in Wine. It is commended as of Service in the Beginning of a Cataract, and in a Redundance of Phlegm, and as an excellent Resolver and Dissolver of all Obstructions. The Root is very good for the hysteric Passion; and is possessed of a balsamic, deterging, and gently heating Virtue; and is of extraordinary Use for cleansing Wounds and Ulcers. *Hist. Plant. adscript. Boerhaav.*

PEVETI. *H. M. Baccifera Indica, Floribus ad Foliorum Exortus, Fructu sulcato decapryeno Solanum somniferum Antiquorum.* *Alpin. Exot. forte.* A bacciferous Tree growing in *Malabar*, of whose Leaves they prepare a vulnerary Ointment. *Raii Hist. Plant.*

PEXIS, πῆξις. Congelation, or Concretion.

PEZA,

PEZA, *πέζα*. The Malleolus, or Sole of the Foot; and, according to some, the very Bottom of the Sole. *Pollux* says, that the Part under the Tibia is called *Sphurion*, and *Peza*. In *Galen's* Exegetis, under *Πέζα*, we read as follows: "In the second Book *de Morb. Mul.* it is written, *ἡ ὑπὸ τοῦ ὀστέου πλάτης, ἡ πέζα πρήσσει* [and the Feet swell, and especially the *Peza*]. *Zenodotus*, in his *Gentilia Vocabula*, [Words proper to certain Countries] says, that the *Arcadians* and *Dorians* call the Foot *Peza*; but *Hippocrates* seems to call by that Name, either the Bottom of the Sole, called *Pedion*, or the *Malleoli*." *Cornarius*, in his *Hippocrates*, renders it by *Pedum Extremitates*; and *Celsus*, by *Tali*.

PHACE, *φακή* or **PHACOS**, *φακός*. A Lentil.

PHACODES, *φακίδες*. Of the Colour of a Lentil.

PHACOIDES, *φακοειδής*. Of the Form of a Lentil; an Epithet for the Crystalline Humour of the Eye.

PHACOPTISSANA, *φακοπτισσάνη*. A sort of Aliment prepared of Ptisan and Lentils. *Galen, de Aliment. Facultat.*

PHACOSIS, *φακώσις*. A black Spot, in the Eye, resembling a Lentil.

PHÆNOMENA. Appearances. Whatever happens to Bodies, and falls under the Cognizance of the Senses, either according, or contrary to Nature, is called *A Phenomenon*.

PHÆON COLLYRIUM. The Name of a *Collyrium*, described by *Scribonius Largus*.

PHAGEDÆNA, *φάγεδαινα*, from *φαγεῖν*, to eat, feed upon, is taken sometimes in a general Sense, as signifying all Kinds of Ulcers, which corrode the sound Parts adjacent to it; and grow still worse as they spread; sometimes it means only a particular Sort of Ulcer, as distinguished from other Kinds, as an *Herpes*, *Noma*, and the rest, in which Sense it is defined to be a tumid and deep Ulcer corroding the subjacent Flesh, and the Parts around it. This is the Substance of what *Galen* says on the Subject, in his Comment on 6 *Aph.* 45. The same Author, in his Book of *preternatural Tumors*, makes the characteristic Difference between an *Herpes* and a *Phagedæna*, to consist in this; that the former spreads itself only by Corrosion and Exulceration of the Skin, but a *Phagedæna* by corroding, also, the subjacent Parts. *Celsus, Lib. 6. Cap. 18.* makes a *Phagedæna* in the Penis, a Species of *Cancer*.

Phagedæna is, also, used, in a kind of metaphorical Sense, to signify an Affection of the Stomach, much the same with the *Caninus Appetitus*, as appears by the Definition given of it, by the Author of the *Definitiones Medicæ*. *Pliny, also, Lib. 26. Cap. 11.* makes *Phagedæna* to signify sometimes a Disorder, under which the Patient eats immoderately, and sometimes a sort of Ulcer; and *Helychius* gives the same double Exposition of the Term.

PHAGOS. A Name for the *Quercus*; *parva*; five *Phagus Græcorum*, & *Esculus Plinii*.

PHAGRUS, or **PAGRUS**. The Name of a Sea Fish, about a Foot long, not unlike a Roach, but larger, and thicker.

The Stones found in the Head of this Fish, when reduced to a Powder, and exhibited internally, are of an aperient Quality, and proper for removing the Stone of the Kidneys, rendering the Body soluble, and correcting the acid and acrid Humours of the Stomach. The Dose of this Powder is from half a Scruple to half a Dram. *Lemery des Drogues.*

PHALACRA, *φαλακρά οὐδένηα*, in *Hippocrates*, are blunt and smooth iron surgical Instruments, as a Probe, or any other, with a Button at the End.

PHALACROCORAX. The Cormorant. The Skin is said to be good to fortify and warm a weak Stomach, if apply'd thereto. *Lemery des Drogues.*

PHALACROSIS, *φαλακρωσις*. Baldness.

PHALÆNA. The same as *Balæna*, the Whale.

PHALAIA. A barbarous Term introduced by *Basil Valentine*, importing an universal internal Medicine; or *Panacea*; But *Roslinkius* uses this Word to express a Tincture of Jalap.

PHALANGIA. A very large Sort of Spider, common in hot Countries, as *Italy*, *Spain*, and the *Indies*. They are said to cure an intermittent Fever, if they are bruised, and applied to the Wrists, a little before the Fit. *Lemery des Drogues.*

PHALANGITES, *φαλαγγίτις*. A Name for the *Liliastrum*; *Alpinum*; *minus*. It is thus called by *Paulus Ægineta*.

PHALANGIUM. A sort of Insect, of the Spider-kind, whose Bite is said to be venomous.

They who have written of venomous and noxious Animals, have described several Species of the *Phalangium*, as the *Rhagium*, *Lupus*, *Formicarium*, *Granocolaptes*, *Sclerocephalus*, and *Scolecium*, in all six. The *Rhagium* is round and black, resembling the Stone of a black Grape, whence it has its Name; [*ράγιον*, *Rhagium*, signifying a Grape-stone]. Its Mouth is situated near the Middle of its Belly, and its Legs are very short on each Side. The *Lupus* kills Flies, and feeds on them; it has a broad and voluble Body; the Parts about its Neck are in-

dent, and its Mouth has three Eminences. The third Species, called *Myrmecium*, or *Formicarium*, very much resembles an Ant; it is of a sooty Colour, and its Body is marked with a sort of Stars, especially about the Back. The fourth, or *Cranocolaptes*, is somewhat long and green, and has a Bristle near its Neck, and, in its Attack, aims at the Head. The fifth, called *Sclerocephalus*, has an hard and stony Head, and all the Lineaments of those Animals, which fly about lighted Candles by Night. The last, which is *Scolecium*, or *Vermicarium*, is somewhat long and spotted, especially about the Head.

The Bite of these Animals is so small, as hardly to be discerned; but is followed by a livid, and sometimes a red Tumor, attended by a Coldness about the Knees, Loins, and Scapulæ. Sometimes the whole Body is oppressed with a Sense of Weight; accompanied with a continual Pain, Trembling, Paleness, and Want of Sleep. In some there is an Erection of the Penis, and an Itching about the Head, and sometimes about the Calves of the Legs; the Eyes are hollow, watery, and shed Tears; the Belly is unequally swelled, and the whole Body and Face are tumefied, especially the Parts about the Tongue, so as to cause an Impediment in the Speech. Sometimes the Patients are afflicted with a Dysury, accompanied with an Erection of the Pudendum, and a Pain. If they make Water, their Urine is aqueous, and contains something like Spiders Webs; and their Vomit, and sometimes their Stools, are of the same Nature. By bathing in warm Water, they fancy themselves eased of their Pain; but afterwards it returns with more Violence; and a painful Erection of the Penis; but, in old Persons, far from being erected, that Part suffers a great Relaxation. These are the Symptoms in general, which are common to the Bites of all those Creatures. Those which proceed in particular from the Bite of the *Cranocolaptes*, are an extraordinary Pain of the Head, Vertigo, a continual Coldness, Delirium, Restlessness, and a pungent Pain of the Stomach. They, who are bit by these Animals, are relieved by bathing every Day, and washing the Wound with the Decoction of *Trifolium bituminosum*, mixed with Oil. It is good, also, to foment the Wound often with Sponges dipt in warm Vinegar, and to anoint the Body all over with the most liquid Kind of Cerate. Proper Cataplasms are prepared of Bulbs, Sanguinaria, Leeks, Bran boiled in Vinegar, Barley-meal boiled with Bay-leaves in Wine of Honey, Rue, unripe Figs, Goats-dung in Wine, *Sampsuchus* with Vinegar; also, *Cyperus*. *Asclepiades* advises the following Cataplasim, which he much commends:

Take of the Seeds of Wild-rue, Rocket, Stavesacre, Cenchrys, and the Vitex, the Fruit or Leaves of the Cypress; of each equal Parts; bruise them in Vinegar, and make them into a Cataplasim with Honey: The same is good taken inwardly.

Another celebrated Receipt, to be used either inwardly or outwardly, is as follows:

Take of native Sulphur, Galbanum, each four Drains; Succus Cyrenæicus, two Drains; or, for want of it, four Drains of Laser; of bitter Almonds blanched, two Drains; Steep them in Wine, and make them up with Honey.

Eating of Garlick, Bathing, and Wine, are, also, proper Remedies. *Aetius, Tetrab. 4. Serm. 1. Cap. 18.*

PHALANGIUM.

The Characters are;

The Flower is naked, hexapetalous, furnished with six Stamina, and contains a roundish Ovary, full of angular Seeds; the Root is fibrous.

Boerhaave mentions six Species of *Phalangium*; which are,

1. *Phalangium*; parvo flore; non ramosum. *C. B. P.* 29. *M. H.* 2. 333.

2. *Phalangium*; parvo flore; ramosum. *C. B. P.* 29. *M. H.* 2. 333.

3. *Phalangium*; Africanum; floribus luteis, parvis. *Raii Hist.* 3. 564.

4. *Phalangium*; parvo flore; ramosum; foliis fistulosis; annuum. *H. L. Asphodelus, foliis fistulosis.* *C. B. P.* 29. *T.* 344.

5. *Phalangium*; Africanum; foliis cepaceis; floribus spicatis aureis.

6. *Phalangium*; Africanum; foliis Ficoidis; floribus spicatis, aureis. *Boerh. Ind. alt. Plant.*

PHALANGIUM is, also, a Name for several Sorts of **EPHEMERUM**.

PHALANGIUM ALLOBROGICUM. A Name for the *Liliastrum*; *Alpinum*; *minus*.

PHALANGOSIS, *φαλαγγώσις*. A Disease of the Eye, when the Margin of the Eye-lid turns inwards; so that the Hairs stimulate the Eye. See **OCULUS**. *Paul. Ægineta, Lib. 6. Cap. 8.*

PHALANX. The Bones of the Fingers are called *Phalanges*.

See **BRACHIUM**.

PHALARIS.

The Characters are;

It has a thick Spike, which is compos'd of a squamous Congeries of Husks, containing Seeds; Pairs of these hollow, carinated Husks, containing in the middle between them a Seed involv'd in a Hull, have the Appearance of Scales.

Boerhaave mentions eight Species of *Phalaris*; which are,

1. *Phalaris*; major; femine albo. C. B. P. 28. *Theat.* 534.
- Boerb. Ind. A. 2.* 158. *Raii Synop.* 3. *Phalaris*. Offic. Ger. 80.
- Emac.* 86. J. B. 2. 442. *Raii Hist.* 2. 1248. *Phalaris vulgaris*.
- Park. Theat.* 1163. *Gramen spicatum femine miliaceo albo*. *Tourn. Inst.* 518. **CANARY GRASS.**

It grows not only in the *Canary Islands*, but in *Tuscany*, among the Corn, and in *Spain*, and in *Languedoc* about *Montpellier*.

The Antients commend the Seed of *Phalaris*, the Juice of the Herb, and the Leaves, to be used inwardly under tormenting Pains of the Bladder. And we are inform'd by *Lobel*, that some have Bread made of it, which they frequently eat, in order to cleanse the Bladder from Stones, and all other Things which might incommode the free Discharge of the Urine. *Raii Hist. Plant.*

2. *Phalaris*; major; femine nigro. C. B. P. 28. *Theat.* 536.
- M. H. 3.* 186. *J. B. 2.* 443. *Gramen, spicatum, femine miliaceo, nigro*. T. 528.

3. *Phalaris*; alter; femine griseo. H. R. *Par. Gramen spicatum, femine miliaceo, griseo*. T. 519.

4. *Gramen*; tremulum; majus. C. B. P. 2. *Theat.* 22.
5. *Gramen*; tremulum; majus perenne. H. L. 196.
6. *Gramen*; tremulum; maximum. C. B. P. 2. *Prodr.* 5.
- Theat.* 24. *J. B. 2.* 470.

7. *Gramen*; paniculis elegantissimis; five *epiypensis*. C. B. P. 2. *Theat.* 26.

8. *Gramen*; tremulum; minus, panicula parva. *Boerb. Ind. alt. Plant. Vol.* 2.

The Seeds are highly aperitive; for which Reason they are of Service in the Stone of the Kidneys and Bladder. *Hist. Plant. adscript. Boerhaav.*

PHALERÆ, φάλαρα. A sort of Bandage for the Nose, describ'd by *Galen*, in his Treatise of Bandages.

PHANION, φανιον. A Name of two compound Medicines, describ'd by *Galen*, de C. M. S. L. Lib. 4. C. 7.

PHANLEC. Iron. *Rulandus*.

PHARICUM. The Name of an excessive poisonous Medicine, which, by great good Fortune, is unknown to the Moderns. *Scribonius Largus*, N° 195. informs us, that it was said to be compounded of many Ingredients; but not one of them is known.

PHARMACEIA, φαρμακεία. Purgation of the Belly by the Exhibition of a Cathartic. *Hippocrates*.

PHARMACEUTICA, φαρμακευτική. Pharmaceutics, that Part of Medicine, which gives the Description of Remedies, and teaches the Method of rightly exhibiting them. *Gorræus*.

PHARMACIA. Pharmacy.

PHARMACITES, φαρμακίτης, see **AMPELITES TERRA**.

PHARMACOCHYMIA, that Part of the Chymical Art, which teaches the Preparation of Chymical Medicines, by way of Distinction from the Spagirical Part, which treats of the Transmutation of Metals. *Castellus*.

PHARMACON, φάρμακον, signifies Poison, Medicine, and Colours in Painting. It is one of those Terms which *Aulus Gellius*, Lib. 12. Cap. 9. calls *vox media*, a middle Word between two Contraries, which may indifferently signify either of them.

PHARMACOPOEUS, φαρμακοποιός, from φάρμακον, a Medicine; and ποίω, to make, or prepare; is one well vers'd in the Art of preparing Medicines. *Castellus*.

PHARMACOPOLA, φαρμακοπόλης, from φάρμακον, a Medicine, and πωλείω, to sell, is properly one who sells Medicines. To illustrate the three preceding Articles, it may be proper to observe, with *Le Clerc*, that those who addicted themselves to Pharmaceutics, or Medicamentary Medicine, were called *Pharmaceutæ*, as says *Galen ad Thrasjib*. The Name *Pharmacopœus* was taken in an ill Sense, and signify'd a *Poisoner*, who was, also, called *Pharmacos* and *Pharmaceus*, from the Word *Pharmacum*, which signify'd indifferently all sorts of Drugs or Compositions, both good and bad, every Medicine or Poison, both simple and compounded. The *Latins*, in Conformity hereto used the Word *Medicamentum* for *Poison*, and *Medicamentarius* for *Poisoner*, tho' the last Word signify'd, also, an Apothecary, as the first did a Medicine. The Word *Pharmacopola*, among the Antients, signify'd one of another kind of Profession, whose Business was to sell Medicines; particularly it belong'd to such as are now called Mountebanks.

PHARMACOPOLIUM. An Apothecary's or Druggist's Shop.

PHARMACOPOSIA, φαρμακοποσία, from φάρμακον, a Medicine, and πείω, a Poison, is either any liquid Medicine in gene-

ral, or a liquid Cathartic in particular; in which latter Sense this Term; and *æquaxein*, are commonly used by *Hippocrates*, as *Galen* observes, *Com. ad 7 Aph.* 25. And thus are the Words used; 4 *Aph.* 19. and *Coac.* 251.

PHARMACOTA *Medicamenta*. Medicines which have a Mixture of Poison. *Castellus*.

PHARMACOTHECA, a Box, or Chest, for the Reception of Medicines. *Castellus*.

PHARMACUM. See **PHARMACON**.

PHARMACUM AD AURES. See **ÆGYPTIUM PHARMACUM AD AURES**.

PHARMIANUM. A Malagma so called. *Galen, Lib. 7. de C. M. P. G. Cap.* 6.

PHARYNGETHRON, φαρυγγέθρον, in *Hippocrates*, Lib. de Diffect. is the Pharynx, or Fauces.

PHARYNGÆUM SAL. An artificial Salt, of Use in the Quinsey, when the Pharynx, or Fauces, are incommode with a Defluxion of impure and serous Humours; it is prepared of Cream of Tartar, and Nitre, each one Ounce, with half an Ounce of bunt Alum, dissolved in distilled Vinegar, which Solution is afterwards coagulated according to Art. This Salt, mixed with two Drams of Honey, and dissolved in five Ounces of Plantain-water, makes an excellent Gargarism for the Quinsey. *Frederic Hoffman* from *Lobelius*.

PHARYNX, φαρυγξ. See **ŒSOPHAGUS**.

PHASEOLUS.

The Characters are;

It has a long Pod, full of Kidney-shap'd or oval Seed; the Plant, as to its Habit, or outward Appearance, is flexible, scandent, and, for the most part, trifoliated, or has its Leaves growing by Threes.

Boerhaave mentions twenty-five Species of *Phaseolus*; which are,

1. *Phaseolus*; vulgaris. *Park. Parad.* 521. *Tourn. Inst.* 412.
- Boerb. Ind. A. 2.* 28. *Smilax hortensis*. Offic. J. B. 2. 255. *Raii Hist.* 1. 884. *Smilax hortensis* five *Phaseolus*. C. B. P. 339. *Phaseolus albus*. Ger. 1038. *Emac.* 1212. **KIDNEY-BEANS.**

It is cultivated in Gardens, and flowers in *July*. The Pods, which are the Parts in Use, are opening, digestive, and provoke Urine, and the Menfes. *Dale*.

2. *Phaseolus*; vulgaris; fructu nigro.
3. *Phaseolus*; vulgaris; fructu rubro.
4. *Phaseolus*; vulgaris; fructu pallido.
5. *Phaseolus*; vulgaris; fructu luteo.
6. *Phaseolus*; hortensis; minor. T. 415. *Smilax hortensis minor*. C. B. P. 359.
7. *Phaseolus*; hortensis; filiquâ longissimâ.
8. *Phaseolus*; hortensis; filiquâ longissima, & latissima.
9. *Phaseolus*; peregrinus; hortensi similis; fructu timidiore, minore niveo. C. B. P. 340.
10. *Phaseolus*; hortensis; fructu albo, minore oviformi; Veneris dictus. *Hoffm. Cat. Altorf.*
11. *Phaseolus*; hortensis; minor; fructu incano, cujus hilum limbo fusco cingitur.
12. *Phaseolus*; puniceo flore. *Corn.* 184.
13. Idem (12); fructu ex nigro & Coloffino variegato.
14. *Phaseolus*; Indicus; floribus, & fructu, candidissimis. *Flor. Nor. Volk.*
15. *Phaseolus Americanus*; perennis; flore cochleato odorato; seminibus fuscis orbiculatis; Caracalla dictus. H. L. *Phaseolus Indicus*, cochleato flore. *Triumphett. Observ.* 92.
16. *Phaseolus*; octocaulis; Mungo Persarum; Turcarum Masc; Hispanorum Max. Tab. Col. Annot. & Addit. in *Nard. Ant. Rech. Ic. & Defcr. Raii*.

It is a Plant with an erect Stalk, three Feet in Height, with Leaves and Flowers like those of our *Phaseolus*, and Pods containing Seeds the Size of dry Coriander-seeds.

The People of the Eastern Countries commonly eat the Seeds boiled, with Butter, as they do other leguminous Foods; and esteem it a Delicacy much preferable to the rest.

Garcias tells us, that the Seed, when ripe, is black, and is Food for Horses, and is sometimes eaten by Men: He gives us, also, the Method of using it, by the Inhabitants of *Guzarate* and *Decan*, in the Cure of a Fever. The Patient in this Case abstains from Food ten, and sometimes fifteen Days; after which they give him the Decoction of this Fruit, in which they have left some of the Pulp remaining; then they give him *Mungo* decorticated and boiled, like Rice, and suffer him to eat no Bread made of Wheat for many Days. *Raii H. P.*

17. Idem; femine albo.
18. *Phaseolus*; tenerrimus; suprà & infrâ, terram fructus gerens, sicque perennans.

19. *Phaseolus*; Ægyptiacus; nigro femine. C. B. P. 341. *Phaseolus, niger Lablab vocatus*, *Alpin. Ægypt.* 39.

It is a farmentous Tree, of the Bigness of the Vines, and spreads its Branches and Leaves after the same Manner. In Appearance, it is altogether like the common *Phaseolus*; bears Flowers twice in a Year, that is, in Spring and Autumn; these Flowers are somewhat like those of our *Phaseolus*, and are succeeded

ceeded by long Pods, as those of Beans, and containing Seeds some black, some redish, exactly like our Kidney-beans. The Tree lives an hundred Years, and more, and is always green. The Egyptians commonly eat the Seeds or Beans, which are as well tasted as ours. The Women use the Decoction with Saffron, to provoke the Menfes; the same is good, also, for the Cough, a Dyspnoea, and a Suppression of Urine. *Prosper Alpinus de Plantis Egypti.*

20. Phaseolus; Ægyptiacus; semine rufo. C. B. P. 341.
21. Phaseolus; Ægyptiacus; semine albo.
22. Phaseolus; Zeylanicus; folio longo; filiquâ tenui; semine parvo, pallido.
23. Phaseolus; Asiaticus; filiquâ albâ, longissimâ, articulata; semine rubro.
24. Phaseolus; Zeylanicus; folio longo; filiquâ tenui; semine violaceo, parvo.
25. Phaseolus; Indicus; minimus; folio magno; flore cœrulescente. *Boerb. Ind. alt. Plant. Vol. 2.*

The Pods of the Kidney-bean are esculent, but the Seeds yield a gross Nutriment; whence they are good for those who use much Exercise, but are prejudicial to Students, and sedentary Persons. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Species of *Phaseolus*, Dale mentions the four following;

1. *Phaseolus*. Offic. *Phaseolus vulgaris Italicus humilis, seu minor, albus cum orbita nigricante.* J. B. 2. 358. Raii Hist. 1. 885. *Phaseolus erectus*. Park. Theat. 1057. *Phaseolus peregrinus fructu minore albo.* Ger. Emac. 1213. *Phaseolus minor filiqua sursum rigente, fructu albo.* Tourn. Inst. 413. *Smilax filiqua sursum rigente, vel Phaseolus parvus Italicus.* C. B. P. 339. ITALIAN KIDNEY-BEANS.

It is cultivated in Gardens, and flowers in July. The Pod is used, which, as *Dioscorides* says, if boiled, whilst green, and eaten, is good to mollify the Belly, and proper to provoke Vomiting.

2. *SOIA*. Offic. *Phaseolus Japonicus, ex quo Japonensium Soia, qui intinctus Species est, conficitur.* Herm.

This Species is a small, white Kidney-bean, brought from Japan, of which they make the Pickle called Ketchup; of this there are two Kinds, the liquid and the solid. Dale.

3. *Phaseolus erectus* filiquis Lupini, fructu Pisi majoris candido. *Kemph. Aman. Exot. 837.*

We owe the Knowledge of this Species, says Dale, to the late learned Paul Herman, who communicated it, under the Title above said, to the learned William Sherrard, LL. D. from whom we borrowed it.

4. The fourth sort of *PHASEOLUS* is the COUHAGE; which see. *PHASGANIUM, φαργάνιον.* A Name in *P. Ægineta* and *Aetius* for the LAPP.

PHAULUS, φαῦλος, according to *Galen, Com. in Lib. de Fract.* with the Antients, signify'd not only vitious and depraved, but plain and simple, in Opposition to ἀκριβής, "exquisite;" in which Sense it is apply'd by *Hippocrates* to Diet; and *Hypophaulus, ὑποφαυλός*, in the same Author, is expounded in *Galen* by μέτριος (*Metrios*) moderate, or a Mean between simple and exquisite.

PHAUSINGES, φαούγγες, in *Galen's* Exegetis, are said properly to signify red Circles in the Legs, excited by the Fire; but, by an Abuse of the Word, it signifies other sorts of Spots. Some, who read σπῖλοι, Spots, for κῆλοι, Circles, will have it to be red Spots, of any kind, excited by the Fire. Other Senses of the Word may be found in *Hesychius*, which are not material.

PHAUSTIANOS, φαυστιανός. The Name of a very acrimonious and corroding Pastil, described by *Aetius, Tetr. 3. Serm. 1. Cap. 49.*

PHAZALA. The Name of a Disease incident to Horses which wash in the Red Sea. *Castellus.*

PHEGOPYRUM. See *FAGOPYRUM.*

PHELLANDRIUM.

The Characters are;

The Root is fibrous, the Stalk very thick, the Leaves very large, and very finely jagged: the Perals of the Flowers are shaped like an Heart; and the Seeds are small, gibbous, and slightly striated.

Boerhaave mentions three Species of *Phellandrium*; which are, 1. *Phellandrium*. Offic. *Tourn. Inst. 306. Boerb. Ind. a. 56. Phellandrium vel Cicutaria aquatica quorundam.* J. B. 3. 183. *Phellandrium.* Raii Synop. 3. 215. *Cicutaria palustris.* Ger. 905. Emac. 1063. Raii Hist. 1. 452. *Cicutaria palustris tenuifolia,* Park. Theat. 933. C. B. P. 161. WATER HEMLOCK.

The Leaves are commended by *Blancard* in virulent Inflammations of the Penis; internally it is an Emetic.

This Hemlock has a thick, hollow, striated, and jointed Stalk, which arises not so high as the ordinary Hemlock; it is divided into several Branches, having large winged Leaves, much finer and tenderer than Hemlock; the Flowers grow in Umbels, which are but small in proportion to the Bigness of the Plant: They are white, with a Cast of Red. The Seed is small, and of a dark-brown Colour. The Root is compos'd of a great Number of white Strings, which shoot out from the Joints at

the Bottom of the Stalk: It grows in Ditches and Ponds, and flowers in June.

It is suppos'd to be much like common Hemlock in its Nature and Qualities; but it is believ'd to be more poisonous, and therefore is very seldom made use of in the Shops.

Webber has wrote a whole Treatise concerning this Plant. *Miller's Bot. Off.*

2. *Phellandrium*; folio Thysselin; caule rotundo. *Ind. 2.*
3. *Phellandrium*; Thysselin folio; caule sulcato. *Ind. 2. Cicutaria Cassubica, Thysselin folio.* Breyn. Prodr. 1. Raii H. 1868. *Boerb. Ind. alt. Plant. Vol. 1.*

It is said to possess the Virtues of Hemlock; but is sweet-scented and aromatic, and of excellent Service, where a gentle Dissipation of Humours is required. The first Species is of Use in Surgery, for discussing inflammatory and cold Tumors; and is said to resist a Gangrene; and nothing can be more safely apply'd to scirrhus and cancerous Tumors; it is, also, commended for Diseases of the Breast, being apply'd in the Form of a Cataplasm. *Hist. Plant. adscript. Boerhaav.*

PHELLODRYS. Offic. *Phellodrys alba latifolia & angustifolia.* Park. Theat. 1399. *Phellodrys candicans latifolia, molliter aculeata & candicans, angustifolia, serrata.* C. B. P. 423. *Phellodrys Matthioli.* J. B. 1. 2. 100. *Phellodrys sive Cerrô.* *Sugaro Matthioli.* Raii Hist. 2. 1391. THE LAUREL-OAK.

It grows in Dalmatia, and, as some say, in Greece; the Leaves, Bark, and Acorns, which are the Parts used in Medicine, agree in Virtues with those of the *Quercus*, or common Oak. Dale. The *Phellodrys* of *Theophrastus*, which *J. Bauhine* proves to be the same with what he, also, calls *Aria*, *Pliny* seems to have taken for the *Suber*, called *Pbellos*; for he ascribes to that Tree all the Properties which *Theophrastus* ascribes to the *Phellodrys*.

The *Phellodrys nigra* is distinguish'd by the Smoothness and Blackness of its Bark; the Leaves differ from those of the *Ilex*, as being rounder and broader; from those of the *Smilax*, as being much shorter in respect of their Breadth; and from those of the *Suber* just mention'd, as being harder, and more prickly. Raii H. P.

PHELLOS. A Name for the *Suber*; *latifolium*; *perpetuô virens.*

PHEMOS, φῆμος, the Name of a Medicine against the Dysentery, compos'd by *Martianus*, and described by *Aetius, Tetr. 3. Serm. 1.*

PHENGITES, φηνγίτης, a luminous Stone, capable of acquiring Light, and dispensing it again.

PHENULE, φένουλα, in *Myrepsus, Antidot. 77.* as *Fuchsius* observes in his Notes, is corruptly written for *Enula, ένουλα*; for *Phenula*, he says, is the same as *Feniculum*.

PHESÆ. A kind of broad Fish, mention'd by *Oribasius, Med. Coll. Lib. 2. Cap. 58.* from *Xenocrates*, among Fishes whose Flesh is hard and difficult of Digestion.

PHIALA, a glass Vessel, with a big Belly, and long Neck, of frequent Use in Coagulations and Solutions. *Castellus.*

PHIBALIOS, φιβάλιος, in *Galen's* Exegetis, is expounded a Species of Fig; some take it for the *Carica*, or dry'd Fig. *Phibalean* Figs are commended by *Athenæus, Lib. 3.* Now *Phibaleos* is a Place in Attica.

PHIBIT, rapax. Rapacious. *Rulandus.* Perhaps Amber.

PHILADELPHUS. A Name for the APARINE. *Blancard.*

PHILADYNAMOS, φιλαδύναμος, in *Hippocrates de R. V. I. A.* is an Epithet of Water; expressing that Property of it, by which it diminishes the Strength.

PHILAGRIANON, φιλαγγριανόν. The Name of a Malagma, described by *Ægineta, Lib. 7. Cap. 18.*

PHILALYSTES, φιλαλυστής, in *Hippocrates's* Book of Precepts, means one who is of an anxious and perplexed Mind.

PHILANTHROPOS. The Name of a compound antinephritic Medicine, in *Nicol. Antidot. Oper. Mésua. Castellus.*

PHILETÆRIUM, φιλεταίριον. A Name in *Dioscorides, Lib. 4. Cap. 8.* for the POLEMONIUM.

PHILETIS COLLYRIUM. The Name of a compound Medicine for the Eye, in *Celsus, Lib. 6. Cap. 6.*

PHILIPENDULA, the same as *FILIPENDULA.* *Blancard.* The Term occurs in *Myrepsus, Antidot. 40.*

PHILIPPI Trochiscus, the Name of a Troche, described by *Paulus Ægineta, Lib. 7. Cap. 12.*

PHILISTÆA. An obscure spagirc Term in *Basil. Valent. in Repetit. Lap. Philos. C. de Antim.* where he says, that, if Antimony should pass into *Philistæa*, it would of itself become Glass. *Castellus.*

PHILLYREA.

The Characters are;

The Leaves are conjugated, and always green. The Flower is monopetalous, Bell-shap'd, divided into four Parts, and contained in a quadrifid Calyx. The Ovary in the Bottom of the Calyx becomes a globular Fruit, full of round Seeds.

Boerhaave mentions eight Species of *Phillyrea*; which are,

1. *Phillyrea*; crasso; latissimo, atroviridi folio quasi Bicis.
2. *Phil.*

2. Phillyrea; latifolia; levis. C. B. P. 476. Phillyrea, *Mahaleb Serapionis*. Lugd. 154.
3. Phillyrea; latifolia, spinosa. C. B. P. 416. Phillyrea, folio *Illicis*. J. B. 1. 541.
4. Phillyrea; latifolia; spinosa. C. B. P. Longiori folio *Alaterni*. Ind. 248.
5. Phillyrea; folio leviter serrato. C. B. P. 476.
6. Phillyrea; folio magis serrato, subrotundiori. Ind. 248.
7. Phillyrea; folio Ligustri. C. B. P. 476. Tourn. Inf. 596. Boerb. Ind. a. 2. 215. Phillyrea. Offic. Phillyrea latiusculo folio. J. B. 1. 539. Raii Hist. 2. 1585. Phillyrea latiore folio. Ger. 1209. Emac. 1395. Phillyrea latifolia foliis fere non serratis. Park. Theat. 1443. **MOCK PRIVET.**

The Leaves are drying and astringent, and are very much commended for Ulcers in the Mouth. Dale.

8. Phillyrea; angustifolia; prima. C. B. P. 476. Boerb. Ind. alt. Plant. Vol. 2.

Many confound the Phillyrea of Dioscorides with the Philyra of Theophrastus; others, rightly in my Opinion, distinguish them. *J. Baubine* proves the *Mahaleb* of the *Arabians* to be the Phillyrea of Dioscorides. But whether the *Mahaleb*, or Phillyrea, be the same Tree which is now commonly known by that Name, is a Question. *Ranwolffius* writes, that he saw at *Aleppo*, in the Spicery-shops, small white Seeds, which they call *Mahaleb*, surrounded with an hard Cortex, somewhat long, and acuminate, and cover'd with a thin Membrane, after the manner of Pistaches; these Seeds they use in the Composition of their sweet-scented Soap. And the Monks who have commented on *Mesue*, write that *Mahaleb* is a very common Shrub in *Syria*, thorny, and with Leaves like the Olive-tree; that it bears Fruit in Clusters on the Branches, like the Lentisk, but somewhat bigger; from whence the *Syrians* express a very fragrant Oil, of which they prepare their sweet-scented Soaps, and several other Things. But how all this can agree with the common Phillyrea, says *Ray*, I am at a Loss to understand.

The Leaves of the Phillyrea, according to Dioscorides, are astringent, like those of the wild Olive-tree; and are therefore proper in those Cases, which require Astringent. Being chewed in the Mouth, they are very good for Ulcers therein; and a Collution of the Mouth with the Decoction has the same Effect. The Decoction drank provokes Urine, and the Menstrues. What the *Arabians* write of the Virtues of the *Mahaleb*, which *J. Baubine* supposes to be the Phillyrea of Dioscorides, may be found in *Baubine*. At present the Phillyrea is not used in Medicine, but, on account of its evergreen Leaves, is of good Ornament in Gardens, being disposed in clipt Hedges, Plots of Evergreen, and by the Sides of Walks. *Raii H. P.*

PHILOCHYMICUS. A Lover of Chymistry.

PHILOCOTYCHE. The Name of a Plaster, in *Myrepsus*, Cap. 136.

PHILOCRATIS Emplastrum. A Plaster described by *Celsus*, Lib. 5. Cap. 19.

PHILOLAGNOS, φιλόλαγνος, in *Hippocrates de R. V. I. A.* means one addicted to Venery.

PHILOLUTROS, φιλόλουτρος, from φίλος, a Friend, and λούτρον, a Bath. A Lover of Bathing. *Hippocrates de R. V. I. A.*

PHILOMEDICA. The Name of a Potion, prescribed in burning Fevers, for allaying the Thirst; and described in *Collectedan. Chymic. Leidenf. Cap. 332.*

PHILOMELA, the Nightingale. See *LUSCINIA*.

PHILONIUM. A kind of somniferous, anodyne Opiate; taking its Name from *Philo*, the Inventor. *Galen, de C. M. S. L. Lib. 9. Cap. 4.* says, that the Antidote of *Philo*, or *Philonium*, was in great Reputation for a long time past; and that this Medicine was one of the first and most ancient of its Kind. By Medicines of this Kind, we can understand no other than Antidotes, such as *Mithridate*, *Theriaca*, *Hiera*, and the like. I do not believe this Composition of *Philo* to be quite so ancient as *Mithridate*; but it was, doubtless, coeval with the simple *Hiera*, invented by *Themison*, who lived under the Reign of *Augustus*. The *Theriaca* was of later Invention, and not begun to be composed till the Time of *Nero*. What makes me think, that *Philonium* was somewhat later than *Mithridate*, is, that, among the Virtues which *Philo* ascribes to his Composition, he says, it is proper for the Colic. Now this Disease was not known by that Name, long before the Reign of *Dionysius*. I imagine then, that *Philo* lived under *Augustus*, near about the Time of *Themison*, and the first Disciples of *Asclepiades*. *Galen* may, however, speak of the *Philonium*, as an ancient Medicine, because he did not write till about two hundred Years after the Time in which I suppose it to be invented.

Philo wrote it in Greek Elegiacs, and after an enigmatic Manner; so that it required to be well versed in Mythology, or Fable, to be able to conjecture at his Meaning. "Take, says he, red and odorous Hairs of the Youth whose Blood is still fresh in the Fields of *Mercury*; as many Drams as we have of Senes [five]; of *Euboic Naupium*, one Dram; as much of the Killer of the Son of *Menatius*, as is contained within the Bellies of the Ewes. Add thereto twenty Drams of white Flame, and the same Weight of Beans of the *Arcadian Swine*; with one Dram

of the Plant falsely call'd a Root, and which comes from the Country celebrated on account of *Jupiter Pisseus*. Write *Philonium*, and, to the Head of that Word, add the masculine Article of the Greeks. Take ten Drams of this last Ingredient, and carefully mix the Whole with the Works of the Daughters of the Bull of *Athens*." You may see, in *Galen*, an Explication of this Jargon, which amounts to this: Take of Saffron, Pyrethrum, white Pepper, Henbane, Spikenard, and Opium, the Weight assign'd to each Ingredient; and incorporate the Whole with Attic Honey. Not only *Galen*, but *Aretaeus*, *P. Aegineta*, *Aetius*, *Oribasius*, and other Authors, mention this Medicine, which is still common at this Day. *Celsus*, also, quotes *Philo*, but it is only for a Collyrium, and says nothing of his Antidote; tho' it is probable, that it was this *Philo* of *Tarsus*, from whom he borrow'd that Collyrium. *Le Clerc Hist. de la Medecine*.

Philonium Persicum is thus prepared. Take of white Pepper, and white Henbane, each ten Drams; of Opium, Terar Sigillata, each five Drams; Lapis Hæmatites, Saffron, each two Drams and an half; Castor, Indian Spikenard, Pyrethrum, Pearls, Amber, Zedoary, Doronicum, or else Elecampane, Troches of Ramich, each half a Dram; Camphire, a Scruple; Honey of Roses, fifteen Ounces. Mix them together for an Opiate.

The Roots, the Seeds, the Castor, the Spikenard, the Saffron, and the Troches of Ramich, are to be reduced to a Powder together. Then the Seal'd Earth, and the Camphire, are to be pounded together; and the Blood-stone, the Pearls, and the Amber, are to be levigated on a Marble, till they are reduced to an impalpable Powder. The Opium must be of the best Kind, and cut down into small Portions; after which, it is to be beat in a brazen Mortar, with a little Honey of Roses, till it is reduced to a kind of liquid Paste. Then boil Honey of Roses to the Consistence of a thick Syrup; with fifteen Ounces of which intimately mix the Opium, and the Powders, for an Opiate, to be kept for Use in a close-stopt Vessel.

This Preparation is proper for stopping Hæmorrhages and Fluxes; as, also, for preventing Abortion. The Dose of it is from one Scruple to one Dram.

A Scruple of this Opiate contains Two-thirds of a Grain of Opium; and One-third of a Grain of the Seeds of white Henbane.

Half a Dram of the Opiate contains a Grain and half a quarter of a Grain of Opium, and two Grains and an half of the white Henbane-seeds.

Two Scruples of the Opiate contain a Grain and an half of Opium, and three Grains of the Henbane-seeds.

One Dram of the Opiate contains two Grains and a quarter of a Grain of Opium, and four Grains and an half of the Henbane-seeds.

The *Philonium Romanum* is thus prepared.

Take of white Pepper, and white Henbane-seeds, each five Drams; Opium, two Drams and an half; Cassia-bark, one Dram and an half; Smallage-seed, one Dram; the Seeds of *Macedonian Parsley*, Fennel, and Candy Carrots, each two Scruples five Grains; Saffron, one Scruple and an half; Spikenard, Pellitory of Spain, and Zedoary, each fifteen Grains; Cinnamon, a Dram and an half; Myrrh and Castor, each a Dram; Syrup of white Poppies, a sufficient Quantity, to make the Whole into an Electuary.

This is a Prescription, originally, of *Nicolaus Myrepsus*; but the first Dispensatory of the College received it with Euphorbium, as does the *Augustan*, which the College has now rejected, it being an Ingredient too hot, and irritating, for inward Use. There are several other Compositions of this Denomination taken by the Dispensatory-writers from *Mesue*, *Galen*, and others; but they all nearly agree. *Zwelfer*, however, prefers the *Confectio Archigenis* to them all, as a warm Opiate, which is their main Intention. The former Prescriptions of this were all with Honey, in three times the Quantity of the other Ingredients; but the *Syrupus de Meconio*, as here ordered, is vastly preferable, as agreeing so much better with the Intention of the Whole. It is a powerful Opiate, and given from ten Grains to two Scruples, to ease violent Pains, and procure Sleep. *Quincy*. But, perhaps, this Medicine, and all of this Class, may be much better, if prepar'd with Honey.

PHILOPARABOLOS, φιλοπαράβολος. An Epithet, apply'd by *Asclepiades* to one of the two Methods used by him in the Cure of a Phrensy, and signifying violent and dangerous, in Opposition to his other Method, which was safer, or, in the Language of *Cælius Aurelianus*, non merulofus, and proper for most Patients. This dangerous and violent Method (for that Reason called *Philoparabolos*, which is used, by *Plutarch*, to signify one who desperately throws himself into the midst of Dangers) consisted in exhibiting, at the first Visit, a large Draught of pure or undiluted Wine, mix'd with Sea-water; for, says *Asclepiades*, giving a Reason for this Practice, all those Helps and Benefits which accrue to the Sick, in a weak and slow Manner, from the Use of Mulsim, and forbile Liquors, are much more readily and plentifully procured by Wine; for the Exhibition thereof is succeeded by a vast Fervor, with a Lowering of the Pulse, and a Repression of the colliquative Sweats, the Wine performing the Office of an univer-

universal Caustery. *Galienus Aurelianus, Acut. Morb. Lib. 1. Cap.*

15. **PHILOXENIAS ANTIDOTUS.** The Name of an Antidote, described by *Nicolaus Myrepsus, Sect. 1. C. 239.*

PHILTRON, φίλτρον. A Love Potion, or Medicine to excite Love. It, also, imports that Cavity, or Depressure, in the upper Lip, which is situated immediately under the Septum of the Nose.

PHILUMENI MEDICAMENTUM. The Name of a Medicine for the Eyes, described by *Oribasius, Collect. Medicinal. L. 8. C. 45.*

PHILYPOSTROPHA, φιλυπείστροφα. Whatever cause, or threaten, a Relapse, are thus call'd by *Hippocrates, Prorrhēt. and Coac. Prænot.*

PHIMOSIS. Sometimes the Præputium, or Foreskin, is so contracted by a violent Inflammation, that it cannot be drawn backward behind the Glans. This Disorder is call'd Phimosis by the *Greeks*, and produces many dangerous Consequences; especially if a virulent Venereal Matter be lodged between the Glans and the Skin; for, by the Contraction of the Skin, those little Ulcers of the Glans, called Chancres, which proceed from impure Copulation, cannot be conveniently cleansed or healed. Nor is it surprising, as *Verduc* observed, that a Gangrene, or Cancer, or, at least, a violent Inflammation of the Glans and Foreskin should arise from this Cause; and, upon account of these Mischiefs, the Penis must either be consumed by the Ulcers, or removed by the Knife. The Patient, generally, cannot void his Urine without extreme Pain, because of the Corrosion of the Skin and Glans. The general Cause of a Phimosis is, by Physicians, rightly ascribed to impure Coition. For whilst the virulent Matter, which had been lodged in the Sinuses of the Vagina, continues between the Skin and Glans, the Foreskin, especially if it should be naturally long, or tight, can hardly escape being swell'd with an Inflammation, and a Phimosis must be induced. Some, however, have the Foreskin naturally so long, and so straiten'd, that the Glans can either be not at all, or very little uncover'd; but as this neither occasions Trouble in discharging the Urine, nor any Impediment in Procreation, it requires no Aid from the Surgeons, unless it be attended with an Inflammation, violent Pain, or any remarkable Inconvenience in Coition. Those who have their Foreskin naturally very long, are much more easily infected by impure Embraces, than others, as we learn both from Reason and Experience.

If this Disorder is occasion'd by no Venereal Taint, it is cured by bathing the Penis, a sufficient Time, in warm Water: But, if it proceeds from a Venereal Infection, proper internal Medicines must be exhibited; and the Pain may be alleviated, and the Ulcers heal'd, by the following Method. In order to wash out the acrimonious morbid Humours lodged under the Skin, let warm Water, or rather, a Decoction of Barley, mix'd with Honey of Roses, be frequently injected with a Syringe, between the Skin and the Glans. To discuss the Tumor, apply, externally, an emollient and digestive Fomentation, or Cataplasm, round the tumefied Part of the Penis; and, if the Inflammation be severe, Bleeding should not be omitted. After these Measures are duly taken, we may endeavour to draw back the Prepuce. But if the Tumor, and violent Exulceration, of the Glans render this Attempt impracticable, if the Disorder increases, or, lastly, if the Prepuce was naturally long, and could not be drawn back before the Infection, Recourse must be had to the Knife.

In this Case, there are two Methods of Operation. 1. Let the End of the Prepuce be drawn as far forwards as possible, and let an Assistant hold the cover'd Glans in his Fingers. Let the Operator, with his Left Thumb, press back the Glans cover'd with the Skin, and then, with a Knife, or Scissars, let him extirpate all that Part of the Skin which projects beyond his Thumb, much in the same manner with the *Jerusalem* Circumcision. Thus may the most straiten'd Part of the Skin be easily drawn back; and, the Glans being uncover'd, the Ulcer may more expeditiously be cleansed and heal'd.

2. The other Method is thus perform'd. The superior Part of the Prepuce must be drawn up by the Fingers, and a Pair of Probe-scissars introduced; then an Incision must be made so far in the contracted Skin, as may be sufficient for uncovering the Glans. *Guillemeau, Palfyn*, and others, prefer a particular Knife for this Use, represented *Tab. XLVII. Fig. 4.* But why this Knife should be crooked, or why a strait Knife may not as well serve the Purpose, I cannot understand. After this longitudinal Incision, some Surgeons cut off, with the Scissars, as much of the End of the Prepuce, as appears superfluous. A copious Discharge of Blood succeeds this Operation; nor should it be suddenly stopped, but rather suffer'd to flow, as long as the Strength of the Patient will permit, in order to prevent an Inflammation. Then dress with dry Lint, and apply a proper Compress and Bandage; and proceed, afterwards, as in the Cure of other Wounds. Besides the Cautions to be observed in the first Method of Cure, particular Care must be taken, that, in healing the Wound, the Extremity of the Prepuce be not too much contracted; by which means the Patient would be again exposed to the same Disorder. Sometimes, by dividing the Prepuce, the Glans is drawn back by the Frenum, and the Penis be-

comes incurvated; in which Case, the Frenum must be cut with the Knife, or Scissars. If a Gangrene affects the Glans, as in an Instance related by *Verduc*, it is necessary to penetrate to the sound Parts by frequent Scarification, and to apply a Fomentation of *Unguentum Ægyptiacum*, and Treacle, dissolved in camphorated Spirit of Wine, till the Gangrene disappears. But the stubborn Ulcers, or Chancres, can scarcely be removed without the Use of internal mercurial Medicines; and, sometimes, not without a slight Salivation. Nor must I omit to mention an Instrument contrived by my Friend, Dr. *Trew*, for this Purpose, and represented in *Tab. XLVII. Fig. 5.* whose Plates A A, being introduced under the Skin, and gradually diffended by the Screw B, they, by their Elasticity, gently dilate the contracted Skin; and thus may the Glans be denuded, without the Help of a Knife. But I question whether this Instrument will always answer the Intention.

PHLASMA, φλάσμα. A Contusion, or Collision.

PHLEBION, φλεβίον. A small Vein.

PHLEBODONODEA, φλεβοδονώδεια; an odd, and sort of foreign, and, for that Reason, obscure Term in *Hippocrates*, 1 *Prorrhēt. 101.* and *Coac. 20.* *Galen* explains it of the Veins or Arteries, agitated by the excessive Heat of the Blood; which happens under a great Effervescence of the Humours, or violent Pains of the Head, when the Veins and Arteries at the Temples, as well as the Jugulars, are subject to a sort of Concussion and Subfultus; so that the Word, by Etymology, imports as much as φλέβες δονώμεναι (*Phlebes donomenoi*) Veins agitated. Some, he says, read φλεβιδονώδεια (*Phlebotonodea*), understanding thereby a Distention of the Veins. Others, to avoid all Ambiguity, write it φλεδονώδεια (*Phledonodea*), deriving it from φλεδίνες (*Phledones*), expounding the Word by παράληψις (*paralerunta*), and apply it to Persons in a Delirium: For φλεδόνες are expounded in the *Exegesis*, by φλυαρία (*phluaria*), Trifles, Follies, and λησι (Leri), idle Amusements of delirious Persons. In 4 *Epid.* we read, that *The Hypochondrium appeared distended, φλεδονώδεια τερπνόν.* But we ought, says *Foesius*, to read the Word φλεβοδονώδεια, or φλεβιδονώδεια, or φλεδονώδεια, and to understand it of a Distention of the Hypochondrium, after the manner of the Veins and Arteries, when under a Distention and Agitation, or Concussion from the Heat and Effervescence of the Blood.

PHLEBOPALIE, φλεβοπαλίη. The Vibration, or Pulsation, of an Artery.

PHLEBORRHAGIA, φλεβορραγία, from φλέψ, a Vein; and ῥήγνυμι, to break. A Rupture of a Vein.

PHLEBOTOMIA, φλεβοτομία; from φλέψ, a Vein; and τέμνω, to cut. Phlebotomy.

There is not a more excellent, instantaneous, and efficacious Remedy for removing various Diseases, both of the acute and chronical Kind, than Venesection, prudently and cautiously used; for some violent Disorders, of the most dangerous Nature, arise from a Redundance of Blood; from a Suppression of its critical Evacuations from the Uterus in Women; and a Defect or Interruption of the hæmorrhoidal Discharge in Men. A Phlethora, by retarding and stopping the free and equable Circulation, lays a Foundation for Impurities of the Humours, Stagnations, Infarctions, Obstructions, Extravasations, and Ruptures of the Vessels: For whilst the Blood, by its too great Quantity, strongly resists the contractile and elastic Force of the Heart, Arteries, and other Vessels, its progressive Motion through the whole Body is not only retarded, so that it becomes thick, and fit for generating Infarctions, and Obstructions, the fruitful Sources of chronical Disorders, but, also, in delicate Patients, and highly nervous Parts, by exciting spasmodic Strictures, it induces an Inequality in the Circulation of the Humours, and violent and impetuous Congestions, to some of the nobler Parts, which lay a Foundation for terrible Disorders in the Head, Breast, and Præcordia: These dangerous Disorders are not only prevented, but presently relieved, by Venesection seasonably and duly instituted, especially in Patients who abound with Blood, have large and full Vessels, or who labour under a Suppression of the Menes, or Hæmorrhoids: When in the Spring, and about the Equinox, the Air, on account of the Nearness of the Sun to our Climate, becoming thin and rare, produces a violent Expansion in the Blood, there is great Danger of those Diseases which arise from a Phlethora, as *Hippocrates* justly observes; so that, before these Seasons come on, it is expedient to lessen the Redundance of the Blood by Venesection, and by that means prevent the approaching Disorders: Nor is it absolutely necessary we should always accurately observe these equinoctial Seasons; for, when the Quantity of congested Blood requires a more speedy and expeditious Evacuation, or when, about the End of *February*, and Beginning of *March*, the serene and tepid State of the Atmosphere produces an Expansion and Turgescence of the Blood, which prove injurious to its progressive Motion, we are not to wait for, but, without Hesitation, to anticipate, the Equinox. I have known some, who from an ill-tim'd Adherence to their usual Custom, have delay'd Venesection till the Equinox, whilst in the mean time, the Phlethora increasing, they died of an apoplectic Fit before that time: Nor are we to listen to those who affirm, that Venesection is only proper at certain Periods of the Moon, or when certain Conjunctions of the Stars happen: But we are boldly,

boldly, and without any Scruple, to take Blood from phlethoric Patients, under all Phases of the Moon, and every Conjunction of the Stars, especially if the Atmosphere is serene and calm: Those, also, who abound with Blood, ought to use Venesection about the autumnal Equinox, lest the Blood should, by the Winter Cold, be inspissated, and become sordid, the Excretions being disturbed by the Inclemency and Variation of the Weather; by which means a Foundation is laid for those Disorders which proceed from an Impurity and Stagnation of the Humours. Some, who greatly abound in Blood, ought to preserve themselves from Disorders, by using Venesection thrice a Year, that is, in the Beginning of *March*, and in the Ends of *May* and *September*.

As a Redundance of Blood indicates Venesection, a Penury of it, and a Defect of Strength, contra-indicate this Operation. A Redundance of Blood is sufficiently known, from the Repletion of the Vessels, the Largeness of the Pulse, the luxurious Diet, the quiet and calm Method of Life, and the Intermision of any critical, natural, or artificial Evacuation; for, when all these Circumstances concur, we may safely and boldly use Venesection. On the contrary, when the Body is infirm and emaciated, and the Pulse weak, in consequence of a Want of Blood and Strength, Venesection is absolutely to be condemn'd, unless we intend to do an immediate Mischief to the Patient; for the Strength of the Pulse depends upon the large and brisk Impetus, with which the Blood is convey'd from the Left Ventricle of the Heart into the large arterial Tube: Now the Strength of the Heart to perform this Expulsion, depends upon the free and sufficient Motion of the Blood through the Coronary Vessels into the Substance of the Heart, as, also, on the Influx of the nervous Fluid into the Fibres of the Heart: When, therefore, the Pulse is weak, small, and languid, from too scanty an Influx of the nervous Fluid, and a laudable Blood, and too weak an Impulse of the Blood into the Arteries, it is highly prejudicial to open a Vein in any Patient, or in any Disorder, because it more exhausts the Blood and Strength, which are already too much impaired.

Those Physicians, therefore, err, who order Venesection either in the Decline of the Disease, or in Cases where one Disease succeeds another, as it happens, sometimes, in Fevers; or violent Hemorrhages. Nothing is more frequent in Practice, than to observe a Suppression of the Menes in Women, who surmount any Disorder which consumes their Blood and Strength. But, in this Case, we are not, in order to provoke the Menes, to prescribe Emmenagogues, or Evacuations of Blood; but we are rather by Analeptics, and a rich Diet, to generate a fresh Stock of laudable Blood and Humours.

A Defect of Strength, sometimes, arises not from a Petury, but from a Redundance, of Blood: We often perceive a Slowness and Weakness in phlethoric young Persons and Adults, who were before brisk and active. In phlethoric Patients we, also, observe an unusual Languor, both of Body and Mind, a Defect of Sleep, and a preternatural Expansion of the Arteries: In this Case, it is expedient to remove the superfluous Mass of Blood, which, by its Quantity, hinders the systaltic Motion of the Arteries, immediately after which the Pulse becomes more frequent and strong. But the skilful Physician must distinguish such an Oppression of the Strength, when present, and arising from a Redundance of Blood, from that Weakness which draws its Origin from a Penury thereof.

After Venesection, the salutary Excretions of Blood, and the Evacuations by Stool, Sweat, and Urine, succeed better, and more freely, than they did before; as all the salutary Excretions depend upon the quick or slow, the brisk or languid, Circulation of the Blood: Hence it is obvious, that if, by a Redundance of the Blood, its progressive Motion, together with the Excretions, is retarded, the diminishing the Plenitude of the Vessels must increase its Circulation, render it more fluid, free the Passages of the excretory Ducts, and convey the Blood more freely and copiously to the Emunctories, that thus the Excretions may be the better carried on.

Hence I have often observed, that a Suppression of the Menes has soon been removed, by opening a Vein in the Foot. I, also, know several Instances, in which the hemorrhoidal Discharge, after having been a long time stop'd, has been happily restored by Venesection.

It is certain, from Experience, that in plethoric Patients, and those labouring under spasmodic Disorders, an aqueous and limpid Urine is discharged with Difficulty; but, immediately after Venesection, it is evacuated more copiously, and more deeply tinged. *Hippocrates*, also, in *Self. 6. Aph. 36.* informs us, that "Phlebotomy removes a Difficulty of Urine; and, for that Purpose, opens the Veins of the inferior Parts of the Body." *Riverius*, also, in *Cent. 1. Obs. 1. & 48. & 49.* affirms, that, by Venesection, aqueous Urine has been render'd of a deeper Colour.

I have, also, frequently found, that in hypochondriac Patients, who are generally costive, the Body has been render'd soluble by Venesection: The Reason of which is certainly this; that in the hypochondriac Disorder, by reason of the difficult Passage of the Blood through the Mesentery and Liver, the Vessels are too copiously filled with Blood; and, by reason of their preternatural

Distention, Spasms are produced in their Coats, and their peristaltic Motion is injured; in consequence of which, neither the Faeces, nor the Flatulencies, are duly evacuated by the Anus: But, by seasonably opening a Vein in the Foot, or, as I have often observed, by recalling the hemorrhoidal Discharge, by the Application of Leeches to the Veins of the Anus, the Circulation of the Blood through the Vessels of the intestinal Coats is render'd free; a due Strength and Motion is restored to the Intestines themselves; and the Faeces are more regularly and naturally discharged.

Venesection is not only often useful to old Persons; but, also, powerfully contributes to Longevity, or the Protraction of their Lives: For it is a common, though a palpable Error, to affirm, that Venesection is absolutely improper in Old-age; as if Persons at this Period of Life were so far from labouring under a Redundance of Blood, that they were rather afflicted by a Deficiency of that Fluid, and a Want of Strength. We may indeed readily grant, that all old Persons are not phlethoric, and, consequently, do not stand in need of Venesection; nor does Age of itself contribute to the Repletion of the Vessels: But, at the same time, there are some vigorous, robust, and sound old Persons, furnished with capacious Vessels, who not only eat heartily, but are, also, capable of duly concocting and digesting the heaviest Aliments; in consequence of which, it is not to be doubted but a copious Chyle and Blood will be generated from well-concocted Aliments; and such a State is sufficiently apparent from the florid Colour of the Countenance, and the Turgescence of the Vessels with Blood: It, also, frequently happens, that not only Adults, but, also, Persons extremely old, discharge large Quantities of Blood from the hemorrhoidal Veins, without any remarkable Loss of Strength: And I myself have known some Persons of eighty Years of Age, who have evacuated large Quantities of bloody Urine, without a perceptible Decrease of Strength. Besides, Age is not very fit for Motion and Exercise; and, for this Reason, the Excretions cannot bear a due Proportion to the Quantity of Aliments taken; and, as the Blood is little consumed by Heat and Motion, there must, necessarily, be produced a Redundance of Humours, and an Infarction and Plenitude of the Vessels, which, unless seasonably removed, lay a Foundation for those Disorders which are most familiar to old Persons, such as Wasting of the Flesh, Coughs, Coryzas, Hoarseness, Pains of the Joints, Palsies, a Difficulty of Urine, Stones of the Kidneys and Bladder, Itchings, and the dry Itch: Which Disorders do not proceed immediately from a Redundance of the Blood, but, rather, from an Impurity of the Serum; but, at the same time, this Impurity of the Serum derives its Origin from the Redundance of the Juices, by which the Excretion of the Sordes is prevented.

I know many Instances of old Persons who have lived sound, robust, and free from the ordinary Diseases incident to Old-age, by no other means than Venesection, used twice a Year. And that Venesection is not unfriendly to Old-age, is sufficiently obvious from this, that almost all the *Swiss*, even when eighty or ninety Years of Age, use Venesection every Year. See *Wepfer, Lib. de Apoplexia. Primrose, also, Lib. 4. de Vul. Error. Cap. 23.* evinces from three Instances, that Persons of eighty Years of Age may commodiously bear Venesection in the most violent Distempers, whether arising from internal or external Causes: This I have, also, found confirmed by frequent Experience. But we are by no means from this to conclude, that Venesection is proper in old Persons, who are weak and languid, whose Appetite is lost, or who labour under a Weakness of the Stomach and Intestines, and, especially, in those who have previously struggled with some long and chronic Disorder.

In continued and acute Fevers, Venesection is generally not only useful, but absolutely necessary: It is surprising, that some eminent Physicians, in other Cases remarkable Patrons of Venesection, should yet maintain, that in all acute Fevers, whether of the benign or malignant Kind, as, also, in exanthematous Fevers, and those that are not such, it is so far from being necessary, that it is rather pernicious, except in the Synocha, in which they do not think it absolutely necessary; but only when it is accompanied with a Phlethora, and an Orgasm: They assert, that it has been frequently observed, that Venesection, in the Beginning of such a Fever, has, about its State or Height, produced dangerous Translations and Congestions of Blood to the Head, which induce Convulsions, and a mortal Phrenitis: They are, also, of Opinion, that Nature, which always wisely governs the animal Oeconomy, does not in these Fevers intend an Evacuation of the redundant Blood; but only a Resolution of it into an excrementitious Serum, with a Secretion of the noxious Matter, by means of an intense Heat; and that, for this Reason, Venesection is, in these Cases, contrary to the Intention of Nature, since, by it, the salutary Work of Secretion is disturbed. But this Doctrine is overthrown, both by Reason and Experience: For I have known many robust Persons; both young and full-grown, who, being full of Blood, and seized with these Fevers, in consequence of the Omision of Venesection, have, in a few Days, died of a Phrenitis, an Inflammation of the Stomach or Fauces, or a Peripneumony. In such Cases, after Death, the whole

whole Body has been found surprisingly tumid, and the sanguineous Ichor has been copiously discharged from the Nostrils: A prodigious Stench, also, accompanied with Putrefaction, has immediately succeeded; for no other Reason but the inflammatory Stagnation of the Blood. On the contrary, I have, from many Observations, found, that Venesection, only once performed, in Patients labouring under acute Fevers, has not only diminished, or absolutely removed, the Anxieties of the Patients, but, also, a Train of other terrible Symptoms. This Doctrine is, also, confirmed by the Practice of the *French*, who, in all Fevers, with great Success, use Venesection, not only once, but twice, or oftener, if the Condition of the Patient indicates its Propriety: But that Venesection, about critical Times, produces Translations of Blood to the Head, is an egregious Mistake; for though Phrenesies and Convulsions frequently happen, in those who labour under acute Fevers, yet the same Misfortunes happen, and that too more frequently, when Venesection is omitted, than when it is used: And since almost all who die of acute Fevers, are seized with a Phrenitis and Convulsions, certainly, if Venesection is the Cause of these Symptoms, a Person labouring under an acute Fever, cannot readily die, if that Operation is neglected.

I, on the contrary, do not hesitate to affirm, that, in acute Fevers, Venesection is often not only useful, but necessary; for Persons seized with acute Disorders have always rather a Redundance, than a Penury, of Blood and Humours: Now it is certain, that the very Essence of a Fever consists in an Augmentation of the Tone, and a certain spasmodic Stricture, of all the Vessels and Fibres, upon which both the Circulation of the Blood, and the Increase of the Heat, depend: It is, also, known, that by Spasms the Diameters of the Vessels are lessened; and that, by Heat, the Humours are expanded, and possess a larger Space: For which Reason the redundant and raging Blood, being denied a free Passage through the Blood-vessels, is impetuously agitated higher and thither, and forced, as to improper Parts, thro' Vessels whose Diameters are naturally too small for the Admission of the Blood, where it remains, becomes stagnant, and lays a Foundation for dangerous Inflammations, which are most effectually prevented by seasonable Venesection. This is sufficiently confirmed by the Authorities of the most skilful Physicians; for *Hippocrates* himself, in his *Treatise de Ration. Viſſ. in Acut.* warmly recommends Venesection, in acute Disorders: Besides, the Antients, in these dangerous Diseases, used Venesection till a Deliquium was brought on, as we are informed by *Galen*, in *Lib. 1. de Rat. Viſſ.* where he tells us, that such Venesection as brings on a Deliquium is only to be used in the most acute Diseases, and in those Patients who are robust and vigorous, in the Flower of their Age, and abound in Blood, as, also, where the Climate, the Air, and the Season of the Year, are very temperate. The Diseases of this Kind are highly burning Fevers, intense Pains, considerable Inflammations of the Viscera, Carbuncles, a Synochus, an inflammatory Lassitude, and violent Pains of the Joints: For, in all these Disorders, when a large Quantity of Blood is evacuated, the Heat is immediately abated; in some of them the Body is render'd soluble, or Sweats are excited; by which means the Disease is either terminated, or at least diminished, according to *Hollerius*, in *Comment. ad Aphor. 3. Sect. 1. Hippocr.*

In Exanthematous Fevers, also, those of the Petechial and Purple Kind, the Measles, and Small-pox, and even the Plague, Venesection is so far from being unsafe, that, when prudently used, it proves highly beneficial. It is a Dispute of great Importance among Physicians, whether in those Disorders, in which the peccant Matter is forced to the Surface of the Body, Venesection may be properly and successfully used: Some espouse the Affirmative, and others the Negative, whilst both appeal to Experience: But a due Distinction is to be made, and Venesection is to be accommodated to the Nature and Variety of Circumstances: Thus, for Instance, when the Humours are defective; when, in the Beginning of a Disorder, the Strength is impaired; when the Pulse is weak, hard, and small, the Vessels numerous, but narrow; when the Strength is diminished by any Affliction of Mind, or by a Flux; in a Word, where-ever there is a Malignity of the Humours; Venesection is rather prejudicial than salutary: For, in order to eliminate a Matter which offends, not so much by its Redundance, as by its caustic, subtle, and virulent Quality, so prejudicial to the nervous Parts, a strong moving Force of the Heart and Arteries is required, which can only be expected from a sufficient Influx of the Blood, and nervous Fluid. Besides, this peccant Matter to be expelled can only be convey'd to the Surface of the Body, by the Assistance of the Blood and Humours; since, when the Diameters of the Vessels are small, they easily collapse, and are only filled by a brisk and lively Impulse of the Fluids: If, therefore, a Physician, by Venesection, diminishes the already defective Blood, Humours, and Strength, he does a terrible Injury to the Patient; since, by this means, the peccant Matter remaining within, like a Poison, perverts the Motion of the Solids and Fluids, and proves mortal.

But quite different Measures are to be taken, when, in consequence of the Redundance of the Blood, and its Rarefaction by the febrile Heat, the Coats of the Heart and Arteries are so distended, that their Systole is diminished, and almost suppressed;

in consequence of which, the Blood is not freely convey'd to the small curaneous Tubes, that the peccant Matter may be duly secreted and eliminated; for, in such a Case, Reason informs us, that, when a certain Quantity of the Blood is evacuated, the remaining Part circulates more briskly, the equable Resistance of the Coats to the Impulse of the Fluids, and the systolic and diastolic Motion, are restored, by which the Secretion and Evacuation of the peccant Matter is excellently carried on: This most frequently happens in young and phlethoric Persons of sanguineous Constitutions, who live high, or are accustomed to an indolent Course of Life; as, also, in those Constitutions, in which an immoderate Indulgence of boundless Passion has diminished the Excretions, and, consequently, generated a Redundance of Humours. Patients of this kind, when labouring under a purple, petechial, a catarrhus, benign, or malignant Fever, or the Small-pox, are exposed to the most certain and infallible Danger, by an Omission of Venesection; whilst, on the contrary, those Disorders are happily removed, when, by diminishing the Phlethora, the free Circulation of the Blood is restored.

In Exanthematous Fevers already appearing on the Skin, Venesection is so far from being prejudicial, that it is sometimes highly beneficial. It is a common Opinion, that upon the Efflorescence of Petechial and Purple Fevers, the Measles, and Small-pox, it is neither proper to use Venesection, nor Purgatives, lest the malignant Matter, being by these means recalled into the Habit, should produce an irreparable Loss. But though it is an Observation of great Importance, and supported by Experience, that Venesection is not to be used, when Nature is employ'd in the Work of Excretion, and when the exanthematous Eruptions have not had a long and fixed Seat in the Skin; yet there are Cases, in which, after the Appearance of the Efflorescences, Venesection is both useful and necessary: For I have observed, in those who have died of a Purple Fever, whether of the primary or secondary Kind, or of the Measles, or Small-pox, violent Spasms, not only of the Joints and Extremities, but, also, of the Abdomen, which, in consequence of the Contraction of the Skin, were succeeded, not only with a Retrocession of the Efflorescences, but, also, with a violent Anxiety, a Tossing of the Body, and frequently a Delirium, accompanied with a Deliquium; all which mortal Symptoms are not, as is commonly believed, so much produced by the Retrocession of the exanthematous Matter to the internal Parts, as by the Impetus and Congestion of the Blood to the Heart and Brain: Hence, induced by the Reason of the Thing alone, in one Year's Time, I, by Venesection in the Arm, saved four Childbed Women labouring under so violent Purple Fevers, that their Lives were despair'd of; for, as soon as a Vent was given to the Blood, the Anxiety about the Præcordia, and the Deliquiums, were removed, and the Patients forthwith became better, to the great Surprise of the Surgeon and By-standers, who predicted the Death of the Patients, under the very Operation which could only afford them Relief. In a young Man, also, dangerously ill of the Small-pox, when an imminent Delirium, and a violent Anxiety about the Præcordia, threaten'd Death, I successfully order'd Venesection in the Arm. Nor does this Piece of Practice want the Authority of some of the most celebrated Physicians to support it: Thus *Botallus*, that noted Patron of Venesection, in *Lib. de Venæsect.* informs us, that, with great Success and Advantage, he order'd Venesection in pestilential Buboes, and other exanthematous Disorders, if the Fever did not remit. *Muraltus*, also, not to mention others, in *M. N. C. Dec. 2. An. 7. Obs. 115.* observes, that Venesection proved salutary in an epidemical Fever, in which a large Number of Papulæ appeared on the Body.

In the Paroxysms and Exacerbations of Fevers, and other Diseases, Venesection is dangerous; but is beneficially used on the intervening Days: In the Paroxysms of intermittent Fevers, under an immediate Fit of an Epilepsy, or the hysterical or hypochondriac Disorders, and in Cases where the Extremities are cold, or internal Heat and Anxieties rack the Patient, Venesection not only augments the Violence of the Symptoms, but, also, endangers the Life of the Patient. The Reason of this is obvious; for the Exacerbation of Symptoms and Diseases is accompanied with Spasms, especially of the external Parts, as, also, of the Stomach and Intestines; by which the free Circulation of the Blood is intercepted, and the Blood itself forced, with a greater Impetus, to the large Vessels, and especially to the Breast and Heart: If, therefore, any one attempts Venesection in the Arms or Feet, when all the Parts are spasmodically constricted, he will in these Parts infallibly augment the Spasms; for the larger Quantity of Blood is taken from these Parts, the more the spasmodic Contraction of the Fibres is increased; since nothing more powerfully resists this spasmodic Stricture, and the Regurgitation of the Blood to the internal Parts, than a strong Impulse of the Heart and Arteries, and a liberal Afflux of the resisting Blood to the Parts: Hence it is expedient to delay Venesection till the Day of Intermission or Remission, when the Spasms are remitted, and the free Afflux of the Blood to the Parts is restored.

But there are some Cases, in which it is expedient, even under the spasmodic Paroxysms, though not in the Parts spasmodically affected, but in those to which the Blood is conveyed with the greatest

greatest Impetus: Thus it often happens, that, in consequence of Spasms of the Parts of the Abdomen, or of the Legs and Feet, which are extremely cold, either on account of a Frigidity, or any other Cause, the Blood is impetuously convey'd to the Breast and Head, and threatens an Apoplexy, or a Suffocation; in which Case, a Vein opened, not in the inferior, but superior Parts, is highly useful, and affords present Relief.

There is, therefore, a slight Species of Apoplexy, which may be removed by Venesection alone, when, either by the Violence of some Passion, especially a Frigidity, or by terrible Spasms of the inferior Parts, the Blood being with such an Impetus convey'd to the Head, as, by its Quantity, to distend the Vessels of the Membranes of the Brain, their systolic Motion is checked, and a slight Species of Apoplexy produced. This Species of Apoplexy is very familiar to hysteric Women, to Persons of plethoric Habits, and those of delicate Constitutions and Minds; and is, by the unskilful and unthinking Part of Mankind, taken for a Delirium; from which, however, it is widely different; For, in a Delirium, there is no Pulsation of the Heart and Arteries, the Face is pale, and the Breathing imperceptible; but, in this slight apoplectic Paroxysm, the Use of all the Senses, whether external or internal, is totally destroyed, the Limbs remain immovable, there is a violent Palpitation of the Heart, the Pulse is large and quick, and the Face tumid and red: Nor does this slight Apoplexy arise from a Rupture of the Vessels, which is an incurable Disorder; nor from a Secretion of the Serum, which terminates in a Palsy; but only from a Stagnation of Blood in the Cavities of the preternaturally distended Vessels; for it is certain from anatomical Discoveries, that the carotid and vertebral Arteries, as soon as they enter the Cranium, and run through the Membranes of the Brain, lay aside their thicker Coats, with which all their other Parts are covered: For which Reason it is not to be wonder'd at, if, by the Quantity and Impetus of the Blood convey'd to the Brain, their contractile and elastic Force, by the Assistance of which the Blood is farther protruded into the venous Sinuses of the Head, is diminished or destroyed; by which means the Systole of the Carotids being destroyed, the Blood stagnates in the too much distended Vessels of the Membranes of the Brain, and in the Plexus Choroides: Hence the Secretion and Influx of the nervous Fluid, on which Sensation and Motion depend, are intercepted and destroyed: Hence it is obvious, that, in order to restore the due Systole of the Vessels, the free Circulation of the Blood through the Head, and the Influx of the nervous Fluid into the Nerves, there can be no more proper and efficacious Remedy, than taking a sufficient Quantity of Blood from a large Orifice made in one of the Veins of the Arm; for, by this means, in a short time, Reason, Sensation, and Motion, are restored.

But those Physicians ill consult the Safety of their Patients, who, for want of a sufficient Knowledge of the Causes of this Misfortune, order Venesection in the inferior Parts, because these are, in such a Paroxysm, generally spasmodically constricted, cold, and too remote from the Part affected, by which Circumstances the Derivation of the Blood is rendered less expeditious and commodious. Besides, I have often observed, in Patients whose whole nervous Systems were disposed to spasmodic Contractions, and whose Extremities were always cold, that by Venesection, even when scanty, the Violence of the Spasms in the inferior Parts has been in a few Hours increased: In consequence of which, the Blood, being afterwards impetuously convey'd to the Brain, produces the apoplectic Fit above described, and which, in Process of Time, becomes so violent, as to cut off the Patient, or, at least, leave behind it a Palsy, or Loss of Memory, unless removed by a speedy and seasonable Venesection.

Disorders of the Head arising from a Congestion of Blood, and a Distention of the Vessels, require a Venesection, which, however, is to be performed in the adjacent Parts. A violent and obstinate Head-ach, a frequent Hæmorrhage from the Nose, melancholic Madness, a Vertigo, an Ophthalmia, an Erysipelas of the Head, and Inflammations of the Larynx and Pharynx, very frequently draw their Origins from Spasms, too great a Congestion of Blood to the superior Parts, and a violent Distention of the Vessels; especially in hypochondriacal Patients, and in Cases where the Stomach and Intestines are turgid with Flatulencies and Sordes, or are spasmodically constricted; as, also, in Cases where the free and equable Circulation of the Blood is so intercepted, that, rushing copiously and impetuously to other Parts; especially the Head, it there produces these Disorders. In such Cases, for preventing Danger, and deriving the Impetus of the Blood elsewhere, it is expedient to open a Vein, either in the Forehead, the Temples, under the Tongue, or in the Neck.

In violent Cephalalgias, Ophthalmias, and Quinsies, Venesection under the Tongue is always highly beneficial; but, in a Phrenitis, Melancholy, and an Head-ach, arising from internal Causes, it is most expedient to open the external Jugular Vein; and, if this cannot be found, the Vein which runs longitudinally along the Forehead, and is a Ramification of the external Jugular, is to be open'd; the Neck being previously tied with a Ligature under the Chin, and the Breath retain'd. The Opening of this frontal Vein was very common among the Antients. Thus Hippocrates, in

Señ. 3. Aph. 68. informs us, "that a Pain in the posterior Part of the Head is relieved by opening the Vein running along the Forehead." And Hollerius, in his Commentary on this Aphorism, tells us, "that 'tis certain from Experience, that many have been instantaneously freed from Head-achs, by opening the same Vein." Alexander Trallian, in Lib. 1. Cap. 13. greatly recommends the opening of the frontal Vein in a Phrenitis; and affirms, that he suddenly cured a phrenetic Patient by that Means; and in the 16th Chapter of the same Book, de Melancholia, he has these Words: "If a sanguineous Matter is impacted in the Brain, we are boldly to open the frontal Vein; for, in consequence of the Evacuation of the whole other Parts of the Body, there is no Harm produced by immediate Applications to the Part affected."

Tho' we are certain from Experience, that in violent Disorders of the Head, opening the frontal Vein, those behind the Ears, the external Jugulars, and the sublingual Vein, are of great Service, yet this Practice is not to be universally recommended; nor is it proper in all Cases, since we are to have a particular Regard to the State and Constitution of the Patient; for if such Disorders of the Head are accompanied with a Plenitude of the Vessels, or if violent Spasms of the inferior Parts convey the Blood copiously and impetuously to the Head, it is to be dreaded, lest opening a Vein in the Head should invite a larger Quantity of Blood to it. For this Reason the most skilful of the Antients unanimously advise, that, at the same time, a Vein should be open'd in the Arm, or in the Foot. Thus Alexander Trallian, in Lib. 1. Cap. 16. tells us, "that if we attempt any Cure on the Head, before the Body is freed from its recrementitious Juices, we do Harm rather than Good; since by that means a larger Quantity of Humours is attracted to the Part affected." Hollerius, also, in Comment. in Aph. 68. Señ. 5. of Hippocrates, informs us, "that, if a Pain of the Head is accompanied with a Plethora, we must first open a Vein in the Cubit, and then the frontal Vein; but, if there is no Plethora, we may forthwith safely open the frontal Vein; and if the Pain of the Head is produced by Constriction, if, for Instance, it arises from a Suppression of the Menstrues, we are first to open the Vein in the Ankle, then that of the Cubit, and then the frontal Vein. If the Head-ach arises from some Disorder of the Diaphragm, or Liver, we are first to open the cubital, and then the frontal Vein."

With respect to opening the sublingual Veins, in an Angina, it is, also, to be observed, that in a plethoric Habit, this Practice is dangerous, unless the Plethora is previously removed, by opening a Vein in the Arm. We are, therefore, to follow the Directions of Alexander Trallian, who, in Lib. 4. Cap. 1. de Angina, uses these Words: "In Cases of Necessity, I have, in the Morning, open'd the cubital Veins, and then the frontal; after which, by exhibiting Cream of Pissan in the Evening, I have perfectly cured a Quinsy. I have, also, with great Success, open'd the jugular, when I could not find the sublingual Veins."

In Disorders of the Breast, such as a genuine Pleurisy, and a Peripneumony, Venesection in the Arm is often highly necessary. Tho' a spurious Pleurisy, which is a Species of Rheumatism, or arthritic Pain, and which arises from an acrid Serum contain'd within the Pleura, and surrounding the Ribs, does not always require Venesection, but is often happily remov'd by a Diaphoretic; yet quite different Measures are to be taken, in a true Pleurisy and Peripneumony, the former of which is only a slight, and the latter a more profound Inflammation of the Lungs, arising from a Stagnation of Blood, firmly impacted in their Vessels; for, in these, Venesection is not only necessary, but, if there is a Plethora, must be repeated, in order to prevent the Increase of the Inflammation; which End is obtained, when the Blood, which is too copiously congested in the Vessels, stagnates, and incapable of a free Circulation, is, for the sake of a better Derivation, drawn from the most contiguous Part, making a large Incision in the Vein, that thus the Blood may be the more quickly and impetuously deriv'd from the Lungs.

Venesection is of singular Use for the Purposes of Evacuation, Revulsion, and Derivation: The evacuating Use of Venesection is to diminish the Quantity of the Blood; and, when this Intention alone is pursued, it is of no Importance, from what Part of the Body the Blood is taken. The derivatory Use of Venesection is to attract the Flux of the Blood from any Part affected to other Parts, from which it may be more commodiously evacuated. Thus, in violent spasmodic and flatulent Disorders of the Abdomen, and in Diseases arising from a Suppression, or retarded Discharge, of the Menstrues or Hæmorrhoids, 'tis safer for the Purposes of Derivation to open a Vein in the Foot, rather than in the Arm. Hence Hippocrates, in Lib. de Nat. Hum. justly informs us, "that, in Pains of the Back and Coxendices, we are to use Venesection in the Hams and Ancles." And Severinus, in his Treatise de efficaci Medic. Cap. 26. informs us, that, for preventing nephritic Pains, promoting the hæmorrhoidal and lochial Discharges, as, also, in Inflammations and Fallings down of the Anus, in Vomitings of Blood, and Schiatic Pains, a Vein is with great Success opened in the Foot: On the contrary, in Disorders of the Head, such as an Apoplexy, a Lethargy, Madness, Melancholy, a Phrenitis,

a Phrenitis, a suffocative Catarrh, a sanguineous Asthma, a Spitting of Blood, a Pleurisy, a Peripneumony, a spurious Inflammation of the Liver, the too great Quantity and Influx of the Blood, which ought speedily to be deriv'd to other Parts, are more happily remov'd by opening a Vein in the Arm; which is far nearer the Part affected: But Revulsion, or rather Avulsion, is made, when the Impetus of the Blood is recal'd, or, as it were, drawn upwards, from the inferior to the superior Parts. Thus, in too profuse a Discharge of the Menfes or Hæmorrhoids, a Vein is successfully open'd in the Arm. The same Practice is, also, expedient in pregnant Women, in order to prevent Abortion, if the Vessels of the Uterus are so much infarcted and distended with Blood, that the Weight of the Uterus, pressing downwards, becomes burdensome and uneasy to the inferior Parts.

Venefection is to be prudently us'd for the Purposes of Derivation and Revulsion; for, if Obstructions of the Vessels arising from impacted Blood are to be remov'd, it is expedient not to take a large, but a moderate Quantity from the most contiguous Part; because, by this means, the Remainder of the Blood is more imperiously convey'd to the Part affected, and carries off the stagnant Blood lodg'd in the small Vessels, since moderate Venefection accelerates the too languid Motion of the Fluids in the Vessels. Hence, opening the Vena Saphena often instantaneously restores the menstrual Discharge; and the hæmorrhoidal Discharge, when too slow, is happily promoted and accelerated by opening a Vein in the Foot; whereas these Effects are often not produc'd, by taking a large Quantity of Blood from the Arm, or the Foot; but, if the Disorder is inveterate, and the Obstructions of the Vessels so great, that it cannot be remov'd, in such a Case, if the Patient is plethoric, opening of the Vena Saphena is more hurtful than beneficial; because it invites the Blood more copiously to the Uterus, by which means a greater Obstruction of the Vessels is produc'd. Nor in an Hemiplegia, or obstinate Head-ach, in a chronic Vertigo, or in Melancholy, does Venefection in the frontal Vein afford any Relief; because by that means a greater Afflux of Blood to the Head is produc'd, and the obstructed Vessels of the Membranes of the Brain more infarcted. 'Tis, therefore, better, in such Cases, to take Blood from the inferior Parts: In recent Ichthiac Pains, Venefection in the Foot often affords immediate Relief; whereas, when the Disorder is inveterate, it rather increases it. In Bodies, therefore, full of Blood and Juices, 'tis far more safe, according to the Advice of *Hallerius*, in *Comment. in Sect. 4. Aphor. 36.* first to open a Vein in the Arm, and then the Schiatic Vein, that there thus may be a Revulsion of the Blood in various Places, at one and the same time. The same Author, also, justly informs us, that in Dysurics proceeding from Infarctions of the Kidneys with Blood, as, also, in Inflammations of the Bladder, we are first to open a Vein in the Arm, and then the Vena Saphena, in the Ham or Ankle. From what has been said, 'tis sufficiently obvious, that Venefection may be us'd in a Part very contiguous to that affected, if the Disease is recent, its Cause moveable, and the Plenitude of the Vessels not very great; but when the Disease is of a long Standing, and the Body abounds with too much Blood, we are first to use Venefection in the more remote, and then in the more contiguous Parts of the Body.

It is of great Importance to take away only a due and proper Quantity of Blood; and sometimes there is a necessity for reiterated Venefection. Young Persons, those of tender Habits, such as have small Vessels, and Women who readily fall into *Deliquiums* by means of large and copious Venefection, ought to abstain from it, if possible; but, if it should be absolutely necessary, the Orifice should in such Persons be made small, and the Blood but gradually evacuated, compressing the Incision at proper Intervals with the Finger. But Women, after fifty Years of Age, when their Menfes generally cease, require a larger Extraction of Blood, which, also, holds in robust Men with large Vessels, and in Persons, who, being accusom'd to rich and delicate Living, begin to have the hæmorrhoidal Discharge cease. In the Spring, especially in *May*, People can bear larger Evacuations of Blood, than in the Summer, or Autumn; but a moderate Quantity of Blood is only to be taken away in excessive Hæmorrhages, such as spitting of Blood; as, also, enormous Discharges of the Menfes, and Hæmorrhoids: Nor is it expedient to deprive the Body of a large Quantity of Blood, before the ordinary Time of the Menfes, lest the subsequent Discharge should either totally cease, or be considerably diminished.

In all inflammatory and exanthematous Fevers, if, in consequence of a Plethora, there is a Necessity for Venefection, we are to be very careful, that only a due Quantity of Blood be taken away; for, if, in case of a Redundance of Blood, too small a Quantity of it, such as an Ounce or two, is taken away, the organic Expansion of the Blood is often augmented; so that it is so far from being beneficial, that it rather does Injury by increasing the Inflammation, and preventing the Eruption of the exanthematous Matter. In like manner, if too large a Quantity of Blood is taken away, more Harm than Good is

done, since by this means the Expulsion of the exanthematous Matter, which ought to be conveyed to the Skin by the Blood, is hinder'd, and the peccant matter, to the great Detriment of the Patient, retain'd in the Habit. In a Peripneumony and Pleurisy, too copious Venefection hinders the Expectoration and Diffusion of the inflammatory Matter, which ought, also, to be evacuated, and carried off, by means of the Blood. In Rheumatisms, an Erysipelas, and arthritic Pains, both of the fix'd and wandering Kind, it is, also, necessary to leave a Quantity of Blood sufficient for the Cure of these Disorders; that is, we are neither to take away too large, nor too small a Quantity.

If a Plethora not only oppresses the Vessels, but, also, impairs the Strength, a large Quantity of Blood, such as a Medical Pound, for Instance, is to be taken away; for, if only a small and inconsiderable Portion is evacuated, the Blood finding a greater Space, its Elasticity is more increas'd, it becomes more expanded, and often acts with a greater Impetus on the Part affected. I have known Instances, says *Hoffman*, where, in considerable Plethoras, the Extraction of a small Quantity of Blood, an Ounce or two, for Instance, has a few Hours after been succeeded by an apoplectic Fit, which has been happily remov'd by liberal Venefection in the Arm, from which eight Ounces, for Instance, have been taken. I, also, remember, says he, that, in a certain plethoric Person, violent Anxieties of the Præcordia were produc'd by a Suppression of the hæmorrhoidal Discharge, arising from Cold. Upon opening a Vein in his Foot, and taking away only four Ounces of Blood, all the Symptoms were augmented, such as the Anxiety of the Præcordia, the Watchings, the Inquietudes, and Difficulties of Breathing, which, however, forthwith ceas'd upon taking seven Ounces of Blood from his other Foot.

Rheumatisms, Catarrhs, Coryzas, and Coughs, are often generated by a preposterous and unskilful Venefection, which, however, when seasonably us'd, proves an excellent Means for preventing and removing these Disorders. I have frequently observ'd, says *Hoffman*, in the Course of my Practice, that a few Days after Venefection, especially in the Spring and Autumn, when the Weather is not calm and serene, many have fallen into violent Catarrhs, Coryzas, Coughs, rheumatic Disorders, and catarrhal Fevers; and this happens very frequently, especially when Persons, not sufficiently clothed, expose themselves to the cold and moist Air, particularly in the Evenings; for it almost always happens, that the Perspiration is diminish'd by a pretty copious Venefection, in consequence of which, the Humours usually carried off thro' the Pores of the Skin, in the Form of Vapours, are, in some measure, retain'd in the internal Parts; and this happens most frequently in Persons of spongy Habits, and small Vessels. Nor is this Phenomenon hard to be accounted for: When a large Quantity of Blood is taken away, the Vessels, especially such as are small and near the Extremities, being before distended with Blood, begin to be flaccid and empty. And as there is an exquisite and highly sensible Tone in the subcutaneous Inguements, hence it happens, that, on the Access of a cold Air, the elastic Fibres of the Skin are contracted, and the sudoriferous Ducts by that means block'd up; in consequence of which, recrementitious Sweat not only remains in the Habit, but, also, is forced from the external to the internal Parts, especially to the glandulous Parts of the Fauces and Bronchia, or to the mucilaginous Glands of the Joints, or to their glandular Ligaments, where an highly acrid, saline, and stagnant Serum, exciting violent Irritations and Constrictions of the Vessels, hinders the free Circulation of the Humours; by which means, Secretions of Serum, Pains, intense Heats, and a copious Afflux of Humours, are excited.

But as an unskilful, or too copious, Venefection lays a Foundation for Catarrhs, so it is frequently observed in Practice, that Venefection prudently us'd in the Spring and Autumn, and repeated every Year, has freed many of Coryzas, Stuffings of the Head, and annual Coughs, and especially, those who before abounded in Blood, and have never had a Vein opened before. In the Spring, in consequence of the Rarefaction and Expansion of the Air, the Vessels are turgid, on account of the Expansion of the Blood, by the Access of a subtle Ether: If therefore, an Evacuation of Blood, either natural or artificial, is not made, Stagnations of Blood, and Humours, and Secretions, and Depositions of Serum, readily happen in the most lax, soft, and glandular Parts: all which Misfortunes may be happily prevented by seasonable and prudent Venefection.

As the flatulent Colic is sometimes augmented by Venefection, so those of the convulsive and hæmorrhoidal Kind are often alleviated, and totally remov'd, by it. Those Flatulencies which violently distend the Intestines, most frequently depend upon a want of due Tone in them, or a Weakness of their peristaltic Motion; for since, by the Force of this Motion, not only the Flatulencies, but, also, the other Contents, of the Intestines are carried downwards, so when it is either diminish'd, or totally destroy'd, Flatulencies are copiously generated, and become stagnant, especially in the Flexures of the Colon about the Hypochondria; but this want of Tone in the Intestines principally arises from the Defect of a laudable Blood, and nervous

vous Fluid; for which Reason old Persons, People after Recovery from a Disease, those weaken'd by any long-protracted Disorder, or Indisposition of Mind, those abounding in Phlegm, or who feed upon very refrigerating Aliments, are frequently subject to a particular Species of Colic, which is happily cur'd, not by Venesection, or diminishing the Quantity of Blood, but by carminative Medicines, possess'd of a balsamic and aromatic Principle. But other Measures are to be taken with the spasmodic or convulsive Colic, which arises from Blood lodg'd in the intestinal Coats, and violently distending them; for seasonably opening a Vein in the Foot not only proves a Preservative against this terrible Misfortune, but, also, affords present Relief under it, as *Riverius*, in *Cent. 1. Obs. 44.* has justly observ'd.

Both before and after Venesection, some Cautions are to be observ'd as useful: For,

1. We are not, except in Cases of urgent Necessity, to open a Vein in the Equinox or Solstice themselves, at full or new Moon, or in a rainy and gloomy Day. But 'tis expedient, a few Days before these Seasons, and on a clear and serene Day, to use Venesection as a Preservative; because about these Seasons the Discharge of the Menes generally happens, and various Disorders of the spasmodic Kind, epileptic Paroxysms, and the Diseases familiar to hypochondriac and melancholic Patients, generally return; and before the Paroxysms of these Diseases it is expedient, by Venesection, to free the Body from its superfluous and redundant Blood.

2. It is always expedient, in Persons who readily faint, to constitute Venesections, not with an empty Stomach, but after taking a little Broth, making the Orifice at the same time but small.

3. After Venesection, it is highly improper to load the Stomach with Meat or Drink; and much more, to drink to Excess, or expose the Body to a cold or moist Air; for 'tis certain, from frequent Experience, that by these means many, especially in the Months of *March* and *October*, and particularly if they are of a spongy Habit of Body, fall into Coryzas, Coughs, Rheumatisms, catarrhus Fevers, and spurious Pleurisies; for by Venesection, especially when copious, the Perspiration is considerably diminish'd, because the exhausted Blood no longer keeps the subcutaneous and sudoriferous Ducts so open as they were before. Hence the cold Air, by closing them up, and repelling the Humours from the Surface of the Body to the interior Parts, produces the now-mention'd Disorders.

4. Before Venesection, it contributes to Health to free the Primæ Viæ and Stomach from Crudities and Sordes, not by a drastic Purgative, but by a gentle Laxative; for we are by no means to exhibit strong Purgatives to plethoric Persons, because, by exciting Spasms of the Intestines, they by that means disturb the free Circulation of the Blood, and produce prejudicial Congestions in various Parts of the Body.

5. In Women, on account of the menstrual Discharge, and in Men subject to the Hæmorrhoids, it is always expedient to open a Vein in the Foot, lest the Blood should be derived from these Emunctories. But Men free from the Hæmorrhoids ought not to accustom themselves to Venesection in the Foot; for I have by that means seen blind Hæmorrhoids, without any Discharge excited, for removing of which Venesection in the Arm ought to be instituted.

6. After Venesection, a careful Regimen is to be observ'd; nor must the Patient forthwith return to his former Diet, and Method of Life. Hence we cannot forbear condemning the Custom of the *Germans*, who never eat and drink more plentifully than after Venesection.

Cupping with Scarification is often us'd as a Succedaneum for Venesection. Thus *Celsus*, in *Lib. 2. Cap. 10.* informs us, "That the principal Use of Cupping-glasses is when any Fault is lodg'd, not in the Whole, but in some particular Part, of the Body, to which, for the Purposes of Health, they need only be applied: And this is a Proof, that, in order to relieve any Part, we are, with the Knife or Lancet, principally to take Blood from the Part affected, since no one applies Cupping-glasses to a distant Part, unless when he intends to derive the Blood from it, but to the Part affected, and which is to be reliev'd." For this Reason, in Rheumatisms, especially such as affect the Back, Scapulæ, and Arms, and in Pains of the Gout, a profound Scarification is with great Advantage made; as, also, in Parts affected with a puffy and constrictory Pain; but it is observable, that a smaller Quantity of Blood is always obtain'd from the injured, than from a sound Part. In order to prevent Gout-pains, some, every Month, with great Success, use Scarification, either on the Sole, or on the upper Part, of the Foot. In Efflorescences, and Defecations of the Face, Cupping with Scarification is, also, useful, in order to derive the Blood from that Part. In fat and spongy Habits, this Practice is, also, useful, for removing Itches, and cutaneous Deformities.

In acute Disorders, where the Strength does not admit of a quick and speedy Evacuation of Blood by Venesection; it is expedient, gently, and by degrees, to procure this Evacuation, if ne-

cessary, by Cupping, with Scarification. Thus *Celsus*, in *Lib. 2. Cap. 11.* informs us, "That Cupping, with Scarification, is to be used in some acute Disorders, when the Body is to be relieved, and the Strength does not admit of an Evacuation of Blood from the Veins. And this Practice is not only less violent, but more safe, and never dangerous, tho' used when the Fever is at its Height, and when the Crudities abound. For this Reason, when immediate Danger attends the opening of a Vein, or when the Disorder is lodged in some of the more noble Parts of the Body, we ought rather to have recourse to Cupping, with Scarification, especially when we know, that it is a safe and gentle Method, and that violent Disorders must only be cured by violent Remedies." I have found this Caution of *Celsus* to be founded on Experience; for I have observed, that Disorders of the Head, such as Epilepsies, Vertigoes, Madness, and Convulsions of the Joints, have been increased, and their Paroxysms rendered more frequent, especially in young Persons, and those of delicate Constitutions, by a quick and pretty copious Evacuation of Blood from a Vein; whereas they were very able to bear the Extraction of Blood by Cupping-glasses, which greatly alleviated their Disorders. The Reason of this seems to be, that, in the Parts affected, the Violence of the Spasms, to which the Blood in the Vessels greatly resists, is increased, if that Blood is suddenly taken from them. In acute Fevers, when, in consequence of a Congestion of Blood in the Head, a Phrenitis is to be dreaded, it is, also, more safe and expedient to lessen the Quantity of Blood, by applying Cupping-glasses to the Occiput, than by opening a Vein in the Cubit. *Prosper Alpinus*, in his *Treatise de Medicin. Egypt.* informs us, that it was a common Practice among the ancient Physicians of that Nation, in all acute Fevers, where, from a Redness of the Face, and continual Watchings, they dreaded a Phrenitis, to scarify the internal Veins of the Nostrils, and, by tepid Baths of sweet Water, procure an Evacuation of Blood from them. But when, in any Disorder, instantaneous Relief is necessary, and a speedy Derivation of the Blood from the Part affected, in an apoplectic Fit, for Instance, a Peripneumony, an Inflammation of the Uterus, or a cardiac Syncope, proceeding from an Infarction of the Blood in the Heart, or in Cases where there is Danger of a Suffocation, Cupping-glasses are but of little Service; for 'tis rather expedient to make quick and speedy Evacuation of Blood, by making a large Orifice in some proper Vein near the Part affected.

Cupping-glasses are to be used, when, in consequence of Blood or Serum, stagnating in some external Part, Pains, Tumors, Inflammations, or other Disorders, are produced. This Doctrine is confirmed by *Celsus*, in the former of the Passages before-quoted from him; for the Use of Scarification is either evacuator or derivatory; the former, in order to diminish the Plethora; and the latter, in order to extract the corrupted and impacted Matter. Many of the Antients, and especially among the *Egyptians*, denied, that Cupping was of any Service in order to remove a Plethora; and, for that Reason only, applied Cupping-glasses to certain Parts. But when these are applied to any Part of the Body, such as the Back, Arms, Thighs, or Legs, and the Incisions made frequent and deep, twelve Ounces of Blood are often evacuated, of the same Weight and Consistence with that which is taken from the Veins; for I have often convinced myself of this, by drying the Blood extracted by Cupping-glasses, and found three Parts fluid to one of the solid, as in the Blood taken from the Veins; so that it may justly be class'd among the vulgar Errors of Medicine, to affirm, that the Blood, extracted by Cupping-glasses, is thinner than that obtained from the Veins. However, in order to evacuate and divert the peccant Matter, Cupping is preferable to Venesection; for I remember some Instances, where, in violent Pains of the Scapulæ, Pains and acrid Defluxions of the Eyes, a Gutta Rosacea, erysipelatous Swellings of the Head, Venesection in the Feet or Arms, was of no manner of Service; but Scarification in the Neck, Occiput, and behind the Ears, and the Application of Cupping-glasses to the Back, afforded great Relief. *Prosper Alpinus*, in his *Treatise de Medicin. Egyptior.* informs us, that in Pains and Defluxions of the Head and Eyes, Ophthalmias, Lippitudes, and in order to procure Sleep, the *Egyptians* applied Cupping-glasses to the Occiput, Neck, and behind the Ears, and, by profound Scarifications, extracted the Blood, but first ordered a Vein in the Arm to be opened. This Advice is carefully to be followed in plethoric Patients, even where the Veins of the Face or Nostrils are to be scarified in violent Pains of the Head, or Madnes, lest Space being afforded, a greater Afflux of Blood to these Parts should be excited. In order to prevent Gout-pains, Scarification made in the Soles of the Feet, every Month, is of great Service. And *Cardan.* in *Lib. de Art. Parv.* recommends Scarification under the very Paroxysm of the Gout. And *Platerus*, *Lib. 2. Prax. Med.* confirms this Doctrine, by giving us some Instances of Persons cured by this means. Besides, *Severinus*, in his Book *de Efficac. Medic. Lib. 1.* greatly recommends the Use of Scarification, in order to prevent the spreading of a Sphacelus, and cure malignant Ulcers. *Galen*, also, in his *Treatise de Sang. Missio.* greatly recommends Scarifications of the Legs in Suppressions of the Menes and Hæmorrhoids, which may be, also, used in those who have an Aver-

tion to Venesection; who, from a languid Strength of the Heart, are subject to Faintings; or those who, on account of the Tenderness of their Age, cannot bear a sudden Extraction of Blood from an opened Vein.

Blood may be, also, extracted from the Body by Leeches, which are greatly commended by some Physicians. Tho' this Method seems to have been little known to the most antient Physicians; yet *Pliny*, in *Hist. Nat. Lib. 32. Cap. 10.* speaks of them thus: "The Uses of Leeches for extracting Blood are various, and the same with those of Cupping-glasses, which are to relieve the Body, when oppressed with a Redundance of Blood, and to open the Pores." Among the *Arabians*, *Rhazes* knew the Use of Leeches; and, among the Physicians of the last Age, *Zacutus Lusitanus*, *Amatus Lusitanus*, and *Mercatus*, greatly commend the Application of them, especially in those Disorders which are generally incident to the Head, such as the Guttæ Rosææ, Pustules of the Face; and Head-achs, especially of the rheumatic Kind; as, also, in Vertigoes, Melancholy, Quinseys, and Tooth-achs, in which these Physicians applied them to the Occiput, Neck, and behind the Ears. Tho' I do not at all doubt of the Salubrity of the Evacuation of Blood made by Leeches, yet I have good Reason to suspect, that no greater Advantage is to be obtained from them, than from the Evacuation procured by Cupping with Scarification.

The Application of Leeches to the Anus in a Suppression of the Hæmorrhoids, and Disorders arising thence, is generally greatly recommended. This Method of extracting Blood from the Veins of the Anus, by the Application of Leeches, is, by some, preferred to others, in Disorders arising from a Suppression of the Hæmorrhoids; such as hysteric Symptoms, and in those Disorders which, according to *Hippocrates*, are terminated by the hæmorrhoidal Discharge, such as phrenitic, melancholic, hypochondriac, nephritic, and ischiadic Disorders; because these Diseases arise from Blood stagnating in the Vessels of the Intestines, which terminate in the hæmorrhoidal Veins; in consequence of which, this Blood is more easily evacuated, and the Part affected relieved, by applying Leeches to the Veins of the Anus, than if Blood was extracted from any other Parts of the Body. I cannot deny, but, in these Disorders, Leeches may be of some Use, especially if we may believe the Observations of *Zacutus Lusitanus*, *Amatus Lusitanus*, and *Mercatus*. But, whether an happier Effect may be produced from them, than from opening a Vein in the Foot, or from profound Scarifications in the Legs, I cannot assert, since I have not Experience to authorize me: For, in violent and inveterate Spasms of the Hypochondria, I have often seen Leeches applied without any Effect; I have, on other Occasions, seen them afford Relief for a time; and, by their Application to blind Hæmorrhoids, I have seen malignant Ulcers and Fistulas produced. Besides, there is Reason to doubt, whether Leeches draw the Blood from the Part affected, because they suck it from the external hæmorrhoidal Veins, the internal being concealed. Now the internal hæmorrhoidal Veins have little or no Communication with the intestinal Vessels, the mesaraic Veins, and the Ramifications of the Vena Portæ, in which, however, the Seat of spasmodic and hypochondriac Disorders is placed. But, in an hæmorrhoidal Discharge, the internal hæmorrhoidal Veins evacuate the Blood; for which Reason, if the Hæmorrhoids flow duly, and at proper Times, they afford great Relief in the Disorders arising from a Stagnation of Blood in the Ramifications of the Vena Portæ. *Hoffman*.

Phlebotomy, used in such a Degree as not to impair the Strength, produces the following Effects.

1. It diminishes the Redundance of the arterial and venous Humours.
2. For this Reason it renders the Resistance of the Fluids to be moved less.
3. In consequence of this, it lessens not only the Plenitude of the Vessels, but, also, their mutual Compression on each other.
4. Hence it restores a due Degree of Contraction, or Elasticity, to the preternaturally distended Vessels.
5. It rarefies the Fluids.
6. It attenuates the Humours.
7. It resolves the Juices.
8. It removes Obstructions.
9. It promotes the Circulation of the Blood, together with the several Secretions and Excretions so necessary to Life and Health.
10. It produces a Revulsion.
11. It refrigerates and cools.

Hence it removes many Disorders of very different Natures, and induces surprising Changes on the State and Condition of the human Body.

Phlebotomy is indicated as expedient,

1. By a Redundance, or excessive Quantity, of Blood.
2. By too powerful a Resistance made to the Action of the Heart by the Humours.
3. By a suffocated Motion of the Heart, in consequence of too tumid a State of the Arteries, arising from a Redundance or Rarefaction of their Contents.
4. By the Motion of the Heart beginning to be suffocated, in

consequence of a preternatural Extension of the Vessels, by which their Elasticity is destroy'd.

5. By too great a Condensation of the Blood.
6. By too great a Concretion of the Parts of the Blood.
7. By too great an Inspissation of the Blood.
8. By the Signs of a violent and inflammatory Obstruction found every-where in the Body; the most considerable of which are Pain, Tumor, Redness, intense Heat, and Anxiety, accompanied with a Suppression of the Sweat, Spit, and Urine.
9. By too accelerated a Motion of the Humours through the Vessels; or, also, a too slow and languid Circulation of the Humours, arising from a Redundance of the Humours; a Plenitude, and preternatural Distention, of the Vessels; a Rarefaction, Attenuation, or Resolution, of the Humours; and Obstructions of the Vessels.
10. By too intense an Heat in all the Vessels.
11. By too violent an Imperus of the Blood forced into one particular Part, as in Hæmorrhages and Defluxions.
12. By epidemic Disorders, whose Natures are understood.
13. By the Age, the Sex, the Method of Life, and the Constitution, of the Patient.
14. By a Cacochymy: And,
15. Phlebotomy is indicated, when the Intention is to make Medicines enter the Vessels, to procure their due Mixture with the Fluids, and to augment their Efficacy in performing Cures of great Importance.

Phlebotomy is best and most advantageously performed,

1. By making a large Orifice with some cutting Instrument.
2. In a Vein that is disengaged, large, easily discovered, and remote from Arteries, Nerves, and Tendons.
3. By accelerating the Velocity of the Blood, whilst it flows, by means of a strong Respiration.
4. By the Motion of the Muscles contiguous to the opened Vein. And,
5. 'Tis most proper to perform Phlebotomy on Patients, whilst they lie in Bed.

That Phlebotomy may be the more happily and successfully performed, the Patient may be prepared for it,

1. By Frictions. And,
 2. By Fomentations.
- Phlebotomy is contra-indicated, and rendered improper,
1. By many chronical Disorders, in which there are many Obstructions, and only a very small Quantity of fluid Blood remaining in the Vessels.
 2. By Old-age.
 3. By particular Temperaments, or Habits, of Body.
 4. By the known Nature of any epidemic or endemic Disorder.
 5. By a Crisis already made in another manner.
 6. By the Deficiency of red Blood, and the consequent Weakness of the Patient. And,
 7. By recent Childbirth.

Hence 'tis obvious, that an irreparable Injury must be done to Mankind, by using Phlebotomy in all Cases, according to the Advice of *Leonhartus Botallus*; and by banishing it entirely from the Practice of Medicine, according to *Johannes Baptista Van Helmont*.

The Extraction or Evacuation of Blood from the hæmorrhoidal Veins is indicated,

1. By an arrabilarious Habit of Body.
2. By Diseases accompanied with irregular and disorderly Workings of the Fancy.
3. By a Suppression of the usual Discharge of Blood from these Veins.
4. By an Eruption of Blood from other Parts, which was before more happily evacuated from the hæmorrhoidal Veins.

Blood is evacuated from the hæmorrhoidal Veins,

1. By softening these Vessels by an emollient and warm Fomentation prepared of Water, Oil, Honey, and other emollient Ingredients; and applied by way of Clyster, Vapour, or Fomentation.
 2. By opening these Vessels by Friction, with rough Substances, or by means of Leeches. And,
 3. By the Use of Preparations of Aloes.
- Scarifications act by stimulating, and by evacuating. Hence we are enabled thoroughly to understand the Action of Leeches.
- But Serons and Fontanels stimulate with less Pain, agitate the nervous System, evacuate Serum, and procure a Vent, or Discharge, for preternatural Repletion.

Hence we may learn in what Parts, and on what Occasions, these are indicated.

Stimulating Medicines, or such as create Pain, Heat, and Redness, act by procuring Motion to the Nerves, and by determining Blood to particular designed Parts.

Hence they undoubtedly perform an unconceivable Number of happy Effects, by the known Necessity of which they are, also, indicated.

Stimulating Medicines are generally reduced;

1. To highly adhesive, and, at the same time penetrating Drops, applied warm in the Form of a Plaister, and torn off, repeating

peating this, till the Part affected becomes red, tumid, and hot. The Ingredients proper for these Dropaxes are, Pitch, Oil, Bitumen, the Ashes of Twigs of Vines, Galbanum, Pepper, Pellitory of Spain, Sal Gemme, and Sal Ammoniac.

2. To gentle Sinapisms, called *Phanigmi*, applied by way of Cataplasim, and left till Redness, Heat, Itching, and Tumor, appear in the Part. The Materials for these are Mustard, Bryony, Garlic, Onions, Water-cresses, Squills, Euphorbium, Crow-foot, and the deadly Carrot.

3. To Veficatories, which are only stronger Sinapisms used in the same Form, but producing more violent Effects. The Difference only consists in the augmented Quantity of the acrid Substances. Thus, for Instance, three Parts of Figs, mixed with one Part of acrid Substances, yield a *Phoenigmus*; one Part of Figs, mixed with one Part of acrid Substances, yields a Veficatory; and one Part of Figs, mixed with three Parts of acrid Substances, yields a strong Veficatory.

4. To the potential Caustic, applied either in the Form of a Poullice, or with Lint. The Materials for this are Crow-foot, the Efula, the Tithymalus, fixed alkaline Salt, alkaline volatile Spirits, and Salts. The Effects produced by this Species of Remedy are Inflammation, and an Eschar. And,

5. To the actual Caustery, which is ignited Iron. *Boerb. Inst.* Phlebotomy, or Bleeding, by the Veins, is performed by making an Incision in a Vein, with a fine sharp-pointed Instrument, or Lancet, by which as much Blood is taken away, as may be proper for restoring or preserving the Health of the Patient.

This Operation may not improperly be called Venesection, and is not only extremely beneficial, but of a very antient Date, having been commended and practised about three thousand Years, as we learn from the Writings of *Hippocrates*, *Celsus*, and other antient Authors upon Surgery. Yet some Physicians, both antient and modern, such as *Erasistratus*, *Paracelsus*, *Helmont*, *Portius*, *Bontekoe*, *Gebema*, and others, have asserted it to be a most pernicious and unlawful Operation, and have termed the Practisers of it no less than the Destroyers and Butchers of Mankind. But Experience shews us, that all their Objections are trifling and unjust; and that there is no Remedy in the whole Art of Medicine, more ready, or more serviceable, in curing or preventing the generality of Diseases, than Phlebotomy. Some relate, that Physicians took the Hint of this Operation from the *Hippopotamus*, or Sea-horse, who, at certain Seasons, used to open a Vein with a sharp-pointed Reed. See *Polydore Virgil de Rer. Inventor*.

Bleeding, according to the vulgar Opinion, is a very easy Operation. In some Persons I own that the Veins are so large and conspicuous, that they may be opened by Novices, without Danger or Difficulty. But, in others, they are so small, or so deeply seated, that they cannot be discovered by the most expert Surgeon without Difficulty; nor opened without Danger. For the Arteries, or the Nerves and Tendons adjacent to the Veins, are very liable to be wounded by the Lancet; a Misfortune which is generally attended with violent Pains, Convulsions, Inflammations, profuse Hemorrhages, Aneurisms, Gangrenes, and sometimes a most miserable Death; and, therefore, this Operation, as well as others, requires Caution and Attention, since the Reputation of young Surgeons, especially, may suffer as much by a timorous Introduction of the Lancet, so that the Blood follows not, as when, by affecting to perform easily and expeditiously, a Misfortune should ensue.

An expert Phlebotomist should have an active, gentle, and steady Hand, a clear Sight, and an intrepid Mind; for, without these Qualifications, he will be subject either to miss the Vein, or to occasion some Mischief, which may be fatal to the Patient. This is the Reason, why the Dexterity of Surgeons, in Bleeding, gradually declines, as they advance in Years; for, as Age increases, the Eyes become weak, and the Hands unsteady.

The Instrument now commonly used in opening a Vein, is called a Lancet, and is represented in *Tab. XXII. Lit. A.* and *Tab. XXXII. Fig. 5.* A Surgeon should always be provided with several of these Lancets, of different Sizes, and in good Order. Some Surgeons in Germany, particularly in *Francia*, *Bavaria*, and the *Lower Saxony*, bleed with a Fleam (see *Tab. XXXII. Fig. 3.*) in this manner: With the Fingers of one Hand, they hold the Part B, and place the Point A upon the Vein; with a Finger of the other Hand, they strike the Part C, by which means the Point pierces the Vein, as Farriers do in bleeding Horses. Others use a sort of elastic Fleam, called by the Germans, *Schnapper*, or *Schnapperlein*, (see *Fig. 4.*) thus: Having raised the Point A, they apply it to the Part; and, by pressing at B, force down the Point into the Vein: Others use an Instrument shaped like a Dart. But, as these Instruments cannot be always adapted to the different Position and Figure of the Veins of different People, the Lancet seems to be more proper; tho' many of the Germans are very expert in the Use of their *Schnapper*.

Tho' Phlebotomy is used in various Parts of the Body, as in the Arm, Hand, Foot, Forehead, Temples, Neck, Tongue, Penis, and others; yet, as it is most frequently performed in a Vein of the Arm, which is near the Joint of the Elbow, we shall, therefore, begin with this Operation, and enlarge a little upon it.

It is commonly known, that Bleeding in the Arm is performed on the Veins placed on the Inside of the Cubit. In this Operation several Circumstances are to be considered: 1. What is to be done preparatory to the Bleeding. 2. How the Operation itself is to be performed. 3. and lastly, What is necessary to be done, in consequence of it. With regard to the preparatory Circumstances, the Surgeon must necessarily have in Readiness a Linen Fillet, about an Ell in Length, and of the Breadth of two Fingers. 2. Two small square Compresses. 3. Porringers, or Vessels, proper for receiving the Blood. 4. A Sponge, with warm Water. 5. A small Quantity of Vinegar, Wine, or Hungary Water, for relieving the Patient, if he should be inclinable to faint. 6. Two Assistants, not fearful, one to hold the Porringer, and the other to bring what may be wanted. 7. A small Wax-candle, when this Operation is necessary to be performed in the Night, or in a dark Place. 8. The Patient should be placed in a Chair a little reclined, or, if timorous, in a Bed, that he may not be in Danger of dropping off his Seat in a Swoon. 9. Lastly, The Surgeon should take care, that no Cloaths, and the like, should lie in the Way. The Patient should banish all Concern, and be by no means apprehensive of any Danger from the Operation. The Operator should be as expert in performing with his Left, as with his Right Hand; for the Vein in the Right Arm must be opened with the Right Hand, and in the Left Arm, with the Left Hand. Some will insist on being bled in the Left Arm; and sometimes the Vein in the Right is not conspicuous, or proper to be opened.

With regard to the Operation itself, though it may be performed by a single Puncture, yet many Circumstances are necessary to be observed, for the better Execution of it. The Surgeon should narrowly inspect the Arm whence Blood is to be taken, in order to observe the Veins; then he must take hold of the Arm, and extend it towards his Breast. The Sleeve being tucked about an Hand's-breadth above the Elbow, he should make a tight Ligature about three Fingers-breadth above the Elbow, with a Fillet of the Breadth of a Thumb and a Yard in Length, rolling it twice, and fastening it with a Knot (See *Tab. XXXII. Fig. 1. D*); by which means the Veins, being compressed, and the Reflux of the Blood obstructed, are swelled, and rendered more conspicuous. This Fillet is generally made of a Piece of thin scarlet Cloth, though any other Colour may do. The Surgeon may now let go the Arm, and, taking out his Lancet, open it to an obtuse Angle, and hold it in his Teeth, at the Joint A, *Tab. XXXII. Fig. 5.* In the mean while the Veins grow more turgid, and more conspicuous. The Surgeon must now again lay hold of the Arm, and extend it towards his Breast, the Assistant being ready with the Porringer, and in the most convenient Situation, for receiving the Blood. The Surgeon must next examine, which Vein is most conspicuous, and, therefore, most proper for Incision. It is necessary to be observed here, that three principal Veins appear in the Arm: The first is called the *Vena Cephalica*, and lies towards the exterior Part of the Arm; the second is termed the *Basilica*, and is found towards the interior Part of the Arm; see *Tab. XXXII. Fig. 1. A*; it is, also, denominated, in the Right arm, *Hepatica*, and, in the Left, *Splenetica*, as at B; the third, being situated in the Middle, obliquely, between the other two, is named *Mediana*, as at C. The *Mediana* and *Basilica*, being larger, generally emit the Blood more copiously, than the *Cephalica*, but they are opened with greater Danger; for, under the *Basilica*, lie the great Artery of the Arm, and the Brachial Nerve; and, under the *Mediana* is a Tendon, of the *Musculus Biceps*. But, as these two are most conspicuous, they are most frequently opened; though it is safer, especially for young Surgeons, to make the Incision in the *Cephalic* Vein, or, at least, in the *Median*. But, when the Veins are so situated, that only one of them can be made to appear, then there is no Choice left, and there is nothing to be depended upon, but the Skill and Care of the Surgeon.

When the Vein is already pitched upon, the Incision must be made where it appears largest and conspicuous. If any Marks of former Wounds remain, it will be proper to open the Vein rather below, than above the Cicatrix; which generally straitens the superior Part. For this Reason, whenever you open a Vein for the first Time, begin as high as you can; by which means you may gradually descend in repeated Bleedings.

Before the Lancet be applied, if the Veins do not sufficiently rise, it will be proper to stroke the Arm from the Hand upwards, which will compress the Blood towards the Elbow, and make the Veins become more turgid. If the Incision is to be made in the Right Arm, the Surgeon is to hold the Arm in his Left Hand, in such a manner, that his Thumb may be placed upon the Vein which is to be opened, in order to prevent the Reflux of the Blood, and the Vein from sliding out of its Place.

The

The Vein being thus firmly held, the Surgeon must keep his Eyes fixed upon that Part, where he intends to introduce the Lancet. Then, taking the Lancet out of the Mouth with his Right Hand, he must hold it about the Middle of the Blade, between his fore Finger and Thumb, suffering the other Fingers to rest gently upon the Patient's Arm, that his Hand may not slip.

Then the Lancet must be softly and carefully pushed by the fore Finger and Thumb, till it penetrates the Coats of the Vein; and the Point must be immediately turned a little upwards, by which the Wound may be enlarged; and the Discharge of the Blood may soon be rendered plentiful. Those Orifices are reckoned most convenient, whose Length is equal to twice the Thickness of the Back of a small Knife. The Lancet must be introduced, not with Rashness, lest, by penetrating too deep, an Artery, a Nerve, or Tendon, should be wounded; nor with Timidity, lest you should only divide the common Integuments, without reaching the Vein. The Vein may be opened in three Directions: Some make the Wound lengthwise, as at *Tab. XXXII. Fig. 2. A*; others make it transverse, as at *B*; but most Surgeons make it oblique, as at *C* and *D*. If the Incision is to be made in the Left Arm, the Operator must hold the Arm in his Right Hand, and all must be done with the Left Hand, which was before proposed to be done with the Right. If the Fleam at *Fig. 3.* be used in this Operation, the Point *A* must be applied to the Vein; and, the End *B* being held in the Left Hand, the Point must be driven into the Vein by the Stroke of a Finger of the Right Hand. If the elastic Fleam is to be used, let the Point *A*, placed above the Vein, be raised towards the Hook *C*; by a slight Pressure at *B*, the Point is plunged into the Vein.

The Vein being thus opened, and the Instrument immediately drawn back, the Blood will either vigorously spring out, or flow gently. The Lancet must now be put into a Basin, and never thrown upon the Bed, lest it should be accidentally lost, or the Patient should wound himself by it. In the mean time, the Blood should be suffered to run, till a sufficient Quantity is discharged. But if it should stop too soon, as often happens from the Stricture of the Ligature above the Elbow, the Bandage may then be untied, or rather a little relaxed; by which means, the compressed Artery is again enlarged, and the Discharge of Blood is continued. If the Wound should be stopp'd by too great a Tension of the Skin, or by Fat, the Piece of Fat should be pressed back with the Finger, or a warm Sponge, or the Skin may be relaxed by bending the Arm. If the Orifice should be obstructed by thick coagulated Blood, that Impediment may be removed by wiping the Wound with a Sponge dipt in warm Water.

That the Patient's Arm may not tire by being long extended, the Surgeon ought to support it about the Elbow. A small Stick, or Cylinder, should be put into the Patient's Hand, which he should continually turn round, by this Method accelerating the Motion of the Blood towards the Wound; which will be further promoted, if the Patient urges a little voluntary Cough. The Attendants should be ready, with empty Vessels for receiving the Blood, to remove such as are filled, and to administer the Compresses, Bandages, Cordials, and other Necessaries.

The Quantity of Blood to be taken away must be regulated by the Physician, according to the Nature of the Disease, the Temperament, Strength, and other Circumstances, of the Patient. But, when the Surgeon attends his Patient without a Physician, he may determine the Quantity himself, according to the Nature of the Disease, the Strength, Age, Constitution, and other Circumstances, of the Patient. If the Patient retains his natural Complexion, and neither grows languid nor faint, the Blood may be suffered to flow longer, than in those who are soon affected with Paleness and Swooning.

When a sufficient Quantity of Blood is discharged, the Bandage above the Elbow must be removed; and the fore and middle Finger of the Left Hand must be gently drawn over the Orifice, stroking the Skin on each Side of the Wound; by which means the Lips of the divided Vein are more easily pressed together. Then let the Surgeon take the smaller Compress in his Right Hand, and apply it to the Wound, having first removed the Fingers of his Left Hand, that the Blood, between the Vein and the Skin, may be discharged, before the Compress be applied. Over this, lay another larger Compress, which must be retained with the Thumb, till the Whole be secured by the Bandage.

The Patient's Sleeve may now be drawn down over the Arm, which he should keep bent towards his Breast; and the Patient should be ordered not to use any Motion too soon, lest a new Hæmorrhage, Inflammation, or Suppuration, should be occasioned. If the Patient should faint away after the Operation, it will be proper to apply to the Nostrils and Face some Cordial Water, as *Hungary Water*, or *Vinegar*, or *Wine*; or cold Water may be sprinkled on the Face; or, if in the Summer-

time, the Window may be opened, and the Spirits and Strength of the Patient restored by the Admission of fresh Air. A small Glass of Cordial Water, or generous Wine, should, likewise, be given to the Patient.

It is customary for the Surgeon, or the Physician, if there is one present, to look at the Blood, and give his Opinion of it. In this Case, the Surgeon should never discourage the Patient, whether the Blood be good or bad, or whether he retains his Senses, or falls into Faintings. Favourable Accounts here greatly contribute to the Recovery of Health; but to dishearten the Patient by a severe Prognostic, may occasion very fatal Consequences. If, therefore, the Blood appear florid, the Surgeon should declare it a Sign of immediate or approaching Health; if the Blood be of a bad Colour, or vitiated, he must pronounce, that the Bleeding will be extremely serviceable. If the Patient should fall into a Swoon, the Surgeon intimates, that this Weakness is an Evidence of the speedy and salutary Effects of the Remedy. The Blood should be set by in a cool Place, till the Physician, or Surgeon, renews his Visit.

If, after Bleeding, the Patient should be affected with Thirst, he may be allowed to quench it, especially if he can drink small thin Liquors. It is a Custom among the *French*, immediately after Bleeding, especially if the Remedy is used to prevent Disorders arising from the Heat of the Blood, to take a Draught of cold fresh Water: Which Method, in hot Habits, may be very serviceable; but in cold, infirm Constitutions, very prejudicial; for whom a little warm Tea, or Coffee, would be much more proper. The Patient may either be forbid or allowed to sleep after the Operation, according to Circumstances. If the Patient used Bleeding only by way of Prevention, it would certainly be more proper for him to divert his Drowsiness by some agreeable Conversation, Amusement, or Exercise; for, if Sleep be indulged, the Bandage may slip, and a violent Hæmorrhage be occasioned. But those who are extremely weak, or labour under some Indisposition, should by no means be hindered from Sleep, especially if they have been troubled with tedious Watchings; for, by Sleep, the weak wearied Body is often wonderfully refreshed. In the mean time, an Attendant should carefully observe, that the Bandage continues fast, or, if it should slip, to stop the Flux of Blood, by compressing the Wound with the Fingers, till the Surgeon be called.

If, at the next Visit, the Blood, as is usual, should be again brought to the Surgeon, and his Opinion of it asked, he should, as we before observed, say nothing, but what may tend to encourage the Hopes of the Patient. The Surgeon should, likewise, inspect the Dressing; and, if the Bandage be relaxed, he should untie it, and apply it afresh; if the Compresses adhere to the Wound, they should not be removed; but, if they are loose, they should be again applied, and secured by the Bandage; which, being suffer'd to continue a Day or two, till the Wound be healed, may then be taken away. Some People, of an hot Constitution, will have the Blood run into cold Water, imagining, that by some secret Sympathy the Heat of the Blood may be by this means allayed. But, however trifling and false such a Notion may be, yet as it may be complied with without Danger, and as it may have some good Effect upon the Imagination of a credulous Person, it ought not to be rejected, but permitted.

OF BLEEDING AT THE HAND.

Phlebotomy is sometimes practised on two Veins of the Hand, one of which is called the *Salvatella*, and the other *Cephalica*. The *Salvatella* extends on the exterior Part of the Back of the Hand towards the little Finger, being sometimes named *Splenica* in the Left Hand, because many antient Physicians believed, that the Opening of it was beneficial in Diseases of the Spleen. The *Cephalica* runs between the fore Finger and Thumb, and was so denominated by the antient Physicians, because they fancied, that Bleeding from it was an excellent Remedy against Disorders of the Head. Although it is plain, that Bleeding at the Hand is more difficult than in the Arm, and that all these Notions of the Antients are without Foundation, yet, since the Effect is the same with that of Bleeding in the Arm, it may be sometimes proper for the Operation to be performed on the Hand; especially if the Patient be prepossessed with a good Opinion of that Operation; or if the Veins of the Hand are more conspicuous, than those of the Arm. Some Women, too, in the last Months of their Pregnancy, or near the Time of their Delivery, prefer Bleeding at the Hand, which, they imagine, does not so much debilitate the Fœtus, as in the Arm.

In this Operation, therefore, it is proper for the Patient to bathe and rub his Hand in warm Water, that the Veins may swell, and become conspicuous. The Bandage must be fix'd immediately about the Carpus, to keep the Veins turgid; then the Hand must be dried, and the Incision made in the most convenient Place, as was before directed. If the Blood flows but slowly, the Hand must be again dipped in warm Water, and continue

continue there, till a sufficient Quantity is discharged. Then the Hand may be dried, the Wound contracted by the Fingers, and the Compresses and Bandages applied as above directed.

OF BLEEDING IN THE FOOT.

Bleeding in the Foot is a very ancient Operation, which has been observed by Physicians to be a most efficacious Remedy for various Diseases of the Head and Breast, and, also, against those Disorders which proceed from an Obstruction of the Menfes, or Hæmorrhoids: Hence the Veins of the Feet have long ago been called *Cephalica*, and *Saphena*. The Vena Cephalica extends towards the great Toe; and the Saphena towards the lesser Toes. But, notwithstanding the Difference of the Names, in Bleeding, they have both the same Effect; and, therefore, I think, the more conspicuous of the two ought always to be preferred. However, when the Veins of the Feet do not sufficiently appear, it will be more proper to open a Vein about the Ancles, the Calf of the Leg, or the Knees, as I have frequently done, especially as the Nerves and Tendons of those Parts are not so liable to be wounded, as those of the Foot. But it is proper to advise the Surgeon here, to be cautious in bleeding single Women at the Feet, without the Advice of a Physician; for some, under the Pretence of an Obstruction of the Menfes, endeavour by this Method, to procure a Miscarriage.

In order to facilitate the Performance of this Operation, let the Patient bathe his Feet in warm Water, till the Veins become tumid; and the Surgeon should choose that Foot, in which the Veins are most conspicuous. The Bandage should be tied about the Breadth of two Fingers above the Ankle; and, whilst the Surgeon is taking out his Lancet, the Patient should keep his Foot in the warm Water, in order to increase the Raising of the Vein. Then the Surgeon, kneeling on one Knee, and having dried the Foot, lays it on the other Knee, or on a Stool, or on the Edge of the Vessel which holds the Water. He then takes the Foot in his Left Hand, and keeps the Vein fixed, as was directed for bleeding in the Arm. If the Veins appear not sufficiently below the Ancles, it will not be improper to open them above, or in the Calves; and then the Ligature must be made at the Distance of the Breadth of two Fingers above the Place of Incision, and the Veins may be rendered conspicuous by the Method already directed. We must, also, observe, with regard to the Surgeon's Posture, that he may place himself before the Patient on a low Seat, and put the Foot on either Knee. When the Spring-steam is used, as is often done in Germany, it will be then most convenient for the Patient to put his Foot on a low Stool.

The Vein being thus opened, the Blood may be received into proper Vessels; and, if the Blood does not flow freely, let the Foot be again put into the warm Water, which will, also, prevent the Blood from congealing and stagnating in the Wound; an Accident which frequently happens. When a sufficient Quantity of Blood has been thus discharged, which may be discovered, not only from the Time, but, also, from the Quickness or Slowness of the Evacuation, from the Redness of the Water, and especially from the Strength of the Patient, the Orifice is to be stopp'd by a proper Compress and Bandage. The Advantages resulting from this Operation may be seen in *Verduc*, *Caspar Cadera de Heredia*, a Spanish Physician, *Stahl*, and others. These Authors have been opposed by *Hecquet* of Paris, in his Book *sur la Saignée du Pied*, and again defended by *Jo. Bapt. Sylva*, also, a Physician of Paris, in his *Traité de l'Usage des différentes Sortes de Saignées*, Amsterdam, 1729. He was answered in 1730, by *Chevalier*, a Physician, and, also, by *Quesnay*, a Surgeon, both of Paris.

OF BLEEDING IN THE FOREHEAD, TEMPLES, AND OCCIPUT.

Some are of Opinion, that Bleeding at the Veins of the Forehead and Temples is more efficacious and expeditious in the Cure of violent Pains of the Head, of Vertigos, Melancholy, Madness, Deliriums, and the like obstinate Disorders of the Head, than the like Evacuation by Veins more remote from the Part affected; judging, that the morbid Matter may more readily be extracted by the Veins of the Forehead and Temples, by reason of their Vicinity. But, in my Opinion, the Situation of these Veins contributes very little towards hastening the Cure, because they have little or no Communication with the internal Parts of the Head, and they generally yield but a small Quantity of Blood. The Jugular Vein seems to me much better adapted to this Purpose, as it is situated very near the Veins of the Forehead and Temples, which terminate in it, as it is larger and more conspicuous, and as it communicates with the internal Parts. But if this Operation must be performed, either by Order of the Physician, or at the Request of the Patient, the following Directions are necessary to be observed. Let an Handkerchief or Napkin, be drawn tight

about the Neck; by which means the Jugular Vein being compressed, those Branches of it may become more conspicuous. The Vein being open'd, the Patient should incline his Head downwards, that the Blood, which is discharged slowly and gently, may not flow into his Eyes or Mouth. A sufficient Quantity of Blood being evacuated, unless it stops spontaneously, as is often the Case, let the Wound be compressed with the Fingers, the Forehead and Face be washed, and afterwards let one or two Compresses, with a Bandage, be properly applied.

Bleeding at the occipital Veins, which communicate with the lateral Sinuses of the Dura Mater, is proved, both by Reason and Experience, to be very beneficial in many Distempers of the Brain, especially when it is necessary to avert and evacuate the Blood from that Part. The celebrated *Morgagni* particularly recommends it in obstinate lethargic Disorders, by Cupping and Scarifications; and *Zacutus Lusitanus* gives an Instance of an desperate Apoplexy being cured by Cupping, and deep Scarification in the Occiput. *De Medic. Princip. Hist. Lib. 1. Hist. 33.* If the Incision is to be made with a Lancet, the same Method is to be used, as in opening the Veins of the Forehead and Temples.

OF BLEEDING AT THE GREATER CANTHUS OF THE EYE.

Anatomists have observed, between the Nose and the greater Canthus, on each Side of the Face, a Vein, proceeding partly from the Eye, and partly from the Forehead, which, like the Frontal Vein, descends to the external Jugular Vein. Bleeding in this Vein has been recommended by almost all Oculists, and particularly *Dionis*, as extremely serviceable in violent Inflammations of the Eye; tho', in my Opinion, with no better Reason than in the Veins of the Temple and Forehead. But, when this Operation is to be performed, let the Ligature be made about the Neck, as before directed, and let the Lancet be carefully introduced into the Vein. The Patient ought, likewise, to hold down his Head to prevent the Blood from flowing into his Mouth; and, as much Blood being discharged as may be necessary, apply a thick triangular Compress with proper Bandages. For Bleeding in the Eye itself, see *OCULUS*.

OF BLEEDING AT THE JUGULAR VEINS.

The Operation of Bleeding at the external Jugular Vein, in violent Inflammations of the Neck or Quinsy, in Inflammations of the Brain, in Madness and Melancholy, in Inflammations of the Eyes, in Apoplexies, Head-achs, lethargic Disorders, and violent Diseases of the Head, is very ancient; and many of the Moderns have recommended this Practice, because, by it, the violent Influx of the Blood into the Part affected, and the Collection and Stagnation of the Humours, may be most expeditiously prevented. Besides, there is no Danger in the Operation, as these Veins, extending on each Side of the Neck from the Head to the Clavicles, lie immediately under the Skin, and are sufficiently large and conspicuous. But, before the Incision, it will be proper, to make a Ligature tighter than ordinary about the lower Part of the Neck, which must be straitened by the Patient, or an Assistant, till the Veins become turgid; or, a loose Bandage being thrown about the Patient's Neck, it may be drawn down towards his Breast by himself, or an Assistant. By this means the Jugular Veins, being compressed on each Side, will become more turgid, without obstructing Respiration.

When the Veins are sufficiently tumid, that is to be chosen which is most conspicuous, when the whole Head or Fauces are affected; but when the Disease lies only on one Side of the Head, or in one of the Eyes, that Vein is, in my Opinion, to be preferred, which is situated on the morbid Side. A sufficient Quantity of Blood being drawn, the Ligature must be removed, the Wound compressed by the Finger, and Compresses with a circular Bandage must be applied; and thus the Bleeding is stopp'd without any Danger of a fresh Hæmorrhage, as I have often experienced. It is, indeed, true, that the Patient is very subject to faint in this Operation; but that Circumstance is attended with no bad Consequence. *Tralles*, a learned Physician of Breslaw, published in 1735. an excellent Treatise on the Usefulness of this Operation.

THE METHOD OF BLEEDING IN THE VENÆ RANINÆ.

Bleeding in those Veins, under the End of the Tongue, is by some esteemed beneficial in a Quinsy, or Inflammation of the Neck, especially if a Vein has been before opened several times in the Foot, Arm, or Neck; for, by these means, the inspissated and stagnant Blood is gradually discharged. The Operation may be thus performed: Make a Ligature about the Neck, as was already directed; then, raising the End of the Tongue with the Left Hand, carefully open both these Veins with the Lancet, one after another; for one of them will never discharge

discharge a sufficient Quantity of Blood. When it becomes necessary to stop the Hæmorrhage, unbind the Ligature, and it commonly ceases spontaneously; but, if it should still continue, let the Patient hold a little Vinegar, or *Pontac* Wine, in his Mouth; or, if necessary, apply to the Wound a little Vitriol, or Alum, or a Compress dipt in some astringent Medicines, till the Bleeding stops. But there is seldom any Danger of a violent Hæmorrhage here; and, unless the Discharge be copious, in Diseases of the Fauces, little Effect can be expected from it.

THE METHOD OF BLEEDING BY THE VEINS OF THE PENIS.

In some violent Inflammations of the Penis, this Operation has a wonderful Effect, and is sometimes more successful than almost every other Remedy. Introduce your Lancet about the Middle or back Part of that large Vein, which runs along the superior Side of the Penis, and is already sufficiently tumefied from the Nature of the Disorder; let the Evacuation be continued, till the Penis becomes flaccid, or till a Quantity is discharged proportionable to the Degree of the Disease. Then the Wound may be closed with the Finger, and Compresses are to be applied, with a Bandage proper for the Penis. Particular Care must be taken in this Operation, to avoid wounding the adjacent Nerves and Arteries, which might produce fatal Effects; and not to make the Bandage too tight, which might increase the Inflammation.

OF THE ACCIDENTS WHICH ARISE FROM BLEEDING.

THE METHOD OF TREATING AN ECCHYMOSIS.

An Ecchymosis is an Extravasation of the Blood, from the Vein, between the Flesh and the Skin. Of this Disorder there are different Degrees; as when a great Part of the Arm is so violently affected, that it not only becomes livid, black, and swelled, but is, likewise, affected with Inflammations, Pains, Suppurations, and a Gangrene.

This Disorder is produced, either when the Surgeon has cut the Vein entirely through, or, which is more frequently the Case, when the Patient has used some violent Exercises, especially of the wounded Arm, too soon after the Operation; for by these means it may very readily happen, that the Blood may be extravasated from the wounded Vein, between the Flesh and Skin, more or less in proportion to the Violence of the Exercise.

When the Quantity of extravasated Blood is but small, little Danger is to be apprehended; for the stagnant Blood may be easily discussed, by applying a Compress dipt in Vinegar and Salt, or in Spirit of Wine. Sometimes the Blood degenerates into Pus, and then the Suppuration should be promoted by a Diachylon-plaister; and when the Matter is once ripened, it will spontaneously make its Way by Degrees, without Incision. As long as any Pus appears to be discharged, it should be daily expressed with the Fingers, and the Wound may be healed with a Diachylon-plaister.

If the Quantity of stagnating Blood be very considerable, there is little or no Hope of a Discussion: For the vitiated Blood generally degenerates into a violent Inflammation and Suppuration, and sometimes into a Gangrene. In order to prevent these Consequences, let the Surgeon make frequent Incisions in the livid Part, for evacuating the stagnating Blood. He may then apply a Diachylon-plaister, or Fomentations proper for Contusions, or Phlegmons. But if, as often happens, a violent Inflammation, or even a Gangrene, affects the Arm, it ought to be frequently scarified, and digestive Fomentations, or Cataplasms, should be applied. But, in these Cases, it is often necessary to take a sufficient Quantity of Blood from another Part of the Body, and to exhibit resolvent Medicines internally, till the Violence of the Inflammation, or the Gangrene, abates; or till it entirely ceases.

THE METHOD OF TREATING A NERVE OR TENDON WOUNDED IN BLEEDING.

A Nerve or Tendon may be certainly known to be wounded in Bleeding, if the Patient, at the time of Incision, feels most acute Pains, so that he can scarcely refrain from a vehement Outcry; especially if the Pains continue, and are followed by Tumors, Inflammations, Spasms, or, likewise, a Rigor and Convulsions of the Limb: Which Symptoms, if not timely relieved, are succeeded by most dangerous Convulsions, a Gangrene, and Death itself.

Among the various Methods of remedying this Malady, that seems the most excellent, which was formerly performed by *Paré* on the French King *Charles IX.* No sooner had the King signified his Pain, by crying out at the Instant that the Vein was opened, than *Paré* justly suspected, that a Nerve had been wounded. Immediately the Arm began to swell, and grow rigid, with the Acuteness of the Pain. Hereupon the

King's Physicians, in Consultation with *Paré*, agreed upon the following Method: They first injected into the Wound, Oil of Turpentine with rectified Spirit of Wine; then they applied to the whole Arm the Emplastrum Diachalciteos, dissolved in Vinegar and Oil of Roses; then they used the expulsive Bandage, beginning at the Hand, and ascending gradually in continued spiral Turns to the Shoulder; by which means, the violent Impulse of the Blood, and the Inflammation, were not only abated, but the Pain, also, diminished by degrees. In order to complete the Cure, they applied to the Arm the following Cataplasma, till the Pain entirely ceased.

Take of the Meal of Barley, and Vetches, each two Ounces; of the Flowers of Chamomile, and Melilot, each two Handfuls; of fresh Butter, an Ounce and an half: Boil them in Soap-suds into a Cataplasma.

Thus, though the natural Activity of the Arm was impaired for three entire Months, yet it gradually recovered its former Strength.

However, it may not be improper, in this Method of Cure, to substitute, instead of the Oil of Turpentine, and Spirit of Wine, the *Peruvian* Balm, or *Hungary* Water, which may be for some Days instilled into the Wound, till the Pain diminishes. As the Emplastrum Diachalciteos is rarely to be found in the Shops, in room of it, the Emplastrum Diapompholygos, or the Plaister of red Lead, may be used. But great Care must be taken, whilst the Remedies are preparing, that the Wound be not exposed to the Air. It will, therefore, be proper, immediately to apply any Sort of Plaister, which is the readiest, to the Wound, and to wrap up the whole Arm in Linen Cloths moisten'd in Oxycrate, which will both lessen the Inflammation, and defend the Wound from the Injuries of the external Air. If the Patient be of a vigorous plethoric Habit, Bleeding in another Part may tend to prevent the Inflammation. *Scultetus*, in *Obs.* 87. gives a certain Ointment, which he commends as an excellent Remedy in Punctures of the Nerves; where he, also, informs us, that he has successfully divided entirely, or cut through, some of these wounded Nerves. *Heister's Surgery.*

PHLEBOTOMUS. A Lancet, or a Fleam: Instruments used for Bleeding.

PHLEDONODES, φλεδωνόδες. See **PHLEBODONODES**.

PHLEGMA, φλέγμα. Phlegm. Every Humour, says *Galen*, *Lib. 2. de Diff. Feb. Cap. 6.* which is both cold and humid, comes under the Denomination of *Phlegma*, "if we would speak in the Language of *Hippocrates*, and according to the usual Custom, not only of the antient, but modern *Greeks*; or," as he says a little after, "if you please, you may call it *Scindapsus*." Of Phlegm there are four Species, the vitreous, sweet, acid, and salt: These are reduced by *Galen*, *de Diff. Feb. Lib. 2. Cap. 6.* to three. But, in his *Book de Plenitud.* he makes five Species of it.

Phlegma, also, in *Hippocrates*, as *Galen* says in his *Exegesis*, signifies not only a white and cold Humour, but, also, an Inflammation [φλέσσις]. Instances to this Purpose are innumerable.

Phlegmasia, φλεγμασία, in the same Author, signifies not only an Inflammation in the common, but is sometimes to be understood of the violent Heat excited by a Fever; as *Lib. de R. V. I. A.* But φλεγμασίν τῇ ὕρῃ is a pituitous Sort of Urine, abounding with a gross and cold Humour.

Phlegmainon, φλεγμαίνων, signifies not only inflamed, but sometimes imports tumid, and increased in Bulk; as may be shewn from many Places in *Hippocrates*, in which ἐξυαίνειν, to extenuate, and φλεγμαίνειν, to induce a Tumor, are set in Opposition: Many Instances of this Sense of the Verb may be given from the *Book de Locis in Homine*. *Foesius*.

PHLEGMAGOGUS, φλεγμαγωγός, Phlegmagogue. An Epithet for such Cathartics as purge off Phlegm.

PHLEGMASIA, φλεγμασία. An Inflammation.

PHLEGMATIAE, φλεγματίαι. Persons abounding with Phlegm are thus called, by *Hippocrates*.

PHLEGMATORRHAGIA. *Salmuthus*, *Observat.* 37. *Cent. 1.* gives an Account of a Disorder, which he calls by this Name. This was a very considerable Flux of thin Phlegm from the Nostrils, which continued for three Days, and was cured by the Use of the Cephalic Pills.

PHLEGMONE, φλεγμαία. A Phlegmon, or Inflammation. See **INFLAMMATIO**.

PHLEGMONODES. Resembling an Inflammation.

PHLEPS, φλέψ. A Vein. But among the Antients it signified both the Arteries and Veins.

PHLIAE, φλῖαι, in the Scamnum of *Hippocrates*, or other Machines of that Kind, are the upright wooden Posts, which are bored to receive the Ends of the Axes, and in which they turn. *Oribasius de Machinamentis*, *Cap. 24.* Or, as *Galen* explains

Plains it, in his *Exegeſis*, ſtrait Pieces of Wood, fixed oppoſite to each other, like the Poſts of a Door.

PHLOGINON, φλοῖν. The Name of a liquid Collyrium, deſcribed by *Galen*, *Lib. 4. de C. M. S. L. Cap. 7.*

PHLOGISTOS, φλοῖστος. Inflammable. The Liquor called *Æther*, is called, alſo, *Phlogiſten*, on account of its great Inflammability.

PHLOGIUM. A Name for the *Viola*; *tricolor*; *bortenſis*; *repens*.

PHLOGODES, φλοῖδης. Of a Flame-colour, intenſely red, inflamed.

PHLOGOEIDES, φλοῖσσις. The ſame as **PHLOGODES**.

PHLOGOSIS, φλοῖσις. An Inflammation; or an Heat and Exeſtuation of any Part, without an inflammatory Tumor. *Willis* ſpeaks frequently of a Phlogos of the animal Spirits; but, I am afraid, no juſt Idea can be framed of ſuch a Phlogos, till ſuch time as we know, that animal Spirits really exiſt, and we are better acquainted with their Natures.

PHLOMIS.

The Characters are;

The Root is perennial; the Leaves thick; the Galea large, hollow, falcated; the Beard trifid, the middle Segment being large, broad, marginated, and extended beyond the Galea, which cloſely preſſes upon the Beard: The Calyx is a ſhort, wide, pentagonal Tube, ſometimes indented: The Seeds are oblong.

Boerhaave mentions eight Species of *Phlomis*; which are,

1. *Phlomis*; *Narbonenſis*; folio *Hormini*; flore purpureſcente. *T. 178.* *Marrubium*, *nigrum*, *longifolium*. *C. B. P. 230.* *Herba venti*, *Monſpelienſibus*. *J. B. 3. App. 854.*

2. *Phlomis*; fruticoſa; *Salviæ* folio latiore, & rotundiore. *Tourn. Inſt. 177.* *Boerh. Ind. A. 160.* *Phlomis*. *Offic. Salvia fruticoſa lutea latifolia*, ſive *Verbaſcum ſylveſtre quartum Matthioli*. *Park. Theat. 51.* *Raii Hiſt. 1. 511.* *Verbaſcum latis Salvia foliis*. *C. B. P. 240.* *Verbaſcum Matthioli*. *Ger. 625.* *Emac. 767.* **YELLOW SAGE.**

It is cultivated in Gardens, and flowers in *June*: It is aſtringent, and reckon'd among vulnerary Plants.

3. *Phlomis*; fruticoſa; *Salviæ* folio longiore, & anguſtiore. *T. 177.* *Verbaſcum ſylveſtre*. *Dod. Pſeudoſalvia*, fruticoſa, minor, lutea, *Verbaſci foliis incanis*. *M. H. 3. 397.*

4. *Phlomis*; fruticoſa; folio ſubrotundo, brevior, flore luteo. *Verbaſculum*, *ſalviſolium*. *Alpin. Exot. 109.* *Pſeudoſalvia*, minor, *Cretica*, lutea. *M. H. 3. 397.*

Dioſcorides ſays, that the Flowers are good to dye Hairs of a Gold-colour; and that the Leaves cure Ambuſſions. *Galen* writes, that the Leaves are moderately drying, and digeſtive. *Proſper Alpinus de Plantis exoticis.*

5. *Phlomis*; *Samia*; herbacea; folio *Lunariæ*. *T. Cor. 10.*

6. *Phlomis*; *Orientalis*; folis laciniatis. *T. Cor. 10.*

7. *Phlomis*; *Orientalis*; anguſto & longiori folio; flore luteo. *T. Cor. 10.* *Boerh. Ind. alt. Plant. Vol. 1.*

The *Phlomis fruticoſa* was called by the Antients *Verbaſcum*; for which Reaſon *Tournefort* makes it belong to that Kind. The medicinal Virtues are not known; only it is recommended with the *Lamium* and *Galeopsis*: The Juice, however, is emollient. *Hiſt. Plant. adſcript. Boerhaav.*

PHLUS, φλῦς. This Word occurs, *Lib. de intern. Affect.* where we read, ὅτι ἐν τῇ κεφαλῇ ὑπὸ τὰς τρίχας οὖν φλῦς ὑπάρχει. And on the Head, under the Hairs, there is, as it were, a Cortex. In this Paſſage φλῦς ſignifies the ſame as φλόα (phloos), or φλοῖς (phloios), that is, a Cortex, or ſcaly Skin, like the Exuvies or Slough of a Serpent: For which Reaſon *Calvus* renders the Word *squamulas*, “ſmall Scales.” *Heſychius*, alſo, expounds φλῦς by φλοῖς, λεπτοχάνον (*Lepychanon*), and λεπυρὸν (*Lepyron*); Words much of the ſame Import.

PHLYCTÆNÆ, φλυκταῖναι, from φλόζω, to boil. Small Eruptions on the Skin, ariſing from an hot or acrimonious Humour. *Hippocrates* ſometimes repreſents them, as reſembling thoſe Puſtules which appear after Ambuſſions.

PHLYCTENOIDES. An Epithet of Puſtules which reſemble *Phlyctænæ*. *Blancard.*

PHLYCTIDES, φλυκτίδες. The ſame as **PHLYCTÆNÆ**.

PHLYSIS. An Eruption on the Skin, from a Redundance of Humours. *Caſtellus* from *Galen*.

PHLYZACION, φλυζάκιον. A Puſtule, or Vefication on the Skin, excited by Fire or Heat. Sometimes it imports the ſame as **PHLYCTÆNÆ**.

PHOCA, or *Vitulus Marinus*. The Sea Calf. An amphibious Animal, which lives ſometimes in the Sea, and ſometimes on Shore, but moſt in the Sea. It is ſaid, that the Fins of this Animal, eſpecially thoſe taken from the Right Side, excite Sleep, when applied to the Head: Its Fat has an emollient Quality, and, if rubbed on the Region of the Uterus, is thought proper to provoke the Menſes, and remove Vapours: Shoes made of the Skin of it are, alſo, thought to be a good Prefervative againſt the Gout. *Lemery, Traité des Drogues.*

PHOCÆNA. A Species of Dolphin, ſomewhat thicker and ſhorter than the ordinary Kind; the Fat of which is eſteemed reſolutive, and good for the Nerves. *Lemery des Drogues.*

PHODES, or **PHOIDES**, φῶδες, or φῶιδες. The ſame as **PHRAUSINGES**.

PHOENICITES. A Name for the *Judaicus Lapis*.

PHOENICIUM EMPLASTRUM. The *Emplaſtrum Diachalcites*, or *Diapalma*.

PHOENICIUS MORBUS. The *Elephantiaſis*. See **LEPRA**.

PHOENICOPTERUS, φαινικοπτερος. The Name of a Bird, frequently mentioned by the Antients, whoſe Tongue and Brains were eſteem'd great Delicacies. I don't know, that it is certain what Bird this was; but, by the Derivation, it ſhould have red Wings.

Lemery deſcribes the *Phenicopterus*, as a Bird as large as an Heron, of an Aſh-colour, with a crooked Bill, and very long Neck, which lives upon ſmall Fiſh, and Shell-fiſh: He ſays it is eſteem'd aperitive, and good for the Epilepſy; and that the Fat is reſolutive, and good for the Nerves.

PHOENICURUS. The Name of a Bird called, alſo, *Rubecula*, *Ruticilla*, and *Erithacus*. *Lemery* ſays, it is about the Size of a Cuckow, and has a red Tail, as the Derivation of the Name imports. It is eſteem'd good for the Epilepſy, either eaten, or in Broth. The Fat is reſolutive, and anodyne.

PHOENIGMUS, φαινιγμός, from φῶνιξ, a red Colour. A Rubification, or Rubefaction, of the Skin; that is, an Excitement of a Redneſs of the Skin, by means of acrid Applications.

PHOENIX. A Name for the *Gramen*; *Loliaceum*; folio & *Spica anguſtiore*. See **LOLIUM**.

PHOLAS. The Name of a Sea Shell-fiſh, ſomewhat like a Muſſel, which grows to the Rocks at the Bottom of the Sea, and is ſaid to be good Food. The Shell, powder'd, and taken internally, is ſaid to be aperitive, and good for the Stone.

PHOLIS, φολις. A Scale of Metal.

PHOLLIDODES, φολλιδῶδες, *Lib. 4. Epid.* is apply'd to Tumors in the Legs, and ſignifies ſoft, lax, and fungous, as in thoſe who labour under an *Anaſarca*, and eſpecially, a *Leucophlegmatia*. All the Copies, indeed, read φολιδῶδες, which *Calvus* renders *squamous*, becauſe φολις is the ſame as λεπίς (*lepis*) a Scale like that of Fiſhes, or Serpents. Whence the Paſſage in *Hippocrates* above-mention'd, ſuppoſing this to be the true Reading, may be underſtood of ſuch Tumors in the Legs, as, by reaſon of the Drineſs and Corrugation of the Skin, and the want of Aliment, are cover'd with a ſcaly ſort of Subſtance, as with a Cortex, as is often obſervable in the Legs and Feet, and other Parts, under a Cachexy or Dropſy. But perhaps for φολιδῶδες we are to read φολλιδῶδες (*Phollicodes*) which ſignifies fungous, lax and empty like Huſks, void of Seeds, as *Galen* expounds the Word in his *Exegeſis*, with an Eye, it is probable, to the Place in *Lib. 4. Epid.* where it is ſaid, τὰ φολλιδῶδα φλυκταίνεμενα, “the puſtulous Eruptions were ſoft “and lax.” *Erotian* expounds φολλιδῶδη by ἐρηλῶδη and λεπτῶδη, ſquamous and ſcabrous, as if exaſperated by the *Lepros*; for the Antients, he ſays, called the Aſperities of the Skin, proceeding from the *Pſora*, and the like Affections, by the Name of φολλιδες, *Phollicides*. And this affixes a very different Idea to the Word, which muſt then be underſtood of thoſe Tumors, which are exaſperated with a ſort of ſquamous Cruſt, as is ſometimes obſervable in cachectic Bodies.

PHORACIODES, φερακιδῶδες, from φῶρες (*phoros*), which in the *Exegeſis* is expounded by εὐσπυλλεπτος (*eusphylliptos*), diſpoſed for Conception, *Lib. 2. γυναικ.* is ſpoken of the Orifice of the Uterus, as open and duly qualified in order for Conception. But *Foeſius* ſuſpects, that the Word ought to be read φερακιδῶδες (*pharacidodes*), which *Galen* and *Erotian* expound by ρυτιδῶδες (*rutidodes*) corrugated. But he ſhould rather like to read, he ſays, φεργανῶδες (*phorganodes*), becauſe φεργάνη (*Phorgane*) is expounded, in *Heſychius*, by ἀραιῆς (*Arætes*), as importing the Orifice of the Uterus to be lax, rare, and open; which, *Lib. de Muliebr. Nat.* and *Lib. de Morb. Mul.* on the ſame Occaſion, is expreſſed by εὐρύ (*eury*), wide, ex-
panded.

PHORIMOS, φερίμος. An Epithet for that Species of Alum, which is call'd in the Shops, *Roch-alum*.

PHORINE, φορίνη. The Skin of a Man or Beaſt, or, according to *Pollux*, an Hog's-skin. Thus, *Lib. de R. V. 1. A.* ſpeaking of Swines-fleſh, it is ſaid, that it ought to be eaten ἀνευ τῆς φορίνης, that is, as *Galen* ſays, in his Commentary, ἀνευ τῆς δερμάτος, “without the Skin.” *Φορίνη* is, alſo, ſpoken of the human Skin, which by ſome, too, is called πυρίνη (*Pyrine*), as *Heſychius* obſerves.

PHOS, φῶς. Light; but it, alſo, ſignifies the black Circle, which ſurrounds the Pupil of the Eye.

PHOSPHORUS, from *φῶς*, Light, and *φέρω*, to bring. The Name of a *Collyrium*, in *Galen, L. 4. de Comp. M. S. L. Cap. 7.* It is the same as the *DIACROCUS*.

There are several Chymical Preparations call'd by this Name, which shine in the Dark, some of which I have taken Notice of under the Article *ALUMEN*.

HISTORY OF PHOSPHORUS.

The *Phosphorus igneus* differs from other naturally shining Bodies, in this, that it is in reality nothing but a kind of concealed Fire, which discovers itself by its Light and Smoke; but, if you rub it harder, it will break out into a Flame. This Discovery appeared about the Year 1677; but was preceded by *Baldwin's Phosphorus*, which is an artificial Imitation of the natural *Bolognian Stone*. *Christopher Adolphus Baldwin*, Governor of a certain Place in *Misnia*, happened to dissolve Chalk in *Aqua Fortis*, or Spirit of Nitre, which last he again brought over by the Fire; and he found the remaining Body to imbibe the Light, when exposed thereto, and retain it for some time, and carry it along with it into a dark Place, as a Sponge does the Water it has imbibed. This Experiment did not a little startle the *Cartesians*, (very few of whom had seen the *Bolognian Stone*) that Light should of a sudden become a gross and portable Thing, whose Rays they supposed to consist in Pressure only, and to be propagated in an Instant of Time. *Baldwin*, in an obscure manner, described his Experiment in a Treatise intitled *Aurum Aurea*.

To this succeeded *Brand's* *Hamburg's* Invention, named the *Phosphorus igneus*, the *Pyropus*; and afterwards, by way of Eminence, the *Phosphorus*, which was discovered in this manner. *Brand* had fallen on a Chymical Process, extant in a printed Book, which taught how to prepare from Urine a Liquor fit to ripen a Particle of Silver into Gold; and in labouring on this he found out his *Phosphorus*. He had some Acquaintance with *Jo. Daniel Kraft*, of the Council of Commerce to the Elector of *Saxony*; and, by his means, with *Jo. Kunkel*, one of the said Prince's Bed-chamber; but who, under that Character, performed Chymical Processes. On persuading *Brand*, that this Arcanum might be sold to the Great at an high Price, and offering him their Assistance, they obtained the Composition from him. And, upon going from *Dresden* to *Hamburg*, they both saw and learned from him the Process of the *Phosphorus*. But *Kunkel*, upon his Return Home, had committed some Mistake in the Process, and for a long time could not hit upon the *Phosphorus*; and he sent a Letter to *Brand*, complaining that the Secret was not sincerely communicated to him. But *Brand*, repenting that he had been so easy in imparting the Secret, delayed to satisfy him. *Kunkel*, in the mean time, after various Trials, corrected the Error himself: Whence he pretended to be the Inventor; and of this *Brand* bitterly complained.

Kraft, who was a Man of a good Address, undertook to vend the Discovery among the Great; and, in his Way to *England*, he made me a visit at *Hanover*; and ingenuously mentioned to me, both the Matter of the Process, and its Author *Brand*; and he likewise shewed the Experiment of the *Phosphorus*, to the great Surprise of *Duke John Frederic*; and afterwards in *England* to *K. Charles II.* *Prince Rupert*, the illustrious *Mr. Boyle*, and others, of which there is an Account by *Dr. Hook*. But he never, as far as I know, mentioned himself as the Inventor. The *Phosphorus* was first sent into *France* by me to *Huygens*; and at length the Composition it self was, by the illustrious *Tschirnhausen*, upon his Return from *Germany* into *France*, communicated from me to the Royal Academy, to whom *Huygens* had already shewn the thing. That *Boyle* had got but an imperfect Description of it, appears from his Dissertation on *Phosphorus*; for his *Phosphorus* differs from *Brand's* only in this, that it is more imperfect.

But *Duke John Frederic*, as he was a magnificent and generous Prince, ordered that I should send for the Inventor: *Brand*, therefore, came to *Hanover*, and faithfully communicated to us the Process; for, whatever he did, I imitated in another Laboratory. Upon collecting a large Quantity of Urine, *Brand* came to us, and went through the Process. Upon *Brand's* Return to *Hamburg*, the Duke settled an annual Pension upon him, which was punctually paid him till the Duke's Death; and this probably was the only considerable Encouragement which he reaped from his *Phosphorus*.

I myself shewed to the same Prince, who was very curious in these Matters, another kind of *Phosphorus*, which we may call the *Thermophosphorus*, which does not acquire its shining Quality from Light, as the *Bolognian* and *Baldwin's* *Phosphorus*, but from Heat. There is a kind of Substance found in Mines, capable of being dissolved by Fire, with the Powder of which if you draw Letters and Figures on an iron Plate, and lay the Plate upon burning Coals, the

Strokes shine, though the Plate be not ignited; and though the Rays of Light cannot penetrate from the Coals to the Figures.

It is a thing commonly known, that hard Bodies acquire Heat, and at last take Fire, by Motion; and the Flame produced by the Attrition of two Pieces of Wood was, by the ancient *Saxons*, regarded as a religious Ceremony. But we are not so well acquainted with the Manner, in which Smiths at our Mines kindle the Fire extinguished in their Forges. They strike, with an Hammer, an iron Bar on its very Edge, and which is wont to come from the Mines, in the Form of a quadrangular Prism. This Bar they shift, that the Edge may be alternately struck, now on the Right, and again on the Left: Thus it immediately becomes hot, and, after repeated Blows, glowing hot, so as to set on Fire any inflammable Matter.

We have, besides, other kinds of *Phosphori*, in which there are no Traces of Fire, the principal of which we owe to *Job. Bernouilli*, who has improved the Observations of others on Mercury shining in Vacuo, and carried it so far, that now it may be produced at Pleasure; whereas before Mercury was rarely, and by chance, made to shine. It is credible, that this *Phosphorus* always retains its shining Quality, or, at least, for a long time; because it does not stand in need of the Free Air to make it shine, like the *Phosphorus igneus*, but emits a Light by only shaking it in a Glass, hermetically sealed; and with this the King of *Prussia* was so well pleased, that he rewarded the Inventor with a Gold Medallion. I understand, that *M. Dutal* at *Paris*, and others, have laboured with remarkable Success in establishing and promoting this *Phosphorus*. It would be worthy Inquiry, what Quantity of Light might be produced by many such *Phosphori*, continually shook; for a continued Shaking may easily be effected by means of a Machine, and the Light of many *Phosphori* may be collected either by Refraction or Reflexion, an Experiment which I wonder has not been hitherto attempted. *Leibnitz*, in the *Miscellanea Berolinensia*.

DR. SHAW'S ACCOUNT OF PHOSPHORUS.

We took half a Dram of Camphire, and ground it in a glass Mortar, with three Grains of the solid *Phosphorus* of Urine; then added as much essential Oil of Cloves, as served to reduce the Whole to a fluid Form. The Mixture thus made may be rubbed upon the Clothes, the Hair, or the Hands, without Danger of Burning.

The successful Method of making it is this: Evaporate any Quantity of fresh Urine over a gentle Fire, to a black, and almost dry Substance; then with two Pounds thereof thoroughly mix twice its Weight of fine Sand. Put the Mixture into a strong-coated Retort of Stone; and, having poured a Quart or two of clear Water into a large Receiver with a long Neck, join it to the Retort, and work in a naked Fire; let the Heat be small for the two first Hours; then increase it gradually to the utmost Violence, and continue thus for three or four Hours successively. At the Expiration of which Time, there will pass into the Receiver a little Phlegm, and volatile Salt, much black fetid Oil, and, lastly, the Matter of the *Phosphorus* in form of white Clouds; which either stick to the Sides of the Receiver, like a fine yellow Skin, or fall to the Bottom in form of a small Sand. Now let the Fire go out; but take not away the Receiver, before it is cold, for fear of setting the *Phosphorus* on Fire by admitting the Air. To reduce these small Grains into one Piece, put them into a little Tin Ingot-mould, along with Water; heat the Ingot to make the Grains melt together; then add cold Water, till the Matter is congealed into one solid Stick, like Bees-wax; which, being cut into little Pieces, fit to enter the Mouth of a Phial, may be preserved by Water, and keeping the Glass close stoppered. If the Glass were not to be stoppered, the *Phosphorus* would turn black on its Surface, and at length be spoiled.

The Cautions required to make the Process succeed are;
1. To evaporate the Urine, while it is recent. 2. To prevent its-boiling over, and so losing the most unctuous Part. 3. To let the Matter afterwards ferment in the Cold. 4. To mix the black Matter with Sand, to prevent its melting and running together. 5. To use a Stone Retort, those of Earth being too porous, and suffering the *Phosphorus* to transude sooner than pass into the Receiver. 6. To have the Receiver very large, and with a very long Neck, to prevent its breaking and over-heating; which would either evaporate the white Vapour, wherein the *Phosphorus* consists, or else prevent its coagulating. 7. To put Water into the Receiver for keeping it cool, and quenching the *Phosphorus*, as it falls to the Bottom. 8. To make the Fire small at first, that the Retort may be preserved, and the black Matter gradually dried; which would otherwise swell and come over in a black Froth. Lastly, it

It is found necessary, that the Urine for the Operation be of such use Malt Liquors, rather than Wine. All these Circumstances being required for obtaining the Phosphorus to Advantage, no wonder if so many of those who attempted it miscarried.

This Operation may be greatly shortened, by freezing and concentrating fresh Urine; afterwards evaporating it with Care; then digesting it *per se*, in the manner above-mentioned. When thoroughly digested, commit the Matter, in a large Quantity, to an iron Pot, with an earthen Head, as the Chymists usually do, for making Spirits of Hartshorn, or the Spirit and Salt of Urine. When thus all the Salt and Oil are obtained, let the *Caput Mortuum* be taken out, and mixed with twice its own Weight of Alum. The Matter may now be put into a well-coated long Neck, and worked with Care in a reverberatory Furnace, into very large Receivers filled with Water, and connected to the Necks by Adapters; the lower Ends whereof may enter the Water, as in distilling of Quicksilver; the Operation being continued for eight or ten Hours. And this we apprehend to be the best way hitherto known of procuring Phosphorus to Advantage. Dr. Wall informs us, that Mr. Boyle, being concern'd to find how small a Proportion of Phosphorus was afforded by Urine, desired him to look out for another Subject, that might afford it in greater Plenty. The Doctor afterwards causing a Piece of dry Matter to be dug up in the Fields, where Night-men emptied their Carts, he observed a great Number of small Particles of Phosphorus therein. This Matter the Doctor immediately carried to Mr. Boyle; who set Bilgar the Chymist to work upon it: But he could obtain very little Phosphorus from it, till another Material was added to it in Distillation; and then he procured Phosphorus in such Plenty, that, selling large Quantities at six Guineas the Ounce, he soon became rich, and left England. The Matter which thus fixes and increases the Phosphorus, we apprehend to be Alum; which is itself not only prepared from Urine, but appears to afford the same kind of Acid that Phosphorus yields by burning. For, upon its Analysis, Phosphorus appears to be a Composition of a strong acid and an inflammable Matter, exactly in the manner of common Brimstone; whence it may not improperly be called an animal Sulphur. Accordingly, like common Brimstone, it will burn under a Glass-bell, and afford Flowers, that become an acid Liquor, like *Oleum Sulphuris per Campanam*, by attracting the Moisture of the Air.

And in this manner it has been used, so as to produce extraordinary Changes upon Metals, especially in the philosophical View; the Acid itself, even without Heat, proving a Menstruum to perhaps all the Metals. But when this Acid is driven into the Pores of the Metal, by the Action of the Flame in burning the Phosphorus, it seems productive of much greater Effects; as is known to those acquainted with the sublimer Metallurgy. This Phosphorus, of all the kinds hitherto discovered, seems the most useful.

This Phosphorus has been several Ways disguised, so as to make it appear under various Forms; sometimes as a Solid, sometimes as a Liquid, sometimes as an Ointment, and sometimes as a running Mercury. There are, also, others of different Kinds; of which we shall only mention two, discovered by M. Homberg: The first is that usually called the *black Phosphorus*, now commonly prepared with Alum and Wheat-flour, by taking four or five Parts of Alum, to one of Wheat-flour, and calcining them together to a brown or blackish Mass; which being powder'd, and put into a Phial, loosely stopp'd with Paper, and set in a Sand-heat, so as to continue glowing hot for some time; then removing the Whole from the Fire, and suffering it to cool gradually, and at last stopp'd the Bottle close. A little of this Powder, being poured out of the Bottle, and expos'd to the open Air, immediately takes Fire, and appears like a glowing Coal. But the Powder must be fresh made, to have a strong Effect; for the Sun's Rays, or the Moisture of the Air, being gradually admitted to it, destroy its Virtue; whence it ought to be kept in a dark and dry Place. 'Tis remarkable of this Phosphorus, that it may be made almost from any animal or vegetable Substance, instead of Wheat-flour; but that no Salt whatever can be substituted instead of Alum.

M. Homberg's other Phosphorus is made of one Part Sal Ammoniac, and two Parts Lime slaked in the Air: These being mixed well together, a Crucible is to be filled with them, and set in a small Fire of Fusion; where, as soon as the Crucible becomes red-hot, the Mixture will melt, and should be stirred with an Iron Rod, to prevent its running over. When the Matter is entirely fused, it may be poured into a Brass Mortar; and, when cold, it will appear of a grey Colour, and almost as if it were vitrified. If now it be struck upon with any hard Body, it appears as on Fire, in the whole Extent of the Stroke: But, the Matter being brittle, it may be proper, for the Expe-

riment's Sake, to dip little Bars of Iron, or Copper, into the melted Matter in the Crucible; for thus they will be enamel'd, as it were, with the Matter, and these Bars may be struck upon, so as commodiously to repeat the Experiment several times before the Matter falls off. The Bars are to be kept in a dry Place, to prevent the Phosphorus upon them from running, by the Moisture of the Air.

Both these Phosphori were discover'd by Accident. The first was obtained by searching for a limpid Oil, from the common stercoraceous Matter, that should fix Quicksilver; and the second by endeavouring to calcine Sal Ammoniac with Lime, so as to render it fusible like Wax; which End was obtained, but not the other.

There have been no very considerable Uses of these two Phosphori hitherto discovered; but the Phosphorus of Urine has been employed for making many curious Experiments; a few whereof we shall here exhibit.

1. The Light of this Phosphorus appears greater in Vacuo, than in the open Air.

2. In hot Weather it is observed to dart Flashes of Light through the Water wherein it is contained, so as exactly to resemble Lightning; which thus darts unextinguished through watery Clouds and Vapours.

3. These Flashes are not liable to kindle or burn any combustible Matter, in which they resemble the harmless Kind of Lightning; but, in a condensed State, this Phosphorus burns very furiously, and with a most penetrating Fire, so as to melt and dissolve Metals: In which respect it again resembles the more destructive Kinds of Lightning, which are found to have the same Effects.

4. If a little Piece of this Phosphorus be view'd through a Microscope, the internal Parts appear in a constant Ebullition.

5. A little Piece of it being put into a Silver Spoon, and held over the Fire, it bursts out into a shining Flame, leaving a red Spot in the Spoon, of a corrosive acid Taste; and, being diluted with Water, the Mixture makes a Conflict with Oil of Tartar *per Deliquium*.

6. If a little of it be ground in a Glass Mortar, with twenty times its own Weight of Nitre, it does not take Flame, but only disperse a shining Property through the Body of the Nitre; but, if ground in the same manner, with Iron Filings reduced to Powder, a bright Flame immediately ensues.

7. Though this Phosphorus appears to be a kind of Sulphur, yet it does not dissolve in highly rectified Spirit of Wine, but communicates some sulphureous Parts thereto: For if this Spirit be poured to Water in the Dark, it yields a faint Degree of Light.

8. The Nature of this Phosphorus is considerably changed, by being long digested with Alcohol; for thus it becomes a kind of white transparent Oil, that does not coagulate without an extreme Degree of Cold, nor afford any manner of Light; and, when fresh Spirit of Wine is pour'd thereon, it does not, like other Oils, mix therewith, nor dissolve therein.

9. If this Phosphorus be separated from the Spirit of Wine, wherewith it was digested, and be afterwards well washed in common Water, it, by degrees, recovers its former Consistence, and coagulates into a transparent Matter whiter than before; but neither affords so much Light, nor recovers its primitive shining Virtue, nor its yellow Colour.

10. The Spirit of Wine so separated becomes yellowish, and smells strong of the Phosphorus; though it shines not, except when poured upon Water.

11. This Phosphorus, being mixed with a large Quantity of Pomatum, makes, as well as with Camphire, and the Oil of Cloves, a shining Unguent, that may be rubbed on the Hands and Face, without Danger of burning, so as to render them luminous in the Dark.

12. If a Piece of Paper, or Linen, be dipt at one End in Spirit of Wine, and a Bit of Phosphorus be crush'd on the other End that remains dry, the Spirit will be fired by the Phosphorus, without immediate Contact. But the same thing will not happen, if the Paper were dipt in Oil of Turpentine, nor if a Bit of Phosphorus were rubbed upon the End dipt in the Spirit of Wine; only, when the Spirit is entirely evaporated, the Phosphorus will burn, though with Difficulty; and slowly.

There are many of these odd kind of Experiments, that might be made with Phosphorus; which is a Substance that seems in Chymistry to be much such a thing, as the Load-stone in Natural Philosophy; and its Effects almost as odd, and difficult to be explain'd, for want of knowing the latent Properties of Bodies.

AXIOMS.

We learn from the preceding Experiments, that the Phosphorus of Urine is applicable to many extraordinary Purposes, particularly

particularly to the introducing of uncommon Changes in metalline Bodies.

That, as most Discoveries of chymical Explosions and Phosphori were accidental, greater Things may be expected from a sagacious Experience, and by a further Discovery of Causes and Axioms.

That the Phosphorus of Urine may be made in large Quantities, and with small Expence; so as to afford desirable Opportunities for the farther Improvement of Chymistry and Metallurgy.

PHOTEL, by some called *Ficus Pharaonis Thevet*, is a Tree nearly resembling the *Banana-tree*, growing in the Kingdom of *Catay*, according to *C. Baubine*; which is all we know of it.

PHOXINOS SQUAMOSUS. The Name of a River-fish, about half a Foot long, pretty thick, and covered with yellow and blue Scales, with a red Tail. It is esteem'd appetitive. *Lemery des Drogues*.

PHOXOS, *φοξος*. One with an acuminate or fastigiated Head, that is, sharpen'd towards the Top, the Eminences either of the Forehead or Occiput, or both, being depressed, or one or both of those Parts beyond measure prominent. Or, as *Galen* expresses it *Com. 1. in 6 Epid. η φοξή κεφαλή*, &c. "An acuminate Head, with one or both the Eminences [of the Forehead and Occiput] indelicately prominent, or "having one Eminence, and wanting the other." And again, "Acute Heads want either the Eminence of the Forehead, or "Occiput; or else have it produced beyond a just Degree." But *Phoxoi* are properly those who have the Top of their Head very much fastigiated and turbinated, and consequently deformed. *Therites* is described by *Homer* with such a Head. *φοξος*, in *Helychius* and *Erotian*, is expounded by *δξύκεφαλος*, "sharp-headed." The Word occurs twice *6 Epid.*

PHRAGMITES, *φραγμαίτις*. A Name in *Dioscorides*, for the common *Arundo*.

PHRAGMOS, *φραγμας*, from *φράσσω*, to inclose as with an Hedge. An Anatomical Term for the double Series, or Cage, of Teeth.

PHRASIMUM *viride*. Flos *Aëris Rulandus*.

PHRENES, *φρένες*, was the Name by which *Hippocrates*, and the antient Physicians, called the *Diaphragma*.

PHRENESIS, PHRENETIASIS. The same as PHRENITIS; which see.

PHRENITICI NERVI. The Nerves belonging to the Diaphragm. See PHRENES.

PHRENITIS, *φρενίτις*, from *φρήν*, the Mind. A Phrensy.

There is no Inflammation, or particular Fever, of so great Importance in Medicine, as that which is lodged in the Brain, the noblest of all the Parts; and not only totally destroys the Use of Reason, but, also, induces a sudden Danger of Death, and is, by the *Greeks*, call'd *Phrenitis*. Now this Disorder is an acute inflammatory Fever, arising from too great a Congestion of Blood, and its interrupted Circulation, especially thro' the most minute Arteries of the Membranes of the Brain; and accompanied with intense Heat, a Delirium, and Danger of Death.

The Signs of an approaching Phrenitis are, by *Alexander Trallian*, in *Lib. 1. Cap. 13.* accurately and compendiously described in the following manner: "An approaching Phrenitis, "says he, is preceded by intense and continual Watchings; or, if "the Patients sleep, their Rest is troubled and interrupted. They, "also, start, and are afflicted with terrible Dreams. They soon "forget what is said to them; and if, at any time, they return "an Answer to a Question, they appear more fierce and "angry, than just before they seem'd to be. Their Pulse is "hard and small, whilst they are frequently afflicted with a Pain "of the Occiput. When the Disorder increases, their Eyes become more fix'd and red; Tears, at the same time, flowing "from both of them." But the Signs and Symptoms of a present Phrenitis are by none of the Antients so well specified and characterized, as by *Calius Aurelianus*, in *Lib. 1. Cap. 2.* in the following manner: "In a Phrenitis, the Patient is afflicted "with an acute Fever; his Pulse is hardly perceptible on the "Surface of the Body; or, if it is, it is low and tense; his Face "is inflamed and full; the Blood drops from his Nostrils; he is "afflicted with continual Watchings; or, if he sleeps, his Rest is "disturb'd; he is seized with a kind of turbulent Madness, a "preternatural Solicitude of Mind, and a Privation of Reason; "he frequently changes his Posture in Bed, and his Head is in a "continual Commotion. He is sometimes cheerful, without "any apparent Cause; his Eyes are red; he weeps gently, and "tosses his Arms about him, but has no Pain in his Head. His "Joints are cold, but without any Tremor. His Urine is copious, yellow, aqueous, thin, and discharged by little and little. "Some phrenitic Patients are afflicted with a Noise in their "Heads, a Ringing of their Ears, and an incessant Head-ach. "Their Looks are, also, fix'd and stern, and their Eyes frequently "wink."

All these injured Functions of the Body, accompanying a Phrenitis, arise from too copious and impetuous a Conveyance of Blood to the Head; its interrupted Circulation thro' the minute Vessels of the Brain; its Stagnation; and its quick Conveyance thro' other unusual Ways. Hence Distentions of the Vessels of the Brain and Face happen; a serous Humour is secreted, and every-where obstructs the Vessels. The Brain is totally disturb'd, and especially in those Functions which are subservient to the Use of Reason; for *Hippocrates*, in his Book *de Flatibus*, and in many other Parts, justly observes, that Prudence and Reason depend upon a laudable State of the Blood in the Brain; or, in the modern Style, upon its equable Circulation thro' it; so that, when this is disturb'd, Prudence and Reason are destroy'd. And that the true Seat of a Phrenitis is in the Brain, is sufficiently evinced by dissecting those who have died of that Disorder; in whom, not only the Vessels of the Dura Mater, with its Sinuses, but, also, those of the Pia Mater, are infarcted with a thick and coagulated Blood; whilst these Membranes themselves are so dry and parch'd, that the Pia Mater can be easily separated from the cortical Substance of the Brain. Besides, the medullary Substance of the Brain appears cover'd with a large Quantity of a serous Humour. These Circumstances are confirm'd, in many Instances, by *Blancard*, in *Anatom. Pract. Obs. 3.* *Schenckius*, *Lib. 1.* and *M. N. C. Decad. 2. An. 5. Obs. 62.*

Among the antecedent Causes of a Phrenitis, *Calius Aurelianus*, in the Part before quoted, justly reckons, drinking Wine too copiously; Watchings; remaining long exposed to the Sun; a Mind naturally giddy and inconstant; Anger; a Weakness of the Head, brought on by Study; and Youth. Now 'tis certain, that all those Things dispose to a Phrenitis, which render the Head weak and infirm; in consequence of which, there may easily happen a Stagnation of the Blood, and a too long Continuance of the Humours in its Vessels. Those Things, also, dispose to a Phrenitis, which forcibly convey the Blood from the inferior Parts to the Head. Hence 'tis confirm'd by practical Observations, that a Phrenitis, and delirious Fevers, are highly incident to those afflicted with long Grief, or Care, who fatigue their Minds by profound Meditation and Study; to those who are strong and vigorous; who are of melancholic and choleric Constitutions; who are often under the Influences of Anger or Hatred; who are rack'd by violent Passions; who are afflicted with Watchings and Inquietudes; who surfeit themselves with strongly hop'd Malt-liquors; who are addicted to Wine and Women; to those who lead a sedentary Life, free from Motion and Exercise; and to such as, in consequence of a bad and preposterous Regimen, contain a large Quantity of impure Blood in their Veins. 'Tis, also, certain from Experience, that a Cessation, or speedy Suppression, of an usual hæmorrhoidal Discharge, of the Menstrues, or Lochia, in Child-bed Women, especially when such Patients are costive, lay a Foundation for a Phrenitis. For, in such a State, in consequence of the Stagnation of Blood in the abdominal Viscera, spasmodic Strictures are excited in the nervous Parts, which render the Circulation of the Blood unequal, and convey it impetuously to other Parts, where it is too copiously congested. A Phrenitis is, also, frequently induced by external Violence. This easily happens in Wounds and Contusions of the Head, especially in plethoric and cacochymic Habits; unless such a Misfortune is speedily prevented by Venesection and Discurients. In a Phrenitis, arising from such a Cause, the Event is generally fatal, according to *Hippocrates*, in *Secl. 7. Aph. 14.*

A Phrenitis is justly to be distinguish'd into that of the idiopathic, and that of the symptomatic Kind. In both of these, there is, indeed, an acute Fever, but with this Difference, that, in the latter, it precedes; whereas, in the former, it is the inseparable Concomitant of the Disorder. An idiopathic Phrenitis is rarely found in temperate Climates, but occurs more frequently in hot, dry, and southerly Countries; for which Reason the antient *Greek* Physicians, especially *Aërius*, and *Alexander Trallian*, have, in their Works, treated accurately and copiously concerning a Phrenitis. There are, however, in temperate Climates, Instances of a Phrenitis arising, without any previous Disorder, especially from Surfeits, continual Anger, and a Weakness of the Brain, produced by profound and continual Meditation, Watchings, and Fatigue; in sanguineous, or choleric and melancholic Persons; those addicted to a sedentary Life; hypochondriacal Persons; and those subject to the Hæmorrhoids, especially if that Evacuation is imprudently stop'd. But *Willis*, in *Pathol. Cerebri*, *Cap. 10.* justly informs us, from his own Experience, that unless this Species of Phrenitis is soon removed by proper Medicines, it degenerates into a Mania, or a furious Delirium. An idiopathic Phrenitis, which degenerates into a Mania, also, frequently happens after burning, purple, exanthematous, and catarrhus Fevers, improperly treated by a too hot Regimen; by volatile Medicines, which throw the Blood into too violent Commotions; by Opiates; by too forcible Repellents; by Refrigerants; and unseasonable Venesections. And this Disorder happens the more infallibly and violently, when the Patient is much and frequently subject to Anger.

A symptomatic Phrenitis is much more frequent in our Country; for it frequently happens, and proves mortal, in the Height

of malignant Fevers, acute exanthematous Fevers, petechial Fevers, the Small-pox, malignant catarrhus Fevers, especially such as rage in Camps, and most of all in the *Hungarian Fever*, particularly when the Disorders are ill treated; for in these Diseases a Phrenitis, of the symptomatic Kind, generally appears about the critical Days, and is attended with Rigor and Tremor of the Joints, a Tension of the Præcordia, a Refrigeration of the Extremities, and a Thinness of the Urine, which is discharged either in too small, or in too large a Quantity. But because, in consequence of the preceding Disease, and the continual Watchings, the Strength is almost totally lost, and the Tone of the Vessels distributed through the Membranes of the Brain too much weaken'd, irresolvable Stagnations of Blood happen in them, which generally prove mortal on the third Day.

But, though a Phrenitis frequently degenerates into a Mania, according to the Antients, especially *Hippocrates*, *Cælius Aurelianus*, and *Arætaus*, who for this Reason join, or rather confound, the one with the other, there is yet a great Difference between them; for in a Phrenitis there is always a Fever, accompanied with a quick, hard, and small Pulse. There is, also, a Delirium, not absolutely intermitting, but sometimes remitting, at which time every thing which happened under the Delirium, is forgotten. But a Mania is a chronical Disorder without an acute Fever, though accompanied with a preternaturally hard and unequal Pulse, which is sometimes small, and at others large and quick. A Mania has, also, its lucid Intervals, and is generally accompanied with great Pride, Anger, and Hatred to the Patient's Friends and Neighbours. And, when the Paroxysm ceases, the Maniacs have generally a surprising Remembrance of what happened under it. A Phrenitis is, also, different from that slight Alienation of Mind, which is frequently observed in acute Fevers, before the critical Expulsion of the exanthematous Matter; for such a slight Alienation of Mind goes more easily off, nor is it accompanied with thin and watery Urine, nor a Rigor and Refrigeration of the external Parts: Sometimes, also, after the Decline of an acute Fever, we observe, for some Days or Weeks, a certain Foolishness, or Inconstancy of Mind, which is different from a Phrenitis, arises from the Loss of the Strength, and Weakness of the Brain produced by the Disease; and, as the Strength returns, it either spontaneously ceases, or is easily removed by proper Medicines.

THE CURE.

Since the violent and terrible Symptoms, which accompany a Phrenitis, depend upon an Inflammation of the Meninges, which is their immediate Cause, the principal Intention of the Physician ought to be, either to prevent, or remove, such a Misfortune. But as the Cause of this Inflammation is a Stagnation of the Blood in the Vessels of the Meninges, and a sudden Conveyance of it to other Parts accompanied with Pain, a spasmodic Tension, and Heat, Reason informs us, that those Medicines are, of all others, the most proper, which check the fierce Impetus of the Blood to the Head, derive the congested Humours from it, disengage and discuss the stagnant Blood, and relax the spasmodically constricted Meninges.

Now, both in preventing and curing a Phrenitis, both antient and modern Physicians unanimously recommend Venesection, as near as possible to the Part affected. *Trallian*, and the *Arabians*, in a Phrenitis, often open'd the Jugular Vein; but this laudable Practice is too much neglected, since 'tis certain from Experience, that in all Disorders of the Head, arising from a Congestion and Stagnation of the Blood, opening this Vein is preferable to an Incision of any other, because both the external and internal Jugular Veins derive the Blood from the Carotid and Vertebral Arteries. Nor is the Incision of this Vein either so difficult, or dangerous, as 'tis commonly thought, since by applying a Ligature about the Neck, in such a manner, as to render the Vein turgid, it may be easily performed. Besides, opening the Sublingual Veins is a Practice highly esteemed by Physicians, not only in a Phrenitis, but, also, in other Disorders of the Head. Thus, *Ammannus*, in *Parien*. informs us, that in the Year 1664. among all the Soldiers who return'd from the *Hungarian Expedition*, and labour'd under the *Hungarian Fever* in the Hospitals, none of those died, who, in due Time, had the Venæ Raninæ open'd, whilst those were carried off by the Disorder, who had not that Advantage. I have, also, known the Opening of these Veins highly useful in acute Fevers, for preventing a Delirium, when performed on the sixth or seventh Day, whilst the Patient's Reason yet remained. But, if a Delirium is already present, it is with Difficulty performed. Besides, if the Incision is large, a terrible and fatal Hæmorrhage is to be dreaded, in consequence of the Impetus of the Blood to the Head. On the contrary, from too small an Orifice, but little Blood is evacuated; and, a

Space being there procured, the Blood is rather more solicited to the Brain. Others, after the proper Application of a Ligature to the Neck, recommend opening the Frontal Vein; and *Trallian* informs us, that by this means he cured a Person afflicted with a violent Phrenitis. Some prefer Arteriotomy in the Temples. Thus *Panacelus*, in *Pentec.* 1. *Obs.* 19. informs us, that in a violent Phrenitis he found this Practice so successful, that the Patients were immediately relieved by it. In a Phrenitis, *Cælius Aurelianus*, after shaving the Head, orders the Whole of it to be scarified. But the *Egyptian Method* of scarifying the Nostrils is far more commendable; and, if a proper Instrument for this Purpose cannot be had, the End may be obtained by thrusting a Straw, or any other thing of the like Nature, up the Nostrils, in such a manner, as to procure an Hæmorrhage, which I have often seen productive of immediate Relief. These Methods of Venesection in the Parts contiguous to that affected are to be used not only in the idiopathic, but, also, in the symptomatic Phrenitis. But, when, from a Retention or Suppression of the Menes; or Lochia, a Phrenitis is dreaded, a Vein is quickly to be open'd in the Foot, and a large Quantity of Blood must be taken away. If from any Fault, or Interception, of the Hæmorrhoids, a Delirium is dreaded, the best and most proper Method of affording Relief is, to open the hæmorrhoidal Veins by the Application of Leeches.

After a due Evacuation of Blood, the Body is to be render'd soluble; since, when the Patient is costive, the Afflux of the Humours is directed to the superior Parts, whereas, when his Body is sufficiently soluble, they are derived to the inferior Parts. *Hippocrates*, in *Lib. 3. de Morbis*, *Sec.* 9. justly advises, that, in the Cure of a Phrenitis, the Body is to be rendered soluble by moistening Potions, which relax the spasmodically constricted Coats of the Intestines, because Spasms of the Primæ Viæ are frequently the Causes of Deliriums. But, for answering this Intention, I, above all other Medicines, recommend Potions prepared with Manna. Thus,

Take four Ounces of Manna; dissolve it in a Pint of Whey; and add one Dram of Cream of Tartar, half a Dram of Nitre, and one Ounce of the Oil of sweet Almonds.

Bagliui, in *Prax. Lib. 1.* recommends the Pulvis Cornachini in the following manner: "Since, says he, it has often been observed, that Deliriums are terminated by Fluxes, I have therefore, in Imitation of the Method pointed out by Nature, found the Pulvis Cornachini effectual for this Purpose; drinking after it diluting Decoctions prepared of Barley, Sal Prunellæ, and other Ingredients calculated for sweetening the Humours, especially if there is a preternatural Heat of the Viscera, and an internal Inflammation." But, if the Case calls for speedy Relief, the Body is to be rendered soluble by a lenient, pargoric, and domestic Clyster.

Among the internal Medicines against a Phrenitis, we must, also, class diluent, demulcent, and moistening Potions drank in large Quantities, if the Patient is very thirsty, which, according to *Arætaus*, rarely happens. But, among all other Drinks, none is more proper and expedient than Whey, either acidulated with Citron-juice, and prepared with Julap of Roses, or edulcorated with Syrup of white Poppies. In a Quart of this Whey, we may, with Advantage, dissolve a Dram of depurated Nitre, or Sal Prunellæ. Phrenitic Patients, also, with Advantage, use Emulsions prepared of Decoctions of Barley, Shavings of Hartshorn, and the Four cold Seeds, with Julap of Roses; especially if to a Quart of such an Emulsion two Scruples of Nitre are added. Piti-fans, and Milk mixed with the *Selteran* or *Antonian Waters*, are very proper for those who labour under this Disorder; for the more copiously these Liquors are drank, the more efficacious they are in diluting the Humours, relaxing the constricted Vessels, removing Obstructions, and extinguishing the Heat. The diaphoretic and discutient Mixture, described under the Article ANGINA, is, also, of singular Service, not only in a Phrenitis, but, also, in all other Inflammations.

Among the external Means of freeing the Head from the Afflux of Humours, we may justly reckon bathing the Feet, or wrapping them up in a moist and warm Linen Cloth, or, which is still better, temperate Baths of fresh Water. The remarkable Use of these is not only confirmed by daily Experience, but, also, supported by the best Authorities. Thus *Alexander Trallian*, in *Lib. 1.* tells us, "That those who have sufficient Evacuations made, whilst the Quantity of the Humours is prejudicial to no Part of the Body, but are afflicted with a Driness of the Body, and an obstinate Watching, ought to bathe and anoint; and, even if the Patient is feverish, it will do him no Harm to bathe in this manner, especially if the Bath is tepid, and neither the Air, nor the Bathing-tub, too hot. But those who do not bathe for Fear

“ of the Fever, are greatly mistaken, since, by abstaining from
 “ the Bath, the Patients have their Watching, and Perturbation
 “ of Mind, increased. Such Patients are, therefore, to be
 “ bathed in the manner directed, since by this means they are
 “ restored to a due Temperament, and freed from their De-
 “ lirium, and the Disorder which excited the Fever.” The
 Antients, also, and especially *Alexander Trallian*, and *Aretæus*,
 after Venesection and Purgation, fomented the Head with
 an *Oxyrrhodinum* of Vinegar of Roses, left, as they said, the
 Head should attract a large Quantity of Humours, and be
 filled with them. Nor is this Piece of Practice to be con-
 temn'd. In all Deliriums, however, I with great Success order
 the Head to be shaved, and fomented with the following tem-
 perate Epithem :

Take of Rose-vinegar, two Ounces ; of the Spirit of Roses,
 in which ten Grains of Camphire are dissolv'd ; two
 Drams ; of pure Nitre, two Scruples ; and of the Oil of
 Rosewood, twenty Drops. Mix all together for Use.

This Method of curing not only an idiopathic, but, also,
 a symptomatic Phrenitis, and especially that inveterate Species
 of the Disorder, which seems to degenerate into a Mania, is
 founded upon my own Experience ; nor can any other Measures
 be well invented, or found out : But the Use of these must be
 for a considerable time persisted in. *Alexander Trallian*, in *Lib.*
1. gives an accurate Account of the Regimen proper for phre-
 nitic Patients, in the following manner : “ The Place, says he,
 “ in which the Patient lives, is to be duly consider'd, since he
 “ ought to be expos'd to an Air, which is neither too thick, too
 “ moist, nor too cold, lest the Pores of his Head should be by
 “ that means obstructed, or a Repletion of it produced. But
 “ let the Atmosphere be temperate, that by its laudable Qua-
 “ lity the animal Spirits may be revived and relaxed. Let
 “ his Chamber be rather light than dark, that by this means
 “ he may gradually arrive at the Perception and Remembrance
 “ of such Objects as he was formerly accustomed to. For
 “ this Reason, let some intimate Acquaintances attend him,
 “ and reprove him for what he does, and exert a due Autho-
 “ rity over him. Nor ought any Servant or Friend, on whose
 “ account he is sometimes grieved, or at whom he is angry,
 “ to enter the Room ; for this generally irritates the phrenitic
 “ Patient, and lays a Foundation for his greater and more
 “ manifest Perturbation. Nor ought great Numbers of his
 “ Friends and Acquaintances to enter his Chamber, since
 “ they not only form a Croud about him, but, also, render
 “ the Air thick by their Breaths. He is not to be re-
 “ moved in Bed with Violence, but gently, lest, in conse-
 “ quence of his Weakness, he should be hurt ; for this, above
 “ all things, irritates the Patient, and prevents Sleep. Let
 “ the By-standers hold all his Limbs without Violence, and
 “ gently rub them, especially the inferior Members : And his
 “ Limbs are to be secured with Cords, principally when his
 “ Convulsions seize him ; for this solicits the Matter to the
 “ inferior Parts, and allays the Convulsions. It is, also, ex-
 “ pedient, when the inferior Parts are rub'd, to foment
 “ them, and apply Ligatures to them in such a manner, that
 “ the Matter by Fomentation and Friction convey'd to them,
 “ may be derived still farther downwards.”

With respect to Venesection, we are to observe, that phre-
 nitic Patients often absolutely refuse to submit to it : In which
 Case, I know no more expeditious and effectual Method of Re-
 lief, than suddenly and unexpectedly to thrust a Quill or Straw
 into the Nostrils ; by which means a large Quantity of Blood
 is sometimes commodiously evacuated. But, if the Phrenitis is
 idiopathic and chronical, we are not to open the Frontal Vein,
 especially in plethoric Habits, till we have previously opened a
 Vein either in the Arm or Foot, lest the Impetus of the Blood
 to the Head should be augmented. Neither, in performing this
 Operation, are we to use too sharp an Instrument, lest, passing
 it through the Vein, we should wound the Pericranium.

A Phrenitis arising from any Disorder of the Menfes and
 Hæmorrhoids, and the violent Spasms by that means produced,
 is best and most commodiously alleviated by Baths, drinking
 Mineral Waters, and the Application of Leeches to the Veins
 of the Arms, using, at the same time, a proper Regimen and
 Diet ; for I have known a long-continued Phrenitis happily re-
 moved by the Eruption of the menstrual or hæmorrhoidal
 Discharge. But when a Phrenitis does not so much proceed from
 a Redundance of Blood congested in the Vessels of the Brain,
 as from a subtle, acrid, and virulent Matter, which is either
 repel'd from the Surface of the Body, as in exanthematous Dis-
 orders, or, being, by too hot and volatile Medicines, too much
 exalted, is firmly impacted in the Dura Mater, which is a ner-
 vous Membrane, excites Spasms, hinders the free Circulation
 of the Blood, and intercepts its Return to the Heart, besides
 opening the Veins contiguous to the Head, we are to shave the

Head, and apply to it the warm Parts of Animals just
 killed, such as the Lungs, the Liver, and the Omentum,
 which, becoming cold, are to be immersed in warm Water, in
 order to heat them again.

In *Poland*, a melancholic and maniacal Phrenitis is very fre-
 quent, in consequence of a latent *Plica* ; and, when the latter
 appears, the former ceases. For this Reason, 'tis expedient to
 solicit and forward the Egress of the *Plica* ; for which Purpose,
 the Inhabitants of that Country generally use a Decoction of
 two Handfuls of Club-moss, prepared with two Quarts of Wa-
 ter. When with this Decoction they wash their Head and Hairs
 twice a Day, the *Plica* generally appears in a Week's time,
 and removes the Delirium. When in a *Plica Polonica* the Hairs
 are cut off, there frequently ensues a violent Head-ach, which is
 succeeded by a Phrenitis, a Fever, and sometimes a Mania ;
 which, however, are soon removed by using the Decoction of
 Club-moss, or the Liniment of Club-moss, described in *M.*
N. C. Dec. 1. An. 2. Obs. 54. by which means the *Plica* is
 recalled.

But as in all Inflammations, so, also, in a Phrenitis, we are
 carefully to abstain from acrid Substances, and such as put the
 Humours into a Commotion ; from spirituous Liquors ; from
 violent Exercise, both of Body and Mind ; and from all Ali-
 ments capable of putting the Blood into a preternatural Mo-
 tion. The Patients are by no means to be irritated and pro-
 voked to Anger : For which Reason, no Person who has in-
 jured them, or whom they cannot endure, is to be admitted to
 them. Opiates and Narcotics are by no means to be used in a
 Phrenitis, especially where the Strength is already impaired ;
 for 'tis certain from Experience, that, in Fevers, Deliriums are
 sometimes brought on by Opiates and Narcotics. Hence,
Alexander Trallian, in *Lib. 1.* justly advises, “ That in a
 “ Phrenitis, where the Strength is low, we are to exhibit
 “ nothing which induces Sleep, and a Torpor ; since, by such
 “ Medicines, a great Injury is done to the Patient.” Vefica-
 tories, also, by some much used in a Phrenitis, are to be con-
 demned ; for the *Cantharides*, by their acrid Stimulus, irritate
 the already tense and spasmodically constricted Fibres ; by which
 means they increase the Delirium, and bring on Convulsions,
 as *Baglivi*, in *Lib. 1. Prax.* informs us, in the following man-
 ner : “ In *Rome*, says he, I observe more Men killed than
 “ cured by Veficatories, which, however, are more benefi-
 “ cial, and less dangerous, to Women :” And, a little after,
 he subjoins, “ If Veficatories are applied to Patients labouring
 “ under a Delirium, accompanied with an acute Fever, a Dri-
 “ ness of the Tongue, and the Signs of a violent Inflamma-
 “ tion of the Viscera, all the Symptoms become worse, and
 “ the Patient, for the most part, dies of Convulsions.”

Frederic Hoffman.

When a violent and perpetual Delirium arises from a primary
 Disorder of the Brain, accompanied with a continual Fever, it
 is called *A true Phrenitis*.

When a Phrenitis arises from a Disorder communicated to
 the Brain from some other Parts, in Fevers and Inflammations,
 it is called *A symptomatic Phrenitis*, a Disorder which corre-
 sponds to the *Greek παροξυσμ*, and the *Latin Desipientia*.

A true Phrenitis is preceded by Heat ; a violent internal and
 inflammatory Pain of the Head ; a Redundance of Blood ; an
 inflammatory Disposition ; a Redness of the Eyes and Face ;
 turbulent Sleeps ; a slight Degree of Folly ; Youth ; the Use of
 hot Substances ; remaining in the Sun ; Haughtiness, or Fierce-
 ness ; sudden Forgetfulness ; a Driness of all the Parts ; and
 especially of the Brain ; and picking the Knaps of the Bed-
 cloaths.

A symptomatic Phrenitis is preceded by almost every acute
 Disease, accompanied with a Fever ; as a Pain of the Side, which
 is not pleuritic, but accompanied with a slight Perturbation of
 Mind, and Inflammation of the Pleura, Lungs, and Diaphragm,
 which is a very bad Sign : Such an Inflammation is prognosti-
 cated by a Blackness of the Tongue, a Suppression or White-
 ness of the Fæces, and a Retention of the Urine, which Sym-
 ptoms never fail to prove mortal : A thin, pale, and ill-colour'd
 Urine ; a Want of Thirst ; Redness ; Urine with black Mat-
 ter suspended in it ; and Watchings ; are Signs of an approach-
 ing Inflammation of the Head.

Both a true and symptomatic Phrenitis, have the following
 Symptoms :

1. A Depravation, not only of the sensible Ideas, but, also,
 of the internal Senses, of Reason, and of the Affections of the
 Mind.
2. An increased violent and restless Fierceness, or often tur-
 bulent Sleep.
3. An hard Pulse, and a rare and large Respiration.
4. A Countenance, for the most part, highly red, stern and
 ghastly ; fierce and protuberant Eyes ; and a slight Hæmorrhage
 of the Nose.

As for the Prognostic, a true Phrenitis generally carries off the Patient on the third, fourth, or seventh Day, which it rarely surpasses; and when it does, and happens to be violent, it degenerates into a Mania, or, when rising somewhat higher, it becomes intolerable. It, also, often terminates in a Lethargy, a Coma, and a Catache.

An æruginous Vomiting, in consequence of an inflamed Brain; a frequent and indecent Spitting; a Tremor; the Fæces and Urine intercepted, or white; crude Urine; Convulsions; catching at flying Flakes; muddy Eyes; a Gnashing of the Teeth; a Want of Thirst, the general Forerunner of Convulsions; a perpetual Change of Symptoms; and the Subsiding of a tumid Ulcer; are frequent Prefages of great Danger, and of Death.

A true Phrenitis is mortal after a Peripneumony, and the Iliac Passion; and very bad after the Small-pox.

An Inflammation somewhat fixed, and a Roughness of the Fauces tending to the superior Parts, produce a mortal Phrenitis; and the Patients labouring under it grope for Objects which have no Existence, and are greatly oppressed.

That Phrenitis is the worst, which prevents the Patient from submitting to what is necessary for him.

Upon laying open the Bodies of such as have died of a Phrenitis, the Meninges have been found inflamed. Gangrenes, Abscesses, and a Sphacelus of the Brain, are, also, found; or acrid and corroding Ichors are discovered.

From what has been said, 'tis obvious, that the immediate Cause of a true Phrenitis is a primary Inflammation of the Pia and Dura Mater; whereas the Cause of a symptomatic Phrenitis is a like Inflammation arising from the Conveyance of an hot and phlogistic Matter to the Meninges of the Brain.

Whatever is capable of producing such Inflammations, may be considered as immediate Causes of a Phrenitis.

Hence the true Diagnosticks, both of a true and symptomatic Phrenitis, are to be taken.

In the Cure of a Phrenitis, the following Circumstances ought to be adverted to:

Varices, and hæmorrhoidal Discharges, are beneficial to phrenitic Patients; as is, also, a Diarrhœa. A Pain of the Breast and Feet, or a violent Cough supervening, often terminate a Phrenitis; as does, also, an Hæmorrhage.

A true Phrenitis requires the speedy Use of the strongest Medicines, calculated for removing the Inflammation in the Arteries of the Brain, which are found under the Article INFLAMMATIO: Only it is to be observed, that Venesection is to be copiously instituted, either making one very large Orifice, or opening, at one time, a Vein in the Foot, and the Jugular and Frontal Vein. Diluting, antiphlogistic, and nitrous Decoctions are copiously to be exhibited: Then antiphlogistic Purgatives are to be used, in Conjunction with a large Quantity of a diluting nitrous Drink. Clysters of the like Nature, with an Addition of proper laxative Ingredients, are to be used: The Anus is to be fomented, and the hæmorrhoidal Veins either rubbed with Fig-leaves, or evacuated by the Application of Leeches. Gentle Collutions and Gargarisms for the Mouth are to be frequently used: The Nostrils, Eyes, and Ears, are to be fomented; and the Head is to be shaved. If these Measures are taken without removing the Disorder, we are to use Opiates, wash the Feet, and apply gentle Epispastics and Cupping-glasses to the inferior Parts. The Patient is to be refresh'd in a moderately cool Air, and held in an erect Posture.

But if a Phrenitis is of the symptomatic Kind, and arises from some other inflammatory Disorder, we are carefully to consider, whether the Nature of this primary Disorder will admit of the Measures now recommended: If not, it is to be cured by the Manner usually appropriated to itself; taking care always to use deriving and topical Medicines. *Boerhaav. Aph.*

PHRICE, *φρις*. See HORROR.

PHRICODES *Febris, φρικδης πυρεσος*. A Fever attended with an Horror, or Shivering, not only in the Beginning of a Fit, but during a good Part of it; of which Nature is a semitertian Fever. *Galen, de Diff. Febr. Lib. 2. Cap. 9.* The Author of the *Definitiones medicæ* describes it as attended with an Heat, mixed with a Rigor, and a remarkable Lowness of the Pulse, which is insensible to the Touch, and recedes, as it were, inwards: The Belly, in this Case, is tumefy'd, and a Rumbling is heard: The Tongue is extremely tumid, and irrigated with an acrid Humour, as with the Saliva. *Foessus.*

PHRONTIS, *φροντις*, properly signifies intense Cogitation, or painful Exercise of the Mind: But in *Hippocrates, Lib. 1. de Morb.* it is taken in a particular Sense for a Disease, where he says, *φροντις νοςος χαλεπη*, *Phrontis is a troublesome Disorder*; in which, as he describes it, the Patient feels, as it were, a Thorn pricking the abdominal Bowels; is extremely restless; avoids the Light and Company; is only pleased in Obscurity; and is afraid of every thing: The Membrane, which separates the Abdomen from the Thorax, swells outwards; the Patient

is very fearful of being touched, and suffers greatly thereby: He is molested with terrible Dreams; and imagines that he sees frequently frightful Objects, or dead Persons. This Disorder may be reduced to the Class of melancholy Affections. *Le Clerc. Hist. de la Med.*

PHRYCTE, *φρυκτη*, in Latin, *Frieta*, simply, or without its proper Substantive, is *Resina Colophonia*, black Resin, so called by way of Distinction from the liquid Sort, named *υγρη*. *Hygra*: It is called *φρυκτη*, from *φρυγω*, to torrefy, because it is burnt, or torrefy'd, as *Dioscorides* shews, *Lib. 1. Cap. 93.*

PHRYGANON, *φρυγανον*. A dry Twig, or Branch fit for Burning. *Varinus.* A Bundle of these dry Sticks, or *Phrygana*, is directed by *Hippocrates, Lib. 1. de Morb. Mul.* to be placed under the Bed of a Woman in Travail, in order to prevent its Feet from coming to the Ground, when it was let fall backwards, from the erect Posture to which it was before raised. This kind of Operation was called *σεισμος* (*Seismos*), *Concussion*, and order'd to be used for the Promotion of Delivery in difficult Cases.

PHRYGIUS LAPIS. *Offic. Boet. 406. De Laet. 134. Matth. 1380. Aldrov. Mus. Metall. 689. Calc. Mus. 385.* THE PHRYGIAN STONE.

The *Phrygian Stone*, so called, because it is used by the Dyers in *Phrygia*, is produced in *Cappadocia*. The best is pale, moderately ponderous, of no solid Contexture, and distinguished by white Lines, like the *Cadmia*: They burn it in the following manner; they first wash it over with the best Wine, then cover it with live Coals, and blow them continually; when they perceive it has changed its Colour, and is become redder, they take it out, and extinguish it in the same Wine; they put it under the Coals a second time, and do as before; and even burn it a third time, but take care, that it does not crumble away, nor pass into Soot.

The *Phrygius Lapis*, whether crude or burnt, is an efficacious Astringent: It moderately cleanses, also, and has an escharotic Virtue, and with Cerate cures Ambustions: It is wash'd like the *Cadmia*. *Dioscorides, Lib. 5. Cap. 141.*

It is good in Diseases of the Eyes, and for Ulcers, and other Purposes. *Galen.* It is at present unknown in the *English Shops.* *Dale.*

PHRYMION. A Name in *Oribasius, Collect. Medicinal. Lib. 12.* for the *Poterium* of *Dioscorides*. See POTERIUM.

PHTHARTICOS, *φθασις*, from *φθειρω*, to corrupt. Deleterious, deadly; an Epithet applied to Poisons, and their Qualities. *Galen, de S. F. Lib. 5. Cap. 18.* It is opposed to *αλεξιηριος*, *alexiterius*. See ALEXITERIA.

PHTHEINAS, *φθεινας*, from *φθισιν*, to corrupt, signifies tabific: Thus *φθεινας αι νοςος* are Diseases causing a Tabes, by a Defluxion from the Head upon the Lungs. *Lib. απει αδιναν*. Again, *φθεινας* put substantively, with the Epithet *ξηρα* (*xera*), signify dry Consumptions, which owe their Original to Tophi, or a Concretion and Induration of Humours in the Lungs, and seem to be opposed to *φθινδεις* (*phthinodes*); which means those who are in a Consumption, proceeding from a Suppuration, or Collection of Pus in the Lungs. See PHTHINODES.

PHTHEIRIASIS. See PHTHIRIASIS.

PHTHEIROCTONON. A Name for the Staveacre, so called from *φθισ*, a Louse, and *κτενω*, to kill, because it destroys Lice.

PHTHINICE, *φθινικη*. *Hippocrates, 2 Prorrh.* mentions a Disease called *νκος φθινικη*. The *Phthinic Disease*. The near Affinity between *phthinc* and *phthisic* has induced some Interpreters to believe that he there speaks of a Phthisis: But the most learned are convinced, that there is a Fault in the Text, and that, instead of *φθινικη*, we are to read *φθινικη* (*Phænicie*), *A Disease of Phœnicia*: They found their Opinion on their meeting with the Word *Phænicie*, in the ancient Glossaries on *Hippocrates*, where it is added, that *By this Word is to be understood a Disease common in Phœnicia, and other Eastern Countries, and probably the very same with the Elephantiasis*. What confirms this Explication is, that *Hippocrates*, in the same Place, treats of the Impetigo, Lepra, and Leuce. I shall only observe, that *Galen*, who is the Author of the Glossary above cited, might be mistaken in that respect, so far only as in supposing the Disease of *Phœnicia* to be what they called the *Elephantiasis*, whereas it is possible, that it might have no more than a bare Relation to it; and that, by this *Disease of Phœnicia*, *Hippocrates* might mean the Leprosy of the *Jews*, which was a Sort of Leuce, and might have something in common with the *Elephantiasis*, without being exactly the same Distemper. *Le Clerc, Hist. de la Med.*

PHTHINODES, *φθινωδης*. Tabid, or consumptive. An Epithet for Diseases, and Persons labouring under such Diseases. In *Hippocrates*, it sometimes signifies a Tendency to a Consumption.

PHTHINOPORON, *φθινωπορον*. The Autumn.

PHTHI-

PHTHIRIASIS. The lousy Evil, from *εθσιε*, a Louse.

The Phthiriasis is a lousy Distemper, to which Children are particularly subject, and sometimes Adults. *Swammerdam*, in his History of the Generation of Insects, tells us, that what we commonly call the *Nit*, is the true Egg from which the Louse is hatched; this Egg requires a moist and warm Place for its Matrix, and then its Multiplication is incredible, in a short Space; and some even suggest, that, in twenty-four Hours, a Louse is not only *Abavus* but *Tritavus*, that is, not only Great Grandfather's Father, but Great Grandfather's Great Grandfather. But if they miss this kindly Repository for their Eggs, as being exposed to the cold Air but for one Day, they are kill'd before they are hatched.

There are reckon'd four Kinds of Lice which molest human Bodies. 1. The *Pediculi*, so called, says *Isidore*, because they are more troublesome by the Motion of their Feet, than their Bite. These generally breed in the Heads of Children, especially if fore or scabby, and often in those of Adults, who are slothful and nasty.

2. *Crab-lice*, so called from their Resemblance to the Crab-fish, which lodge in the Arm-pits, Eye-lids, Eye-brows, and Pudenda of grown Persons. See *MORPIONES*.

3. *Body-lice*, which infest the Bodies, and breed in the Cloaths, of the Slothful and the Nasty: These are of a large Size, oblong, thick, and ending with an acute Point towards the Head.

4. Those generated, according to some, under the Cuticle, being found in the Hands and Feet, of a round Form, like the small Eggs of Butterflies; some of them so minute as to escape the Sight: By their creeping under the Scarf-skin, they excite an intolerable Itching; and sometimes, bursting the Skin, they discover themselves in Clusters; but they generally keep themselves concealed: They are named by some Authors, *Acari*, *Cyrones*, and *Pedecelli*.

The Cause of their Production is, by some, ascribed to the plentiful eating of Figs. *Galen* says, that the Flesh of Vipers breeds them; but, undoubtedly, Slovenliness and Nastiness are the chief Promoters of their Propagation, as affording fit Matrices for hatching their Eggs, and, also, proper Food for their Nourishment.

The lousy Evil is best prevented by wholesome Food, keeping the Body clean, and the Head carefully combed.

When they breed in the Head, let it be well combed, and washed with the following Lixivium.

Take of Wormwood, Stavesacre, Rue, and Horehound, each an Handful; lesser Centaury, half an Handful; Oak-ashes, five Ounces: Make them into a Lixivium, with Spring-water; in which dissolve, of common Salt, two Ounces; Salt of Wormwood, one Ounce: With which let the Head be washed.

Or anoint it with the following Ointment.

Take of the Oils of bitter Almonds, Rue, and Bays, each an Ounce; the Powders of Stavesacre, and Myrrh, each two Drams; Powder of Aloes, one Dram; salted Lard, two Ounces: Mix them with a little Vinegar. Or,

Take of Hogs-lard, Oil of Bays, and black Soap, each half an Ounce; Quick-silver, extinguished with Spittle, a Scruple; Myrrh, and Aloes, each half a Dram; Stavesacre, two Scruples; French Soap, two Drams: Reduce them, in a Mortar, to the Form of an Ointment.

For Body-lice, the wiping the Body with Gilders Cloths is reckon'd an efficacious Remedy, on account of the Quicksilver which they contain. Or,

Take of Stavesacre, and the Powder of red Arsenic, each an Ounce; common Salt, Olive-oil, and Vinegar, each a sufficient Quantity: Mix them together: Or,

Take of Stavesacre, and Powders of Nitre, and white Hellebore, each equal Parts; Oil of bitter Almonds, a sufficient Quantity: Mix them.

Take of Wormwood, and lesser Centaury, each an Handful; Lupins, one Ounce; Stavesacre, and Birthwort, each half a Pound: Boil them in a Lixivium, to which add two Ounces of Salt.

Take of Oil of bitter Almonds, one Ounce; Oils of Rue, and Stavesacre, each half an Ounce; the Powders of lesser Centaury, Myrrh, and Aloes, each a Dram; Quick-silver, half a Dram; rancid salt Lard, two Drams: Make them, with a little Vinegar, into a Liniment.

The following Lotions and Ointments are taken from *Sennertus*.

Take of long Birthwort, Lupins, and the Leaves of the Pine and Cypress, each equal Parts: Boil them in a sufficient Quantity of Spring-water, for a Lotion for the Head.

Take of the Root of Elecampane, two Ounces; of Bryony, half an Ounce; Beet, and Mercurial Soap, each an Handful; Lupins, an Ounce; Nitre, half an Ounce: Boil them for a Lotion for the Head.

Take of the Powder of Stavesacre, three Drams; Meal of Lupins, half an Ounce; white Agaric, three Drams; native Sulphur, two Drams; of the Gall of a Bull, half an Ounce; Oil of Wormwood, enough to make them into a Liniment.

Take of Stavesacre, an Ounce; Wormwood, and Rue, each half an Ounce; Sulphur, and Nitre, each two Drams: Mix and make them into a Powder, which reduce to the Form of a Liniment, with Oil of Bays.

Much stronger is this;

Take of the Powder of the Seeds of Stavesacre, an Ounce; white Hellebore, three Drams; Quicksilver, extinguish'd with Spittle, two Drams; Hogs-lard, and Oil of Bays, each a sufficient Quantity to make them into an Ointment.

In Infants and Children the Quicksilver must be omitted, as too hazardous, since milder Medicines will answer the Intention.

All the Bitters, four, and salt Things are here recommended, as, also, Mercury, which, by a singular Property, is said to destroy these Vermin, beyond all other Medicines; but it must be used with very great Caution. *Turner de Morbis Cutaneis*.

Ettmuller advises the Head to be wash'd with a Lixivium, in which have been boiled the Seeds of Stavesacre; and anointed with the following Ointment:

Take of the Oil of Spike, two Drams; the Oil of bitter Almonds, half an Ounce; the Ointment of Tobacco, six Drams: Mix and make them into a Liniment.

This will destroy all those Animals in one Night's time.

The Powder of the *Indian Berries*, sprinkled on the Head, infallibly destroys them. *Codrœchius* (who has wrote a particular Treatise of these Animals) says, he has a thousand times experienced the Use of this Powder; and that, in small Quantities, mix'd with Hogs-lard, a boiled Apple, or the like, applied to the Head, it miraculously destroys Lice, more effectually than the Stavesacre, and more safely than Quicksilver.

To destroy the Crab-lice lodging in the Groins of Adults, the anointing the Parts with black Soap is an infallible Remedy, neither is there Occasion to seek for any other. *Turner* proposes Lac Sublimatum; but that is a Medicine not so safe to be used about the Genital Parts. See *MORPIONES*.

Sennertus says, that the Loufiness of the Eye-lids is no contemptible Disorder; for it occasions sharp Fluxions, and the Eyes are at last much prejudiced by it: The same Author enumerates a great many Medicines for it; but there is no Occasion to mention them here; for these and all other Sorts of Lice are easily killed by anointing with black Soap.

Those who would see more relating to this Subject, may consult the following Writers; *Mercurialis, Lib. 1. Cap. 7. Lufitan. Cent. 3. Cur. 58. Zwinger. Theatrum Vit. Hum. Fol. 525. Tulp. Obs. Lib. 3. Cap. 40. Forest. Schol. Lib. 8. Obs. 15. Curdan. Lib. de Subtilitate, 9. Scaliger, Exercit. 94.*

PHTHIRION. The same as *PHTHIROCTONON*. *Blancard*.

PHTHISICUS. The same as *PHTHINODES*.

PHTHISIS.

Except the Heart, no Part of the human Body is so useful and necessary for the Preservation of Life, as the Lungs, the genuine Instrument of Sanguification, in which the chylous and nutritive Lymph is intimately mixed with the Blood, and assimilated to it: It is, also, by means of the Lungs we draw that vital Air, or ethereal and elastic Fluid, which communicates Strength to the solid Parts, and a due systaltic Motion to the Heart: But, as the Lungs are of more Use and Importance, than most other Parts of the human Body, so they are subject to more terrible Disorders, which we shall endeavour to account for, from their Fabric and Texture. The Lungs, then, consist of membranaceous Vesicles, which receive the Air; of Nerves, which contain an highly subtle Fluid; and of various Kinds of Vessels,

Vessels, appropriated for the Blood and Lymph; so that, in consequence of so many small Vessels, it is not to be wondered at, if there should happen frequent Congestions, Stagnations, and Obstructions of the Blood in them, which lay a Foundation for various Disorders, among which one of the most considerable is a Phthisis, which is a Consumption or Wasting of the Body, accompanied with a slow Fever, a Difficulty of Breathing, a troublesome and continual Cough, and a copious Expectoration of corrupted and purulent Phlegm and Matter. This Disorder arises from an injured State of the Lungs, by means of an Abscess, or a scirrhous or ulcerous Corruption.

There are various Species of Consumptions accompanied with a Fever, an uneasy Cough, and an Expectoration of peccant and corrupted Matter, which, with respect to their Prognostics and Cure, are widely different from a Phthisis, and ought not, by the Physician, to be confounded with it, since they happen without any considerable Injury to the Lungs. Thus it is certain from Experience, that a Consumption frequently arises from a simple Gonorrhoea, or nocturnal Pollutions long-continued, as we are informed by *Hippocrates* in *L. 6. Ep. Sect. 8. 47.* Nor is it uncommon to observe a Consumption arising from excessive Venery, and a Cacochymy, or depraved State of the nutritious Juices in scorbutic Habits, whilst the Texture of the Lungs is as yet sound and entire. Almost the same thing may be observed in the Atrophy of Children, in which, on account of a scirrhous Induration of the mesaraic Glands, the Chyle cannot easily and freely pass to the Blood; in consequence of which, Nutrition is prevented; and, by this means, the superior Parts are consumed and wasted, the Belly inflated, the Patient afflicted with a slow Fever, a Difficulty of Breathing, a Cough, and a preternatural Solubility of Body. Nor is that Species of Consumption always to be accounted a Phthisis, in which there is an Extenuation of Body, a slow Fever, a Cough, and more or less sanious Stools; for it frequently happens, that, whilst the Compages of the Lungs is found, a Sanies is conveyed to the Breast from other Parts, such as the Mesentery, the Uterus, and Kidneys, when labouring under an Abscess, or Ulcer. A Phthisis is, also, to be accurately distinguished from a chronical Cough, accompanied by a copious Expectoration of Phlegm, and succeeded by a Consumption, Loss of Strength, and preternatural Heat, since this last Species of Consumption in the Autumn and Spring frequently seizes Persons subject to catarrhus Disorders, and afflicts them for a considerable time; but may be happily removed by the Force of Nature, and the Assistance of Art.

But, that there may remain no Mistake in distinguishing a Phthisis from other Disorders, we shall here give the Signs of it from *Caelius Aurelianus*, who, in *Lib. 2. Cap. 14.* has the following Passage: "A Phthisis is frequently produced by a previous Spitting of Blood, and sometimes by a gentle, but long-continued Catarrh, or Cough, by which the Lungs are, at first, gently lacerated, and then ulcerated. A Phthisis is accompanied with a latent Fever, which begins in the Evening, is alleviated in the Morning, and attended with a violent Cough at those times. At first a small, but afterwards a large Quantity of sanious Spit is expectorated. Those who fall into a Phthisis, in consequence of an Hæmorrhage, discharge, at first, a bloody Spit, which, afterwards, becomes feculent, and then livid, or green, and, last of all, white and purulent, sometimes salt, and, at others, sweet; whilst the Voice is hoarse, and shrill, the Breathing difficult, the Cheeks red, and the rest of the Body of a cineritious Colour. A Phthisis is, also, accompanied with a Loathing of Food, and a preternatural Thirst. Some Patients have, as it were, a Sense of a Wound in their Lungs, and even expectorate Fibres of them. The Pulse is weak, hard, and formicular. A Phthisis is, also, accompanied with an Inflation of the Feet. As the Disorder increases, a Flux is brought on; and the Phlegm discharged, when thrown upon live Coals, is of a fetid and disagreeable Smell." *Hippocrates*, in *Lib. de Morbis*, delivers the Signs of an approaching Phthisis in the following manner: "A Patient, says he, is rendered Phthisical, when the Phlegm falls down from the Head upon the Lungs; at first, for the most part, insensibly; and excites a gentle Cough: The Spit is, also, bitterer than usual, and sometimes there is a gentle Heat of the Body. But, in Process of Time, the Lungs, and especially their internal Parts, are exulcerated by putrid Phlegm; the Breast is oppressed by a Sense of Weight, and acute Pain is perceived both in the anterior and posterior Parts, and the Heat of the Body becomes more intense. The farther a Phthisis proceeds, the more unmixed Pus is discharged, the more intense the Fever becomes; the Cough is more violent and continued; the Patient is racked with a Sense of Hunger, and a Diarrhoea comes on."

Having thus specified the Marks and Characteristics of a Phthisis, we now come, from a Consideration of the Phenomena

observable in the Bodies of those who have died of that Disorder, to investigate the Causes of the several Symptoms with which it is accompanied. First, then, in all Persons, who have died of a Phthisis, either the Right, or Left, or both Lobes of the Lungs adhere so firmly to the Pleura and Ribs, or to the Vertebrae of the Back, that they cannot, without great Difficulty, be separated with the Knife; and the Part, in which they adhere, is generally full of a putrid Serum, or Ichor. In some Phthisical Patients, especially such as have been afflicted with an Empyema, I have observed one Lobe of the Lungs totally consumed by the previous long-continued Disorder of the Breast, and the other inflamed; which Circumstances prove the Cause of the Patient's Death. For the most part, there are, also, in one of the Lobes of the Lungs, Impostumations, or closed Ulcers, of different Bulks, and sometimes more, sometimes fewer in Number; which, when laid open, contain partly a thick, and partly a fluid Pus. When an Incision is made, especially in the superior Part of either of the Lobes of the Lungs, there are found pretty large Cavities filled with Pus and Phlegm, almost of the same Kind and Colour with that before evacuated by the Mouth. Sometimes, also, in the Lungs, when become knotty and scirrhous, there are found spreading and fistulous Ulcers, like Cancers, which prey upon the adjacent Parts, and contain a sanguineous and fetid Ichor. There are, also, Instances of scirrhous Tubercles, hard, like the Stones of Fruit, and containing a tophaceous, calculous, and putrid Matter, found in the Lungs. It is, also, to be observed, that, in Phthisical Patients, the Heart is, for the most part, flaccid, and its Vessels infarcted with polypous Concretions; a memorable Instance of which is found in *M. N. C. Decad. 2. Obs. 35.* In the Pericardium, also, and frequently in the Cavity of the Breast, there is a large Quantity of impure and fetid Serum. As for the Abdomen, and other Parts, the Vessels are generally without Blood, the Liver large and pale, the Glands of the Mesentery tumefied, the Omentum destroyed, and all the Fat, both of the internal and external Parts, appears to the View: Those, who desire a farther Knowledge of the Phenomena observed in dissecting Phthisical Patients, may consult *M. N. C. Decad. 1. An. 1. & 2. Decad. 2. An. 4. Obs. 45. 118. An. 8. & 9. Cent. 3. & 4. Obs. 118. Cent. 8. Obs. 105. Cent. 9. Obs. 16. & 26. Cent. 10. Obs. 143. Vorzsch. Obs. 100. Lessius, Obs. 11. Pawius, Obs. 22. Platerus, Lib. 3. Obs. 189. & 690. and Pexoldus, Obs. 63, 64, 74. and 92.*

Hence it is sufficiently obvious, how violent the Injury done to the Lungs must be in a Phthisis, in order to induce Death. We now come to inquire into the Causes productive of such an Injury; among which the most considerable are scirrhous Stagnations in the vascular, vesicular, and membranous Substance of the Lungs; which, if considerable, are not, without the greatest Difficulty, to be removed, on account of the continual and reciprocal Passage of the Air. *Hippocrates*, in *Lib. de intern. Affect. Cap. 4.* speaks concerning this in the following manner: "When the Lungs receive Blood, or a salt Phlegm, without again discharging them, but retain them impacted in them, Tubercles are formed, and come to a Suppuration in the Lungs. From the Beginning of the Disorder, through its whole Course, there is an acute, dry Cough, a Rigor and Fever, a Pain in the Back and Breast; and sometimes in the Sides. The Breathing, also, is so violent, as to force the Patient to sit in an erect Posture. Then the Pus is corrupted, and expectorated in large Quantities." *Aretæus*, also, in *Chron. L. 1. Cap. 8.* has given us nearly the same Description of Phthisical Patients: "Before, says he, Phthisical Patients can discover their Disorder by manifest Signs, especially by putrid and purulent Spit, they have Tubercles, or scirrhous Knots, formed of a viscous and tough Matter, which gradually becomes hard in their Lungs. Thus they live in a consumptive State for several Years before these Tubercles are corrupted, and formed into Abscesses. If there are such Tubercles in the Lungs, the Patient is afflicted with a dry, strong, and sonorous Cough, an acute and pungent Pain of the Breast, a Difficulty of Breathing, and a kind of Uneasiness and Resistance in the Breast, from the profound Attraction and Inspiration of the Air. Then the Cough becomes more violent, especially after strong Exercise."

Though this Doctrine of *Hippocrates* and *Aretæus* is strictly agreeable to Truth, yet we shall, for the better Illustration of the Subject, add some Observations. These Tubercles, filled with a viscid Matter, constitute the Beginning of the Abscesses, which are nothing else, but Ulcers of different Bulks, surrounded in a peculiar Membrane. These Impostumations, when small, are sometimes expectorated by Cough; but when they become large, and break internally, Abscesses and Cavities are formed; a purulent copious Spit, mixed with Phlegm, is expectorated; and then a true Phthisis is present. Sometimes, also, these scirrhous Knots, which are long

long so latent, as to produce only a dry Cough, in consequence of their acrid Matter retained and pent up, degenerate into cancerous, fistulous, spreading, and fetid Ulcers; which so consume and putrefy the adjacent Parts, that, according to *Forestus*, in *Lib. 16. Obs. 14. and 53.* Portions of the *Aspera Arteria* have been spit up; and, according to *Sylvius*, in *Obs. Lib. 2. Cap. 12.* Ramifications of the Pulmonary Vein have been evacuated in Coughing.

There are, also, other Beginnings of a Phthisis, especially an *Hæmoptysis*, when ill-treated, or when a large Quantity of Blood is lost; for then the Blood is easily extravasated from the small Vessels of the Lungs into their Air-bladders; and, becoming stagnant, it putrefies, corrodes the adjacent Parts, forms Sinuses, or is reduced into Nodes and Tubercles: And I can, from my own Experience, affirm, that almost half of the Phthisical Patients, who have subjected themselves to my Care, received the Origin of their Disorder from a previous ill-cured Spitting of Blood. Among the Beginnings of a Phthisis we may, also, with the Antients, reckon a salt Catarrh for a long time affecting the Breast, and which is frequently succeeded by a Phthisis.

We now come to inquire into the Origin of these Causes. The Stagnation, then, of the Blood firmly impacted in the Vessels is the Origin, not only of a Phthisis, but, also, several other Disorders; for when the Fluids do not circulate, they lose their former temperate Nature, become impure, saline, and acrid; or, by filling the minute Vessels too full, produce Obstructions, Indurations, and Scirrhuses. Now these fatal Stagnations of Blood and Humours, in the minute Vessels of the Lungs, proceed from too impetuous and copious Congestions of the Humours to a Part already too faint and languid, so that the Veins cannot return so much as they received from the Arteries.

But there are various other Causes, which are capable of inducing such a fatal Stagnation of the Blood and Humours in the Lungs, and, consequently, contributing, in a remote manner, to the Production of a Phthisis. The most considerable of these Causes is, an hereditary Disposition, conveyed from Parents to Children; in consequence of which they readily fall into a Phthisis, when any slight Cause occurs. This is confirmed, not only by Experience, but; also, by the Authority of the most celebrated Physicians. Thus *Fernelius*, in *Patholog. Lib. 5. Cap. 10.* informs us, "That such as are sprung from consumptive Parents, by a kind of hereditary Right, become consumptive; and we often observe, that a Phthisis rages in such Families." The Reason of this is obvious; for since this Proclivity to Diseases received from the Parents principally consists in a bad Conformation of the solid Parts, or such a Laxity of the Fibres and Vessels, as is insufficient, with a proper Effort, to promote the Motion of the Fluids conveyed to them; the Reason is plain, why those, who have naturally weak and flaccid Lungs, should be more subject than others to Disorders of the Breast, and especially to a Phthisis. Among the Persons subject to this Disorder, we may, also, with *Hippocrates*, reckon those of narrow and depressed Chests, whose Scapulæ are prominent, like Wings; whose Ribs are protuberant, whose Necks are oblong, or who are gibbose.

It is, also, certain, not only from Experience, but, also, from the Authority of *Hippocrates*, in *Aph. 9. Sect. 15.* that Persons of slender and tender Habits, of tall Statures, and between the eighteenth and thirty-fifth Years of their Age, are highly subject, not only to a Spitting of Blood, but, also, to a Phthisis; for no other Reason, but because, at this Period of Life, the Vessels are more tender, and easily expanded; than in Persons farther advanced in Years. But generally a Spitting of Blood and Phthisis happen most readily to full-grown and young Persons, who, being of a sanguineous and choleric Habit, are easily subject to Commotions of Mind, and have had frequent *Hæmorrhages* from the Nose, in their Childhood, especially when they are over-heated by too violent Exercise; for then the Blood, being copiously and impetuously conveyed to the superior Parts and Breast, cannot return freely to the Heart through the minute Vessels of the Pulmonary Artery and Vein. Hence, in the larger Ramifications, the stagnant Blood must necessarily produce Expansions, Ruptures, and Extravasations.

This Disorder is, also, frequently produced by an unseasonable Drinking of spirituous Liquors. Nor is it difficult to prove this, since it is almost universally known, that, in the Countries productive of Wines, all the Disorders incident to the Breast, and especially a Spitting of Blood, and a Phthisis, are far more frequent, than in other Climates. Hence *Hoesferus*, in *Hercule Med. Lib. 1. Cap. 3.* justly concludes, that a Phthisis being so endemial, and destroying such Numbers in *Lower Austria*, is owing to nothing, but their excessive Use of generous Wine, especially in the Morning.

We now proceed to consider those Causes which produce the Defluxion of saltish Humours in the Breast. This Humour the Antients in general asserted to come from the Head, as if

all Humours conveyed to the Breast proceeded from it: But this Opinion is not sufficiently perspicuous, and founded on Experience. Too copious a Congestion of serous Blood to the Breast, and especially to the Fauces, and Whole of the *Aspera Arteria*, which is covered with an internal glandular Coat, is rather to be accused, especially in serous Patients, and those, who, during their whole Lives, have been subject to Stuffings of the Head, Coryzas, and frequent Catarrhs; for if more Blood and Serum is conveyed to the glandular Parts through the Arteries, than can return through the Veins, there is a great Secretion of the Serum, which, increasing in Quantity, is coagulated by the Admission of the free Air, and, at last, often expectorated in large Quantities. In Process of Time, when the Disorder continues, and other Causes concur, such as Crudities arising from a bad Diet, or Indigestion, an obstructed Perspiration, or profound Grief, the Serum acquires a saline and corrosive Nature; in consequence of which, in Process of Time, it corrodes the Vesicles and tender Vessels of the Lungs.

From what has been said, we may easily understand, how injurious cold and northerly Winds, rainy, cloudy, and cold Weather, which, by relaxing the Tone of the Pulmonary Vessels, accumulate the Sordes in them, must necessarily be to consumptive and phthisical Patients; so that, with *Hippocrates*, in *Aph. 10. Sect. 3.* we may justly affirm, that the Autumn is prejudicial to consumptive Patients. And, indeed, the Influence of the Air is not more considerable in producing any Disorders, than those of the Breast, and especially a Phthisis. Hence *Tulpius*, in *Obs. Med. Lib. 2. Cap. 10.* justly assigns the State of the Air; as the Cause why Impostumations, and Phthisical Indispositions, are so frequent in *Holland*, in marshy Places, and such as are exposed to an Air perpetually impregnated with putrid Vapours.

We now come to investigate those Disorders, which generally dispose to a Phthisis, among which we may justly reckon the Small-pox. I know many Children, and young Persons, who, after the Small-pox, have been subjected to various Disorders of the Breast, which have lasted for several Years, such as a dry Cough, an acute Sense of Pain, a Difficulty of Breathing, a Consumption, and a slow Fever, who, at last, upon the Formation of an Abscess, have died, among whom was the Prince of *Saxony*. Almost the same Misfortunes are produced after the Measles; for, in these exanthematous Disorders, the Serum is highly acrimonious; and, not only in the Beginning of these Disorders, remaining firmly in the nervous Membranes of the Lungs, excites a dry and uneasy Cough, but, also, leaves a considerable Weakness in the Lungs, an Expulsion of the peccant Matter being made to the Surface of the Body. Now, if the Patients, before the whole peccant Matter is carried off by Transpiration, expose themselves to the free Air, especially in the Spring or Autumn, it readily happens, that the Remains of the peccant Matter, receding to the internal Parts, acts upon, irritates, and exulcerates the weakened Lungs: See *Thomas Bartholine, Cent. 4. Inst. 43.* and *Michaeli, in Prax. Clin. Part. 1. Lib. 3. Cap. 5.*

It, also, frequently happens, that, after Effervescences of the Skin, such as the Itch, the Gutta Rosacea, scorbutic and purple Spots, are repelled, a Phthisis is often produced. The same Disorder is, also, frequently caused by the Suppression of copious Sweats, by the unseasonable Treatment of Ulcers of the Head and Feet; and by the too speedy Consolidation of Fontanels. Nor are there wanting Instances, in which a Phthisis has been produced by the Repression; or unskilful Treatment; of an Erysipelas, and Gout-pains; for since, by this means, the acrid and caustic Matter is retained in the Habit, and resorbed through the Veins by the Mass of Blood, hence it happens, that, being conveyed to the nervous and tender Membranes of the Lungs, it is firmly impacted in them, and, by irritating, constricts them. Hence the constricted Vessels must, at last, be obstructed and corroded. I, also, remember to have seen a Phthisis produced, in consequence of curing Tumors under the Axillæ, and behind the Ears; so, also we may readily, suppose a Phthisis frequently generated by a Suppression of the hæmorrhoidal and menstrual Discharges.

There are, also, other Instances, though not common, in which, besides a Spitting of Blood, a Phthisis may, in some Patients, be induced by other *Hæmorrhages*; and this principally happens in those Patients, who, either from hereditary Disposition, or from other Causes, having brought on a Want of due Tone in the Lungs; are disposed to this Disorder. This Doctrine is, also, confirmed by Experience, which informs us, that not only a Redundance; but, also, a Defect of Blood has a strong Tendency to produce Stagnations. Hence those, who place the proximate Cause of a Phthisis in a Plethora, only palpably contradict Reason and Experience.

It is disputed, among Physicians, whether a Phthisis is contagious: But I do not hesitate to affirm, that it is; or, at least, to assert, that, if the Miasma of this Disorder is not sufficient

to induce a Phthisis, it is, nevertheless, capable of promoting it, if there is already a Disposition to it; for all ulcerous and corrupted Matter is of so surprising and contagious a Nature, that many malignant and contagious Disorders, such as the Itch, the Leprosy, the Small-pox, old fordid Ulcers, pestilential Carbuncles, and Dysenteries, are to be accounted for from hence. Nor am I of Opinion, that the Nature of the Phthifical Miasma is so malignant, as suddenly, and, at a Distance, to prove infectious; but that it only does so to such as continually converse with Phthifical Patients. This Doctrine is confirmed to us by some of the most celebrated Physicians. Thus *Riverius*, in *Cent. 1. Obs. 99.* gives us an Instance of a Maid, who became Phthifical by attending her Mistress, who was in that State, Day and Night; and, in *Cent. 4. Obs. 92.* he mentions a Girl infected by her Sister, who had become Phthifical by giving the Breast to a Man in that Condition. *Schenckius*, also, in *Lib. 3. Obs. 133.* informs us, that the Spit of Persons labouring under a confirmed Phthisis is so contagious, that a Physician, only by smelling it, became Phthifical. A Phthisis, produced by Contagion, is, also, described in *M. N. C. Cent. 9. Obs. 26.*

As for the Prognostic of this Disorder, that a true Phthisis is a violent Disease, and not to be cured without the greatest Difficulty, is not only known to the Vulgar by many fatal Instances, but, also, confirmed by long Experience to the Physician. Thus *Hippocrates*, in *Lib. 1. de Morb.* informs us, "That when Consumptions happen, they necessarily prove mortal." He is seconded in this by *Galen*, in *Lib. de Locis affect. Cap. 8.* and 5 *Meth. Medend. Cap. 1. & 8.* *Celsus*, in *Lib. 3. Cap. 22.* informs us, "That a true Phthisis ought to have proper Measures taken with it in the Beginning, since, when it becomes inveterate, it is not easily cured." Among latter Authors, see, with respect to the Difficulty of curing a Phthisis, *Forestus*, in *Observ. 45. Lib. 16.* *Rodericus a Fonseca*, *Tom. 1. Consult. 58. Tom. 2. Consult. 48.* and *Timæus a Guldenkleer*, in *Epist. Lib. 3. Cap. 2.* where these Words occur: "I ingenuously confess, that, during the whole Course of my Practice for thirty-seven Years, I could never totally restore such as had their Lungs ulcerated; though I left no Means untried, which could in the least contribute to the Cure of this Disorder: Nor have I seen any one in this Condition totally recovered by the most celebrated Physicians."

But tho' the Cure of a Phthisis is very difficult, and even impossible, when the Disorder discovers itself by such manifest Signs, as to appear to the Vulgar, yet I would not affirm the like of every Phthisis, especially when as yet in its Beginning; for I know several Instances, in which, after Wounds of the Lungs, a Spitting of Blood, a Rupture of the Vessels, a Pleurisy, and Peripneumony, the Patients have laboured under an Abscess and Impostumation of the Breast, but have, nevertheless, been totally cured, by taking due Measures in time. Besides, I, and others, have frequently observed many sprung from Phthifical Parents, who have had their Breasts depressed, and their Scapulæ prominent, like Wings; who, being addicted to Anger, had in their Youth frequent Hæmorrhages from the Nose, without any external Cause; who have had saline Defluxions on the Breast and Fauces, accompanied with a dry and violent Cough, even in the Summer; who have surprisingly lost their Flesh, and perceived a Heat in the Palms of their Hands, whilst their Cheeks as yet remain florid; totally cured by proper Medicines, and a due Regimen. I have, also, seen Abscesses of the Lungs, where a large Quantity of white equal Pus, of one Colour, has been expectorated, but where the other Parts of the Lungs have not as yet been corrupted, nor spoiled, with scirrhus Indurations, and ulcerous Fistulas, and where the Vessels of the Heart and Lungs have not been infarcted with polypous Concretions, happily cured by proper Remedies, and a due Regimen.

But it may here be asked, by way of Objection to my Doctrine, Why is it, that even beginning Phthifical Disorders are so rarely cured? But this is frequently brought about by various Causes, the most considerable of which seems to be, that we are not always sufficiently ascertained of the Presence, Nature, and genuine Causes, of a true Phthisis, by evident diagnostic Signs. Thus *Fernelius*, in *Patholog. Lib. 5. Cap. 10.* informs us, "That a latent Abscess, at first, neither known to the Physician, nor Patient, is often the Cause of this Disorder; in consequence of which, the Patient neither desists from his usual Business, nor thinks himself afflicted with any Disease; but bears the secret Cause of his Death in his Breast, without knowing it. However, some have, in a Quarter of an Hour, died unexpectedly of this Disorder, in whom, when dissected, no other Cause of their Death could be discovered, than the sudden Breaking of an Impostumation in the Lungs; by which the Patient was suffocated. But all such Patients are, before the Rupture of the Abscess, afflicted with a Cough, a Spitting of Blood, an Heaviness of

"the Body, a slight Oppression of the Breast, and a Difficulty of Breathing, which rarely accompany a Consumption, but are Signs frequently common to other Disorders." Besides, we may be convinced of the difficult Diagnostics of a Phthisis by the frequent Errors committed, in this respect, by the most celebrated Physicians. Thus many are accounted Phthifical, who, labouring under a chronical Cough, accompanied with a catarrhal Defluxion, discharge a thick Matter of a whitish-green Colour; or who are afflicted with a stomachic, or hypochondriac Cough, arising from the Sordes of the Primæ Viæ falling upon the Lungs. A moist Asthma, especially, when it arises after a Suppression of the Menfes, or Hæmorrhoids, and a consequent Regurgitation and Congestion of the Humours to the Breast, is frequently taken for a Phthisis. It is, also, certain, that a slow Fever, accompanied with a Cough, a sudden Extenuation of the Body, and colliquative Sweats, which sometimes succeed Arthritic Pains, the Gout, or Scurvy, is, also, confounded with a Phthisis; whereas, in the former of these Disorders, there is no Solution of Continuity in the Lungs. Since, therefore, the Knowledge of a Pulmonary Consumption is so difficult, hence we may infer, how uncertain and precarious the Cure of this Disorder must be.

There is, also, another equally important Cause, which hinders the Cure of a Phthisis, and of an Hætic arising from it; which is, that there are few Physicians, who know, with due Caution and Circumspection, to use proper Medicines for this Disorder; for, if in any Disorder, certainly in a Phthisis, the Caution of the Physician is necessary, on account of the so great Contra-indication of Remedies; for a Phthisis requires laxative and moistening Medicines, gentle Traumaties and Astringents, and sometimes mild Anodynes, which, unless exhibited with due Caution, at a proper time, and with sufficient Regard to the Circumstances of the Patient, are so far from affording any Relief, that they rather increase the Disorder.

Having taken a general View of the Prognostics of a Phthisis, we now come to consider its Terminations or Events, whether salutary or fatal. First, then, 'tis a very bad Sign, when the hætic Heat is more and more increased; when, in the Morning, the Pulse is quicker than usual, and when the Flesh and Strength are consumed, without being in the least recruited by Sleep. Which Misfortunes generally the rather happen, if, when there is a large Quantity of Pus, there is only a small Portion of it expectorated; for then it becomes more acrid and filthy, and, when thrown on the Coals, diffuses a fetid Smell, the more the Fever is, also, increased. If, besides, there is a great Difficulty of Breathing, accompanied with a Dread of Suffocation; if the Patient cannot lie on that Side, where the injured Lobe of the Lungs is; if his Breath is of a cadaverous Smell, and his Voice hoarse; if he is afflicted with colliquative Sweats, a Diarrhoea, and a Swelling of his Feet, sometimes accompanied with Pain; 'tis certain that Death is not far off. If the Expectoration is totally suppressed, the Patients gradually, but especially in an erect Posture of the Head, die, retaining their Reason.

But greater Hopes are to be entertained, if there is still a considerable Degree of Strength, and the Respiration free, if the Appetite and Digestion are entire, if the Spit expectorated is white and equal, and if there is no hætic Fever. The Hopes of Recovery are still the greater, if the Patient is of a good Habit of Body; if he has a large Chest; has no hereditary Disposition to the Disorder; and if his Heat becomes more mild, and the Substance of his Stools is compact; for, by means of these Circumstances, Phthifical Patients, especially when they use a proper Regimen and Medicines, may often protract Life for a great many Years. Thus *Willis*, in *Lib. de Medicament. Operat. Sect. 1. Cap. 6. de Tabe seu Phthisi*, speaks in the following manner: "It sometimes happens, says he, that a Cavity, or, perhaps, two are formed in the Lungs with callous Sides every-where, so that the Matter collected in them is not convey'd to the Mass of Blood, but is every Day totally expectorated, tho' its Quantity should be very large. Persons in this Situation have only, as it were, a Fontanel in their Lungs; and, although they should every Morning expectorate a large Quantity of thick, or yellow, and even, as it were, purulent Spit, and a small Quantity of the same throughout the Day, yet in other respects, they enjoy sufficiently good Health, breathe freely and easily, eat and sleep well, have a due Quantity of Flesh, or, at least, are blessed with a good Habit of Body, and are frequently cured. Hence some are said to have laboured under a Phthisis for thirty or forty Years, and even not to have had their Lives shortened by this Disease." And, with respect to Ulcers of the Lungs, 'tis observable, that they may continue for several Years without any considerable Decay of the Body, whilst the other Viscera remain sound and entire. See *Kerkringius*, in *Specilegio Anatom. Obs. 72.* and *Bartbol. Cent. 2. Hist. 14.* Nor is this difficult to be conceived; for as Nature sometimes advantageously expels peccant and recrementitious Matter by an Ulcer of the Extremities, or by an artificial Ulcer, such as a Fontanel, so I see no Reason, why the same Circumstance should not sometimes happen in Ulcers of the Lungs.

The Physician ought, also, to be well acquainted with the particular Signs which manifest the Recovery of phthical Patients, which are, by *Aretæus*, in *Lib. 3. Cap. 1.* excellently enumerated in the following manner. "When phthical Patients begin to grow better, the Cough seizes less frequently, and at longer Intervals; a larger Quantity of sanious and more moist Spit is expectorated; much aqueous Matter is evacuated by Stool; the Urine is copiously discharged, tho' it has as yet no Sediment; the Voice becomes more clear and sonorous, the Sleeps are sufficiently long, the Præcordia relieved, and the Pain remitting is, sometimes, transferred to the Scapulæ; the Difficulty of Breathing is gentle and less frequent, but accompanied with an Asperity of the Voice; and, when these Things happen, the Patients recover."

The CURE.

The Application of proper Remedies, in a Phthisis, is widely different, according to the different State of the Patient, with respect to Strength, the Time and Causes of the Disorder. The Method of treating a Phthisis in general, may be divided into curative, mitigative, and preservative. The first is to be taken when there are such Causes, such Circumstances, and such a Condition of the Patient, as to lay a Foundation for expecting a Recovery, by means of proper Medicines. The mitigative Method is to be taken, when the Force of the Disease is so great, that it will not yield to the best Medicines; in which Case we are to mitigate the most urgent Symptoms, prevent such as are worse, and, by that means, protract Life as long as possible. And as the preservative Method is the best, the most easy and safe, against all terrible Disorders, so it is of the highest Importance in a beginning Phthisis.

As for the curative Method, it is principally to be used, when, in consequence of a broken Impostumation, an open Abscess is formed, and a large Quantity of Pus expectorated; which most generally happens after the unlucky Termination of a Pleurisy, or Peripneumony; after a Spitting of Blood; after Wounds of the Lungs, whilst the rest of their Substance is sound, and neither corroded, nor scirrhus. In this Case, the best and safest Cure is Milk duly used, by which I have known many phthical Patients brought from the Gates of Death, and restored to perfect Health; for no Medicine has longer, or more universally, been found efficacious in the Cure of a Phthisis, than Milk.

The most ancient Physicians warmly recommended Milk for the Cure of this Disorder, as is obvious from various Passages of *Hippocrates*. And *Galen*, who greatly extols Milk for a Phthisis, in *Lib. 5. Meth. Medend. Cap. 12.* mentions a Place called *Stabias*, to which, on account of the Purity of the Air, the fine Pasturage for Cattle, and the consequent salubrious Quality of the Milk, there was a great Conflux of phthical Patients, just as, in our Days, the Valerudinary and Infirmary resort to the medicinal Springs. This Method of Cure was known in *Italy* above an hundred Years ago; for the celebrated *Andreas Baccius*, in *Lib. 4. de Theriis*, informs us, "That the *Neapolitan* Physicians, as the last Resource, send phthical Patients, such as spit Blood, or those afflicted with any Ulcers of the Thorax to *Stabias*, with so great Success, that some remain in that healthful Part all their Lives."

Aretæus, also, one of the most skilful of the ancient Physicians, in *Lib. 6. de Morb. Chron.* does not hesitate to affirm, that phthical Patients stand in need of no other Thing for their Recovery, but the liberal Use of Milk. *Trallian*, also, who, in his *Work de Re Medica*, greatly extols Milk in all Disorders of the Breast, in *Lib. 7.* has the following remarkable Passages: "If the whole Body, not having Nourishment convey'd to it, begins to decay manifestly, and if there is not much Pus in the Thorax, Milk alone ought to be exhibited to them; and, for this Purpose, that of Asses is best, because it is an excellent Purgative." In another Place he speaks in the following manner: "I have frequently seen those afflicted with a Difficulty of Breathing, relieved by the due and proper Use of Milk, which removes the peccant Matter lodged in the Cavities of the Lungs." And, in the Part already quoted, when speaking of an Hæmoptysis, he says, "Let all those afflicted with a Spitting of Blood, use Milk; for no Medicine nor Aliment is so useful and beneficial to them as Milk; and those, who, in the Beginning of this Disorder, use Milk alone for a long time, are totally recovered. Thus, says that Author, I knew a certain Man, who, by using Milk for a whole Year, and abstaining from Wine, was totally freed from a Spitting of Blood, and Pus, so that he did not afterwards fall into a Phthisis."

It may, also, be shewn from Reason, without the Evidence of Experience, that Milk is an efficacious Remedy in Disorders of the Breast. But 'tis to be observed, that all Milks are not of the same Kind, and of the same Efficacy for all Purposes; since, according to the Diversity of Animals, and their respective Foods, they are possessed of different and peculiar Qualities, which are to be considered apart. First, then, Asses Milk, which was always greatly esteemed by the Antients, contains a great deal of sweet Serum, but a very small Quantity of earthy, caseous, and

pinguious Substance; for which Reason, it is not easily coagulated, and consequently but very unfit for Butter and Cheese. Its Whey is abstergent, laxative, moistening, and proper for correcting the Acrimony of the Humours. Goats Milk does not contain so large a Quantity of Whey, as that of Asses; nor is it of so laxative and abstergent a Nature, but of a thicker Consistence. And as Goats eat the Leaves of Trees, which contain something of a resinous Quality, their Milk is very efficacious for the Consolidation of suppurated Parts. Cows Milk is more pinguious, contains a large Quantity of Earth, but less Whey; for which Reason it generally yields a great deal of Butter and Cheese. This Species of Milk is of a tempering, nutritive, and consolidating Virtue. Womens Milk, for medicinal Purposes, is preferable to all others; for it is the sweetest of them all, and its nutritive Quality is sufficiently observable in Infants. The Virtues of Milk are, also, different, according to the Diversity of Herbs and Pasturage, which Animals eat. Hence Milk, in the Spring, is highly salutary, because, at that time, the Vegetables abound with temperate Juices; whereas Milk in the Winter is accounted less salutary, because then Animals feed on Hay and Straw.

Hence we may easily judge, that in all Disorders of the Breast, and an universal Decay or Wasting of the Body, Milk may be accounted a Medicine proper for answering all Intentions: For, first, we find nothing more efficacious than Milk, especially that of Cows, for correcting, mitigating, and allaying the Acrimony of the Humours, which is the principal Cause of the Irritation, the violent Cough, and the Corrosion; for as this Species of Milk is capable of breaking the noxious Force of corrosive arsenical Poison, so 'tis much more efficacious in sheathing up and obdounding the saline Spicula lodged in the Fluids of the human Body. But when the Intention is to deterge viscid Humours, to cleanse Ulcers, to render the Body soluble, to provoke Urine, and derive the Afflux of the Humours from the Part affected, Asses Milk is of all others the most efficacious, on account of the large Quantity of sweet abstergent Whey it contains. When wounded Parts are to be consolidated and conglutinated, Goats Milk is best for answering the Intention. For nourishing wasted Parts, and restoring Strength, nothing is more effectual than Womens Milk, especially when suck'd immediately from the Breasts, without any Access of the Air, by which its spirituous Principle is exhaled, and flies off. With respect to this Milk, the learned *Wepfer*, in *Epist. ad Verazscham*, speaks thus: "There is certainly a divine Quality both in Womens and in Asses Milk, which I could not have believed, if I had not had the Evidence of my Senses for it; for by their means I have, with my own Eyes, seen Persons rendered, as it were, entirely new; and, by a due Use of these two Species of Milk, many have acquired not only a sounder Habit, but, also, a better Colour, and more Strength."

Not only Milk, but, also, Whey, when duly prepared, is highly efficacious, and even sometimes more powerful than Milk, in curing the chronical Disorders of the Lungs, and the other Viscera: For if the Obstructions of the small Vessels of the Viscera, which generally lay a Foundation for chronical Disorders, are to be removed; if the viscid and tenacious Humours are to be dissolved; if the Emunctories are to be kept open, and the Heat of the Parts allay'd by proper Moisture; Whey, prepared of whatever Milk, is preferable to the Milk itself. See *LAC*.

Hence the Reason is obvious, why not only in the Cure of Disorders of the Breast, but, also, in that of the most terrible and obstinate Diseases, the most skilful Physicians, both among the Antients and Moderns, have always greatly recommended Milk. But the whole Secret consists in the due Use of it, both for mitigating and curing Diseases; for, if either Aliments or Medicines should be improperly used, they prove more detrimental than beneficial. This should be adverted to, especially by those of the Moderns, who strenuously endeavour to destroy and discredit the medicinal Use of Milk.

But tho' the Use of Milk and Whey is sufficient to answer many Intentions in the Cure of a Phthisis, yet 'tis equally certain, that its divine Energy, in producing different Effects, may be assisted and augmented by various means: For, first, the Efficacy of Milk is surprisingly increased, and rendered truly Medicinal, if the Animals, whose Milk we use, are fed with Substances accommodated to the Intention of Cure; for, from the different Aliments which Animals and Women use, the Milk they afford, also, acquires a different Quality, since 'tis certain from Experience, that a Purgative exhibited to the Nurse is, with the Milk, convey'd to the Child upon whom it operates. The Antients are, therefore, to be commended, who, in order to render their Milk more efficacious, gave their Asses and Goats, among their Food, such Herbs as were possessed of a specific Virtue against the Disease they intended to cure. Hence *Galen*, in the Part before-quoted, mentions the Herbs growing in *Stabia*, such as Grass, Knot-grass, Bastard-baum, the Bramble, Ivy, Shrub-trefoil, the Maltich-tree, and some others, by eating which the Milk of the Animals was rendered highly salutary. This Custom I have successfully used, when, in order to the Absterion and Depuration of any Part affected, I have ordered Barley, Scabious, Scordium, Chervil, *German* Leopard's-bane, Hyssop, Paul's Betony, and white Horehound,

to be mixed with the Food of the Animals, from which the Milk was to be taken. But, when the Intention was to consolidate, I have ordered their Food to be mixed with the several Species of Plantain, Ground-ivy, Agrimony, Yarrow, Sanicle, the greater Confound, and Lungwort.

But there are still other Methods of augmenting the medicinal Virtues of Milk, according to various Intentions; the most considerable of which is the mixing Milk with mineral Waters; a Practice, by me, first introduced in *Germany*; for when, upwards of thirty Years ago, I was, by a chymical Analysis, investigating the Principles of the mineral Waters in *Germany*, both hot and cold, and found no acid and truly vitriolic Salt in them, but rather one of an alkaline and neutral Kind, together with a subtile Earth, and fine Particles of Steel, I mixed Milk with these Waters, and that with such Success, as, in curing and alleviating many chronical Disorders, to find happy Effects, which could neither be obtained by Milk alone, nor by the Waters exhibited separately from Milk. Hence 'tis surprising, and even to be lamented, that there formerly were, and still are, Numbers of Physicians, who, in a Phthisis and Exulcerations of the Lungs, think cold mineral Waters highly prejudicial; and dare neither to prescribe them alone, nor in Conjunction with Milk. Before our Times, however, two celebrated Physicians recommended cold mineral Waters in Disorders of the Lungs. The most ancient of these is *Raymundus Joannes Fortis*, in *Cent. 2. Consil. 20, 27, 28, 30.* and especially in *Consil. 34.* where he speaks in the following manner: "At a proper Season of the Year, cold mineral Waters I have found to be highly useful in Ulcers of the Lungs; and to them I have ordered the Patients to have recourse, as the last and most effectual Expedient; since, if the Disorder did not yield to them, I could hardly think, that it could be removed by Decoctions, Milk, and other Things of a like Nature." And the celebrated *Morton*, a later Physician of the *English* Nation, in his *Phthisiologia*, recommends medicinal Waters in Disorders of the Lungs, and when they are afflicted with steatomatous Tumors, accompanied with a gentle hectic Heat, on which Occasion, he speaks in the following manner: "I have seen, during a Course of several Years, many Phthical Patients have their Appetites and Strength restored, their Cough and hectic Heat lessened, their Respiration rendered freer, and, at last, their Disorder totally removed, without any Relapse, by means of these Waters."

But though I would not prescribe strong mineral Waters in Disorders which arise from a Solution of Continuity in the Lungs, especially if very considerable, yet I can from Experience affirm, that mild mineral Waters, abounding with an alkaline Salt, such as the *Salteran* and *Caroline* Springs, mix'd either with the Milk of Ases, or that of Goats, afford surprising Relief, not only in a chronical and obstinate Cough, accompanied with an oppressive Pain of the Breast, a Difficulty of Breathing, a slow Hectic, and a Consumption, but, also, in a deep Suppuration of the Lungs, and a true Phthisis; for, by this Admixture of the mineral Waters, the Milk is rendered more efficacious and powerful in dissolving the tough and viscid Matter, removing the Obstructions of the capillary Vessels, and deterging and cleansing the Ulcers. But using this Mixture of Milk with medicinal Waters is still more indicated, when such Diseases of the Lungs are supported by hypochondriac, scorbutic, arthritic, or calculous Diseases, which frequently happens.

This Method of correcting Milk by various Admixtures was not only known, but, also, practised, by the ancient Physicians. Hence, in *Hippocrates*, *Trallian*, *Aetius*, and *Aretaeus*, there are several Instances in which they prescribed Milk mixed with Water, for Phthical Patients; or Hydromel, mixed with Milk; to which *Hippocrates*, in *Lib. 2. de Diata*, ascribes a surprising Efficacy, affirming, that it softens the Lungs, allays the Cough, procures an Expectoration of the Spit, and promotes a Discharge of the Urine. The celebrated *Sponius*, in *Aphorism. novis, Sect. 5. Aph. 99.* not only extols the external and vulnerary, and, also, the internal Use of Lime-water, in curing an Impetigo, and Leprosy; but, also, commends the Mixture of the same Water with Milk in the following manner: "Besides, says he, this Water, mixed with Milk or Whey, produces surprising Effects in internal Ulcers, Diarrhoeas, and Dysenteries, as I was informed by Mr. *Declasure*, a celebrated practical Physician in *Gascony*." Nor shall I condemn this Method, since in Dysenteries, accompanied with an Exulceration of the Intestines, I have always found Milk, mixed with the *Salteran* Waters, an incomparable and highly efficacious Medicine.

But let us inquire with what other Remedies Milk may be commodiously joined: For curing, therefore, violent Disorders of the Lungs, in a true Phthisis, Infusions and Decoctions, prepared of vulnerary and pectoral Herbs, have not only been highly esteemed by Physicians, but, also, by the common People. The Herbs most recommended for this Purpose, are the greater Confound with its Roots, *Sarcena* Confound, Coltsfoot,

sharp-pointed Plantain, spotted Lungwort, Sanicle, Spicewort, Scabious, Paul's Betony, Agrimony, Ground-ivy, white Horehound, Yarrow with its Tops, St. John's-wort with its Flowers, Rose-flowers, and others of a like Nature, which are to be boil'd either in Ale or Water, adding Figs, Honey, and the Seeds of Fennel, and stellated Anise. Nor are there wanting Instances of considerable Benefit done to Phthical Patients by these means; since when there is only a simple Abscess without a scirrhus Induration, or a polypose Concretion, they contribute much to the Consolidation of the affected Parts. It must, however, be own'd, that these Decoctions, in consequence of their astringent Quality, have produced very unhappy Effects; especially, when, in the Beginning of the Disorder, the Lungs are affected with hard Tubercles, or when they are unseasonably used to stop a Spitting of Blood; for by this means the extravasated Blood is easily coagulated, and the minute Vessels obstructed; so that there happens a far greater Stagnation of the Blood and Humours in the Lungs, a Circumstance which has the strongest Tendency to produce a Phthisis. But, in order to prevent these Dangers, such Infusions and Decoctions may properly be mixed with an equal Portion, or only half the Quantity, of Milk; by which their astringent Quality is, in some measure, destroy'd, and the Acrimony of the Humours corrected.

If the *Primæ Viæ* are to be cleansed of any Sordes, Senaleaves, Rhubarb, and Manna, may be commodiously infused, and gently boil'd either with Milk alone, Milk and Water, or Milk diluted with temperate mineral Waters; since, otherwise, Phthical Patients, especially of delicate Habits, are easily injured even by mild Purgatives. I have, also, observed, especially when there was a large Quantity of acid Sordes in the *Primæ Viæ*, that a Dram or two of the *Magnesia*, which is nothing else but an highly subtile Flour of Quick-lime elutriated, mixed with a few Ounces of Goats Milk, proved a safe and excellent Purgative.

In order to alleviate a violent Cough, which destroys the Strength and Sleep, to correct the Acrimony of the Humours, and relax the constricted Parts, the Antients, with great Success, used their various Diacodiums, the Principal of which are composed of the Juice and Seeds of the Poppy. But the Moderns, for the same Purposes, use the *Pilulæ de Cynoglossa*, and the *Pilulæ de Styrace*, which, when exhibited in a small Dose, are sufficiently efficacious: But all these Medicines are render'd still more efficacious, if they are exhibited about Bed-time, in a Draught of Milk. It is, also, sometimes expedient, when there is a great Afflux of the Humours to the Breast, and when, in protracted and phthical Coughs, a great Corruption is to be dreaded, to make moderate Use of such Remedies as provoke Urine, in order to derive the Impetus of the Humours from the Breast: For answering which Intention, we may use Milk and Whey, the diuretic Virtues of which are in some increased, by making them into an Infusion with Seeds of *Selleri*, Parsley, *Cretan* Daucus, Gromwell, and Violets, well bruised together.

Besides those already mentioned, there are still other Remedies highly beneficial, not only for the Depuration, but, also, for the Consolidation, of those Ulcers of the Lungs, which constitute a Phthisis. The most considerable and celebrated of these are, the pectoral and vulnerary Balsams, of which, tho' there are various Kinds in the Shops, yet we shall only mention those invented by the most celebrated Physicians. The best, then, is the justly celebrated Balsam of *Meibomius*, prepared in the following manner:

Take of the old Oil of St. John's-wort, two Ounces; of Sperma-ceti, six Drams; of the best *Venice* Turpentine, three Drams; of Dragon's-blood, one Dram; and of Laudanum Opiatum, six Grains: Mix all together, and let the Dose be from one to two Drams.

Nor have I found the following Balsam less efficacious:

Take of the Oil of sweet Almonds, two Ounces; and of the Flowers of Sulphur sublim'd by Quick-lime, two Drams: Boil over a gentle Fire: Then add, of the Balsam of Capivi, one Dram; of Sperma-ceti, and Bees-wax, each half an Ounce; of the Extract of Saffron, half a Dram; and of the Oils of Anise, Fennel, and Mace, each ten Drops.

Another Balsam for answering the same End may be prepared thus:

Take of the best *Prussian* Honey, and Mountain Diacodium, each one Ounce; of the aqueous Essence of Myrrh, inspissated, half an Ounce; of the Flowers of Sulphur, and the

the Extract of the Tops of Yarrow, each two Drams; of the Extract of Saffron, half a Dram; and of the Oils of Mace and Safafras-wood, each eight Drops.

These noble and efficacious Balsams, when their Use is indicated, cannot be exhibited in a better, or more proper Vehicle, than a sufficient Quantity of the Milk of Asses, Goats, or Cows.

Having considered the curative Method in a Phthisis, we now come to treat of the palliative, or mitigative Method, by which we endeavour to render Phthifical Patients free from the most terrible and deplorable Symptoms, and to protract their Lives as long as possible. This Method is principally to be used in those Patients, in whom there is an intense Heat, gradually consuming the Flesh and Strength, which is generally excited by a Mixture of the purulent Matter with the Blood, and by which the Blood, being contaminated, is put into an Effervescence, and becomes more acrid and saline. In order, therefore, to extinguish this preternatural Heat, and correct the Acrimony of the Humours, nothing is more effectual than due Doses, either of Asses, or Womens Milk, exhibited in Conjunction with a proper Regimen. For answering the same Intention, Emulsions of the Four cold Seeds, and white Poppies, Decoctions of Barley, or Hartshorn, the Waters of Roses, Lilies of the Valley, and black Cherries, and Julap of Roses, may be frequently exhibited. The Virtue of these is greatly increased, if they are exhibited with the temperate nitrous Powders, which are of great Efficacy in a beginning Hæctic. These Powders may be prepared in the following manner:

Take of Mother of Pearl, and Crabs-eyes, each two Drams; of purified Nitre, one Dram; and of the distilled Oil of Mace, four Drops: Mix all together, and exhibit one Dram for a Dose.

Nor, in order to allay the Violence of the Symptoms, are we to neglect Baths of sweet Water mixed with a sufficient Quantity of Cows Milk, and purified Nitre; by which means the constricted, tense, and dry Parts, are relaxed and moistened, the Cough allayed, the Heat lessened, and the Sleeps rendered more sweet and gentle; for which Reason such Baths are sometimes highly proper in the curative Method.

When the Lungs are affected with a callous and inveterate Ulcer, and a Spit, mixed with Pus, is daily expectorated, by which the Flesh and Strength are considerably impaired, the principal Intention is, by correcting the acrid and saline Dyscrasy of the Blood and Humours, to prevent the farther Exulceration of the Lungs: This End is excellently answered by temperate Infusions of Ground-ivy, the Herb Costus, Chervil, Paul's Betony, Scabious, Coltsfoot, and Lungwort. But such Infusions must be frequently, and for a long time, used. In ferous Persons, and such as are subject to Catarrhs, when the Disorder is brought on, and supported, by a large Quantity of impure Humours falling on the Lungs, in order to prevent the greater Congestion of the Humours to the Breast, for ordinary Drink the Patient may use a Decoction of China-root, and of Red-saunders prepared with Raisins, a Drink highly recommended by Authors for this Purpose.

In such a Condition of the Patient, we are, as much as possible, to endeavour to preserve the Tone of the Lungs. This Intention is excellently answered by Sugar of Roses frequently exhibited in the foregoing Decoction. This simple Remedy was not only known and commended by the *Arabians*, and especially *Avicenna*, but, also, some of the Moderns think, that this alone is sufficient to mitigate, and even to remove, a Phthisis. See *Zacutus Lusitanus*, in *Prax. Admir. Lib. 1. Obs. 139.* and *M. N. C. Decad. 2. Ann. Obs. 19.* and *Sylvaticus*, in *Consil.*

We are now come to consider the preservative Method of Cure, which consists in preventing a Phthisis in those who are subject to it by Nature, Age, Habit, or Errors in Regimen, by a seasonable Removal of its Causes, or in removing it, or preventing its further Progress, by proper Medicines, when it is already present. We have already sufficiently shewn, that in sanguineous, choleric, and slender Habits of Body, from the Age of eighteen to thirty-four, a Phthisis, or purulent Spitting, accompanied with a violent Cough, and a Difficulty of Breathing, is not only generally produced by a Spitting of Blood, but, also, frequently recurs; in which Case, the principal Intention of the Physician ought to be, to remove this Spitting of Blood, or, at least, so to mitigate it, as that it may not degenerate into a Phthisis.

In order, therefore, to remove a Spitting of Blood, besides the Efforts of Nature, there is no more safe and efficacious Remedy, than Venesection, duly repeated, till the End is obtained. This is confirmed, not only by Experience, but, also, by the Authorities of the greatest Physicians. Thus the cele-

brated *Boerhaave*, in his *Praxis Medica*, informs us, "That, if we intend to cure a Person naturally disposed to a Phthisis, we are carefully to prevent his having a Spitting of Blood; otherwise we cannot cure him. Hence, about the seventeenth Year of his Age, Venesection is to be twice or thrice used; Gestations are, also, to be used; and in this Method we are to continue till the twenty-fifth Year of his Age. I know a Family, the Father, Mother, and all the Children of which, died Phthifical, except one Son, whom I preserved by this Method, who is now above fifty Years of Age, has lived above the Time ascribed by *Hippocrates* for the Access of a Phthisis, and has no bad Symptoms attending him."

Besides Venesection, great Moderation, with respect to the Non-naturals, is to be used; for which Reason, 'tis necessary, that such Patients should carefully guard against violent Commotions, both of Body and Mind, and abstain from spirituous Liquors, and every thing which is capable of throwing the Blood into an Orgasm. And, since a Spitting of Blood, preposterously treated with strong Astringents, easily degenerates into a Phthisis, such Medicines are to be as carefully abstained from, as if they were as much Poison. In such a Case, it is rather expedient to use Milk and Water for Drink; gentle Laxatives of Manna and Sena-leaves; Powders, which allay the Ebullition of the Blood, prepared of Shells, Mother of Pearl, Crabs-eyes, and Nitre; with each of these we may commodiously join the Decoctions or Infusions above-mentioned.

But there is nothing so effectual either for preventing a Phthisis, or removing it, when begun, as a due Regimen and Method of living; which, among the Antients, *Celsus*, in *Lib. 3. Cap. 22.* has elegantly prescribed in the following manner: "A Phthisis is, in the very Beginning, to be attacked by proper Remedies: If the Patient's Strength admits, a long Voyage is to be made, and a Change from a rare, to a more dense, Atmosphere is highly beneficial; for which Reason it is expedient, phthifical Patients in *Italy* should sail to *Alexandria*. If any Circumstance forbids Sailing, the Patient is to be removed in a Bed, or some other manner. He must, also, abstain from Business, and every other thing which has a Tendency to discompose his Mind; he is, farther, to indulge himself in Sleep; Desluxions are to be carefully guarded against, lest, perhaps, being somewhat relieved, his Condition should again become worse. For this Reason Crudities, the Influence of the Sun, and the Access of Cold, are to be prevented. The Mouth and Fauces are to be covered, and the Cough removed by Medicines appropriated to that Purpose. In such a State Water is to be drank, and Milk may, also, be commodiously exhibited."

Celsus, in prescribing a dietetic Regimen proper for the Cure of a Phthisis, justly and principally recommends Exercise, and Choice of Air: Of almost the same Opinion is our justly celebrated *Sydenham*, who tells us, that he has prevented many Phthises, and cured many Phthifical Patients, by prescribing Riding. He, also, thinks, that 'tis of no small Importance what Air they breathe: "For, says he, Phthifical Patients are much more happily cured in the Country, than in the Town, since the Air of the former purges their Lungs, and contri- butes more to their Recovery, than any other Remedy." We are more effectually convinced of this, by considering by what Causes it principally happens, that in *Holland* and *England* so many die of a Phthisis; and that, in half of these, this Disorder is brought on by a Spitting of Blood. For, certainly, this is to be ascribed, not only to the gross Aliments, since these Nations use rich Food, eat much Flesh, and Sea-fish with high Sauces, by which is generated a crude Chyle and Blood, which, easily stagnating in the Lungs, dispose to a Phthisis; but this is rather principally to be ascribed to the Impurity of the Air, which is much impregnated with Smoke, by which the Bronchial Glands and Membranes, together with the minute Capillary Ramifications of the Pulmonary Artery, are dried; by which means a Consumption of the Lungs is, in Process of Time, brought on. The same Misfortune is, also, frequently produced by cold Weather, and Northerly Winds, which almost always prove offensive to the Lungs, especially of old Persons, and such as are disposed to a Phthisis; so that a considerable Number of Persons are destroyed by this means. But nothing is more prejudicial, than exercising the Body strongly by Walking or Running against such a Wind; for by this means, I have frequently known Abscesses produced in the Lungs both of Men and Horses.

If any Disorder requires not only an accurate dietetic Regimen, but, also, a cautious and circumspect Use of Medicines, 'tis certainly a Phthisis, of which there is so great a Contradiction of Remedies, that, unless they are all duly considered, the Physician may easily fall into an Error, and, instead of relieving, injure his Patient. Thus, in order to promote Ex- pectoration,

pectoration, sweet and pinguious pectoral Syrups, incrassating Substances, and Preparations of Honey, are requisite; by the immoderate Use of which, however, we destroy not only the Tone of the Lungs, but, also, that of the Stomach; and by that means produce a larger Quantity of Crudities, and a greater Congestion of Humours in the Breast. The slow, drying, hectic Heat requires Diluents, moistening Liquors, and Milk; which, however, in a moist Cough, increase the Afflux of the Humours to the Breast. The sordid putrid Ulcers require balsamic resinous Medicines, such as Myrrh, *Venice Turpentine*, Balsam of Capivi, *Peruvian Balsam*, and the other consolidating and vulnerary Balsams; which, however, by increasing the intestine Motion and Heat of the Fluids, generally produce bad Effects.

We find the same Difficulty in those uneasy, and almost convulsive Commotions of the Breast, which, in long and violent Coughs, are excited by the Acrimony of the Humours; for these require to be alleviated by Anodynes, Preparations of Poppies, oleous and somniferous Substances; which, however, when frequently exhibited, surprisingly destroy the Strength: The corroded, dissolved, and ulcerated vascular Substance of the Lungs requires consolidating and gently astringent Medicines; but since they retain in the Habit the extravasated Humours, which ought to be eliminated, and suppress Expectoration, they, by these means, increase the Corruption: Besides, if any one intends the Consolidation of Ulcers, he ought to prevent the Afflux of the Humours to the Part affected; which is obtain'd both by vulnerary Substances, and Decoctions of the Woods, and by Powders composed of *Armenian Bole*, Sealed Earth, and Blood-stone; but, when there are Tophi, Tubercles, and Indurations of the Lungs, these are enlarged by such Medicines. In order to extinguish the hectic Heat, nothing is more beneficial and efficacious, than the nitrous Powders: But even these do not at all times produce the desired Effect; since they readily prove purgative, and lessen the Sympathetic Force of the Stomach and Intestines. Milk is, also, of singular Efficacy in the Cure of these Disorders: Yet, in young and phlethoric Habits of Body, where there is a beginning Phthisis, and many acid Crudities, accompanied with a slow Fever, I have often observed it highly prejudicial.

As Venesection is highly useful, not only for the Cure of a beginning Phthisis, but, also, for preventing it in young Persons, so it is very improper, with a curative Intention, when the Strength is greatly exhausted by the Disease, and the Heat; unless, perhaps, we should take away an Ounce, or an Ounce and an half, of Blood, for the sake of Ventilation. Drastic Purgatives, such as Preparations of Aloes, Scammony, and Hellebore, but more especially Emetics, are highly prejudicial, not only by impairing the Strength, but, also, by carrying off the temperate Moisture of the Body: Hence, when the Humours are to be derived from the Breast, and gently evacuated by Stool, these Ends are most commodiously obtain'd by Laxatives prepared of Manna, Tamarinds, Rhubarb, Agaric, and Sena-leaves: But if, when exhibited in a small Dose, these should not be sufficient for diminishing the Redundance of Humours, or if the gross and viscid Humours, which obstruct the minute Vessels, are to be resolved and eliminated, we may, instead of these, substitute the Pilulæ de Succino Cratonis, or Pills prepared of Gum Ammoniac, Saffron, Mercurius Dulcis, Extract of Rhubarb, and Aloes.

Motion and Exercise, and especially Riding, is highly commended for the Cure of a Phthisis and Hectic, by the most skilful Physicians, both antient and modern. But in the Beginning of the Disorder, where the Patient is young, and the Habit plethoric, it often does more Harm than Good, by exciting a Spitting of Blood. Nor is it expedient, where the Lungs are violently injured, and a Vomica is suspected, since, by the brisk Motion of the Horse or Chariot, a fatal Inflammation may readily be brought on. But 'tis far otherwise in hypochondriac Consumptions, in which moderate and often repeated Exercise is highly beneficial.

The more temperate, pure, and serene the Air is, the more beneficial it is to Phthisical Patients; for a moist Intemperature of the Atmosphere is surprisingly injurious to the Lungs, which are already relaxed, tumid, and infarcted. 'Tis, also, highly expedient, to impregnate the Air surrounding the Patient, with the balsamic Particles arising from Fumigations of Mastich and Amber; or to render the Air drawn in balsamic, by holding a Piece of the best Myrrh in the Mouth, till it is dissolved by the Saliva.

Since the Beginning of a Phthisical Exulceration is frequently produced by a saline Catarrh, or a certain acrid caustic Matter, convey'd, by Translation, from other Parts to the Lungs, in order to derive this Afflux elsewhere, and evacuate the Humours, we may safely and advantageously use the actual Caustery; by the Application of which, between the Scapulæ, and

in the Neck, we read of an imminent Phthisis happily removed, in *Riverius*, in *Obs. Cent. 2. Obs. 67. 78. Cent. Obs. 92.* and in *Schenkius*, *Obs. 56.*

In order the more effectually to institute the Cure of a Phthisis by Milk, either alone, or mixed with mineral Waters, the following Cautions are to be observed:

1. We ought diligently to inquire, whether the Strength of the Stomach is sufficient to digest, and again expel, this Species of Medicine.

2. 'Tis expedient, that, before the Use of the Milk, the Primæ Viæ should be well cleansed from viscid and acid Humours; which Intention is most effectually answer'd by a laxative Infusion of Manna, whose Virtue is augmented by the Addition of a sufficient Quantity of Tartar.

3. On the first Days, it is expedient, every Morning about six or seven, and every Afternoon about five o'Clock, to drink six or eight Ounces of Womens, or Asses Milk, and afterwards gradually to increase the Quantity.

4. After the Patient has for six or eight Days, drank the Milk in this manner, a gently laxative Medicine, and such as has a Tendency to evacuate the Sordes, is to be interposed, and repeated every sixth Day.

5. He ought never to use Wine, nor Malt-liquors, for Drink, but rather Ptisans of Barley, Hartshorn, and Citron-peel. He must, also, carefully abstain from Aliments of hard Digestion, and such as generate bad Juices. On the contrary, Broths prepared of Tortoises, Cray-fish, Veal, Fowls, Lettuce, and Garden Succory, are of singular Service.

6. In order to augment the concoctive Force of the Stomach, which in a Phthisis is very languid, 'tis expedient, between Meals, to exhibit some balsamic, pectoral, and stomachic Elixir, such as that made of the best Myrrh, Saffron, Nutmegs, Orange-peel, Marsh-trefoil, and Liquorice-root.

In those excessive and colligative Sweats, which, in phthisical and hectic Disorders, exhaust the Strength, besides Whey and Emulsions, the Species de Hyacintho, mixed with a small Quantity of Nitre, and half a Grain of Laudanum Opiatum for a Dose, afford singular Relief. But, if, in consequence of the Violence of the Cough, by which the Mass of Blood and Humours is greatly exagitated, an excessive Profusion of Sweat should be produced, a gentle and corrected Opiate, such as the Pilulæ de Styraçe, or the Pilulæ Wildegansii, may be commodiously exhibited with some temperating Powder, since, by removing the Cough, it checks and lessens the Sweats. But, if, besides the Cough, a colligative Heat of the Blood should, also, prove the Cause of the Sweat, *Morton* and *Pitcairn* are not afraid to prescribe the *Peruvian Bark*, with one Grain of Laudanum Opiatum. *Hoffman*.

If an Ulcer has so corroded the Substance of the Lungs, that the whole Habit of the Body is by that means wasted and consumed, the Patient is said to labour under a Pulmonary Phthisis, or Consumption of the Lungs.

The Origin of such an Ulcer may be deduced from any Cause capable of so stopping and detaining the Blood in the Lungs, that it must necessarily degenerate into a purulent Matter.

These Causes may be reduced,

1. To that very Habit and Temperament of Body, in consequence of which, the Patients first begin to spit Blood, and are afterwards afflicted with an Erosion and Exulceration of the Lungs. This Habit or Temperament of Body consists, first, in the Tenderness of the arterial Vessels, and the Impulse of the Blood, when in any Degree acrimonious. Such a Constitution is known by the Sight of the small and tender Vessels, and of the whole Body; by the Length of the Neck; a flat and narrow Thorax; depressed Scapulæ; an highly red, thin, dissolved, acrid, and hot Blood; a very white, and sometimes a rosy blooming Complexion; a bright and shining Skin, Chearfulness of Temper, and an early Ripeness and Subtlety of Genius. Secondly, in such a Weakness of the Viscera, as to occasion those Aliments, which are in their own Nature too tenacious to create Obstructions, Putrefactions, and Acrimony; and in consequence of these unhappy Circumstances, to exulcerate the corroded Vessels after a previous Spitting of Blood. This Weakness of the Vessels is known by a slight Fever, a dry and gentle Cough, a preternatural Heat, an increased Redness of the Lips, Fauces, and Cheeks; appearing about the time the new Chyle enters the Mass of Blood; by a Propensity to Sweat, during Sleep; by a Weakness and great Difficulty of Breathing upon the smallest Motion. Thirdly, it appears at that Age, when the Vessels, having acquired their full Growth, resist the farther Efforts of the Fluids to lengthen them, whilst the Blood, in the mean time, is increased in Quantity, Acrimony, and Impetus; so that it appears between the sixteenth and thirty-sixth Year of the Patient's Age, and earlier in Girls than in Boys; because the former sooner arrive

at their full Growth, than the latter. Fourthly, in an hereditary Disposition to the Disorder: What is said under the Article *FIBRA*, compared with the Circumstances just now mentioned, are sufficient to explain, ascertain, and prognosticate the Nature, Causes, and Effects of Blood-spitting. Now, this Effect, or a Spitting of Blood, is brought on, and accelerated,

1. By an Interception of the usual Evacuations, especially of Blood, such as the Hæmorrhoids, Menfes, or Lochia; a Suppression of Hæmorrhages of the Nose, and Neglect of usual Venesection, especially in plethoric Habits, and those who have lost any of their Limbs.

2. By any great Violence or Force apply'd to the Lungs in Coughing, Crying, Singing, Running, violent Efforts of the Body, Anger, or any Wound inflicted, by whatever Cause or Instrument.

3. By acrid, saline, or aromatic Aliments; by Drink of the like Qualities; by a particular Manner of living, or by any other Disease, which have a Tendency to increase the Quantity, Acrimony, Velocity, Rarefaction, and Heat of the Blood. Hence it is, that this Symptom happens so frequently after acute Fevers, the Plague, the Small-pox, and Scurvy.

Hence it arises accompanied with a slight Pain, a moderate Heat, a Difficulty of Breathing, and an Oppression of the Thorax. The Blood discharged from the Lungs is generally florid, scarlet-coloured, and frothy, full of small Fibres, Membranes, arterial, venous, or bronchial Vessels; a Cough, a Noise, or Rattling of the Lungs, a soft, small, and undulating Pulse, a Difficulty of Breathing, and a saltish Taste in the Mouth, having preceded.

It is cured, first, by liberal Venesection, repeated every third Day, for four times, till the inflammatory Crust entirely disappears. Secondly, by refrigerating, inspissating, styptic, and lenient Medicines, long persisted in, and sometimes intermixed with very mild Balsamics. Thirdly, by managing the six Non-naturals in such a manner, as that they may be contrary to the Causes of the Disorder already enumerated; and especially by a moderate Regimen, and mild Aliments, continually persisted in, to which a Milk-diet peculiarly belongs. And, fourthly, by correcting the specific Nature of the Cause, or particular Disease, which has produced it.

When a Spitting of Blood has happen'd, and is removed, the Patient is to have Blood taken from him every six Months for some succeeding Years; but the Quantity is to be gradually lessen'd each time, that at last the Practice may be left off, without any Detriment.

But, if, in consequence of the Violence of the Disorder, the preposterous Use of Styptics, or a Neglect of the Method of Cure already prescribed, there should, after the Spitting of Blood, arise a continually increasing Difficulty of Breathing, a wandering Horror, an Heat and Redness of the Cheeks, a dry and gentle Cough, a slight hectic Fever, a preternatural Thirst, a Weakness and Sense of Weight in the Thorax; these Symptoms import, that the Wound from which the Blood was expectorated, has already begun to change the Matter collected about its Lips, and under the Crust of dried Blood, into Pus; and this Collection is degenerating into a conceal'd Vomica, which, breaking, terminates in an open Ulcer of the Lungs.

This Collection of Matter, besides the Causes already mentioned, also, arises from any Peripneumony terminating in an Apostem; which may be known from the Signs specified under the Article *PERIPNEUMONIA*.

Besides, an Empyema may corrode, waste, and consume the Lungs; in which Case, the same Disease is produced with that occasioned by an Ulcer primarily formed in their Substance. This is known to be the Case by the Signs specified under the Article *EMPYEMA*.

Hence 'tis obvious, what Signs discover an Ulcer of the Lungs, even of the conceal'd Kind; how many Causes and Sorts there are of such Ulcers; and consequently, how many different Kinds of Phthises, or Consumptions, there may be.

Now the Effects of an Ulcer of the Lungs already formed, but concealed, and commonly called a *Vomica*, are generally these following: The Acrimony, Quantity, and Putrefaction of the Pus, are daily increased; the Membrane containing it is dilated, corroded, and macerated; the Blood-vessels, and those of the Bronchia, are converted into Pus; the whole Substance of the Lungs, or at least, of one of their Lobes, is converted into a purulent Matter; the Patient is afflicted with a continual dry Cough, or such an one as, only by the Concussion in Coughing, produces an Abrasion and Expectoration of the Spit; the Blood convey'd into the Ulcer, is converted into Pus; the Vomica in the Lungs spreads, and is propagated; then it breaks at last into the Ducts of the Larynx. Sometimes there is a suffocating Secretion, and sometimes a daily and copious Expectoration, accompanied with a Cough of a Pus, which subsides in Water, is of a thick Consistence, sweet, pinguious, fetid, white, red, yellow, livid, cineritious, full of Strigments, and which, when put upon a live Coal,

smells like stale roasted Flesh. Then the Vomica breaks into the Cavity of the Thorax. Hence the Respiration becomes highly difficult, and the Symptoms of an Empyema appear. Then the Respiration is most difficult; the whole Blood and Chyle are converted into Pus; the Preparation of the nutritive Juice is totally destroy'd; the Solids are almost totally consumed; there is an hectic Fever, accompanied with a small and languid Pulse; an intense Heat of the superior Parts; an Hippocratic Face, and a Redness of the Cheeks. There is an unaccountable Uneasiness, especially towards the Evening, a preternatural Thirst, profuse Sweats in the Night, red Pustules on the Face, Neck, and Breast, cedematous Swellings of the Hands and Feet, great Weakness, Hoarseness of the Voice, a Falling of the Hairs, an Itching all over the Body, accompanied with watery Pustules, a Gripping, a frequent and weakening Diarrhoea, the Stools discharged in which are yellow, fetid, purulent, and cadaverous; a Suppression of the Spit; and at last, Death.

Hence we may draw the following Rules:

1. An hereditary Phthisis is the worst of all, and not to be cured, but by preventing a Spitting of Blood.

2. A Phthisis, arising from a Spitting of Blood, produced by external Causes, without any previous inward Defect, is, of all others, the mildest, if all other Circumstances are alike.

3. A Phthisis, in which the Vomica is suddenly broken, and the expectorated Pus white, well concocted, smooth, and in Quantity corresponding to the Largeness of the Ulcer, without Thirst, but with a good Appetite, due Digestion, laudable Secretion and Excretion, is curable, though with Difficulty.

4. A Phthisis, produced by an Empyema, is incurable: And,

5. A Phthisis, accompanied with an Expectoration of heavy, solid, fetid, sweet Spit, together with the Symptoms last enumerated, is to be despaired of.

When a Vomica is already formed in the Lungs, the Intention of the Physician ought to be, to mature and break it with all Expedition; which is done by a Milk-diet, Riding on Horseback, tepid Steams, and expectorating Medicines: And, when it is broken, it is requisite,

1. To guard and defend the Blood against the purulent Contagion.

2. As soon as possible, to evacuate the Pus from the Ulcer, and to cleanse and consolidate its Lips. And,

3. To use such Aliments as are of easy Digestion, that they may not only pass through, but, also, be changed and duly assimilated by the remaining Force of the Lungs. They ought, nevertheless, to be capable of nourishing the Body, and unfit for generating new Pus.

The first of these Intentions is answer'd by mild and grateful acid and saline Medicines, vulnerary Herbs, and mild Balsamics exhibited in all Forms, in large Doses, and long persisted in.

The second Intention is answered by liquid and diuretic Medicines; together with such as promote Coughing, whether internal or external; by Exercise, Riding, and the Country Air, which expel the Pus; by Abstersgents, and Balsamics, both internal and external, which depurate; and, lastly, by consolidatory Paregorics. And,

The third Intention is answer'd by Ptisans, Broths, and a Milk-diet.

The palliative Cure of a Phthisis principally regards the Cough, the Oppressions, and the Flux: And

These Symptoms are remov'd by a proper Regimen, Opiates cautiously exhibited, and proper warm Liquors.

As a Phthisis is most generally produced by an Ulcer of the Lungs, so it may sometimes arise from an Ulcer of some of the other Viscera, such as the Liver, Spleen, Pancreas, Mesentery, Kidneys, Uterus, and Bladder; the Knowledge, Prognostics, Effects, total and palliative Cures of which may easily be deduced from what has been said, by the Physician who knows the natural Effects of each particular Bowel. *Boerhaav. Institut.*

The following Observations of *Dr. Bennet*, relative to the Subject of this Article, are of Importance sufficient to deserve Notice.

Omitting all Consideration of that Moisture, which, when it superabounds in the Stomach, by the Assistance of the Oesophagus, and the Membrane common to that and the Tongue, flows into the Mouth without Coughing or Hacking; as, also, that Rheum which issues out of the capillary Arteries, and their Coats, from the Brain upon the Palate, and ejected with the same Ease, the Nature of that Expectoration is to be examined, which proves injurious to the Breast. This is nothing else than a Portion of Fluid derived from the Blood by Suffusion into the Cavity of the Thorax through the pectoral Arteries, and thrown up through the Trachea into the Mouth, in order to its final Ejection, by the contractile Motion of the Lungs, either

in Coughing or Hawking. As the Blood, therefore, is constituted in Conformity to its Aliment, so the Matter of this Excretion is as the Blood, from which it is derived. The Truth of this will appear, upon considering the Manner of this Excretion, and the Largeness of its Quantity, in those who are not troubled with a Defluxion from the Brain upon the Trachea.

Whoever shall use proper Medicines for purifying the Blood, although Pectorals be omitted, yet the Matter expectorated will become better, in proportion to the Rectification of the Mass of Blood. Thus, when the State and Colour of the Matter is bad, if such Sweats be promoted, as serve to clear the Blood from its Impurities, the Matter brought up will mend, in Conformity to the Blood's Depuration.

That the Pulmonary Artery, with its Ramifications, receives the Recrements of the Blood, and thence detaches them into the Branches of the Windpipe, is a matter beyond all Dispute. Some are more, and some less, affected with this Lodgment, according to its Nature and Quantity; and sooner or later discharge it by Expectoration; according to the Circumstances of its Adhesion. Every body has not the same Freedom in the Organs of Breathing: Some are fatigued with a severe Cough without any Expectoration; whilst others, with a slight Hawking or Coughing, discharge the irritating Matter. Some have it so much diluted with *Ichor* or *Serum*, that the Lungs endeavour in vain to bring it up; others have the Defluxion so hardened into Clots, that it yields with great Difficulty. Some, through a cold Laxity of the Breast, can evacuate but little Matter; while others, of a firmer and warmer Constitution in the same Parts, discharge it with little Uneasiness. Some, by the Freedom of the Motion of the Lungs, when they do not adhere to the adjacent Parts, easily expel the Matter, while others, either through Plenitude or Constriction, natural or adventitious, have such a Dislodgment either retarded, or rendered impracticable.

In Expectoration, the Matter that settles about the upper Parts of the Trachea, is evacuated with little Labour of Hawking and Coughing; but what is deeply situated is with great Difficulty expelled.

Matter of a moderate Consistence is easily expectorated; but when it is too thin, or formed into hard Clots, it is not dislodged without great Trouble and Difficulty.

Nature then carefully consults her own Security, when the Matter, in Phthical Patients of a more healthy Constitution, is supplied from the Blood, and when the Times of Formation and Expulsion are determined. For, when crude, it cannot be naturally or spontaneously discharged; but it is prepared for Evacuation, when it comes to Maturity, and is, as it were, shaped to the Capacity of the Vessels, through which it is to pass. Those who are accustomed to this sort of Expectoration, are under the salutary Directions of Nature, to which the Means are to be accommodated; but if the Matter be interrupted in its Course, so that it does not proceed according to the Inclinations of Nature, it occasions a Necessity for more vigorous Efforts. The Treatment, therefore, of such Patients is a Matter of great Importance.

Whoever attempts to hasten Expectoration by violent Exercise, or any voluntary Anticipations of Hawkings, extremely fatigues the Contents of the Thorax; when Nature at her appointed Time would easily have relieved them. Those who expectorate the Rheum freely and copiously, will soon find themselves eased of the Burden upon the Lungs. On the contrary, at the Beginning of a Cough, every thing is difficult and fatiguing; but in its Progress, as the Matter ripens, every thing becomes easier.

In my Opinion, the white frothy Spit is produced by a thin sort of Rheum, ouled out into the Lungs or Fauces, and there agitated. For a Defluxion, proceeding from a Coldness of the Brain, is thicker, and, unless it be retained and agitated some time in the Mouth, is not so white, is more mucous, and froths not up so much into Bubbles; whence it seldom or never hurts the Lungs; but, if it froths, I believe it proceeds from some Motion of the Parts, from Heat, and a Mixture of Air. Besides, if this Matter rises unmixed, it indicates no more, than that there is some internal Exsudation, occasioned by a more vigorous Action of the Parts than usual.

A frothy Spittle is increased by Exercise, in those especially who perspire but little; and that the Motion of the Mouth and Lungs conduces to it, is manifest, because it always happens to those who cough or talk much.

This Spittle is very light, consisting principally of a watery Pellicle inflated with Air.

Nature has given the same Laws to Plants, and to Animals; and, according to *Hippocrates*, implanted in both what is sour, bitter, sweet, salt, and of all Tastes. Nor does the Microcosm want its insipid Fluids, a moderate Proportion of which

is necessary to dilute the Blood; but, if a Superfluity be contained in the Vessels, it loads the Constitution, as does that which is extravasated, if it collects upon particular Parts, especially the Organs of Respiration. But at present it is of no great Importance, whether such insipid Humidities collect in their proper Vessels, or are thrown upon them after the Discharge of their proper Offices, so that they have been circulated with the Blood, and are found inspissated upon Protrusion into the large Cavities of the Body. The Excretions, however, which consist of a mild Humour, are more troublesome than dangerous; but those which do not readily pass into the Trachea, in a liquid Consistence, harden into a thick viscid Consistence, and are expectorated with great Difficulty.

A Lady of forty-seven Years of Age, fleshy, but valetudinary, who had all the Capillaries in the Liver, Spleen, and Mesentery, obstructed, was frequently affected with unequal Shiverings, attended with a Coldness, in one or other of the Parts, which seemed to her to resemble the pouring on of cold Water; which Symptoms, notwithstanding our Endeavours, continued; but when a Ptyalism, or Diarrhoea, arose, it then ceased. At last, after the Exhibition of some Cathartics, by sweating in dry Baths, and a sparing dry Diet, she was quite cured.

In many Persons, a thin Lymph arising from the Blood is at first copiously discharged upon the Trachea, upon which the Coldness will disappear; but the Spit will then grow thick, pellucid, and be evacuated with violent Reaching. With this Matter we have often observed the Breast to be extremely obstructed.

Pleuritic Patients, after the purulent Matter has been expectorated, cast up Spit of this kind for some Days; and the more the other Vessels are affected with it, the less will the Organs of Respiration be obstructed by it; and not at all, when it is translated upon the Bowels. I am of Opinion, that this Mucus, being unequally supplied from the Blood, serves in the place of Nourishment to those who have the Rickets; and I take it for granted, that the same, stagnating in the Ureters, and hindering the Passage of Urine, regurgitates into the Stomach and Bowels, and occasions Pains of the Back, Vomiting, Gripes, and a bastard Ischury. It is sometimes to be observed, that the like Viscosity hinders the Circulation of the Blood, by lodging in the greater Vessels. An Instance of this I once met with in a Child, who was taken off in the third Fit, it having obstructed the Pulmonary Artery, or that which is called the Arteria Venosa. Lastly, if these thick Rheums are unequally deposited upon some of the extreme Parts, they generate oedematous Swellings; but if upon the whole Habit, an universal Oedema or a Leucophlegmatia, and an Anasarca, very difficult to be cured.

This Mucosity, which is the Cause of obstinate Obstructions in the Bowels, increases in the Female Sex, or in Men of a cold Temperature; and even in a State of Recovery, where the natural Heat is defective, or is wasted, and grown languid, by the long Continuance of any Disease.

OF YELLOW-COLOURED SPIT.

Yellow Spit is probably derived from the bilious Juice, the Blood being so weakened before Secretion, that it is, at least, deprived of its Taste. Salts make Ulcers by Erosion, so putrefying Bodies by penetrating, inciting, and raising the Parts into a Tumor; but I have always been of Opinion, that saline Serosities prepare the way for Putrefaction, by too much relaxing and softening the Parts; but both together make an internal compound Ulcer, which cannot be cured without great Difficulty. It is not surprising, that a Fluid, otherwise thin, clear, and agreeable, while it flows in the Blood-vessels, should be changed into a yellow Colour; for, as the Blood, at its Source, and before it is distributed into its proper Vessels, is destitute of Tincture and Consistence, so the Spit, which is its Recrement, is changed by the Alteration of Heat in the Parts thro' which it passes, and retains no distinguishing Quality that it possessed, whilst it was carried about in the Circulation. It is still less surprising, that yellow Spit should lose its Taste, when it has not only been blended with the whole Mass of Blood, but strained, also, thro' the fleshy Substances of the Parts, and the Pores of the Membranes; for that Substance in which its Bitterness consists, may not be able to penetrate through such fine Strainers.

The whole Mass of Blood is impregnated with Bile, or bitter Particles, which serve to preserve it. However, no Part of that, or of any other Fluid of the Body, is so affected with Bitterness, as to communicate, by the Tongue and Palate, any considerable Sensation to the Nerves, except that Part secreted from the common Mass, which is of a remarkable bitter Taste, and is discharged in extreme Vomittings, when it is drained from its natural and appointed Receptacle.

In Phlebotomy, when the Blood happens to fall upon the Skin, it commonly feels hot; and yet the Heat of this Blood, whilst

whilst in the Vessels, might, as far as could be conjectured, be moderate and benign.

Once, in a dissected Subject, I saw the Neck of the Gall-bladder filled with Tophi; but the Bladder itself was filled with a pellucid Lymph, strained through those Tophi, as through a Filtré of a thick Contexture. These Tophi resembled candied Coriander-seeds; but the Lymph was insipid, and coagulated upon the Fire into a Mucilage like the White of an Egg.

These yellow Excretions are not produced, except by a continued Incalcescence of the Blood, or by an Heat concentrated by Cold, or from a Corruption or Redundance; which different Causes may be known by Physicians from the Nature of the Complaints of the Patient.

That some Portion of this yellow Humour penetrates through the Skin under the Arm-pits in sweating, appears from the Linen.

The consistent fleshy Substance of none of the Viscera could give the Blood its red Colour, without the Assistance of a proper Heat; but the Spir owes its Substance, and Variations of Colour, to the Blood, and Juices of the Viscera, and also, to the Aliments. The most remarkable Sorts of Spir, that frequently occur, are the bluish, the rust-coloured, and blackish; which, are not, as many imagine, produced by what is drawn in with the Breath, either by the Nostrils or Mouth; but from a Taint lodged in the Viscera and Vessels, and formed, perhaps, in the Spleen, its principal and peculiar Laboratory: This Taint, being received into the Blood, is expelled in the Course of Circulation. But I do not imagine, that it receives its deep Colour immediately, as it is discharged from the Vessels; but as it must distil from the fuscipient Viscera and Vessels, where it condenses, there it is endowed with its dark Tincture. However the Degrees of Heat, in themselves, are not the effectual Cause of the different Colours; yet, where they increase or diminish, the Spir is more or less coloured. But for these Diversities which I have enumerated, an Heat more gentle, but of longer Continuance, is requisite.

Expose to the intense Heat of the Sun, or of a culinary Fire, a Portion of bluish Spir, and it will immediately change to a white Colour; which would not happen; if the bluish Colour proceeded from any Mixture of extraneous Particles, drawn in with the Breath. This bluish kind of Spir has, I believe, never been observed to be of a thin Consistence, but always mucilaginous.

This Species of Expectoration is increased by exhibiting things that cool the Breast, as Barley and Apples; but is lessened by the Use of sudorific or mercurial Medicines. Those, also, spit but little, whose natural Heat has been much exhausted by long Sickness; those who are accustomed to slender Diets, Exercise, and Fasting; those who have the Breast of an hot Temperature, or who are much used to Smoking; and those who are agitated with frequent Coughing. Whence it appears, that the Matter of this sort of Expectoration is formed by a more gentle Heat, and longer Concoction, and by a Breast of a cold flaccid Temperature.

I remember an Instance of this kind, in a middle-aged Woman, under a violent Catarrh, whose Spleen so filled the Head with noxious Vapours, that every Morning she discharged a vast Quantity of a Rust-coloured Spir, which resembled the Threads of a Cobweb; a Portion of which was sometimes diverted, by the hot Catarrh, into the upper Part of the Aspera Arteria; but, upon opening and deterring the Vessels of the Spleen, both the Catarrh and Excretion ceased.

If the White of an Egg be long, though gently, kept warm, it will change its white into a bluish Colour.

At the End of a Fit of accidental Coughing, from Congestion, or of a thick periodical Expectoration, I have observed this sort of Spir to rise more white and depurated; and I have observed, that such Kinds generally proceed from Disorders of the Spleen or Womb; nor does the Mucus of the Nose become discoloured from any other Cause.

Though a salt Spir is produced by a salt Blood, and may give some Commotion to the Humours, yet I imagine, that it seldom bursts the Membranes and Coats of the Vessels by its incisive Quality; but, after the Blood has strained out its saline Serum, like a Dew, through the Membranes and Coats of the Breast, it occasions a Cough, by stimulating the contractive Motion of the Lungs. By this sudden Constriction and Contraction, the tender Parts, through which the saline Particles of the Blood are conveyed, being rendered weaker, are soon corroded. So that the saline Particle, lodged upon any of the Viscera, does not immediately, like a Needle, penetrate the Part itself; but, by remaining long upon it, it dissolves its Texture, and assimilates it to its own Nature; so that this Effect rather proceeds from a Power of Solution, than of Incision; for, by insinuating into the very Substance of the Part, it is mixed and united with its most intimate Combinations, and so changes its Substance into a kind of middle State between Mixture and Dissolution: When it has continued in this neutral State some time, it, at last, dissolves, and is, by an induc'd

Friability, entirely destroyed. Thus, if a saline Fluid be extravasated, perhaps, like a Vapour, and deposited upon a particular Part, by its penetrating Acrimony, it intimately unites with the Substance of the Part, and endangers its Corrosion and Dissolution. And if the acid and saline Particles should even be deposited on the extreme Parts, great Trouble and Danger are occasioned to the Patient.

Many whose pectoral Vessels have been burst by a turgescient Blood, perhaps of a saline Nature, have been cured by using Phlebotomy once or twice; but I have known none whose Lungs have been corroded, that could be recovered without an entire Edulcoration and Change of the Mass of Blood.

Some have been affected with Luxations of the Vertebrae, by an acrid Defluxion upon the Spine; and I have, also, seen the Joints of other Bones distorted by the same Means. But if the Qualities of the Fluxion are entirely offensive to Nature, as in the Venereal Disease, Protuberances will be raised on the Bones, especially the Tibia; and they will be entirely render'd friable, spongy, and soft. The same Case happens in the Elephantiasis. And, if we may believe some, the Bones are so dissolved, as to become flexible, like Wax.

I have seen many almost entirely emaciated, whose whole Mass of Blood abounded with Salt; and who used, periodically, to expectorate a briny Matter, discharged into the Breast from the pulmonary Veins, which, however, has not corroded the Lungs. Among these, I knew a Merchant of London almost reduced to a Skeleton, in whom the saline Matter was translated from the Lungs into the Palms of the Hands, Feet, and Anles, where it produced most malignant consuming Ulcers, whilst the Lungs continued entire.

I have, more than once, seen the constituent Substance of the Lungs so uniformly dissolved, that they seem'd reduced into a kind of purrid Mud.

I have, also, met with Patients, whose Lungs have been torn away in pieces, by a sharp and unequal Corrosion; and appear'd, upon Dissection, as if they had been gnaw'd by a Rat. A redundant Acrimony of the Blood, which is frequent in melancholic Habits, not only occasions a general Tenderness, but exposes the Parts to suffer by external Injuries, and destroys the Nourishment of the muscular Flesh. And the Rheumatism, which is nearly related to the Gout, both in its Causes and Seat, produce very intense Pains.

The constituent Matter of all Spir is different, and assumes various Appearances, according to the Part from which it derives its Source; for the Serum of the Blood is not the only Matter which is translated into the Cavity of the Thorax, but, sometimes, that dewy Substance, which is destined for Adhesion and Nourishment, rises into the Mouth. The Blood is first deprived of its thin Serum, and thereby becomes heated; and the Increase of this Heat throws its more glutinous Parts upon the Lungs, which have been already relax'd and weaken'd by the Translation of watery Humours; and Patients, in this Situation, are, I think, in the greatest Danger. For Nature greedily embraces this Juice, till her attractive and assimilating Qualities are entirely lost.

When I practised at Bristol, where Consumptions are very frequent, I met with some who easily expectorated a sweet Spir for three Months together, and were totally wasted and enervated: Some of these were seized with a violent Cough; and, having entirely lost their vital Moisture, they expired, pale, dry, and entirely emaciated. In one Instance of this Kind, who, for our Information, was open'd, and who, sometimes, expectorated Blood after the saline Excretions of Spir, the Lungs had entirely lost their Tone; and yet the other Organs of Respiration, and all the Viscera, were found to Appearance. Nor is this surprising to those who know how unfit Blood, that is too much attenuated, is for Nutrition; or who have observed too much, colliquated and rarefied by intense Heat, flow through the capillary Arteries, particularly of the Nose, and produce Fainting. For it is inevitable Destruction to the animal Oeconomy to deprive it of that tempering glutinous Juice, which, by a moderate Warmth, gives a due Smoothness and Consistence to the whole Mass.

This sweet Spir, in all the Patients that I remember to have seen, happens after a tedious and generally saline Pyralism.

This Spir, put upon the Fire, becomes of the Consistence of a white Gelly, like other nutritious Juices.

Of all sorts of Spir, the most vapid and seculent is of a cineritious dirty Colour, like moist Clay, which is, also, the least adhesive, that is excreted by consumptive Persons, and is a Symptom of the Defect of natural Heat, and of the Approach of Death. All the other Sorts are, in some measure, affected by Warmth, and from it derive their Figures and Consistences; this only stagnating in its Lodgments, can scarcely be expectorated unless forced up by the Greatness of its Quantity; it is produc'd by extreme Corruption, and natural Decay.

If you fill two Acorn Cups, of equal Bigness and Weight, one with the dirty Spir, and the other with any other Species, the dirty Spir will weigh down the other, as it is heavier than any of the other Sorts.

This Clay-like Spit happens only to those who are hastening to their latter End, and are out of all Hopes: Their Lungs, upon Dissection, have been found only a Mass of stinking Corruption. *Bennet. Theat. Tabid.*

OBSERVATIONS RELATING TO THE DIAGNOSTIC SIGNS.

The Approach of this Distemper may be discovered, when the saline Blood is carried towards the Breast with a slower or quicker Motion.

Its slower Afflux is discernible,

1. By bloody and saline Spittings, at stated Periods, about four, five, or six, in the Morning, or Afternoon, sooner or later, and more or less, according to the Irritations they occasion, or as they are determined by the Exercise of the Body. That which is inspissated out of the Vessels, is not excreted at the accustomed Periods, because they abound in the Body at those Times, as is the common Opinion of Physicians; but, because, in some measure, it transpires through the Skin, while the thicker Parts are deriv'd to the larger Vessels.

2. By more frequent Spitting and Hawking.

3. By an Interception of the cutaneous and other Excretions.

4. By Spit of a light unequal Substance.

5. By globular Spit convolved like Hail-stones, and expel'd at the above-mention'd Hours, by sudden Coughing or Hawking.

6. The Truth of these Symptoms is confirmed, when, from any Cause, there happens a Defluxion of a saline Matter upon the Joints or Extremities of the Body, and the Breath in that time gets Strength.

More violent and copious Affluxes are known,

1. By a more plentiful Expectoration of frothy Blood of a Clay-colour, with Hawking and Coughing, less painful, if from the Lungs; but of a blackish or redish Colour, if from the Cavity of the Thorax; if from the great Arteries, it is attended with regurgitating Replections of the Mouth at Intervals; but gradually, and with a Sense of Titillation, if from the Fibres.

2. By an heavy Pain in the Breast, which is periodically pungent.

3. By a periodical Difficulty of Breathing.

4. By a manifest Relief of the other Parts.

The Signs of a Phthisis from a thick and cold Phlegm, falling from the Head, and collecting in the Breast, is apparent, when the like Matter being secreted, in some manner, at the Extremities of the Carotid Arteries, and contaminated by a cold Brain, makes its Way into the Aspera Arteria, which is always accompanied with the Discharge of a similar Matter into the Thorax from the common Vessels; of which a distinguishing Symptom is an Erection or Opening of the Larynx, with its alternate Closure, or falling again, and causing a Sound like the Ticking of a Watch beating Seconds, to which daily are joined the following Symptoms.

1. A Torpor of the Spirits.

2. An Heaviness of the Head, with Pain, increasing periodically at the full Moon.

3. Longer Sleeps, with Dreams of Drowning.

4. A general Coldness of Temperature.

5. The Pores contracted with Cold.

6. A Flaccidity of the Lungs, and all the pectoral Muscles, and a slow Expectoration, which is known by a frequent Endeavour to hawk up something in vain.

7. A thicker Spit, which is easily evacuated after a good Meal, when the Breast has been warmed with suitable Food.

8. An heavy and oppressive Pain of the Breast.

9. A Cough which, at Intervals, threatens Suffocation, and is aggravated by Exercise, and drinking cold Liquors.

10. A frequent Difficulty of breathing.

11. A Catarrh slowly, but continually, moistening the Aspera Arteria.

12. Difficult Expectoration in a cold Air, but a Readiness to sweat.

13. The Flesh becomes flaccid and soft in a moist State of the Air, and hardens in dry Weather; which is a Symptom that almost always attends a consumptive Patient. Whence,

14. A Disposition to be affected with every Inclemency of Air or Wind; the moist, or cold, being most injurious.

The Signs of a Phthisical Consumption, from what Source soever derived, but deeply rooted, and eluding all the Art of Medicine, with regard to a perfect Cure, are,

1. A severe Cough, the Violence of which streaks the Spit with Blood; then a nasty Pus of a cineritious Colour, which, put into Water, easily mixes with it, and falls to the Bottom; there are, also, expectorated Fragments torn off from the Lungs themselves, the Vessels, and Membranes.

2. A fetid Breath, and the greatest Difficulty in Respiration.

3. A Pain of the Breast, and a pricking Soreness of the Nipples; especially in the time of Coughing.

4. A Defect in all the Functions.

5. A putrid Fever from the Blood, universally tainted by the Pus, and inducing preternatural Motions, as Fermentation: Whence the Fluids of the Body are discharged by colligative Sweats, especially in the Morning.

6. A Diarrhoea, and at last, a Lientery, occasioned by a weak State of the Liver, and all the Parts subservient to Nutrition.

These are necessarily attended with,

7. A Driness of the Flesh, from the Defect of a due Degree of Moisture.

8. A Scurf upon the Extremities, and whole Epidermis, from the same Cause.

9. A Pain accompanied with Tension, in lying down on the Right or Left Side, occasion'd by the Adhesion of the Lungs to one Side or other of the Pleura.

10. A weak, small, and frequent Pulse, from a languid Motion of the Blood to the extreme Parts.

11. A shedding of the Hair, and the Nails dead-coloured and hooked.

To which, lastly, may be added,

The *Facies Hippocratica*, or the very Image of Death; the Face ghastly, the Eyes sunk, the Nose pinch'd, the Cheeks hollow, the Temples collapsed, and the whole Body stiff, and resembling a Skeleton.

A Fluxion, of whatever kind, from the whole Body into the Breast, is more dangerous than one from any particular Part.

A Fluxion from a Stagnation of the Blood, or a Diminution of its Motion near the Heart, is more dangerous than one proceeding from a more distant Part.

There is less Danger from Blood gushing by fits into the Breast, than when it flows slowly and constantly; for though there is a greater Flux upon a periodical Bleeding, there is a time of Resection.

Extravasation of Blood from Redundance and Tension is much more easily cured, than one proceeding from its Distemperature and Acrimony.

There is greater Danger to the Lungs from the Pressure occasioned by an Obstruction in the Liver, than from a Regurgitation by the broken Vessels.

If a Spitting be critical, and from Translation, it often goes off with Safety and Advantage.

Those who have had the Pulmonary Vessels continually enlarged, by the Afflux of Blood, and Expressions of viscid Matter, accompanied with an Asthma admitting of no Remissions, have mostly, either, by a Rupture of the Lungs, thrown up Blood into the Trachea, mixed with sordid Matter; or have died with a sudden Aggravation of the Asthma.

In all Fluxions, if, upon the Use of Remedies, the Intervals are lengthened, and Paroxysms remitted, it promises Recovery, and *vice versa*.

A larger Intermission, between milder Fits, is still more encouraging.

Phthisical Patients bear long, and easily, the Afflux and Expectoration of mild watery Humours; but of bilious Excretions, with Difficulty, and for a short time; but by a Discharge of thick, saline, fetid Matter, they are immediately destroyed.

From a Suffusion there is the greatest Danger, but from an Infiltration the least.

Those who are crooked, and have had Limbs cut off, are most subject to Fluxions, and in greatest Danger from a Phthisis.

After the Spitting of Blood has ceased, if the Lungs are less sensible, or the torpid State of the Parts prevents a total Discharge, the Putrefaction of the retained Blood, and of the Lungs themselves, will endanger a Phthisis.

A free Respiration, a Cessation of Coughing, and a Continuance of Strength, after Bleeding, are good Symptoms, and *vice versa*.

If after Blood-spitting, a mucilaginous, blue, and light Spit succeeds, and if it continues, it foretels a Return of the Hemoptysis in young and hot Constitutions; but, if purulent, a Phthisis, both to Young and Old; if none at all, and other Circumstances be favourable also, it denotes Recovery.

Spitters of Blood are most uneasy in Snow, Hail, or Rain.

The Bronchia are least obstructed by an extravasated Blood; that putrefies; by a nutritious Juice, when it becomes mucilaginous, more; and mostly by Phlegm falling down the Trachea, if it be concocted into a tough Viscidity.

Lastly, if the Organs of Respiration retain Matter, of any Kind, long upon them, it forebodes a difficult Cure.

That Languor which slowly steals upon consumptive People, without any Decay of the Lungs, or other Bowels, is most dangerous to English Constitutions; and, unless Remedies immediately take Place, which they seldom do, is mortal.

A Phthisis which sinks a Person suddenly, when attended with Coldness of the Extremities, especially of the Feet, is most dangerous, although it does not so severely affect the Lungs; for it is a Symptom, that the nutritious Juice is very much vitiated, and the Strength exhausted.

Phthifical Patients are in a most desperate State, who have stony and offcious Concretions of unequal Surfaces lodged upon their Lungs.

In those who are accustomed to Intemperance, if they are seized with a Phthisis productive of Languor, they are in the last Extremity of Danger.

A copious and frequent Flux of Matter upon a corroded Part is dangerous; for internal Ulcers are seldom cured when they emit a plentiful Discharge of Sanies, as those externally are hardly ever healed.

Persons of lax Habits, though they sooner droop and languish, yet they soonest feel the Benefit of Medicines, if they be timely applied at the Beginning of the Disease.

Those who are phthificaly inclined, and frequently spit insipid Matter, are longer in wasting, although from the Beginning the Lungs were affected.

Those who labour under an hereditary Phthisis, though they are incurable, yet their Life may be of some Continuance.

The Lives of Phthifical Patients are prolong'd by frequent, but moderate, Hæmorrhages at the Nose.

The Danger of an Effusion of Blood from the Pulmonary Artery is lessened, when it is attended with an Hæmorrhage from the Nose.

If, after a protracted Phthisis, there appears a chylous Flux, it is a fatal Symptom.

If an Ephemera, or Hætic, often returns at unequal Periods, it indicates dismal Consequences.

When Phthifical Patients have a keen Appetite, and acquire no Strength from their Food, their Case is desperate; for it shews, that the vital Juice is degenerated to a corrosive Fluid.

When Virgins, who are pretty far advanced, but never had the menstrual Flux, are affected with a Phthisis from a Translocation of the menstrual Matter to the Breast, it produces a most dismal Alteration, and a sudden Wasting, which, are followed by Death.

If a Contraction of the Nostrils, a Straitness and Sinking in of the Breast, happen suddenly, they prognosticate immediate Death.

Oedematous Swellings of the Feet, in a Phthisis of long Duration, is a mortal Symptom.

Almost all Phthifical Patients perish, who are seized with a putrid or malignant Fever, occasioned by the Taint of the Matter lodged in the Breast.

When a freer Respiration is obtained by the Assistance of Remedies, and a Change of Air, then the Patient feels himself enlivened, his Strength is increas'd, and his Colour becomes florid; lastly, Health returns, and the vital Heat is rekindled all over the Body.

When, in Phthifical Patients, a copious Discharge of slimy and saline Sordes is procured by Cathartics, the Breast is greatly relieved, and there appear Hopes of a Recovery.

If Pectorals of a thin Substance, which stimulate, are exhibited in a long-continued Phthisis, without exciting a Cough, the Sign is fatal.

If, by the Assistance of Art, the Spit, which was variegated, be brought to one Colour; if from nasty it becomes depurated; if, from having an unequal Surface, it becomes smooth; from saline, insipid; from fetid, inodorous; and lastly, if it be easily expectorated; all these are Signs of Recovery. *Bennet Theat. Tabid.*

PHTHOE, *φθόν*. The same as **PHTHISIS**.

PHTHOIS, *φθίσις*. A Pastil, or Troche.

PHTHORA, *φθορά*. Corruption. In *Hippocrates*, it imports a Miscarriage.

PHTHORIAS. An Epithet of a Medicine producing Abortion.

PHTHOROPOEOS, *φθοροποιός*. Deleterious, or destructive.

PHU. A Name for several Species of *Valeriana*. It generally imports the Garden *Valerian*.

PHUSCA, *φύσκα*. The same as *Posca*. There are several compound *Poscas* describ'd by *Aetius*, *Tetrabib.* 1. *Serm.* 3. C. 80, 81. and by *Paulus Aegineta*, L. 7. C. 11.

PHYCIS, *Phycida*, *Fuca*, a Sea-fish resembling the Sea Perch, with a long sharp Snout, thick Head, large Teeth, and his Body covered with Scales. It is of several Species and Colours, and is taken among the Sea-weeds near the Shore, in the Sand and Mud, where it brings forth its Young; it is good to eat, and easy of Digestion; purifies the Blood, and provokes Urine. *Lemery des Drogues.*

PHYGETHLON, *φύγεθλον*, is a broad, but not much elevated Tumor, in which there is some Resemblance of a Pustule. The Pain and Distention with which it is attended, are violent, and greater than in proportion to the Bigness of the Tumor; and sometimes there is a small Fever. This Tumor is slow in ripening, and is not much converted into Pus; it generally rises in the Neck, in the Armpits, and in the Groins. Our Countrymen call it *Panus*, from some Similitude in its Figure [spoken with relation to *Panis*, a Loaf of Bread]. *Celsus*, Lib. 5. Cap. 28.

In the Account above given, *Celsus* describes a bilious Tumor, agreeably to what *Galen* says of it, Lib. 2. ad *Glauc.* "An in-

flammatory Erysipelas, or an erysipelatous Inflammation, is called a *Phygethlon*." The same Author, in other Places, reckons this Tumor among Inflammations and Affections of the Glands; and distinguishes it from other Tumors by its Heat, and speedy Generation; and says it arises in the Armpits, and in the Groins, from an Inflammation of the indurated Glands in those Parts. *Foefius.*

PHYTICA. A Name for the *ALATERNUS*.

PHYLLIREA. The same as *PHILLYREA*.

PHYLLITIS. A Name for several Sorts of *LINGUA CERVINA*.

PHYLLON. A Name for the *Mercurialis*; *fruticosa*; *incana*; *resiculata*.

PHYMA, *φύμα*, from *φύμα*, to grow, or be generated from, in its general Signification, comprehends all Kinds of preternatural Tumors, in whatever Part of the Body they appear; and especially such as affect the external Parts, and Superficies of the Skin, and arise without an external Cause, and are generated, increased, inflamed, and suppurated, in a short Period of Time. *Galen*, *Com. in 6 Epid.* Agreeably to this Description, those Eruptions of Tubercles, which are generated of vicious Juices, and excited by an heated Blood, are called *Phymata*, 2. *Aph.* 15. 3. *Aph.* 20. and *Lib. de Alim.* *Phymata*, *φύματα*, are, also, Inflammations of the Glands, which suddenly break forth, and hasten to a Suppuration, *Gal. Lib. 2. ad Glauc.* & *Paulus*, *Lib. 3. Cap. 22.* and are reckoned among Affections and Inflammations of the Glands; *Lib. de Tum. præternat.* differing from a *Furunculus* only in Hardness. In *Prorrhet.* 2. we also we meet with *τὰ χυρώδεις φύματα*, "scrophulous Tumors," incident to Children. *Φύμα* sometimes signifies an Abscess, or vitiated Juices lodged in some Part of the Body; as 4. *Aph.* 44, 45. & 7. *Aph.* 65. & *Coac.* 118. So *Celsus*, *Lib. 2. Cap. 7.* renders *φύματα*, from 4. *Aph.* 44. by *Abscessus*. *Φύμα*, also, takes the Signification of *εμπύημα*, and every Inflammation which is converted into Pus, as 7. *Aph.* 8. according to *Galen's* Comment on the Place. So we read of *φύματα εμπύμα*, *Prorrhet.* 2. And, *Coac.* 404. we read of *Phymata* in the Lungs discharging Pus, which are opposed to hard and undigested *Phymata*. *Celsus* renders *φύματα*, sometimes, *orientia Tubercula*, and sometimes *Tubercula*, as in *Lib. 5. Cap. 18.* & 28. *Seneca de Beneficiis* renders *φύμα* by *Tuber*, where he relates, that a Person had a *Tuber* opened by the Sword of a Tyrant, who aimed to take his Life. *Pliny*, relating the same Story, calls it *Vomica*.

PHYMATA, in *Celsus*, *Lib. 2. C. 8.* seems to imply a Caruncle in the Urethra.

PHYMOSIS. The same as **PHIMOSIS**; or as **PHYMA**. *Blancard.*

PHYMUS. The same as **PHYMA**. *Blancard.*

HYPELLA. The same as **PANUS**.

PHYRAMA, *φύραμα*, from *φύρα*, to mix, is a Species of Ammoniacum, so called from its being mixed with Earth, Sand, and Gravel. *Gorraeus*. See **AMMONIACUM**. But it signifies any Mass whatever, moistened with a Fluid, and worked.

PHYSA, **PHYSE**, *φύσα*, *φύση*, signifies a Flatus, or gross Wind in the Body, or the fetid Wind discharged by the Anus, according to *Erotian*, from several Places in the Aphorisms, and from 1. *Epid.* where we read of *φύσαι ορυώδεις* (*Physæ sigodees*) and *φύσας* (*psophodees*) Flatulences discharged with and without Noise; the Word bears the same Sense in the *Prognost.* and *Coac.* *Φύσα*, also, is very often used by *Hippocrates*, to signify a gross Wind, or Flatulence, collected in any Cavity of the Body. Thus, *Lib. περί παθών*, he says, that Meats, light of Digestion, generate no Flatulences (*φύσας*); and, *Lib. de Flatibus*, it is said, *πνεύματα ἢ τὰ μὲν ἐν τοῖσι σώμασι φύσαι καλῶνται, τὰ δὲ ἔξω τῶ σώματος ἀνέχονται*. "The Winds which are in Bodies, are called *Physæ*; those without the Body, Air."

PHYSALIS. The Hop, or rather its Flowers, which are boiled in Beer. It is, also, a Name for the *ALKEKENG*. *Blancard.*

PHYSALOS. The Toad. *Blancard.*

PHYSEMA, *φύσημα*. The same as **PHYSA**. It, also, signifies the Refin of the Fir.

PHYSESIS. The same as **PHYSA**; that is, an Inflation.

PHYSICA REMEDIA are Remedies which do Service without any manifest Reason.

PHYSINX, *φύσινξ*, is a little Bladder; but *ορυώδης φύσινξ*, in *Hippocrates*, *Lib. de Fistulis*, is the Stalk or Stem of Garlick, which he uses instead of a Probe for searching the Depth of a Fistula. *Galen*, in his Exegesis, where we read *φύσινξα* (*Physinga*) corruptly for *φύσινγα* (*Physinga*), as, also, in *Varinus*, makes the *Physinx* to be what we call the Stalk, and especially its Cavity. The Scholiast of *Aristophanes* makes the *Physinx* to be the outer Rind of Garlick; and so does *Erotian*, on *Hippocrates*, contrary to *Galen*; tho' with relation to the same Place. *Hesychius* makes the *Physinx* a Species of Garlick, or an Head of Garlick: Whence some, by *Physinx*, in *Hippocrates*, understand an Head or Clove of Garlick, and expound it by a Probe with a Button at the End of it, in the Figure of a Clove of Garlick; but *Hippocrates*, in that Place, directs the Use of a fresh Stalk of Garlick in the Search of a Fistula. Some, for *φύσινξα*, in the Exegesis, read *φύσινξα*, (*Physeta*) others *φύσινξα* (*Physitra*).

PHYSIOGNOMIA, φυσιογνωμία. The Art of judging of a Person's Nature, Fortune, or Disorders, by the Lineaments of his Face; from φύσις, Nature, and γινώσκειν, to know.

PHYSIOLOGIA, φυσιολογία, from φύσις, Nature, and λόγος, to treat of Physiology. That Branch of Medicine, which considers Nature, with respect to the Cure of Diseases, particularly the human Body, its Parts, Structure, Health, Life, Functions, and Oeconomy.

PHYSOCELE, from φύσα, a Flatus; and κύλη, a Tumor. A Wind-rupture.

PHYSTE, φύσιν. A Mals of Meal macerated, in a Vessel, in Wine, but not worked.

PHYTALIA, φυτάλια. The latter Part of the Winter. But it, also, signifies, a Place where Vines are planted.

PHYTEUMA. A Name for the *Reseda*; *minor*; *vulgaris*.

PHYTOLACCA.

The Characters are;

The Flower is roseous, polypetalous, and disposed in Bunches; the Berry is soft, globular, and full of Seeds disposed in orbicular Order.

Boerhaave mentions two Species of *Phytolacca*; which are, 1. *Phytolacca*; *Americana*; majori fructu. *Tourn. Inst.* 299. *Boerb. Ind. A.* 2. 70. *Phytolacca*. Offic. *Solanum racemosum Americanum*. *Raii Hist.* 1. 662. *Solanum magnum Virginianum rubrum*. *Park. Theat.* 347. *Solanum racemosum Indicum*. *Hort. Reg. Par.* 167. **PORK-PHYSIC**.

It was brought from *Virginia* and *New England*, and is cultivated with us in Gardens. The Leaves are used in Medicine, and esteemed an excellent Anodyne. *Dale*.

2. *Phytolacca*; *Americana*; fructu minori. *T.* 299. *Solanum Barbadosense, racemosum, minus, tinctorium, Circae foliis mollibus & incanis*. *Plukn. Alm.* 353. *Phytogr. T.* 112. *Fig.* 2. *M. H.* 3. 522. *Boerb. Ind. alt. Plant. Vol.* 2.

This Kind of Plant is called *Phytolacca*, from φυτὸν (*Phyton*), a Plant; and *Lacca*, because it gives a red Colour like *Lacca*. The Virtues are yet unknown. *Hist. Plant. adscript.* *Boerb.*

PHYTOLOGIA, φυτολογία, from φυτὸν, a Plant, and λόγος, to treat of. That Part of Pharmacy which treats of Plants.

PHYXIMOS, φύξιμος. An Epithet of Diseases in *Hippocrates*, importing salutary, or of which a Person is likely to recover.

PIA MATER. The thin Membrane which immediately involves the Brain. See **CAPUT**.

PIANTERIA, πιαστήρια. Aliments which increase Fatness, and Corpulence.

PIATTONES. Crab-lice.

PICA. Offic. *Schrod.* 5. 323. *Schw. A.* 333. *Mer. Pin.* 172. *Charlt. Exer.* 75. *Pica varia cordata*. *Will. Ornith.* 87. *Raii Ornith.* 127. *Ejusd. Synop. A.* 41. *Aldrov. Ornith.* 1. 784. *Gesn. de Avib.* 628. *Jonf. de Avib.* 27. **THE MAGPYE**, or **PIANET**.

This Bird is very much commended against Dimness, Redness, and Pains of the Eyes, being eaten, or incinerated, and the Ashes put into the Eyes, or any other way apply'd; the Ashes are, also, exhibited in the Mania, Epilepsy, and Melancholy. *Dale*.

PICA GLANDANA, or *Glandaria*, is another Species of Magpye, supposed to be the *Pica Græca*; to which the same Virtues are ascribed, as to the preceding.

PICA is, also, the Name of a Distemper, in *Greek*, κίτλα, (*Citta*) being a depraved Appetite principally incident to Women with Child, to the End of the second or third Month of their Pregnancy. They who are affected, have absurd Longings after sour, sharp, or acrimonious Things, and sometimes after Earth, Shells, Coals, old Rags, rotten Pieces of Leather, and other things abhorrent to Nature. Men are sometimes molested with the like vitiated Appetite, which is supposed to proceed from a Collection of depraved Humours in the Stomach.

The Disease is called *Pica*, either from the Variety of absurd Longings, which bears Analogy to the Variety of Feathers observed in the *Pica*, or *Pye*, or because, perhaps, that Bird is subject to the same Disorder. The Scholiast of *Aristophanes* gives another Reason; for he says, the *Pye* is a Bird of a voracious and universal Appetite, and difficult to be pleased; that he longs after Fruits, but is soon disgusted; and, when he has eaten of this or that kind of Apple or Berry, he is presently satiated with it, and flies from Tree to Tree in Search of new Varieties: So that Women are properly said to be affected with the *Pica*, when they long for this and that kind of Food, and, when they have tasted it, conceive an Aversion to it; which Kind of Loathing is called ἀψικία, *Hapsicoria*. But however κίτλα may signify the Bird *Pica*, as well as a Disease, we have no Authority for affixing that double Signification to the Word *Pica*; for none ever called a Disease, in proper *Latin*, *Pica*. *Pliny*, therefore, always calls this Disorder *Malacia Gravidarum*, in *Greek* μαλακία, from μαλαρός (*Malacos*), soft, languid. It is defined, like the κίτλα, or *Pica*, to be a languishing Disorder incident to pregnant Women, in which they long sometimes for one thing, sometimes for another; some desire to eat Earth, dead Coals, or Terra Cimolia, as *Paulus* says, *Lib.* 1. *Malacia* is, also, a Disorder or Weakness of the Stomach; in which Sense it is used by *Pliny*, *Lib.* 28. *Cap.* 7. *Lib.* 23. *Cap.* 6. *Malacia* (*Malacia*) are expounded in *Galen's Exegetis*, aqua-

tile Animals having no Spine, as the Polypus, Loligo, Sepia, and Urlica; these have neither Blood nor Viscera; and, *Lib.* 3. *de Alim. Fac.* he describes them as having no Scales, nor rough or testaceous Skin, but soft like the human. *Pliny*, *Lib.* 9. *Cap.* 18. calls them *Mollia*, by a literal Translation of the *Greek*, and gives the same Description of them. The Place in *Hippocrates*, to which *Galen*, in his Exegetis, had a respect, since we can only conjecture, in this Case, appears to me, says *Foessius*, without all doubt, to be that, *Lib.* περί γυναικ. εἶς. where we read, καὶ στίσις μαλθακώσι, καὶ τοῖσι πολύπυσι, καὶ τοῖσιν ἄλλοις μαλθακώσιν, "with soft Foods, as Polypuses, and other soft (aquatile Animals)."

The *Pica*, according to *Riverius*, in *Lib.* 9. *Cap.* 3. *Prax. Med.* is such a Depravation of the Appetite, as excites the Patients to an uncommon and preternatural Fondness for absurd, useless, and hurtful Aliments.

This Disorder is produced by depraved and corrupted Juices, either generated in the Stomach, in consequence of an undue Concoction, or convey'd to it from other Parts.

Humours of this Kind are, for the most part, generated in Persons of phlegmatic and melancholic Habits, and especially in Women, to whom this Disorder seems, in a manner, peculiar, tho' Children and Men are sometimes, tho' very rarely, afflicted with it. Humours of this Kind are principally generated by the Use of bad Aliments; a Suppression of some natural Evacuation, and especially of the Menes, Grief, Disorders, Obstructions, and Weakness of the Liver and Spleen, and various Diseases of the Uterus.

These corrupted Humours are of various Natures and Qualities, according to the various Degrees of their Corruption and Intemperature. Hence arise various Inclinations to various, absurd, and improper Aliments; for since some of these Humours are crude and unconcocted, and others of an hot and inflammatory Quality, so some are fond of acid, austere, bitter, and highly-cold Substances, such as unripe Fruits, Vinegar, Verjuice, the Juices of Oranges, Pomegranates, and Lemons, cold Water, Snow, and Ice; whilst others cover earthy, dry, and hot Substances, such as Cloves, Cinnamon, Nutmegs, and other Aromatics, Salt, Ashes, and Plaster.

This Disorder is familiar to young Women labouring under a Chlorosis, and to pregnant Women, on account of the Suppression of the Menes; which, by remaining long in the Body, assume a peccant Quality; and being convey'd to the superior Parts, load the Stomach with that corrupted Humour which depraves its Actions, and perverts the Appetite. Sometimes Children, especially those born of Mothers labouring under a Chlorosis, are subject to this Disorder. Nor are Men totally exempted from this Misfortune, tho' they are but rarely afflicted with it, and those Men are most subject to it, who are of a melancholic Habit, labour under Obstructions, or a Suppression of the hæmorrhoidal Discharge.

The Diagnostic of this Disorder is sufficiently easy; for by the bare Relation of the Patient, 'tis certain, that the Part principally affected is the Mouth of the Stomach, which may be said to be the Seat of Appetite. The Cause may, also, be conjectur'd at from their being fond of Substances of a similar Nature with the peccant Humours in the Stomach; for if they are fond of Coals, Salt, and other Things of a like Nature, we may conclude, that saline and hot Humours produce the Disorder. But this Conjecture will be converted into Certainty, if any Quantity of these Humours is thrown up by Vomit, or discharged by Stool; or if acid, or nidorous Eructations are present, or a bitter acid, or saline Taste perceived in the Mouth.

As for the Prognostic of this Disorder; it is of the chronical Kind, but not very dangerous; since, in Process of Time, the peccant Humour is removed by frequent Vomits, or other proper Medicines, and the Menes, or hæmorrhoidal Discharge, a Suppression of which, laid the Foundation of the Disorder, are at last restored. But if these are neglected till Nature is too much weakened, terrible Disorders may succeed; for when the first Concoction is vitiated, the second and third must necessarily be so too. Hence violent Obstructions, Cachexies, and Dropsies happen. Or if the Quantity of the peccant Humour, lodged in the Stomach, is very great, or its Quality highly malignant, it sometimes produces terrible Cardialgias, which terminate in Deliquiums, Syncopes, and sometimes in Death.

If Women, labouring under this Disorder, begin to abstain from the improper and absurd things they were fond of, and with less Reluctance use laudable and wholesome Aliments, it is an infallible Sign of a beginning Cure, and approaching Health.

Pregnant Women are generally freed from the *Malacia* about the fourth Month, because the Fœtus, becoming at that time larger, consumes a greater Quantity of the Humours, and the Mother, by frequent Vomiting, throws up the Sordes lodged in her Stomach. But if the Disorder continues any longer, it is dangerous; for 'tis a Sign, that the peccant Humours are deeply rooted, and cannot be eliminated without Difficulty.

'Tis better that Persons, labouring under this Disorder, should be fond of acid and sharp-tasted Substances, than of such as are directly unfriendly to Nature; as *Avicenna* informs us, in *Fen.* 13. *Lib.* 2. *Traft.* 2. *Cap.* 20. for a Fondness for the latter indicates a greater

greater Recess from a natural State, not to be cured without great Difficulty.

The Cure of this Disorder is to be varied according to the different Constitutions of the Patients.

In pregnant Women, very few Medicines are recommended as proper, for fear of Abortion. However, even in these, gentle Medicines may be used for evacuating and corroborating the Stomach. Nor is moderate Venection, frequently repeated, to be neglected, if there is a Necessity for it, since it is of great Efficacy in the Cure of this Disorder.

In young Women labouring under a Chlorosis, this Disorder is cured by the same Medicines which are proper for removing the Chlorosis.

As the Pica in Men, which, however, rarely happens, proceeds from Obstructions of the Liver and Spleen, it must of course be removed by every thing which removes these Obstructions.

According to Doctor Pittcairn, in his *Element. Med. Lib. 2. Cap. 18.* in this Disorder, such Things as obtund Acids, are to be prescribed; fixed Salts; mucilaginous, oleous, and pinguous Substances; the Effects of all which are to hinder the free Contact of the Coats of the Stomach with each other. For answering this Intention, he himself orders viscid Substances, and such as remain long in the Stomach.

Thus, for Aliments, he prescribes Gellies of Hartshorn, Broths of gelatinous Fleashes, and other things of a like Nature.

For Drink, he orders *Spanish* and *Canary* Wines, moderately drank; and especially *Brunswick* Mum, or *Dutch* Hydromel, prepared of one Part of Honey, and six Parts of Water.

PICACISMUS. The same as PICATIO.

PICANS. An Epithet for Wine, importing, that it is of a sweet delicious Flavour.

PICATIO. Pication. A Species of *Dropax*. For this Purpose, dry Pitch is melted with a very small Quantity of Oil, and applied to the Skin whilst warm. This Preparation adheres strongly to the Parts previously shav'd, and is to be pull'd off, before 'tis perfectly cold. Then it is to be warm'd at the Fire, applied in the same manner, and pull'd off, before 'tis entirely cold. This Method is to be repeated very often. This *Picatio*, or *Dropax*, is highly beneficial to Patients afflicted with continual Vomiting, Crudities of the Stomach, Indigestion, and the Cœliac Passion. It is, also, properly applied to Parts not duly nourished by the Aliments. When 'tis requisite this common *Dropax* should be heating, we add to it Pepper, Pellitory of Spain, Rosemary-seeds, and Bitumen: When we want it of a drying Quality, we add to it native Sulphur, Salt, and the Ashes of Vine-twigs. If we intend it should be of a stimulating Nature, we add *Limnestis*, commonly call'd *Ardate*, or *Euphorbium*. All these Ingredients, when triturated, are to be sprinkled into the melted Pitch and Oil. *Aetius, Tetr. 1. Sermon. 3. Cap. 180.*

PICATIO, also, implies the same as PICA.

PICATUM VINUM. See PISITES.

PICEA. See ABIES.

PICERION, *πικέριον*. Butter. *Hippocrates, Galen.*

PICINUM OLEUM. The same as PISSELEUM.

PICOTA. A Distemper, consisting of an Eruption of very minute red Pustules. *Castellus.*

PICRIS. A Name for the *Cichoreum Sylvestre*, five *Officinatum*.

PICHROCHOLOS, *πικρόχολος*, from *πικρός*, bitter; and *χολή*, Bile. A Person abounding with bitter Bile. *Hippocrates*. Sometimes it signifies a Person very subject to Anger.

PICTONUM COLICA, or COLICA PICTONIA, or PICTA-VINSIS. The Name of a nervous Colic, generally called, in the West-Indies, the dry Belly-ach. This is so popular a Disease in the Leeward Islands, that it may, very justly, be reckon'd an Endemic in them, most People there, at one time or other, having felt its Cruelty.

There is not, in the whole Compass of Infirmities, to which Flesh is liable, any one that afflicts human Nature in a more exquisite Degree, than this unmerciful Torture. The Belly is seized with an intolerable piercing Pain, sometimes in one Point only, and sometimes in several Parts of the Intestines. In a short time, the Affliction becomes more diffusive, and stretches itself from the Point where it was first felt, to a greater Distance; which is done in such a manner, that the Fibres of the Bowels seem to be contracted, and drawn up from the Anus, and the Pylorus, towards the Part primarily affected, as into the Centre of Misery: During this Scene of the Distemper, which sometimes lasts eight, ten, or fourteen Days, the Patient is upon a perpetual Rack, with scarce any Remission from Pain. He undergoes all the various Modifications of Torment; and the burning, lancing, and biting Pain, by turns afflict him with a Diversity of grievous Sensations. The Belly continues, all this time, obstinately costive; very little Urine is made; the Strength is greatly impair'd; the Habit exceedingly wasted; the extreme Parts are cold; and the Patient frequently falls into clammy Sweats and Deliquia. The Affections of the Mind are much disorder'd; Grief, Anger, Rage, and Despair, usurp the Place of Reason; the vital, natural, and animal Functions, are perverted; and the miserable Patient, at length, sinks under the Agony of his Affliction.

The principal Causes concurring to the Production of this Colic are, immature, austere, and astringent Fruits, eaten in too great Quantities; debauching in strong Punch, highly acidulated with the Juice of Lime; and travelling in the Night, after too free Ingestion of spirituous Liquors.

When the Extremity of the Pain begins to abate, the sick Person often observes a sort of tingling Uneasiness through the spinal Marrow; which propagates itself from thence to the Nerves of the Arms and Legs, which, at this time, are very weak and debilitated. This Weakness and Inability increases daily; till, in a short time, it terminates in a confirm'd Palsy of the Extremities. The sudden Transition from the Colic to a Palsy made Dr. Willis conjecture, that the Nerves of the Mesentery were principally affected in this Disease.

In order to subdue this dire Distemper, and prevent the paralytic Consequences of it, we must employ our utmost Endeavours to remove the Constipation of the Bowels, and solicit them to a Discharge. But this is not, upon any account, to be attempted by strong stimulating Cathartics, which, by their forcible and repeated Irritations, would vellicate and contract the Fibres of the Guts, enrage the Pain, create convulsive Motions of the Bowels, hasten on the Palsy, or change the Disease into a *Miserere Mei*. The mild, lenitive, detergent Purges are, therefore, to be relied on in this Exigency, and they ought to be given in liquid Forms, small Quantities, moderately warm, and frequently repeated, till they slide through the Intestines, and procure a Stool.

But it is almost impossible, that this should be effected, so long as the Bowels continue under such spasmodical Disorders as they are now in: We must, therefore, have a due Regard to the mitigating this Inconveniency. There is not any Preparation of Opium so effectual in this Case, as the *Pil. Matthæi*, which receives a prodigious Advantage from the aperient Quality of the *Sapo Tartareus*.

It has been a received Opinion, that Opiates, in this Distemper, have often proved the Occasion of the paralytic Consequences which have ensued; but I am fully convinced from undoubted Experience, that this Observation is erroneous, having always found the desired Success from the Administration of them, tho' given with a liberal Hand. However, it may not be improper, in these Cases, to add three or four Grains of Castor to each Dose of the *Pil. Matthæi*.

The Method by which I have relieved many in this dreadful Distemper, is as follows. As soon as I came to the Patient, I order'd eight or ten Grains of the *Pil. Matthæi* to be given him; and, about half an Hour after, half an Ounce of Manna, two Drams of Cream of Tartar, and one Ounce of solutive Syrup of Roses, in warm Water-gruel; and this is to be repeated every three Hours, allowing four Grains of *Pil. Matthæi* to be administered in the Intervals. But if the great Propension to vomit should render the Stomach incapable of retaining the laxative Draught, so that no Operation is to be expected from it, then it will be necessary to appease that Symptom with the following, or some other Mixture of the like Kind, before we proceed any farther.

Take of Salt of Wormwood, one Scruple; pure Opium, a Grain, or a Grain and half; strong Mint-water, an Ounce; Syrup of Lemons, a Spoonful. Mix them together.

A Clyster is, also, to be injected once in four Hours, till the Body becomes soluble. These Clysters should always admit of Balsamics in their Composition, and may be made in the following manner.

Take of common Decoction, eight Ounces; Balsam of Capivi, dissolved in Yolks of Eggs, two Drams; Soap of Tartar, one Dram; Oil of Anise, two Drams. Mix them together.

In the mean time, warm Fomentations are to be applied all over the Region of the Abdomen; with Flannel Cloths.

Take of Chamomile-flowers, three Ounces; Juniper and Bayberries, each an Ounce; boil them in five Pints of Spring-water, to three. At the End, add of Caraway, Fennel, and Anise-seed, each half an Ounce; dissolve in the strain'd Liquor, a Dram of Opium; and add a Pint of Rum.

A Semicupium, or Bath, made with the Leaves of wild Sage, Lavender, Rosemary, Chamomile, and other warm, nervous Plants, often help to alleviate the Pain, and afford considerable Relief to the distress'd Patient.

When the Pains begin to be mitigated, and the Body is somewhat open, it will be time to proceed to Purges of greater Efficacy; and chiefly, such as are compos'd with a Mixture of Mercurial Preparations.

Take of Calomel, a Scruple; the smaller *Pil. Cochizæ*, a Scruple; Opobalsamum, enough to make them into four Pills; to be taken in the Morning, and repeated every Day, till the Pain remits, and the Body becomes soluble.

Opiates

Opiates may now be laid aside, unless the Urgency of the Symptoms still require the Continuance of them; or, at least, their Quantity may be lessened; and, in their stead, the Patient is to take two Scruples of Balsam of *Peru*, with Loaf-sugar, or in any other convenient Form, every six Hours: This Medicine will rarely be found to fail, when given at a proper Time of the Disease, and in a sufficient Dose; which has been too long neglected in Practice.

There is another Production of Nature, which Providence has plentifully bestowed on this Island, I mean the *Pisselæum Indicum*, or the *Barbadoes Tar*, as it is commonly called: This indeed is not so elegant to the Taste and Smell, as the fore-mentioned Balsam; but, where the Stomach can comply with it, I am sure it is of much greater Efficacy in this Distemper. I need not, surely, use many Arguments, to prevail with any Person under these Circumstances, to divest himself of Prejudices to a Remedy, which will so powerfully conduce to his Ease and Safety; for a Man must be strangely Palate-ridden, who will endure the highest Aggravations of Torture, and run the Risk of disabled useless Limbs, for the Gratification of Taste. I would, therefore, advise, that two Drams of this *Pisselæum* be given three times a Day, till the Disease be totally vanquished.

Upon the first Apprehension of the tingling Uneasiness along the Spinal Marrow, or the Numbness and Inability of the Limbs, the whole Length of the Vertebrae, as well as the Limbs, ought to be well chafed with a Mixture of this Tar, in double-distilled Rum, which will (if any thing in Nature can) avert the impending Paralysis.

This is a Method which I have successfully used, in a Malady which was generally attended with such fatal Consequences, under a different Management; and I could not forbear making it public, for the Benefit of an Island which has laid me under the strongest Obligations of Gratitude.

When the Palsy has been actually formed, either from injudicious Treatment, or the Violence of the Distemper, I have not been able to discover any means effectual enough to remove it, unless the Patient would be prevailed upon to leave the Island, and repair to *England*, where *Bath Waters* taken inwardly, and applied to the affected Parts by Pumping, with other proper Remedies, have often perfected the Cure. *Towne's Diseases of the West-Indies*.

PICUS MARTIS. The Woodpecker: A Bird of which there are many Species, besides that commonly known in *England*. It has the Reputation of being good for the Eyes, and to preserve and improve Vision: For this Purpose it is eaten dressed, or boiled in Soup: It is, also, applied to the Eyes; and the Blood is dropped into them, with the same View.

PIERRE DE COLIQUE. See *UMBRA*.

PIESMA, *πῖσμα*, from *πίσσω*, to press. The *Magma*, or Residuum, which remains after the fluid Part is pressed out: Thus, in the Expression of Oils, the Cake, or what remains in the Bag, is called the *Piesma*; and in this Sense it is used by *Hippocrates*. But *Dioscorides*, *Lib. i. Cap. 106*. speaking of Bay-berries, calls their expressed Juice *Piesma*: And it is used by *Galen*, in the same Sense.

PIESTER, *πῖστης*, or *πῖστης*, a Press; from *πίσσω*, to press.

PIESTRON, *πῖστρον*, from *πίσσω*, to press. An Instrument recommended by *Hippocrates*, for breaking the Bones of the Head of a Fœtus, when too large to be otherwise extracted: It should seem to be a Sort of Forceps.

PIGMENTARIUS. A Vender of Ointments. *Rhodus ad Scribon. Largum*. An Apothecary, or Druggist.

PILA. A Ball. See *SPHÆRA*. It, also, signifies a Mortar, or a Pestle.

PILA MARINA. This is a Species of Alcyonium, or a round spherical Ball, found on the Sea-coast, among the Wrack. It is generally as large as a Person's Fist, but sometimes larger, and sometimes less: It is lanuginous, of a dark Colour, and formed by a Collection of Hairs, Sand, and other Impurities of the Sea, united by means of some glutinous Liqueur. It is said to be proper for killing Worms, and preserving the Hairs, when applied externally. *Lemery des Drogues*.

The *Pila Marina* cannot be reduced to a Powder; till it is thoroughly calcined. Authors are of Opinion, that this Substance is good against scrophulous and strumous Disorders, not only on account of its drying Nature, but, also, in consequence of some other latent Quality. Neither can I totally reject this Opinion, since it is a Substance, whose saline Quality is not destroyed by Calcination. *Zwelfer*.

PILARELLA. The same as *PELADA*.

PILARIS MORBUS. The same as *TRICHIASIS*.

PILATIO. A minute Fissure of the Cranium, not larger than an Hair.

PILEUS, or **PILIOLUS**. See *CUCUPHA*. In Anatomy, the Coif with which some Children are born, is called *Pileus*, *Pileulus*, *Galea*, and *Vitta*.

PILI ZENIL. The Hairs which grow about the Scut of an Hare. *Rulandus*.

PILIMICTIO. A Discharge of Substances resembling Hairs, with the Urine. See *TRICHIASIS*.

PILIPOC *Philippinarum Insularum*. *Nieremb*.

This Plant is of two Kinds, the Male, and the Female: The first is the greater, and has larger Leaves, and grows among Rocks; the other, or Female, is less, and grows in Plains: On the Roots of them both grow dark-coloured Tubercles, of the Bigness of a Man's Fist: The Trunks, which are of a dark-brown Colour, and without Joints, being cut athwart, are divided into a sort of Pellicles, like the Membranes or Coats of Onions: The Leaves are like those of Bay, and are remarkably acuminate; are produced in a moist and shady Situation, and roll themselves about the Trees. The Root is of Use for venomous Bites, and in Potions; but is slow in Operation. *Raii H. P.*

PILORIS. A very large Species of Rat, found in *Martinitico*, which smells like Musk. The Inhabitants eat them: But they are of no Use in Medicine.

PILULA. Pill.

The Form of Pills is principally designed for such Things as are too nauseous to be taken any other Way; or are most readily fitted, by their natural Texture, to this Kind of Management: Of the first Kind are the *Aloes*, *Colocynth*, and the like, which are thus best concealed from the Taste; and of the latter are most Gums, which, with very little Trouble, are reduced into Pills.

But this Form being generally the most troublesome to take, as few Things should be contrived into it as possible; that is, such only as, by their Irksomeness in going down any other Way, make it necessary to conceal them by this means. But this Reason ought to extend only to such Things, which are of sufficient Efficacy, not to make above four or five small Pills for a Dose. Thus, the Bark, in Powder, and all the lighter Species, which are given in the Quantity of half a Dram, or upwards, for a Dose. If, to avoid the Irksomeness of other Forms, Recourse should be had to this, a necessary Quantity of Moisture, to reduce them into it, would make one Dose into ten, twelve, or fifteen ordinary Pills, which are more than any one can be imagined well to get down; for half a Dram in the Mass makes five middle-sized Pills, and half a Dram of dry Powder will take up above double its Quantity of Syrup, to bring it into a Mass of due Consistence. The gummy Substances, indeed, are thus reducible by Liqueur, which will but little increase their Bulks; and for this Reason, also, they have a peculiar Fitness for this Form.

But there are some Things absolutely unfit for Pills, by reason of their natural Texture and Properties, except in small Quantities; and these are all the volatile Salts, and most of the fixed ones. The first heave and ferment them into unreasonable Bulks; and the last render a Mass so brittle and crumbly as make it almost impossible to be worked into Pills; though both these Inconveniencies may, in some measure, be avoided, by contriving to mix with either of these Salts other Things which are very tenacious, as some of the Extracts and Gums; and this makes the *Pilulæ Ecphrasticæ*, now directed in the Dispensatory, at first of a tolerable Consistence.

One very material Thing, likewise, to be considered in this Form, whether officinal or extemporaneous, is, that the Liqueur or Moisture, wanted to give a Consistence, have the most convenient Fitness to the Thing requiring it. Thus dry light Powders will not make up with any thing thinner than Syrup; and some of the heavy ones, as *Cinnabar*, and most of the Mercurials, will hardly do with any Moisture of a lower Consistence than Honey or Conserve. But the gummy Substances, especially those which most approach to an oily or resinous Texture, as *Galbanum*, *Opopanax*, *Myrrh*, and the like, will not so well make up with Syrups or Conserve, not only on account of increasing their Bulks too much, but because they will not so well incorporate with them, as with spirituous and more penetrating Liqueurs. As this Form, therefore, must have somewhat in it adhesive and tenacious, where it is not in the dry Substances, it must be sought for in a proper Moisture to hold them together; and where it is sufficiently already in those Substances, as in the Gums, the thinner Liqueurs are best, to give them a Consistence, or such as are better suited to incorporate with them, than aqueous Moistures, as the terebinthinous Balsams; for some fat Substances will refuse a Syrup, at the same time that they will readily take in Turpentine, or any thing of like Disposition.

Among the officinal Pills, there are but few that do not take in something purging, and those are as follow: The *Pilulæ Gummosæ* were never in the *London Dispensatory* before, tho' long ago in some others; so that it may not, perhaps, be yet much brought into the Shops; but it is a very uniform Composition; only the *Mithridate* will not so readily incorporate with

with such Materials as Spirit of Castor, or any terebinthinous Substance. Such things are, likewise, sooner brought into a Mass, with a Mortar a little warmed. The Storax-pill has stood long approved for an excellent Composition; by the frequent Prescription of it in Catarrhs, and such-like Defluxions; but the Texture of its Materials, though most of them gummy, partake so little of an oily Principle, that they readily make up with a Syrup into a very good Consistence. The Pilulæ de Cynoglossæ are calculated for the same Intentions, and hardly to be known from this in the Mass, the Ingredients being nearly the same in both; but the Storax-pill is generally preferred, as a shorter and more uniform Composition. The Laudanum is subject to grow brittle, and sometimes a little mouldy at the Top; both which are prevented by keeping it close from the Air. The Quantity of Opium is much better ascertained in this, than in any liquid Forms; and, with a little Trouble, this may be dissolved into Draughts for extemporaneous Uses, though it is the most ready for a Bolus, or Pills.

Among those which take in Cathartics, some do it so sparingly, that they ought rather to be deemed Alterants than Purgers; such as the Aloephanginæ Foetidæ, and Stomachicæ cum Gummi; all which so abound with Ingredients of other Intentions, that the purging-ones are almost lost in them. *Saxenius* finds great Fault with the first of these; but it is so very little used now, that it is hardly worth a critical Examination here; and especially as the Tinctura Sacra is a Medicine much better contrived for the same Intentions, on all Accounts, both for Taking and Efficacy. The Pilulæ Foetidæ cannot be justified for a very uniform Composition; but, in the main, it takes in so many Things which are efficacious in hypochondriacal, hysterical, and other nervous Disorders, that it is generally used with Success; but if so much of the Juice of Leeks be applied in dissolving the Gums, that it wants but little of the Syrup to bring it to a Consistence, it will be very subject to grow mouldy with keeping. In this, and all other Compositions which take in Ingredients so different in Textures, all that will powder, ought to be so reduced together; and, when the Gums are strained, after dissolving them with a moderate Heat, in the Liquor directed, they are put together in a Mortar, and beat into a due Consistence, with a proper Quantity of Syrup. The Oil of Amber, or any thing else of like Nature, is best rubbed first into the dry Powders. The Pilulæ Stomachicæ cum Gummi continue to be sometimes ordered; but they are not so much esteemed as they were formerly; the Tinctura Sacra, also, taking place of it to better Advantage. There are, likewise, some other Cathartics of weak Efficacy, from their Mixture with other Things, which are so little used, that they deserve not much Examination; as the Pilulæ de Agarico, de Aloe lota, de Ammoniaco Magistrales, Cochiae majores, Diambrae, and Mechocanna; all which are hardly ever made or prescribed. The Pilulæ Ecphracticæ, for the Reasons already given about Salts contained in Pills, are of so brittle a Consistence, that they, likewise, are seldom to be met with in the Shops, or in Prescription. The same Disadvantage, also, have the Pilulæ de Rhabarbaro, de Scammonio, and Tartaræ.

The Pilula Ruffi is the only one in this Rank, which is much approved in common Practice; and indeed its Ingredients are so few, and those so good in the Intention of a gently purging Stomachic, that they very well deserve this Preference. This, and the Elixir Proprietatis, take in the same Ingredients, and differ in little else than their respective Forms: This Pill, as to its Goodness, is so much judged of by its Colour, which is coveted of a bright yellow, that most, if not all, Compounders bring it to a Consistence with Syrup of Lemons, which much improves it in that respect, instead of Syrup of Wormwood, which would greatly hurt it.

Among the most efficacious Purges, and those most commonly in Use, are the Pilulæ Cochiae minores, e duobus, and Pilulæ Rudii. The two first differ in little else, than in one's having the Aloes, and the other not, which makes the latter stronger, the Colocynth and Scammony being most powerful Cathartics. The Goodness of both is judged by the strong Scent of the Oil of Cloves, which, being the most chargeable Ingredient, is most likely to be limited in its Quantity. The Pilula Rudii is of the same Contrivance as the Aloephanginæ; but is not so crowded with unnecessary Ingredients, and, therefore, takes in the efficacious ones in larger Quantities, so that its Operation is brisk enough in a Dose of half a Dram. But, in the common Way of making the Spirit, necessary to extract the Spices, and other hard Ingredients, most of it is drawn over before the Scammony and Aloes are put in; and after that it is distilled, so that the Remainder is near in the State of an Extract, or about the Consistence of a Syrup, the Aloes is melted in it, and the Scammony sifted in, when powder'd. The Pilulæ de Gutta Gamandra have nothing difficult in their Composition, but are of a more brittle Consistence, and more liable

to gripe in their Operation, upon account of the vitriolated Tartar, than they would be without it: Though this seems to be put into many of this Class, which abounds with resinous Ingredients, as a means to divide them; but it is extremely racking to the Stomach and Bowels, and seems to be well supplied by the common Salt of Tartar.

There is not much to be learned from Examples of occasional Prescription in this Form, besides what is common to every Form; for there is required nothing particular here, more than what hath been already taken notice of, concerning a proper Consistence, and the not exceeding a certain Number in a Dose.

PILULÆ DE AGARICO: Pills of Agaric.

Take of the Troches of Agaric, one Ounce; the Species of Hiera, half an Ounce; Myrrh, six Drams; Syrup of Buckthorn, a sufficient Quantity to make into a Mass for Pills: The Dose is from a Scruple to a Dram.

PILULÆ ALOEPHANGINÆ. See ALOEPHANGINÆ.

PILULÆ DE ALOE LOTA. See ALOE.

PILULÆ DE AMMONIACO MAGISTRALES. See AMMONIACUM.

PILULÆ BALSAMICÆ. See CYTISO-GENISTA.

PILULÆ COCHIAE MAJORES ET MINORES. See COCHIA.

PILULÆ DE CYNOGLOSSO. See CYNOGLOSSUM.

PILULÆ DIAMBRAE: Pill Diambra.

Take of new Gum Guaiacum, and the rosated Aloes, each three Drams; simple Hiera Picra, a Dram and half; Mastich, a Dram; the Species Diambrae, without the Perfumes, half a Dram: Let these all be reduced into a fine Powder; and, with a sufficient Quantity of Peruvian Balsam, be made into a Mass of a due Consistence for Pills.

PILULÆ E DUOBUS: Pills of two Things.

Take of Colocynth and Scammony, each an Ounce; Oil of Cloves, half a Dram; Syrup of Buckthorn, a sufficient Quantity to make into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

PILULÆ ECPHRACTICÆ: Ecphractic Pills.

Take of Gentian, Rhubarb, Gum Guaiacum, Salt of Steel, and Salt of Wormwood, of each one Ounce; of the Pilulæ Aloephanginæ, two Ounces; Syrup of Buckthorn, a sufficient Quantity, to make all together into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

PILULÆ FOETIDÆ: The fetid Pills.

Take of Aloes, Trochisci Alhandal, Opopanax, Ammoniacum, Sagapenum, Myrrh, and the Seeds of Rue, of each five Drams; of Scammony, and Asa-fœtida, of each three Drams; of Turpeth-root, half an Ounce; of the lesser Spurge prepared, and Hermodactyls, of each two Drams; of Ginger, one Dram and an half; of Spikenard, Cinnamon, Saffron, and Castor, of each one Dram; of Euphorbium prepared, one Scruple; of rectified Oil of Amber, half a Dram: Let the Gums be dissolved in the Juice of Leeks, and strained; then add the Powders, and mix them well together, and make into a Mass, with a sufficient Quantity of Syrup of Buckthorn.

These are the *Pilula fœtida majores* of *Mesue*, and which our College transcribed exactly into their first Dispensatory, as, also, it is in the *Augustan* in the same manner; but, on a Review, the Bdellium hath been expunged, as having no Virtues corresponding to the Intention of the Whole; the Euphorbium hath been, also, lessened by half its Quantity, because of its excessive Heat and Pungency. Some other small Alterations are, also, made, that are not of Moment enough for any particular Notice. *Quercetan* hath a Composition under the Title of *Pilula de Euphorbio*, not greatly unlike these, and which are transcribed by *Schröder*, who hath, in Book 4. taught many Ways how to correct the Euphorbium, as by baking it in a Citron or Lemon, or dissolving and washing it with various Acids; which Means are imagined to abate its caustic, fiery Nature. The *Augustan* Dispensatory, also, orders it, for the same End, to be reduced to a kind of Pulp, or Mass, with Oil of sweet Almonds, and then macerated warm in any acid Juices; but the Quantity it is here so reduced to, requires no such great Trouble. *Zwelfer* greatly recommends this Composition in arthritic Affections, and cutaneous Foulnesses, besides many other Cases;

Cases; and the present Practice gives some Reputation to its Virtues, by directing it sometimes in nervous and hysterical Disorders, to which last Intention the College seem to have had a particular Regard, by the Addition of *Asa-fœtida*, which was never in it before: But the Mafs is somewhat difficult to keep, without moulding; which seems owing to the Juice of Leeks used for dissolving the Gums, and not giving Body enough to keep it from drying: The best way is, to confine it in an oily Bladder, and a leaden Pot. This is a well-contrived Purge, of all kind of Humours which lay a Load upon the Nerves, and the principal Spring of the Animal Machine; for it is full of hot and penetrating Parts; and, as the Scammony acts as a Cathartic in the more open Passages, others carry the same Quality into the remotest Recesses, and clear away watry and pituitous Humours from all the Glands and Capillaries; but particularly those mucous Foulnesses, which frequently disorder the Womb. For these Reasons this is a notable Purge in all Disorders of the Head, as Apoplexies, Epilepsies, Palsies, and the like, for hypochondriacal and splenic Affections; and promotes the uterine Cleasings, so as to assist in the Cure of most Complaints from that Quarter. Rheumatisms, Schrophulas, and the Gout, it is calculated for; and the most extreme Parts will be drained of their Superfluities by it. But, for these extraordinary Purposes, it is to be frequently repeated, and to be given in small Doses, that it may not run off too fast by Stool; for the more such things are brought to the Operation of Alteratives, the more effectual are they to answer any Intentions of Moment; an Alterative in the Blood-vessels operating by the same Means as a Cathartic in the Bowels: The general Dose is from one Scruple to four Scruples.

PILULÆ GUMMOSÆ: The Gum-pill.

Take of Opopanax, an Ounce; of Gum Ammoniacum, Galbanum, and Sagapenum, of each half an Ounce; of Myrrh, two Drams; of *Asa-fœtida* and Castor, of each three Drams; of Oil of Amber, one Scruple; of Mithridate, a sufficient Quantity to make into a Mafs of a due Consistence for Pills: The Dose is from fifteen Grains to half a Dram every Night, or oftener.

PILULÆ DE GUTTA GAMANDRA: The Gamboge-pill.

Take of Rosin of Jalap, Scammony, Gamboge, and Calomel, of each half an Ounce; of Gum Ammoniacum, dissolved in the Juice of the English Orrice, three Drams; of vitriolated Tartar, two Drams; of Mastich, one Dram; of Saffron, one Scruple; of the Spirit of Turpentine, forty Drops: And make the Whole into a Mafs of a fit Consistence for Pills, with a sufficient Quantity of Syrup of Buckthorn.

This is a very rough Purge, and cannot safely be given from above ten Grains to half a Dram. It is reckoned a great Purger of Water, and is therefore principally given in Dropsies, and such-like Cachexies, that are attended with too great an Excess of Bulk; in which Case it is a powerful Medicine, but is not often prescribed.

PILULÆ MECHOCANNAE: Pills of Mechoacan.

Take of Mechoacan-root, half an Ounce; of Turpeth, two Drams; of the Leaves of Mesereon, macerated in Vinegar, and dried, of Dwarf-elder-seed, and the Troches of Agaric, of each two Drams; of the Spurge-root prepared, and Mastich, of each one Dram and an half; of Mace, Cinnamon, and Sal Gem, of each two Scruples: Let all these, clean-powdered, be made into a Mafs, with White-wine, and that dried and powdered again; and lastly, be beat up into a Mafs, of a Consistence fit for Pills, with a sufficient Quantity of Syrup of Buckthorn.

PILULÆ DE RHABBARBARO: The Rhubarb-pills.

Take of Rhubarb, one Ounce; of Resin of Jalap, and Tartar of Vitriol, of each two Drams and an half; of the chymical Oil of Nutmegs, half a Dram; of the thinner Extract of Gentian, a sufficient Quantity to make them into a Mafs of a fit Consistence for Pills.

PILULÆ RUDII.

Take of Colocynth, six Drams; of Agaric, Scammony, black Hellebore-root, and Turbeth-root, of each half an Ounce; of Succotrine Aloes, one Ounce; of Cinnamon, Mace, and Cloves, of each two Scruples: Let the Colocynth be cleared from its Seed, and cut small, the Agaric shaved into Chips, and the Hellebore, Turbeth, and Spices, be grossly bruised; and, pouring upon them four times as much Spirit of Wine, let them macerate four Days together in a moderate Heat; then strain and press out hard the Liquor, in which dissolve the Scammony and Aloes, after

they have been before duly cleansed; last of all, put the Whole into an Alembic of Glass, and draw off so much of the superfluous Moisture, as will leave the Remainder as thick as Honey, for a Mafs to be made into Pills.

It may be given from fifteen Grains to two Scruples, and is effectual for all the Purposes the *Aloephagina* stand recommended for. This, at present, is in great Esteem in the Shops for an Head-purger; and it is, indeed, the principal Pill in Use in most Cases where Cathartics are prescribed in this Form.

PILULÆ RUFFI five COMMUNES: Ruffy's, or the Common Pill.

Take of the best Aloes, two Ounces; of choice Myrrh, one Ounce; of Saffron, half an Ounce: And make them all together into a Mafs, of a Consistence fit for Pills, with a sufficient Quantity of Syrup of Wormwood.

This is accounted a good Stomach-purge, and with good Reason; for it greatly warms and strengthens it; and but very gently purges: It is peculiarly good in cold Constitutions and Indigestions, and will many times, without other Help, cure a Green-Sickness; in which Case it greatly promotes the menstrual Discharges, and opens uterine Obstructions: It may be given from fifteen Grains to one Dram; but this is not so fit for a Catarrh, as an Alterative; and therefore ought rather to be given in moderate Doses, and be long continued:

PILULÆ DE SCAMMONIO: Pill of Scammony.

Take of Jalap-root, one Dram; of Scammony, and Vitriol of Tartar, of each one Scruple; of the chymical Oil of Nutmegs, six Drops; the more liquid Extract of Gentian, a sufficient Quantity to make into a Mafs for Pills. Its Dose is from one to two Drams.

PILULÆ STOMACHICAE CUM GUMMIS: Stomachic Pills with Gums.

Take of the finest Aloes, one Ounce; of Sena-leaves cleansed, five Drams; of Gum Ammoniacum, dissolved in Vinegar of Squills, half an Ounce; of Mastich and Myrrh, of each one Dram and an half; of Saffron, and Salt of Wormwood, of each half a Dram: Make them into a Mafs for Pills, with a sufficient Quantity of Syrup of Buckthorn.

PILULÆ DE STYRACE: Storax-pill.

Take of Storax, Olibanum, Myrrh, the inspissated Juice of Liquorice, and Opium, of each half an Ounce; of Saffron, one Dram: Make them all into a Mafs for Pills, with a sufficient Quantity of Syrup of white Poppies.

Schroder says, that *S. Clossæus* used it, with great Success, to breeding Women, who were in Danger of Miscarriage from the Trouble of frequent Coughing. It is much, that the *Augustan Dispensatory*, as well as the *Pharmacopœia Regia*, hath omitted it; as it is a very good Medicine, and now much used in common Prescription against Catarrhs. There is one Grain of Opium in every six Grains of this Mafs; and therefore it ought, in the extreme Dose, not to exceed twelve or fifteen Grains. It has all the Virtues of the *Pilula de Cynoglossa*, but has somewhat more than double the Quantity of Opium in that. It is much more used, than any other of this Intention; but it ought to be with Caution.

PILULÆ TARTAREAE: The Tartar-pill.

Take of the best Aloes, three Drams; of Gum Ammoniacum, cleansed in Vinegar of Squills, half an Ounce; of Tartar of Vitriol, half a Dram: Make them together into Pills.

PILUM. A Pebble.

PILUS. An Hair. See CAPILLUS.

PIMENTA. Jamaica Pepper. See CARYOPHYLLUS.

PIMPINELLA.

The Characters are;

The Flower is monopetalous, rotated, and generally cut into four Segments, to the very Centre, and adorned with four or more very long Stamina, and herbaceous, minute, and scarce visible Bractææ; for which Reason some pronounce it Apetalous. The Ovary becomes a Fruit, which is generally quadrangular, acuminate at both Ends, and consisting sometimes of one, sometimes of two Capsules, full of oblong Seeds.

Boerhaave mentions eight Species of Pimpinella; which are,
1. Pimpinella; maxima; Canadensis; alba; spicata. *Cor. nut.* 175.

2. *Pimpinella*; *spica brevi, rubra*. *M. U.* 57. *Sanguisorba major, flore spadiceo*. *J. B.* 3. 120. *Sideritis*, II. *Discozoidis, major*. *Col. I.* 124.

3. *Pimpinella*; *sanguisorba*; *minor*; *lævis*. *C. B. P.* 160. *Tourn. Inst.* 157. *Boerb. Ind. alt.* 2. 99. *Pimpinella* & *Sanguisorba*. *Offic.* *Pimpinella bortenensis*. *Ger.* 889. *Emac.* 1045. *Pimpinella vulgaris* *sive minor*. *Park. Theat.* 582. *Raii Hist.* 1. 401. *Sanguisorba minor*. *J. B.* 3. 113. *Raii Synop.* 3. 203. BURNET.

It grows in hilly Pastures, and flowers in June, and the Leaves are in Use. The Plant is alexipharmic, vulnerary, and pulmonic; and is principally used in Catarrhs, Affections of the Lungs, a Phthisis proceeding from Erosion, in malignant Diseases, Loosenesses, and Hemorrhoids: It prevents Abortion, and is a Strengtheners: Outwardly it is of Service in all Kinds of Hemorrhages. *Dale from Schroder.*

There grows to the Root of this Plant, in some Places, a red Grain, which is used in dying a crimson Colour: Whence some take it for the Coccus, and call the Root by that Name; as we are informed by *Lacuna* and *Anguillara*.

What is related of the Virtues of this Plant, may be reduced to two Heads; first, That it is cardiac and alexipharmic: Hence the green Herb is put into Wine, to exhilarate the Heart, and to improve the Wine itself, by communicating to it an aromatic Flavour and Taste, much like that of a Melon: It preserves, also, from the Pestilence, and other contagious Diseases. In the second Place, it is an Astringent: Whence it is of excellent Service in an immoderate Flux of the Menfes, Fluxes of the Belly, all Sorts of Hemorrhages, and in drying, conglutinating, and healing Wounds and Ulcers. *Mr. Boyle* used to exhibit the Powder of the dried Herb or Root, with Sugar of Roses, for an Hemorrhage of the Nose, Spitting of Blood, and a Consumption of the Lungs; the same, without the Sugar, sprinkled on cancerous Ulcers, restrains them from spreading. *Selenander, Lib. 3. Consil. 27.* recommends a Conserve of the Leaves, with a Draught of the simple Water afterwards, for Pissing of Blood; for which Purpose, also, the candied Root, he says, may be used. An Huntsman belonging to *Henry the Second, King of France*, solemnly affirm'd, that *Pimpinella* was of such Efficacy for preventing an Hydrophobia, that whoever should eat it for some Mornings together, either in a Salad, or any other way prepar'd, would never be visited with the least Symptom of that Distemper. *Palmar. de Morfu Canis rabidi*. *Panchorius* relates, that a King of *Chabam*, after a Battle, cured fifteen thousand wounded Men with the Use of *Pimpinella*. *Raii Hist. Plant.*

4. *Pimpinella*; *Sanguisorba*; *elegantior lacinata*. *H. R. Par.*

5. *Pimpinella*; *Sanguisorba*; *minor*; *femine majore*; & *crassiore*. *Bot. Monsp.*

6. *Pimpinella*; *Agrimonioides*; *odorata*. *H. R. Par.*

7. *Pimpinella*; *spinosa*; *feu sempervirens*. *M. U.* 57. *Poterio affinis, foliis Pimpinellæ, spinosæ*. *C. B. P.* 388. *Poterium quibudam, sive Pimpinellæ spinosæ*. *J. B.* 1. 2. 410. *Χαλκοον Anguillæræ, Poterium Dalechampi*. *Clus. H.* 108. *T. Voy.* 1. 158.

8. *Pimpinella*; *major*; *Hispanica, altera*; *conglomerato flore*. *H. R. Par. T.* 157. *Boerb. Ind. alt. Plant. Vol. 2.*

These *Pimpinellas* have the Appellation of *Sanguisorba*, to distinguish them from the *Pimpinellæ Saxifragæ*, which are of a very hot Nature; but the *Pimpinellæ Sanguisorbæ* are astringent. The Plant is aromatic, gently astringent, and of excellent Service in a Relaxation of the Fibres, and a too thin and fluid State of the Blood: It is prescribed in an immoderate Flux of the Menfes, to be eaten with Bread and Butter, or drank like Tea; so used, it renders all manner of Poison of no Effect. The five first Species are commended as Preservatives against the Pestilence. *Pimpinella* is infused, also, in Wine, to be used where a Laxness of the Part requires Astringents; and there is scarce, among Vulneraries, a better Plant for repressing the Flux of Blood in an Hemoptoe: It is of singular Virtue in the Dysentery, both by correcting the Acidity of the dysenteric or peccant Matter, and by gently astringing the relaxed Fibres of the Intestines. There is prepared a Conserve of the Flowers, which is of extraordinary Efficacy in the above-said Disorders. The Leaves infused in Wine, or common Water, are good for the Stone and Gravel in the Kidneys. *Hist. Plant. adscript. Boerhaav.*

PIMPINELLA is, also, a Name for several Sorts of *TRAGOSELINUM*; which see.

PIMPINICHI, *Arbor lactescens*. *J. B.* On all the Coasts of the *Indian Continent*, says *Monardes*, there grows a small Tree, like an Apple-tree; the *Indians* call it *Pimpinichi*, from whose Branches being cut off, there immediately flows a milky Humour, somewhat thick and viscid.

Three or four Drops of this Juice, being taken inwardly, purge very strongly, Bile and Water, by Stool: It is drank in

Wine; or the Powder of it, inspissated, is swallow'd, but in a small Quantity, because of its Violence. Upon taking some Wine or Broth, its Operation is checked, and ceases on a sudden: And the same is reported of the *Indian Ricinus*. *Hernandez. Raii H. P.*

PINASTER. See *PINUS*.

PINDAIBA nonnullis Ibira. *Pison. Arbor baccifera Brasiliensis Fructu Piper respiciente*. A very tall Tree growing in *Brasil*, which, on account of its acrimonious Fruit, and other Qualities, much resembles the *Braslian Pepper*: The Leaves are small, acuminate, and like those of the Olive-tree: The Berries are green in the rainy Months, but turn red in *December* and *January*, when they ripen, and fall off; but, being dried, they turn black, and burn the Tongue, and have an aromatic Taste, being separated from the black oblong Seed contained in them, which smells of Juniper.

The Berries, eaten fasting, corroborate a weak Stomach, and discuss Flatulencies; bruised and applied, they heal the Bites of Serpents: Of the same, dried and pulverized, they prepare a Gargarism against cold Affections of the Throat: They are boiled, in order to be kept in Shops, and serve instead of Pepper, for culinary Purposes. *Raii H. P.*

PINDOVA. The Name of a Species of Palm.

PINEA. A Name for the *Ananas aculeatus*; *fructu pyramidato*; *Carne Aurea*.

PINEALIS GLANDULA. The Pineal Gland. See *CEREBRUM*.

PINEATUM. A Name for various Compositions, the Basis of which are Pine-nut-kernels.

PINEI Nuclei Maluccani sive purgatorii. *J. B. Pinus Indica Nucleo purgante*. *C. B. Pinei Nuclei Maluccani*. *Park.* There grows, says *Acosta*, in some Gardens of *Malabar*, and, also, wild in some Woods, a Tree of the Bigness of a Pear-tree, whose Leaves are of a Watry-green beneath, and of a Deep-green on the upper Face, and are very tender and soft: They are of a very acrid Taste, and vellicate the Tongue for a long while afterwards: The Fruit is triangular, of the Size of a Filbert, and divided into many Capsules, containing each a round Sort of white Seed, equal to a Pine-kernel, when taken out of its Shell.

We are to consider, says *J. Bauhine*, whether these are the cathartic Pine-nuts, of which *Monardes* gives the following Account: There is exported, he says, from *New Spain*, a Sort of Pine-kernels, with which the *Indians* purge themselves; whose Example is imitated by very many in these Countries: They are like our Pine-kernels, growing in large *Strobili*, like the beardless Ears of Mayz, with a softer and blacker Shell than ours, round, white on the Inside, fat, and sweet in Taste.

The *Indians*, as *Acosta* says, take a couple of the Kernels, peel them, and then pound them, and mix them in Clysters, against Difficulty of Urine, and the Pain of the Sciatica; or exhibit them in Cock-broth, for the Evacuation of putrid, slimy, gross, and cold Humours; and particularly for the Cure of an Asthma: They anoint the Impetigo with these Kernels, bruised in Water; and so cure it; but they are very burning. The cathartic Pine-kernels, as *Monardes* says, purge very strongly Bile, Phlegm, and Water; and, though milder than Filberts, excite Vomiting: When roasted, they operate with less Violence, and fewer Gripes: They are exhibited in chronic Diseases, and have a peculiar Virtue of evacuating gross Humours. *Raii H. P.*

PINGUEDO, *πικνὴν, πιάς, πίστις, λίπος*. Fat. See *ADEPS*. Official Fats are, also, called *Axungia*.

Fats in general are heating, moistening, emollient, abstergeing, digestive, generative of Pus, and more or less anodyne: Every Fat in particular partakes of the Nature of the Animal whence it was taken; the weakest is the Fat of Swine, because that Animal is of a cold and humid Nature: The Fat of a Calf is somewhat stronger, next that of the gallinaceous Kind, and the strongest of all is the Fat of a Goose. It is to be observed, that whenever Fat is mention'd simply, or without any Note of Distinction, we are to understand it of the recent unsalted Fat of Swine.

Pinguedo mineralis; what it is, see *Theat. Chym. Vol. 4.*

PINGUICULA. A Plant so called by *Gesner*, because its Leaves are fat to the Touch, as if rubbed over with Oil, or Butter. Of this *Ray* makes four Species; which are,

1. *Pinguicula Gesneri*. *J. B. Pinguicula sive Sanicula Eboracensis*. *Ger. Park. Sanicula montana Flore calcari donato*. *C. B. BUTTERWORT, YORKSHIRE SANICLE*.

The Leaves, which are six or seven in Number, and sometimes more, spread themselves upon the Ground, and are about two Inches long, and one broad, of a yellow Colour, inclining to a pale Green, fat to the Touch, and shining as if they were rubbed over with Butter or Oil. From amidst the Leaves arise Pedicles, a Palm or more in Height, and bearing at the very Top a single purple, violet, or white Flower, like a Violet, but mono-

monopetalous, furnished with a long Spur, and divided into five Segments: It grows in moist and marshy Places, and on plashy Downs, where Springs of Water abound.

2. *Pinguicula Flore albo minore, Calcarei brevissimo.* This was observed by Ray, in moist Places on the Tops of Mount Jura.

3. *Pinguicula Flore amplo purpureo, cum Calcarei longissimo.* This is found in the same Places as the preceding.

4. *Pinguicula Cornubiensis Flore minore carneo.* The Leaves of this Species have their Margin reflexed, and, as it were, convolved; are almost pellucid, and striated with red Veins. Ray observed this Species to grow in marshy Places, about Kilkhampton, and other Places in Cornwall.

The Leaves, bruised, and applied, are said to cure recent Wounds and Bruises: It is usual for the Country-people to cure Chaps in their Hands, and Tumors and Fissures in the Udders of their Cows, with the Fat and buttery Juice of this Herb: Hence it took the Name of *Yorkshire Sanicle*. The common Sort of People in *Wales* prepare from it a Syrup, with which they purge themselves, and those who belong to them; and, also, boil the Herb in Broths, for the same Purpose; for it purges Phlegm briskly enough: They make, also, an Ointment of the same, which is of great Use in Obstructions of the Liver. *Dalechampsius* affirms, that the Root baked, and applied in Form of a Malagma, cures the Sciatica on the third Day, and that the same bruised and applied, cures all Sorts of Pains. *Camerarius* assures us, that it is a vulnerary Herb, and is of excellent Service in Hernias of Children. It dyes Hairs yellow, and serves Women instead of Gum for curling their Hairs. *Raii H. P.*

PINIPINICHI. The same as PIMPINICHI.

PINNA. A Wing. But the lateral and inferior Parts of the Nose are called the *Pinnae* thereof; and the superior broad Part of the external Ear is, also, called the *Pinna* thereof.

PINNA, or PINNA MARINA, is a Sea Shell-fish of a conical Form, and separated into two Parts, which are rough without, and of a darkish Colour, but smooth, green, and resplendent within: Some of them are two Feet in Length, and about half a Foot in Circumference, towards the Middle. This Shell is found upon the Coast of the Sea, either among the Wrack, or the Sand: There are various Species of them, which contain a small Fish, which is an excellent Aliment, and in which there are sometimes found large Pearls.

From the superior Part of the Shell, which terminates in a very obtuse Point, arises a sort of Cord, or small Portion of redish or dark-colour'd Silk, by some Naturalists, though, perhaps, not very properly, called *Byffus*: This Cord helps the Animal sometimes to fix itself to the Rocks: This Silk, when taken from the Fish, and prepared, is made into Stockings, and other Cloaths. The Fish, when eaten, excites Urine; and the Shell, when reduced to a Powder, provokes Urine, and renders the Patient costive. *Lemery des Drogues.*

PINNACULUM FORNICIS GUTTURALIS. The *UVULA*.

PINO. The Name of a sort of Nettle, which grows in *Brasil*.

PINOQUACU. A Name for the two Species of *MA-MOERA*.

PINUS.

The Characters are;

The Leaves are longer than those of the Fir-tree, and always grow by Pairs, out of one common Sheath: The Flower is male, amentaceous, consists of Stamina, and is produced at a Distance from the Fruit of the same Tree. The Fruit is a Cone, consisting of tetragonal Tubercles. Among the Squamæ, which are excavated into two Pits, are two Stones, frequently winged, inclosing an oblong Kernel.

Boerhaave mentions three Sorts of *Pinus*; which are,

1. *Pinus; sativa. C. B. P. 491. Raii Hist. 2. Tourn. Inst. 585. Boerb. Ind. alt. 2. 179. Pinus. Offic. Pinus sativa sive domestica. Ger. 1173. Emac. 1355. Pinus urbana sive domestica. Park. Theat. 1354. Pinus officulis duris, foliis longis. J. B. 1. 248. THE PINE-TREE.*

This is a large spreading Tree, whose Branches are clothed with long, slender, sharp-pointed, green Leaves, two growing together in a common Sheath, which are somewhat hollow on the Inside; on the larger Branches grow large, loose, yellow Catkins, which come early in the Spring; and, after them, large, oblong, round-pointed Cones, heavy and firm, composed of several high, brown, hard Scales, between which lie the Kernels, which are longish and white, of a pleasant Taste, included in an hard Shell, and covered immediately with a thin brown Skin. The Pine-tree grows wild in several Parts of *Italy*; and is usually planted here in Gardens.

The Nuclei, or Kernels, which are principally used, are of a balsamic nourishing Nature, good for Consumptions, Coughs,

and Hoarseness, restorative, and serviceable after long Illness; and, likewise, help the Strangury, Heat, and Sharpness of Urine. *Miller's Bot. Off.*

It has been a Subject much disputed among the Learned, by what Name the *Pinus* of the *Latins* was called among the antient *Greeks*. *J. Baubine* is persuaded, that *πεύον* (*Peuce*) is the antient *Greek* Name for the *Pinus*; and his Brother *Caspar*, with *C. Clusius*, *Bodæus a Stapel*, and other learned Men, are of the same Opinion. For my part, I am inclined to think, with our Countryman *Turner*, that the *πεύον* of *Theophrastus* is indeed the Tree which the *Latins* call *Pinus*; but that *Pliny* took the *πίτυς* (*Pitys*) of the *Greeks*, for the *Pinus*, because that Author renders *πίτυκαμπαι* (*Pityocampæ*) by *Eruca Pinorum*, *The Caterpillars of Pine-trees*, not of the *Picea*, or Pitch-tree. As for the *πίτυς* (*Pitys*) of *Theophrastus*, we are not certain what Tree it was; but *J. Baubine* thinks it likely to be the *Pinaster*, or Mountain-pine. The Occasion of this Uncertainty, and Mutation of Names, seems to be owing to the *Arcadians*, who, as *Theophrastus* writes, called *πίτυς* what the other *Greeks* called *πεύον* and gave the Name of *πεύον* to what the rest called *πίτυς*.

The Bark and Leaves of all the Species of Pine-trees are refrigerating and astringent; whence they are of Service in Dysenteries, and an immoderate Flux of the Menfes. The Decoction or Infusion of Pine-tree-tops in Beer, or any other proper Liquor, is supposed to be very effectual for the Stone in the Kidneys or Bladder, and for the Scurvy, and other Affections of the Thorax. *Hoffman, Meth. Med.* relates how a thousand Persons were cured of scorbutic Affections, by the young and tender Shoots of the Pine-tree.

Pine-kernels are of a most delicious Taste, and even preferable to Almonds; whence, in *Italy*, they are served in at a second Course: They are moderately hot and moist, maturating, lenitive, and fattening; their principal Use is in a Phthisis and Tabes, because they are very nutritive, though not very easy to be digested, as *Dodonæus* thinks: Taken either alone, or in Honey, or in any other Eclegma, they are good for a Cough, and inveterate Disorders of the Breast, because they are lenitive in Exasperations; they are, also, of Service in nephritic Disorders, the Strangury, Acrimony of Urine, and the like, because they mitigate and remove Pains: They increase Milk, and the Semen; on which Account they revive languishing Nature, and excite to Venery, especially when they are preserved in Sugar. The whole Cone, or Strobilus, boiled with fresh Horehound, and afterwards boiled a second time, with a moderate Addition of Honey, to a melleous Consistence, is a proper Medicine, as *Galen* says, to promote Expectoration, is good for an old Cough, and consumptive Disposition, as we are assured, also, by *Dioscorides*. The Water of the Cone is astringent, and, therefore, good to remove Wrinkles in the Face, to repress the Growth of the Breasts, and for the Falling out of the Matrix, and other Disorders of that Kind.

Coccalus, κόκκαλον, according to *Galen, Com. 4. in Lib. de R. V. I. A.* though used by *Hippocrates*, was not the Name for the Pine-nut, among the antient *Greeks*, but *κόνος* (*Conos*); the modern Physicians, he says, almost universally call it *σπείλαιον* (*Strobilos*): The *Coccalus*, together with Myrrh, made into an Eclegma with Honey, is advised by *Hippocrates*, in the Book before-mentioned, for a Pleurisy: And in the same Treatise, he directs an Eclegma to be prepared of the *Coccalus* and Galbanum, with *Attic* Honey, for a Peripneumony; to which last Place *Galen* had, undoubtedly, a respect in his Exegesis, where he writes, *That most take the Coccalus to be the Kernel of the Strobilus*. But *Dioscorides*, by way of Diminution, will have it to be the *Granum Cnidium*. *Κόκκαλον*, in *Hesychius*, is expounded by *ῥόμβος* (*Rhombus*) *σπείλαιον* (*Strobilos*), and *πεύον* (*Peuce*). Pine-kernels are called by *Dioscorides, Lib. 1. Cap. 88. πίτιδες* (*Pityides*); by *Menesthus, in Athenæus, Lib. 2. ἀστράκιδες* (*Astracides*); also, *πίτινοι κόνοι* (*pityini Coni*), and *πίτινα κάρυα* (*pityina Carya*), from *Alexander Myndius*, and *Diocles Carystius. Foesius*.

2. *Pinus; sylvestris. Ger. 1175. Emac. 1356. C. B. P. 491. Raii Hist. 2. 1399. Boerb. Ind. A. 2. 179. Pinus sylvestris, Pinaster. Offic. Pinus sylvestris vulgaris Genevensis & Tada. J. B. 1. 253. THE MOUNTAIN PINE.*

This Tree grows to be as tall, and as large, as the former; but differs from it, in having shorter and slenderer Leaves, smaller and sharper Cones, including smaller Kernels, much of the Nature and Virtue of the former: It grows in great Plenty in divers Parts of *Germany*.

From this Tree is gotten what is called *common Turpentine*, (See *TEREBINTHINA*) which is whitish, thick, and opaque, like Honey, of a strong Smell, and used principally by *Farriers*: From this is distilled the Oil of Turpentine, the finer and more volatile Part thereof, and what comes first, being called

the Spirit: What is left at the Bottom of the Still is the common Rosin, which, if taken out, before it be drawn too high, and then washed in Water by a peculiar Method, is what we call white, or yellow Rosin. The black Rosin is the same, more evaporated, and not washed at all. See COLOPHONIA. The common Frankincense is reputed to be the native Rosin of this Tree, or the *Resina Pini*, which is of a whitish-yellow Colour, whereof some Pieces are fat, soft, and whitish, and others hard, brittle, and more yellow. There is but little of this to be got pure at present, being adulterated by common yellow Rosin, by some way that crafty Knaves have found out. See THUS. The black and yellow Rosin are much of a Nature, being used in Ointments and Plaisters. Mr. Dale, in the second Part of his *Pharmacologia*, affirms, from Dr. Kreig, that the *Pix Burgundica*, or Burgundy Pitch of the Shops, is made of this Turpentine, after it has been boiled some time, and before it has arrived to the Hardness of Rosin: This is done, says he, in Saxony, where the white Rosin is made by boiling the Turpentine in large Vessels, without Distillation. See *Pix BURGUNDICA*. Miller's Bot. Off.

3. *Pinus humilis*; *Iulo purpurascens*. T. 585. *Pinaster Austriacus*, *tenuifolius*. J. B. 1. 255.

The Kernels, dried by the Fire, are good for an Asthma, and deterge Ulcers in the Kidneys. The Decoction of the thin Leaves is commended in the Scurvy, where the Acrimony of the Humours requires Demulcents, and where the Vessels are to be strengthened, as the Case is in a Pthipsis. The expressed Oil of the Kernels has the same Virtues, as Oil of Almonds. Hist. Plant. adscript. Boerhaav.

PINUS AFRICANA. A Name for the *Conocarpodendron*; *foliis argenteis, sericeis, latissimis*.

Besides the foregoing Species of *Pinus*, Dale mentions the following;

Pinus maritima. Offic. *Pinus sylvestris montana*. Ger. 1175. Emac. 1357. *Pinus maritima major*. C. B. P. 492. *Pinus sylvestris maritima, conis firmiter ramis adhaerentibus*. J. B. 1. 243. Tourn. Inst. 586. Raii Hist. 2. 1400. *Pinus maritima major fructifera*. Park. Theat. 1535. SEA PINE.

It grows in *Provence* and *Languedoc* in France; and the Bark, Leaves, and Resin, which are the Parts in Use, agree in Virtues with those of the *Pinus sylvestris*, or Mountain Pine.

Besides these, the following Species are mentioned in Ray;

1. *Pinus cui Officula fragili Putamine sive Cembro*. J. B. *Pinus sylvestris montana tertia*. C. B. *Pinus sylv. altera fructifera, Teda arbor forte*. Pin. syl. 2. Ger. descr.

It grows plentifully in the Country of the *Grisons*, where the Peasants feed on the Fruit, which, though, in the Judgment of *Bellonius*, it has a softer, and more savoury Kernel, than the common Pine, it is yet so cheap, as not to be worth the Exportation; it grows frequently, also, on the Mountains of *Geneve*, and Mount *Genis*, in the Passage from France to the Duchy of *Milan*, where it is known by the Name of *Elvi*. *Gesner* says, that it grows on the high Mountains of the *Grisons*, and of *Wallisserland*; and that no Trees grow in higher Places.

2. *Pinaster latifolius Iulis virecentibus aut pallescentibus*. C. B. *Niger, latiore folio, Iulis pallescentibus*. Park.

3. *Pinaster Austriacus tenuifolius*. J. B. *Pinaster tenuifolius, Iulo purpurascens*. C. B. *Teda, seu Pseudo-Pinus*. Ger. *Pinaster 3. Austriacus*. Clus.

4. *Pinaster conis erectis*. C. B. *Pinaster Austriacus*. Ger. Emac. *Pumilus montanus*. Park. An *Pinus sylvestris*. *Mugho* sive *Krein*. J. B. *Pinus tibulus seu tubulus*. Plin? *Sylv. Mugo*. Matth.

It grows on the Tops of the highest Alps in *Austria* and *Stiria*, among Stones and Rocks, where hardly any other Trees will appear.

5. *Pinaster tertius Hispanicus humilis*. J. B. *Pinus maritima minor*. C. B. Park. *Pinaster marit. minor*. Ger. Emac. *Clusius* observed this Species only in the Kingdom of *Murcia* in Spain, and that very rarely.

6. *Pinus sylv. maritima, conis firmiter ramis adhaerentibus*. J. B. *Sylv. altera maritima*. Lob. Obs. An *Pinaster 2. Hispanicus*. Clus.?

7. *Pinus maritima major*. C. B. *Maritima major fructifera*. Park. *Sylvestris montana*. Ger. *Pinus maritima Theophrasti*. *Lobelii*. J. B. In Trunk, Branches, and Leaves, it appears very like the *Pinaster montanus*; only the Branches are glabrous, and blacker than the Trunk; and the Cone is of a scarlet Colour, and shorter and broader at the Top.

8. *Pinastrum alterum Hispanicum, vel minus Hispanicum*. Clus. *Pinus maritima major fructifera altera*. Park. *Marit. major*. This grows frequently in the Kingdoms of *Murcia* and *Valentia*, in Spain.

9. *Pinus sylv. foliis brevibus glaucis, cum parvis albertibus, Hortulanis negris*. THE SCOTCH FIR, i. e. *Abies Scotica perperam dicta*. It grows spontaneously in the *Stirian Alps*.

This is now frequently cultivated in our Gardens and Groves, on account of its noble and beautiful Appearance.

10. *Pinus sylvestris, five, ut Bellonius, Picea sylvestris Ida Troadis, cujus coni facile decidunt*. J. B. Raii H. P.

PIPA arbor & fructus Linensis. Michael Boym. in *Flora Sinenfi*. Jonston. Dendrolog. The Name of a Plum-tree, which grows in China.

PIPER ALBUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum album*. C. B. P. 411. Raii Hist. 2. 1342. *Piper album, Leucopiper*. Mont. Exot. 9.

WHITE PEPPER. See **PIPER NIGRUM**. **PIPER NIGRUM.** Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum nigrum*. C. B. P. 411. Raii Hist. 2. 1341. *Lada, aliis Molanga sive Piper aromaticum*. Pil. Mant. A. 492. *Piper rotundum ex Malabara foliis latis quinque nerviis albicantibus*. Herm. Mus. Zeyl. 52. *Molagocodi*. Hort. Mal. 7. 23. Tab. 12. **BLACK PEPPER.**

The Plant which bears Pepper climbs and twists itself about any thing that is put for its Prop or Support, bearing alternately large, oval, but sharp-pointed Leaves, full of large Nerves, opposite to which grow long Spikes of small monopetalous Flowers, cut into three Parts, succeeded by Bunches of the Grains of Pepper, which are round, of a dark-brown Colour, having a wrinkled Bar on the Outside. There has been a Dispute among the Writers of the *Materia Medica*, whether the white and black Pepper are the Fruit of one and the same Plant, or whether they be two distinct Species. The more antient, as *Garcias ab Horto*, *Parkinson*, *C. Bauhine*, were of Opinion, that they were different; but *Piso*, in his *Mantissa aromatica*, and since his Time, *Herb. de Jager*, in the twenty-sixth Epistle of the *India literata*, in the Appendix to the *Museum Valentini*, plainly demonstrate, that they are but one Species; and that the white is made of the ripest black Pepper, of which they put a Quantity in a deep Trench, where it lies for two or three Days, till the Bark is rotted, when they pour in a Quantity of Water, and, stirring it about, separate the Bark which swims a-top, and dry the Fruit with white Ashes, which they separate from, when dry, with large Fans, as we with new Corn.

Pepper is heating and drying, expelling Wind, and of great Use against Coldness and Windiness of the Stomach, and the Colic; it strengthens the Nerves and Head, and helps the Sight; outwardly it is good for the Tooth-ach, and for cold Affections of the Nerves, and Pains in the Limbs. Pepper ought not to be powdered fine, but only grossly broken, when it is eaten with any Food, or used to season it. Miller's Bot. Off.

Pepper is an aromatic Fruit, of an heating and drying Quality, produc'd in Grains commonly, and us'd in Sauces and Seasonings.

This Fruit, so well known in Europe, is produc'd by a Plant or Shrub, which grows in various Parts of the East Indies.

The Plant which bears it, is weak and creeping; a Circumstance which obliges those who cultivate it to plant it at the Foot of large Trees, such as the *Areca*, and *Coco-nut-tree*. Its Leaves, in Figure, resemble those of *Ivy*, but are less green, more yellow, of a strong Smell, and pungent Taste.

The Pepper comes forth in small Clusters, like our Gooseberries; and the Grains of which these Clusters are compos'd, at first appear green; then they become red, in proportion as they ripen; and at last black, or such as they come to us, after they are left expos'd to the Heat of the Sun for some time.

There are not two Species of Pepper, one white, and the other black; and we have good Reason to embrace this Opinion notwithstanding what Mr. *Pomet*, in his *Histoire des Drogues*, has said to the contrary, since Mr. *Dillon*, a celebrated Physician, and Author of the History of the Inquisition of Goa, assures us, that all the Difference between the white and black Pepper is, that the latter has its Skin, whereas the former wants the Skin; which is taken off by beating it before it is entirely dry, or by suffering it, after it is dry, to soak for some time in Water.

Tho' Pepper is produc'd in various Parts of the Indies, yet it grows most copiously between *Rajapour*, and the Cape of *Camarin*. The Pepper of *Malabar*, or that produc'd between Mount *Eli* and the Southern Extremity of the Coast, is somewhat smaller than the other; but produc'd in such large Quantities, that Europe is principally supplied with it.

The black Pepper, consumed in Europe, is of three Sorts; that of *Malabar*, and that of *Jamby*, and that of *Belipatham*. But this last is least esteem'd in Europe, on account of its Smallness and Driness; two Circumstances which recommend it to the Indians, who think small Pepper less hot than the large Kind.

The white Pepper ought to be chosen large, well-nourish'd, weighty, and without Mixture of black Grains or Rubbish; which when reduc'd to a Powder, is of a beautiful grey or a whitish Colour.

As for black Pepper, which ought to be possess'd of almost all the Qualities of the white already enumerated, we must, also, take care that the Grains be not wrinkled; that there be a large Quantity of white Grains among them; and that the largest Grains have not been separated, in order to be whiten'd, a Practice very common in *Holland, Rouen, and Paris*.

As a great Part of the Pepper, whether white or black, is sold beaten, it is easy for Persons of a fraudulent Disposition to sophisticate it, which Retailers generally do by mixing, with the black Pepper, the grey Spices of *Auvergne; Maniguette*, a Species of *African Pepper*; the Dust of Pepper; and the Crust of Bread. With the white Pepper they mix white Spices, or black Pepper whiten'd; so that it is very difficult to distinguish the sophisticated from the genuine Kind; for which Reason we ought to buy from Persons of Honesty and Skill.

Druggists and Spice-merchants sell various other Kinds of Pepper, describ'd by Travellers in their Relations; such as the Pepper of *Madagascar*, that of *Mascarene*, or the Island of *Bourbon*; the Pepper of *China*; the Long-pepper of the *Indies, Ethiopia, and America*; *Guinea Pepper, Jamaica Pepper*, the Pepper of *Theret*, and that of *Africa*.

The Pepper of *Madagascar* is white, and grows on a Plant, which creeps on the Ground, and whose Stalk and Leaves have the same Smell with the Fruit, which ripens in the Months of *August, September, and October*.

The Pepper of *Mascarene*, which is, also, produc'd in the Island of *Java*, is call'd Cubebs, or Pepper with a Tail. It exactly resembles the black Pepper, except that it is larger, and has a Tail. The Plant which produces it, creeps on the Ground; and its Fruit, which ought to be chosen large, well nourish'd, and without Wrinkles, adheres to it in the Form of Clusters.

The *China Pepper*, describ'd by Father *le Compte* in his Memoirs, has the same Proportion with that of the *Indies*. The Tree which produces it, is as large as a Nut-tree. Its Fruit is as large as a Pea, and of a greyish Colour, mix'd with red Streaks. When it is ripe, it opens spontaneously, and contains a small Nut, as black as Jet; after it is gather'd, it is expos'd to the Sun, in order to be dried. The Nut, which is of a very strong Taste, is thrown away, and the Husk or Bark only kept. The Smell of the Pepper-tree is so strong, that the Fruit must be gather'd at different Times, lest those employ'd in that Work should be injur'd by it.

The Long-pepper, which is a kind of Congeries of many small Grains, strongly united to each other, grows upon a Shrub, whose Leaves are slender, green, and placed upon a short Stalk.

This Pepper is of three kinds, that of the *East Indies*, that of *America*, and that of *Ethiopia*, which is call'd Grains of *Zelim*. But that of the *Indies* is the only true Long-pepper, since the others bear but little Resemblance to it.

Good Long-pepper ought to be recent, well-nourish'd, large, weighty, difficult to be broken, not rotten, without Rubbish or a Mixture of Earth. It is us'd in Medicine, in various *Galenical Compositions*, and is an Ingredient in the *Theriaca*: It is, also, sometimes mixed with Spices.

The *Guinea Pepper* is of a red Colour, resembling that of Coral. It is cultivated in *Languedoc*, and especially in the Villages about *Nimes*. It is commonly found in the Shops of the Druggists and Grocers. The Vinegar-makers use it for making their Vinegar. Some, also, preserve it with Sugar; it ought to be chosen recent, in Pods, which are beautiful, dry, sound, and very red.

There are four Sorts of this Pepper: The first is call'd *Chilchotes*; the second, which is very small, is call'd *Chiltepin*; and these two Kinds are of an acrid and highly pungent Taste. The third is call'd *Tenacibiles*, which is moderately hot, and which the *Indians* eat, like other Fruit, with Bread. The fourth is call'd *Chilpelagua*: This last is neither so pungent as the two first, nor so mild as the third; this is the Species so much esteem'd by the *Spaniards*, and generally us'd by them in preparing their Chocolate.

There is, also, another Species of this Pepper, which only grows about *Peru*, where it is call'd *Agy*. A large Quantity of this Species is cultivated in a small Plain, about six Leagues in Circumference, near the Village of *Arica*, on the Coast of *Peru*, and in the Valleys of *Sama, Tacna, and Cocumba*. Tho' these four Places are of a small Extent, and there is a great Demand for this Kind of Pepper, yet they furnish every Year, as much as draws more than six hundred thousand Piafters; which would appear incredible, if the Excrements of the Bird call'd *Guana*, with which the *Peruvians* dung their Land, did not render it so fertile, that the Grains sown in it, and especially the *Agy*, yield four or five hundred for one.

The *Jamaica Pepper* is the Fruit produc'd by the Tree which furnishes us with the *Indian Wood*.

The Pepper of *Theret*, which the *Dutch* call *Amomi*, on account of its Resemblance to the *Amomi*, or *Jamaica Pepper*, is a small round Fruit, as large as the white Pepper, a little roundish, and with a Species of small Crown at one of its Ends. It is, also, call'd the small round Clove, because its Taste resembles that of the true Clove. *Savary. Dict. de Comm.*

As for the *African Pepper*, which is call'd *Maniguette, Malaguettes, or Cardamoms*, see the Article *CARDAMOMUM*.

PIPER JAMAICENSE. *Jamaica Pepper.* See *CARYOPHYLLUS*.

PIPER INDICUM. *Guinea Pepper.* See *CAPSICUM*.

PIPER LONGUM. *Offic. Ger. 1355. Emac. 1539. Park. Theat. 1604. Ogiib. Chin. 1. 226. J. B. 2. 185. Raii Hist. 2. 1343. Piper longum orientale. C. B. P. 412. Piper longum Pistolobia foliis absque pediculis, Maderaspatana. Pluk. Phytog. Tab. 104. Pimpilim. Pil. Mant. A. 182. Tlatlancuaye five Piperis longi Species II. Hern. 126. Catta-tripali. Hort. Mai. 7. 27. Tab. 14. Arbor Piperifera fructu longo. Jonf. Dendr. 178. Acapatli. Laet. 231. LONG-PEPPER.*

This is a long Fruit, somewhat resembling the *Isulus* or Catkin of the *Hazel*, but hard and firm, consisting of several small roundish Grains, set together in a spiral Order, of a brownish Colour, and an hot biting Taste; they grow upon a Plant, which twists and winds itself about any thing, that is in its Way, having large, oblong, round-pointed Leaves, set alternately on the Stalks; and opposite to them grow monopetalous Flowers, divided into five Segments, which are succeeded by this Fruit. It grows in *Java and Malabar*, and other Parts of the *East Indies*.

As in Taste, so in Virtue, it imitates the black Pepper; warming and comforting the Stomach, expelling the Wind, and promoting Digestion. It is, likewise, accounted alexipharmic, and is an Ingredient in the *Theriaca Andromacki*. *Miller's Bot. Off.*

PIPERELLA. A Name for the *Marum; Hispanicum; nigrum; flore purpureo*.

PIPERITIS. A Name for the *Lepidium*, Ditander.

PISCATORIS EMPLASTRUM. The Name of a Plaister describ'd in *Aetius, Tetrabiblos, 4. Serm. 3. C. 18*.

PISCATORIS MEDICAMENTUM. The Name of a compound Medicine describ'd by *Actuarius, L. 6. C. 9*.

PISO. A Mortar. *Castellus*.

PISONIA. *Fingrigo vulgo*.

The Characters are;

It is male and female in different Plants; the male Flowers consist of a great Number of Stamina, and have no Petals: The female Flowers consist of one Leaf, which is Bell-shaped, and divided at the Top into five Parts; from whose Cup arises the Pointal, which afterwards becomes an oblong, angular, channel'd Fruit, containing oblong Seeds.

Miller mentions two Species.

1. *Pisonia aculeata mas.* *Houft.*

2. *Pisonia aculeata, fructu glutinose, & racemose.* *Plum. Nov. Gen.*

These Plants are feminal Variations, which arise from the Seeds of the same Plant, but as they were not distinguished by any of the Botanists, till the late Dr. *Houftoun* observed their Difference; and therefore the different Sexes are here mentioned as separate Plants.

The Name of this Plant was given by Father *Plamier*, in Honour to Dr. *William Piso*, who published a Natural History of *Brasil*. The Name of *Fingrigo* is what the Inhabitants of *Jamaica* know it by.

These Plants are very common in the *Savannahs*, and other low Places, in the Island of *Jamaica*, as, also, in several other Places of the *West Indies*; where it is very troublesome to whoever passes through the Places of their Growth, by fastening themselves by their strong crooked Thorns, to the Cloaths of the Persons; and their Seeds, being glutinous, also, fasten themselves to whatever touches them: So that the Wings of the Ground-doves, and other Birds, are often loaded with the Seeds, so as to prevent their flying; by which means they become an easy Prey.

It rises about ten or twelve Feet high, with a pretty strong Trunk; but the Branches are long and slender, whereby being unable to support themselves, they generally twist about whatever Plants are near them. *Miller's Dictionary*.

PISSANTHOS. The same as *ORRHOPISSA*.

PISSASPHALTOS. See *BITUMEN*.

PISSE. *πῖσσον*. Pitch.

PISSELEUM, *πισσέλειον*, (from *πῖσσον*, Pitch, and *ἐλαιον*, Oil) Oil of Pitch, is prepared of Pitch by Separation of its watry Part, which swims thereon like Whey upon Milk. It is taken off while the Pitch is in boiling, by spreading over it clean Wool, which, as soon as it is thoroughly moisten'd with the ascending Vapour, is wrung into a Vessel; and this is repeated as long as the Pitch is in boiling.

The *Pisseleum* is effectual for the same Purposes as Tar. A Cataplasm thereof, prepared with Meal of Barley, restores the Hairs in an Alopecia; Tar has the same Effect; and, besides, cures Scabs and Ulcers in Cattle. *Dioscorides, Lib. 1. Cap. 95*.

PISSELEUM INDICUM. *Offic. Bitumen Barbadense.* *Boerh. Chem. Pix liquida Barbadenfis, Pharmacopolis. Lond. Pix Barbados.* *Boerh. Thesaur. Pharm. 108. BARBADOES-TAR.*

This is brought from the Island, whose Name it bears; where it floats on the Surface of the Water: It is of a blackish-red Colour, of a disagreeable Smell, and of the Consistence of liquid

liquid Pitch. It is possess'd of a sudorific Quality, and is good for Disorders of the Lungs and Stomach. By adding a small Quantity of the Oil of Anise, to this Bitumen, the London Apothecaries prepare a Balsam, which they sell for the *Balsam of Chilli*. Dale.

Boerhaave, in his Chymistry, seems to think Barbadoes Tar a vegetable Preparation, since, like the *Oleum Terræ* of the Indies, it consists of the express'd Oil of Coco-nuts mix'd with medicated Earths.

This, says Quincy, seems to be what passes in the Shops by the Name of Barbadoes Tar. It has a strong Scent, not unlike the common Tar; and is not very pleasant to the Sight or Taste; but 'tis certainly a good Balsamic, and where the Stomach will dispense with it, will do great Service in some Disorders of the Breast. It is effectual in obstinate tickling Coughs; and sometimes succeeds where more elegant Medicines have failed. Some commend it in Burns, Scalds, and Inflammations; but the regular Practice does not much justify such Use externally. Among the Country-people, it is in great Request for Scal'd Heads, which is a Disease troublesome to cure, and often puzzles a good Physician. It is with some, also, a Secret to apply to the Soles of the Feet in Agues, and, also, to the Wrists; and I have known Instances where it has succeeded. That Medicine commonly sold by the Name of Oil of Spike, is nothing but Oil of Turpentine tinged with this Simple. See PICTONUM COLICA.

PISSEROS, *πίσσηρος*, from *πίσση*, Pitch, is an Epithet of a Cerate, called by Hippocrates *πίσσηρον κηρόν* (*pissero cerotes*), pitchy Cerate, and order'd by him to be apply'd to Ulcers affected with an Inflammation, and as an Anodyne. It was prepared, as Galen writes, *Comment. 1. in Lib. de Fract.* of Wax melted with Oil, or Oil of Roses, and dry Pitch. Hippocrates sometimes expresses it simply by *πίσσηρον* (*Pissere*), and sometimes with the Addition of *κηρόν* (*Cerotes*), *πίσσηρον κηρόν*.

PISSITES, *πίσσιτης*, Wine of Pitch, is prepared of Tar and Must. The Tar is first to be washed with Sea-water, or Brine, till it becomes white, and the Sea-water runs off pure; after which it is to be washed with sweet Water. Then to eight Congii of Must, put an Ounce or two of this Tar, and suffer it to ferment, and then to settle, after which pour it into Vessels.

This sort of Wine is of an heating Quality, helps Concoction, is absterfivè and pectoral; on which account, it is of Efficacy in Pains of the Thorax, Belly, Liver, Spleen, and Uterus, if unattended with a Fever; also, in inveterate Defluxions, and deep Exulcerations. It is, also, good against a Cough, Slowness of Digestion, Inflations, and an Asthma; and is of Service in Luxations, especially if applied in raw Wool [*εινυγός*]. *Dioscorides, Lib. 5. Cap. 48.*

PISSOCEROS, *πίσσοκερος*. The Wax with which Bees line their Hives, and which is the Foundation of their Combs.

PISSOSIS. Pication. See PICATIO.

PISTACHIA. A Name for the *Terebinthus*; *Indica*; *Theophrasti*.

PISTATIO, according to *Castellus*, is the covering any Materials, included in a proper Vessel, with Paste, in order to their being bak'd, or boil'd.

PISTILLUM. A Pestle.

PISTOLOCHIA. See *Aristolochia*, and *Serpentaria Virginiana*.

PISUM.

The Characters are

It has a long inflated Pod, full of roundish Seeds; the lower Part of the Stalk is fistulous; the Leaves are some of them, as it were, perforated by the Stalk; the other are pinnated, and end in a Tendril.

Boerhaave mentions twenty-six Species of *Pisum*, none of which have any medicinal Virtues ascrib'd to them at present, that I know of, except the sixth; which is,

Pisum; arvense, fructu albo. *Tourn. Inst. 394. Boerb. Ind. A. 2. 40. Pisum*. Offic. *Pisum arvense flore candido, fructu rotundo, albo. C. B. P. 342. Pisum minus. Ger. 1045. Emac. 1219. Pisum vulgare parvum album arvense. J. B. 2. 297. Raii Hist. 1. 891. Pisum sylvestre primum. Park. Theat. 1057. Raii Synop. 3. 318. COMMON WHITE PEAS.*

Peas are more used in the Kitchen, than in the Shop, being known to every body to have whitish-green Leaves, consisting of two or three Pair of large oval Pinnæ, with Claspers at the Ends; the Stalks are weak, angular, and not able to support themselves. The Flowers are white and papilionaceous; and the Peas, when ripe, round and white: They are planted in Fields and Gardens, flowering in May, and the Fruit is eat in June.

Peas, when green, are a pleasant grateful nourishing Food, but somewhat flatulent and windy, as well as when dry. They are good to sweeten the Blood, and correct salt scorbutic Humours, either eaten raw, or boiled. *Miller's Bot. Off.*

Peas are a Puls much used for Food; the smaller and greener they are, the better is their Taste. They are, also, dried for keeping; but then they have not the Taste they had before.

They produce the greatest Part of their good Effects by the Help of their oily balsamic Parts, which, sheathing up sharp Humours of the Breast, stop Coughs; and, by easily condensing in the Vacuities of the solid Parts, repair and nourish them. The first Pottage, or boiling of Peas, is softening and laxative; because 'tis filled with the more dissoluble Salts of this Pulse; these Salts, irritating and pricking the intestinal Glands, cause them to let pass through their Pores a greater Quantity of serous Matter. Peas contain a viscous and thick Juice, which causes Wind, and produces gross Humours; and, therefore, they are not good for those that are troubled with Gravel. *Lenery on Foods.*

Broth of Peas, not only renders the Body soluble, but, also, procures a more free and copious Evacuation of the Lochia. It is, also, beneficial in nephritic Pains, according to *Simon Paulli*, in his *Quadrupartitum Botanicum*. Some, also, with Success, use a Decoction of Peas, in order to cure cutaneous Disorders, and Pimples. *Haffman. Præst. Remed. Domest.*

PITACIUM. A large Cloth, impregnated; or spread over, with some Medicine, in order to be applied to a Part affected.

PITHA. A Name in Boerhaave for the *Cereus*; *scandens*; *minor trigonus*; *articulatus*; *fructu suavissimo*.

PITINE. A Name for the APHACA; which see.

PITOMA. The Name of a large Tree, which grows in *Brasil*, bearing a kind of Apple; of an astringent, bitter Taste; but not eatable, and of no Use in Medicine.

PITTONIA.

The Characters are;

It hath a globular bell-shaped Flower, consisting of one Leaf, which is cut into several Segments at the Brim; from whose Cup arises the Pointal, which afterwards becomes a soft spherical Berry full of Juice, inclosing two Seeds, which are, for the most part, oblong.

Miller mentions seven Species, all of which grow in the warmest Parts of *America*, where the first Sort grows to the Height of twelve or fourteen Feet, and divides into many Branches, so as to form a small Tree. The second, fifth, and seventh Sorts grow to the Height of eight or nine Feet, and produce many Branches near their Roots, so as to form thick Bushes. *Miller's Dict.*

PITTOSIS. The same as PICATIO.

PITUITA. Phlegm. See PHLEGMA.

PITUITARIA GLANDULA. The Pituitary Gland.

PITYIDES, *πυιδες*, a Name for the Fruit, or Kernels, contained in the Cones of the *Pinus*, and *Picea*. These Kernels are of an astringent and somewhat heating Quality, and are good for a Cough, and other Affections incident to the Region of the Thorax, whether taken alone, or with Honey. *Dioscorides, L. 1. C. 87.*

PITUINA, *πυτινα*. The Refin of the Pitch-tree.

PITYLISMA. A Species of Exercise mentioned by *Galen, de Sanitate tuenda, Lib. 2. Cap. 10.* It consisted in walking on Tiptoes, lifting up the Hands above the Head, and moving them swiftly in different Directions.

PITYOCAMPE, *πυτοκαμπη*. A Species of Caterpillar, which is found on the Pitch-tree, and to which *Galen* ascribes the Virtues of Cantharides, *de Simpl. Facult. L. 11.*

PITYRIASIS. A scurfy Disorder of the Head, Chin, and Eye-brows, called, also, *Porrigo*. See LEPRO. From *πυρρην*, Bran.

PITYROIDES. An Epithet for a sort of Sediment in the Urine, resembling Bran.

PITYS, *πυς*. The Pine.

PITYUSA. See TITHYMALUS.

PIX. Pitch. This is a Species of Gum obtained from the Pine-tree, by making Incisions in it. It receives different Names according to its different Preparations, Colours, and Qualities. When it first flows from the Tree, it is called *Barras*, but is afterwards distinguished into two Sorts, which have different Names: That which is most beautiful and clear, is called *Galipot*; and that which is more full of Fæces, and of a worse Colour, is called *Marbled Barras*. The former of these, or the *Galipot*, serves to make all the different Species of Pitch described in this Article.

The pinguious Pitch, which is, also, called *White Burgundy Pitch*, is *Galipot* melted with Oil of Turpentine. Some, however, assert, that the *Burgundy Pitch* flows naturally from resinous Trees, in the Mountains of *Franche-Comté*.

Refin is, according to some Authors, a Gum discharged from the Turpentine-tree, the Larch-tree, the Mastich-tree, or the Cypress: But the Opinion of others is far more probable, who, from Experience, assert, that it is *Galipot*, boiled to a certain Consistence, and reduced to a Mass of any determinate Weight.

The best Refin comes from *Bayonne* and *Bordeaux*. It ought to be chosen dry, white, free from Water and Sand.

Black Pitch, which is properly that known by the Name of *Pitch*, is only *Galipot*, prepared in a particular manner, by putting

ting into it, when it is quite warm, a certain Quantity of Tar, in order to render it black. There are two Kinds of it, one hard, and another soft, which only differ in this Circumstance.

Mr. *Wheler*, in his *Voyages*, has given another Method of preparing black Pitch, used in the *Levant*, and which is not much different from that given by *Furetiere* in his Dictionary.

He orders us to prepare a Heap of Earth, in which we are to make an Hollow two Ells in Diameter at the Top, but which becomes gradually narrower, as it approaches to the Bottom. This Hollow is to be filled with small Portions of such Branches of the Pine-tree, as contain most Gum, laid above each other till the Hollow is full. Then the upper Part is to be covered with Fire, which burns to the Bottom: By which means the Pitch is discharged from a small Hole made at the Bottom for that Purpose.

The best black Pitch comes from *Norway* and *Sweden*, to which that made in *France* is by no means comparable.

The Goodness of hard black Pitch consists in being of a shining black Colour, brittle, dry, and forming, as it were, a Rays, when it is broken.

What is called the *Pix Navalis* in Medicine, ought to be the Pitch scraped off from Ships; but 'tis certain, that most Apothecaries use the common black Pitch in its stead.

From the black Pitch there is obtain'd an Oil, which, on account of its singular Virtues, is called the *Baum of Pitch*. *Diction. de Commerce*.

PIX LIQUIDA. Tar.

Dr. *Berkeley*, Bishop of *Cloyne*, having lately published an Account of the Virtues of Tar-water, which has considerably raised the Attention of the Public, I think myself obliged to give a short Abstract of his Book upon this Subject, especially as the Author is a Person well known in the learned World.

In certain Parts of *America*, Tar-water is made by putting a Quart of cold Water to a Quart of Tar, and stirring them well together in a Vessel, which is left standing till the Tar subsides to the Bottom. A Glass of clear Water, being poured off for a Draught, is replaced by the same Quantity of fresh Water, the Vessel being shaken, and left to stand as before. And this is repeated for every Glass, so long as the Tar continues to impregnate the Water sufficiently, which will appear by the Smell and Taste. But as this Method produceth Tar-water of different Degrees of Strength, I choose to make it in the following manner: Pour a Gallon of cold Water on a Quart of Tar, and stir and mix them thoroughly with a Ladle, or flat Stick, for the Space of three or four Minutes; after which, the Vessel must stand eight-and-forty Hours, that the Tar may have time to subside; when the clear Water is to be poured off, and kept for Use; no more being made from the same Tar, which may still serve for common Purposes.

This cold Infusion of Tar hath been used in some of our Colonies, as a Preservative, or Preparative, against the Small-pox; which foreign Practice induced me to try it in my own Neighbourhood, when the Small-pox raged with great Violence. And the Trial fully answered my Expectation; all those within my Knowledge, who took the Tar-water, having either escaped that Distemper, or had it very favourably. In one Family there was a remarkable Instance of seven Children, who came all very well through the Small-pox, except one young Child, which could not be brought to drink Tar-water, as the rest had done.

Several were preserved from taking the Small-pox by the Use of this Liquor; others had it in the mildest manner; and others, that they might become susceptible of the Infection, were obliged to intermit drinking the Tar-water. I have found it may be drank with great Safety and Success for any Length of Time, and this not only before, but, also, during the Distemper. The general Rule for taking it is, to drink about half a Pint Night and Morning on an empty Stomach; which Quantity may be varied, according to the Case and Age of the Patient, provided it be always taken on an empty Stomach, and about two Hours before or after a Meal.

It seemed probable, that a Medicine of such Efficacy, in a Distemper attended with so many purulent Ulcers, might be, also, useful in other Foulnesses of the Blood: Accordingly, I tried it on several Persons infected with cutaneous Eruptions and Ulcers, who were soon relieved, and soon after cured. Encouraged by these Successes, I ventured to advise it in the foulest Distempers, wherein it proved much more successful than Salivations and Wood-drinks had done.

Having tried it in a great Variety of Cases, I found it succeed beyond my Hopes, in a tedious and painful Ulceration of the Bowels, in a consumptive Cough, and (as appeared by expectorated Pus) an Ulcer in the Lungs, in a Pleurisy and Peripneumony. And, when a Person, who for some Years had been subject to erysipelatous Fevers, perceived the usual fore-running Symptoms to come on, I advised her to drink Tar-water, which prevented the Erysipelas.

I never knew any thing so good for the Stomach as Tar-water: It cures Indigestion, and gives a good Appetite. It is an excellent Medicine in an Asthma. It imparts a kindly Warmth, and quick Circulation, to the Juices without heating; and is therefore useful, not only as a Pectoral and Balsamic, but, also, as a powerful and safe Deobstruent in cachectic and hysteric Cases. As it is both healing and diuretic, it is very good for the Gravel. I believe it to be of great Use in a Dropsy, having known it cure a very bad Anasarca in a Person, whose Thirst, though very extraordinary, was in a short time removed by the drinking of Tar-water.

The Usefulness of this Medicine in inflammatory Cases is evident, from what has been already observed. And yet some, perhaps, may suspect, that as the Tar itself is sulphureous, Tar-water must be of an hot inflaming Nature. But it is to be noted, that all Balsamics contain an acid Spirit, which is, in Truth, a volatile Salt. Water is a Menstruum that dissolves all Sorts of Salts, and draws them from their Subjects. Tar, therefore, being a Balsam, its salutary Acid is extracted by Water, which yet is incapable of dissolving its gross resinous Parts, whose proper Menstruum is Spirit of Wine. Therefore, Tar-water, not being impregnated with Refin, may be safely used in inflammatory Cases; and, in fact, it hath been found an admirable Febrifuge, at once the safest Cooler and Cordial.

The volatile Salts, separated by Infusion from Tar, may be supposed to contain its specific Virtues. Mr. *Boyle*, and other later Chymists, are agreed, that fixed Salts are much the same in all Bodies. But it is well known, that volatile Salts greatly differ; and the easier they are separated from the Subject, the more they possess of its specific Qualities. Now the most easy Separation is, by Infusion of Tar in cold Water, which to Smell and Taste shewing itself well impregnated, may be presumed to extract and retain the most pure, volatile, and active Particles of that vegetable Balsam.

Tar was by the Antients esteemed good against Poisons, Ulcers, and the Bites of venomous Creatures; also, for phtisical, scrophulous, paralytic, and asthmatic Persons. But the Method of rendering it an inoffensive Medicine, and agreeable to the Stomach, by extracting its Virtues in cold Water, was unknown to them. The Leaves, and tender Tops, of Pine and Fir are, in our Times, used for Diet-drinks, and allowed to be antiscorbutic and diuretic. But the most elaborate Juice, Salt, and Spirit of those Ever-greens, are to be found in Tar, whose Virtues extend not to Animals alone, but, also, to Vegetables. Mr. *Evelyn*, in his Treatise on Forest-trees, observes with Wonder, that Stems of Trees, smeared over with Tar, are preserved thereby from being hurt by the venom'd Teeth of Goats, and other Injuries, while every other thing of an unctuous Nature is highly prejudicial to them.

It seems that Tar and Turpentine may be had, more or less, from all Sorts of Pines and Firs whatsoever; and that the native Spirits, and essential Salts, of those Vegetables are the same in Turpentine, and common Tar. In Effect, this vulgar Tar, which Cheapness and Plenty may have render'd contemptible, appears to be an excellent Balsam, containing the Virtues of most other Balsams, which it easily imparts to Water, and by that means readily and inoffensively insinuates them into the Habit of the Body.

The resinous Exudations of Pines and Firs are an important Branch of the Materia Medica, and not only useful in the Prescriptions of Physicians, but have been, also, thought otherwise conducive to Health. *Pliny* tells us, that Wines, in the Time of the old Romans, were medicated with Pitch and Refins; and *Johnstonus*, in his *Dendrographia*, observes, that it is wholesome to walk in Groves of Pine-trees, which impregnate the Air with balsamic Particles. That all Turpentine and Refins are good for the Lungs, against Gravel, also, and Obstructions, is no Secret. And that the medicinal Properties of those Drugs are found in Tar-water, without heating the Blood, or disordering the Stomach, is confirmed by Experience; and, particularly, that phtisical and asthmatic Persons receive speedy and great Relief from the Use of it.

Balsams, as all unctuous and oily Medicines, create a Nauseating in the Stomach. They cannot, therefore, be taken in Substance, so much, or so long, as to produce all those salutary Effects, which, if thoroughly mixed with the Blood and Juices, they would be capable of producing. It must, therefore, be a thing of great Benefit to be able to introduce any requisite Quantity of their volatile Parts into the finest Ducts and Capillary Vessels, so as not to offend the Stomach; but, on the contrary, to comfort and strengthen it in a great Degree.

According to *Pliny*, liquid Pitch, (as he calls it) or Tar, was obtained by setting Fire to Billets, or old fat Pines or Firs. The first Running was Tar, the latter, or thicker Running, was Pitch. *Theophrastus* is more particular: He tells us, the Macedonians made huge Heaps of the cloven Trunks of those Trees, wherein the Billets were placed erect beside each other: That

That such Heaps or Piles of Wood were sometimes a hundred and eighty Cubits round, and sixty, or even an hundred, high; and that, having covered them with Sods of Earth, to prevent the Flame from bursting forth, (in which Case the Tar was lost) they set on Fire those huge Heaps of Pine or Fir, letting the Tar and Pitch run out in a Chanel.

From the manner of procuring Tar, it plainly appears to be a natural Production; lodged in the Vessels of the Tree, whence it is only freed and let loose (not made) by Burning. If we may believe *Pliny*, the first Running, or Tar, was called *Cedrium*, and was of such Efficacy to preserve from Putrefaction, that in *Egypt* they embalmed dead Bodies with it. And to this he ascribes their Mummies continuing uncorrupted for so many Ages.

Some modern Writers inform us, that Tar flows from the Trunks of Pines and Firs, when they are very old; that Pitch is Tar inspissated; and both are the Oil of the Tree grown thick and black with Age, and the Influence of the Sun. The Trees, like old Men, being unable to perspire, and their secretory Ducts obstructed, they are, as it were, choked and stuffed with their own Juice.

The Method used by our Colonies in *America*, for making Pitch and Tar, is, in Effect, the same with that of the antient *Macedonians*, as appears in the Account given in the Philosophical Transactions. And the Relation of *Leo Africanus*, who describes as an Eye-witness, the making of Tar on Mount *Atlas*, agrees, in Substance, with the Methods used by the *Macedonians* of old, and the People of *New England* at this Day.

Tar, and all Sorts of Exsudations from Ever-greens, are, in a general Acceptation, included under the Name *Resin*. Turpentine is a Resin, and on all hands allowed to have great medicinal Virtues. Tar, and its Infusion, contain these Virtues. Tar-water is extremely pectoral and restorative; and, if I may judge from what Experience I have had, it possesseth the most valuable Qualities ascribed to the several Balsams of *Peru*, of *Tolu*, of *Copivi*, and even to the Balm of *Gilead*; such is its Virtue in Asthmas and Pleurifies, in Obstructions, and ulcerous Erosions, of the inward Parts.

The Folly of Man rateth things by their Scarceness, but Providence has made the most useful things most common. Among liquid oily Substances, which are termed *Balsams*, and valued for medicinal Virtues, Tar may hold its Place as a most valuable Balsam. Its Fragrancy shews, that it is possessed of active Qualities; and its Oiliness, that it is fitted to retain them. This excellent Balsam may be purchased for a Penny a Pound, whereas the Balsam of *Judea*, when most plenty, was sold, on the very Spot that produced it, for double its Weight in Silver, if we may credit *Pliny*. Now, comparing the Virtues I have experienced in Tar, with those I find ascribed to the precious Balm of *Judea*, of *Gilead*, or of *Mecha*, (as it is diversly called) I am of Opinion, that the latter is not a Medicine of more Value or Efficacy than the former.

The medicinal Virtues of Amber are to be found in the balsamic Juices of Pines and Firs. Particularly the Virtues of the most valuable Preparation, I mean Salt of Amber, are in a great Degree answered by Tar-water, as a Detergent, Diaphoretic, and Diuretic.

It is remarked both by *Theophrastus* and *Johnstonus*, that Trees growing in low and shady Places, do not yield so good Tar, as those which grow in higher and more exposed Situations. And *Theophrastus* further observes, that the Inhabitants of Mount *Ida* in *Asia*, who distinguish the *Idæan* Pine from the Maritime, affirm, that the Tar flowing from the former is in greater Plenty, as well as more fragrant, than the other. Hence it should seem, the Pines and Firs in the Mountains of *Scotland* might be employed in that way, and rendered valuable; even where the Timber, by its Remoteness from Water-carriage, is of small Value. What we call *Scotch Fir*, is falsely so called, being, in Truth, a wild Forest-pine; and, as Mr. *Ray* informs us, agreeing much with the Description of a Pine growing on Mount *Olympus* in *Phrygia*, probably the only Place where it is found out of these Islands; in which, of late Years, it is so much planted and cultivated with so little Advantage, while the Cedar of *Lebanon* might, perhaps, be raised with little more Trouble, and much more Profit and Ornament.

At present the *Norwegian* Tar is the most liquid, and best for medicinal Uses, of any I have experienced. Those Trees that grow on Mountains exposed to the Sun, or the North Wind, are reckoned by *Theophrastus*, to produce the best and purest Tar: And the *Idæan* Pines were distinguished from those growing on the Plain, as yielding a thinner, sweeter, and better scented Tar; all which Differences, I think, I have observed between the Tar that comes from *Norway*, and that which comes from low and swampy Countries.

The less Violence is used to Nature, the better its Produce. The Juice of Olives and Grapes, issuing by the lightest Pressure, is best. Resins, that drop from the Branches spontane-

ously, or issue from the Trees upon the slightest Incision; are the finest, and most fragrant. And Infusions are observed to act more strongly than Decoctions of Plants; the more subtle and volatile Salts and Spirits, which might be lost or corrupted by the latter, being obtained in their natural State by the former. It is, also, observed, that the finest, purest, and most volatile Part is that which first ascends in Distillation. And, indeed, it should seem the lightest and most active Particles required least Force to disengage them from the Subject.

The Salts, therefore, and more active Spirits, of the Tar are got by Infusion in cold Water; but the resinous Part is not to be dissolved thereby. Hence the Prejudice, which some, perhaps, may entertain against Tar-water, as a Medicine, the Use whereof might inflame the Blood by its Sulphur and Resin, appears not well grounded; it being, indeed, impregnated with a fine acid Spirit, which is balsamic, diuretic, and possessed of many other Virtues. Spirits are supposed to consist of Salts and Phlegm, and probably too somewhat of a fine oily Nature, differing from Oil, because it mixeth with Water; and agreeing with Oil in this, that it runneth in Rivulets by Distillation. Thus much is allowed, that the Water, Earth, and fixed Salt, are the same in all Plants: That, therefore, which differenceth a Plant, or makes it what it is, the native Spark, or Form, in the Language of Chymists and Schools, is none of these things; nor yet the finest Oil, which seemeth only its Receptacle or Vehicle. It is observed by Chymists, that all Sorts of balsamic Wood afford an acid Spirit, which is the volatile oily Salt of the Vegetable. Herein are chiefly contained their medicinal Virtues, and by the Trials I have made it appear, that the acid Spirit in Tar-water possesseth the Virtues, in an eminent Degree, of that of Guaiacum, and other medicinal Woods.

Qualities, in a Degree too strong for human Nature to subdue and assimilate to itself, must hurt the Constitution. All Acids, therefore, may not be useful or innocent. But this seems an Acid so thoroughly concocted, so gentle, mild, temperate, and withal possessed of a Spirit so fine and volatile, as readily to enter the smallest Vessels, and be assimilated with the utmost Ease.

If any one were minded to dissolve some of the Resin, together with the Salt or Spirit, he need only mix some Spirit of Wine with the Water. But such an entire Solution of Resins and Gums as to qualify them for entering and pervading the Animal System, like the fine acid Spirit that first flies off from the Subject, is, perhaps, impossible to be obtained. It is an Apophthegm of the Chymists, derived from *Helmont*, that whoever can make Myrrh soluble by the Action and Powers of the human Body, has the Secret of prolonging Life; and *Boerhaave* owns, that there seems to be Truth in this, from its resisting Putrefaction. Now this Quality is as remarkable in Tar, with which the Antients embalmed and preserved dead Bodies. And tho' *Boerhaave* himself, and other Chymists before him, have given Methods for making Solutions of Myrrh, yet it is by means of Alcohol, which extracts only the inflammable Parts. And it does not seem, that any Solution of Myrrh is impregnated with its Salt, or acid Spirit. It may not, therefore, seem strange, if this Water should be found more beneficial for procuring Health and long Life, than any Solution of Myrrh whatsoever.

Certainly divers Resins and Gums may have Virtues, and yet not be able for their Grossness to pass the Lacteals, and other finer Vessels, nor yet, perhaps, readily impart those Virtues to a Menstruum, that may with Safety and Speed convey them throughout the human Body: Upon all which Accounts, I believe Tar-water will be found to have singular Advantages. It is observed, that acid Spirits prove the stronger, by how much the greater Degree of Heat is required to raise them. And, indeed, there seems to be no Acid more gentle than this, obtained by the simple Affusion of cold Water, which carries off from the Subject the most light and subtle Parts, and, if one may so speak, the very Flower of its specific Qualities. And here it is to be noted, that the volatile Salt and Spirit of Vegetables, by gently stimulating the Solids, attenuate the Fluids contained in them, and promote Secretions, and that they are penetrating and active, contrary to the general Nature of other Acids.

It is a great Maxim for the Preservation of Health, that the Juices of the Body be kept fluid in a due Proportion. Therefore the acid volatile Spirit in Tar-water, at once attenuating and cooling in a moderate Degree, must greatly conduce to Health, as a mild salutary Deobstruent, quickening the Circulation of the Fluids without injuring the Solids, thereby gently removing or preventing those Obstructions, which are the great and general Cause of most chronical Diseases, and in this manner answering to antihysterical Medicines, such as *Asa-foetida*, *Galbanum*, *Myrrh*, *Amber*, and, in general, to all the Resins and Gums of Trees or Shrubs useful in nervous Cases.

Warm Water is itself a Deobstruent: Therefore the Infusion of Tar, drank warm, is easier insinuated into all the nice Capillary Vessels, and acts not only by virtue of the Balsam, but, also,

also, by that of the Vehicle. Its Taste, its diuretic Quality, its being so great a Cordial, shew the Activity of this Medicine. And, at the same time that it quickens the sluggish Blood of the Hysterical, its balsamic oily Nature abates the too rapid Motion of the sharp thin Blood in those who are Hectic. There is a Lensor and Smoothness in the Blood of healthy strong People; on the contrary, there is often an Acrimony and Solution in that of weakly Persons. The fine Particles of Tar are not only warm and active; they are, also, balsamic and emollient, softening and enriching the sharp and vapid Blood, and healing the Erosions occasioned thereby in the Blood-vessels and Glands.

Tar-water possesses the stomachic and cardiac Qualities of Elixir Proprietatis, *Stoughton's Drops*, and many such Tinctures and Extracts; with this Difference, that it worketh its Effect more safely, as it hath nothing of that Spirit of Wine, which, however mixed and disguised, may yet be well accounted a Poison in some Degree.

Such Medicines are supposed to be diaphoretic, which, being of an active and subtle Nature, pass through the whole System, and work their Effect in the finest Capillaries, and perspiratory Ducts, which they gently cleanse and open. Tar-water is extremely well fitted to work by such an insensible Diaphoresis, by the Fineness and Activity of its acid volatile Spirit. And surely those Parts ought to be very fine, which can scour the perspiratory Ducts, under the Scarf-skin, or Cuticle, if it be true, that one Grain of Sand would cover the Mouths of more than an hundred thousand.

Another way wherein Tar-water operates, is by Urine, than which, perhaps, no Method is more safe and effectual for cleansing and carrying off the Salts of the Blood. But it seems to produce its principal Effect as an Alterative, which is sure, easy, and much safer than those vehement purgative, emetic, and salivating Medicines, which do Violence to Nature.

An Obstruction of some Vessels causeth the Blood to move more swiftly in other Vessels which are not obstructed. Hence arise manifold Disorders. A Liquor that dilutes and attenuates, resolves those Concretions which obstruct the Vessels. Tar-water is such a Liquor. It may be said indeed of common Water, that it attenuates; also, of Mercurial Preparations, that they attenuate. But it should be consider'd, that mere Water only distends the Vessels, and thereby weakens their Tone; and that Mercury, by its great Momentum, may justly be suspected of hurting the fine Capillaries; which two Deobstruents, therefore, might easily over-act their Parts, and (by lessening the Force of the elastic Vessels) remotely produce those Concretions they are intended to remove.

Weak and rigid Fibres are looked on by the most able Physicians, as Sources of two different Classes of Distempers; a sluggish Motion of the Liquids occasions weak Fibres, therefore, Tar-water is good to strengthen them, as it gently accelerates the Motion of their Contents. On the other hand, being an unctuous bland Fluid, it moistens and softens the dry and stiff Fibres; and so proves a Remedy for both Extremes.

Common Soaps are Compositions of lixivial Salt and Oil. The corrosive Acrimony of the saline Particles being softened by the Mixture of an unctuous Substance, they insinuate themselves into the small Ducts with less Difficulty and Danger. The Combination of these different Substances makes up a very subtle and active Medicine, fitted for mixing with all Humours, and resolving all Obstructions. Soap, therefore, is justly esteemed a most efficacious Medicine in many Distempers.

Alcaline Salt is allowed to be cleansing, attenuating, opening, resolving, sweetening; it is pectoral, vulnerary, diuretic, and hath other good Qualities, which are, also, to be found in Tar-water. It is granted, that Oil, and acid Salts, combined together, exist in Vegetables; and that, consequently, there are acid Soaps as well as alkaline. And the saponaceous Nature of the acid vegetable Spirits is what renders them so diuretic, sudorific, penetrating, absterfive, and resolving. Such, for Instance, is the acid Spirit of Guaiacum. All these Virtues seem to be in Tar-water in a mild and salutary Degree.

It is the general Opinion, that all Acids coagulate the Blood. *Baerhaave* excepts Vinegar, which he holds to be a Soap, inasmuch as it is found to contain an Oil as well as an acid Spirit. Hence it is both unctuous and penetrating, a powerful Antiphlogistic, and Preservative against Corruption and Infection. Now, it seems evident, that Tar-water is a Soap as well as Vinegar. For though it be the Characteristic of Resin, which is an inspissated gross Oil, not to dissolve in Water, yet the Salts attract some fine Particles of essential Oil; which fine Oil serves as a Vehicle for the acid Salts, and shews itself in the Colour of the Tar-water; for all pure Salts are colourless. And though the Resin will not dissolve in Water, yet the subtle Oil, in which the vegetable Salts are lodged, may as well mix with Water as Vinegar does, which contains both Oil and Salt. And as the Oil in Tar-water discovers itself to the Eye, so the

acid Salts manifest themselves to the Taste. Tar-water, therefore, is a Soap, and as such, has the medicinal Qualities of Soaps.

It operates more gently, as the acid Salts lose their Acrimony, being sheathed in Oil, and thereby approaching the Nature of neutral Salts, and are more benign and friendly to the Animal System; and more effectually, as by the Help of a volatile, smooth, insinuating Oil, those same Salts are more easily introduced into the Capillary Ducts. Therefore, in Fevers, and epidemical Distempers, it is, (and I have found it so) as well as in chronic Diseases, a most safe and efficacious Medicine, being good against too great Fluidity as a Balsamic, and good against Viscidity as a Soap. There is something in the fiery corrosive Nature of lixivial Salts, which makes alkaline Soap a dangerous Remedy in all Cases where an Inflammation is apprehended. And as Inflammations are often occasioned by Obstructions, it should seem, an acid Soap was much the safer Deobstruent.

Even the best Turpentine, however famous for their vulnerary and detergent Qualities, have yet been observed, by their Warmth, to dispose to inflammatory Tumors. But the acid Spirit, being in so great Proportion in Tar-water, renders it a cooler and safer Medicine. And the ethereal Oil of Turpentine, though an admirable Drier, Healer, and Anodyne, when outwardly applied to Wounds and Ulcers, and not less useful in cleansing the urinary Passages, and healing their Ulcerations, yet is known to be of a Nature so very relaxing, as sometimes to do much Mischief. Tar-water is not attended with the same ill Effects, which I believe are owing, in a great measure, to the ethereal Oil's being deprived of the acid Spirit in Distillation, which, vellicating and contracting as a Stimulus, might have proved a Counterpoise to the excessive lubricating and relaxing Qualities of the Oil.

Woods in Decoctions do not seem to yield so ripe and elaborate a Juice, as that which is deposited in the Cells, or Loculi Terebinthiaci, and spontaneously issues from them. And, indeed, though the Balsam of *Peru*, obtained by boiling the proper Wood, and scumming the Decoction, be a very valuable Medicine, and of great account in divers Cases, particularly Asthmas, nephritic Pains, nervous Colics, and Obstructions, yet I verily think, (and I do not say this without Experience) that Tar-water is a more efficacious Remedy in all those Cases, than even that costly Drug.

It has been already observed, that the restorative, pectoral, and antihysterical Virtues of the most precious Balsams and Gums are possessed in an high Degree by Tar-water. And I do not know any Purpose answered by the Wood-drinks, for which Tar-water may not be used, with at least, equal Success. It contains the Virtues even of Guaiacum, which seems the most efficacious of all the Woods, warming and sweetening the Humours, and being diaphoretic, and useful in Gouts, Dropsies, and Rheums, as well as in the Foul Disease. Nor should it seem strange, if the Virtues obtained by boiling an old dry Wood, prove inferior to those extracted from a Balsam.

There is a fine volatile Spirit in the Waters of *Gerontes*, the most esteemed of all the Fountains about *Spa*, but whose Waters do not bear transporting. The stomachic, cardiac, and diuretic Qualities, of this Fountain somewhat resemble those of Tar-water, which, if I am not greatly mistaken, contains the Virtues of the best chalybeate and sulphureous Waters; with this Difference, that those Waters are liable to affect the Head in taking, which Tar-water is not. Besides, there is a Regimen of Diet to be observed, especially with chalybeate Waters, which I never found necessary with this. Tar-water layeth under no Restraint either as to Diet, Hours, or Employment. A Man may study, use Exercise, or repose, keep his own Hours, pass his Time either within or without, and take wholesome Nourishment of any Kind.

The Use of chalybeate Waters, however excellent for the Nerves and Stomach, is often suspended by Colds, and inflammatory Disorders, in which they are acknowledged to be very dangerous; whereas Tar-water is so far from hurting in those Cases, or deserving to be discontinued on that Account, that it greatly contributes to their Cure.

Cordials, vulgarly so called, act immediately on the Stomach, and, by a Consent of the Nerves, on the Head. But Medicines, of an Operation too fine and light to produce a sensible Effect in the *Primæ Viæ*, may, nevertheless, in their Passage through the Capillaries, operate on the Sides of those small Vessels, in such a manner as to quicken their Oscillations, and consequently the Motion of their Contents, producing, in Effect, all the Benefits of a Cordial much more lasting and salutary than those of fermented Spirits, which, by their caustic and coagulating Qualities, do incomparably more Mischief than Good. Such a cardiac Medicine is Tar-water. The transient Fits of Mirth, produced from fermented Liquors, are attended with proportionable Depressions of Spirit in their Intervals. But the

the calm Cheerfulness arising from this Water of Health (as it may justly be called) is permanent. Tar-water is so far from hurting the Nerves, as common Cordials do, that it is highly useful in Cramps, Spasms of the Viscera, and paralytic Numbness.

Emetics, are on certain Occasions, administered with great Success. But the over-straining and weakening of Nature may be very justly apprehended from a Course of Emetics. They are, nevertheless, prescribed and substituted for Exercise. But, in *Plato's Timæus*, Vomits and Purges are said to be the worst Exercise in the World. There is something in the mild Operation of Tar-water, that seems more friendly to the Economy, and forwards the Digestions and Secretions in a way more natural and benign, the Mildness of this Medicine being such, that I have known Children take it for above six Months together, with great Benefit, and without any Inconvenience; and, after long and repeated Experience, I esteem it a most excellent Diet-drink, fitted to all Seasons and Ages.

It is, I think, allowed, that the Origin of the Gout lies in a faulty Digestion. And it is remarked by the ablest Physicians, that the Gout is so difficult to be cur'd, because heating Medicines aggravate its immediate, and cooling its remote Cause. But Tar-water, although it contain active Principles, that strengthen the Digestion beyond any thing I know, and, consequently, must be highly useful, either to prevent or lessen the following Fit, or, by invigorating the Blood, to cast it upon the Extremities, yet it is not of so heating a Nature as to do harm even in the Fit. Nothing is more difficult or disagreeable to Men, than to argue them out of their Prejudices: I shall not, therefore, enter into Controversies on this Subject; but, if them dispute and object, shall leave the Decision to Time and Trial. In the modern Practice, Soap, Opium, and Mercury, bid fairest for universal Medicines. The first of these is highly spoken of. But then those who magnify it most, except against the Use of it in such Cases where the Obstruction is attended with a putrefactive Alkali, or where an inflammatory Disposition appears. It is acknowledged to be very dangerous in a Phthisis, Fever, and some other Cases, in which Tar-water is not only safe, but useful.

Opium, tho' a Medicine of great Extent and Efficacy, yet is frequently known to produce grievous Disorders in hysterical or hypochondriacal Persons, who make a great Part, perhaps the greatest, of those who lead sedentary Lives in these Islands. Besides, upon all Constitutions dangerous Errors may be committed in the Use of Opium.

Mercury has, of late become a Medicine of very general Use; the extreme Minuteness, Mobility, and Momentum of its Parts, rendering it a powerful Cleanser of all Obstructions, even in the most minute Capillaries: But then we should be cautious in the Use of it, if we consider, that the very Thing which gives it Power of doing Good above other Deobstruents, disposes it, also, to do Mischief; I mean its great Momentum: The Weight of it being about ten times that of Blood, and the Momentum being the joint Product of the Weight and Velocity, it must needs operate with great Force. And may it not be justly feared, that so great a Force, entering the minutest Vessels, and breaking the obstructing Matter, might also break or wound the fine tender Coats of those small Vessels, and so bring on the untimely Effects of old Age, producing more, perhaps, and worse Obstructions than those it removed? Similar Consequences may justly be apprehended from other mineral and ponderous Medicines: Therefore, upon the Whole, there will not perhaps be found any Medicine more general in its Use, or more salutary in its Effects, than Tar-water.

To suppose that all Distempers arising from very different, and, it may be, from contrary, Causes, can be cured by one and the same Medicine, must seem chimerical; but it may with Truth be affirmed, that the Virtue of Tar-water extends to a surprising Variety of Cases very distant and unlike. This I have experienced in my Neighbours, my Family, and myself; and as I live in a remote Corner among poor Neighbours, who, for want of a regular Physician, have often recourse to me, I have had frequent Opportunities of Trial, which convince me it is of so just a Temperament as to be an Enemy to all Extremes. I have known it do great good in a cold watry Constitution, as a Cardiac and Stomachic, and at the same time allay Heat, and feverish Thirst, in another. I have known it correct costive Habits in some, and the contrary Habit in others: Nor will this seem incredible, if it be considered, that middle Qualities naturally reduce the extreme; warm Water, for Instance, mixed with hot and cold Waters, will lessen the Heat in that, and the Cold in this.

They who know the great Virtues of common Soap, whose coarse lixivial Salts are the Product of culinary Fire, will not think it incredible, that Virtues of mighty Force and Extent should be found in a fine acid Soap, the Salts and Oil whereof are a most elaborate Product of Nature, and the solar Light.

It is certain Tar-water warms, and therefore some may perhaps still think it cannot cool. The more effectually to remove this Prejudice, let it be farther considered, that, as, on the one hand,

opposite Causes sometimes produce the same Effects, for Instance, Heat by Rarefaction, and Cold by Condensation, both increase the Air's Elasticity; so, on the other hand, the same Cause shall sometimes produce opposite Effects: Heat, for Instance, in one Degree thins, in another coagulates the Blood: It is not therefore strange, that Tar-water should warm one Habit, and cool another; have one good Effect on a cold Constitution, and another good Effect upon an inflamed one; nor, if this be so, that it should cure opposite Disorders; all which justifies to Reason, what I have often found true in Fact. The Salts, the Spirits, and the Heat, of Tar-water are of a Temperature congenial to the Constitution of Man, which receives from it a kindly Warmth, but no inflaming Heat. It was remarkable, that two Children in my Neighbourhood, being in a Course of Tar-water, upon an Intermission of it, never failed to have their Issues inflamed by an Humour much more hot and sharp than at other times. But its great Use in the Small-pox, Pleurifies, and Fevers, is a sufficient Proof, that Tar-water is not of an inflaming Nature.

I have dwelt the longer on this Head, because some Gentlemen of the Faculty have thought fit to declare, that Tar-water must inflame; and that they would never visit any Patient in a Fever, who had been a Drinker of it: But I will venture to affirm, that it is so far from increasing a feverish Inflammation, that it is, on the contrary, a most ready Means to allay and extinguish it. It is of admirable Use in Fevers, being at the same time the surest, safest, and most effectual, Paregoric and Cordial; for the Truth of which I appeal to any Person's Experience, who shall take a large Draught of it Milk-warm in the Paroxysm of a Fever, even when plain Water or Herb Teas shall be found to have little or no Effect. To me it seems, that its singular and surprising Use in Fevers of all Kinds, were there nothing else, would be alone sufficient to recommend it to the Public.

The best Physicians make the Idea of a Fever to consist in a too great Velocity of the Heart's Motion, and too great Resistance at the Capillaries. Tar-water, as it softens and gently stimulates those nice Vessels, helps to propel their Contents, and so contributes to remove the latter Part of the Disorder; and, for the former, the irritating Acrimony, which accelerates the Motion of the Heart, is diluted by watry, corrected by acid, and softened by balsamic Remedies; all which Intentions are answered by this aqueous, acid, balsamic Medicine. Besides, the viscid Juices coagulated by the fetid Heat, are resolved by Tar-water as a Soap, and not too far resolved as it is a gentle acid Soap; to which we may add, that the peccant Humours and Salts are carried off by its diaphoretic and diuretic Qualities.

I found all this confirmed by my own Experience, in the late sickly Season of the Year one thousand seven hundred and forty-one, having had twenty-five Fevers in my own Family cured by this medicinal Water, drank copiously. The same Method was practised on several of my poor Neighbours with equal Success; it suddenly calmed the feverish Anxieties, and seemed by every Glass to refresh, and infuse Life and Spirit into the Patient. At first, some of those Patients have been vomited; but afterwards I found that without Vomiting, Bleeding, Blistering, or any other Evacuation or Medicine whatsoever, very bad Fevers could be cured by the sole drinking of Tar-water Milk-warm, and in proper Quantities, perhaps a large Glass every Hour taken in Bed; and it was remarkable, that such as were cured by this comfortable Cordial, recovered Health and Spirits at once, whilst those who had been cured by Evacuations often languished long, even after the Fever left them, before they could recover of their Medicines, and regain their Strength.

In Peripneumonies and Pleurifies I have observed Tar-water to be excellent, having known some pleuritic Persons cured without Bleeding, by a Blister early applied to the Stitch, and the copious Drinking of Tar-water, four or five Quarts, or even more, in four-and-twenty Hours; and I recommend it to farther Trial, whether, in all Cases of a Pleurisy, one moderate Bleeding, a Blister on the Part affected, and Plenty of tepid Tar-water, may not suffice, without those repeated and immoderate Bleedings, the bad Effects of which are perhaps never got over. I even suspect, that a pleuritic Patient, betaking himself to Bed betimes, and drinking very copiously of Tar-water, may be cured by that alone, without Bleeding, Blistering, or any other Medicine whatever. Certainly I found this succeed by exhibiting a Glass every Half-hour.

I have known a Bloody-flux of long Continuance, after various Medicines had been tried in vain, cured by Tar-water; but that which I take to be the most speedy and effectual Remedy in a Bloody-flux, is a Clyster of an Ounce of common brown Refin, dissolved over a Fire in two Ounces of Oil, and added to a Pint of Broth; which not long ago I had frequent Occasion of trying, when that Distemper was epidemical: Nor can I say, that any to whom I advised it, miscarried. This Experiment I was led to make by the Opinion I had of Tar as a Balsamic; and Refin is only Tar inspissated.

Nothing that I know corroborates the Stomach so much as Tar-water: Whence it follows that it must be of singular Use to Persons afflicted with the Gout. And from what I have observed in five or six Instances, I verily believe it the best and safest Medicine either to prevent the Gout, or so to strengthen Nature against the

Fit, as to drive it from the Vitals. Doctor Sydenham, in his Treatise of the Gout, declares, that whoever finds a Medicine the most efficacious for strengthening Digestion, will do more Service in the Cure of that and other chronical Distempers, than he can even form a Notion of; and I leave it to Trial, whether Tar-water be not that Medicine, as I myself am persuaded it is, by all the Experiments I could make. But in all Trials I would recommend Discretion; for Instance, a Man with the Gout in his Stomach ought not to drink cold Tar-water.

It is evident to Sense, that Blood, Urine, and other animal Juices, being let to stand, soon contract a great Acrimony. Juices, therefore, from a bad Digestion, retained and stagnating in the Body, grow sharp and putrid; hence, a fermenting Hear, the immediate Cause of the Gout: The curing this by cooling Medicines, as they would increase the antecedent Cause, must be a vain Attempt. On the other hand, Spices and spirituous Liquors, while they continue to remove the antecedent Cause, or bad Digestion, would, by inflaming the Blood, increase the proximate or immediate Cause of the Gout, the fermenting Hear: The Scope therefore, must be to find a Medicine that shall corroborate, but not inflame. Bitter Herbs are recommended; but they are weak in Comparison of Tar-water.

The great Force of Tar-water to correct the Acrimony of the Blood, appears in nothing more than in the Cure of a Gangrene, from an internal Cause; which was performed on a Servant of my own, by prescribing the copious and constant Use of Tar-water for a few Weeks. From my representing Tar-water as good for so many Things, some perhaps may conclude it is good for Nothing; but Charity obliges me to say what I know, and what I think howsoever it may be taken; Men may censure and object as they please, but I appeal to Time and Experiment. Effects misimputed, Cases wrong told, Circumstances overlooked, perhaps, too, Prejudices and Partialities against Truth, may for a time prevail, and keep her at the Bottom of her Well; from whence, nevertheless, she emergeth sooner or later, and strikes the Eyes of all who do not keep them shut.

Boerhaave thinks a Specific may be found for that peculiar Venom which infects the Blood in the Small-pox, and that the Prospect of so great a public Benefit should stir up Men to search for it. Its wonderful Success in preventing and mitigating that Distemper, would incline one to suspect, that Tar-water is such a Specific. Some think an Erysipelas and the Plague differ only in Degree: If so, Tar-water should be useful in the Plague; for I have known it cure an Erysipelas.

Tar-water, as cleansing, healing, and balsamic, is good in all Disorders of the Urinary Passages, whether obstructed or ulcerated. Doctor Lister supposes, indeed, that Turpentine act by a caustic Quality, which irritates the Coats of the Urinary Ducts to expel Sand or Gravel. But, it should seem, this expelling diuretic Virtue consisted rather in Salts than the Resin, and consequently resides in the Tar-water gently stimulating by its Salts, without the dangerous Force of a Caustic. The violent Operation of Ipecacuanha lies in its Resin, but the saline Extract is a gentle Purge and Diuretic, by the Stimulus of its Salts.

That which acts as a mild Cordial, neither hurting the Capillary Vessels as a Caustic, nor affecting the Nerves, nor coagulating the Juices, must in all Cases be a Friend to Nature, and assist the *Vitæ* in its Struggle against all Kinds of Contagion; and from what I have observed, Tar-water appears to me an useful Preservative in all epidemical Disorders, and against all other Infection whatsoever, as well as that of the Small-pox. What Effects the Passions of the Mind, have in human Maladies, is well known; and consequently the general Benefit of such a Cardiac cannot be doubted.

As the Body is said to clothe the Soul, so the Nerves may be said to constitute her inner Garment. And as the Soul animates the Whole, what nearly touches the Soul relates to all: Therefore the Asperity of tartarous Salt, and the fiery Acrimony of alkaline Salts, irritating and wounding the Nerves, produce Passions and Anxieties in the Soul, which both aggravate Distempers, and render Mens Lives restless and wretched, even when they are afflicted with no apparent Distemper. This is the latent Spring of much Woe, Spleen, and Uneasiness of Life. Small imperceptible Irritations of the minute Fibres or Filaments, caused by the pungent Salts of Wines and Sauces, so shake and disturb the Microcosms of high Livers, as often to raise Tempests in Courts and Senates; whereas the gentle Vibrations, that are raised in the Nerves, by a fine subtle Acid, sheathed in a smooth volatile Oil, softly stimulating and bracing the nervous Vessels and Fibres, promotes a due Circulation and Secretion of the animal Juices, and creates a calm, satisfied Sense of Health; and accordingly I have often known Tar-water procure Sleep, and compose the Spirits, in cruel Watchings, occasioned either by Sickness, or by too intense Application of Mind.

In Diseases sometimes Accidents happen from without by Mismanagement, sometimes latent Causes operate within, jointly with the specific Taint, or, peculiar Cause of the Malady. The Causes of Distempers are often complicated, and there may be something in the Idiosyncrasy of the Patient that puzzles the Physician: It may, therefore, be presumed, that no Medicine is infallible, nor even

in any one Disorder: But as Tar-water possesses the Virtues of fortifying the Stomach, as well as purifying and invigorating the Blood, beyond any Medicine that I know, it may be presumed of great and general Efficacy in all those numerous Illnesses, which take their Rise from foul or vapid Blood, or from a bad Digestion. The Animal Spirits are elaborated from the Blood: Such, therefore, as the Blood is, such will be the Animal Spirits; more or less, weaker or stronger. This shews the Usefulness of Tar-water in all hysteric and hypochondriac Cases; which, together with the Maladies from Indigestion, comprise almost the whole Tribe of chronical Diseases.

The Scurvy may be reckoned in these Climates an universal Malady, as People in general are subject to it, and as it mixes, more or less in almost all Diseases. A Cachexy, or ill-Habit, is much of the same Kind with the Scurvy, proceeds from the same Causes, and is attended with the like Symptoms, which are so manifold and various, that the Scurvy may well be looked upon as a general Cachexy, infecting the whole Habit, and vitiating all the Digestions.

The Cure of the Scurvy is no more to be attempted by strong active Medicines, than Pitch on Silk is to be removed by Force. The viscid Humour must be gently resolved and diluted, the Tone of the Vessels recovered by a moderate Stimulation, and the tender Fibres, and Capillary Vessels, gradually cleared from the concentered Stuff that adheres to and obstructs them; all which is in the properest manner performed by a watry Diluent containing a fine vegetable Soap. And altho' a complete Cure by Alteratives, operating on the small Capillaries, and by insensible Discharges, must require Length of Time; yet the good Effect of this Medicine on cachectic and scorbutic Persons is soon perceived by the Change it produces in their pale discoloured Looks, giving a florid healthy Countenance in less Time than, perhaps, any other Medicine.

It is well known how extremely difficult it is to cure an inveterate Scurvy; how many scorbutic Patients have grown worse by an injudicious Course of Evacuations; and how difficult, tedious and uncertain the Cure is, in the Hands even of the best, who are obliged to use such Variety and Change of Medicines, in the different Stages of that Malady; which, nevertheless, may be cured (if I may judge by what I have experienced) by the sole, regular, constant, and copious Use of Tar-water.

Tar-water moderately inspissates with its balsamic Virtue, and renders mild the thin and sharp Part of the Blood; the same Water, as a soapy Medicine, dissolves the grumous Concretions of the fibrous Part. As a Balsam, it destroys the ulcerous Acrimony of the Humours; and, as a Deobstruent, it opens and cleans the Vessels, restores their Tone, and strengthens the Digestion, whose Defects are the principal Cause of a Scurvy and Cachexy.

In the Cure of the Scurvy, the principal Aim is to subdue the Acrimony of the Blood and Juices. But as this Acrimony proceeds from different Causes, or even opposite, as acid and alkaline, what is good in one Sort of Scurvy proves dangerous, or even mortal, in another. If I may trust what Trials I have been able to make, this Water is good in the several Kinds of Scurvy, acid, alkaline, and muriatic; and I believe the only Medicine that cures them all without doing Hurt in any. As it contains a volatile Acid with a fine volatile Oil, why may not a Medicine cool in one Part, and warm in another, be a Remedy to either Extreme? I have observed it to produce a kindly genial Warmth without Heat, a Thing to be aimed at in all Sorts of Scurvy. Besides, the Balsam in Tar-water sheaths all scorbutic Salts alike; and its great Virtues, as a Digester and Deobstruent, are of general Use in all scorbutic, and, I may add, in all chronical Cases whatsoever.

I cannot be sure, that I have tried it in a scrophulous Case, tho' I have tried it successfully in one that I suspected to be so. And I apprehend it would be very serviceable in such Disorders. For altho' Doctor Gibbs, in his Treatise of the *King's Evil*, derives that Disease from a coagulating Acid, which is, also, agreeable to the Opinion of some other Physicians, and altho' Tar-water contain an Acid, yet, as it is a Soap, it resolves instead of coagulating the Juices of the Body.

For hysteric and hypochondriac Disorders, so frequent among us, it is commonly supposed, that all Acids are bad. But I will venture to except the acid Soap of Tar-water, having found, by my own Experience, and that of many others, that it raises the Spirits, and is an excellent Antihysteric, nor less innocent than powerful; which cannot be said of those others in common Use, that often leave People worse than they found them.

Many hysteric and scorbutic Ailments, many Taints contracted by themselves, or inherited from their Ancestors, afflict the People of Condition in these Islands; which Ailments might be safely removed, or relieved, by the sole Use of Tar-water.

As the Nerves are the Instruments of Sensation, it follows, that Spasms in the Nerves may produce all Symptoms; and, therefore, a Disorder in the nervous System shall imitate all Distempers, and occasion, in Appearance, an Asthma, for Instance, a Pleurisy, or a Fit of the Stone. Now, whatever is good for the Nerves in general, is good against all such Symptoms. But Tar-water, as it includes, in an eminent Degree, the Virtues of warm Gums and Resins, is of great Use for comforting and strengthening the Nerves, curing Twitches in the nervous Fibres, Cramps, also

also, and Numbness of the Limbs, removing Anxieties, and promoting Sleep; in all which Cases I have known it very successful.

This safe and cheap Medicine suits all Circumstances, and all Constitutions, operating easily, curing without disturbing, raising the Spirits without depressing them; a Circumstance that deserves repeated Attention, especially in these Climates, where strong Liquors so fatally and so frequently produce those very Distresses they are designed to remedy; and, if I am not misinformed, even among the Ladies themselves, who are truly much to be pitied. Their Condition of Life makes them a Prey to imaginary Woes, which never fail to grow up in Minds unexercised, and unemployed. To get rid of these, it is said, there are some who betake themselves to distilled Spirits. Thus are many Lives rendered wretched. But the tender Nerves, and low Spirits of such poor Creatures, would be much relieved by the Use of Tar-water, which might prolong and cheer their Lives.

I verily think, there is not any Medicine whatsoever, so effectual to restore a crazy Constitution, and cheer a dreary Mind, or so likely to subvert the gloomy Empire of the Spleen.

It must be owned, that Tar-water is not so violent and sudden a Medicine, as always to produce its Effect at once, (such, by irritating, often do more Mischief than Good), but a safe and mild Alterative, which penetrates the whole System, opens, heals, and strengthens the remote Vessels, alters and propels their Contents, and enters the minutest Capillaries, and cannot, therefore, otherwise, than by degrees, and in time, work a radical Cure in chronic Distempers. It gives, nevertheless, speedy Relief in most Cases; as I have found by myself, and many others. I have been surprised to see Persons fallen away, and languishing under a bad Digestion, after a few Weeks, recover a good Stomach, and with it Flesh and Strength, so as to seem renewed by the drinking of Tar-water. The Strength and Quantity of this Water to be taken by each individual Person, is best determined from Experience. And, as for the Time of taking, I never knew any Evil ensue from its being continued ever so long; but, on the contrary, many and great Advantages, which sometimes would not, perhaps, begin to shew themselves, till it had been taken two or three Months.

Sir John Floyer remarks, that we want a Method for the Use of Turpentine: And again, he who shall hit, says he, on the pleasantest Method of giving Turpentine, will do great Cures in the Gout, Stone, Catarrhs, Dropsies, and cold Scurvies, Rheumatisms, Ulcers, and Obstructions of the Glands. Lastly, he subjoins, that, for the Use of altering and amending the Juices and Fibres, it must be given frequently, and in such small Quantities at a time, and in so commodious a manner, as will agree best with the Stomach, stay longest in the Body, and not purge itself off; for large Doses, says he, go thro' too quick, and, besides, offend the Head. Now the Infusion of Tar, or Turpentine, in cold Water, seems to supply the very Method that was wanted, as it leaves the more unctuous and gross Parts behind, which might offend the Stomach, Intestines, and Head; and, as it may be easily taken, and as often, and in such Quantity, and in such Degree of Strength, as suits the Case of the Patient. Nor should it seem, that the fine Spirit, and volatile Oil, obtained by Infusion of Tar, is inferior to that of Turpentine, to which it superadds the Virtue of Wood-sour, which is known to be very great, with respect to the Head and Nerves; and this appears evident from the manner of obtaining Tar. And as the fine volatile Parts of Tar, or Turpentine, are drawn off by Infusion in cold Water, and easily convey'd throughout the whole System of the human Body; so, it should seem, the same Method may be used with all Sorts of Balsams, or Resins whatsoever, as the readiest, easiest, and most inoffensive, as well as in many Cases the most effectual Way of obtaining and imparting their Virtues.

After having said so much of the Uses of Tar, I must farther add, that, being rubbed on them, it is an excellent Preservative of the Teeth and Gums; that it sweetens the Breath, and that it clears and strengthens the Voice. And as its Effects are various and useful, so there is nothing to be feared from the Operation of an Alterative so mild and friendly to Nature. It was a wise Maxim of certain ancient Philosophers, that Diseases ought not to be irritated by Medicines. But no Medicine disturbs the animal Oeconomy less than this; which, if I may trust my own Experience, never produces any Disorder in a Patient, when rightly taken.

I knew, indeed, a Person who took a large Glass of Tar-water just before Breakfast, which gave him an invincible Nausea and Disgust, altho' he had before received the greatest Benefit from it. But if Tar-water be taken and made in the manner prescribed at the Beginning of this Essay, it will, if I mistake not, have enough of the Salt to be useful, and little enough of the Oil to be inoffensive. I mean my own Manner of making it, and not the American. Persons more delicate than ordinary, may render it palatable, by mixing a Drop of the chymical Oil of Nutmegs, or a Spoonful of Mountain-wine, in each Glass. It may not be amiss to observe, that I have known some, whose nice Stomachs could not bear it in the Morning, take it at Night, going to Bed, without any Inconvenience; and that, with some, it agrees best warm, with others cold. It may be made for brute

Beasts, as Horses, in whose Disorders I have found it very useful; I believe, more so, than that bituminous Substance, called *Barbados Tar*.

In very dangerous and acute Cases, much may be taken, and often, as far as the Stomach can bear. But in chronical Cases, about half a Pint, Night and Morning, may suffice; or if so large a Dose should prove disagreeable, half the Quantity may be taken at four times, in the Morning, at Night going to Bed, and about two Hours after Dinner and Breakfast. A Medicine of so great Virtue in so many different Disorders, and especially in that grand Enemy, the Fever, must needs be a Benefit to Mankind in general. There are, nevertheless, three Sorts of People, to whom I would peculiarly recommend it; Sea-faring Persons, Ladies, and Men of studious and sedentary Lives.

To Sailors, and all Sea-faring Persons, who are subject to scorbutic Disorders, and putrid Fevers, especially in long Southern Voyages, I am persuaded, this Tar-water would be very beneficial. And this may deserve particular Notice in the present Course of marine Expeditions, when so many of our Countrymen have perished by such Distempers contracted at Sea, and in foreign Climates; which, it is probable, might have been prevented, by the copious Use of Tar-water.

This Water will, also, give charitable Relief to the Ladies, who often want it more than the Parish-Poor; being many of them never able to make a good Meal, and sitting pale, puny, and forbidden, like Ghosts, at their own Table, Victims of Vapours and Indigestion.

Studious Persons, also, pent up in narrow Holes, breathing bad Air, and stooping over their Books, are much to be pitied. As they are debarred the free Use of Air and Exercise, this I will venture to recommend as the best Succedaneum to both. My own sedentary Course of Life had long since thrown me into an ill Habit, attended with many Ailments, particularly a nervous Colic, which rendered my Life a Burden, and the more so, because my Pains were exasperated by Exercise. But, since the Use of Tar-water, I find, tho' not a perfect Recovery from my old and rooted Illness, yet such a gradual Return of Health and Ease, that I esteem my having taken this Medicine, the greatest of all temporal Blessings; and am convinced, that, under Providence, I owe my Life to it.

In the distilling of Turpentine, and other Balsams, by a gentle Heat, it has been observed, that there rises, first, an acid Spirit, that will mix with Water; which Spirit, except the Fire be very gentle, is lost. This grateful acid Spirit that first comes over, is highly refrigeratory, diuretic, sudorific, balsamic, or preservative from Putrefaction, excellent in nephritic Cases, and for quenching Thirst; all which Virtues are contained in the cold Infusion, which draws forth from Tar only its fine Flower or Quintessence, if I may so say, or the native vegetable Spirit, together with a little volatile Oil. *Siris*.

PLACENTA. A Cake. In Anatomy, *Placenta* is a Congeries of Blood-vessels, adhering to the Uterus, during Gestation, which, together with the Membranes, and *Funis Umbilicalis*, is excluded generally after the Fœtus. See *SECUNDINÆ*.

PLACENTULA. A Diminutive of the preceding Word.
PLACIANUM COLLYRIUM. The Name of a Collyrium, described by *Aetius*, *Tetrabib. 2. Sect. 4. Cap. 113.*

PLACITIS, πλακίτις. A Species of *CADMIA*; which see. It is, also, a Name for a crustaceous Sort of Alum.

PLADAROTES, πλαδαρότης. A Disorder of the Eye-lids, consisting in an Eruption of small, soft, discoloured Tubercles, on their internal Surface.

PLADOS, πλάδος. A redundant and superfluous Humidity, rendering any Part lax and weak.

PLAGULÆ. Compresses, or Bolsters.

PLANETES PYRETOS. An erratic Fever; that is, one which is anomalous, and preserves no regular Period, or Type. The Word is, likewise, apply'd to other Distempers, as the Gout, when irregular.

PLANITIES. The Sole of the Foot.

PLANTA. A Plant, or Vegetable. See *BOTANY*. *Planta Noctis* is a minute itching Pustule, which breaks out in the Night.
Castellus. The Sole of the Foot.

PLANTAGINELLA. A Name for the *Plantago*; *aquatica*; *minima*.

PLANTAGO.

The Characters are;

The Calyx is monophyllous, quadrifid, tubulous, and very tender. The Flower in it is monopetalous, shaped somewhat like a Basin, quadripartite, and expanded in form of a Star: The Ovary is guarded by four long Stamina; whence some take the Flower to be apetalous. The Fruit is a Shell, almost of an oval, or conic Form, when ripe, opening transversely into two Parts (one of which rests upon the other); and is divided by an Inter-closure into two Capsules, full of oblong Seeds.

Boerhaave mentions seventeen Species of *Plantago*; which are,
1. *Plantago*; *latifolia*; *rosea*; flore expanso. C. B. P. 189. f. B. 3. 703.
2. *Plantago*; *latifolia*; *rosea*; floribus quasi in Spica dispositis. C. B. P. 189. *Plantago*, *rosea*. J. B. 3. 503.

3. *Plantago*; *latifolia*; *sinuata*. C. B. P. 189. *Tourn. Inst.* 126. *Boerb. Ind. A. 2.* 100. *Plantago vulgaris*, *Septinervia*. Offic. *Plantago latifolia vulgaris*. Park. *Theat.* 493. *Raii Hist.* 1. 876. Synop. 3. 314. *Plantago latifolia*. Ger. 338. *Emac.* 417. *Plantago major*, *folio glabra, non laciniato, ut plurimum*. J. B. 3. 502. GREAT PLANTAIN.

The Root of the Plantain is thick at the Head, having many whitish Fibres growing from it. The Leaves are pretty broad, large and oval, somewhat waved about the Edges, and having seven large Nerves running through the whole Length of the Leaves, and even the broad hollow Foot-stalks, into the Root. The Flowers grow in long Spikes, above half the Length of the thick Foot-stalk, being small and staminate, cut into four Parts, which are succeeded by two small oblong shining brown Seeds, hollowed in on the one Side, growing in little roundish Capsules, which open horizontally, when the Seed is ripe. It grows everywhere by the Way-side, and flowers in May. The whole Plant is used.

Plantain is cold, dry, and binding, and useful in all Kinds of Fluxes and Hæmorrhages, as spitting and vomiting of Blood, bleeding at the Nose, the Excess of the Catamenia, or Lochia, as, also, for the involuntary making of Urine, its Heat and Sharpness, and the Gonorrhœa. It is, likewise, good to stop the Bleeding of Wounds, and to consolidate their Lips.

The only official Preparation is the simple distilled Water. *Miller's Bot. Off.*

Its Leaves are bitter, astringent, and give a faint red Colour to the blue Paper; the Roots give it a deeper, and are only astringent; which shews, that in the Leaves the Sal Ammoniac, and the terrestrial Parts of this Plant, are clogged with a great deal of Sulphur; thus the Plantain is vulnerary, resolving and febrifugous. *Tragus* commends it very much for the Phtisis. In the Country they drink the Juice, from two Ounces to four, at the first Access of the Paroxysm of intermitting Fevers; two Drams of the Extract of this Plant, or a Dram of its Seed, reduced to Powder, cure a Looseness, and all Sorts of Hæmorrhages. The Prisan and Water of Plantain have the same Virtues. They are prescribed in the Dysentery, spitting of Blood, in the immoderate Flux of the Piles, or Terms, for the Whites, and Losses of Blood. In fine, the Plantain is used in all vulnerary and deterfive Porions. In the Inflammation of the Eyes, *Camerarius* made a Collyrium, with the Juice and Leaves of this Plant mixed with Rose-water and Sugar. *Simon Paulli* used the Extract of Plantain, and the Decoction of *Saraparilla*, to cure a young Man that made bloody Urine, after a Gonorrhœa. The Gargarism of Plantain is excellent for the Diseases of the Throat; this Plant is an Ingredient in the Powder which *Julian Paulmier* has prescribed to cure Madness. *Martyn's Tournesort.*

4. *Plantago*; *latifolia*; *incana*. C. B. P. 189. *Tourn. Inst.* 126. *Boerb. Ind. A. 2.* 100. *Plantago incana*. Offic. Ger. 338. *Emac.* 419. *Raii Hist.* 1. 877. *Plantago major incana*. Park. *Theat.* 493. *Raii Synop.* 3. 314. *Plantago major hirsuta, media à nonnullis cognominata*. J. B. 3. 504. HOARY PLANTAIN.

It grows in gravelly Places, and flowers in June. The Leaves are in Use, and agree in Virtues with those of the Great Plantain, and may be substituted in their stead. *Dale.*

5. *Plantago*; *latifolia*; *hirsuta*; *minor*. C. B. P. 189.
6. *Plantago*; *lato*, *sanguineo folio*. H. R. *Monsp.*
7. *Plantago*; *latifolia*, *glabra*; *pedunculi foliis, & Spica, longissimis*.

8. *Plantago*; *latifolia*; *Spica multiplici, sparsa*. C. B. P. 189.

9. *Plantago*; *angustifolia*; *major*. C. B. P. 189. *Tourn. Inst.* 127. *Boerb. Ind. A. 2.* 100. *Plantago angustifolia, Quinquenervia*. Offic. *Plantago Quinquenervia*. Ger. 341. *Emac.* 422. *Raii Hist.* 1. 877. Synop. 3. 314. *Plantago Quinquenervia major*. Park. *Theat.* 495. *Plantago lanceolata*. J. B. 3. 505. RIB-WORT.

This Plantain has longer and much narrower Leaves than the common Plantain, sharp-pointed, and having five remarkable Ribs, or Nerves, running quite thro' them, to the Root, which is less, and more stringy, than the common Plantain. The Flowers grow at the End of long slender Stalks, in oblong Spikes, about an Inch long; they are small and staminate, with white Apices. The Seed grows like that of the common Plantain, but is somewhat larger. It grows in Fields and Meadows, and flowers in May and June; the Leaves are used.

They are restraining and vulnerary, and may be used to the same Purpose with the common Plantain. Some commend the Juice of it, given before the Fit of an Ague, to prevent its coming. *Miller's Bot. Off.*

Mr. Boyle highly recommends a Dram of the Powder of the Leaves given in the Conserve of red Roses, for a Tertian.

10. *Plantago*; *trinervia*; *folio angustissimo*. C. B. P. 189. *Prodr.* 98.

11. *Plantago*; *angustifolia*; *paniculis Lagopi*. C. B. P. 189. *Prodr.* 98.

12. *Plantago*; *angustifolia*; *albida*; *Hispanica*. *Tourn. Inst.* 127. *Boerb. Ind. A. 2.* 101. *Holostium*. Offic. *Holostium Salmanticum*. Ger. 342. *Emac.* 423. Park. *Theat.* 498. *Holostium hirsutum*.

albicans majus. C. B. P. 190. *Holostium Plantagini simile*. J. B. 3. 508. *Raii Hist.* 1. 880. SPANISH PLANTAIN.

This Species grows in sandy Places, and flowers in April and May. It is a vulnerary Plant; and is principally of Use in Hernias.

13. *Plantago*; *angustifolia*; *minima*; *Maffiliensis*, *Lagopi capitulo*. T. 127.

14. *Plantago*; *Orientalis*; *folio Scorzonerae*. T. Cor. 5.

15. *Plantago*; *angustifolia*; *ferrata*; *Hispalensis*. C. B. P. 189.

16. *Plantago*; *Cretica*; *minima*; *tomentosa*; *caule adunco*. T. Cor. 5. *Holostium, seu Leontopodium, Creticum*. C. B. P. 190. *Leontopodium*. Alpin. Exot. 114.

Prosper Alpinus takes this for the *Leontopodium* of *Dioscorides*, and describes it as a small Plant, two Digits in Height; which, from a long slender Root, produces five or seven hairy Leaves, three or four Digits in Length, which, near the Root, are covered with a thick Down. Among the Leaves, near the Root, are little Heads bending downwards from their Stalks, in a wreathed Posture, and bearing black Flowers, which are succeeded by Seeds, involved in so thick a Down, that they can hardly be taken out of it. I have often, says *Prosper Alpinus*, received this Plant dry'd from Candy; and, having produced it from the Seed, found none of its Characters disagreeable with those of the *Leontopodium*. But one thing, he thinks, ought to be observed, which is, what *Dioscorides* has written of the *Catanance*, that when it is dry'd and withered on the Ground, it shrinks and contracts itself into the Figure of the Claws of a dead Kite. Now this Plant *Bellus* plainly proves to be the *Leontopodium*, and not the *Catanance*, since it has neither the Leaves of the *Coronopus*, nor the Seeds of the *Orobis*, which are ascribed to the *Catanance*, but rather of the *Psyllium*. But, I am inclined to believe, he says, that either the *Leontopodium*, and *Catanance*, are the same Plant, or, at least, are not different in Species; and the rather, because *Dioscorides* says of both of them, that they are employ'd as Philtres, or Medicines to procure Love. *Prosper Alpinus de Plantis exoticis.*

17. *Plantago*; *angustifolia*; *major*; *foliis non dentato, rigidiori, ac radice repente*. H. C. *Suppl.* 3. *Boerb. Ind. alt. Plant.* Vol. 2.

Plantain has an astringent Virtue, without any manifest Acrimony. It is of Service in pissing or spitting of Blood, and under an immoderate Flux of the Lochia; in which Cases it never fails the Hopes of the Physician. Externally, it is of Use in Inflammations, being apply'd to the Parts affected. It is a Plant of excellent Use in a Diarrhœa, Hæmorrhages, and Diseases of the Eyes. The bruised Leaves are good to cleanse and consolidate old Wounds and Ulcers. Their Juice is very proper in intermitting Fevers, and in a Phtisis; the distilled Water, mixed with Rose-water, is a good Remedy for Inflammations of the Eyes; the Water injected is of Service in a Gonorrhœa, and the Decoction of the Leaves makes a proper Gargarism in Diseases of the Fauces. *Hist. Plant. adscript. Boerhaav.*

PLANTAGO AQUATICA.

The Characters are;

The Root is very full of Fibres, which unite in a Bulb; the Leaves are like those of the *Plantago*; the Stalk is erect, and bears something like an Umbella. The End of the Pedicle is unfolded into a monophyllous trifid Calyx, which is first expanded like a Star, and, afterwards, retracted backwards. The Flower is tripetalous, rosaceous; the Petals proceeding from the Margin of the reflexed Calyx; the Stamina are six in Number, two from the Origin of each Petal. The Ovary becomes a Fruit, consisting of a Congeries of Seeds, collected, in the large Species, into a triangular Form; in the lesser, into an echinated, or prickly Ball, each Seed furnished with its proper Tube.

Boerhaave mentions three Species of *Plantago Aquatica*; which are,

1. *Plantago*; *aquatica*; *latifolia*. C. B. P. 190. *Boerb. Ind. A. 45.* *Plantago aquatica*. Offic. J. B. 3. 787. *Raii Hist.* 687. Synop. 3. 257. *Plantago aquatica major*. Ger. *Emac.* 417. Park. *Theat.* 1245. *Plantago aquatica major, Limonium verum Dioscoridis & Antiquorum*. Phyt. Brit. 94. *Alisma*. Dill. Cat. Giff. 126. *Alisma, Doronicum Pannonicum*. Mont. Plant. Var. Ind. 36. *Ranunculus palustris Plantaginis folio ampliore*. *Tourn. Inst.* 292. WATER PLANTAIN.

It grows in watry Places, and flowers in June, and the Root is in Use.

Schwenckfeld says, that it cures the falling down of the Anus, and mitigates the Redness and Inflammation of the Gout, and the Pain of the Head, proceeding from a cold Cause; and is a Remedy for pissing and spitting of Blood. The Juice, as *Roslin* says, consumes the Milk in the Breasts. *Dale.*

2. *Plantago*; *aquatica*; *angustifolia*. C. B. P. 190. *Ranunculus, palustris, Plantaginis folio angustiori*. T. 292.

3. *Plantago*; *aquatica*; *minima*. Clus. H. 110. *Plantaginella, palustris*. C. B. P. 190. *Ranunculus aquaticus, Plantaginis folio angustissimo*. T. 292. *Boerb. Ind. alt. Plant.*

It is called *Plantago aquatica*, because its Leaves are like those of the *Plantago terrestris*. Many think it the *Damaconium* of the Antients; but what is said of the *Damaconium*, does not seem, to me, to agree with this Kind. As for M. *Vaillant*, he thought it the *Damaconium*, because *Label* calls one Species of the *Plantago*.

zago by that Name. *Tournefort* refers the whole Kind to the *Ranunculus*, but I know not for what Reason; for their Leaves and Flowers are different.

The Taste shews this to be an acrimonious Plant, tho' the Generality of Botanists, among whom is *Matthioli*, say, it is of a cold Quality. But this Error is corrected by *Gesner*, *Bauhine*, and others, who make it a Plant of a very heating Nature. The Reason why it was thought to be cold was, I conceive, because the *Plantago* is refrigerating; whence they thought the *Plantago aquatica* to be of the same Nature. The Plant then is acrimonious and penetrating, whatever may have been said of its cooling and drying Qualities. The Leaves bruised, and applied to the Breasts, are a sovereign and approved Secret, as *Timach* assures us, for suddenly consuming and drying up the Milk therein. *Hist. Plant. adscript. Boerhaav.*

PLANTARIS MUSCULUS, or TIBIALIS GRACILIS.

This is a small pyriform Muscle, situated obliquely in the Ham, below the external Condyle of the Os Femoris, between the *Popliteus* and *Gastrocnemius Externus*; and its Tendon, which is long, flat, and very small, runs down on the Side of the *Gastrocnemius Internus*, all the way to the Heel.

The fleshy Body, which is only about two Inches in Length, and one in Breadth, is fixed by a short, flat Tendon, above the outer Edge of the exterior Condyle of the Os Femoris, on one Side of the *Gastrocnemius Externus*. From thence the fleshy Body runs obliquely over the Edge of the *Popliteus*, and terminates in a very small, long, flat Tendon.

This Tendon runs between the Body of the *Gastrocnemius Externus* and *Soleus*, all the way to the inner Edge of the upper Part of the *Tendo Achillis*; and from thence continuing its Course downward, it joins this Tendon, and is inserted together with it, in the Outside of the posterior Part of the Os Calcis, without communicating with the *Aponeurosis Plantaris*.

Sometimes this Muscle is wanting, and sometimes it is situated lower down.

From the Description of the *Tibialis Gracilis*, we see evidently, that it can have no Use with relation to the Sole of the Foot. The Use assigned to it by others, of extending the Tarsus, and thereby assisting the *Gastrocnemii* and *Soleus*, seems to me to be very uncertain; both because of the great Disproportion in its Size, and the Obliquity of its Course. If the *Soleus* were not cover'd by the *Gastrocnemii*, the *Tibialis Gracilis* might be imagined to serve as a *Frænum*, in bracing down that Muscle, and hindering it from swelling too much; but the small Number and Direction of its Fibres would still render it unfit for that Function.

Till its true Use is evidently discover'd by some lucky Observation, there is, in the mean time, some Ground to think, that it hinders the Capsular Ligament of the Knee from being compress'd in the Flexion of that Joint; both because of its Adhesion to that Ligament, and because of the Obliquity of its Course; especially since the neighbouring Portion of the same Ligament seems to receive the same Assistance from a tendinous Expansion of the *Semi-membranosus*. *Winslow's Anatomy.*

PLASTICUS, πλαστικός, from πλάσσω, to form. Formative, or endued with a Faculty of forming.

PLATÆ, πλαται. The Scapula.

PLATAMON, πλαταμών. A smooth low Rock, prominent out of the Sea. *Galen*; *Exeg.*

PLATANARIA. A Name for the *Sparganium*; *ramosum*.

PLATANUS.

The Characters are;

The Leaves are large, and lacinated; the Flower is amentaceous, form'd into a globular Figure, and consisting of a Multitude of Stamina. The Fruit, which is produced at a Distance from the Flower, is spherical, and contains vast Numbers of long, apiculated Seeds, intermix'd with much Down.

Boerhaave mentions two Species of *Platanus*; which are,

1. *Platanus*; *Orientalis*; *verus*. *Park. Theat.* 1427. *Raii Hist.* 2. 1706. *Tourn. Inst.* 590. *Boerh. Ind. A.* 2. 209. *Platanus*. *Offic. C. B. P.* 431. *J. B.* 1. 170. *Ger.* 1304. *Emac.* 1489. THE PLANE-TREE.

The *Platanus Orientalis*, so much celebrated by *Herodotus*, and other Writers, is, also, called *Platanus latus*, because it extends its Branches to such a Compass, as to be able to cover more than a thousand Men under its pleasing Shade. Under this Tree, *Hippocrates* found *Democritus*, and saluted him. *Hist. Plant. adscript. Boerhaav.*

The tender Leaves of the *Platanus*, boil'd in Wine, and apply'd as a Cataplasm, stop Defluxions upon the Eyes, and give Relief under Tumors and Inflammations. The Bark, boil'd in Vinegar, makes a Collution for the Tooth-ach. The green Balls or Fruit, drank in Wine, cure the Bites of Serpents; and made into an Ointment with Fat, are a Remedy for Ambushions. The Dust, or Down, of the Fruit, or Leaves, falling into the Eyes, or Ears, injures the Sight and Hearing. *Dioscorides*, *Lib.* 1. *Cap.* 107.

2. *Platanus*; *Occidentalis*; aut *Virginienfis*. *Park. Theat.* 1427. *Boerh. Ind. alt. Plant.*

PLATANUS is, also, a Name for the *Papaya*; *fructu Meol-peponis effugie.*

PLATEA. The Pelican.

PLATIASMOS, πλατίαςμος. A Fault in Pronunciation, when a Person opens his Mouth too wide, which hinders him from speaking distinctly. *Gortæus.*

PLATYCORIA, πλατυκορία. A preternatural Dilatation of the Pupil of the Eye, from a paralytic Cause. *Areteus de Sig. et Caus. diuturn.* L. 1. C. 7.

PLATYOPHTHALMON. A Name for Antimony; so call'd, because it was used by Women, for rendering their Eyebrows and Eye-lashes black and beautiful.

PLATYPHYLLOS. A Name for the *Quercus*; *latifolia*; *mas*; quæ brevi Pediculo est. And for the *Quercus*; *latifolia*; *femina*.

PLATYSMA, πλατύσμα. Any thing which is flat, and broad. Thus a Piece of Cloth, or Plaister, or Plate of Metal, are call'd by this Name.

PLATYSMA MYOIDES is the Name by which *Galen* calls the muscular Expansion, call'd *Quadratus Genæ*. See CAPUT, and LABIA.

PLATYSTERNOS. Broad-chested. An Epithet for a Person possess'd of a broad STERNUM.

PLECHAS, πλεχάς. The Region of the Body, which is terminated on each Side by the Thighs; forward by the *Pudenda*, and backwards by the Anus. *Hippocrates.*

PLECTANE, πλεκτανή, or πλέγμα. A Plexus, or Complication of Vessels. *Plectanæ*, πλεκτάναι, are the *Cornua* of the Uterus.

PECTRUM. A Name for the Styloide Process of the Os *Petrosum*; for the *Uvula*; and, in some Authors, for the Tongue.

PLEGMA. The same as PLECTANE.

PLEGMARIA. See SELAGO.

PLEIAS, πλειάς, or πλειάς, in the Plural Number *Pleiades*, in Latin *Vergiliæ*, is a Constellation of seven Stars in the Sign *Taurus*; but, in *Hippocrates*, it signifies the Fall of these Stars, which is at the End of Autumn, or about the latter End of October. This is what *Galen* intimates, *Com. 1. in 1 Epid.* where he says, "that *Hippocrates* plainly shews, that he knew the Fall of the "Pleiades to be the End of Autumn; which, therefore, by a "compendious way of Expression, he calls πλειάς." Thus *Galen*. And in Confirmation of what he says, we may often observe, that *Hippocrates* uses the Words ὑπὸ πλειάδος, to signify the End of Autumn.

PLEMMYRIS, πλεμμυρίς, is, properly, the same as πλεμμύρα, and signifies the flowing of the Tide, as *Hesychius* expounds it; but is, by a Metaphor, used to express a Redundance, or Overflowing, of Humidities, or, as *Galen* expounds it, πλῆθος ὑγρό-ιστος, "Plenty of Moisture."

PLEMNE, πλέμνη, is expounded, in *Galen's* Exegesis, by τροχὸν χοιρίτις, "the Nave of a Wheel." The Word frequently occurs, *Lib. de Fract. Plemnæ*, πλέμναι, in the plural Number, as expounded by *Hesychius*, are the Perforations round the Nave, or Axis, into which the Spokes of the Wheel are inserted. *Foesius.*

PLENILIUNUM. The Full Moon. At this Time, many Distempers are said to be exasperated; as Madness, the Epilepsy, and Disorders arising from Worms. See ASTRONOMIA.

PLENNA, πλέννα, the same as BLENNA, Mucus.

PLERES ARCHONTICON. The Name of a compound cephalic Powder. *Lemery Pharmacopée Universelle*. *Blancard.*

PLEROSIS, πλήρωσις. Repletion; or a recruiting a Body, worn out, or reduced, by Sickness, or Evacuations.

PLESMONE, πλεσμονή. Plenitude, Satiety, or Repletion.

PLETHORA, πλεθώρα, from πλῆθος, Plenitude. A Plenitude, or Redundance of Blood, and Humours.

The Disorders arising from a Defect of the Circulation of the Humours, are, in Nature, pretty much the same with those spontaneously produced by their Stagnation. In this Case the Air is of great Importance, since, when admitted, it accelerates spontaneous Corruptions, which would otherwise be brought on more slowly; so that the Knowledge and Cure of the former, are the same with those of the latter; and from all these, the Nature, Cause, Effects, Signs, and Remedies of a Plethora may be duly understood, provided the following Circumstances are adverted to.

The Fluids of the human Body, are either crude, and, in some measure, partake of the Nature of the Aliments; or they have acquired those Qualities which are peculiar to the human Fluids; Now, if we consider what happens both to the crude and assimilated Fluids of the human Body, whilst the Circulation is diminished, it will evidently appear, that nearly the same Changes will happen to the Fluids, as if they had been left to themselves, and in a State of Rest; for the human Blood, when suffered to rest for a few Moments, is separated into Serum, and a red coagulated Substance. Now, when the Circulation is considerably diminished, a Misfortune of the like Nature, of course, begins to be formed; and hence it is, that polypose Concretions are so frequently observed after chronical Disorders. But all crud: Ali-
ments

ments are, by the Efficacy of the Circulation of the Blood, assimilated to the human Fluids. Now if the Circulation of the Humours is diminished, the Aliments longer retain their original Quality, and are spontaneously corrupted.

It must be observed, that a free Access of the Air accelerates all spontaneous Degenerations of the Humours; for no Fermentation happens without the Approach of the Air; and whilst the Atmosphere is excluded, a Putrefaction of the Humours is far more slowly formed, than it would otherwise be. Thus, in dropical Patients, stagnant Water often remains for some Months in the Abdomen, with scarce any Degree of Corruption; but it soon becomes putrid upon the Access of the Air.

Whilst, during the last Months of Gestation, the Blood becomes almost stagnant in the distended Vessels of the Uterus, it does not become corrupted; but, after Delivery, upon the Approach of the Air, the Lochia are highly fetid. After violent Contusions, when the Blood remains under the sound Skin, it hardly becomes putrid; but, being gradually attenuated and absorbed, as it were, disappears. But when Blood taken from the Veins is exposed to the free Air, it quickly becomes putrid. Hence, whilst, in the interior Parts of the Body, the Humours either become stagnant, or move slowly, they do not suddenly degenerate into a putrid State, when the Air has not a free Access to them.

But as a Plethora, or increased Quantity of Fluids, retards their Circulation, so its Nature, Causes, Signs, and proper Remedies, are to be deduced from the following Considerations:

A Plethora is a larger Quantity of laudable Blood, than is capable of undergoing those Changes, which must necessarily happen for the Purposes of Life, without inducing Diseases.

A Redundance of laudable Blood is what we call a Plethora: Hence this Circumstance can never, in its own Nature, be a Disorder; since it only supposes a preternatural Quantity of laudable Humours, whilst, in every other respect, the Patient is sound. Hence *Helmont* imagined, that a Plethora was unjustly classed among the Number of Diseases, since, according to him, what is laudable, cannot be peccant in Quantity. Now a Plethoric Patient is such an one, as is not as yet sick, but at the same time is in such a State of Plenitude, that, if the Humours are more increased or rarefied by Heat, or any other Cause, the natural Functions are, by these means, injured. Hence a Plethoric Person may be found, though at the same time in the greatest Danger; for, by an increased Heat of the circumambient Atmosphere, the smallest Error with respect to the Non-naturals, or any violent Passion of the Mind, this sound State may be changed into the most dangerous Disease. But it is impossible to prevent such a Misfortune sometimes happening to the most healthy Person. Hence *Hippocrates*, in *Aphor. 3. Sect. 1.* informs us, "That Persons in a good Habit of Body are in a State of Danger; and that, since they cannot long continue in the same State, nor change for a better, they must, of course, decline into a worse; for which Reason such a State ought, with the greatest Expedition, to be removed."

A Plethora, therefore, does not import every Increase of the Humours, but only an Augmentation of the laudable Juices. Hence *Galen*, in *Meth. Medend. Lib. 13. Cap. 6.* informs us, "That a mutual and equable Increase of the Fluids is called a Plethora; whereas, when the Body abounds with yellow or black Bile, Phlegm, or serous Humours, the Disorder is called a *Cacoehymy*, and not a Plethora."

A Plethora was, by the Antients, distinguished into that affecting the Vessels, and that influencing the Strength. When the Vessels are so preternaturally turgid with the laudable Juices, that they are ready to break, the Misfortune is called simply a *Plenitude*, or *Plethora of the Vessels*. But when the Vessels are not too full of laudable Humours, but yet contain more than the weak vital Force is able to put into a due Circulation, the Disorder is called a *Plenitude*, or *Plethora, with respect to the Strength*. Thus *Galen*, in his *Treatise de Plenitudine*, *Cap. 3.* informs us, "That there are two Species of Plethoras, one affecting the Strength and vital Powers; and the other the Vessels." And in his *Treatise de Curandi Ratione per Venæsectionem*, *Cap. 6.* he tells us, "That the more heavy a Person perceives himself, the more a Plethora, with respect to the Strength, is increased; whereas a Plethora, with respect to the Vessels, is discovered by a Sense of Tension."

But a Plethora, in the common Acceptation of the Word, is confined to the Vessels, and in this Sense we now consider it.

This Species of Plethora, then, is generated by every Cause which produces a large Quantity of laudable Chyle and Blood; and at the same time hinders their Attenuation, Consumption, and Perspiration.

By the Functions of Life, the Solids are necessarily worn,

and the Fluids diffipated. Hence what is lost, ought to be recruited by Aliments. If every Day as much is restored to the Body as is lost, there remains a perfect Equilibrium, the most perfect Sign of confirmed Health; for *Sanctorius* has shewn, by his Experiments, that the Body is in the most perfect State of Health, when daily, after the Digestion of the Aliments, it returns to its usual Weight. Now the Restitution of what is lost, is produced by laudable Chyle, and the Blood formed of it. If, therefore, by whatever Cause, there is a larger Quantity of laudable Chyle and Blood, than is sufficient for restoring what is lost, generated, there will be an Accumulation of superfluous Juices gradually produced, and such an Accumulation will be greatly increased, if the Efficacy of those Functions is diminished, by which the Fluids ought to be attenuated, consumed, and diffipated; by the usual Ways of Excretion.

Among the other Causes of a Plethora, we may justly reckon the great contractile Force of the chylopoetic Organs, Heart, and Arteries; a lax Texture of the Veins, and other small Vessels; mild Aliments, easily convertible into Chyle; much Sleep; an easy Mind; a Want of due muscular Motion, and habitual Evacuations of Blood, whether natural or artificial.

As for the contractile Force of the chylopoetic Organs; whilst the Viscera, subservient to the Change of the Aliments into laudable Chyle, are sound and strong, there is a large Quantity of Chyle prepared from the Food and Drink; and whilst the like Strength remains in the Heart and Arteries, a laudable Blood is generated from this large Quantity of Chyle; whilst at the same time the Veins, being naturally lax, easily yield to the distending Fluid, and receive its superfluous Quantity, unless a Depletion of them is produced by proportionably greater Motion and Exercise; for the more languid the Circulation is, the more Humours are accumulated in the Veins: Whereas, on the contrary, the brisker the Motion of the Blood is, the Arteries become the fuller, and the Veins the more empty: Whilst Drunkards often destroy large Quantities of Liquor, they would be suffocated, unless the Veins were capable of receiving the superfluous Liquor; for which Reason their Veins are, at such times, greatly inflated. When, therefore, the chylopoetic Organs prepare a large Quantity of Chyle; when the Viscera, subservient to Sanguification, convert this Chyle into Blood, and there is, at the same time, a Laxity of the Veins, there must necessarily be a Redundance of laudable Blood accumulated.

As for mild Aliments; all acrid Substances, by their stimulating Quality, increase the Circulation of the Blood; and an increased Motion of the Blood diminishes the Quantity of the Juices: Mild Aliments, therefore, of the ripe, farinaceous kind, Broths prepared of Flesh, the tender Fleashes of young Animals, and soft Pot-herbs, from all which a large Quantity of laudable Chyle is generated, have a Tendency to produce a Plethora.

As for much Sleep; it is shewn, under the Article *FIBRA*, how plentiful Sleep conduces to the Relaxations of too rigid Fibres. Now the relaxed Vessels easily yield to the distending Fluids, for which Reason they are the more filled. Besides, during Sleep, what was lost by the Functions of Sensation, and voluntary Motion, is restored. On the contrary, whilst we are awake, what was accumulated during Sleep, is consumed. Hence those, who are fatigued by the Labours of the Day, rise brisk and vigorous, after a salutary Sleep. When, therefore, any Person indulges himself in a great deal of Sleep, the more the Humours are daily accumulated, and the less of them is diffipated. Hence arises a Plethora. Hence, also, it is, that Habits exhausted by violent Disorders are so happily restored by long Sleep; and Bears sustain Life all the Winter by sleeping, without any manner of Food.

As for an easy Mind; that Serenity of Mind contributes greatly to the Preservation of Life, is sufficiently obvious. Now the Effect of the best Health is a Plethora: Besides, violent Passions, and racking Cares, palpably prey on the Body. And *Galen*, in his *Method. Medend. Lib. 14. Cap. 15.* mentions the Cares of the Mind, among the other Methods of curing Obesity or Fatness.

As for a Want of due muscular Motion; after Man, for the Punishment of his Sin, was sentenced to earn his Bread by the Sweat of his Brow, bodily Exercise became necessary for the Preservation of Health: Accordingly Persons, who led delicate and idle Lives, are afflicted with the most terrible Disorders. *Hippocrates*, in his *Treatise de Viâs Ratione Sanorum*, *Lib. 1.* informs us, "That a Person, who eats heartily, cannot be sound, without Exercise; for though Aliments and Exercise have different Effects, yet they mutually concur to the Preservation of Health; since Labour consumes what is superfluous, whilst Aliments and Drink recruit what is lost." And in the same *Treatise*, *Lib. 3.* he orders us to consider, "Whe-

“ whether the Aliments surpass the Exercise, or the Exercise the Aliments, since, when either happens, Diseases are produced; whereas, when they are equal, and duly proportioned to each other, Health is preserved.

Such an Equilibrium, therefore, is requisite between the Aliments and Exercise, that as much may be daily dissipated, as is taken in by way of Aliment. Whilst the same Quantity of Food is used, and the Exercise lessened, a Plethora begins to be formed. When Horses are well-fed in Stables, they soon become fat, but when exercised in hard Running for some Days, the additional Fat is soon dissipated.

As for usual Evacuations of Blood, whether natural or artificial; it is certain from Experience, that the oftener a Man is bled, provided he is not quite weakened by it, his Vessels are afterwards rendered more turgid with Blood. Women have every Month a natural Evacuation of superfluous Blood; and Men, accustomed to repeated Venesections, are, about the usual times of Venesection, afflicted with the same Disorders Women labour under, in consequence of a Retention of the Menstrues: Thus at last the Strength of such Men degenerates into the lax and feeble State of Woman. Mr. Dodart, in *Hist. de l'Academie des Sciences*, An. 1707. observes, that in a Man, not weakened by Venesection, sixteen Ounces of Blood taken from the Veins were restored in five Days time. Hence it is obvious, that repeated Venesection disposes to a Plethora, whilst the Blood is, by that means, so soon regenerated, though the Body is rendered less firm, more lax, and consequently its Vessels more easily filled. I saw a Woman, who, on account of violent and often-returning Passions of Mind, was bled above sixty times in a Year, and became so fat, that in a few Months she weighed one hundred and fifty Pounds more, than in her natural State; but the Blood, being daily regenerated, laid a Foundation for repeated Venesections, till, her whole Strength being destroyed, she fell into a Dropsy. It doth not, therefore, seem to be a laudable Custom for healthy Persons to bleed frequently every Year, by way of Caution and Prevention; since, by that means, the Body is weakened, and disposed for the more easy Repletion. Galen, who, in *Meth. Medend. Lib. 9. Cap. 5.* in certain Disorders, recommends frequent and bold Venesections, till the Patient faints away, condemns this Custom in the following manner: “ I hardly think it expedient to open a Vein often every Year; because, in conjunction with it, the vital Spirits are evacuated; and, if these are greatly diminished, the whole Habit is refrigerated, and all the natural Operations worse performed.”

All the Effects of a Plethora depend upon that Rarefaction of the Blood, which is to be ascribed to its increased Velocity, and the Heat arising therefrom, or to other Causes, only to be known from Observation. Hence arises a Dilatation of the Arteries, both sanguiferous and lymphatic, a Change of the Secretion, a Compression of the sanguiferous and lymphatic Veins, a Suffocation of the Circulation, an Inflammation, a Rupture of the Vessels, a Suppuration, a Gangrene, and Death.

All the Effects of a Plethora depend on the Rarefaction of the Fluids. When the Vessels are furnished with too large a Quantity of laudable Blood, there may still be a State of Health preserved: But when, by whatsoever Cause, the Blood contained in the Vessels is rarefied, then the Functions begin to be injured and impaired; and when, on such an Occasion, certain Changes appear in the Body, these are called the Effects of a Plethora; though they do not depend upon this Cause alone, since the Plethora is only the predisposing, and the Rarefaction the exciting or occasional Cause of them. From these two Causes, therefore, united, is formed the proximate Cause of these Phenomena; and as the exciting Cause, that is, the Rarefaction, puts the Plethora in Action, which alone, except in an high Degree, would not soon prove hurtful, hence, in that Sense, the Effects of a Plethora are said to depend upon the Rarefaction of the Fluids.

The Rarefaction of the Blood is to be ascribed to its increased Velocity, and the Heat arising from that Circumstance. When, in the same Time, a larger Quantity of Blood flows thro' the Vessels, its Velocity is said to be increased; but this cannot happen, without an increased Attrition of the Fluids on the Vessels. Hence arises Heat, and the Heat produces Rarefaction: But all the Causes, which, from Experience, seem to rarefy the Blood, seem to produce this Effect, by increasing the Velocity of its Motion, and the Heat arising from that Circumstance. Now a Rarefaction of the Blood is alone sufficient to produce all those Effects; which arise from a Plethora; for if the Blood was doubly rarer than it is, it would be the same thing, with regard to the Vessels, as if its Quantity was doubly increased. If, therefore, to a Plethora a Rarefaction of the Blood is added, all the Symptoms, capable of arising from a Plethora, will be

augmented. Hence it is obvious, why all those Medicines and Diseases, which, in consequence of an increased Velocity of the Blood, induce Heat, and consequently Rarefaction, produce the Symptoms of a distending Plethora. When a pale and chilly Girl is affected with the Small-pox, there forthwith arise a Heat, Redness, and inflammatory Tension of the Vessels, together with an intolerable Head-ach; not from an increased Quantity of the Blood, but from its Rarefaction, produced by an Acceleration of its Motion, and a consequent greater Heat.

Hence arises a Dilatation both of the sanguiferous and lymphatic Arteries. The Blood, when either increased in Quantity, or by Rarefaction, possessing more Space than it did before, will necessarily dilate the Vessels in which it is contained, more than before; and hence both the Arteries and Veins will be distended, and the Blood cannot be so easily propelled from the Arteries into the too much distended Veins: Hence a greater Resistance is made about the Extremities of the Arteries: For this Reason the Arteries will be more distended, by the Blood forced into them from the Heart. Now since, among the Causes enumerated by Physicians, why, from the same Blood, so various Liquors are secreted in various Parts, we may justly reckon the various Proportions which the secreting Ramifications bear to their Trunks, hence it is obvious, that, when this Proportion is disturbed by a Dilatation of the Arteries, all the Secretions may, also, be disturbed by that means.

As for a Compression of the sanguiferous and lymphatic Veins; in most Parts of the Body, Veins run along with the Arteries; and, when the Arteries are too tumid, they compress the adjacent Veins, which are furnished with weaker Coats: The compressed Veins convey their contained Blood to the Heart; the Heart forces it into the Arteries, and the Veins being compressed, are capable of receiving a smaller Quantity of it: Hence a still greater Dilatation of the Arteries succeeds; and, at last, almost the whole Blood is accumulated in them, whilst the Veins are more compressed and emptied.

As for a Suffocation of the Circulation of the Humours; this must necessarily happen, since, by these means, the Resistance made to the Blood, to be convey'd out of the Left Ventricle of the Heart, is every Moment increased. Hence the Pulmonary Veins cannot so easily convey the Blood into the Left Ventricle of the Heart: For this Reason the Blood will begin to be accumulated in the Vessels of the Lungs; the Resistance made to the Right Ventricle of the Heart will be increased, and, at last, the Circulation of the Blood suffocated. Hence we observe, highly plethoric Persons very red, with their small Arteries dilated, and receiving the red Blood. At last such Persons, being, as it were, suffocated, begin to assume a livid Colour, and often die suddenly; unless, either by Nature or Art, the Vessels are relieved, by lessening the Quantity of Blood, and, consequently, diminishing its Heat and Rarefaction.

As for an Inflammation; this must necessarily happen, on account of the gross Humours which have entered the too much dilated Offices of the minute Vessels; and which cannot pass through the narrowest Parts of them.

As for a Rupture of the Vessels; this happens principally in those Parts where the Vessels are most tender: Hence it is, that, in plethoric Patients, Arteries breaking in the Brain so often produce mortal Apoplexies: Hence, also, it is, that Spittings of Blood are so frequently observed to arise from a Rupture of the Pulmonary Vessels, by the distending Blood in plethoric Patients.

As for a Suppuration and a Gangrene; these are the common Terminations of an Inflammation, which cannot be resolved.

As for Death; this seems to happen, because the too much distended Vessels make so great a Resistance to the Heart, that it cannot discharge its Contents. Hence the Circulation is suffocated: Or, because the large Vessels, being too turgid with Blood, compress the minute Vessels in the Brain, Cerebellum, and Nerves; or, when, in consequence of a Rupture of the Vessels, the Humours necessary to Life are evacuated; or, lastly, when, in consequence of a Rupture of the Vessels, the extravasated Fluids destroy the Actions of the Viscera, more immediately subservient to Life.

A Plethora then, when present, is easily known; and its future Effects readily foreseen.

A present Plethora is known, if the Causes which generate too large a Quantity of laudable Blood, and which are already enumerated, have preceded; if there is a great Redness in the whole Body, especially in those Parts in which the Vessels appear naked, and uncovered with Skin, as in the Corners of the Eyes, the Tunica Adnata, the internal Parts of the Eye-lids; the internal Parts of the Nostrils, the Mouth, Fauces, and Lips; if a great Heat is perceived, even at the Extremities of the

the Body; if the Veins are inflated, and the Pulse strong and full; if, after violent Exercise, an increased Heat of the Atmosphere, Wine, or any other heating Substances, the Patients perceive, in all their Muscles, a soft, full, distending Tumor, together with a certain Immobility, so that they can hardly clinch their Fingers; then they begin to be sluggish, lethargic, and have a Discharge of Tears from their Eyes.

In forming the Prognostic of a Plethora, we foresee, that all the Symptoms already enumerated will happen; and particularly, that the Functions of the whole Brain will be disturbed, because, in the Head, all the Parts are naturally full. Hence, when the large Vessels full of red Blood are distended, the other smaller Vessels will be compressed; because the Bones of the Cranium cannot yield. Hence all the Disorders of the Brain, from the slightest Vertigo to the most fatal Apoplexy, may arise from a Plethora.

A Plethora is cured by Venesection, Exercise, Watchings; a sharp and acrid Diet, after due Evacuations; and by a gradual Omission of these Evacuations.

By Venesection. A Redundance of laudable Blood is the Cause of all the Misfortunes already enumerated. Every thing, therefore, which diminishes this Redundance, is beneficial. But this is best done by Venesection, immediately after which all the Symptoms are relieved. A Physician never practises more rationally, than when he imitates the Ways and Methods, which Nature herself takes, in relieving Disorders. Now we see, that both in Health, and under Diseases, a Plethora, arising either from a Redundance or Rarefaction of the Blood, is happily removed by a salutary Hæmorrhage, especially from the Nostrils. Hence, in young Persons, in a perfect State of Health, at that Period of their Lives, when their Vessels, now becoming stronger, begin more forcibly to resist the Fluids, such Evacuations of Blood are so frequently salutary, especially in the Spring, when the Heat increases. For the same Reason, also, Hæmorrhages from the Nose have often proved salutary in the most violent and acute Disorders: Now Physicians, imitating these Efforts of Nature, order the Quantity of Blood to be lessened by Venesection; and if Symptoms indicate, that the Arteries are only highly distended, and the Veins collapsed, because the Blood cannot pass from the Arteries to the Veins, which frequently happens in acute, inflammatory Disorders, then some of them venture to order Arteriotomy; and, as in large Arteries this cannot be done without Danger, the same Effect may more safely be produced by opening many small Arteries by Scarifications. Hence *Prosper Alpinus*, in his *Treatise de Medicina Egyptiorum*, informs us, that the *Egyptians*, among whom these acute Disorders are frequent, greatly esteem such Scarifications.

Some, especially of the Followers of *Helmont*, condemned Venesection, as a Practice both cruel and useless: They believed, that, by Abstinence from Aliments and Drink, the Redundance of the Humours was more effectually lessened, since, by insensible Perspiration, and the other Excretions, several Pounds of Humours are daily evacuated; which, however, are restored by Aliments and Drink. Hence they maintained, that since the natural Excretions continued to diminish the Fluids, whilst what was lost was not restored by Aliments and Drink, there was a greater Diminution of the Fluids, by Abstinence for twenty-four Hours, than by the boldest Venesection: But by this Method the most subtle Humours are only dissipated from the Body, whilst the red, thick Blood, distending the larger Vessels, is hardly diminished; which is the Circumstance most required; and all the Humours become more acrid, whilst no new Chyle is mixed with the Blood.

But tho' Venesection lessens the Redundance of the Blood, yet it not only leaves the Body equally subject to Repletion, but even disposes more to the Generation of a fresh Plethora, as we have already observed. Hence it is necessary the Body should be rendered so firm, as that it may not easily, for the future, accumulate a Redundance of Blood.

As for Exercise; this not only dissipates what was retained during a State of Rest, but, also, to corroborate the Solids, that they do not easily yield to the Fluids they contain. Thus we rarely find Persons daily accustomed to hard Labour, plethoric, even though they should be highly voracious: But Exercise is not proper, till by Venesection the Vessels are emptied; otherwise, being distended, a Rupture of them would very readily happen.

As for Watchings; much Sleep is reckon'd among the Causes of Plenitude; so that Watching must produce the opposite Effect.

As for a sharp and acrid Diet after due Evacuations; soft Aliments easily changed by the Chylopoetic Organs, afford a large Quantity of Chyle. Hence the Quantity of Blood is daily increased, unless, by violent Exercise, the superfluous Hu-

mours are dissipated. Hence Nature has supplied new-born Infants with an highly soft Milk, already changed in the Mother's Body, because, in that Age, a very quick, and daily Increase of the Humours is requisite. But when the contrary is required, as in the Cure of a Plethora, for Instance, then harder Aliments of a more difficult Digestion, and acrid, aromatic, and stimulating Substances, prove beneficial; because, by this means, less Chyle, and, consequently, all other Circumstances being alike, less Blood will be generated; and the Motion of the Humours being increased by acrid stimulating Substances, an Accumulation of them will not so easily happen. But before the Quantity of the distending Fluids is lessened by Evacuants, acrid Substances are highly pernicious, lest a Rupture of the too full Vessels should happen upon an Increase of the Motion of the Blood by means of stimulating Substances.

As for the gradual Omission of usual Evacuations; we have already observed how much frequent Venesections dispose to a frequent Plethora. Hence these Evacuations are to be omitted; but this is not to be done all at once, because all sudden Changes from usual to unaccustom'd things are bad, especially in this Case; for by frequent Venesections the Body is habituated to accumulate a large Quantity of Blood, which unless removed, will produce all the Effects of a Plethora: For this Reason, such usual Evacuations are to be gradually lessened as to their Quantity, and a greater Interval of Time put betwixt them, that they may be gradually diminished without any Danger. In taking such Measures, we imitate the salutary Method of Nature, about the Time when the Menstrues begin to prove defective in Women; for then this Evacuation is naturally and gradually diminished in Quantity, and its Returns appear at longer Intervals, till it at last totally ceases. But, when the Menstrual Discharge ceases suddenly, it is generally productive of terrible Consequences.

Van Swieten.

PLETHORICUS. An Epithet for a Person abounding with Blood, or labouring under a *Plethora*.

PLETHRON. The sixth Part of a *Stadium*.

PLEURA. The Pleura is a Membrane which adheres very closely to the inner Surface of the Ribs, Sternum, and Musculi Intercostrales, Sub-costales, and Sterno-costales, and to the convex Side of the Diaphragm. It is of a very firm Texture, and plentifully stored with Blood-vessels and Nerves, in all which it resembles the Peritonæum, and, likewise, in that it is made up of an inner true membranous Lamina, and a cellular Substance on the Outside, which is a Production or Continuation of the Lamina.

The cellular Portion goes quite round the inner Surface of the Thorax, but the membranous Portion is disposed in a different manner. Each Side of the Thorax has its particular Pleura, entirely distinct from the other, and making, as it were, two great Bladders, situated laterally with respect to each other, in the great Cavity of the Breast, in such a manner, as to form a double Septum, or Partition, running between the Vertebrae and the Sternum, their other Sides adhering to the Ribs and Diaphragm.

This particular Duplication of the two Pleurae is termed *Mediastinum*. The two Laminæ, of which it is made up, are closely united together near the Sternum and Vertebrae; but in the Middle, and toward the lower Part of the fore Side, they are separated by the Pericardium and Heart. A little more backward they are parted in a tubular Form, by the Oesophagus, to which they serve as a Covering; and in the most posterior Part, a triangular Space is left between the Vertebrae and the two Pleurae from above downward, which is filled principally by the Aorta.

Before the Heart, from the Pericardium to the Sternum, the two Laminæ adhere very closely, and there the Mediastinum is transparent, except for a small Space near the upper Part, where the Thymus is situated; so that in this Place there is naturally no Interstice, or particular Cavity. The apparent Separation is owing entirely to the common Method of raising the Sternum, as was plainly demonstrated by *Bartholinus*, in his *Treatise of the Diaphragm*, published at *Paris* in 1676.

The Mediastinum does not commonly terminate along the Middle of the Inside of the Sternum, as the common Opinion has been. I demonstrated, says *Winslow*, in 1715. to the Royal Academy of Sciences, that, from above downward, it inclines toward the Left Side; and that if, before the Thorax is opened, a sharp Instrument be run through the Middle of the Sternum, there will be almost the Breadth of a Finger between the Instrument and the Mediastinum, provided that the Sternum remain in its natural Situation, and the Cartilages of the Ribs be cut at the Distance of an Inch from it, on each Side.

From all this we see, not only that the Thorax is divided into two Cavities, entirely separated from each other, by a middle Septum without any Communication; but, also, that, by the Obliquity of this Partition, the Right Cavity is greater than the Left; and hence we may judge of the Uncertainty of Trepanning

panning the Sternum, which the Antients have recommended in some Cases.

The cellular Portion of the Pleura connects the membranous Portion to the Sternum, Ribs, and Muscles; to the Diaphragm, Pericardium, Thymus, and Vessels; and, in a Word, to whatever lies near the convex Side of the membranous Portions of the Pleura. It, likewise, insinuates itself between the Laminæ of the Duplicature, of which the Mediastinum is formed, and unites them together. It even penetrates the Muscles, and communicates with the cellular Substance in their Interstices, all the Way to the Membrana Adiposa on the external convex Side of the Thorax. In this the Pleura resembles the Peritonæum.

The Surface of the Pleura, turned to the Cavities of the Breast, is continually moisten'd by a lymphatic Serosity, which issues through the Pores of the membranous Portion. This Fluid is said to be secreted by imperceptible Glands; but the Existence of these Glands has not been hitherto demonstrated.

The Arteries and Veins of the Pleura are principally Ramifications of the Intercostrals; and these Ramifications are exceedingly numerous, and, for the most part, very small. The Mammariæ Internæ and Diaphragmaticæ, likewise, send Branches hither, which communicate very frequently with those that come from the Intercostrals.

The Mediastinum has particular Vessels called the *Arteriæ* and *Venæ Mediastinæ*, which are commonly Branches of the Subclaviæ. The Mammariæ Internæ send, likewise, Ramifications to the fore Part of it, the Diaphragmaticæ to the lower Part, and the Intercostrales and Œsophagææ to the back Part.

The Nerves are Ramifications of the true Intercostrals, call'd otherwise *Costales*, and *Dorsales*. Near the Vertebrae, they communicate with the great Sympathetic Nerves, improperly call'd *Intercostrales*, and but very little with the middle Sympathetici, or those of the Eighth Pair.

The Pleura serves in general for an inner Integument to the Cavity of the Thorax. The Mediastinum cuts off all Communication between the two Cavities, and hinders one Lung from pressing on the other, when we lie on one Side. It, likewise, forms Receptacles for the Heart, Pericardium, and Œsophagus; and is continued over the Lungs.

Before we leave the Pleura, it must be observed, that these Portions of it which adhere immediately to the Ribs, may be looked upon as the Periosteum of their inner Sides. This Adhesion keeps the Pleura stretched, and hinders it from slipping or giving way. It, also, renders this Membrane extremely sensible of the least Separation caused by a coagulated Lymph, or accumulated Blood; the nervous Filaments being, likewise, in this Case, very much compressed in Inspiration, by the Swelling of the Intercostrals Muscles. *Winflow's Anatomy.*

PLEURITIS, πλευεΐτις, from πλευρα, the PLEURA. A Pleurisy, or Inflammation of the PLEURA. See PERIPNEUMONIA.

PLEURON, πλευρον. The same as PLEURA.

PLEUROPNEUMONIA. The Name of a Distemper, consisting of a Complication of a Pleurisy, and Peripneumony.

PLEURORTHOPNŒA, according to *Blancard*, is a Pleurisy, in which the Patient cannot breathe without keeping his Neck erect.

PLEXUS, in Anatomy, is a kind of Net-work, or Complication of Vessels. Thus a Congeries of Vessels within the Brain is call'd *Plexus Choroides*, *Reticularis*, or *Retiformis*. A Plexus of Nerves is an Union of two or more Nerves, forming a sort of Ganglion, or Knot.

PLICA POLONICA. In *Poland* and *Lithuania*, this Disorder is endemial, and well known. It consists in a preternatural Bulk of the Hairs, which, being firmly conglutinated and wrapped up in inextricable Knots, afford a very monstrous and unseemly Spectacle. When these are cut, the Blood is discharged from them, the Head racked with Pain, the Sight impaired, and the Patient's Life frequently endangered. This Misfortune is principally incident to the *Jews* who live in those Countries. Though it seems difficult to account for this Disorder, and assign its true Causes, we shall, nevertheless, make an Attempt of this Kind. What, therefore, contributes not a little to its Production, is the sordid and nasty manner of Life to which these People are addicted; for they rarely comb their Hairs, sleep in low, moist Rooms, and drink large Quantities of Brandy. The Waters, also, concur and assist in the Generation of this Disorder. Hence *Gebema*, in *Epist. ad Bontekoe de Plica Polonica*, is justly of Opinion, that the Causes of this Disease is lodged in some particular Waters of *Poland*, which, if either drank, or used for washing the Body, produce the Plica; which he confirms by the Fate of two Soldiers, who, when intending to wash their Bodies, had scarce immersed their Heads in the Water of a certain Pond, before their Hairs were contracted into many Folds. Besides these Causes, we suppose an hereditary Fault convey'd from the Parents, and which consists in too great a Bulk of the Pores and bulbous Hairs under

the Skin of the Head. Hence the thick and glutinous nutritious Juice, produced by their coarse Aliments, and impure Waters, is, by the Heat excited by their drinking Brandy, forced into the Cavities of the Hairs, and, sweating through their Pores, produces this terrible Disorder. *Hoffman. de Morb. cert. Reg. propr.*

This Disorder, unless the peccant Matter is convey'd to the Hairs, is very dangerous; and violent Symptoms are produced in almost all the Parts of the Body, where it is deposited and lodged.

But if Nature, in a salutary and critical manner, throws the peccant Matter to the Hairs, an unseemly Twisting of them is produced, whilst the Patient remains free from every other Symptom; since Nature generally throws the Remains of the peccant Matter to the Hairs, the Disorder of which is, by many, supported to the Ends of their Lives, without any inconsiderable Inconvenience.

If the folded or twisted Hairs are rashly cut off, Blindness, and other terrible Symptoms, are excited, not because, as some think, the Head is by this means exposed to Cold, which might be prevented by wearing a Cap; but because the Substance, in which Nature used to lodge the peccant Matter, is removed, and a free Evacuation of the sordid Humours by that means prevented. And in this Disorder the same happens as in old Ulcers, which, unless the Body is first well cleansed, cannot be healed up without the greatest Danger. Nor is it safe to close Fontanels, which have been kept open for a considerable time.

When the peccant Matter is no longer lodged in the Body, the Plicæ, or Twistings of the Hair, are spontaneously removed; and if we are absolutely certain, that such a Matter is no longer in the Body, which, however, is hard to be known, the Plicæ, or Twistings, may be cut off.

A perfect Method of curing this Disorder is, in my Opinion, unknown; undoubtedly, because in those Parts of *Poland* in which this Disease is endemial, there have been few Physicians, who, from what is commonly known of the Nature and Cure of the *Plica Polonica*, have been able to lay down a rational and judicious Plan for treating it.

'Tis certain, that Purging and Venesection are so far from being beneficial in this Disorder, that they often prove hurtful. Thus the Rector of the Academy of *Zamosca* informs the Physicians of *Padua*, that, if they attempt the Cure of this Disorder by common Purgatives, the Patient will be render'd worse, because these, instead of correcting and subduing the peccant Humours, throw them into violent Commotions, and more effectually distribute them through the whole Body; in consequence of which, intense Pains are produced in all its Members. *Hercules Saxonia* is of the same Opinion, and confirms this Doctrine by various Instances of Persons rendered blind, lame, and subjected to other Misfortunes, by using Purgatives in the Beginning of the *Plica Polonica*, as, also, in the Scurvy.

'Tis, therefore, most safe and expedient, as soon as possible, to solicit the peccant Matter to the Hairs, to which it naturally tends. And this Intention, as we learn from Experience, is, of all others, the most effectually answered by Lotions prepared of Bears-breech. *Sennertus.*

PLICHAS, πλιχάς. The same as PLECHAS.

PLINIA.

The Characters are;

It hath a Bell-shaped Flower, consisting of one Leaf, which is divided into five Segments at the Margin; from whose Cup rises the Pointal, which afterward becomes a globular, soft, chaneled Fruit, in which is included one Seed of the same Form.

Miller mentions but one Sort of *Plinia*; which is,

Plinia fructu croceo odorato. *Plum. Nov. Gen.*

This Plant was discovered by Father *Plumier*, in the *West Indies*, who gave it this Name, in Honour to *Pliny* the famous Natural Historian. *Miller's Dict.*

PLINTHIUM, πλινθιον. A Name of several Machines for making Extension. One of these is described by *Oribasius*, *de Laqueis*, Cap. 13. He, also, describes two more, in his *Treatise de Machinamentis*, Cap. 8. one of which he calls *Nilei Plinthium*.

PLINTHITIS, πλινθίτις. A Species of Alum, called, also, **PLACITIS**.

PLOTES. A Name for the *Mugil*, in *Oribasius*, *Collect. Medicinal. Lib. 2. Cap. 58.*

PLUMACEOLUS. A Pledget, Bolster, or Compress.

PLUMACEUS. An Epithet for certain Magisteries in *Zwelfer*, importing their being extremely fine, and soft as Feathers, or Down.

PLUMBAGO.

The Characters are;

The Root is fibrous, thick, fleshy, hot, and perennial; the Leaves

Leaves are alternate and entire. The End of the short Pedicle unfolds itself into a monophyllous, quinquefid, and very hairy Calyx, shaped like a Tube, in whose Centre is seated the Ovary furnished with its proper Tube. On the Apex of the Ovary, grows a monopetalous Flower, consisting of a long Tube, which has its upper Part expanded into a Circle, so as to resemble the Flower of Jessamin; these Flowers are disposed in Spikes. The Seed is oblong and acuminate.

Boerhaave mentions two Species of *Plumbago*; which are,
1. *Plumbago quorundam*. Tour. Inst. 140. Boerb. Ind. A. 77. *Dentellaria*. Offic. *Plumbago Plinii*. Ger. 1069. Emac. 1254. Raii Hist. 1. 394. *Dentellaria Rondeletii*. J. B. 2. 941. *Lepidium Dentellaria dictum*. C. B. P. 97. *Lepidium Monspeliacum Dentellaria dictum*. Park. Theat. 885.

LEADWORT.

The Stalks of this Leadwort are but weak and slender, clothed with long, narrow, whitish, green Leaves, which encompass them. The Flowers grow in short thick Spikes, small and purple, of a single Leaf cut into five Segments, which are succeeded by rough, hairy, naked, solitary Seeds. The Root is large and thick, and the whole Plant is hot and biting, like *Lepidium*.

This is a Plant seldom or never used. It is of an hot, and even a caustic Nature, like *Pellitory of Spain*; and has been made use of, like that, for the Tooth-ach; it is said, that, even held in the Hand, it will cure the Pain of the Teeth. *Miller's Bot. Off.*

2. *Plumbago Ceylanensis*, folio splendente Ocymastri, flore lacteo.

PLUMBAGO. *Plumbago*. The same as *MOLYBDÆNA*.
PLUMBUM. Lead.

The Greek Authors frequently use the same Name to express both Lead and Tin; and, accordingly, their Latin Translators interpret *nausitese*, both by *Plumbum* and *Stannum*. *Geo. Agricola* mentions three Kinds of *Plumbum*, one white, which we call *Tin*; another of an Ash-colour, which we call *Bismuth*; and the third livid, which is our Lead.

THE FORMS OF ITS ORE.

Lead is seldom found pure in the Mines, and has different-coloured Ores, viz. black, yellow, and ash-coloured; it is, also, found in red, or white rocky Stone, and sometimes in the Form of Dice, with shining Lead-coloured Surfaces; and, sometimes mixed with white, yellow, or green Fluors. There are many Lead Mines in *Spain*, *Italy*, and *Germany*; but the richest are those of *England*.

The Ore is of a poisonous Quality, especially with regard to Brutes. "They who live near where it is washed, says Mr. *Beaumont*, can neither keep Dog nor Cat, nor any Sort of Fowl, but they all die in a short time." He adds, that, "not only Calves, but even Children, have been known to be kill'd, by only being in Houses where Lead-ore had been kept some time; and that if any Sort of Cattle fed often on the Grass, on which the Steam which rises from the Smelting of Lead, falls, they all die soon after." *Phil. Collect.*

DIFFERENCES OF ITS ORE.

There is a very considerable Difference between the Ores of different Mines. Some is so like Steel, that the Workmen call it Steel-ore; which being of more difficult Fusion than ordinary, they mix other Ore with it. There is another, which, from its Readiness to vitrify, and its Use in glazing the Potters Vessels, is called *Potter's Ore*.

Our English Lead-ores are reducible to three Classes; the first, those which, in the ordinary ways of Melting, afford from thirty to forty Pounds of Metal, for every hundred Weight of Ore. The second, from forty-five to sixty. The third, from sixty to eighty.

LEAD CONTAINS SILVER.

The Lead found in some Parts of *England*, contains from five to ten Pounds of Silver in a Tun Weight; which they get out by testing, and recover the Lead without any great Waste.

The Lead of many Mines, being skillfully treated, affords Silver; but the Quantity of Silver in the Ore, does not hold in Proportion to the Quantity of Lead. Mr. *Boyle* caused some Lead-ore to be tried, which, being the most promising he had ever known, gave him Hopes of some considerable Quantity of Silver: But though it proved so rich in Lead, as to afford after the Rate of seventy Pounds to the Hundred; yet one of the most expert Artists in *Europe* could not extract one Grain of Silver from it. Yet a Piece of Lead-ore was brought from *Ireland*, which seemed so light in the Lump, that he thought it scarce deserved to be wrought for Lead; which, however, was found upon Trial, so well stored with Particles of Silver, that he encouraged the Owner of the Mine to work it.

HOW SMELTED.

Some Lead-ore requires no previous Preparation to its being smelted, unless by grinding. They barely throw it upon a Wood-fire, or a Forge-hearth, where the Metal running into a Bason in the Hearth, they ladle it out, and cast it into an iron Mould, which gives it the Form of what we call *Pigs*.

In the Lead-works at *Mendip*, in *Somerſetſhire*, the Method of procuring the Metal is thus delivered by Mr. *Glanvil*, in *Phil. Transact.* No. 39. "When they have got the Ore they beat it small, then wash it clean in a running Stream, and then sift it in iron Rudders. They next make an Hearth, or Furnace, of Clay, or Fire-stone; and therein build their Fire, which they light with Charcoal, and keep up with young oaken Gads, blown with Bellows. After the Fire is lighted, and the Fire-place hot, they throw the Lead-ore on the Wood, which melts down into the Furnace; and, then with an iron Ladle they take it out, and cast it in Sand into any Form they please."

Lead is the heaviest Body, after Mercury. Hence melted Lead constitutes a Fluid of the third Order of Gravity; where-in all Bodies, whether metalline or not, excepting Gold and Mercury, might float, if there were no other Cause to the contrary.

If all the Impurities of Lead could be perfectly purged away, its Weight might nearly approach to that of Mercury. Accordingly, in analysing this Metal, it is said to yield a considerable Quantity of Mercury; though what the other Ingredient is, united with the Mercury, seems hard to say. Lead, though a cheap and common Metal, has yet a great Affinity with Gold, at least in point of Weight, which seems to be the most distinguishing and immutable Character of Gold; and what makes the Resemblance still closer is, that Lead does not mix with any Metals, except those allowed to be Mercurial ones.

Lead proves extremely simple in all Kinds of Trials.

It is not fixed, but fumes in the Fire; and, after continuing long in Fusion, penetrates most of the Vessels hitherto used.

It is the softest of all Metals, easily ductile, and the least elastic or sonorous. There is no Metal whose Figure is so easily changed; and hence it proves very ductile, and easily flexible, though not capable of being drawn out into such simple, fine, coherent Parts, as Gold.

It diminishes the Sound of other Metals, when mixed with them. This Property follows from its Softness; for, if two equal leaden Balls be struck with equal Velocities against each other, they will both remain fixed in the Point of Contact, without any Vibration or Resilition; so that of course no Sound can be produced. 'Tis on account of this Unelasticity of Lead, that it has been used by Dr. *Wallis*, Mr. *Huygens*, and others, for determining the Laws of Percussion. By this Property, also, Lead should appear to be nearly allied to Gold, which is the next least sonorous or springy of all Metals. Accordingly several Experiments have been produced, to prove that Lead, melted, always either contains, or generates, some Portion of Gold. Mr. *Hornberg* assures us, that taking a Quantity of Silver, and separating it from all heterogeneous Matter by testing with Lead, then putting a Piece of it in Aqua-fortis, a little Gold fell to the Bottom. And, upon adding Copper to the Aqua-fortis, the Silver was precipitated.

Lead melts the soonest of all Metals, except Tin, even long before it ignites; and thus grows scurfy, readily vitrifies, and, being now fused, it passes through any Vessel. A Quantity of Lead, being set over the Fire in an iron Ladle, no sooner begins to run, than its Surface appears exceedingly bright, and shines like Mercury; but its Face soon alters, and you discern a Cloud in it, which gradually increases, till the whole Surface appears darkened with a dusty Scoria. This Dust being blown away with Bellows, there strait arises a new Supply; and so on till the whole Lead is thus converted into Scoriae, which are only the Matter of the Lead gently calcined. A more violent Fire vitrifies them; that is, converts them into an heavy, brittle, pellucid, elastic, sonorous Matter, called *Glass*; into which other Metals are indeed convertible, but Lead the easiest; and which is of such a penetrating Nature, that it runs through all the common Crucibles, almost as Water through a Sieve.

The Calx of Lead has nothing of the Appearance of Lead; and yet by only exposing it to a strong Fire, and adding a little Iron-filings, or any unctuous inflammable Matter, the Lead is easily recovered.

And if, while the Lead is in Fusion, it be kept continually stirring with a Spatula, it turns into a red Powder, called *Minium*, or *Red-lead*; in which Operation this is farther observable, that the Lead augments in Weight.

Lead throws up light Bodies that are cast into it; vitrifies with the baser Metals; and, having so done, carries them along with

with it from the Cavity of the Test; thus leaving only Gold and Silver behind, separated from the rest. After Fusion, it quickly returns, in the Cold, to a solid Mass, though more slowly than Tin. Lead dissipates all Metals tested with it, on the Cupel, except Gold and Silver; which is a Property, that had we been unacquainted with, all our Treasures of Gold and Silver had lain in little Compass; this being of principal Use in obtaining those Metals.

The Foundation of the Process is this: Any Mass, of what Kind soever, whether Metal or Stone, Salt or Sulphur, Gold and Silver only excepted, being mixed with Lead, and exposed to the Fire, separates, and flies off.

Upon the Whole, there are three ways whereby all the Matters mixed with Gold and Silver are destroy'd and lost, when cupel'd with Lead. 1. By volatilizing and evaporating. 2. By turning to Scorizæ, and retiring to the Sides of the Test. 3. By penetrating the Pores of the Cupel; which only happens to such Bodies as can neither fly off in Fumes, nor work to the Sides in the way of Scorizæ.

Lead dissolves in Aqua-fortis, not in Aqua-regia, and thus yields a sweet Salt. It dissolves in most of the weak Acids; but very difficultly in the stronger, unless they be diluted with Water. Thus in Aqua-fortis it dissolves slowly; but very readily in Vinegar, small Aqua-fortis, *Rhenish* Wine, Spirit of Vinegar, and the like; and even in Oil of Vitriol well diluted with Water. Add, that, in whatever Acid it is dissolved, the Solution becomes considerably sweet like Sugar. The Fumes of Wine or Vinegar dissolve it into a white Powder, or Calx, called *Cerufs*, or white Lead.

It is found plentifully in various Mines of *Europe*; being cheap, and the Consumption of it large: But 'tis in its Nature very surprising, and for certain Purposes exceedingly useful. In the fabulous way, it is called, the *Origin and Father*; as well as the *Devourer of other Metals*.

Its Ore is usually ponderous and shining, of a Lead-colour, which yield half the Quantity of Metal. Sometimes it is white, red, or yellow, which are poorer Kinds: It often contains a little Silver, by which the Assayers, if not on their Guard, are liable to be deceived.

ITS MEDICINAL VIRTUES.

Both in its crude State, and in all its Preparations, Lead seems to be cooling, thickening, repelling, absorbing, and contracting, so as to retard the Circulation of the Blood, hinder all the Secretions, and hurt the Nerves, by causing Spasms, Convulsions, Tremblings, Difficulty of Breathing, and Suffocation. Whence it appears unfit for internal Use in any large Dose; and, accordingly, its medicinal Uses are principally external.

ITS OTHER USES.

Its Uses in the Hands of the Plumber, Glazier, Shot-maker, white and Red-lead-maker, Potter, Assayer, Jeweller, Painter, and others, need not be mentioned, as being commonly known. A Mixture of it with Tin is the Foundation of enamelling; and counterfeit Gems are made by its means.

HINTS FOR ITS ALCHEMICAL HISTORY.

Let the Saturnus Cornuus be examined for Mercurification.

What Vessel will hold the Glass of Lead in Fusion?

Let the talky Nature of Litharge be examined.

As Lead fulminates with Nitre, and flashes in the Flame of a Candle, and burns blue, it may seem to contain a Sulphur.

Is not the sulphureous Principle in Lead small in Quantity, and but loosely joined; since a small Degree of Fire is able to separate them?

Exposed upon a Tile to the Focus of a Burning-glass, it fumes and turns to a yellow or red Calx; then melts into a yellow Fluid, which soon evaporates in Smoke; but, if removed before this happens, it hardens to a yellow Mass like Orpiment, consisting of Laminæ like Talc. This being again exposed to the Focus, on a Piece of Charcoal, recovers the Form of Lead. But if the Lead be laid upon Charcoal, it thus totally dissipates in Fume, and leaves no Glass behind. Hence what Relation has it to Mercury, Gold, &c.?

Is it not composed of a soft, talky, vitrifiable Earth, and a small Proportion of a Sulphur, or inflammable Substance, lightly joined therewith?

THE CALX OF LEAD BY THE VAPOUR OF VINEGAR.

Take a large glass Body, cut so as to have a wide Mouth, with an Alembic-head answering to it; in this Head put thin Plates of Lead, so as to stand somewhat erect, without falling, all around the hollow Part of the Ledge; put Vinegar into the Body; set it in a Sand-heat, put on the Head with its Lead-plates, apply a Receiver, and distil with a gentle Fire for twelve Hours; then leave off, and let all cool for twelve Hours; the Plates, being now gently dried, grow white, or appear covered with a white Powder, which, being brushed off with a Hare's-foot, is called *Ce-*

rufs, or White-Lead. If the Operation be several times repeated, the whole Body of the Lead will be turned into the like perfectly, insipid, scentless, white Powder; the Vapour of the Vinegar raised in the Operation condenses into a whitish, turbid, sweet, nauseous, styptic Liquor, called the Vinegar, or the Solution of Lead.

REMARKS.

Hence we may see how easily Lead is dissolved by a very mild Acid, and soon changed from its malleable State into a loose Powder, or brittle scaly Plates; but the distilled Liquor, impregnated with dissolved Lead, is a true Solution of Lead, which, being inspissated, affords the true Salt of Lead. This Operation is continually made in Lead exposed to the Air, that abounds with Acids; whence Coverings of Lead, that are exposed to the Air, resolve into a white Calx, and this the sooner, the more the Air abounds with Acids. If the same Operation be performed upon Iron or Copper, these Metals, also, are dissolved on their Surfaces; the Iron into a red Calx of Iron called Rust, and the Copper into a green Substance called Verdigrise; the Iron into a gold-coloured Liquor, and the Copper into one that is perfectly green. The Cerufs thus prepared is likewise compounded of the Acid of Vinegar, and the dissolved Body of the Lead, but the Acid is here latent. This Cerufs is of Use in watry, ulcerous, running Sores, or Diseases of the Skin, being sprinkled thereon. If this fine Powder be drawn along with the Breath into the Lungs, it causes a violent and almost incurable or mortal Asthma: If received into the Mouth, and swallowed along with the Spittle, it occasions inveterate Distempers in the Viscera, intolerable Faintings, Weakness, Pains, Obstructions, and at length Death itself. These terrible Effects are daily seen among those who do any Work in Lead, but principally among the Makers of White-lead. Let Men, therefore, beware of this Poison, which being both without Smell and Taste, proves the more pernicious as it is the less discovered; and does not shew itself 'till it has destroyed the Body. Hence we learn also how easily Lead may be dematerialized, and turned to a Calx; and this appears upon all Experiments. If Lead be melted over a gentle Fire, in a clean unglazed earthen Vessel, it runs pure like clean Quicksilver, but soon grows dark upon its Surface, and gathers a Skin, which being carefully taken off with an iron Ladle, proves a kind of Calx: Now, again, the Surface appears white, and again generates a Skin, that may be taken off, 'till at length, the whole Body of the Lead is changed into this Calx, which also is poisonous. This Calx, and the former Cerufs, being long calcined, and stirred over the Fire, at length increase in Weight, and turn of a bright-red Colour; and the like is found in Lead-ore long calcined. In the Smelting of Copper, there rises a Scum, which principally consists of Lead; and, if of a Colour betwixt Red and Yellow, it is called Litharge of Gold; if paler, the Litharge of Silver; tho' both of them are nearly the same thing, and of the same Virtue. Lead-ore does not much differ from the former. Hence the same Lead may exist under various Colours, Gravities, Masses, and Forms, and may be dissolved in the same Liquors, and thus afford the same Productions; nor is it of much Significance, whether Cerufs, Litharge, Red-lead, or Lead-ore be thus corroded by Vinegar; for in each Case the same Salt of Lead is produced; they have all of them the same medicinal drying Virtue, and poisonous Quality. Red-lead gains considerably in Weight from the Fire; this may, perhaps, proceed from the Acid of the Fuel, imbibed by the Lead from the Fire.

THE VINEGAR OF LEAD.

1. Boil Cerufs in a tall Bolt-head, with twenty times its Weight of strong distilled Vinegar, in a little wooden Furnace, often shaking the Vessel for four Hours; then let all cool, strain off the pure Liquor, add more distilled Vinegar to the Remainder, repeat the Operation as before, and continue thus, till the Cerufs is almost dissolved: Mix the several Solutions together, they will be found to have lost the Sharpness of the Vinegar, and to have become sweet, nauseous, and styptic. This is called the Vinegar of Lead, as also Virgins Milk, because it cures red Spots, Pimples, and little Ulcers in the Face. If this Vinegar be filtered, and distilled with a gentle Fire to a Fourth, there comes over a nauseous Water, that is not acid, but of a disagreeable and particular Odour. All the Acid of the Vinegar is retained below, in the resolved Cerufs. Let it be preserved under the Title of Vinegar of Lead, and it is to be esteemed of the same Virtue with Vinegar of Litharge.

2. If instead of Cerufs we take the Litharge of Gold, or Silver, Red-lead, or Lead-ore, reduce them to Powder, and boil them with Vinegar as above, they will afford the same undistinguishable Vinegar of Lead. This only is particular of it, that, when cold, it filters with Difficulty, as then blocking up the Paper; but, when hot it runs through easier.

3. When fresh-distilled Vinegar is pour'd to this inspissated Solution, and boiled, and again reduced almost to the Consistence of Honey, the Vinegar distilled off loses much of its acid Virtue, leaving the acid Part in the metallic Liquor; the Part that floats

floats above, being somewhat oily, unctuous, and saccharine, is called Oil of Lead, and consists of the Metal and the Vinegar. The oftener this Addition of Vinegar is repeated, the more unctuous the Liquor becomes, and the harder to dry.

REMARKS.

Hence we have a new Method of calcining and dissolving a very ponderous Metal, and bringing it into a Liquor. Here we see a new Taste and Odour produced, by Acid and Metal; and an Attraction and Separation of the Acid by the Metal, till it is fully saturated and impregnated. This Vinegar of Lead long preserves uncorrupted the Bodies of Animals that are plunged therein, or penetrated and dried therewith; it coagulates the animal Juices, and preserves them from Putrefaction; if diluted and rubbed upon the Skin, it cures Breakings out, Redness, Inflammations, and the Erysipelas; it gives a Whiteness and Beauty to the Skin, but proves pernicious to the Body; at length occasioning a Consumption, as appears by many melancholy Examples. If the inspissated Oil of Lead be mixed with an equal Quantity of Oil of Roses, it makes a white Balsam highly commended by the Surgeons.

THE SALT OF LEAD WITH VINEGAR.

1. Inspissate a Quantity of the Vinegar of Lead in a low glass Body, with a very wide Mouth, till it becomes almost as thick as Oil; set it in a quiet cold Place, and a whitish-grey Mass will shoot to the Bottom, in small erect Spiculæ; pour off all the Liquor, and with a gentle Fire slowly dry the Remainder; which will now be white like Sugar, and is called the Sugar of Lead.

2. Dissolve this Sugar of Lead in fresh and sharp distilled Vinegar; let it stand to depurate; inspissate the Liquor to the Thickness of Oil; set it in a cold quiet Place, and there will shoot at the Bottom thick solid Crystals, perfectly resembling the Form of vegetable Candy-sugar, and having nearly the same Taste.

3. If these Crystals be again dissolved in fresh-distilled Vinegar, and the Solution be depurated by standing, then inspissated by a soft Fire to the Thickness of Oil, a Liquor will be obtained which can hardly be dried, and rendered hard by a small Fire; but it remains somewhat fixed, and may be liquified like Wax, with a gentle Heat. The oftener this Impregnation is repeated with fresh Vinegar, and the Matter dried, the more fixed it becomes in a small Fire, so as not to smoke, but easily run. If now it be committed to a moderate Heat, and afterwards suffered to cool, but, while it remains fluid, it be poured into another cold Vessel in the cold Air, it strongly coagulates in the pouring, and concretes into fine Threads, like Cobwebs, perfectly resembling silver Thread, and affording a very agreeable Sight. This was published as a Secret by a Jesuit, though somewhat disguised in the Delivery.

4. As soon as this Body, coagulated into Threads, is exposed to a greater Heat, it presently runs again, so that it may be again poured out. And if this Resolution and Inspissation be carefully and patiently repeated, each time separating the Fæces, and then, if the Matter be long, digested with a gentle Heat, till it grows thick, and concretes, a Mass is at length formed, which to the unwary Eye resembles Silver. *Isaac Hollandus* deserves to be read on this Subject, where he speaks concerning the Stone from Lead. The Process, also, may be continued at Pleasure, by those who desire to see unusual Appearances of Bodies.

REMARKS.

The Production is called the Sugar, Salt, Magistery, or Vitriol of Lead. It shews how a fermented vegetable Acid may be combined with Lead, into a Substance soluble in Water. It is astringent, styptic, and presently coagulates the Blood. Being dissolved in Water, it affords the Vinegar of Litharge, good against Inflammations, when externally used. Internally, it is recommended for a safe Remedy against Spitting of Blood, Bleeding at the Nose, making bloody Urine, the Gonorrhœa, the Fluor Albus, and the like, as, also, for a mollifying Remedy against the Acrimony of the Blood; but I never durst make Trial of it, because I never saw it successfully used by others; and because there is scarce a more deceitful and destructive Poison than this Lead, which presently returns to Ceruss, as soon as the Acid is absorbed from it, by any thing it may meet with; whence it afterwards proves an exceeding dangerous and almost incurable Poison to the Body. If the Salt of Lead be gradually distilled in a Retort, and at length urged with a violent Fire, there comes over a flat inflammable Spirit, perfectly changed from the Nature of the Vinegar employ'd; and there remains at the Bottom a Substance like Glass, which, when urged by a strong Fire, penetrates almost all the Vessels that are known, vitrifying all Bodies, and carrying them through with it, except Gold and Silver.

THE SALT OF LEAD WITH SPIRIT OF NITRE.

1. Put an Ounce of granulated Lead, Ceruss, Litharge of Red-lead, into a tall Bell-head; pour thereon fifteen Ounces of

Spirit of Nitre, or Aqua-fortis, diluted with ten times their Weight of Water; there arises a great Ebullition with a white Froth; which being over, set the Glass in a little wooden Furnace, to boil for five or six Hours. Let the Liquor rest and cool, then filtre it, and distil to a Pellicule; a nauseous, but not acid, Water will come over. Put the remaining Liquor in a cold Place, and there will shoot white, solid, and very ponderous Crystals, that do not run in the Air, but continue solid; they are of a sweetish Taste, and more austere than those of the preceding Process; the Liquor, also, after the Solution, or both before and after the Crystallization, has a saccharine Sweetness like the Salt. 2. If fresh Aqua-fortis be poured to this Salt, so as to dissolve it, and the Liquor be again inspissated, an Oil of Lead may thus, also, be prepared, which coagulates with Difficulty, but gradually fixes, so as to run like Wax, with a gentle Heat. 3. This Salt, being dried, and thrown upon live Coals, does not take Flame, but crackles violently in the Fire, and flies all around, with great Danger to the By-standers; but, if red, used to fine Powder, it may be melted in a strong Fire.

REMARKS.

Hence we have a new Method of producing a metallic Salt, and its Oil; a sweet Taste from an acid and an insipid Body; a Glass from a Metal; and of shewing, that Spirit of Nitre will not make an inflammable Salt with every Metal, as it does with Silver. The Salt here has the same Virtues as that of the preceding Process, but it is more sharp and astringent.

THE SALT OF LEAD TREATED WITH ALCALIES.

To two Ounces of the crystalline Salt of Lead, made according to either of the two last Processes, thoroughly dried and reduced to fine Powder, add four Ounces of Oil of Tartar per Deliquium; set them in Digestion, where the longer they stand, the better; then add an Ounce of Sal Ammoniac; mix them well, and digest again in a close Vessel; pour back the saline Liquor that comes over in the Digestion, and digest again; which being twice or thrice repeated, dry the Matter thoroughly by a gentle Fire, and expose it to a moist Air, that it may dissolve; dry it again, and distil it in a coated glass Retort, with Degrees of Fire to the highest that Sand will give, into a large Receiver containing a little fair Water. Three Kinds of Matter will thus come over, which seems surprising, while another of a particular Nature, and strangely changed, remains at the Bottom of the Retort.

REMARKS.

Many very particular Things are learned from this Experiment, and such as are pleasant to behold; for the Metal thus successively opened, and dissolved by opposite Salts, then coagulated, and dissolved in the Air, is highly changed, opened, subtilized, divided, and separated from all that is not purely Mercurial, or metallic; and may thus exhibit its pure, metallic, Mercurial Part, separated from the rest, if the Industry of the Operator can reach so far.

THE CALX OF THE VITRIOL OF LEAD.

Take the Vitriol of Lead, made according to the two last Processes but one; dry it thoroughly with a gentle Fire, grind it to fine Powder; put in'o a glazed earthen Dish; set it over the Fire, and keep it continually stirring with a Tobacco-pipe, till it yields no more Fumes with a great Heat; a fine and almost insipid Powder will thus be obtained, which is another Calx of Lead, made in the moist Way.

REMARKS.

All the Acid which was united with the Lead, in the Form of the Vitriol of Lead, is here again separated from it by the Fire, except that Part, which, intimately adhering thereto, does not appear externally, and was therefore much more closely united with it in this Operation.

THE BALSAM OF LEAD WITH EXPRESSED VEGETABLE OILS.

1. Put granulated Lead, any Calx thereof, Ceruss, Litharge or Red-lead, into a glazed earthen Vessel; add to it twice its Weight of any expressed Oil; then gradually raise the Fire, and the Lead will begin to melt at the Bottom, before the Oil boils; but if the Fire be gradually increased, so as to make the Lead boil, the Body of the Lead, or Calx, will begin to disappear, and mix so intimately with the Oil, as to make a true Balsam, which, by longer boiling, may be brought to a Substance that is solid in the Cold, semi-metallic, will melt in the Fire, and is ductile. 2. If instead of Lead or its Calx, we use that Calx prepared in the last Process, or the Salt of Lead, first dried, and treat it with expressed Oil, in the Manner above delivered, the like Balsam will be obtained as from the true Metal, and the Oil.

REMARKS.

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REMARKS.

Hence we see, that true and very ponderous Metals may, by the means of Fire, be dissolved in vegetable Sulphur, and so mixed, as to lie perfectly concealed therein: Whence we are often ignorant, whether Metals are concealed in certain Bodies or not; how wonderfully they may be disguised; and how often they may proceed from Matters not thought to contain them, when they have been often falsely supposed to be obtained from them by Transmutation. All these Particulars admonish us to be cautious of the Impositions of the fraudulent Alchemists. These emplastic Preparations of Lead are of Use to strengthen and warm the Parts, whereto they are applied; they, also, discuss, mollify, and absorb acrimonious Humours; in particular, they are excellent for lining Vessels designed to contain Water; for if Red-lead be boiled in Oil to a proper Thickness, and be exactly spread over a Stone Wall made almost red-hot, so as intimately to penetrate and stick therein, it will cause the Wall to resist Water, as well as if it was built with Cement. This Mixture we use to prevent Worm-tubs from leaking.

THE BALSAM OF LEAD WITH DISTILLED VEGETABLE OIL.

Gently dry the Sugar of Lead, prepared according to the third of these Processes; put it into a tall Bolt-head, and add to it four times its Weight of the ethereal Oil of Turpentine; boil it for some time; which is easily done, if the Glass with this Mixture be put into a Vessel, in which Linseed-oil grows just hot enough for the Purpose, which happens long before Linseed-oil of it self will boil: Thus the Oil of Turpentine will almost wholly dissolve the Sugar of Lead, whereby the Balsam is obtained.

REMARK.

This Process has the same Use with the former.

THE GLASS OF LEAD.

1. Mix two Parts of Red-lead, with one of clean Sand, reduced to fine Powder, by grinding them long together; then put them into a clean Crucible; set it in the Fire, so that the Matter may melt, and continue in Fusion for some time, till, when examined by dipping a Tobacco-pipe therein, what sticks thereto appears transparent; then pour it out upon a Marble: A brittle, yellow, transparent, inodorous, insipid Mass will be thus obtained, that proves hard in the Cold, and melts in the Fire; whence it is called Glass of Lead. This Matter, when fused in the Fire, passes through all the known Vessels, as Water through a Sponge; and converts almost all Bodies into Glass, with itself in Fusion, carrying them through the Pores of the Vessels, except Gold and Silver. In order to make the Mixture of the Red-lead and Sand run sooner into Glass, some add Nitre, and others Sea-salt, and keep the Crucible in the Fire till the Salt is melted. 2. If the Sugar of Lead be put into a Crucible, and urged with a gentle Fire, successively increased, the Vinegar flies off, and the Matter is so changed, as to run into a yellow Glass, at the same time that wonderful pleasing Colours appear in the middle, like those of the Rainbow, or the Peacock's Tail. 3. If Lead itself be long kept melted in the Fire, it becomes drossy at Top, which increases till the Lead is almost wholly converted into the same kind of Matter; and this, being again urged with a strong Fire, turns of itself into Glass; but this is a laborious Operation, and requires much Caution. The easiest Method appears to be the following. 4. Take four Parts of Red-lead; one Part of Sand, and two Parts of dry decrepitated Sea-salt; grind them together, the longer the better; put them into a close-covered Crucible; melt them together, and suffer the Whole to Rest; the Salt will be found melted in a Glebe at Top, and the Glass below, when the Crucible is broke, and should be separated from the rest, for the Purposes of Metallurgy, where it is extremely useful. 5. These Glasses, being mixed with a little powdered Charcoal, and melted in the Fire, easily turn to Lead again.

REMARKS:

We have a wonderful Change of this Metal (by means of Fire) and the Discharge of a metallic highly poisonous Vapour) from a perfectly malleable State, to an extremely brittle, and true glassy Matter. Whence we see how wonderfully, and under what various Forms, Metals may lie concealed, and how easily they may again appear. And hence, perhaps, Metals vitrify in the Fire, after being separated from a certain sulphureous Part. This seems to appear from the making of the Glass of Antimony, and other Experiments. And, upon restoring this Sulphur, the metallic Form begins to return, as may be seen in many Instances, especially in Lead. This Glass of Lead is the true Test of Metals, and destroys every thing in the Fire, except Gold and Silver, which it leaves untouched, without any Diminution

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of their Weight. And upon this Foundation depends the whole Art of Assaying and Refining, which is of so great Use in Civil Affairs. Whoever would know more of the Subject, may consult Boyle, Bohn, Homberg, and Geoffroy. But let it be carefully remember'd, that the Fume, the Powder, and all the Parts of Lead are carefully to be avoided, as highly poisonous. Boerhaave's Chymistry.

The burning Spirit and Oil of Lead are obtained from the Sugar or Salt by Distillation; but the Virtues of these inflammable Substances are the same with those of Spirit of Wine, whatever Chymists may pretend to the contrary; for the Spirit is only the Spirit of Wine, concentrated in the Vinegar disengaged by this Preparation, and the red Oil is likewise extracted from the Vinegar.

The mineral Mummy of Lead of Poterius is the Calx of Lead and Quicksilver amalgamated together, made in this manner:

Take of Mercury revived from Cinnabar, two Parts; and one Part of Lead. Amalgamate them together, and continue to shake them strongly in an earthen Vessel over a Charcoal-fire, till the Whole be reduced to a black Powder. Bake this Powder in a Sand-bath, in a glass Matrafs, till it turns yellow; and keep it for Use.

This Mummy cures, in a very small time, the Itch, Tetter, and other Diseases of the Skin, cleanses callous Ulcers, and dissolves the Callus, and dissipates Swellings in the Glands of the Breasts, being mixed in any Ointment or Plaister. It is, likewise, of Service in Cancers, which are not arrived at their last Stage. It must, however, be cautiously and sparingly used, lest the Suppuration prove too great. But, if a Carcinoma, for Instance, be not ulcerated, a Dram of this Mummy, accurately mixed with an Ounce of Emplastrum Magneticum of Angelus Sala, and applied to the Tumor, will gradually dissolve it. But, if there be an Ulceration, then a small Pencil of Lint dipped either in the Mummy alone, or mixed with Powder of Myrrh, is to be thrust into the Ulcer, the Emplastrum Magneticum being applied upon it. By this means the hard Tumor gradually resolves by a gentle Suppuration; and, by proper internal Remedies used at the same time, the Carcinoma is healed. Geoffroy.

PLUMIERIA.

The Characters are;

It has the Appearance of the *Apocynum*, and abounds with a lacteous Juice. The End of the Pedicle passes into a little short monophyllous Calyx, out of which grows the Flower, as in the *Nerium*, but wants the petaloid Crown. The Ovary, which grows in the Bottom of the Calyx, becomes a long, filiquous, double Fruit, when opening lengthwise, and pregnant with a Multitude of Seeds, placed as in the *Apocynum*, but foliated.

Boerhaave mentions but one Sort of *Plumieria*; which is, *Plumieria*; flore roseo, odoratissimo. T. 659. Boerb. Ind. alt. Plant.

Besides the foregoing Sort of *Plumieria*, Miller mentions the five following;

1. *Plumieria flore majore odorato & incarnato.*
2. *Plumieria flore niveo, foliis longis angustis & acuminatis.* Inst. R. H.
3. *Plumieria flore niveo, foliis brevioribus & obtusis.* Inst. R. H.
4. *Plumieria foliis longissimis, minus succulentibus, flore pallido.* Houtt.
5. *Plumieria folio latiore obtuso, flore luteo minore.*

This Name was given to this beautiful Species of Plants, by Dr. Tournefort, in Honour to Father Plumier, who was Botanist to the late King of France, and a long time in America, searching after new Plants; and who has published a Catalogue of the Plants, with the new Genuses he constituted; and two Volumes in Folio, with Figures and Descriptions of many of the Plants.

These Plants grow wild in the Spanish West Indies, from whence some of the most beautiful Kinds were brought into the English Settlements in America, and are cultivated in their Gardens for Ornament. The first Sort here mentioned is the most common Kind, which is preserved in the Gardens of the Inhabitants of Jamaica and Barbadoes. The Flowers of this kind nearly resemble those of the red Oleander, but are larger, and have an agreeable Odour. These are produced in small Bunches, at the Extremity of the Shoots, and generally appear in July and August in this Climate; but in the West Indies they flower a great Part of the Year.

The milky Juice of these Plants is very caustic, and reckoned very poisonous. In cutting off any of the Branches of the Plants, if the Knife be not immediately cleaned, the Juice will corrode it, and turn the Blade almost black in a very little time, so as not to be cleaned off again; and, if dropped on Linen, will cause it to wash in Holes, equal to Aqua Fortis. Miller's Dictionary, Vol. 2.

PLUMOSUM. An Epithet for a Species of Alum.

PLUTEA, in Avicenna, is a Reduplication of the Dura Mater, as in the Formation of the Longitudinal Sinus.

PLUVIALIS.

PLUVIALIS. The Plover; of which there are two Sorts. The first is the *Glottis*. Offic. Genf. de Avib. 450. *Limosa Venetorum*. Ejusd. *Puvialis major*. Aldrov. Ornith. 3. 535. Will. Ornith. 220. Raii Ornith. 298. Charlt. Exer. 114. Jonf. de Avib. 114. *Chloropus Germanis Gult seu Gluttis*. Aldrov. 3. 452. **THE GREAT PLOVER.**

The Gall of this Bird is recommended as a Remedy for Disorders of the Eyes. A Jelly of the Flesh is recommended as a good Analeptic, or Restorative.

The other Species is the *Vanellus*. Offic. Charlt. Exer. 113. Mer. Pin. 182. Gefn. de Avib. 692. Jonf. de Avib. 113. *Capella five Vanellus*. Aldrov. Ornith. 3. 523. Raii Ornith. 307. Ejusd. Synop. A. 110. Will. Ornith. 228. *Vaneau*. Bellon. des Oyse. 209. **THE LAPWING, or BASTARD PLOVER.**

This Animal delights in marshy Places; and its Ashes, Heart, and Skin, are us'd for medicinal Purposes. The Ashes drank in Wine, are beneficial in Colics; and, when applied by way of Cataplasm, cure the Bite of a Mad-dog. The Heart alleviates Pains of the Loins, and the Skin is esteem'd good in Cephalalgias. Dale.

They create an Appetite, yield pretty good Nourishment, digest easily, and are look'd upon to be good to provoke Urine, to strengthen the Brain, purify the Blood, and for the Falling Sickness.

They are not very solid Food, but soon waste; and therefore Persons accustomed to great Exercises, or hard Labour, are not to use them. *Lemery on Foods.*

PLUMA, πλῦμα. The Water wherein any thing is wash'd.

PNEUMA, πνεῦμα, in *Hippocrates*, sometimes imports Spirit, Air, or Vapour; and frequently it signifies the Breath, that is, the Air drawn in by Inspiration, and expel'd during Expiration. But *Pneuma*, by the above quoted Author, is often us'd to express a difficult, short, and laborious Respiration.

Pneuma halizomenon, πνεῦμα ἀλιζόμενον, from ἀλίζομαι, to be coarctated, crouded, means a raised, dense, and full Respiration. *Coac.* 339.

Pneuma hōsper anacaluteno, πνεῦμα ὥσπερ ἀνακαλυμένον, from ἀνακαλέω, to recal, 1 *Epid.* 1. imports a broken Respiration, as when a Person, after a short Expiration, seems to call back his Breath, and to expire with a renewed Force, in order to supply the Defects of the former Expiration. The same is called πνεῦμα πρόσκοπτον (*proscopton*), and προσπάλειον (*prospaleion*), an impinging Breath, which strikes in its Passage, and is interrupted by the Elision. It is otherwise described, 2 *Epid.* and *Coac.* 260. by διπλή ἐσω ἀνάλησις διω ἐπεισπνέειν, a double Revocation inwards, as in those who fetch their Breath "double;" and by πνεῦμα ἐνεδιπλασιάζετο, "the Breath was "double," that is, as *Foefius* endeavours to explain it, was doubled, or sounded double, by suffering an Elision in its Passage.

Pneuma anapherein, πνεῦμα ἀναφέρειν, from ἀναφέρω, to exalt, is to have a great and full Respiration, or to expire vast Quantities of Breath; which is esteemed a Symptom of an internal Inflammation, 2 *Prorrhet.* *Coac.* 486. But πνεῦμα ἀνω φερόμενον, in *Lib. de R. V. I. A.* is no more than the Breath discharged by Expiration.

Pneuma anelomenon, πνεῦμα ἀνελόμενον, from ἀνέλω, to draw upwards, to raise, or elevate, in 1 *Prorrhet.* 87. imports a Respiration performed with a great Elevation of the Thorax, in such a manner, that even the Scapulæ seem to be moved thereby, as *Galen* explains the Word; who, also, takes it to be used by *Hippocrates* in the same Sense as μέλαρον and πρόχειρον, which see below.

Pneuma anespasmenon autica, πνεῦμα ἀνεσπασμένον αὐτίκα (from ἀνασπάω, to retract) the Breath immediately or at every Turn retracted, imports an interrupted or intercepted kind of Respiration, which fails on a sudden. It seems to be much the same with the πνεῦμα διον συσπνέειν τινος, *Coac.* 266. and *Prorrhet.* 87. a short and convulsive kind of Respiration, as is usual with those who fetch their Breath under Convulsions.

Pneuma aræon, mega, πνεῦμα ἀραιόν, μέγα, is a rare and great Respiration, or a full Respiration perform'd at long Intervals (see *ARÆON*); such as is proper to those who labour under a Delirium, as *Galen* observes, *Lib. 2. de Dyspn.* and *Com.* 1. in *Prorrhet.* and as it is confirmed by many Instances in the first and third Books of the *Epidemics*.

Pneumata asema, πνεύματα ἀσημα, signifies an obscure Respiration, or such as is small, interrupted, and hardly perceptible; which is usual in Hysterics, a Syncope, and in dying Persons. See *ASEMOS*.

Pneuma bechodes, πνεῦμα βηχῶδες, from βῆξ, a Cough, is a Respiration attended with Coughing, from something derived into the Aspera Arteria. *Coac.* 62. 632.

Pneuma dia pollou Chronou, πνεῦμα διὰ πολλῶ χρόνου, as explain'd by *Galen*, *Lib. 2. de Dyspn.* is the same as the *Pneuma aræon* before. The πνεῦμα διὰ χρόνου, 3 *Epid.* imports the same.

Pneuma manoteron, πνεῦμα μανότερον, from μανός, rare, loose, *Coac.* 211. imports an Alteration from a short, difficult, and turbulent, to a more remiss, rare, and easy Respiration.

Pneuma mega, πνεῦμα μέγα, a great Respiration, *Coac.* 126. and 290. is when, in breathing, the Thorax is very much enlarged in its Dimensions.

Pneuma meteoron, πνεῦμα μετέωρον, a sublime and elevated Respiration, imports such a Respiration as is performed with an Elevation of the whole Thorax, and an Erection of the Neck, under a great Straitness and Oppression, as is often the Case in a Quinsy, Peripneumony, Pleurisy, and Asthma. Thus *Galen*, *Com.* 1. in *Prorrhet.* explains the Epithet; and tells us, that πρόχειρον and φαινόμενον πνεῦμα are used by *Hippocrates* in much the same Sense. And, *Com.* 2. in 3 *Epid.* he further observes, that τὸ μέλαρον πνεῦμα may import, that the Patients under the fore-mentioned Disorders desire and endeavour μέλαρξιν ἐν εἰσπνέειν, to raise themselves up: Whence he says, μέλαρον πνεῦμα, in 3 *Epid.* is the same as ὀρθόπνοια (*Orthopnoia*) in *Prognost.* There is another Signification of μέλαρον πνεῦμα quoted by *Galen* from *Salinus*, who describes it by τὴν ἀπὸ τῆς ῥινὸς γινόμενὴν ἀναπνοήν, "Respiration performed at the Top of the Nose;" that is, when the Passages for Respiration being almost stopped, the Patient, in drawing his Breath, moves the Pinnæ of the Nostrils, as is the Case with those who are suffocated by a Quinsy, Peripneumony or *Empyema*; or when the Strength is quite exhausted, as in dying Persons. This Sense of the Phrase, tho' criticised by *Galen*, seems, to be in some measure, imply'd in that of *Hippocrates*, in 7 *Epid.* where, speaking of the Wife of *Olympiades*, as almost expiring, he says πνεῦμα μετέωρον κατὰ ῥίνα σπόμενον, "Respiration was such as is called sublime, and perform'd "through the Nose." *Galen*, at the End of *Lib. 3. de Dyspn.* proves this μέλαρον πνεῦμα, or sublime Respiration, to be, also, small and quick, or short.

Pneuma minuthodes, πνεῦμα μινυθῶδες, from μινύω, to diminish, is a small and weak Respiration. *Lib. 2. περὶ γυναικ.*

Pneuma mychthodes, πνεῦμα μυχθῶδες, *Coac.* 519. and 540, is a broken, and most painful Respiration, which is interrupted in the midst of Expiration, as is observable in the sobbing Respiration of Children.

Pneuma proscopton, πνεῦμα πρόσκοπτον, from προσκρίψω, to impinge, 4 *Apb.* 67. is expressed in *Celsus*, *Lib. 2. Cap. 7.* by *Spiritus in Fauibus elisus*, Breath suppressed or intercepted by Elision in the Fauces. This impinging kind of Respiration is explain'd by *Galen*, *Lib. 4. de Loc. affect.* in the following manner: "There is another Species of Dyspnoea, he says, "which is, when the Action of the Thorax is interrupted by a "short Rest, sometimes in Inspiration, and sometimes in Expiration, whether this Symptom proceeds from a spasmodic "Disposition of the Muscles of the Thorax, or from an Abundance of Hear, which constrains the Patient to continue his "Inspiration or Expiration".

Pneuma prosptæon, πνεῦμα προσπάλειον, from πάλω, to impinge, or strike against, *Lib. de R. V. I. A.* is the Breath impinging or interrupted in Expiration, as *Galen*, in his Comment in the Place, explains it.

Pneuma prochiron, πνεῦμα προχείρον, quasi pedes χεῖρα, ready at hand, or obvious, is a conspicuous Respiration, such as is the sublime and elevated Respiration accompany'd by an Elevation of the upper Parts of the Thorax and the Scapulæ, as may be observ'd in Asthmatic Patients, and those who die of a Suffocation. Hence it appears to be the same as μέλαρον. See 1 *Prorrhet.* 25. It is also called φαινόμενον (*phenomenon*) visible, apparent; because the Patients, as *Galen* observes, are plainly perceived, through their Clothes, to move the whole Scapulæ, when they draw their Breath.

Pneuma rycnon, πνεῦμα ρυκνόν, is a quick and frequent Respiration; and a kind of Dyspnoea, which in *Hippocrates* is often accompany'd with a Greatness or Smallness of Respiration, as is observed by *Galen*, *Lib. 3. de Dyspn.* See *RESPIRATIO*.

PNEUMATIE, πνευματίας. See **PNEUMATODES**.

PNEUMATICI. An Appellation of certain Physicians, who constituted the Pneumatic Sect. See the **PREFACE**.

PNEUMATOCELE, from πνεῦμα, wind, and κύλην. A Tumor. A flatulent Hernia, or Wind-rupture.

PNEUMATODES, πνευματώδες, in *Hippocrates*, is one who fetches his Breath short and quick, otherwise called *Pneumatis*, πνευματίας, as in *Lib. de R. V. I. A.* This is the Explanation which *Galen*, *Lib. 3. de Dyspn.* gives of the Word; where he also observes, that it sometimes signifies one who has his Belly or Illia distended with Flatulences; and proves it from the fourth of the *Epidemics*. *Pneumatis* and *Pneumatomenos*, πνευματίζμενος, are used in the same double Sense. *Foefius*.

PNEUMATOMPHALOS. An umbilical flatulent Rupture.

PNEUMATOSIS, πνεύματος. An Inflation of the Stomach; or a Collection of Flatulences in the Stomach.

PNEUMENOS, πνεύμενος. Asthmatic, or breathing with Difficulty.

PNEUMON, πνεύμων. The Lungs.

PNEUMONANTHE. A Name for the *Gentiana, angustifolia, Autumnalis, major*.

PNEUMONICUS. An Epithet for Medicines destin'd to the Lungs.

PNEUMOPLEURITIS. The same as **PLEUROPNEUMONIA** **PNIGALION, πνιγάλιον.** The *Incurbus*, or *Ephialtes*.

PNIGITES. Offic. Charit. Foss. 3. Worm. 5. *Terra Pnigites*, Aldrov. Musf Metall. 259. Matth. 1592. **BLACK EARTH.**

It is a fat, dense, soft, black, astringent, and very acrimonious Substance, of the Taste of Vitriol. To these Marks *Dioscorides* adds, that in Colour it somewhat resembles the *Eretria Terra*, is cold to the Touch, and so glutinous as to adhere to the Tongue. The same Author says, that it has the same Virtues as the *Cimolia*, only is weaker: Some, he says, sell it for *Eretria Terra*. *Dioscorides*, Lib. 5. Cap. 177.

PNIGMOS, *πνιγμός*. The same as PNIX.

PNIGOS, *πνιγός*. A sultry suffocating Heat.

PNIX, *πνιξ*. Any Suffocation; particularly that which happens in hysterical Fits. With an Addition of the Epithet *Hysterical*, it implies an hysterical Fit.

POA. A Name for the *Gramen*; *pratense*; *majus*; *latius folio*. See MILIUM.

POCAN. A Name for the *Phytolacca*; *Americana*; *majori fructu*.

POCATSJETTI. H. M. The Name of a small Shrub which grows in *Malabar*. The Leaves powdered, and sprinkled upon Ulcers, repress luxuriant and fungous Flesh; and, taken internally, they excite a Sweat, and diminish the Paroxysm of an intermitting Fever.

Of the Bark, and Root, powdered, and mixed with Oil, an Unguent is made; said to be good for the Itch, and other cutaneous Disorders. *Raii Hist. Plant.*

POCO SEMPIE. The Down or Moss growing upon the *Agnus Scythicus*. This is esteemed good for stopping of Blood, if given in the Quantity of six Grains. See AGNUS SCYTHICUS.

PODAGRA, *ποδάγρα*, from *πῶς*, a Foot; and *ἄγρα*, a Prey. The Gout in the Feet. See ARTHRITIS.

PODAGRARIA. See ANGELICA. It is, also, a Name for the *Myrrhis*; *folio Angelicæ rugoso*; *hirsuto*.

PODEON, *ποδεών*, is the prominent part of a Vessel, or Bottle, made of a Skin, by which the Liquor is poured in and out, and which used to be tied with a String, in order to keep in the contained Fluid: Thus (*Lib. περὶ καθάρων ποδῶν ποδεῶνα ἀορίσ, &c.*) To the Extremity, or prominent part of the Vessel, or Bottle, a Pipe is tied, for introducing the Air, and distending the Intestines, in order for their being washed with a Clyster, in the Cure of the Ileus. *Foefius*.

POERINSII. A Name for the ARBOR SAPONARIA.

POINCIANA. Flower-fence.

The Characters are;

The Calyx is pentaphyllous; the Flower polypetalous, and furnished with numerous Stamina; the Pod is flat, hard, gaping into two Parts, and divided into Capsules, or Cells, containing roundish Seeds.

Boerhaave mentions but one Sort of Poinciana; which is, Poinciana; flore pulcherrimo. *T. 619. Frutex, Pavonis, flos Crista Pavonis*. *Breyn. Cent. 1. 61. Acacia Orbis Americani, altera, flore pulcherrimo*. *H. R. Par. Crista Pavonis*. *H. L. Erythroxylon, Indicum, minus spinosum, Colutæ foliis, filiquis angustioribus, flore ex luteo & rubro eleganter variegatis*. *Par. Bat. Prodr. 333. Boerb. Ind. alt. Plant. Vol. 2.*

Besides this Sort, *Miller* mentions three more;

1. Poinciana flore luteo. *Houft.*
2. Poinciana flore rubente. *Houft.*
3. Poinciana spinosa, vulgo Tara. *Feuil.*

The Seed-pods of the last Sort are used by the Dyers in the *Spanish West-Indies*, for dying of Black; and they are, also, used for making of Ink. The Infusion of these Pods with Galls affords the most beautiful black Ink in the World.

POLEMONIUM.

The Characters are;

The Leaves are alternate, and pinnated; the Flower is monopetalous, rotated or wheel-shaped, and pentapetaloid; the Fruit is round, tricapsular, gaping, and full of oblong Seeds.

Boerhaave mentions four Species of Polemonium; which are,

1. Polemonium; vulgare; cœruleum. *Tourn. Inf. 146. Boerb. Ind. A. 252. Raii Synop. 3. 288. Polemonium. Offic. Valeriana Græca*. *Ger. 918. Emac. 1076. Park. Theat. 122. Raii Hist. 2. 1102. Valeriana Græca quorundam flore cœruleo*. *J. B. 3. 212. Valeriana cœrulea*. *C. B. P. 164. Vulneraria alata Blattariæ flore cœruleo*. *Hist. Oxon. 3. 605. GREEK VALERIAN, or JACOB'S LADDER.*

This Plant is produced in Woods; and flowers in Summer: The Herb itself, and its Root, are used. The Root, drank in Wine, is good against the Bites of venomous Animals, and Dysenteries. When drank in Water, it is beneficial in Dysurries, and ischiadic Pains. A Dram of it exhibited in Vinegar, proves serviceable to Patients labouring under Disorders of the Spleen: When chew'd, it mitigates Tooth-achs. *Dioscor.*

The Herb is vulnerary. *Sim. Pauli.*

This Plant is so imperfectly described by the Antients, that we are as yet ignorant what it really is; since some of them make it a Species of the Valerian; and others of the Lychnis.

But I have chosen to follow *Tournefort*, who ascribes this Name to this Plant, which is described by *Dioscorides* in the following manner: "The Polemonium is a Plant, with small Branches, pinnated on both Sides: Its Leaves are a little larger and longer than those of Rue; greatly resemble those of Calamint, or Bloodwort; and have Clusters, in which are contained black Seeds, hanging from their Tops." *Dale.*

2. Polemonium; vulgare; album. *T. 146. Valeriana Græca quorundam, flore albo*. *J. B. 3. 212. Valeriana alba*. *C. B. P. 164.*

3. Polemonium; vulgare; flore variegato. *T. 146. Valeriana Græca, flore ex albo & cœruleo variegato*. *H. L.*

4. Polemonium; vulgare; foliis eleganter variegatis. *Boerb. Ind. alt. Plant. Vol. 1.*

POLEMONIUM is, also, a Name for the *Lychnis*; *sylvestris*; *quæ Been album vulgo*. See BEHEN.

POLEMONIUM, *Monspeliensium*. A Name for the *Jasminum*; *luteum, vulgo dictum bacciferum*.

POLENTA. See ALPHITA.

POLETIS SAL. A compound Salt, described by *Aetius*, *Tetrabib. 3. Sermon. 1. Cap. 24.*

POLIATER. A Physician in ordinary to a Town.

POLIUM.

The Characters are;

The Leaves are, for the most part, hoary; the Stamina supply the Place of the Galea; the Beard is quinquefid, like that of the *Chamædrys*; the Flowers grow in Heads, on the Tops of the Stalks and Branches.

Boerhaave mentions ten Species of Polium; which are,

1. Polium; Lavendulæ folio. *C. B. P. 220. Tourn. Inf. 206. Boerb. Ind. alt. 183. Polium alterum. Offic. Polium montanum. Offic. Polium montanum Lavendulæ folio*. *Park. Theat. 25. Raii Hist. 1. 525. Polium Lavendulæ folio flore albo*. *Ger. Emac. 635. Ajuga folio integro*. *Rivin. Irr. M. POLEY-MOUNTAIN WITH LAVENDER-LEAVES.*

This Plant is found in the Gardens of Botanists, and flowers in June. The Herb is only used, and is said to agree in Virtues with the other Species, though in a lower Degree. *Dale.*

2. Polium; montanum; luteum. *C. B. P. 220. Raii Hist. 1. 525. Ger. 528. Emac. 653. Tourn. Inf. 206. Boerb. Ind. A. 183. Polium montanum. Offic. Chom. Pl. Usu. 352. Polium montanum vulgare*. *Park. Theat. 24. YELLOW POLEY-MOUNTAIN.*

This Plant is produced in *Provence* in *France*, and in *Spain*: It flowers in June. The Herb is used; and is said to agree in Virtues with the white Poley-mountain. *Dale.*

3. Polium; Lavandulæ folio angustiori. *C. B. P. 220.*
4. Polium; montanum; repens. *C. B. P. 221.*
5. Polium; Pyrenaicum, supinum; Hederæ terrestris folio. *T. 206. An Chamædrys montis Sumani*. *J. B. 3. 289.*
6. Polium; montanum; luteum; dasphyllum; ferratum; tomentosum. *M. H. 3. 355.*
7. Polium; montanum; luteum; ferratis, angustioribus, incanis, foliis. *Barrel. Ic. 34.*
8. Polium; montanum; album; supinum; folio ad suprema crenato; capitulis multis, globosis.
9. Polium; maritimum; supinum; Venetum. *C. B. P. 221. Polium Venetum*. *J. B. 3. 300.*
10. Polium; Hispanicum; fruticosum; maritimum; Rorismarini folio; flore rubro. *T. 207. Boerb. Ind. alt. Plant. Vol. 1.*

This Plant resists Putrefaction, and with it the Sea-slink is, for that Reason, preserved; because Vinegar and Salt are not thought good enough for the Preservation of so delicious and costly an Animal: This Plant is bitter, and approaches much to the Nature of *Germander*: It provokes Urine, removes Obstructions of the Menstrues, and cures the Jaundice. An Infusion of the Leaves and Flowers is beneficial in lethargic Disorders, and, consequently, in Epilepsies: What the Polium of the Antients was, we know not. This Plant is an Ingredient in various Confections, Opiates, and in the Theriaca. It is said to be beneficial against the Bites of poisonous Animals. *Hist. Plant. adscript. Boerb.*

POLIUM CRETICUM. A Name for the *Teucrium*; *calice campanulato; stachados facie*.

POLIUM GNAPHALODES. A Name for the *Gnaphalium*; *maritimum*.

Besides the foregoing Species of Polium, *Dale* mentions the two following,

1. Polium montanum. *Offic. Polium montanum album*. *C. B. P. 221. Ger. 528. Emac. 653. Raii Hist. 1. 524. Tourn. Inf. 206. Polium montanum Monspeliacum*. *Park. Theat. 24. WHITE POLEY-MOUNTAIN.*

This Plant is produced in *Italy* and *France*, and flowers in the Summer: The only Part of it used is the Herb itself, which ought to be chosen recent and odorous: It provokes Urine and the

the Menfes, afflicts dropfical and iſteric Patients, and is beneficial in the Bites of venomous Animals. *R. H.* It is, alfo; of an inciding and aperient Quality.

Dioſcorides makes two Kinds of Polium; one of which is the Poley-mountain, which he deſcribes in the following manner: "It is, ſays he, a ſmall white Shrub, nine Inches long, and full of Seeds; which, on their Tops, bears a ſmall Head, reſembling a certain Species of Cluſters, or the grey Hairs of a bald Perſon: This Head has a diſagreeable Smell, but is ſomewhat ſweet to the Taſte: The other Species of Polium is more of the Nature of a Shrub, and is not ſo ſtrong, with reſpect to its Smell, and other Qualities." The above-quoted Deſcription of Poley-mountain is ſo ſhort, that Botaniffs, in different Countries, have taken it, ſome for one Plant, and ſome for another. *Tournefort* and *Chomel* have given the Poley-mountain, both white and yellow, of *C. B. P.* a Place in the *Materia Medica*. *Herman* and *Rockerus* think, that the white is the *Polium Officinale*; and *Commelin* and *Philip Miller* take the yellow Polium to be the *Polium Officinale*. But *Rupp* takes the *Polium Lavendulae Folio*. Pin. for the *Polium Montanum*. And *Joſeph Miller*, and *Rand*, take the *Polium Maritimum erectum Monſpeliacum* of *C. B.* for the Poley-mountain: Concerning which *Magnol* informs us, that the *Polium montanum album* of *C. B.* is much ſmaller, and not of ſo grateful a Smell. For this Reaſon, tho' the *Polium montanum album* ought to be preferred in the Shops, yet I have not omitted the other Species.

Befides the Species already mentioned, there is another, tho' not ſo frequently found in the Shops: It grows in *Crete*; and, becauſe it is of a more grateful Smell, and more efficacious, than the others, is, therefore, preferable to them. *Dale*.

2. *Polium montanum*. Offic. Mill. Bot. Offic. 352. *Rand*. Ind. Plant. Offic. 69. *Polium maritimum erectum Monſpeliacum*. *C. B. P.* 221. *Raii Hiſt.* 1. 524. *Tourn. Inſt.* 206. *Polium Monſpeſſulanum*. *J. B.* 3. 299. *Polium montanum minus*. *Park. Theat.* 23. **ERECT, or MOUNTAIN POLEY.**

This Polium grows to be about a Foot high, much branched with ſquariſh woolly Stalks, having two ſmall, white, woolly Leaves at a Joint, not above half an Inch long, and ſcarce half ſo broad, blunt-pointed, indented about the Edges towards their Ends: The Flowers grow at the Ends of the Branches, in roundiſh, woolly, thick Spikes, ſmall, and of a white Colour, labiated, but having no Galea, being ſet in white, hoary, five-pointed Calyces. Both Leaves and Flowers have a pleaſant aromatic Scent. It grows in *Italy*, and the Southern Parts of *France*, and flowers in *July*. The Tops and Heads are uſed.

Mountain-poley is opening and attenuating, good for Obſtructions of the Liver and Spleen, helps the Dropſy and Jaundice, provokes Urine and the Menſes, and is good againſt the Bites of venomous Creatures; and is an Ingredient in the Theriaca Andromachi. *Miller's Bot. Off.*

POLLEX. The Thumb. *Pollex Pedis* is the great Toe.

It often happens, that the Nail of the great Toe, on one Side, turns in; and enters the Fleſh, thereby occaſioning violent Pains and Inflammation, ſo that the Patient cannot walk without the greateſt Difficulty. The moſt general Cauſe of this Diſorder is wearing ſtrait Shoes: Whence it is plain, that the propereſt Method of preventing it is to wear Shoes ſufficiently wide and eaſy. If the Nail is already fixed in the Fleſh, let the Patient keep his Foot in warm Water for half an Hour, till the Nail begins to ſoften; and, to make it yield the more eaſily, ſcrape it with a Knife, or Piece of Glaſs; then, gently raiſing the Nail with the Finger, or a proper Probe, interpoſe, between the Nail and the Fleſh, a little ſcraped Lint, and dreſs with warm Spirit of Wine. This muſt be repeated, till the Pain is removed.

If this Method proves ineffectual, we muſt have recourſe to the Knife. For this Purpoſe, let the Foot be ſome time bathed in warm Water, for the Reaſon already given; then place it upon a Seat, where it muſt be firmly held by an Aſſiſtant: Then let the Operator carefully inſinuate a Pair of ſtrong Nail-ſciſſars (ſee *Tab. LVII. Fig. 12. 13.*) under the injurious Part of the Nail, to cut it off; and, if it does not fall off of itſelf, it muſt be extracted by the Forceps. Though the Patient will feel the Operation extremely painful, yet he will ſoon be ſenſible of the Eaſe it has procured him. Let the Part be then dreſſed with ſcraped Lint, or Compreſſes moiſten'd in Oxycrate, or warm Spirit of Wine, or Lime-water; and it may be fomented twice or thrice a Day, till the Inflammation and Pain ceaſe. In the mean time, the Patient ſhould reſt for ſome Days, till all Danger of the Pain and Inflammation be removed. Sometimes proud Fleſh ſprouts up, which may be ſafely conſumed with burnt Alum. In order to prevent the Nail from growing again into the Toe, and producing the ſame Trouble, *Dionis* recommends, that the Shoes ſhould be made eaſy; and the Nail ſhould be every Month ſcraped ſo thin, with a Piece of Glaſs, or ſharp Knife, that it may not have Strength

to run into the Fleſh, by the Preſſure of the Shoe. *Heiſter's Surgery.*

POLLINCTURA. The embalming of dead Bodies.

POLLUTIO. An Incontinence of the ſeminal Juices; a Species of GONORRHOEA; which ſee.

POLPHOS, *πολφός*. A Bulb, or bulbous Root.

POLYÆMIA, *πολυαιμία*, from *πολύς*, much; and *αἷμα*; Blood. A Redundance of Blood, or PLETHORA.

POLYANTHOS. A Name for the PRIMULA VERIS.

POLYANTHUS. A Name for the Acarna. See CAR-
DUUS.

POLYARCHION. The Name of a Malagma; thus called from *Polyarchus*, its Author. It is deſcribed by *Galen*, *Lib. 8. de Comp. M. S. L. Cap. 5.* and *Lib. 7. de Comp. M. S. Gen. Cap. 7.* From whence *Actius* and *Paulus Ægineta* have tranſcribed it.

POLYCHRESTOS, *πολύχρηστος*. An Epithet for many Medicines, importing their being good, or uſeful for many Diſorders; from *πολύς*, much, and *χρησός*, uſeful.

The BALSAMUM POLYCHRESTON is deſcribed under the Article BALSAMUM.

In *Lemery's Pharmacopée Univerſelle*, we find the following Pills deſcribed:

Pilula Polychreſtæ. Meſue.

— *Polychreſtæ*. Quercetani.

— *Polychreſtæ*. Quercetani Reformatæ.

— *Polychreſtæ Majores*. Meſue.

— *Polychreſtæ Majores Reformatæ*.

— *Polychreſtæ Minores*. Meſue.

— *Polychreſtæ Minores Reformatæ*.

POLYCLONOS. Ramoſe, or abounding with Branches. An Epithet for the *Artemiſia*, Mugwort.

POLYCNEMON. See CALAMINTHA PALUSTRIS.

POLYETES ANTIDOTUS. The Name of ſeveral Antidotes deſcribed by *Nicolaus Myreſus*.

POLYGALA.

The Characters are;

The Leaves are alternate; the Calyx conſiſts of five Leaves, the two larger of them expanded like Wings, and the three leſſer acute; the Flower is monopetalous, anomalous, perfonated, with its hinder Part perforated, and its fore Part bilabiated, the upper Lip bifid, and the lower beautifully fimbriated, or fringed: It is furniſhed with eight Stamina, and diſpoſed in looſe Spikes. The Fruit, which is embraced by the quinquephyllous Calyx, as with Wings, is compreſſed, gaping into two Parts, and divided into two Capſulæ, or Cells.

Boerhaave mentions fix Species of Polygala; which are,

1. Polygala; vulgaris. *C. B. P.* 215. *Tourn. Inſt.* 174. *Boerb. Ind. A.* 236. Polygala. Offic. Ger. 448. Emac. 563. *Raii Hiſt.* 2. 1335. Synop. 3. 287. Polygala minor. *Park. Theat.* 1332. Polygalon multis. *J. B.* 3. 386. *Flos Ambarvalis vulgo*. *Herm. Cat.* 500. MILKWORT.

Gefner, who, in his Letters, calls this Plant *Amarella*, affirms, that an Handful of it, infuſed in a Glaſs of Wine, purges very well, and without any ill Conſequence. *Martyn's Tournfort*.

This Plant is moſt frequently found in dry Meadows, and flowers in *July*. The Herb itſelf is only uſed. Its bitter Taſte proves it to be of an hot and drying Quality: Its Leaves, boiled in Wine, purge Bile, by Stool. *Gefn.*

This is the Polygala of the Shops of *England*, and of the modern Botaniffs: But that it is the Plant to which *Dioſcorides* gives the ſame Name, neither its Deſcription nor Virtues will ſuffer us to believe; ſince it has neither the Leaves of the Lentil, nor a Power of increaſing Milk, both which are aſcribed to the Polygala. *Dale*.

2. Polygala; flore rubro; purpureſcente. *H. Eyſt. Vern.* o. 6. *F. 11. Fig. 2.*

3. Polygala; alba. *Tabern. Ic.* 831.

4. Polygala; carnea.

5. Polygala; violacea.

6. Polygala; fruteſcens; folio Buxi; flore maximo. *Oldenl. T.* 175. *Chamaebuxus*, flore Caluteæ ex purpura ruſcente. *C. B. P.* 471. *Anonymos*, flore Caluteæ. *Cluſ. H.* 105. *Pſeudo-Chamaebuxus*. *H. Eyſt. Vern.* o. 6. *F. 12. F. 3.* *Boerb. Ind. alt. Plant. Vol. 1.*

POLYGALA is, alſo, a Name for ſeveral Sorts of CORONILLA; which ſee.

Befides the foregoing Species of Polygala, *Dale* mentions the following;

POLYGALA VERA. Offic. Polygala major Maſſiliotica. *C. B. P.* 349. Polygala Valentina maritima. *Park. Theat.* 228. Calutea caule Geniſtæ fungoſo. *J. B.* 1. 383. *Raii Hiſt.* 1. 925. Coronilla caule Geniſtæ fungoſo. *Tourn. Inſt.* 650. *Aſtragalus Matthioli*. Ger. 1059. Emac. 1239. MILK-VETCH.

This Plant is cultivated in Gardens, and flowers in Summer. The only Part of it uſed is the Herb itſelf, which, according to

to *Dioscorides*, increases the Quantity of Milk, if drank in some proper Liquor.

The *Polygala* was so common and well-known a Plant among the *Greeks*, that *Dioscorides* has only given a very short Description of it, which has laid a Foundation for various Disputes among the *Botanists*. The *Polygala* here spoken of, seems to be the genuine *Polygala* of *Dioscorides*; because, as *Matthioli* justly observes, it exactly agrees with the Description of that Plant. *Calceolarius* affirms, that he has often found from Experience, that it augmented the Milk of Nurses. Dale.

POLYGALON. A Name for the *Coronilla*; *minima*; and, also, for the *Polygala vulgaris*.

POLYGANON. A Name for the *Polygala*; *vulgaris*; and, also, for the *Onobrychis major*; *filiculis echinatis*, *cristatis*, in *Spica digestis*.

POLYGLOTTA. The Name of a beautiful *Indian Bird*, remarkable for its Song, but of no Use in Medicine.

POLYGONATUM.

The Characters are;

The Flowers are monopetalous, Bell-shaped, tubulated, naked, divided into six Segments, and furnished with six Stamina, which grow out of the Insides of the Divisions. The Ovary, which grows in the Centre of the Flower, produces a long Tube, furnished with a fimbriated Apex; and becomes a soft, globular Fruit, full of roundish Seeds.

Boerhaave mentions seven Species of *Polygonatum*; which are,
1. *Polygonatum*; latifolium; vulgare. C. B. P. 303. *Tourn.* Inst. 78. *Boerb. Ind. A.* 2. 63. *Polygonatum*, *Sigillum Solomonis*: Offic. *Polygonatum*. Ger. 756. Emac. 903. Raii Hist. 1. 664. Synop. 3. 263. *Polygonatum vulgare*: Park. Theat. 696. *Polygonatum*, vulgo *Sigillum Solomonis*. J. B. 3. 529. **SOLOMON'S SEAL.**

The Root of *Solomon's Seal* is about a Finger thick, white and woody; full of flat, seal-like Impressions, creeping upon the Surface of the Earth, with many pretty large Fibres. The Stalks grow to be about a Foot high; single, and not branch'd; round and slender; clothed with pretty large, oval, nervous Leaves, of a bluish-green shining Colour, set alternately on the Stalks, and inclining all to one Side, and having the Top bowing that way. The Flowers come from the Bosoms of the Leaves; on pretty long Foot-stalks, generally two together; being hollow and cylindrical; of one Leaf; parted, at the Ends, into five Segments; these, also, hang all one Way, and are of little or no Scent. They are succeeded by round Berries, green at first, and black when ripe; divided into three Parts; containing small oblong Seeds. It grows in Woods and Copfes, in divers Parts of *England*, and flowers in *May*. The Leaves and Root are used.

Solomon's Seal is vulnerary and restraining; good to stop all Kinds of Fluxes and Hæmorrhages; helps to consolidate Wounds, Fractures, and Ruptures; especially the Root, which, preserved in Sugar, is commended by *Matthioli*, as of great Service against the Fluor Albus. A Cataplasm of the Root is good to take away black and blue Marks, arising from Contusions. *Miller's Bot. Off.*

The Fruit of the *Polygonatum* is black, and cover'd with a Meal like fresh Plums; which, perhaps, deceived *Casalpinus*, who affirms it to be whitish.

Euchsius, to accommodate himself to *Dioscorides's* Description of the *Polygonatum*, fancied he found something like the Taste of Pomegranates in this Species. It might be so, perhaps, in *Greece*; but *Galen* found nothing in it, save an unpleasant Bitterness.

The Leaves of our *Solomon's Seal* are insipid. They have something glutinous in them, which gives slight Nauseas. The Roots are sweet, a little acrid, and glutinous; they give a faint red Colour to the blue Paper; and the Leaves more faint. This Plant seems to contain a viscous Phlegm, mix'd with a great deal of Oil. For, by the chymical Analysis, it yields little besides some acid Liquor and Oil; a little Earth, and fix'd, but no volatile Salt.

Schroder affirms, that fourteen or fifteen Berries of *Solomon's Seal* provoke Vomiting; and they say, that one Dram of its Root has the same Effect. Some macerate half an Ounce of it all Night in a Glass of White-wine, and give the Infusion of it to drink, for several Months together, to those that have Ruptures. The Patients never vomit, and find great Relief; especially if the Roots are applied to the Part at the same time. They are very good, also, for all sorts of Contusions. The distill'd Water clears the Face, and beautifies the Complexion. The Decoction of the whole Plant cures the Itch, and the like cutaneous Diseases. *Martyn's Tournefort.*

2. *Polygonatum*; latifolium; vulgare; cauliculis rubentibus.
 3. *Polygonatum*; latifolium; maximum. C. B. P. 303.
 4. *Polygonatum*; latifolium; flore duplici; odoro. H. R. Par.
 5. *Polygonatum*; latifolium; Hellebori albi foliis. C. B. P. 303.
 6. *Polygonatum*; latifolium; minus; flore majore. C. B. P. 303.
 7. *Polygonatum*; angustifolium; non ramosum. C. B. P. 303.
- Polygonatum*, angustifolium. J. B. 3. 531. *Polygonatum*, alterum. Dod. p. 345. *Boerb. Ind. alt. Plant.*

POLYGONUM.

The Characters are;

The Root is creeping, and very fibrous; the Stalks and Branches are very full of Joints. The Calyx is deeply cut into five Segments, which, in their lower Part, are herbaceous; but, above, of a fuscous Colour; when ripe, the Calyx becomes a Capful of Seed. The Flowers are produced at the Wings of the Leaves, and are conceal'd, in their first Rise, under a very thin Membrane; the Seed is exactly triangular.

Boerhaave mentions two Species of *Polygonum*; which are,
1. *Polygonum*; latifolium. C. B. P. 281. *Tourn. Inst.* 510. *Boerb. Ind. A.* 2. 88. *Centinodium*, *Polygonum*. Offic. *Polygonum mas vulgare*. Ger. 451. Emac. 565. Raii Hist. 1. 184. *Polygonum mas vulgare majus*. Park. 443. *Polygonum sive Centinodia*. J. B. 3. 374. **COMMON KNOT-GRASS.**

The Stalks of this Plant recline pretty much to the Earth, being smooth, and finely chaneled; slender, and branched, full of Knots or Joints, at which grow long oval sharp-pointed Leaves, set alternately on short Foot-stalks. In some Plants these will be broader, and more oval, in others longer and sharper; whence Authors have made two Sorts. At the Joints, with the Leaves, grow several small, staminate, blinking Flowers; sometimes of a white, and sometimes of a redish Colour; in each of which grows a small black triangular Seed. The Root is long and large, and strikes deep in the Earth. It grows every-where by Waysides, and in waste Places; flowering in Summer; the Herb is used.

Knot-grass is cooling, drying and binding, a good Vulnerary, and helpful against all Kinds of Bleedings, either external or internal, as against Fluxes; and outwardly applied, is good for Blood-shot, inflamed Eyes. *Miller's Bot. Off.*

This Plant has an herby, glutinous Taste, and a little Acid; it gives a deep Tincture of Red to the blue Paper; it is likely, that the Salt of Knot-grass resembles Alum, but is mixed in this Plant with a little Sal Ammoniac, and a great deal of Sulphur. For,

By the chymical Analysis, it yields a great deal of Acid, Earth, and Oil, a little volatile, concreted, and very lixivial fixed Salt.

Knot-grass is very vulnerary and astringent; the Juice; Pissan, or Infusion of it in Wine, is given to drink for the Dysentery, Piles, Spitting of Blood, and all Sorts of Hæmorrhages; the Extract has the same Virtues; the Leaves, bruised, cure Wounds. *Martyn's Tournefort.*

2. *Polygonum*; oblongo; angusto; folio. C. B. P. 281. *M. H.* 2. 591. *Boerb. Ind. alt. Plant.*

Polygonum is, also, a Name for several Sorts of *Herniaria*.

Polygonum bacciferum. A Name for the *Ephedra*; *maritima*; *minor*.

Polygonum Cocciferum. See *Coccus* and *KNAWEI*.

Polygonum Germanis. See *KNAWEI*.

Polygonum maritimum. A Name for the *Ephedra*; *maritima*; *major*.

Polygonum minimum. A Name for the *Knawel*; *folio Al-fines*, *glabro*; *flosculis plurimis*.

Polygonum montanum. A Name for the *Paronychia*; *Hispanica*; and for the *Paronychia*; *Hispanica*; *nivea polyanthos*.

Polygonum perenne. A Name for the *Telephium*; *Dioscoridis*.

POLYIDÆ SPHRAGIS. The Name of a Pastil, described by *Celsus*, Lib. 5. Cap. 20. It consists of scissile Alum, four Drains; Virriol, two Drains; Myrrh and Aloes, five Drains; of the Heads of Pomegranates, and Bulls Gall, each six Drains: All which, when triturated, are to be mixed with austere Wine.

POLYMORPHOS. Multiform; an Epithet for the *Os Sphenoides*. See *CAPUT*.

POLYNEURON. A Name for Plantain.

POLYOSTEON. A Name for that Part of the Foot which consists of a great Number of Bones.

POLYPHARMACOS. The same as **POLYCHRESTOS**.

POLYPHOROS. An Epithet of Wine, importing strong and generous.

POLYPODES. The same as **MILLEPEDES**.

POLYPODITES. An Epithet for Wine impregnated with *Polypody*.

POLYPODIUM.

The Characters are;

The Plant is not ramous; the Leaf is cut to the very Rib, into narrow oblong Parts, not adhering to a Pedicle, but with a wide Base embracing the Rib. Oftentimes the Lobes, or Segments, are not divided as far as the Rib, but are continuous, or joined by a leafy Structure. The Fruit grows on each Lobe, in a double Row, parallel to the Rib of that Lobe, and are membranaceous, covered with a thin Pellicle, and surrounded with an elastic crenated Circle, which explicating itself into a strait Line, discharges, with some Violence, angulous Seeds, growing within two very tender Membranes.

Boerhaave mentions six Species of *Polypodium*; which are,
1. *Polypodium*; vulgare. C. B. P. 357. Park. 1039. *Tourn. Inst.* 540. *Boerb. Ind. A.* 24. *Polypodium*, *Quercinum*. Offic. *Polypodium*. J. B. 3. 746. Ger. 972. Emac. 1132. Raii Hist. 1. 137. Synop. 45. *Felix Polypodium dicta*. Herman. Cat. 258. **POLYPODY OF THE OAK.**

This is a capillary Plant, consisting only of pretty large, long, unbranched, pinnated Leaves, whose blunt Pinnæ are very finely indented, and grow not directly opposite to one another on the Stalk, but alternately, a little above one another; the Leaves terminate in a sharp Point, having no Pinnæ on the lower Part of the Stalk: On the back Part of each Pinna, come forth the Flowers and Seed, in double Rows of round Tubercles, of a redish-brown Colour. The Root is slender, and full of small Knots, which appear like the Feet of an Insect, whence it takes the Name of *Polypodium*; it is of a brownish Colour on the Outside, and greenish within, of a sweetish styptic Taste. It grows upon old Walls, and at the Roots of Trees, and in the decayed Bodies of them; that which grows on the Oak, is most esteemed. The Roots only are used.

They are accounted opening, and gently purging; but are rarely given by themselves, but put among those purging Simples, which are stronger; they are supposed to purge bilious, melancholic Humours, and to open Obstructions of the Liver, and to help the Jaundice and Dropsy, and provoke Urine; they are good for the Scurvy, and are frequently an Ingredient in antiscorbutic Diet-drinks. *Miller's Bot. Off.*

The Root, being analysed, yields several acid Liquors, a little urinous Spirit, no concentered volatile Salt, a good deal of Oil, and a moderate Quantity of Earth. The Antients believed this Root was purgative. *Monardes* was the first among the Moderns, who knew that it loosened the Body but very gently. And *Dodonæus* confesses it does not purge at all, unless it is boiled in Cock-broth, with Mallows and Leeks. It sweetens the Blood, and removes Obstructions of the Bowels. It must be used in a dry Cough, when the expectorated Matter is salish, in the Asthma, Scurvy, and hypochondriac Affections. It is an Ingredient in several Compositions. *Martyn's Tournefort.*

2. *Polypodium*; minus. *An. C. B. P.* 358. *Dod. p.* 464.

3. *Polypodium*, sensibile; aut *Polypodium Virginianum*. *Munt. H.* 289. *Herba viva, foliis Polypodii*. *C. B. P.* 359. *Filix Indica, Polypodii facie*. *Mentzel.*

4. *Polypodium*; Cambro-Britannicum; pinnulis ad margines laciniatis. *Raii H.* 137. *Filix, amplissima; lobis foliorum laciniatis, Cambrica*. *Plukn. Phytogr. T.* 30.

5. *Polypodium*; tenerum minus. *Boerb. Ind. A.* 25. *Dryopteris*. *Offic. Dryopteris Adversariorum*. *Ger. Emac.* 1135. *Dryopteris sive Filix Querna repens*. *Park.* 1041. *Filix Querna*. *C. B.* 358. *Filix minor non ramosa*. *J. B.* 3. 740. *Tourn. Inst.* 537. *Raii Hist.* 1. 46. *Synop.* 48. OAK-FERN.

This Plant, the Whole of which is used, grows in marshy and putrid Places: When irritated with its Roots, it takes Hairs off the Body. It is to be apply'd by way of Ointment, and, when the Body is in a Sweat, the Sweat is to be wip'd off, and the Ointment apply'd again. *Discor.* It is possess'd of a septic Quality.

Rondeletius affirms, that he has found bad Effects produced by this Plant, when mixed with Medicines instead of *Polypodium*, by some ignorant Apothecaries of *Dauphiné*. I have sometimes found it in the Shops of some Apothecaries under the Title of *Adiantum album*. *Dale.*

6. *Polypodium*; angustifolium; folio vario. *Tourn. Inst.* 540. *Boerb. Ind. A.* 25. *Lonchitis*. *Offic. Aspera*. *Ger.* 978. *Emac.* 1140. *Raii Hist.* 1. 138. *Synop.* 45. *Aspera minor*. *Park.* 1042. *Minor*. *C. B.* 359. *Lonchitis altera foliis Polypodii*. *J. B.* 3. 744. *Lonchitis altera foliis Polypodii, Asplenium sylvestre nonnullis*. *Chab.* 556. *Filix sive Lonchitis altera foliis Polypodii*. *Pluk. Almag.* 152. ROUGH SPLEENWORT.

This Plant grows in moist, woody, rough, and uncultivated Places. The Herb is proper for agglutinating Wounds, without suffering an Inflammation to come on. When drank in Vinegar, it consumes the Spleen. *Discor.* The Root is aperient and diuretic. *Boerhaave.*

POLYPOSIA, πολυποσία. A copious drinking of Wine.

POLYPUS, πολύπους. A Name for any Animal possess'd of many Feet. But it is generally apply'd to a large Sea-fish, resembling a Cuttle-fish. It has eight Claws or Legs, which serve it to swim, walk, and convey its Aliments to its Mouth. These Claws, tho' distant from each other, are, nevertheless, joined by a large Membrane, which runs between them. The four middle Claws are the largest, in Bulk surpass a Man's Arm, and are all along adorned with a double Range of Tubercles, like small Horns. The four other Claws are call'd Brachia, Crura, Cirri, and Barba. The Eyes of this Fish are lodged at the Root of two of these Claws, and its Mouth, which is furnished with Teeth, is situated in the Middle. It has upon its Back a long Body, which, like a Rudder, it turns sometimes one way, and sometimes another, according as it intends to steer its Course. Its Flesh is not covered with any apparent Skin, but is spongy or porous, hard, and of difficult Digestion. This Fish is found in the *Adriatic* Sea, and feeds upon Shell-fish, human Flesh, when it can find it, Fruits and Herbs: It, also, loves Oil; it has, like the Cuttle-fish, near its Stomach, a Bladder full of a black or redish-brown Liquor, which it discharges, when it intends to conceal itself. Its Eggs are like those of the Cuttle-fish, but of a whitish Colour. It contains a large Quantity of Oil, Phlegm, and Salts, both of a volatile and fixed Kind. Its Flesh, when roasted and eaten, is good against a windy Colic. *Lemery Traité des Drogues.*

POLYPUS.

That Men in the Flower of their Age, and blessed with a naturally sound and robust Constitution, often die suddenly and unexpectedly, is sufficiently confirmed by Experience. Nor are the Vulgar ignorant, though Physicians cannot often account for the Thing, that there are some chronical and violent Disorders, whose Diagnostics and Prognostics are highly difficult, and which are in themselves so obstinate, as to prove mortal. But, the more frequent these Diseases are, and the more fond People are of knowing their Natures, the more surprising it is, that the genuine Causes of such Effects have so long remained latent, till luckily the modern Physicians began to make Anatomical Dissections of the Persons who have died of such Disorders, with a View to discover the genuine Condition of their Viscera; for Medicine has made more Advances in this present Age, by means of Anatomy alone, than were made in all preceding Ages, in which it was neglected; for as, by dissecting Bodies, many Causes of sudden Deaths, and dangerous Diseases, have been detected, so the most considerable of these are the Coagulations and Concretions of the Blood, firmly impacted in the large Vessels of the Heart and Lungs, and known by the Name of *Polypuses*; which, by intercepting and obstructing the free Circulation of the Blood, are capable, not only of destroying all the Functions, but, also, Life; for which Reason they are with Difficulty cured, and ought to have their fatal Causes in due time prevented, or removed by proper Medicines.

But that we may prove, that such Polypose Concretions have frequently been found, in dissected Carcasses, to be the Causes of Death, and incurable Diseases, we shall enumerate a few Instances of this Kind, from the Writings of modern Authors. Thus *Bartholine*, in *Lib. de Lacteis Thoracis*, *Cap.* 14. informs us, that in those who died suddenly, he, upon laying them open, found the larger Vessels of the Heart filled with a concentered Blood. This is, also, evinced by *Bonetus*, in *Anatom. Pract. Lib. 2. Sect. 2. Obs.* 5. where he treats at large of sudden Deaths produced by extraneous Bodies found in the Sinuses of the Heart. And *Fridericus Loffius*, in *Lib. 1. Obs.* 15. mentions a Boy of three Years of Age, who, though seemingly robust, and in good Health, yet died unexpectedly in his Mother's Arms: Upon dissecting the Body, the Viscera appeared perfectly sound, so that, besides an highly coagulated Blood in the Ventricles of the Heart, no other Cause of Death could be discovered. *Carolus Fracastorius*, who had many Opportunities of dissecting those who died suddenly, found nothing as the Cause, but Blood concentered and impacted in the Ventricles of the Heart, and in the pulmonary Vessels. And, that many died suddenly from an Infarction of the Vessels, is sufficiently evinced by *Panarolius*, who informs us, that, in the Year 1656, when sudden Deaths raged so much, many were suffocated by too large a Quantity of Blood retained within the Heart; so that, upon laying open the Bodies of these Persons, he hardly found any other Cause for their Misfortune, than a remarkable Infarction of the Vessels. *Johannes Daniel Horstius*, in *Manuduct. ad Med.* informs us, that in a Person who died suddenly, he found a whitish Phlegm in the Left Ventricle of the Heart. And *Riverius*, in *Cent. 1. Obs.* 82. tells us, that, in the Left Auricle of the Heart of a Man who died suddenly, he found a thick, compact, and entirely white Matter, resembling boiled Bacon.

From what has been said, it is sufficiently obvious, that in all Ages such Concretions of Blood have been formed in the Heart, and larger Vessels, as have produced sudden Deaths, and other incurable Disorders. But since, in the Writings of the Antients, the Word *Polypus* does not occur, we may reasonably conclude, that the Moderns have bestowed this Name upon such Concretions, because they generally send off many Ramifications, dispersed here-and-there among the adjacent Vessels; but, notwithstanding this Interpretation, it is to be observed, that the true Polypuses are only such Concretions, as consist of a whitish, fibrous, and pretty compact Substance, and are widely different from grumous or coagulated Blood; which, though it may create various violent Disorders in several Parts, especially when lodged in the Heart and Uterus, yet it hardly deserves the Name of a Polypus, but is, for the most part, by Authors called a *Pseudo-polypus*.

We now come to consider, why polypose Concretions are so fatal to Mankind. Now these Concretions are principally the Causes of violent Disorders, and of Death, when their Bulk is so increased, or, which more frequently happens, when they are, either by a slight internal, or external Cause, so removed from their Seat, as to intercept and disturb the free Circulation of the Blood from one Ventricle of the Heart, through the Lungs, to the other; or when, by blocking up the Orifices of the Vessels, they entirely destroy the Circulation of the Blood; for so long as small polypose Concretions only adhere to the Sides of the Vessels of the Heart, and of the other Vessels, they

they do not much retard the Circulation of the Blood; and for that Reason do not manifestly injure the Functions. This is confirmed by Experience, which teaches us, that such Concretions may be formed in the Auricles and Sinuses of the Heart, on account of the various Windings, and fleshy Fibrils, about the Divarications of the Vessels, and, also, in other Parts of the Body, whilst, at the same time, the Blood is, notwithstanding, suffered to circulate freely. Thus *Vesalius*, in *Lib. 1. Cap. 5. de Corporis humani Fabrica*, informs us, that, in the Left Ventricle of the Heart of a certain Man, he found almost two Pounds of glandular, but blackish Flesh, the Heart being extended like the Uterus; and he adds, that though the Patient's Pulse was surprisingly unequal and various, yet he walked about like a sound Person for several Months before his Death, till at length, during the last Weeks of his Life, his Pulse became so greatly intermittent, that, during the Time usually requisite for nine natural Strokes of the Pulse, only two or three could be perceived in him.

We next come to consider what Diseases are produced, obstinately sustained, or disposed to an unhappy Termination, by means of polypose Concretions: Among these, the most considerable are various Disorders of the Breast, such as Pleurisies and Peripneumonies, among the acute kind; and, among the chronic kind, all sorts of Asthmas, the suffocative Catarrh, the Chin-cough, the Phthisis, and a Spitting of Blood: As for this last, it is certain from Experience, that, in consequence of a Stagnation of viscid and congested Blood, it easily disposes to polypose Concretions, which, in their Turn, produce a Spitting of Blood; for if, by means of these polypose Concretions, the free Passage and Repassage of the Blood through the Pulmonary Vessels is disturbed, the Blood must necessarily be accumulated in the capillary Vessels of the Pulmonary Artery; and at last, upon the breaking of some Ramification, expectorated by way of Spit, especially in Persons disposed to an Hæmoptysis. For this Reason it is no unusual thing for Polypose Concretions to be found in dissecting Persons, who have died of Spitting of Blood: Thus, in *Hoffman's Consult. Med. Tom. 1. Sect. 2. Obs. 73.* we have an Instance of a young Man of seventeen Years of Age, who died of a Spitting of Blood, accompanied with a slow Fever; and, upon laying open his Body, there was a callous Concretion found in his Pulmonary Artery. *Bonetus*, also, in *Anatom. Pract. Tom. 1. Lib. 2. Sect. 5. de Sputo Sanguinis*, gives us an Account of the Dissection of a Person who died of a Spitting of Blood, made by *Sylvius* in the Hospital of *Leyden*, in the Year 1664. In both Ventricles of this Person's Heart there was found a thick, fibrous, and, as it were, fleshy Matter, extended into all the Vessels running off from the Heart. But, particularly, such a Concretion, above three Spans long, was extracted from the Left Jugular Vein; but this Matter, to which much grumous Blood adhered, was, in the Ventricles of the Heart, of a considerable Thickness, and, in a singular manner, interwoven with the fleshy Fibres of the Heart, which its Fibrils, as it were, embraced. Besides, in the Middle there appeared a grumous Blood, and it seemed to have minute Vessels. I have, also, seen polypose Concretions in those who have died of a Phthisis. And *Baehne*, as we are informed by *Georgius Horstius*, in *Op. Tom. 1.* tells us in express Words, that he almost always found polypose Concretions in those who died of a Phthisis and Dropsy. The Curious may, with respect to this, consult *Needham de Formatione Fœtus, Cap. 2. Malpighius, de Polypo Cordis*; and *Harderus*, in *Obs. 45, 46, and 47.*

An Asthma, especially that which is of the incurable kind, and on which depends a Dropsy of the Breast, is almost always generated and sustained by polypose Concretions. I have often had Opportunities of dissecting the Bodies of such as have died of this kind of Asthma; and found either Polypuses in the Heart, and Pulmonary Vessels, or a fetid Serum extravasated in the Cavity of the Thorax. Nor are there wanting a sufficient Number of Observations to confirm this. Thus the celebrated *Grævius*, a Physician to the Army, in his *Dissertatio de Astmate Convulsivo*, informs us, that, upon laying open the Bodies of fifty Soldiers, who died of Dropsies of the Breast, and Asthmas, he found Polypose Concretions in the Ventricles of all their Hearts. *Lancisi*, also, in his *Treatise de Motu Cordis*, gives us the following memorable Case: A Man of twenty-four Years of Age, of a slender Habit, and accustomed to a gross Air, and coarse Aliments, was seized with frequent Anxieties about the Heart, and Faintings, accompanied with a violent Difficulty of Breathing, and a Refrigeration of the Extremities. His Pulse was small and unequal, and his Jugular Veins and Abdomen were surprisingly tumid, till at last he died of a slow Fever. Upon laying open his Body, his Heart was found wonderfully flaccid and small, with polypose Concretions filling both its Ventricles, and the Pericardium firmly adhering to it. More Observations, with respect to that Asthma which is generally accompanied with a Dropsy of the Breast, may be seen in *Diemerbroeck. Anatom. Lib. 2. Cap. 9. Bartholin. Epist. 2. Cent. 4.*

and *Epist. 56. Cent. 2. Harderus, Obs. 56. Leiver de Cordis, Cap. 2. Pezoldus, Obs. 58. and 61. Russch, Obs. 19. and in the M. N. C. Dec. 2. An. 9. Obs. 174. and Dec. 3. An. 2. Obs. 185.*

A Dropsy of the Pericardium and Thorax not only frequently accompanies an Asthma brought on by polypose Concretions; but, also, dropfical Tumors of other Parts of the Body derive their Origin from the same Cause. Hence nothing occurs more frequently in Practice, than to observe a spasmodic and convulsive Asthma, arising from polypose Concretions, succeeded by a cachectic Habit of Body, œdematous Swellings of the Feet, and sometimes an Ascites; for when the Circulation of the Blood, from the Right Ventricle of the Heart, through the Lungs, to the Left Ventricle, is hindered by such a polypose Concretion, the whole Circulation of the Blood, thro' the Vena Cava, must necessarily be rendered slower; and violent Stagnations by this means must be produced here-and-there in the inferior Parts, and particularly in the Liver, which when obstructed or indurated, the Blood begins to stagnate in the Mesentery, and all the Ramifications of the Vena Porta: Whence the Serum, being secreted, regurgitates to the lymphatic Vessels, which, when too much distended, are formed into Hydatids, the Breaking of which produces a fatal Extravasation of Serum. Memorable Observations of this kind occur in *Rhodus, Cent. 3. Obs. 4. and Peyer, in Hist. Anatom. Cap. 6. Wepfer, in his Exercitat. de Apoplexia*, informs us, that he observed fibrous and pituitous Concretions in the Bodies of those, who, during their Lives, had been for a long time cachectic, or often afflicted with Diseases. *Smetius, in Miscel. Medic. Lib. 10.* gives us a singular Instance of an œdematous Tumor in both Legs, arising from a tense and somewhat hard Polypus, and which, reaching as far as the Thighs, formed a full and hard Tumor in the lower Belly between the Pubes and the Navel, and which at last filled all the Region of the Abdomen. *Bonetus*, from *Boyle, Obs. 9.* makes mention of Polypuses in the Hearts of two Women, one of whom died of a Dropsy, and the other of a Cachexy. And *Albinus*, in *Dissert. de Polypis, Thes. 5.* mentions a memorable Species of Dropsy in a Man for some time afflicted with a Difficulty of Breathing, Palpitations and Anxieties of the Heart, who had Tumors in his Arms, and his Veins tumid, and protuberating into Knots, in consequence of a pretty large Polypus ascending from the Right Auricles of the Heart into the Trunk of the Vena Cava, and sending off Ramifications; but, in such a Situation, the Dropsy infallibly proves mortal.

But, waving the farther Consideration of an Asthma, and of a Dropsy, which often accompanies it, we now come to investigate the other Disorders of the Breast, which arise from polypose Concretions. The most considerable of these may be justly accounted the suffocative Catarrh; for, upon laying open the Bodies of such as have died of this Disorder, polypose Concretions have, for the most part, been found to be the principal Causes of Death, as is obvious from *Bartholin. Cent. 2. Obs. 86. Greiseli, in M. N. C. An. 1640. Obs. 74. and Malpighi de Polypo Cordis*; for the last-mentioned of these Authors informs us, that in all those he had laid open, who died either of an Apoplexy, or of a suffocative Catarrh, he found callous, viscid, and glutinous Bodies in the Heart and Brain, and frequently in both. Nor must we overlook a Palpitation of the Heart, which is, for the most part, and, when of the chronic kind, almost always, produced by polypose Concretions. But, referring the Curious to the Article PALPITATIO, we come to consider those inflammatory and highly acute Disorders of the Breast, a true Pleurisy, and Peripneumony, which often arise from Stagnations of the Blood, produced by polypose Concretions. Thus *Malpighi*, in his *Treatise de Polypo Cordis*, affirms, that the Bodies of pleuritic Persons, when laid open, are found to contain a large Quantity of white Portions of concremented Matter, not only in the Præcordia, but, also, in the Liver and Veins. *Willis*, in his *Treatise de Febribus, Cap. 11.* informs us, that, upon laying open the Bodies of those who died of Pleurisies, the Blood has been found concremented into long Portions in the Sinuses of the Heart, and every-where about the Cavities of the Vessels. *Peyer*, also, in his *Exercitat. Anat.* mentions a Man of Sixty, who died of a Pleurisy changed into a Peripneumony; and, upon opening his Body, there appeared in his Heart large and tenacious polypose Concretions, resembling Portions of Fat.

Polypose Concretions prove the Causes of incurable Diseases, not only in the Heart, and annexed Pulmonary Vessels, but, also, in other Parts, especially the Veins, as is obvious from Dissections. Thus various Observations in *Wepfer, Peyer, Willis, Blasius*, and in *M. N. C.* sufficiently evince, that violent Cephalalgias, Apoplexies, and Deliriums, have been excited by Polypuses found within the Jugular Veins, and in the Sinuses of the Brain; but no Part of the Body is more disposed to the Generation of Polypose Concretions, than the Uterus, in whose Veins, on account

of their winding Complication, and the consequent slow Circulation of the Blood through them, such Polypose Concretions are easily formed, which afterwards lay a Foundation for frequent Abortions, immoderate Hæmorrhages of the Uterus, copious Effusions of Serum and Lymph from it, a Dropsy thereof, and Barrenness.

Having thus considered those incurable Disorders, and such as cannot be cured without the greatest Difficulty, which arise from Polypose Concretions, we shall now subjoin some Phenomena, by means of which it may be known, whether these Polypose Concretions are lodged in the Præcordia, where they have their principal Seat. But, among all the Signs which evince this, the most considerable are, a long-continued Palpitation of the Heart, often excited by a slight Cause, such as the Commotions of the Mind, flatulent Aliments, and such as render the Patient costive; for such is the Nature of these things, that, by disturbing the equable Circulation of the Blood, they produce a greater Impetus thereof to the Heart, where, being preternaturally congested and accumulated, on account of the obstructing Polypus, it cannot find a sufficient Space for expanding itself, but violently distends the Heart, and its Vessels; by which means it produces a violent Anxiety, and convulsive Motion of the Heart, which is called a Palpitation. Immediately after this, arises another Sign, which is, the Inequality and Intermision of the Pulse, often accompanied with Faintings; for as the Pulse is generally the best Circumstance, by which we can judge of the Motion of the Heart, and of the Circulation of the Blood through all the Parts of the Body; so, if it is irregular, or plainly intermittent, it, if other Circumstances concur, lays a Foundation for suspecting, that some Polypose Concretion, by its Bulk, disturbs, or, for some time, intercepts, the due Constriction of the Heart, and other Vessels, on which the Circulation of the Blood depends. Nor must we exclude, from the Signs which manifest a Polypus, a frequent Obstruction of Breathing, without a manifest Cause; a Compression of the Præcordia, in consequence of spasmodic Strictures of the Breast, and, what most generally accompanies this, a fixed Pain about the Heart; for each of these, if they are almost perpetual, are palpable Signs, that the Circulation of the Blood is obstructed by some foreign Body.

We now come to consider Polypose Concretions in a more particular Manner, and account for their Generation and Production. First, then, 'tis to be observed, that all Polypuses are not of the same Texture, Colour, and Bulk; for some are found so solid, hard, and so compacted of Fibres, that they seem to resemble small Tendons; whilst others are soft, composed of mucilaginous and thin Pellicules, and externally covered with a Membrane. Some are so large as to weigh a few Ounces; some, on the contrary, are smaller, and have sometimes many pinguious Parts intermixed with them. That the Colours of Polypose Concretions are widely different, is sufficiently obvious, from the various Denominations given them by Authors, especially those of a pretty antient Date; for sometimes they are represented under the Idea of Fat, which, according to some, is white, and resembles Candle-tallow; and, according to others, of a whitish yellow Colour, resembling that of the heated Marrow of Bones; at other times they are said to resemble Flesh, and at other times other Substances. Polypuses also differ in this, that some of them being rooted in the Right, and others in the Left Ventricle of the Heart, send off more or fewer Ramifications to the adhering Arteries and Veins; as also, in this, that some are by their own Bulk sufficient to prove mortal, by blocking up the Mouths of the Vessels; whilst others only produce that Effect, by being moved out of their Places.

But from sufficiently important Considerations, I am induc'd to think, that the Matter of Polypose Concretions is supply'd by the more weighty, viscid, and fixed Particles of the Chyle and Lymph, which by their Motion are easily united, and so form'd into one Mass, as to form a fibrous and membranous Body. This is sufficiently confirmed by various Experiments, made with respect to the Generation of these Substances. Thus *Ruyfch*, that incomparable Anatomist, in his *Thesaur. Anatom.* 6. informs us, that of his own Blood, only by shaking, he formed a kind of spurious Membrane, which was furnish'd with many Stamina or Fibres, and so much resembled a genuine Membrane, that it was universally believed to be the Work of Nature: And in his *Thesaur. Anatom.* 1. n. 3. he tells us, that by strong Conquassation alone, continued for the Space of one Hour, he produced a Polypose Substance from the Blood of a newly killed Sow: Hence, we are enabled to form a distinct Idea of a Polypus; which may justly be defined, a certain solid, fibrous, Concretion, formed of the more viscid Parts of the Lymph, by means of a strong Motion, or Impulse.

Tho' Polypuses are formed in both Sinuses of the Heart, and in the Arteries as well as the Veins, yet 'tis certain from accurate Observation, that they are more easily and frequently formed in the Right Auricle and Ventricle of the Heart, than in the Left; as, also, more commonly in the Veins than in the

Arteries: Nor is this hard to be accounted for, since the Chyle, which, by means of the Subclavian Vein, is convey'd to the Vena Cava, and the Right Ventricle of the Heart, being full of gross Particles, and moving slowly, easily deposits its heavy Parts, by which the Columna of the Heart being embraced, one Substance, or Body, as it were, is produced. Then the Blood convey'd to the Veins, by means of their too weak contractile Force, circulates more slowly, is of a thicker Consistence, and more weighty, than the arterial Blood: Hence it easily deposits its thick Parts; but especially, when these, not being intimately mixed, cohere slightly, they, by the Force of their Gravity, tend most to the Bottoms and Sides of the Vessels. But it is otherwise with the arterial Blood; for, as this is not only considerably promoted in its Course, by the elastic Motion of the Arteries, but, also, in the Lungs, impregnated with an highly subtil aereo-ethereal Matter, and intimately mixed, by being forced through very minute Vessels, so 'tis by these means rendered more light and red: Hence the Reason is obvious, why the arterial Blood is less fit for the Generation of Polypuses, than that of the Veins.

Nor only those advanced in Years, but also Children and Infants are found subject to Polypose Concretions. That such Misfortunes are incident to Adults, is universally allowed; for which Reason we shall here give a few Instances, in which such Polypose Concretions have been found in Infants: Thus *Albinus*, in his *Dissert. de Polypo Cordis*, gives us an Instance of a Polypus blocking up the Auricle of the Heart, in a very young Boy. *Bonetus*, in *Sepulchret. Anatomicum*, Lib. 2. Sect. 11. Obs. 6. mentions pretty large Polypuses found in the Sinuses of his young Son's Heart. *Snell*, in his *Dissertatio de Cordis Polypo*, tells us that in a Boy of six Years of Age, who died of an Atrophy, he found a Polypus in each Sinus of the Heart. *Dorstenius*, in *E.A.C. Dec. 2. An. 3. Obs. 153.* mentions four extraneous Bodies, found in the Left Ventricle of the Heart of a very young Boy; and in *E.A.C. Dec. 3. An. 2. Obs. 18.* an enormous Polypus, found in a Youth, is described. This might be proved by a great Variety of Instances. 'Tis not, however, to be denied, that Adults, and those pretty far advanced in Years, are more disposed to the Generation of Polypuses than those who are younger; for the Blood peccant both in Quantity and Temperature is more easily accumulated, when the Work of Nutrition is over, than when it is carrying on; especially, when, in consequence of numerous and large Vessels, and a diminished Elasticity of the Solids, any one is disposed to a Plethora, addicted to an idle Life, without Exercise, or has the Misfortune of an improper Diet.

We almost always find Men more subject to Polypuses, and the Diseases produced by them, than Women; the Reason of which is, in my Opinion, this, that in the Female Sex, whilst the menstrual Evacuations are duly carried on, the Quantity of Blood is not so easily increased; and, in consequence of the Laxity of the Fibres, and greater Fluidity of the Humours, or a Blood more abounding in Serum, it more difficultly happens, that the gross Particles unite, and form themselves into Concretions. 'Tis, also, to be observ'd, that in marshy Places, and Northern Countries, far more die of Polypose Concretions, than in the hotter Climates: Which, in my Opinion, besides the cold Air, and the more obstructed Perspiration, is principally, to be ascribed to the gross Aliments, such as Sea Fish, coarse Bread, smoked and salted Flesh, from which a tenacious Chyle, full of terrestrial Particles, and consequently a thick Blood, is generated.

We now come to consider the procaccatic Causes of Polypose Concretions; the most considerable of which is a Redundance of Blood; for, in consequence of an increased Diastole of the Vessels, under a plethoric State, the Fibres lose their Elasticity; by which means, the Systole of the Vessels is diminished, the Circulation of the Blood surprisingly retarded, and a palpable Foundation for the Cohesion of the terrestrial Particles laid. Besides, in consequence of this, an Obstruction of the Vessels happens; the great Tendency of which to the Generation of Polypuses is sufficiently obvious from an Experiment made by *Lancisi*, in *Lib. de Aneurismatibus*, Propos. 38. where that Author informs us, that with a waxed Thread he tied a certain Ramification of the Iliac Artery of a live Dog; and that, upon cutting the Ramification, without the Ligature, about fifteen or twenty Days after, he found a Polypose Concretion: Nor is it difficult to account for this, since, by making such a Compression, the more tenacious and least moveable Parts of the Blood, being mutually united, begin gradually to adhere to the Sides of the Vessels, till at last their Bulk being increased, they constitute a thick and fibrous Substance, called a Polypus. But not only a Redundance, but, also, a Penury or Scarcity, of Blood lays a Foundation for Obstructions, and consequently for Polypose Concretions. Hence I have frequently observed copious and frequent Hæmorrhages succeeded by the same Disorders, which are produced by Polypuses; for since, in consequence of the Distention, the Fibres are rendered more lax, and the Pores larger, they transmit all kinds of thick and viscid Humours, which are fit for generating Polypose Concretions.

As Length or Tenuity of Body disposes to various Diseases, so it, in a particular manner, contributes to the Generation of Polypuses, and all the Disorders arising from them; for, in tall Persons, the perpendicular Ascent of the Fluids is difficult: Hence, the Circulations in all the Parts of the Body become slower, and Stagnations and Obstructions of the Viscera are easily formed, but especially of the Lungs, where the Blood circulating with Difficulty, stagnates in the minute Vessels, and the secreted heavy Parts are, in Process of Time, condensed into a thick Mass. If this Account of the Matter is not sufficient, it may be still farther confirmed by Experience, which reaches us, that excessively tall Persons are not only inferior in Gaiety of Temper, and Strength of Body, to such as are of a lower Stature, but, also, far more subject to the Diseases arising from a slow Circulation, and Stagnation of the Blood, such as Polypose Concretions, a Phthisis, an Asthma, and a Difficulty of Breathing.

But nothing is more injurious to the human Body, or has a greater Tendency to occasion sudden Death, than large Draughts, of cold Liquors, hastily drank after any violent Commotions or Over-heating of the Body. Thus *Galen*, in his Book *de Sanitate tuenda*, justly thinks that such a Practice induces a Cough, and Difficulty of Breathing; weakens the Brain, and excites Defluxions from it; impairs the Strength of the Stomach, and injures the Nerves; for such is the pernicious Nature of Cold, that, by stopping the intestine Motion of the Fluids, it not only coagulates the Blood, but, also, precipitates the terrestrial and gelatinous Parts; Hence 'tis not to be wondered at, if Obstructions, Inflammations, and Polypose Concretions, should be produced; which last may be observed, when Blood flowing warm from the Veins is suffered to fall into cold Water; or, when warm Water, in which such Blood has fallen, becomes cold; for, in this Case, the fibrous and more heavy Part will be separated and precipitated from the other, in a most beautiful manner. Many Instances might be alleged, in which the drinking cold Liquors has suddenly prov'd mortal.

Both Experience and Reason concur to evince how effectually Acids, and spirituous Liquors, contribute to induce violent and dangerous Coagulations of the Humours; for, according to a known Experiment, Blood which is sufficiently fluid, when taken from the Veins, is by an Affusion of any acid Liquor, or rectified Spirit of Wine, forthwith coagulated into an hard Mass. Now none who accurately advert to this Circumstance, can doubt but the same may happen in the human Body, tho' not in the same Time and Manner. But if they should doubt of this, let them remember into what violent and chronic Disorders, arising from Obstructions in the Viscera, such as a Phthisis, a Cachexy, a Dropsy, a convulsive Asthma, and excessive Hæmorrhages, great Drinkers of Brandy, and spirituous Liquors, bring upon themselves.

Nor are we to overlook the Affections of the Mind, especially Anger, Frights, and Sorrow, which lay a sufficient Foundation for Polypuses, and the Disorders arising from them. Without making a curious Inquiry into the latent Causes of so singular an Effect, we shall only give some memorable Instances of the Facts. Accordingly, the celebrated *Malpighi* gives us an Account of a Patient, otherwise sufficiently robust, who, by means of a Fright, was seized with a great Inequality and Obscurity of the Pulse, especially in the Left Wrist, without any Fever, and a recurring Difficulty of Breathing. But soon after he expectorated by Spit, sometimes a Portion of red Blood, and at other times a large Quantity of small white Portions of Matter, not unlike Polypuses. But afterwards his superior Parts became turgid, and he was suffocated by the Redundance of confined Blood. *Riverius*, also, in *Cent. 4. Obs. 2.* gives us an Instance of a certain Man of Distinction, who, having the Misfortune of a sudden and unexpected Fright, complained of a violent Tremor of his Heart, a Difficulty of Breathing, together with an unequal and intermittent Pulse, till he soon after died; when, upon laying open the Cavity of his Breast, the Heart, and larger Vessels, were full; and in the Left Ventricle of the Heart were found round Caruncles, resembling the Substance of the Lungs, the largest of which, approaching to the Size of an Hazel-nut, blocked up the Mouth of the Arteria Aorta.

Nor must it be forgotten, that the preposterous Methods of curing violent Hæmorrhages, and intermittent Fevers, by Astringents, Opiates, Chalybeates, and even the Peruvian Bark, greatly contribute to bring on violent chronic, and even incurable Disorders, which are produced and supported by Polypose Concretions. And I can, after a Practice of more than fifty Years, affirm, that I have known more Mischiefs done by no Medicines, than by the unseasonable and incautious Use of these; since I have seen, not only acute and mortal Disorders, such as Apoplexies, Epilepsies, and suffocative Catarrhs, but, also, long and chronic Disorders, such as a Phthisis, a convulsive Asthma, hypochondriac and hysterical Disorders, violent Hæmorrhages, slow and hectic Fevers, pro-

duced by this means. If we inquire whence so many Misfortunes arise, it is to be observed, that the Cause of these terrible Disorders is principally to be sought for, in the slow and retarded Circulation of the Blood and Humours through the minute and capillary Vessels of the Body; for, by this means, the natural Secretions and Excretions, which are, also, made through minute Emunctories, composed of subtile Vessels, are surprisingly retarded: Hence arise various Stagnations in different Parts, Infarctions and Indurations of the Viscera, together with a large Train of other Symptoms. Now if a Physician, in such a State where there is already a Thickness of the Blood and Humours, and a slow Circulation, or where violent Spasms strongly compress the Vessels, should exhibit astringent and in-craffating Medicines, or even those of the sedative Kind, he must necessarily do his Patient a considerable Injury, by rendering the Disorder more terrible. This happens the more infallibly, if the preposterous Use of these Medicines is too long persisted in: Nor can it be doubted, that such Polypuses as may prove the Causes of incurable Diseases, may be produced by these means; and I have had Opportunities, in many Diseases arising from this preposterous and empirical Method of Cure, sometimes of prognosticating Polypose Concretions, from pretty certain Signs; and sometimes of seeing them, in dissecting such Patients after Death.

Thus we have consider'd the principal Causes which concur to the Generation of Polypuses: And, with respect to the other Causes, as they rarely occur, so they may be easily reduced to some one or other of those already mentioned.

The CURE.

So obstinate are most Persons, that they rarely think of attacking the Beginning of Diseases, but call for the Physician, and the Assistance of his Art, when, their Disorders being increased by Delay, they have a near Prospect of Death: But, by this means, they only hasten the fatal Day, which, by a speedy Use of proper Medicines, might have been totally averted. Persons afflicted with polypose Concretions are the more culpable in this respect, since it is certain from Experience, that their Cure is, at best, difficult and dubious, and, when the Disorder is of long Standing, absolutely impossible; for, if any Assistance is to be expected in those Diseases arising from an intercepted Circulation by means of Polypose Concretions, great Expedition is absolutely necessary: And the principal Intentions of the Physician ought to be to hinder the Generation of such Concretions, and to prevent their Increase, and injurious Effects, where they are already present.

First, then, in order to prevent the Generation of Polypose Concretions, our principal Care ought to be, to dilute and resolve the inspissated Blood, and duly to diminish its Quantity in plethoric Habits. In order to obtain this End, nothing is of more Importance than a right Regimen, and Method of Living; for which Purpose let their Diet be spare, slender, and moistening; and let the Patient abstain from all hard, acid, saline Aliments, and such as afford much Nourishment: Let his Drink be of a proper Quality, and very thin. For this Purpose he may very commodiously use small and pure Beer, or Spring-water, either alone, or mixed with a due Quantity of Wine, or a Decoction prepared of mild and aperient Ingredients; among which the most considerable are the Roots of Vipers-grass and Sarsaparilla, together with China Root, and the Bark of Sassafras-wood; for, by these means, the Purposes of Dilution and Resolution will be excellently obtained. To these Measures let the Patient, also, add frequent Exercise, by which the Fluidity and equal Circulation of the Blood through all the Parts are greatly promoted. But all Persons, especially those of fat and plethoric Habits, ought carefully to guard against violent Exercise suddenly begun, since, by this means, too much Blood is projected to the Lungs, where circulating slowly, it is easily coagulated. In order to prevent this, it is expedient forthwith to drink some warm Liquor; which is still the more necessary, if, after the Body has been over-heated by violent Exercise, it is suddenly cooled; or, which is worst of all, if large Quantities of any cold Liquor have been drank. Besides, the Air the Patient breathes ought to be pure, serene, and temperate, neither too hot, nor too cold, nor too moist. But, if the Patient cannot have the Benefit of such an Air, such Infusions as promote Perspiration, have an excellent Tendency to attenuate the Fluids, and disjoin the united Molecules.

The Patient ought, also, to guard against violent Affections of the Mind, especially Grief, Anger, and Frights: But if at any time a Change is induced on the Body by these, such things are with all Expedition to be used, as allay violent Commotions, and render the disturbed Circulation of the Blood again regular and equable. Thus, if the bad Effects of a sudden Fright are to be removed, such Medicines are most efficacious as are gently resolvent, and promote a mild Perspiration; because, perhaps, by this means, that Part of the Mass of Blood which

which was beginning to be coagulated, is most commodiously resolved: For this Purpose I always, with great Success, exhibited the *Pulvis Marchionis*, either alone, or with a few Drops of the anodyne Liquor, taken in Cinnamon-water, or Baum-water prepared with Citron-juice and Wine; after which I order some Cups of a warm Infusion to be drank: And this Method I, also, found highly beneficial in those wasted by long Grief. Besides these Measures, in violent Frights, moderate Exercise is greatly to be commended; since by it the Heart is enabled more easily to free itself from the Quantity of Blood congested to it, in consequence of which the Disorder becomes less terrible. Those, therefore, but ill consult their own Advantage, who, immediately after a Fright, betake themselves to a State of Rest, or endeavour to fall into a profound Sleep.

Care must, also, be taken, that the Body be duly soluble; and, if the Patient is costive, Clysters, or balsamic Pills, are, with all Expedition, to be used, in order to remove this Misfortune. Nor is less Care and Prudence requisite, that the other Passages subservient to the Secretion and Excretion of the Humours, be kept free and open, lest, as it generally happens, these being obstructed, the Mass of Blood should be contaminated, and rendered impure: But it ought, in a particular manner, to be the Physician's Care, that no natural Evacuation of Blood, such as the Hæmorrhoids in Men, and the Menfes in Women, be either totally suppressed, or too long retained; for, in this Case, there easily happen dangerous Congestions of Blood to other Parts, which, by the skilful Physician, may be commodiously prevented, by proper Venesection, Pills, and other Medicines of a gently balsamic and temperate Quality. Nor are artificial Evacuations of Blood to be neglected; but these are still more strictly to be regarded, if the Patient is plethoric, and has, by long Custom, render'd them natural to him.

Having laid down these Rules, with respect to Regimen, we must, among the Class of Medicines calculated for inciding and resolving the inspissated Fluids, recommend Salts of a neutral and alkaline Nature, such as the Arcanum Duplicatum, vitriolated Tartar, Nitre, the digestive Salt of *Sylvius*, the aperitive Salt, Oil of Tartar per Deliquium, the Terra foliata Tartari, and the Liquor of fixed Nitre. Among spirituous Preparations, this Intention is answer'd by the Essence of white Burnet, the *Tinctura Antimonii Acris*, and others of a like Nature. But, among all the Medicines, I know none is so powerful in dissolving those Parts of the Blood which are fibrous, and disposed to Concretion, as mineral Waters, especially those which are impregnated with an alkaline Salt, and of a mild and temperate Quality; such as the *Embsen* and *Selteran* Waters, those of *Aix la Chapelle*, but especially the *Caroline* Springs, which, by their Salt, open all the Emunctories of the Body, wash away and evacuate the impure Sordes, and resolve and dilute the thick and viscid Blood.

Having already shewn the Method of preventing Polypuses, we now come to inquire what Measures are to be taken, when there are any Signs of a Polypus already formed in the Heart, or larger Vessels, and by what means its farther Growth may be prevented: It is, therefore, to be observed, that whilst a Polypus is only beginning, and, as yet, pituitous, we are not to lose all Hopes of resolving it, which may be done by alkaline and neutral Salts, which excellently resolve the viscid Humours; by a slender Diet; by a sufficient Quantity of Drink of such a Nature as to dilute the Humours; but, especially, by the *Caroline* Waters; by the prudent Use of which I have known many cured, who had strong Symptoms of a Polypus formed within. But if the Polypus has already degenerated into a fibrous and hard Substance, all possible Care is to be taken, lest, becoming bigger, or, being moved out of its Place, it should totally block up the Vessels, and suddenly destroy the Patient. For answering this Intention, it is of the greatest Importance to prevent a Redundance of Blood, and to preserve its Fluidity, by the Medicines already recommended for that Purpose. But, when a Difficulty of Breathing arises from a Polypus, we must by no means use Venesection in the Arm, since, by that Practice, a greater, and even a suffocative Congestion is produced. Besides, let the Patient avoid all spirituous Liquors, too much Exercise, and Perturbations of Mind, all which, partly by coagulating the Blood, and partly by throwing it into too violent Commotions, render the Disorder worse.

We shall now subjoin some Cautions with respect to the Treatment of Hæmorrhages, and Intermittent Fevers. We have already shewn how faulty Physicians are in this respect; for which Reason I sincerely advise, that, in stopping Hæmorrhages, the Physician would not attempt the Cure by Astringents alone, but rather by a proper Evacuation of Blood, and gently anodyne Medicines; as, also, by Frictions of the inferior Parts, to restore the equable Circulation of the Blood. With respect to the Cure of Intermittent Fevers, the greatest Care is to be taken, that they be not too soon suppressed; for which Reason it is ex-

pedient prudently to use gently aperient and evacuating Medicines; to which we may commodiously subjoin, and even interpose, resolvent, temperating, and corroborating Medicines. *Hoffman.*

POLYSARCIA, *πολυσαρκία*, from *πολύς*, much, and *σὰρξ*, Flesh. Corpulence.

This is a superfluous Increase of Flesh, by the Greeks so called, on account of its Excess. It is a Disorder directly opposite to that, in which Nutrition ceases, and in which the Body becomes tabid and consumptive. Too large a Quantity of Nourishment conveyed to the Parts, is the Reason, why an excessive Quantity of Flesh is generated, and the Patient, by that means, oppressed. We may justly reckon this to be a Species of Cachexy; for the Patients are afflicted with several terrible Symptoms, such as a superfluous Quantity of Flesh, an Excess of prominent Fat, Slowness of Motion, Oppression, Weakness, Difficulty of breathing, and Sweating upon the least Exercise; so that the Patient becomes apprehensive of Suffocation, and can hardly wear the slightest Garments. Many Physicians have, therefore, given Rules for diminishing the Quantity of Flesh, or preventing an Increase of the Body. But their Doctrine is refuted by *Soranus*; for, if the Habit of Body is good, a moderate Quantity of Flesh, accompanied with Strength, is rather to be preserved, than destroyed. But the *Polysarcia* we call a Disorder, which may be justly accounted a Cachexy, and is accompanied with many dangerous Symptoms; for all the Misfortunes, which attend voracious Animals, or those fattened for Use, such as Inflation, Extension, and Prominence of the Body, also, attend those afflicted with a *Polysarcia*. The like happens in ulcerated Bodies, in which the luxuriant Flesh is either consolidated, or springs up afresh on the Lips of the Ulcers, after it has been removed.

There are two Methods of curing a *Polysarcia*, the one by preventing too copious Nourishment, and which consists in quick Gestation, and the Use of such mild Aliments, as do not nourish much, or have a Tendency to increase the Body; the other consists in the Observation of certain Rules, and laborious Exercise, in order to induce a Change on the Body: But, for the sake of Distinctness, we shall give more particular Directions with respect to the Cure. It is, therefore, expedient to exercise the Patient much and long, either on Horseback, or in Coach; to order him to sail, to read, and use his Voice; to wrestle, and walk quickly, that his Legs may be the more exercised: He must, also, run, and have the Parts of his Body rubbed with the Hands dry, or with a rough Linen Cloth, and some Sand sprinkled on the Parts; then he is to use various *Pæstrian* Exercises, such as that which the Greeks call *μελαδία* and *Choricomachia* (perhaps *χευμαχία*); which Exercises are directed by their respective Masters: Then he is to use what the Greeks called *ἀπλομαχία*, that is, a Mock-fighting with Arms: Then he is to use the Exercise of Wrestling, which the Greeks called *ἀτεροκοπία*, or *τεχνηλισμός*. He is, also, to use the long tractary Machine, called by the Greeks *Macro-sparton*, and the Italians *Sphere*, and Wrestling; as, also, quick, hard, long-continued, and dry Frictions; for if the Parts are rubbed with Oil, the Hands slip, and the Patient cannot perform his Exercise with due Vigour. The Patient's Body must, also, be exposed to the Sun, a Practice which the Greeks call *ήλιωσις*. Then a Sweat is to be excited by means of a Flame, live Coals, and dry Steams. Sometimes Hot-baths, which diminish the Body, and, at other times, Cold-baths, which condense it, are to be used; for the Bodies of such as have used the Cold-bath are perceived to be thick, and, as it were, testaceous. It is, also, expedient to apply hot Sand to the Body, and to swim in the Sea, or in Medicinal Waters. After Sweating in the Bath, the Body must be sprinkled with Salt, by which the Fleshes of Animals are preserved dry, dense, and free from Withering. Then the Patient is to use what the Greeks call *zegma*, (perhaps *smegma*) a Friction of Nitre reduced to Powder; and, after Bathing, Meat and Drink are to be long abstained from; for then the Appetite begins to languish, and its Edge is obtunded by the Delay; the Keenness, also, of the Digestion languishes, when the Fomes, which sustained it, is withdrawn. Drinking before Eating is to be forbidden, and very little is to be drank at all, though the Patient may drink most at Meals; for, by drinking much, the Aliments are rendered fluid, the Flesh softened, and by Digestion, the Food is rendered capable of adhering to the Solids, and, consequently, of increasing the Solids: But if the Patient is afflicted with an insatiable Thirst, he may drink a small Quantity of moderately sharp Wine. But Puls, Alica, Flour, Milk, Nuts, the Brains of Animals, Eggs, tender Fishes, and all pinguious Substances, are to be abstained from; but the Patient may eat Bread that is cold, fermented, and prepared with the Bran; for such Bread nourishes but little, especially if it is old. Dry Aliments are, in a particular manner, beneficial; Pot-herbs, and Fishes of hard Digestion, are to be used; as, also, the drier Sorts of Birds, and wild Aliments, such as Hares, and

and wild Goats; as, also, Pork long dried in the Salt. The Patient ought, also, to use but one kind of Aliment at a Meal, and keep from sleeping a great while after it; for, by Watching and Restlessness, the Bulk of the Body is much impaired by Exhalation; whereas it is fattened, and its Bulk increased, by Sleep. Besides, the Body is, by Sleep, rendered more moist. Cold Liquors are to be drank, and, during the Continuance of the Polyfarcia, the Metasyntetic Cyclis is to be begun; for sometimes the Patient is to use total Abstinence, and sometimes to take but a small Quantity of Aliments and Water, which is to be regularly augmented, as the Situation requires. We are to begin the Cure by Vomiting, the Patient fasting, or by an Exhibition of proper Roots. Then the Patient is to use acrimonious Substances, Things of a neutral Quality, Birds, and wild Animals. These Measures are the more expeditiously to be taken in a few Days, the more severe and violent the Beginnings of every Cyclis are. Diuretics are, also, to be exhibited among other Pot-herbs; such as Asparagus, Carrots, Parsneps, Smallage, Fennel, Leeks, and other Things of a like Nature; for by this means a Change may be induced on the Body by the Use of common and ordinary Aliments. We must, also, have a due Regard to the various Symptoms in the Cure of this Disorder. Some Physicians recommend Phlebotomy, purgative Medicines, Clysters, the Use of Venerly after Bathing, and before Meals, and on the same Day a small Quantity of Nourishment, and Water for Drink: They, also, recommend Vomiting after Supper. Some, also, as contrary to the Polyfarcia, recommend Exercising the Body by Pandiculation, after rising out of Bed, which they call *articularis*; as, also, the Drinking Night-dew, before the Rising of the Sun. But the Madness and Absurdity of late Physicians is sufficiently obvious; for, by Phlebotomy, the Strength is impaired, and the Patient's Body rendered flaccid, which the Greeks call *paræsis*. Purgative Medicines, such as Clysters, and those above-mentioned, corrupt the Fluids, and induce a bad Habit of Body, by the Greeks called *Cachexia*. Venerly, also, renders the Patient effeminate, and destroys his Strength. Some, also, order Bathing twice a Day, and Sleep before Meals; but this is very improper, since Sleep rather renders the Patient fat, than lean. Vomiting, also, after Supper, destroys the Strength; and though it diminishes the Flesh, yet it fills the Head with Fumes, disturbs the Organs of Sensation, renders the Gums putrid, corrupts the Breath, corrodes the Stomach, and renders the Patient disagreeable to himself, which the Greeks call *Δυσάρεστος*, and which is accompanied with a State of Inequality, resembling that of Fevers. Besides, Vomiting is improper, and justly to be condemned, because, by corrupting the Juices, it does more Harm to the Body. But if the Patient has eaten too large a Quantity of Aliments, then a Vomit is to be exhibited; for the Uneasiness arising from the Excess is greater than that produced by the Vomit. Close and violent Application of Mind, also, contributes greatly to the Cure of the Polyfarcia; for which Reason we observe the Bodies of close Students more thin and slender, than those of Persons who lead lazy and indolent Life, whose Bodies are more full and solid. *Cælius Aurelianus. Chron. L. 5. C. 11.*

POLYSOMATICA. The same as POLYSARCIA.

POLYSPASTON, from *πᾶς*, much, and *σπάω*, to draw. The Name of a Machine for making Extension, in case of Fractures, or Luxations. See the Article FRACTURA, and the Explication of Table XXIX.

POLYTRICHUM; see TRICHOMANES.

POLYTRICHUM AUREUM; see ADIANTHUM AUREUM.

POLYTROPHIA. Abundant Nourishment.

POMACEUM. Cyder.

Cyder is the Juice of Apples, made spirituous by Fermentation; the Apples are gathered in Autumn, when they are ripe; then they are ground in a Mill, the Juice is pressed out, and left to ferment in Hogheads.

There may be as many Sorts of Cyder made, as there are different Sorts of Apples. Apples that are commonly eaten, and are of a sweet pleasing Taste, produce Cyder that will not keep; and therefore others are preferred for this Purpose. These Apples are of a curious Colour, but they have an harsh, bitter, and styptic Taste; which makes the Cyder pungent, strong, and to keep long. Cyder ought to be fine, of a curious gold Colour, having a pleasant Smell, and a pungent sweet Taste.

Cyder is pectoral; fortifies the Heart and Stomach; moistens, and quenches Thirst; and is looked upon to be good for scorbutic and melancholy Persons. When drank to Excess, it occasions Drunkenness of longer Continuance, more dangerous, and of more pernicious Consequences, than is produced by Wine.

By an exact Analysis of Cyder, a sulphureous Spirit is first drawn from it, and then Phlegm; afterwards, by the Help of a great Fire, a little thick Oil is extracted, and a Spirit, which is nothing but essential Salt, dissolved in the Phlegm. What

remains will yield a little fixed Salt by Calcination, Lotion, Filtration, and Evaporation.

When the Juice of Apples has not been well purified, it soon corrupts; because the Dregs, which remain mixed with the Liquor, are small Pieces of the Apples, which are as subject to rot, as the Apples themselves, and give the Cyder an unpleasant rotten Taste. In order to purify it, some use Water-glue dissolved in Wine; and, to prevent the Cyder from growing sour, they put Mustard into it. Others draw off what is clear, into earthen or glass Bottles, which are afterwards well corked.

Apples of an harsh and bitter Taste are best for Cyder, because they contain much essential Salt, proper for separating the oily Parts from the Dregs. Besides, these Apples supply the Cyder with a sufficient Quantity of tartarous Parts, to hinder the Spirits from evaporating; and hence this Cyder is stronger, more pungent, and will keep the longer. On the contrary, sweet Apples being deficient in these Particulars, the Cyder made from them quickly dies.

Cyder is good and wholesome, provided it be used with Moderation; and may be said, in general, to be better for the Health than Wine, because its Spirits are not so impetuous, nor so much agitated, as those of Wine; and are, besides, detained and moderated by a great Quantity of viscous Phlegm, which still contributes to make this Liquor moistening and cooling. We know by Experience, that most of those who drink nothing but this Liquor, are stronger, more healthy, and look better, than those who drink Wine; of which Lord Bacon gives us a remarkable Instance: Of eight old People, says he, some were near, and others above an hundred, who, during their whole Lives, drank nothing but Cyder, and were so vigorous, that they danced and jumped about like young Men.

Cyder, drank to Excess, does not intoxicate so soon as Wine; but the Drunkenness caused by it continues longer, because its Spirit conveys along with it, into the Brain, a great many heavy and viscous Particles, which hinder its sudden Dissipation. These Viscosities, dispersing themselves afterwards, into all the Substance of the Brain, stop the Channels of the Nerves, and oppress the animal Spirits, in such a manner, that they require some time to recover themselves, and to expel that which detain'd them in a kind of Repose and Unactivity. Hence proceeds that Sleepiness after Drunkenness.

By letting the gross Substance of the Apples ferment in Water, a moistening and cooling Liquor, called small Cyder, is made. This Liquor will not produce Drunkenness, and many Women in *Normandy* make it their common Drink.

Of the Juice of Pears extracted and fermented, is made a kind of Cyder, or vinous Liquor, called Perry, which, in Colour and Taste, resembles White-wine. Bitterish and harsh Pears are best for this Purpose. As the Fermentation of both Liquors is the same, and as the Virtues of Perry are nearly allied to those of Cyder, what has been said may be sufficient.

Many other spirituous Liquors may be made of the fermented Juices of several Fruits; but the greatest Part of these Liquors never become spirituous, as Wine, or Cyder, and will not keep so long.

The Juice of Quinces, after it has been fermented, becomes viscous. It fortifies the Stomach, works by Urine, is good for the Colic, Spitting of Blood, Dysenteries; and qualifies the Motion of sharp and bilious Humours, which cause Evacuations upwards and downwards. As this Liquor soon grows sour, and decays, they mix Honey, Sugar, or the like, with it, to preserve it.

Ananas is a juicy and delicious Fruit, that grows in the *West Indies*, whose Juice the *Indians* extract, and make excellent Wine of it, which will intoxicate. Women with Child dare not drink it, because they say it will make them miscarry. The *Ethiopians*, also prepare a sort of Wine, called *Sebanfcon*, from a certain Fruit that grows among them.

Pliny says, that they made a Liquor in *Egypt*, which was somewhat spirituous, of the Juice of *Sebetes*, which produced good Effects in Persons of a bilious Constitution. The Juice of Jujubes, prepared in the same manner, has, also, the same Virtues.

From some Trees they draw Liquors, which are almost as spirituous and pleasant, as those we make from Fruits. A kind of a large and fruit Palm-tree grows in the *Indies*, called *Coquo*, in whose Branches they make Incisions, and extract a vinous Juice, which the *Indians* call *Sura*, or *Taddi*, and from which they distil a good Spirit. They, also, make a sort of Vinegar with this Juice, by exposing it to the Sun: Others boil it upon the Fire, to make a sweet Wine of it called *Orraca*.

The first Juice being drawn out of the Branches of the Tree, there comes out a second, that is not so spirituous as the other, which they suffer to evaporate, in order to make a kind of Sugar of it, which they call *Jagra*.

The Fruit of this Tree supplies them, also, with a sweet and well-tasted Liquor, which is very cooling and moistening.

The Birch-tree yields a Sap, which, being drank, is of an opening Nature. *Van Helmont* values it much for its Virtues in curing the Stone. Several Physicians, also, use it, for the same

same Distemper, for the Strangury, and scorbutic Humours.

The Body, Branches, and Root of the Maple yield a sweet and pleasant Sap: This Liquor, Mr. Ray says, is more abounding in cold and rainy Weather, than in any other; whilst the Birch, on the contrary, yields more in hot and dry Weather.

The Root of the Nut-tree, also, yields a Juice, which Boyle and Schröder value much, they having observed it to have produced good Effects in the Gout, and several other Distempers.

Several other Trees supply different Nations with pleasant Drinks. *Lemery on Foods.*

The Countries in England, most celebrated for the Production of Cyder, are, *Herefordshire, Worcestershire, and Devonshire.* *Musgrave* informs us, that the *Devonshire* People are very subject to the Gout, which he attributes to the copious Use of strong Cyder. I have sometimes known an habitual Colic removed by an entire Change of Malt Liquor, or Wine, for Cyder, by way of common Drink.

POMAMBRA. Apples of Amber; these are made of odorous Powders, to which Oils may be added; and these Powders, being receiv'd in Wax, liquid Storax, or Mucilage of Tragacanth, with a little Turpentine, to render them tenacious, if it is necessary, and intimately incorporated, by an Addition of a proper Quantity of Rose-water, or some other such Liquor, are to be reduc'd to Balls of any Size, which shall be judg'd most expedient.

They derive their Name from Amber, not because that Substance is always and necessarily an Ingredient in them, but because they have a grateful Smell, and in that respect resemble Amber: Thus, for a Preparation of this Kind, we may take the *Odoriferum Crollianum*, which is prepar'd in the following manner:

Take of Mace, Cloves, Cinnamon, or the Cassia Lignea, each two Drams; of Musk, Civet, and Gum Arabic, each one Dram; and of Tragacanth dried in a Furnace, two Drams.

Let these two Gums be triturated with the Musk; and, when all the other Ingredients are carefully triturated, mix the Civet with them, and add a sufficient Quantity of Water prepar'd from the Flowers of the Orange-tree; or the Water of Damask Roses, prepar'd with odorous Specifics, and Rose-water, in which has been digested for eight Days a small Quantity of the Carbo Paracelsi, or the Zibetta Occidentalis; all these are to be incorporated together.

The Carbo or Zibetta Occidentalis, so far as we may conjecture from the *Archidoxa* of Paracelsus, is nothing else but human Dung, or Sulphur plac'd in Digestion for some time, till, instead of its ferid Smell, it assumes one highly grateful and agreeable. See *Hartman in Croll.*

This Medicine may, also, be prepared by pulverizing the Mucilage of Tragacanth, dissolv'd in odoriferous Water, and mixing the other Ingredients with it.

This Medicine, when applied to the Nostrils, by its grateful Smell, conveys a brisk Motion to the Blood; and surprisingly comforts the Heart in Apoplexies, Epilepsies, Colics, Suffocations of the Uterus, and Plagues.

A small Quantity of it may be mix'd with express'd Oil of Nutmegs, in order to make a Liniment, to be us'd in the above mention'd Diseases. *Croll.*

Schröder, in his *Pharmacop.* gives three other Formulæ of the *Pomambra*; but, as they are of little Importance in Medicine, we refer the Reader to that Work without inserting them.

POMATUM UNGUENTUM. Take of fresh Hog's-lard, three Pounds; of fresh Sheep's-suet, nine Ounces; of the Apples commonly called Pome-waters, pared and sliced, one Pound nine Ounces; of the most fragrant Rose-water, six Ounces; of Florentine Orrice-root, grossly powdered, six Drams; let these boil together in *Balneo Mariæ*, till the Apples are dissolved; then strain without Expression, and keep for Use: Heat it then over again, and wash the Whole with Rose-water.

Almost all the official Dispensatories abound with Prescriptions for this Ointment. The *Pharmacopœia Regia* has one, containing these Ingredients, but crouded with many more; as has the *Augustan* Collection, one yet more loaded; but that, also, gives another from *Amatus Lusitanus*, much more contracted; and from thence, likewise, our College seem'd first to take it, but yet with a farther Abridgment of Superfluities. *Zwelfer* takes great Pains, in his Animadversions, to teach the most convenient Manner of Composition, and Mixture of so many things of different Texture. But, as short a Compass as it is reduced to here, seemingly to avoid these Difficulties, the common Practice of the Shops has of late found out a much nearer way; which is by buying it of Persons, who make it their sole Business to beat up fresh Hogs-lard with Rose-water, into a kind of Curd; and scent it with any of the aromatic Oils, most suitable to the Liking of their Customers. *Quincy.*

POMPHOLYGODES. Frothy.

POMPHOLYGERON, *πομφολυγερών*. The Name of a Plaster describ'd by *Paulus Ægineta*, L. 7. C. 17.

POMPHOLYX, *πομφόλυξ*, is a Bubble excited in a liquid Substance, by some flatulent Spirit, or Air, contained therein. Thus *πομφόλυγες* are expounded in *Hesychius*, *δι' ἐν τῷ ὕδατι γινόμεναι ἀερίαι, ἢ φυσήματα ὕδατος*, "Tumors arising on the Water, or Swellings of the Water." Bubbles, *πομφόλυγες*, appearing on the Top of the Urine, indicate a Disorder of the Kidneys, and that the same will be of long Continuance. *Hippocrates*, 7 *Aph.* 34.

POMPHOS, *πομφός*, in *Galen's* Exegetis, are expounded, *ἐπανάσεις τῶ δερμάτος ὑψώσεις τε ἀμα καὶ πλασάει καὶ ἐνεργεῖς*, "scaly Eminences or Tumors on the Skin, which are at the same time red, and full of Moisture." In the Words *Galen* seems to have an Eye to that Passage of *Hippocrates*, (*Lib. 2. περὶ γυναικ.*) *καὶ ἐν τῇσι κνήμῃσι πομφόλοι ἀνίσταται*, "and *Pomphi* arise in the Legs." The Word occurs, also, *Lib. 2. de Morbis*, where we read *καὶ κατὰ πᾶσιν πομφόλοι ὥς ἐπὶ κνίδος*, "and she was full of *Pomphi* [red, watry Tumors], as tho' she had been rubbed over with Nettles."

POMUM. See **MALUS**.

POMUM AMORIS. See **AMORIS POMI**.

POMUM ADAMI. A Name for the *Limon*, *fructu Aurantii*. *Pomum Adami* is, also, a Name for a Protuberance in the anterior Part of the Neck, form'd by the Thyroide Cartilage.

POMUM ARENOSUM. A Name for the *GUAJAVA*.

POMUM CITREUM. See **CITREUM**.

POMUM HIERUCHUNTANUM. A Name for the *Solanum spinosum*; *fructu rotundo*.

POMUM SPINOSUM OPUNTIIATUM. A Name for the *Melocactus*; *India Occidentalis*.

POMUM SYLVESTRE. See **AGRIOMELA**.

PONDO, or **PONDUS**. A Weight. See **DRACHMA** and **LIBRA**.

As it is necessary to be acquainted with the Weights us'd by different Nations, at different times, in order to understand their Practice, I have given Tables of the principal antient and modern Weights; and, after these, Table of their Measures.

PONGA. H. M. *Jaca minor sylvestris Malabarica*. D. *Comelin.* *Tataisba Brasiliensum* Pison. *similis*. It is a tall evergreen Tree, growing in *Malabar*, and bearing no Flowers; at least none which are conspicuous; but the Fruit adheres to the Branches in the same manner as that of the *Jaca*; whence the Portuguese call the Tree the wild *Jaca*. The Calyxes are echinate, first green, and afterwards redish, and containing Multitudes of roundish-oblong, acuminate, and redish Seeds.

A Cataplasm prepared of the green Fruits of the Tree bruised, being apply'd to Tumors, potently promotes their Suppuration. Of the Bark and Root boiled in Water, is prepared a Fomentation for oedematous Tumors of the Legs, an endemic Disease among the Indians, and called by the Portuguese *Pêdo S. Thomæ*, which preserves them from an Inflammation. *Raii H. P.*

PONGAM. See **MINARI**.

PONGELION *five Perimaram*. H. M. *Arbor Indica siliquosa, Floribus racemosis, pentapetalis, Siliquis foliaceis, ad singulos Flores ternis*. It is a tall large Tree, growing in several Parts of *Malabar*. The Oil, prepared of the Bark first bruised, and then boiled, being rubbed on the Body, extracts vicious Humours. The Juice which distils from the Tree, being drank with Butter-milk, dissolves Flatulencies. The Fruit, triturated with *Manga*, and mix'd with a Decoction of Rice, being insilled into the Eyes, cures the Cephalalgia and Ophthalmy.

PONNA. H. M. *Prunifera seu Nucifera Malabarica Foliis Nymphææ, Fructu rotundo, Cortice pulvinato*. It is a vast Tree, thirty Yards in Height, and four in Thickness, bears ripe Fruit in *March* and *September*, and continues fruitful for the Space of three hundred Years; it grows in sandy Places almost everywhere in *Malabar*.

From the dry'd Kernels of the Fruit they express an Oil, which is used in Lamps, and cures Pains in the Limbs, being anointed therewith. Of the Bark of the Root macerated in Vinegar, they prepare an Extract, which, rubbed on the Head, cures the *Cephalæa*. The Tear which distils from the Tree, and its Fruit, being collected and exhibited, excites Vomiting, provokes to Stool, and violently purges corrupt Humours both upwards and downwards. *Raii H. P.*

Tsiferou Ponna, H. M. is the *Malabarjan* Cornel-tree, with Leaves like those of the *Nymphæa*. This is accounted a smaller Species of *Ponna*, and bears Fruit like that of our Cornel-tree, in Shape, Size, and Substance: This Fruit is eaten by the Natives, and from its Kernels they express an Oil, which is used in their Lamps, but is of no Service in Medicine. *Raii H. P.*

PONNAGAM, H. M. is a tall bacciferous Indian Tree with a smooth tricapsular Fruit, containing in each Capsula a single Seed. It is always cover'd with Leaves, Flowers, and Fruit.

Of the Leaves and Fruit bruised, with Honey, is prepared a Cataplasm, which, being apply'd, is a sovereign Remedy for the Bites and Stings of Serpents, and other venomous Animals. The Root, bruised, and apply'd in the Form of a Cataplasm to Contusions, dissolves the coagulated Blood, and cures the Part affected. *Raii H. P.*

Pee Tjerou-Ponnagam, H. M. is a larger Species of *Ponnagam*, which grows to a greater Height than the former; but, in all other respects, is very little different from it. *Raii H. P.*

PONNAM. A Name for the *Senna*; *orientalis*; *fruticosa*, *Sophora diffusa*.

PONS VAROLII. The Name of a sort of Arch in the *Cerebellum*, form'd by two medullary Processes, call'd thus from *Varolius*, the first Observer of it.

PONTAGIA. A Term in *Paracelsus de Tartaro*, importing, as is said, a Mixture of saline Substances with those which are bitter, or styptic.

PONTICUS, an Epithet in *Paracelsus*, expressive of a certain saline Taste, resembling that of Sea-water.

Pontica Vina are acid, feculent, and tartarous Wines.

Ponticum Mel is a sort of poisonous Honey. See **ÆGOLITHRON**.

POPONAX. The same as **OPOPANAX**.

POPLES. The Ham, or Joint of the Knee.

POPLITEUS MUSCULUS.

This is a small Muscle obliquely pyramidal, situated under the Ham; from whence it has its Name.

It is fixed above by a strong narrow Tendon to the outer Edge of the inner Condyle of the Os Femoris, and to the neighbouring posterior Ligament of the Joint. Thence it runs obliquely downward, under the inner Condyle of the Os Femoris; its flat, and pretty thick, fleshy Body, increasing gradually in Breadth, till it is fixed in the back Side of the Head of the Tibia, all the Way to the oblique Line, or Impression observable on that Side.

The Popliteus performs the Rotation of the Leg, when bent, in a Direction contrary to that of the Biceps. The Biceps turns the Leg from before outward; the Popliteus from before inward. This Rotation, therefore, answers to the Pronation of the Radius, by the Pronator Teres; as that made by the Biceps Tibiæ does to the Supination made by the Biceps of the Arm.

This Muscle is commonly reckoned among the Flexors of the Leg; but it seems very ill contrived for such a Function, because of the Obliquity of its Situation, and because its Insertion is so near the Centre of Motion of the Joint. By its Connection with the Capsular Ligament, it may serve to prevent its being catch'd between the two Bones in the Flexions of the Leg. *Winslow*.

POPULAGO. Marsh-marigold.

The Characters are;

The Root is perennial, the Leaves are entire and roundish. The Flower is roseaceous, like that of the Ranunculus, and naked. The Fruit consists of a Multitude of little Sheaths inclined downwards, stellated, and full of many oblong Seeds.

Boerhaave mentions two Species of *Populago*; which are,

1. *Populago*; flore majore. See **CALENDULA Palustris**.

2. *Populago*; flore pleno. T. 173. *Caltha palustris, flore pleno*. C. B. P. 276. *Pseudo-belleborus ranunculoides, pratensis, rotundifolius, multiplex*. M. H. 3. 461. *Boerb. Ind. Plant. Vol. 1.*

This Plant is said to be of a refrigerating Quality, like the *Nymphaea*; but it is really of a very caustic Nature, so that Cattle avoid it, tho' in the greatest want of Grass; but, if they happen to eat it, they are first seized with an Inflammation of the Fauces, Oesophagus, and Stomach, and at last die. Hence it appears to be a very acrimonious Herb, and of the Nature of Hellebore. *Hist. Plant. adscript. Boerhaav.*

POPULARIS. Endemial, or Epidemical.

POPULUS.

The Characters are;

The Leaves are roundish. The Flower in the male Tree is amentaceous, and consists of apiculated Leaves; from the squamous Calyx shoots forth a long Axis, to which grow on every Side masculine Floscules so disposed, as by their Union to resemble a Car's Tail; each of these Floscules consists of a thin, caducous Membrane, furnished with an hairy Margin, and, under this of another less caducous Membrane, from which, on the supine Part, arise eight Stamina, furnished with red, oblong Testiculi: This Membrane, when mature, has its Margin indented, and adorned with a lanuginous Fimbria, or Fringe.

Boerhaave mentions five Species of *Populus*; which are,

1. *Populus*; alba; majoribus foliis. *Tourn. Inst. 592. Boerb. Ind. A. 2. 211. Populus alba*. *Offic. Ger. 1301. Emac. 1486. Park. Theat. 1410. Raii Hist. 2. 1418. Synop. 3. 446. Populus alba leuon*. J. B. 1. 155. *Populus alba (quæ leuon ab albedine dicitur) majoribus foliis*. C. B. P. 429. **THE ABELE, or WHITE POPLAR**.

It delights in watry Places, and the Bark is of Use both inwardly and outwardly in the Sciatica, Strangury, and Ambustions.

2. *Populus*; alba; minoribus foliis. C. B. P. 429.

3. *Populus*; nigra. *Offic. Ger. 1301. Emac. 1486. C. B. P. 429. Park. Theat. 1410. Raii Hist. 2. 1419. Synop. 3. 446. Tourn. Inst. 592. Boerb. Ind. A. 2. 211. Populus nigra sive Alysse*. J. B. 1. 155. **THE BLACK POPLAR**.

The black Poplar grows frequently to be a large Tree, having a whitish Bark, and smooth shining green Leaves, growing on long Foot-stalks; they are broad and round toward the Bottom, ending gradually in a narrow sharp Point. The Stalks and Leaves have frequently large Swellings, or Tumors on them, made by small Insects. The Catkins are long and loose, coming out early in the Spring. It grows by watry Places and Rivers; the Leaves and Buds are used.

The only Use that they are put to, is to make the Unguentum Populeum; but, as the black Poplar is hot, the Ointment cannot receive its cooling Virtue from those Leaves or Buds, but from the other Ingredients which are put in it. *Schroder* says, the Women in *Germany* use the Buds to make their Hair grow thick and ornamental. *Miller's Bot. Off.*

The Buds of this Tree are used in the Ointment of Poplar; to which *Tragus* adds the Root of Bryony; and the Tops of the Bramble: It is very lenifying, and is used with Success in the Inflammation of the Piles; but a good Quantity of Opium must be added to it. The Tincture of the Buds with Spirit of Wine, is excellent for old Loosnesses, and internal Ulcers; the Dose half a Dram, or a Dram, taken Morning and Evening in a Spoonful of warm Broth. *Martyn's Tournefort*.

The Eyes, or young Buds, gather'd in April, are used in Medicine. It is disputed whether they are of a cold or hot Quality; but the most probable Opinion is, that they are moderately hot. *Dale*.

POPULEON, or POPULNEUM UNGUENTUM.

Take of the fresh black Poplar-buds, a Pound and an half; the Leaves of Violets, and Navelwort of the Wall, each three Ounces; fresh unsalted Hogs-lard, cleared from its Membranes, and washed, four Pounds. Bruise, mix; and macerate these together; and then add the tender Tops of the Bramble, Leaves of black Poppies, Mandrake, Henbane, Nightshade, Lettuce, the greater Houfleeck, and the greater Burdock, each three Ounces. Bruise again, and mix all together very well; and then after ten Days standing, pour on them one Pound of Rose-water; after which boil over a gentle Fire, continually stirring with a Spatula, until all the superfluous Humidity is evaporated; then strain and squeeze out with a Press, so as to obtain an Ointment, according to Art.

This is originally ascribed to *Nicolaus*. The Pharmacopœia Regia gives a Prescription of it, as, also, does the *Augustan Dispensatory*; but the latter comes much the nearer to what is here retained. The new College Dispensatory has corrected a Mistake, which the former Editions were liable to, in expressing the Houfleeck to be the greater Sort, because the lesser, commonly called Stone-crop, which was liable to be put in its stead, is of a very opposite Quality to the Intention of the Medicine. *Quincy*.

4. *Populus*; tremula. *Offic. C. B. P. 429. Tourn. Inst. 592. Boerb. Ind. A. 2. 411. Populus Libyca*. *Ger. 1302. Emac. 1487. Park. Theat. 1411. Raii Hist. 2. 1419. Synop. 3. 446. Populus Libyca Plinii, nœgis Theophrasti*. J. B. 1. 163. **THE ASP or ASPEN-TREE**.

It grows in Woods; and in moist watry Places; and the Leaves are supposed to agree in Virtues with those of the black Poplar-tree.

5. *Populo similis arbor*; resinosa altera. C. B. P. 430. *Tacamabaca*. *Ibid. Boer. Ind. alt. Plant. Vol. 2.*

The Bark of the Poplar is a very good Detergent, and the tender Buds are used by the Women in adorning and promoting the Growth of their Hair; they have, also, an anodyne Virtue, being externally apply'd; for which purpose they are an Ingredient in the *Unguentum Populeum*; so named from them: This Ointment is of excellent Service in the Hemorrhoids, especially if it be prepared with a good Quantity of Opium. The Tincture of the Buds is very good for an inveterate Diarrhoea, and internal Ulcers. The bruised Leaves are by some apply'd with good Success in the Gout; and the Liquor, which is collected in the Cavities of the Poplar, is believed to cure Warts and the Impetigo. *Hist. Plant. adscript. Boerhaav.*

PORCELLIONES. The same as **MILLEPEDES**.

PORCELLUS INDICUS. The Guinea Pig. The Flesh of this Animal has not much Taste, and is hard of Digestion. Some are of Opinion, that Broth prepared of it is good against Dysenteries, and proper for exciting a Discharge of the Urine. *Lemery des Drogues*.

PORCUS MARINUS. The Sea-hog. This is a Species of Dolphin, or large oblong Fish, whose Nose resembles that of the Land Hog, and it digs up the Earth in the same Manner. This Fish is frequently carried up with the Tide into Rivers, and is very commonly seen at *Roan*, in the River *Seine*. It is of a yellowish Colour and very fat; its Flesh is eaten, but is not very delicious, and is, besides, somewhat hard of Digestion. When the Grease of it is melted, and perfumed with some

Some odorous Plant, it is called the Oil of the Porpoise, or Sea-hog. It is of an emollient, resolvent, and anodyne Quality, and good in Disorders arising from a Coldness of the Humours. *Lemery des Drogues.*

PORCUS. Offic. *Porcus domesticus* five *Sus*. Raii Synop. A. 92. *Sus*. Aldrov. de Quad. Bisul. 937. Gefn. de Quad. 872. Jonst. de Quad. 70. Charlt. Exer. 13. Schw. de Quad. 123. *Mes Aper*, the BOAR. *Femina Sus*, the SOW. *Fetus Porcellus*; a PIG. THE TAME SWINE, or HOG.

The Parts of this Animal, used for medicinal Purposes, are the Lard, the Gall, the Excrement, the Lungs, the Astragalus, and the Bladder. As the Lard is not of a very hot Quality, it is, therefore, made an Ingredient in refrigerating Ointments, and used for alleviating inveterate Pains of the Loins and Joints. *Dioscorides* informs us, that the Gall of this Animal is used with great Success against Ulcers of the Ears, and of all other Parts. It is, also, said to prevent the Growth of the Hairs. The Excrements are of an emollient and discutient Quality, and for that Reason beneficial in Itchings, Exanthematous Eruptions; Corns of the Feet, and other hard Tubercles; the Excrements of this Animal, also, cure the Bites of venomous Animals, and stop Hæmorrhages of the Nose; the Lungs are highly beneficial, if applied to Abrasions of the Skin contracted by the Shoes. The Astragalus is recommended for Fractures of the Bones, as also for Pains of the Neck and Head. The Bladder is beneficial to those who discharge their Urine involuntarily. *Schrod.* It produces the same Effects, when applied to the Pubes, and is said to provoke Urine. *Pliny. Dale.*

There are two Sorts of Hogs, the wild and the tame. Of the tame Hogs, those are the properest for Food, which are neither too old, nor too young, which are large, fat, tender, and have been well fed, as with Acorns, Mast, Beans, Turneps, and the like.

Pork is nourishing Food, and renders the Body soluble; but it is difficult to digest; produces dull, viscous, and gross Humours; and is improper for gouty Persons.

It contains much Oil, volatile Salt, and Phlegm.

It agrees principally, in cold Weather, with young, hot and bilious Constitutions; with those who have good Stomachs, and are used to labour, and exercise; but it has bad Effects upon old, weak, and tender Habits.

When an Hog is about a Year old, he is gelded, and in *Latin* called *Maialis*. He then grows fatter, and the Flesh is more juicy, and better tasted, than before. A Sow is in *Latin* called *Porca*, or *Scropha*, and not so much fed for Food as the Hog, because its Flesh does not taste so well.

A Pig, in *Latin* called *Porcellus*, is esteemed an excellent Dish, and that which is neither too young, nor too old, is most wholesome; when too young, it abounds too much with Humidity; and, when too old, it becomes hard of Digestion.

An Hog is subject to the Measles, Leprosy, and many other Distempers, because it is full of gross Humours, and such as are liable to produce the like Diseases in those who feed upon them.

Pork affords a Food that does not easily waste, because it contains oily, balsamic, and viscous Principles, which easily stick to the Fibres of the Parts, in such a manner, that they are not without Difficulty separated from them. Pork is, also, laxative, because the oily and phlegmatic Principles, with which it abounds, loosen the Fibres of the Stomach and Entrails, and dilute the gross Humours contained in those Parts.

Galen says, that Pork is not only better tasted, than the Flesh of other Animals, but, also, that it is more wholesome. He adds, that it nearly resembles human Flesh, which he proves, in his third Book, and second Chapter, of the Nature of Foods, by an Account of certain Persons, to whom he ordered human Flesh to be presented instead of Pork, which they eat without being able either by Taste, or Smell, to discover the Fraud. Lastly, he assures us, that Pork, when well digested in the Stomach, affords more Nourishment than any other Food; and says, that the Athletes, or Wrestlers, and such as were inured to hard Labour, were never so strong and vigorous, as when they fed upon Pork; and that when those People, who were used to this Food, lived but only one Day upon the Flesh of another Animal, and still continued the same Exercises, they found themselves weaker the next; and when they continued several Days to disuse Pork, their Strength sensibly decayed, and they became lean.

We readily agree with *Galen*, that Pork may be very nourishing and wholesome, for those who are used to Fatigue and hard Labour; because it is durable Food, and not soon wasted. But Pork in general is not wholesome, and ought to be used moderately; for this Animal's Way of Living is lazy and unactive, and the Filth it continually feeds upon, plainly shews, that its Flesh is full of viscous and gross Juices, fit to produce Humours of the same Nature, in those who eat it, to cause Indigestions, and several other Inconveniences.

Some Nations never eat Pork, as the *Jews*, *Arabs*, *Mahometans*, *Moors*, *Tartars*, and others.

If we reflect upon the Distempers Swine are subject to, indisputably from their habitual Way of living, and their noxious

Juices thence contracted, we may, perhaps, find Reason to admire the Legislator of the Jews, who forbade the Use of it; and to commend the Wisdom of the Eastern Nations, who esteem it their Duty to observe this Prohibition. It is not at all improbable, that the Scurvy, a Distemper to which the Northern Nations are extremely subject, may be excited by the habitual eating of Swines Flesh, especially when hardened with Salt and Smoke.

Aper. Offic. *Schrod.* 5. 268. Schw. de Quad. 54. Aldrov. de Quad. Bisul. 1013. Gefn. de Quad. 918. Jons. de Quad. 74. Charlt. Exer. 13. Raii. Synop. A. 96. THE WILD SWINE, or BOAR.

The Parts of this Animal used for medicinal Purposes, are the Lard, the Teeth, the Penis, the Gall, the Excrements, and the Urine. The Lard is possess'd of the same Qualities, tho' in a stronger Degree, with that of the tame Swine. The Teeth are exhibited as a Specific in the Pleurisy, and are said to cure the Quinley. The Penis and Testicles are said to remove Impotence and Barrenness. The Gall discusses strumous Swellings. The Excrements, when dried, are thought beneficial in stopping Vomiting of Blood, and Hæmorrhages, when applied externally. The Urine is a Specific for resolving and expelling the Stone of the Bladder. *Schrod. Dale.*

A wild Boar that is young, fat, well-fed, and tender-fleshed, is best for Food; he ought, also, to be hunted, and well run. This Food is very nourishing, and does not soon waste, but is easier of Digestion than common Pork. It produces gross Humours, and is not good for sedentary and tender Persons.

All the Parts of a wild Boar contain much volatile Salt and Oil. Its Flesh is good principally in Winter, for young People of an hot bilious Constitution, for those that have a good Stomach, and are used to Fatigue.

The wild Boar is so called, because it is of the same Shape and Size with the tame Hog, only that it lives in Woods. It is fiercer, more nimble, and rougher bristled, than the other; and is usually of a black, or dark red Colour: *Pausanias* says he had seen white ones. *Pliny* and other Authors, assure us, that there were no wild Boars in *Candia*, *Africa*, and the *Indies*; and *Ælian* observes, they had none in *Macedonia*. The *Spaniards* have found some in *America*, which were much smaller, had a shorter Tail, and their Feet made otherwise than those of our wild Boars; and their Flesh was also more delicate, and easier of Digestion, than ours; and they found others in some Places with a Pair of Horns on their Heads.

The wild Boar in *Latin* is called *Verres Sylvaticus*, and the Sow *Sus fera* or *Scropha Sylvestris*. *Pliny* says, that, *Servilius Rufus* was the first who introduced Hunting the wild Boar among the *Romans*.

The Flesh of all wild Boars is not equally good. Those that are pent up in Parks are inferior Food to those that range at large, and feed upon Roots, Swine-bread, Corn, and Fruits.

The wild Boar is not of so moist a Nature as the common Hog, by reason of the Exercise, and different Food it lives upon; its Flesh is, therefore, less viscous, more agreeable to the Taste, and easier of Digestion. This Flesh is very nourishing, because it contains oily and balsamic Juices; but it is proper only for those who are of robust Constitutions, and inured to Fatigue; because, being very compact in its Parts, it requires a strong Stomach to digest it; and as Persons who are used to much Exercise, lose much of their Substance, they must have gross Foods, which adhere to the Parts, and are not so easily spent. *Lemery on Foods.*

Porcus sometimes imports the female *Pudenda*.

PORFILIGON. The Scales which fall from Iron upon being hammered. *Rulandus.*

PORFIRETICUM. A Brass Mortar, or a Rasp. *Rulandus.*

POROCELE, *πρωκέλη*. A callous Hernia; from *πῶρος*, a Callus, and *κέλη*, a Rupture or Tumor.

POROMPHALON, *πρωμφαλον*, from *πῶρος*, a Callus, and *ὄμφαλος*, the Navel. In the Definitions ascribed to *Galen*, it is the Concretion of a Toph, or Callus, in the Navel.

POROPOEIA, *πρωποεία*, from *πῶρος*, a Pore, or Passage, and *ποιέω*, to make. An Opening, or Reseration, of the Pores, or Passages.

POROS, *πῶρος*. A Pore, or Passage. See **CUTIS**, and **PERSPIRATIO**.

POROS, *πῶρος*. A Toph, or Callus. See **PORUS**.

POROSIS, The Generation of a *Callus*.

POROTICA, Medicines which generate a *Callus*.

PORPHYRA, See **PURPURA**.

PORPHYRIO. A Bird so called on account of its Colour, which resembles that of Purple. It is a Water-fowl, as large as a Cock, of a bluish or diversified Colour, with a large, sharp, and purple-coloured Beak. It has a Comb on its Head; its Legs are long, and its Feet divided into five Claws; its Tail is pretty short, and the Fowl itself feeds upon any Kind of Fish it can catch. Its Fat is of an emollient, resolvent, and anodyne Quality. *Lemery des Drogues.*

PORPHYRITES. Offic. *Worm.* 44. *Charlt. Foss.* 20. *Boet.* 505. **PORPHYRY**, or RED MARBLE.

POR

This is a Species of Marble highly hard, and of a red Colour; it is brought to us from the Confines of Egypt, the Red-sea, and Esbiopia. It is thought to be possess'd of a Lithontriptic Quality, and to agree in Virrues with the OPHITES. The principal Use of Porphry, in Medicine, is to levigate hard Substances, so as to reduce them to an impalpable Powder. Dale.

PORRACEUS. Of the Colour of Leeks.

PORRIFIGL. In Surgery, is the same as FICUS.

PORRIGO. A Disorder of the Skin; the same as FURFUR. See LEPRO.

PORRUM.

The Characters are;

The Bulbs, or Roots, are oblong, narrow, almost cylindrical, and coated: The Leaves grow out of the Coats of the Roots, are plain, and sometimes carinated: The Flower is hexapetalous, as it were Bell-shaped, and adorned with broad and flat Stamina, ending in three Capillaments, the middle of which is adorned with an Apex; the Flowers are disposed in almost globular Bunches: The Ovary becomes a roundish, tricapular Fruit, full of roundish Seeds.

Boerhaave mentions four Species of Porrum; which are,

1. Porrum; commune; capitatum. C. B. P. 72. Tourn. Inf. 382. Boerb. Ind. A. 2. 143. Porrum. Offic. Park. Parad. 512. Ger. 138. Raii Hist. 2. 1136. J. B. 2. 551. LEEKS.

Leeks are well known to have long, white, round Roots, with several white Fibres shooting from the Bottom; the Leaves are long and broad, encompassing the Stalk, which grows two or three Feet high, smooth and round, having at the Top a large, round Head, composed of a great Number of small, greenish, purple, six-leaved Flowers. it is sown in Gardens, and flowers in June and July; they have a strong Onion-like Scent.

Leeks are more used in the Kitchen among Soops, and Broths, than in Medicine; they are warming and attenuating, and good to cleanse the Lungs from rough Phlegm, and to help Shortness of Breath, and Stoppage of the Stomach; they are, likewise, reckoned good against the Bites of venomous Creatures. The Juice of them is used to dissolve the Gums in the *Pilula fetida*. Miller's Bot. Off.

2. Porrum, commune, capitatum. C. B. P. 72. M. H. 2. 390. Capite, sphaerico, minori, flosculis, & pedunculis florum, carneis.

3. Porrum, commune, capitatum. C. B. P. 72. M. H. 2. 390. Capite sphaerico, maximo, flosculis candidis, pedunculis florum penitus viridibus.

4. Porrum, commune, capitatum. C. B. P. 72. Capite, sphaerico, minori, flosculis albis, in pedunculis penitus viridibus. Boerb. Ind. alt. Plant. Vol. 2.

This Plant contains a fetid, oily, volatile Salt: Whence its Bulb being bruised, causes a Distillation of Tears from the Eyes and Nostrils. For this Reason it is proper in Cases where Heat is required, or where an Excess of Heat is not feared; but is injurious to those who abound too much with Blood, or whose Blood is of too loose a Contexture; as when it is voided by the urinary Passage, by an Hæmoptoe, or by the hæmorrhoidal Veins. It provokes the Menies, and Urine; and is very good for the Bites of Serpents, and Combustions. Hist. Plant. adscript. Boerhaav.

Besides the foregoing Species of Porrum, Dale mentions the following.

- Porrum vitignium*. Offic. Ger. Emac. 176. *Porrum tonsile*. Ger. 139. *Allium sylvestre Amphicarpon, foliis Porraceis, floribus, & nucleis purpureis*. R. Synop. Edit. 2. p. 230. VINE-LEES.

They have been observed by Mr. Lawson, to grow on the Mountains of Westmorland, and to flower in June. The Leaves are used.

Dale takes this Plant for the *Ampeloprasum* of Dioscorides; the Virtues of which see under the Article ALLIUM, from Dioscorides, Lib. 1. Cap. 180.

PORRUM, or PORRUS, in Fallopius, is a Species of rough Wart, which resembles the Root of a Leek, on account of a great Number of Filaments on the Surface.

PORTA. See HEPAR. The Female Pudendum is sometimes thus called.

PORTAIGUILLE. The Name of a Chirurgical Instrument. See the Explication of Fig. 2. and 3. of Tab. XXVII.

PORTATILE. In the *Collectanea Chymica Leydensia*, there is a Preparation of Tartar, intitled, *Acetum in Sacco Portatile*.

Take of white Tartar, half a Pound; after it is carefully wash'd and dried, reduce it to a Powder; infuse this Powder in strong Wine-vinegar. Then dry the Powder again, and infuse it a second time in Vinegar. Let these Measures be repeated ten times, and an highly acid Powder will be obtained, which, when dissolved in any Water, renders it acid; and this is called *Acetum Portatile*, or, *Portable Vinegar*. Collect. Chym. Leyden.

PORTORARIUM. The Duodenum, or the Pylorus.

PORTULACA.

The Characters are;

POR

The Leaves are somewhat thick and succulent; the Calyx is monophyllous, bifid, and closely adheres to the Ovary; the Flower is roseaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes an oval Vessel, consisting of two Shells, one within the other. Half the outer Shell, when ripe, bursts horizontally, or leaving an horizontal Opening, over the inner Shell, which afterwards flies open in the same horizontal Manner, discovering a Multitude of small Seeds.

Boerhaave mentions six Species of Portulaca; which are,

1. Portulaca; latifolia; sativa. C. B. P. 288. Raii Hist. 2. 1039. Boerb. Ind. A. 220. Portulaca. Offic. Park. Parad. 499. Portulaca domestica. Ger. 418. Emac. 521. PURSLANE.

This Plant is well known, and has round, smooth, reddish, and succulent brittle Stalks, with fat, thick Leaves, round, and broader at the End, than next the Stalk. The Flowers grow on the Tops of the Stalks among the Leaves, being small, five-leaved, and yellow, succeeded by roundish Seed-vessels, including small, black, rugged Seed. The Root is small and fibrous. It is sown in Gardens; the Leaves and Seed are used. The Seed is one of the Four lesser cold Seeds.

The Leaves are much used as a Salad, being cooling, and good for the Scurvy, attempering the Heat of the Bile; and help the Strangury, Heat of Urine, and Gonorrhœa. The Seed is cooling and restraining, and good to kill Worms. Miller's Bot. Off.

2. Portulaca; sativa; latifolia; foliis flavis. M. H. 2. 570.

3. Portulaca; angustifolia; five sylvestris. C. B. P. 288. Tourn. Ind. 236. Boerb. Ind. A. 220. Portulaca sylvestris. Offic. Ger. 418. Emac. 521. Park. Theat. 722. Raii Hist. 2. 1039. Portulaca sylvestris minor sive spontanea. J. B. 3. 678. WILD PURSLANE.

It grows frequently in fallow Grounds, and by the Sides of Paths. The Herb is used, and agrees in Virtue with the common or Garden Purslane.

4. Portulaca; Curassavica; lanuginosa; procumbens. Par. Bat. 215.

5. Portulaca; Africana; sempervirens; flore rubicundo. H. A. 2. 177.

6. Portulaca; Curassavica, folio capparidis. Par. Bat. 213. Boerb. Ind. alt. Plant.

This Plant affords an excellent Aliment and Medicine; its Parts are very succulent, and the Juice astringent, remarkably aperient, expulsive, and cooling in inflammatory Diseases, and very good to wash the Gums, when affected with a Gangrene. A Decoction of the Leaves makes an excellent Gargarism for the Quinsy, and is no less serviceable in the Phrensy, Pleurisy, Peripneumony, Scurvy, and Inflammations of the Viscera and Intestines; it tempers Bile, and is corroborative, especially if the Plant be boiled with Whey. The Juice is somewhat acid, nitrous, and very viscid: Whence it has the same Virtues as the *Sempervivum*, or *Nummularia*, which renders it qualify'd to correct an excessive Motion, or Volatility of the Spirits, a Putrefaction, and a Rigidity of the Fibres; whence it is of Service in all acute Diseases. Being eaten in Salads in the Summer-season, it mitigates Bile, and prevents Disorders which may be justly apprehended from an Excess of that Humour; it destroys Worms, and is of Service in malignant putrid Fevers, Heat of Urine, and the Nephritis. The Leaves, applied to the Head, ease the Pains thereof; the distilled Water is very good for an excessive Flux of the Menfes, and for Hæmorrhages; the Juice is of great Efficacy in a Consumption. The whole Plant is extremely full of Juice; so that if you compress and rub the Leaves between your Fingers, they will almost spend themselves wholly in Juice; so that if you bruise a Pound of the Leaves, and squeeze out all the Juice, there will scarce remain a Dram of solid Substance. Hist. Plant. adscript. Boerb.

- Portulaca maritima*. Offic. *Portulaca marina nostras*. Park. 724. *Halimus sive Portulaca marina*. C. B. 120. Raii Hist. 1. 195. *Halimus vulgaris sive Portulaca marina*. Ger. Emac. 523. *Atriplex maritima angustissimo folio*. Tourn. Inf. 505. COMMON SEA PURSLANE.

It is commonly found in the salt Marshes, and flowers in July and August. The Leaves, and tender Branches, pickled after the manner of Samphire, are used by the English as well as the Dutch, in Sawces, for exciting an Appetite. Raii Cat. Angl. It is an hot Plant. Magnol. Bot. Monps. Mr. Stubbs commends it for a Cosmetic. Dale.

PORUS. See POROS.

PORI BILIARII. The Biliary Ducts. See HEPAR.

PORUS. Pliny, in the seventeenth Chapter of his thirty-sixth Book, after he has spoken of sarcophagous Stones, which soon consume dead Bodies, which are laid in them, speaks of others which have a contrary Property of preserving them: Such, he says, was the *Chernites*, very much much resembling Ivory, in which it is reported Darius was laid; and such another is the *Porus*, which, for Whiteness and Hardness, he describes

scribes to be like the *Parian Stones*, but less ponderous. *Pliny* is so brief in his Description, that we are not certain whether he speaks of the Stones which we now call *Pori*. These have their Name from the Multitude of their Pores, or Perforations; in Substances they resemble Coral, and only differ from it in their Porosities. Some of them are near akin to Coral; others are widely different from it. Those of the whitest and closest Substance much resemble Coral, and spread themselves in Branches after the same manner; but it must be observed, that they are all white in general. Those which are wrinkled have striated Lines, which run along the Trunk, and even to the Extremities of the Branches lengthwise; and they are, also, furnished with their internal porous Substances with Meatues, which proceed according to the Longitude of the Branches, being separated by the Interposition of a sort of Thread. Those which have Punctations in their Superficies, have their Meatus interrupted by Rays proceeding from a Centre in the interposed Thread to the Circumference. Ray from *J. Baubine*:

POSCA. Oxycrate, that is, Vinegar and Water.

POSSETUM. A Posset. The foreign Writers mention this as a sort of Food, or rather Medicine, peculiar to the *Englisch*. The Serum of a Posset, or Posset-drink, appears to be an excellent Liquor, either considered as a Medicine, or Aliment, from what is said of Whey, under the Article LAC.

POSTBRACHIALE. The METACARPUS.

POSTHE, *πρόθη*. The Prepuce.

POSTHIA, *πρόθια*. A Disease of the Eye-lids; the same as CRITHE, or HORDEOLUM.

POSTPOSITIO. When the Paroxysm of an intermittent Fever comes on later than it is expected, this is called the *Post-position of the Paroxysm*; as when it seizes sooner, it is called the *Anticipation*. The first is esteemed a good Sign; the latter, the reverse.

POTABILE AURUM. See AURUM.

POTABILIS MARS. In the *Collectanea Chymica Leidensia*, we find three Preparations of Iron under this Title, from *de Maets*. The first of them is thus prepared:

Take of the Filings of Iron finely triturated, and of the whitest crude Tartar obtained from *Rhenish Wine*, each as much as you please; and of filtrated Rain-water, a sufficient Quantity to form into small Balls: Dry these Balls in the Sun, and bake them along with Loaves in an Oven. Then reduce them to a Powder again; and with a sufficient Quantity of Rain-water, as before, form them into Balls, and again bake them in an Oven. These Measures are to be repeated, till the Iron is found to be soluble in any Liquor. This Medicine is to be exhibited in a Spoonful of Rain-water. The Dose is from six to sixteen Grains, and one Scruple.

Or,

Take of the finest Filings of Iron, one Part; and of the Flowers of Sulphur, two Parts. Triturate them together, and add a sufficient Quantity of Rain-water to reduce them to the Form of a Poullice. Let them stand in a moderately warm Digestion for twelve Hours. Then pour as much Rain-water upon them as rises three or four Inches above them, and boil all together, till a yellow Tincture is extracted. When this Tincture is poured off, and filtrated, inspissate it till only a fourth Part of it remains; for by this means it will in a few Days assume an highly red Colour.

But the most simple Method of exhibiting Iron, for removing any Obstructions, and especially for promoting the Menfes, and destroying peccant, acid, and austere Ferments, is the following:

Take of well-washed Filings of Iron, triturated in Alcohol, and passed through a fine Sieve, one Part; of the finest Sugar, half the Quantity; and of Mace, a fourth Part: Mix them intimately together. The Dose of this Powder is as much as may be contained on the Point of a Knife.

POTAMOGEITON.

The Characters are;

The Root is fibrous and perennial; the Leaves are disposed alternately on the Stalks, and arise at the Origin of the Pedicle of the spiked Flowers. The Calyx is tetraphyllous, the Flower tetrapetalous, and disposed in Spikes. The Seeds are angulose, naked, four in Number, each succeeding its Floscule. The Plant is produced in the Waters, and grows under them.

Boerhaave mentions eleven Species of this Plant; which are,

1. Potamogeton; rotundifolium. C. B. P. 193. *Raii Hist.* 1. 188. *Synop.* 60. *Tourn. Inst.* 233. *Boerb. Ind.* A. 196.

Potamogeton. Offic. *Potamogeton rotundifolius* folio. J. B. 3. 776. *Potamogeton latifolium*. Ger. 675. Emac. 821. *Fontalis major latifolia vulgaris*. Park. 1254. POND-WEED.

This Plant is frequently found in stagnant Waters and Fish-ponds. It flowers in the Months of June and July. The only Part of it used is the Herb, which is of a refrigerating and inspissating Quality. It is, also, beneficial against Itchings, inveterate Ulcers, and Nomæ. *Diosco. Dale*.

This Plant receives the Name of *Potamogeton*, from the Greek Words *ποταμός*, a River, and *γειτάν*, adjacent, because it grows about Fountains; *Millefolium*, from the Smallness of its Leaves; and *Viola Aquatica*, from the Colour of its Flowers.

Hist. Plant. adscript. Boerhaav.

2. Potamogeton; foliis latis; splendentibus. C. B. P. 193.

3. Potamogeton; longo; serrato; folio. C. B. P. 193.

Lapathum, fluitans, longo, serrato, folio. J. B. 2. 988.

4. Potamogeton; foliis crispis, conjugatis. *Tribulus aquaticus, minor, alter*. Clus. H. 252.

5. Potamogeton; seu Fontalis crispa; foliis alternis; cauliculis compressis. *Tribulus, aquaticus, minor*. Clus. H. 252.

6. Potamogeton; aquis immersum; folio pellucido, lato, oblongo, acuto. *Raii Synop.* C. 1.

7. Potamogeton; caule compresso; foliis graminis canini. *Raii Synop.* 61.

8. Potamogeton; pusillum; gramineo folio; caule rotundo. *Raii Hist.* 190.

9. Potamogeton; flosculis ad foliorum nodos. T. 233. *Millefolium, aquaticum flosculis ad foliorum nodos*. C. B. P. 141.

Myriophyllum, aquaticum, minus. Clus. H. 252.

10. Potamogeton; foliis pennatis. T. 233. *Millefolium, aquaticum, pennatum, spicatum*. C. B. Prodr. 73.

11. Potamogeton; ramosum; angustifolium. C. B. P. 193. J. B. 3. 778. *Boerb. Ind. alt. Plant.*

POTAMOGEITON, SALICIS FOLIO. A Name for the *Periscaria, salicis folio, perennis*.

POTASH. See ALCALI.

POTENTILLA. A Name for the *Pentaphylloides; argenteum; alatum; seu Potentilla*.

POTERIUM. See TRAGACANTHA.

POTERIUM, *ποτήριον*, is, also, a Name for a *Malagma*, recommended by *Galen* for a Dropsy, L. 9. de Comp. M. S. L. Cap. 3.

POTIO. A Potion; a liquid Form of a Medicine, consisting of as much as can be drank at one Draught. The Writers on Pharmacy distinguish Potions into Cathartic, Cardiac, and Alterative.

POUST. The *Indian* Name for a base Kind of Opium, procured by boiling the Leaves and Stalks of the Poppy.

POUTAETSJA. The Name of a low Berry-bearing Shrub, which is very common in *Malabar*.

Of the Leaves of this Tree boiled in Milk, they prepare a Drink, which prevents Sleep, and is of Service in a Lethargy, and other soporose Affections. The Leaves, Flowers, Bark, Root, and other Parts boiled in Water, make a Bath, which is of Efficacy in the Epilepsy, and other spasmodic Disorders. *Raii Hist. Plant.*

PRÆBIUM. A Dose; the Quantity of a Medicine exhibited at one time.

PRÆCIPITANTIA. Precipitating Medicines; (that is, Medicines which moderate the Motion and Heat of the Blood) as was supposed, by absorbing and correcting the Acid contained therein. *Præcipitans Magnum* is a Name for the *Os Sepia*.

PRÆCIPITATIO. Precipitation is that Process, by which Particles, after having floated, and been suspended some time in a Menstruum, at length sink to the Bottom. These Particles sometimes precipitate of their own Accord, but oftener by the Assistance of some other Liquor added to the Menstruum. The Reason of the Descent in both Cases is the same.

It may be easily conceived, that Fluids may be made to sustain Bodies specifically heavier than themselves; by making the Resistance, arising from the Cohesion of the Parts of the Fluids, equal to the Excess which there is of specific Gravity in those Bodies above the Menstruum. And it has been shewn, that this Resistance is proportional to the Surface of the Corpuscles. Therefore a contrary Condition to this, is all that is requisite to their being sustain'd no longer; or, which is the same thing, to their Precipitation: That the Tenacity of the Menstruum be not proportional to the Gravity of the Corpuscles: And this may be produced two Ways.

In the first place, Precipitation generally follows upon dropping in a Liquor specifically lighter: For, by this Mixture, the Gravity of the Menstruum, which always is proportional to the compound Gravities of both Liquors, become lighter. The Menstruum being thus diluted, the Force of Cohesion is, also, weaken'd, so that it is not able to resist, or bear up, the Bodies dissolved in

in it: Hereupon, the Equilibrium being taken off, they are precipitated by the Force of their own Gravity, just in the same manner as Hydrometers, which are easily sustain'd in Water, upon pouring in a good deal of any inflammable Spirits, sink to the Bottom of the Glass. And this does not only agree very exactly with the Laws of Mechanics, but, also, with Experiments themselves. Thus Spirit of Sal Ammoniac does very plentifully precipitate the Filings of Metals, which are dissolved in acid Menstruums, though it be abundantly lighter than any of them. The same thing is done quicker by Spirit of Wine, whose Gravity is known to be almost the least of any. By this Spirit, also, all Salts which are suspended in Water, are precipitated, and afterwards unite into Crystals: So, if you drop in distill'd Vinegar the Dross of Antimony, diffused in Water, it falls to the Bottom, and affords the Golden Sulphur. After the same manner, Water, Vinegar, &c. make a Precipitation from Acids, tho' more sparingly. Acids themselves, being poured upon others which are heavier, will precipitate whatever is swimming in them. Thus Spirit of Salt precipitates either Lead, Copper, or Tin, dissolved in Oil of Vitriol. So little need is there for Alcalies in this Business, though all the Chymists have unanimously contended for them as absolutely necessary.

In the second place, Precipitation will succeed as well, if there be added a heavier Liquor to the Menstruum: For the Particles of this Liquor, what with their Weight, and what with the Impetus they acquire in their Descent, carry down and sink all the solid Corpuscles they meet with in their Way: So that the Corpuscles, being thus forced down, and kept there by this adventitious Liquor, cannot mount up into their former Situation. And, if any one has a mind to try the Truth of this Reasoning by Experiments, there are enough to confirm it: For not only acid Spirits, but Water alone, will precipitate Tinctures of Vegetables extracted by Spirit of Wine. And the very same Tinctures, extracted with Water or Wine, are precipitated very copiously by acid Spirits, which are heavier. After this manner, Metals which are dissolved in Spirit of Sal Ammoniac, are precipitated with Oil of Vitriol, or Spirit of Nitre. The same Bodies, though suspended in Aqua-fortis, are easily precipitated with Oil of Vitriol, or Bezoartic Spirit of Nitre. And this very Oil, if poured upon Sal Volatile Oleosum, or any other Solution of Salt, ever so much saturated, does not only sink the smaller Particles, but converts almost the whole Liquor into Salt. For when these Liquors are poured upon one another, the Salts with which they abound, being put into Motion by their attractive Force, run mutually towards one another; and, because they don't recoil far back after the Shock, they are at length so united, as to become like a Solid, there being very little Phlegm remaining. The same may, also, be observed in *Tartarum Vitriolatum*. In making all these Experiments, there happens such a Conflict and Effervescence, as evaporates almost all the Moisture, with which the Salts are diluted. And upon this depends the Rationale of chymical Coagulation, a thing of very great Consequence in the Business of Precipitation. Nor can we account for Oil of Tartar's precipitating Bodies dissolved in Acids, any otherwise than from its making a kind of Coagulation with these Corpuscles, which thereby becomes too heavy for, and exceeds the Tenacity of the Menstruum.

Nor does Coagulation succeed only upon the mixing of heavier Fluids, but it, also, very often promotes Precipitation, when the Gravity of the infus'd Liquor is entirely equal to that of the Menstruum, or but very little different from it. And this Agglutination of Parts is to be seen in many Liquors, but most of all in saline ones. Thus Spirit of Sal Ammoniac, Spirit of Hartshorn, that of human Blood, and Sal Volatile Oleosum, whose Gravities are nearly the same as that of common Water, precipitate the Solution of Sublimate very plentifully, as you may observe in making white Precipitate of Mercury: In which Experiment, the Increase of the Weight gives sufficient Indication of an Union of those Salts, which are pretty copious in the Sublimate, and Liquors which are poured upon it: For that which subsides at the Bottom, exceeds in Weight the Sublimate which was at first put in. Also, the Magisteries of Vegetables, extracted by Precipitation, confirm this Account of Coagulation; for these have a greater specific Gravity than the Powders of the Plants they are made from. This additional Weight, therefore, is to be imputed to the Particles of the Liquor, with which Precipitation is performed. Quincy.

PRÆCORDIA. The Diaphragm. The Word, also, very commonly imports the same as *Hypochondria*, which, according to *Galen*, in *Prorrhetic*. are those Parts above the Navel, which on both Sides are subjacent to the spurious Ribs; for the *Epigastrium*, or *Abdomen*, says the same Author, *Cam.* in 2 *Aph.* 35. is divided into the Hypochondrium, the Parts about the Navel, and the lower Belly, (which the *Greeks* call *πτερυγ*, (*Ectru*) which lies between the Navel and the Pudenda [See

a very accurate Division of those Parts under the Article *ABDOMEN*]. The *Præcordia*, or *Hypochondria*, then, may be more fully described, as that external Part of the Abdomen, which extends itself above the Navel on both Sides, from the *Ili*a, under the cartilaginous Parts called the *spurious Ribs*, (situated above the empty Places called the *Ceneones*) and comprehending, in the Right Side, the Liver; and, in the Left, the Spleen. But the Word, in a larger Sense, is used to signify all the inferior Parts comprehended within this Region, as the Stomach, Liver, Spleen, and Diaphragm; which is the Signification of the Word *ὑποχονδρια* in that Sentence, 1 *Prorrh.* 56. where it is said, that "Fevers proceeding from Pains of "the *Præcordia*, or *Hypochondria*, are of a malignant Nature." And let this suffice for adjusting our Notion of the *Præcordia*, by which we mean that Part of the Abdomen which is situated above the Navel, and extends itself to the Right and Left under the spurious Ribs.

The *Præcordia* (which we shall henceforth in this Discourse call *Hypochondria*) may be regarded, first, as in a State which is usual to Persons in Health, and is best for the Patient; or they may be considered as in a bad Condition, and unlike that of healthy Persons; as when, for Instance, they are affected with Tensions, Pains, Tumors, and Suppurations. On this Subject we may observe *Hippocrates* speaking in his *Prognostics*, where he says, "The *Hypochondria* are in the best State when "they are free from Pain, and are soft and equal both on the "Right and Left Side." And he might justly say so; for, when the *Hypochondria* are in such a State, we are satisfied, that no Part contained within their Region, as, for Instance, the Stomach, or Diaphragm, have received any Injury. And the good State of those Parts under acute Fevers is of no small Moment towards prognosticating an happy Event; and it is impossible for any of those Parts to be injur'd, and the *Hypochondria*, at the same time, to be soft, and free from Pain. In acute Diseases, therefore, it is of extraordinary Moment towards predicting a Recovery, for the *Hypochondria* to appear in a very good Condition, as, when they are soft, equal, and free from Pain, both on the Right and Left Sides.

With respect to the Thickness or Carnosity, and the Thinness or emaciated State, of the *Hypochondria*, *Hippocrates*, 2 *Aph.* 35. commends the former, in pronouncing, that, "Under "all Diseases, it is better for the Parts about the Navel, and "the lower Belly, to appear thick and fleshy; but when they "are remarkably lean and extenuated, it is a bad Sign." Whence it follows, that the *Hypochondria* when thick and carnosous, have a promising Aspect. But the best way will be for us, first, to procure a thorough Knowledge of the Patient's *Hypochondria*, and of the State, whatever it be, in which they usually appear; for, oftentimes, they are perceived to be unequal, and not alike soft, in Persons enjoying a good State of Health; for which Reason, not only those *Hypochondria* which are in the best State, but sometimes those which are unequal and tense, provided they were so when the Patient enjoy'd Health, afford a good Prognostic. It is not, however, as good a Sign to have the *Hypochondria* tense and unequal, though it be no more than what was usual in Health, as to have them soft, equal, and free from Pain. But those tense and unequal *Hypochondria*, which are elevated into a Tumor attended with Pain, are always bad, unless they appear as Signs of a Crisis, at the Approach of which there is frequently a Tension, Tumor, or Pain, of the *Hypochondria*.

Of critical Tensions of the *Hypochondria*, the Author of 1 *Prorrhetic*. 144. thus speaks: "Palpitations about the Belly, "with an oblong Tumor and Tenseness of the *Hypochondria*, "indicate an Hæmorrhage." And a little after, *Text*. 147. "A Tension of the *Hypochondria*, with an Heaviness of the "Head, Deafness, and Confusedness of Sight, prognosticate "an Hæmorrhage." *Galen*, also, in his third Book of *Crisis*, says, that a Tension of the *Hypochondria* without Pain is a proper Sign of an approaching Hæmorrhage from the Nose; but when the Tension is accompanied with Pain, it is no Prognostic of an Hæmorrhage, but indicates an Inflammation. Hence we infer, that a Tension of the *Hypochondria* without Pain, and sometimes, from the great Degree of Tension thro' the Redundance of the Blood, with Pain, a Dulness of the Sight, or Scintillations striking on the Eyes, an Heaviness of the Head, with a Redness, or high Colour, of the Face, are all critical; and, in particular, are Signs of an approaching Hæmorrhage from the Nose: For which we have the Authority of *Galen*, *Lib. 3. de Crisibus*, & *Lib. de Prasag. ad Posthumum*, and the Author of the *Prorrhetica*, *Lib. 1. & 2.* But a Tension of the *Hypochondria*, accompanied with a Coma, Anxiety, and Pain of the Head, are Signs of the Parotides, according to the Author of the *Coac.* 289. And *Hippocrates*, *Lib. Prognost.* teaching us to prognosticate future critical Abscesses from Tensions of the *Hypochondria*, says, "That an Inflammation about "the *Hypochondria* is succeeded by an Abscess in the inferior "Parts;

“ Parts; but if the *Hypochondria* be soft, and free from Pain, “ you may expect an Abscess in the superior Parts of the Body.” Hence it plainly appears, that even a Tension of the *Hypochondria* is sometimes very good and salutary, as it is an Indication of an approaching critical Evacuation.

We may reason in the same manner with respect to Tumors of the *Hypochondria*, though rarely any good Event may seem to be prognosticated from Tumors in those Parts. *Hippocrates*, however, in his *Prognostics*, speaking of those Tumors, says, “ That soft Tumors, which are free from Pain, and yielding “ to the Touch, remove the Crisis to a greater Distance of “ Time, and are less to be dreaded.” And more plainly to the same Purpose, a little after, he says, “ Soft Tumors, in- “ dolent, and yielding to a Pressure with the Finger, are slower “ in coming to a Crisis, and less dangerous.” Again, in the same Book, he tells us, that “ Tumors of the Belly are less dis- “ posed to form Abscesses than Tumors of the *Hypochondria*, “ and Tumors below the Navel least of all; but an Hæmor- “ rhage may be expected from the superior Parts.” And, *Coac.* 290. “ A Tumor of the *Hypochondria*, succeeded by a great “ or full Respiration, and an high Fever, in bilious Patients, “ occasion the Parotides;” because in such Constitutions the bilious Humours take their Course upwards.

There are, also, Pains of the *Hypochondria*, which are critical; as, when they are occasioned by a Redundance of Blood distending the Vessels: The Signs concomitant, and indicating a Crisis, are, as we said before, an high Fever, an Heaviness of the Head, or Deafness, or Dimness of Sight, or a Redness of the Face. To this we may add, that Pains of the *Hypochondria* are not bad, when succeeded by a Fever. Of these Pains we find *Hippocrates*, 6 *Aph.* 40. thus pronouncing: “ They “ who are afflicted with Pains about the *Hypochondria*, with- “ out an Inflammation, are relieved from them by the coming “ on of a Fever.” And, *Coac.* 281. we read, “ That Pains “ and Tumors of the *Hypochondria*, if recent, and not attend- “ ed with an Inflammation, meet with a Solution from Rum- “ blings arising in those Parts, and especially from their Erup- “ tion together with Discharge by Stool and Urine.”

Of Abscesses affecting the *Hypochondria*, the Author of the *Coac.* 281. pronounces, that, “ As to those which break out- “ wardly, it is best, that they should be contracted into a very “ small Space, and to a very sharp Head.” And, continuing to speak of the same Abscesses, he says, “ For those which tend “ inwardly, they are to be accounted the safest, which shew no “ outward Mark of themselves, neither by Tumor, nor Pain, “ nor Colour; but the contrary to these are of the worst “ Kind.”

The *Hypochondria*, in acute Diseases, tense, hard, pained, and unequal, are bad, as we are taught by *Hippocrates* in the *Prognostics*; and the same Author, 2 *Aph.* 35. passes a like Judgment on a remarkable Emaciation or Extenuation of those Parts. But, in order to a clearer and more distinct Notion of these Disorders, which affect the *Hypochondria*, and are all of them bad Prognostics, if attended with other bad Signs, we shall choose to treat of them all singly, and of their Causes, before we inquire what Prognostics may be formed from them; for without a just Idea of those Disorders, and some Knowledge of the Causes from whence they proceed, we shall never be able, with any tolerable Certainty, to form Predictions from them.

We shall begin, then, with a Tension of the *Hypochondria*; which Disorder is sometimes accompanied with a Tumor, and an Hardness which resists the Touch. Sometimes there is a Tenseness of the Parts without a Tumor, in such a manner, that though they appear distended, yet they are empty; and such Tensions as these, are what *Galen* calls *empty, softish, and tumorless Tensions*. *Hippocrates* has sometimes Occasion to speak of these Tensions, as in 3 *Epid.* *Ægr.* 2. where he says of *Hermocrates*, that “ He had a soft Tension of the *Hypochon- “ dria*.” Sometimes he calls those Kinds of Tensions *υπολαμπεις*, “ softish;” and the *Hypochondria* thus affected, *μετιστα*, “ elevated;” as he does in the Case of *Erasmus*, 1 *Epid.* *Ægr.* 8. In such Cases there is indeed a Tension of the *Hypochondria*, but such a Tension as is empty, and free from any hard Tumor. As to their Figure, these Tensions are sometimes oblong, according to that of the *Musculi Recti Abdominis*; sometimes broad, and sometimes round like a Crescent, in which Shape Tumors of the Liver are represented.

A Tension of the *Hypochondria* is attended with an Hardness, or an hard Tumor, from an Inflammation affecting either the Muscles, or the convex or gibbous Part of the Liver, or the Spleen, or even the Stomach. There is, also, a Tension without Hardness, as from a Repletion of the Muscles with a flatulent Spirit; and a Tension with an Hardness, but no Tumor, as from a Redundance of Blood in the Vessels. A Tension without Hardness is, also, without Pain, as is frequently observed, where a copious Hæmorrhage from the Nose succeeds;

a Tension from a Flatus is without Hardness, and without Sense of Weight; a Tension from a Redundance of Blood is attended with both; and, lastly, a Tension from an Inflammation is attended with a Tumor, if an Inflammation affects the external Part of the Muscles, or the convex Part of the Liver, or the Spleen, or the Stomach. And this is the Doctrine of Tensions in general. But we think ourselves obliged to be more explicit, because it has been said, that a Tension of the *Hypochondria*, attended with an Hardness, proceeds from an Inflammation of the Viscera before-mentioned; whence we may be inclined to conclude, that this kind of Tension is always from the same Cause. This, indeed, is true; for all Tensions, attended with a Tumor, or Hardness, and Pain, indicate an Inflammation of the Viscera: Yet it is as true, according to the Doctrine of *Galen*, that there are several Sorts of Tensions, which are not hard, but soft, or, as the same Author explains it, void, empty, and sublime; and these Tensions may not be accompanied with an Inflammation of the Viscera; for which Reason they deserve our more accurate Examination. Those Tensions, then, which are soft, or empty, or tumorless, which Words all signify the same thing, are caused either by an Inflammation of the internal Parts of the Viscera, or by a Driness in the Origin of the Nerves, which supply the Diaphragm. Hence the *Hypochondria* are attracted upwards, and, on that account, are sometimes, by *Hippocrates*, call'd properly *μετιστα*, “ sublime.” In this Case the *Hypochondria* are, indeed, distended; but the Inflammation being seated in the internal Parts of the Viscera, remote from our Notice, there is no concomitant Tumor, nor Hardness. *Galen*, in 3. *Epid. Com.* 2. *Text.* 1. tells us, that “ a “ soft Renitency of the *Hypochondria* indicates an Inflammation “ of some Part of the Viscera, as the Liver, Diaphragm, or “ Spleen.” And the same Author, on 1 *Epid.* treating of the Tension which affected the *Hypochondria* of *Silenus*, says, that “ through an Inflammation of the Diaphragm, the *Hypo- “ chondrium*, by virtue of its Continuity, was attracted up- “ wards, and distended, without a Tumor.” Again, on 3 *Epid.* speaking of this kind of Tension, he has these Words: “ As if he “ (*Hippocrates*) had said, the Right *Hypochondrium* was dis- “ tended, but without a Tumor, either because the Inflam- “ mation of the Liver was not great, or affected only the lowest “ Parts, by which it is united to the Belly; the gibbous Part “ thereof, in Conjunction with the inferior Parts, being not as “ yet elevated into a Tumor.” And this was the Case of *Hermocrates*. The *Hypochondria*, then, may be affected with a Tension of a soft kind, that is, without a Tumor, from an Inflammation of the Diaphragm, Spleen, or Liver, provided this last-mentioned be not wholly nor violently affected, but in a small Degree, or only in its lower Parts; whence the gibbous or convex Part of the Liver being free from an Inflammation, the Tension will feel soft to the Touch, and appear without a Tumor; but this Sort of Tension will never happen, when the Liver is either wholly or violently inflamed.

It was said before, that such a soft kind of Tension may proceed, not only from an Inflammation of the Viscera, but from a great Driness. *Galen*, *Com. in Prognost.* 27. comprehends both these Causes under the following Expression: “ Sometimes, says he, there is a Tension of the *Hypochon- “ dria* without an Inflammation, properly so called, either from “ an immoderate Driness, not only in the Parts themselves, “ but in the Diaphragm or Pleura; or from an Inflammation “ with a Tumor affecting the Muscles of the *Hypochondria*, “ without an Inflammation, properly speaking, which is a Tu- “ mor attended with a Pain.” And those Causes of a soft Tension are expressed yet more plainly by the same Author, *Com.* 2. in 3 *Epid. Cap.* 4. where he says, “ There is a Tension “ of the *Hypochondrium*, when the adjacent Parts are attracted “ by the Diaphragm; and there is a Tension of the Dia- “ phragm itself in a Pleurisy, sometimes from a violent Inflam- “ mation of the Pleura, sometimes from a Retraction of the “ Nerves belonging to the Diaphragm towards the Origin of “ the Nerves, and sometimes from an Inflammation of the Part “ itself.”

Having said thus much of the Causes of a Tension of the *Hypochondria*, we proceed to inquire, what may be predicted from it. And here we are told by *Hippocrates*, in *Prognost.* “ That an hard and painful Tumor in both the *Hypochondria*, “ or only in the Right *Hypochondrium*, is a very bad Pro- “ gnostic; for such Tumors, appearing in the Beginning, sig- “ nify, that Death is not far off.” *Galen*, commenting on this Place, by Tumor understands an Inflammation of the Liver, Stomach, or Spleen, which often proves mortal in a short time, especially when violent; tho' our Prognosticating from this Symptom must be confirmed by other pernicious Signs. But when the Tumor proceeds from an Inflammation of the Muscles, it is seldom accounted mortal. And *Hippocrates* himself, a little afterwards, seems to limit the Judgment he had passed on hard and painful Tumors of the *Hypochondria*, in saying, that their Appearance

Appearance in the Beginning prognosticates Death in a short time, in such a manner, as if none but great Tumors, and those not always, portended so fatal an Event, by saying, "When- ever, therefore, a Tumor (thus circumstanced) is painful, hard, and large, it signifies, that the Patient is in Danger of dying in a short time;" as if he had said, Those Kinds of Tumors, that is, Inflammations of the Viscera, if they prove mortal at all, destroy the Patient in a short time; for if they continue long, they indicate a Suppuration, rather than Death; agreeably to that of *Hippocrates*, delivered a little before, where he says, "If the Fever continues above twenty Days, and the Tumor subsides not, the Disease changes to a Suppuration." Tumors, therefore, of the Hypochondria, attended with Pain, and not proceeding from an Inflammation of the Muscles, but of the Liver, or Stomach, are dangerous, especially if the Inflammation be violent.

But our Prognostications in these Cases will be confirmed by the Pathognomonic Signs of these Inflammations, which indicate their Nature, and, if pernicious, portend a fatal Event. Such were the Signs observed by *Hippocrates* in *Apollonius*, 3 *Epid. Sect. 3. Ægr. 13.* of whom he says "that he was afflicted with Want of Sleep, and a bad kind of Inflation; had a great Thirst; laboured under a Coma, with a Tumor of the Right Hypochondrium, attended with a Pain; that his extreme Parts, on all Sides, were somewhat refrigerated; talked a little irrationally; forgot all he had said; and was delirious."

No less dangerous are softish Tensions of the Hypochondria without a Tumor, since, as we have shewn, they indicate either an Inflammation of some one of the principal Viscera, or a very great Driness of the Origin of the Nerves which descend to the Diaphragm, or of the Pleura. But these Tensions, it is to be observed, though always bad, never of themselves portend Death, but only in Conjunction with other bad Signs appearing at the same time; for not all who labour under an Inflammation of the Liver, Stomach, or Diaphragm, die. It will be necessary, therefore, to consult the rest of the Signs; and if these, too, are bad, and of the Number of those which are fatal, we may safely venture to predict the Death of the Patient. Thus fatally circumstanced were the Tensions observed in *Silvius*, *Hermocrates*, *Philistes*, the young Man of *Melibæa*, and the young Man who lay in the *Forum Mendacium* [*ἐν τῷ ψευδοῦ λόγῳ*] who all, as you may read in the first and third Books of the *Epidemics*, had this softish Tension of the Hypochondria, attended with other bad and deadly Signs.

On the same account Pains of the Hypochondria, attended with the aforesaid Tension, and other bad Signs, are usually mortal. Thus it was in the Case of the Wife of *Dromeades*, 1 *Epid. Ægr. 11.* who, on the third Day, was seized with a Pain of the Hypochondria; and made thick, turbid Urine, which had no Settlement; and had cold Sweats; which were all mortal Signs. And, *Ægr. 12.* it is related, "that a certain young Man, being feverish, went to Supper, and drank pretty freely; at Night he vomited up all, and was seized with an high Fever, attended with a Pain of the Hypochondrium, and a softish Phlegmon tending inwardly; and he had a troublesome Night; his Urine, at first, was red and thick, and deposited no Sediment; his Tongue was very dry, but he was not very thirsty." All these were very pernicious Signs, and very fatal to the Patient, who died on the eleventh Day. The Author of the 1 *Prorrhetic. 56.* says, "that Fevers, proceeding from Pains in the Hypochondria, are malignant." But *Galen* says, that all Fevers from the Hypochondria are not malignant, since there are several Parts seated therein; but only such as are excited by an Inflammation of the Diaphragm, Stomach, and Liver; nor are even these all malignant, nay, perhaps, not so much as acute, so far are they from Malignancy: Thus *Galen*. But the Malignancy of acute Fevers is to be demonstrated from other bad Signs. It may be added, that those Kinds of Tensions and Pains are bad and mortal, if they continue long attended with some pretty copious Evacuation. Of these it is said, *Coac. 284.* "that Pains arising in the Hypochondria are bad in every Circumstance, but especially if accompanied with a Looseness." This appears from the Cases of the Sick, to which we just now referred; particularly that of *Silenus*, 1 *Epid. Ægr. 2.* who laboured under a Tension of the Hypochondria, accompanied with thin blackish Stools: And in the Case of *Erasmus*, *Ægr. 8.* who had a painful Tension of the Hypochondria, attended with Sweats.

We have spoken enough on the Subject of Predictions from bad Tensions of the Hypochondria; and proceed to speak of Suppurations affecting the same Parts, which are bad, if attended with a great Looseness, Nausea, Syncope, Vomiting; and worst of all, when the Fever is not at all remitted, nor the Patient relieved thereby. We said before, that Tumors, which continue long with a Fever, pass into an Abscess, or Suppuration,

on the Authority of *Hippocrates*, who, in his Prognostics, says, "That, if the Fever holds the Patient above twenty Days, and the Tumor does not subside, there is a Conversion into a Suppuration;" and a little after, "If the Fever goes beyond the Bounds of sixty Days, and the Tumor, in that time, does not subside, it indicates a Suppuration, both in this Case, and, also, when the Tumor affects any other Part of the Abdomen." Of the Prognostics, which may be drawn from these Kinds of Suppurations, the Author of *Coac. 281.* treats, where he says, "Among mortal Abscesses are to be esteemed those which break inwardly; but, of those which break outwardly, the most laudable take up the least Space, and gather to the sharpest Head. Of those Abscesses, which tend inwardly, the best are those which shew no outward Marks of any Tumor, Pain, or Heat; but the contrary to those are very bad." Hence we learn to know bad Suppurations; and that, to be sensible of a Tumor, Pain, or Heat, in the Hypochondria, is an Indication of a latent and not elevated Inflammation. If, therefore, this Tension of the Hypochondria continues after the Suppuration, without in the least relaxing, it is a pernicious Sign; but if there be, also, a Pain and Heat, it is a worse and more fatal Prognostic; but there is the greatest Reason for predicting the Death of the Patient, when a copious Evacuation of Pus gives him no Relief; and when he finds himself the worse after such Excretions, his Case is esteemed desperate. For such an Evacuation is one of these critical Symptoms, which determine nothing, and, consequently, are fatal; and the more so, if attended with a Decay of Strength, or some other bad Sign.

These are the Predictions we have Reason to make from a Suppuration in the Hypochondria; but, before we conclude this Discourse, it will be fit to observe, that *Hippocrates*, in his Prognostics, tells us "That if there be a Pulsation in the Hypochondria, it indicates a Disorder of the Reason, or a Delirium." But, in this Case, we are to observe the Eyes of the Patient; for, if he frequently moves his Eyes, and casts his Looks from Place to Place, Madness is to be expected; agreeably to that in *Coac. 282.* "A Pulsation in the Hypochondria, with a Perturbation or Disorder of the Senses, portends a Delirium; and the more, if it be attended with frequent Motions of the Eyes." And such an Event seems probable, either from an Inflammation of the Diaphragm, or an Effervescence of the Humour, by which a Multitude of Flatulencies are generated; which, ascending in great Quantities to the Head, by heating and stimulating the Membranes of the Brain, excite a Delirium. This Pulsation of the Hypochondria is generally bad; though sometimes good, when it precedes a Crisis; in which Case it is distinguished from a bad Pulsation by critical Signs. But when a Pulsation in the Hypochondria is attended with other bad Signs, it ought to be esteemed a mortal Prognostic; agreeably to *Coac. 283.* where we read, that "A Cardialgia, [*καρδίας πόνος*] attended with a Pulsation of the Hypochondria, and a Fever, in which the external Parts are refrigerated, is bad, both on other accounts, and the more; if it be attended with an EPHIDROSIS" [See that Word]. And let this suffice to be spoken concerning Predictions from good or bad Hypochondria. *Prosper Alpinus de Prasag. Vit. et Morb. Ægrot.*

PRÆCURSORES, in *Paracelsus*, are the Signs of an approaching Distemper.

PRÆDICTIO. A Prediction; that is, a Prognostic.

PRÆFOCATIO. A Suffocation. It is applied to hysterical Fits.

PRÆFURNIUM. The anterior Part of a Chymical Furnace, by which Coals are conveyed to the Grate, or Fireplace.

PRÆGNATIO. Impregnation.

PRÆLINGUA. The anterior Part, or Tip, of the Tongue.

PRÆLUM. A Press, in Pharmacy, for the Expression of Oils and Juices.

PRÆNOTIO. A Prognostic, or Foreknowledge.

PRÆOPINATIO. An Uncertainty in the Mind of a Physician, in prognosticating the Event of a Distemper.

PRÆPARANTIA MEDICAMENTA. Preparing Medicines; that is, such as prepare the morbid Humours, and dispose them to separate from the healthy, and pass off by the Help of Evacuants.

PRÆPARANTIA VASA are the Spermatic Vessels.

PRÆPUTIUM. The Prepuce, or Foreskin. See GENE-RATIO.

PRÆSAGIA. Presages.

Three Things principally contribute to render a Physician perfect: The first is, that, from accurate Observations, he be able to trace and investigate the Origins and Causes of Disorders, in order to oppose them in their Beginnings by proper Remedies; or that, knowing these Causes, he

may give salutary Precepts for preventing their Effects: The second is, that he accurately know the various Natures of Diseases, and their Differences, with respect to different Constitutions, that he may be the better capable of discovering Medicines proper and adequate for removing them. The third is, that he may be able to form a right Judgment concerning the Event of Disorders; as, also, concerning the Operation and Effects of Medicines. But though this last does not contribute directly to obtain the End of the Healing Art; yet it is certain, that it greatly promotes the Certainty of Medicine, and the Reputation of the Physician. For this Reason *Hippocrates*, in the very Beginning of his *Prænotiones*, speaks in the following manner: "It is, in my Opinion, most expedient for the Physician to form a Prognostic; since, when he declares, not only what is past, present, and to come, but, also, what escapes the Patient himself, he must, by these very means, procure the greater Confidence and Trust." And in *Prorrhetic. Lib. 2. Sect. 3.* he tells us, "That the Physician ought to be mindful of this; that, if his Prediction succeeds, he will be admired by the Patient; whereas, if he fails in his Prognostic, he will be hated, if not looked upon as a Madman." But this exalted Art of Prognosticating is so difficult, uncertain, and precarious, that we find, from Experience, the most sagacious Physicians have failed in it; since we often see the Patient die, of whose Recovery they were certain. *Hippocrates* confesses this, and pronounces all Prognostics in acute Diseases fallacious. In consequence of this Difficulty in forming Prognostics, the most sagacious Physicians have placed Medicine among the conjectural Sciences; and the Vulgar have not only deemed the salutary Art uncertain, but, also, despised its Professors.

But, though no Part of Medicine is incumbered with more Difficulties, than the Prognosticating Art, yet I do not despair to reduce it to the Form of a Science, and to establish it on certain general Axioms, and even Definitions; provided we assume what is necessary for this Purpose: But we shall first inquire into the Causes which may have so long hindered this Part of Medicine from being established into a Science. The most considerable, therefore, of these Causes is a Defect of Observations; for, as accurate Observations, and Histories of Diseases, are the first Foundation of Medicine, from which we learn whatever happens in Nature, what Effects are produced in this or the other Disorder, and what Changes are induced on human Bodies by particular Substances; so such Observations supply us with the Circumstances, the Matter and Opportunity of forming right Prognostics. The Physician, who duly compares these Things, and has a sufficient Knowledge of Natural Philosophy and Anatomy, is able accurately to investigate the true and adequate Causes of what is past, present, and to come; from which he can afterwards form a right Judgment of the Danger of a Disease, and tell, whether it will terminate in Death, or Recovery. But, as the Antients drew their Prognostics, not from entire Histories of Diseases, but from particular Circumstances, Numbers of which are collected by *Hippocrates*, and others, who have trod in his Steps, so it is not surprising, that they should rarely answer, but frequently prove fallacious. Besides, as the Antients wanted a rational Medicine, neither understood the true and genuine Natures and Causes of Life, Diseases, and Death, and were grossly ignorant of the Structure of the human Body, and the various Motions depending upon it; so they could not, even from the fullest and most circumstantial Observations, deduce the true Causes and Signs of the future Event of a Disease, with respect to Death, or Recovery: Much less could they comprehend and account for the different Operations of Medicines. Hence it is obvious, that the Antients treated, not only this, but all other Parts of Medicine, in an empirical manner. Thus, for Instance, if any one laboured under an acute Fever, and died under a particular Train of Circumstances, and if this happened for several times, they forthwith laid it down for a Rule, that these Symptoms were Signs of Death. But, because these Symptoms vary very surprisingly, according to the Diversity of Patients, Diseases, Countries, and Seasons, hence numberless Precepts are laid down, especially by the Antients, which rarely hold good; so that *Hippocrates* confessed, that the Prognostics, with respect to Life and Death, were very uncertain in acute Diseases.

That this Art of Prognosticating may receive more Advances, and, in time, find a Place among the Sciences, all Circumstances are to be carefully consider'd, and adverted to, in the Progress or History of the Disease: Nor is it sufficient to know the Disease, and its Causes, since, in order to form a right Prognostic, it is absolutely necessary the Physician should have a perfect Knowledge of the Constitution of the Patient; for it is of great Importance, to know the Age and Strength of the Patient, the State of his Viscera, the Condition of his Blood and Humours, his previous Method of Life, the Season of the Year, whether his Body is strong or weak, and whether his nervous System is disposed to anomalous and spasmodic Mo-

tions. It is, also, necessary the Physician should know the several Stages of the Disease, in which certain particular Symptoms happen: He must, also, inquire in what Method the Cure has been carried on, that thus he may know, whether any Error has been committed by the Patient, or by any other Physician. From these Things, duly consider'd, he is to form a Judgment, what Signs or Symptoms, under these or other Circumstances, in this or the other Patient, prognosticate a salutary, or a fatal Event: For it often happens, that a particular Symptom of the same Disease proves fatal to one Patient, and not so to another. Thus we frequently observe, that when infirm and old Persons, those wasted with Hunger, or previous Diseases, or long Grief, are seized with a Fit of the Stone or Colic, they generally die under the slightest Train of Symptoms, which seem to portend no Danger, and which are easily supported by the Robust and Vigorous. In acute Disorders, the same is, also, observable: Thus, in acute Fevers, those who are of a slender Habit, and whose Parts are exquisitely delicate and sensible, are racked with violent Pains, Anxieties, Watchings, a Delirium, and insatiable Thirst, and yet escape; whereas, when those who are of a spongy Habit of Body, or whose Strength is impaired, are seized with the same Kind of Fever, they do not complain of any great Uneasiness, Pain, or violent Heat; yet die delirious, in the Height of the Disorder, upon the least external Refrigeration. The Stages of the Disorder are, also, of great Importance in forming a Judgment of its Symptoms: Thus it is certain, that an Epilepsy, especially in Children, often happens without any Injury, in the Beginning of the Small-pox; whereas an Epilepsy, in the Height of this Disease, infallibly proves mortal. In the Beginning, also, of the Small-pox, a Phrenitis is in young Persons often observed to be without Danger; but, if it seizes the Patient about the ninth or tenth Day, it is a certain Sign, that Death is not far off: For this Reason, in forming Prognostics, all Circumstances are duly to be separated, distinguished, and considered: Hence *Hippocrates*, in his *Prorrh.* justly advises Physicians to Caution, as in all the Parts of Medicine, so more particularly, in forming Prognostics; for a Physician in no manner opens the Mouths of People against him, and exposes himself to Contempt, more effectually and shamefully, than by false and ill-founded Predictions; especially when a Patient is left for irrecoverable, and afterwards recovers; or, when the Patient dies, though the Physician was absolutely certain of his Recovery: For I have known some Physicians affirm, that their Patient would not die, when a few succeeding Hours have put an End to their Lives.

Thus, though the Prognosticating Art is very difficult, yet the Physician ought to do all he can, to have some certain Signs and Marks of future Recovery, or Death, which, in my Opinion, may be obtained; for it is certain, that all Events, whether with respect to Life or Death, proceed from certain adequate Causes, without which they cannot happen. If, therefore, the Physician thoroughly knows the Causes why a Patient must necessarily die by a Disease; and if he observes these Causes in the Patient, by their usual and infallible Signs; he may certainly, from their Presence, predict and foretell the Event they will produce. In the same manner, if a Physician knows in what Manner, at what Time, by what Ways or Excretions, a Disease is terminated, and the Patient recover'd; from the Presence of these Circumstances, he may confidently and reasonably predict future Health. We must, also, condemn the Practice of those Physicians, who, in the Beginning or Progress of a Disease, before they either have, or can have, certain Signs, either of Health or Death, rashly form a Prognostic, with respect to its Event: For we are by no means, from the Beginning of a Disease, to form a Judgment of its End; for a Disorder which begins gently, and proceeds mildly, often rages with Violence, when arrived at its Height.

I am not of Opinion, that a Physician can, in the Beginning or Progress of a Disease, form a Prognostic, either with respect to the Life or Death of the Patient, as the Vulgar believe, and, therefore, demand a satisfactory Answer from the Physician. I assert, however, that both in acute and chronical Disorders, there are certain Signs and Marks by which we may both foresee and predict a fatal, or a salutary Event; but, before we can do this, we must wait for the Times in which these Signs discover themselves. Besides, it is one thing to pronounce a Disease dangerous, and another to prognosticate future Death; for the former may be conjectured at, even in the Beginning of the Disease, from the Nature and Strength of the Patient, and the Genius of the Disease; whereas the latter cannot be prognosticated, except when the true Signs of Death are present. But, before we consider the Signs by which we may be sure of a future Death, in any violent and dubious Disorder, we shall give a Theory of Death, and investigate its true Causes, that what we are afterwards to advance, may be the better understood.

As the Antients were entire Strangers to solid Reasoning in medicinal Affairs, so it would be to no Purpose to endeavour from their Works, to discover wherein the Nature and Essence of Death consists; for they assert nothing more, than that Life consists in a due Temperament of the innate Heat, and the radical Moisture; and Death in the Exinction of these: But as these Words convey no clear Idea to the Mind, so nothing solid or satisfactory can be deduced from them: But after, in our Times, by the Study and Contemplation of Nature, and by a careful Discovery of the Structure of the human Body by Anatomy, Light and Truth began to diffuse their genial Rays on Medicine, and the Circulation of the Blood was discovered, the Reasons and Causes of Life and Death can no longer remain in the Dark; for as by the constant and free Circulation of the Blood and Humours, the Body, in itself subject to Putrefaction, is preserved from every Degree of Corruption, all the Actions, whether natural or animal, remain entire, and Vigour is imparted, both to the Mind and Body; so, when this Circulation is totally destroy'd, we observe, that the Force of the Mind and Body is cancel'd, all their Functions cease, and the Body itself is forthwith converted into Putrefaction: Hence we understand, that Death is present, when the Circulation of the Blood is so effectually stopped, that it can by no Means or Art be restored. Now, as this Circulation of the Fluids depends on the Motion, Impulse, and Tone of the Heart, Arteries, and all the Vessels furnished with nervous moving Fibres, so the Cause of Death is only to be sought for in a total Destruction of the Pulsation of the Heart and Arteries, and an effectual Abolition of the Motion of the Thorax, so subservient to Respiration. We now come to explain, how in Diseases these Motions of the Heart and Thorax are totally intercepted.

The Seats, therefore, of Diseases, and, consequently, the Causes of Death, can in no manner be more accurately investigated, than by Anatomy, or the Inspection of Carcasses: Now, upon laying open Carcasses taken off by any Disorder, the evident Causes of the Patient's Death are forthwith subjected to our Senses; for whether the Patient has died of an acute, or a chronical Disorder, a putrid Corruptio of some Part or other, accompanied with an highly fetid Smell, is always observed; for always, in some of the nobler internal Parts, either in the Stomach and Intestines, or within the Brain, and its Membranes, or in the Liver, Uterus, Kidneys, Spleen, or Lungs, there is a certain putrid and sphacelous Corruption, hardly tolerable on account of its fetid Smell; and this is found to proceed either from a Stagnation or Inflammation of the Blood, which, in acute Disorders, produces Death; or from a Stagnation and Extravasation of the Blood and Humours into the principal Cavities of the Body, such as the Head, Thorax, or Abdomen. This last principally happens in chronical Diseases, where the Viscera, especially in the Thorax and Abdomen, are found corrupted by extravasated Pus, or Serum. Upon dissecting the Bodies of those who have died of any violent Disorder of the Head, an Apoplexy, for Instance, or a Lethargy, there is always an inflammatory and sphacelous Stagnation of Blood, in the Meninges, observed: The like happens in those who die of violent Disorders of the Breast; for in Patients taken off by a profound Pleurisy, or Peripneumony, the whole vascular Compages of the Lungs is found infarcted and obstructed, by-corrupted Blood. In Patients who die by a Phthisis, the Lungs are found full of purulent Tubercles, or a great Part of them are corrupted, and corroded with Pus. In convulsive Asthmas, a large Collection of Water in the Thorax generally destroys the Patient; and in a suffocative Catarrh, which soon proves mortal, there is a Collection of Blood or Serum in the Bronchia of the Lungs, which hinders the free Ingress and Egress of the Air. In investigating the Causes of Death, in those Disorders which have their Seat in the Abdomen, we find in a Cachexy and Dropsy, that the Liver and Omentum are indurated, or corrupted by a large Extravasation of Serum. In the Morbus Niger of Hippocrates the Spleen is generally large, infarcted, and corrupted, whilst, at the same time, there is an Extravasation of Blood in the Cavity of the Stomach and Ileum. In those who die of violent Iliaz Passions, Colics, Choleras, Dysenteries, and Cardialgias, the Parts of the Stomach and Intestines, are found inflamed, sphacelated, and corroded, so as to diffuse an highly fetid Smell. The Patient who dies of a violent Pain arising from a Stone firmly impacted in one of his Ureters, has his Stomach principally inflamed, the Kidneys, and urinary Ducts and Passages, being at the same time affected, and corrupted. In such Disorders of the Uterus as prove mortal, the Womb is either inflamed, exulcerated, sphacelated, or corrupted by extravasated Serum.

As for acute Disorders, the most considerable of which are Fevers, which destroy so many in the Flower of their Age, and are so unfriendly to the human Constitution, they prove

fatal in no other manner than by an Inflammation, which terminates in a Sphacelus of the internal Parts, especially of the Stomach, Intestines, and Meninges; for these Phenomena are universally observed in those destroyed by Fevers. Poisons of every kind prove mortal by a sphacelous Inflammation, especially of the Primæ Viæ, which, upon opening the Patient immediately after his Death, is subjected to the Senses; so that such an Inflammation is, among all others, the most certain Sign of having taken Poison. In Patients destroyed by Worms, the Intestines are visibly corroded and inflamed. From all which I think it sufficiently obvious, that Death cannot readily happen, without the Putrefaction and Corruption of some internal Part; so that Putrefaction may be justly said to be highly unfriendly to Life, and fatal to Mankind; for, as the Putrefaction of the human Body quickly succeeds a total Destruction of the Circulation of the Blood, so it is generally the adequate, true, and almost perpetual Cause of Death, and which attacks either the external Parts, though rarely, or, which happens most frequently, those of the internal Kind; so that we may truly affirm, that hardly a Patient among a thousand dies without a Sphacelus: Only we must except such as die violent Deaths, and those who are suddenly taken off by a Polypus blocking up the Mouths of the Vessels. But, in all other Subjects, when opened after Death, a fetid Putrefaction, highly ungrateful to the Smell, is perceived.

But though the Causes of Death are most evidently discovered, by dissecting Persons after Death; yet we must here give a Caution, not to confound the Causes of Death with the Causes of Diseases, which we see frequently done: For I have observed, that several Physicians, when a Patient dies of a dangerous Disorder, immediately order his Body to be laid open; and, when the internal Parts are found sphacelated and corrupted, they shew them to the By-standers, and inform them, that the Patient could not possibly be saved, in consequence of so violent a Disorder, thus manifestly confounding the Causes of his Death, with the Causes of his Disease; whereas it ought principally to be consider'd, whether those Causes which produced Death, might not, by proper Measures, taken in due Time, have been prevented. By these means they endeavour, artfully, to palliate and cover their Errors, if they have, possibly, committed any. Since, therefore, the Nature and Essence of Death consists in a putrid Corruption; hence we may justly infer, that the Physician, who intends to preserve his Patient, ought carefully, by proper means, to prevent and remove this sphacelous Corruption, which always proceeds from a Stagnation of the Humours, and strictly forbid him the Use of every thing which can, in the least, promote such a Putrefaction.

But, that we may more accurately consider this Subject, and be able, from certain Signs and Marks, to foresee and predict such a future Corruption, we are to investigate the Causes by which it is generated in the human Body: For as no Effect in Nature is produced without certain and adequate Causes, so, we may affirm, that there are certain Causes of this Corruption, from which, when present, a right Prognostic is to be deduced. But, before we attempt an Explication of these Causes, we shall briefly shew, why Putrefaction is so unfriendly to the human Constitution, that a slight and gentle Sphacelus, in a small Part of the Stomach and Intestines, is sufficient to destroy the Patient suddenly. This, therefore, in my Opinion, happens in the following manner: The Circulation of the Blood, on which depends the Soundness of all the Functions of the Body, is supported by the Impulse, Strength, and moving Force of the Solids. But this depends not, as some imagine, on any immaterial Being, but, rather, on the highly subtile Fluid of the Blood and Nerves, and its Influx into these Parts, as is sufficiently obvious from this Experiment, that when the Nerve, or Artery, which runs to any Part is tied, or cut, all Sensation, Motion, and Nutrition, are destroyed in that Part. Besides, that the Strength of the Parts depends on some material Principle, is certain from this, that, by Hunger, Strength is impaired; but immediately restored by the Exhibition of proper Aliments. Now there is nothing in Nature so prejudicial, and which so soon destroys Strength, as Putrefaction; as we observe in a Sphacelus, or in an exulcerated Cancer, which soon destroys, not only Strength, but Life. It is, therefore, certain, that Putrefaction conceived in the Body, especially when it increases and diffuses itself, intimately mixes its malignant Vapour, principally with the nervous Parts, and moving Fibres; and being highly unfriendly to the Fluid, which is the Origin of the Motion of the Solids, it corrupts it, as it were, extinguishes the Systole and Diastole of the Heart, and totally destroys the Tone and Motion of the Fibres.

In Diseases there are, therefore, two Methods by which Death is brought about; one of these is sudden and precipitate, and this is produced by violent Constrictions of the nervous Parts, which either arise from Inflammations, and sometimes,

in the Vigour of the Disease, generate fresh inflammatory Stagnations, which tend to a Sphacelus, and the Death of the Patient, which principally happens in Fevers, and acute Disorders: The other Method is more slow, and happens gradually, from a Corruption of the Viscera, and a Stagnation and Extravasation of the Humours; and this principally happens in chronical and long-protracted Disorders. As for Death, in acute Disorders, or Fevers, it generally proceeds from violent Spasms, which bring on an Inflammation of the Stomach, Intestines, or Membranes of the Brain, together with a mortal Corruption; for Spasms are universally hurtful, and unfriendly to the Constitution, because they direct the Motion of the Blood and Humours from the Circumference of the Body to the internal Parts, and obstruct the salutary Secretions, so necessary to Life and Health. Besides, such is the Force and Power of Spasms, that they hinder the free Circulation of the Blood, in which the very Essence of Health consists; and, by rendering its Motion unequal, produce Congestions of Blood in the nobler Parts, especially in the Head, Stomach, and Intestines, which, if not surmounted by Nature, by means of an happy Discussion and Resolution, infallibly bring on Corruption and Death: For in every Commotion of Nature, or Fever, there are two Kinds of Motions, which ought to be duly adverted to, and carefully distinguished from each other. The one is highly pernicious, and performed from the Circumference to the Centre: This is that spasmodic, and always morbid Motion, which tends to the Destruction of Nature, and the vital Motions, and discovers itself by Coldness, Rigor, Horror, Anxiety, and a small and weak Pulse. The other is of the salutary Kind, succeeds the Spasms, is contrary to them, directed from the Centre to the Circumference, and discovers itself by Heat, and a brisk and strong Pulse: And this is, as it were, the Medicine of Nature, which frees the Body from Destruction, and by means of which these spasmodic Strictures are resolved, the inflammatory Stagnations dissolved, and the excretory Ducts, before closed up and constricted, happily open'd. This is that Motion which the Antients called *the healing Power of Nature*, by the Efforts of which Diseases are subdued, the Patient recovered, and the Danger of Death averted: This is, also, that Motion under which no ones dies, which rather happens under a spasmodic Motion directly contrary to it. The Physician, therefore, who duly knows the Genius, Power, mutual Actions, Effects, and Relations, of these two opposite Motions, is able to act with Prudence in the Management of Diseases, to foretel their Dangers judiciously, and with Reputation to prognosticate their happy Terminations: Such a Physician is, also, qualified for understanding the seemingly uncouth Phrases of the Antients, when they tell us, that a Fever is the Struggle of Nature with a Disease; and that the Patient recovers, when Nature gets the better of the Disorder: For if Spasms, Inflammations, Congestions, and Stagnations of Blood, in themselves mortal, are not in a certain Period of Time, by the hot, solvent, and febrile Motion, digested and dissolved, but remain in their full Force and Vigour, then Nature sinks; and the Patient must necessarily die. But since there are certain Signs, by which the Victory both of Nature over the Disease, and of the Disease over Nature, may be estimated, it is sufficiently obvious, that the Prognosticating Art depends upon certain Principles and Foundations.

We shall, therefore, here briefly consider those Effects and Signs of fatal Spasms, as rarely prove fallacious in acute Disorders; and such as, if they appear about the critical Days, after the Patient is weaken'd by the Disease, and either are not removed, or increase, may render the Physician pretty certain, with respect to the fatal Termination of the Disorder. Nor are these fatal Spasms observable in one, but in many Parts of the Body. If, therefore, a Rigor, accompanied with Coldness, is observed about the Height of the Disease, or recurs often; if the Body is not equally soft, but hard, dry, and rough; if exanthematous Eruptions are, by the Spasms of the Skin, repel'd or diminished; if the external Parts are seized with an Horror and Coldness; if Fontanels, or Ulcers, discharge no more Matter; these are bad Signs, and prognosticate the greatest Danger of Death; because, in consequence of the Spasms of the Skin, the Motion of the Blood and Humours to the internal Parts excites dangerous inflammatory Congestions, and hinders the peccant Matter from being expelled by Perspiration. In acute Disorders these Spasms generally affect the Parts subservient to other Excretions; such as those by Urine and Stool, by constricting which, the Urine is render'd thin and aqueous, the Patient costive, and afflicted with an Hardness and Tension of the Abdomen. Some Patients, in consequence of the Violence of these Spasms, are afflicted with a frequent Desire of discharging their Urine and Excrements.

But the Danger is still greater, when these spasmodic Contractions affect the internal and more noble Parts, subservient to the vital Motions; for the small, the contracted, the quick

and hard, as, also, the unequal and intermittent Pulse, proceed from no other Cause than the spasmodic and convulsive Stricture of the Nerves, which terminate in the Fibres and Coats of the Heart, and always, in the Height of the Disease, prognosticate great Danger. Equal Danger is indicated, by a frequent, uneasy, and difficult Respiration, happening about the critical Times; for, as *Hippocrates*, in his Prognostics, justly observes, that as in all Diseases an easy Respiration is of great Importance to Recovery, so in acute Disorders, a frequent and difficult Respiration is always an unlucky and inauspicious Omen. If the Nerves of the Præcordia are affected with violent Spasms; insupportable Uneasiness, Inquietude, Tossing, and Change of Situation in the Bed, happen; if the nerveo-muscular Membranes of the Oesophagus and Stomach are seized with Spasms, Efforts to vomit, Regurgitations of the Liquors drank, frequent Discharges of a limpid Serum from the Fauces, Difficulty of Deglutition, a Dryness of the Tongue and Mouth, afflict the Patient; and if the Duodenum is drawn into Consent; the whole Body, and especially the Face, is tinged with a yellow Colour: But when more excessive and universal Spasms shake and rack the whole nervous System, the certain Death of the Patient may be prognosticated from the Pinching of his Nostrils, his collapsed Temples, his cold and flaccid Ears, his hollow Eyes, the Coldness and Tension of his Skin about the Forehead, and his black or highly pale Colour; all which make up the *Facies Hippocratica*, an infallible Prognostic of Death. Convulsions of the Nerves, which, according to *Hippocrates*, in *Sept. 4. Aph. 6.* are always bad Signs in acute Disorders, are indicated by the following Signs: If the Patient lies on his Back, with his Knees contracted; if he falls downward to the Feet of the Bed; if he makes bare his Arms and Legs, and tosses them irregularly about him; if his Nails and Fingers are pale; if he gathers the Knaps, or Fingers the Edges, of the Bed-cloaths; if he picks off the Eminences from any adjacent Wall, and is afflicted with a Twitching of the Tendons: When all these appear, they prognosticate a speedy Death.

Tho' most acute Disorders have, for their Cause, an Inflammation of some internal Part, and, for that Reason, are not free from Danger; yet, in the Height and Violence of the Distemper, fresh Inflammations are frequently formed, especially in the Stomach and Membranes of the Brain, and such Inflammations are always terrible and sure Prognostics of Death: These Inflammations, whether separately or jointly, infallibly destroy the Patient, if they appear on the seventh, ninth, or eleventh Day, not only of malignant, petechial, contagious, and Camp-fevers, but, also, in other acute Fevers, such as the Synochus, Burning Fevers, the Purple Fever, the Small-pox, and Measles: An Inflammation of the Stomach is known, if there is a violent Heat, and, as it were, a Sense of Burning, accompanied with an acute Pain about the Præcordia; if these Parts are hard to the Touch; if the Extremities are cold; if the Patient is uneasy and restless; and if every thing he takes, whether Medicines or Drink, is immediately either thrown up by Vomit, or, if retained, creates great Uneasiness, and increases the Anxiety: Sometimes, also, the Inflammation is so great, as to pass through the Oesophagus to the Fauces, which, in this Case, are full of burning painful Puustules, and continually covered with a viscid and putrid Mucus: All which are Prognostics of a quickly approaching Death. Another more dangerous Inflammation, which is generally joined to this, and happens a little before the Death of the Patient, is, that of the Membranes of the Brain, by the *Greeks* called *Phrenitis*, which generally succeeds an obstinate and continual Watching, and an intense Pain of the Head: Its Approach may be predicted from a previous Rigor, thin and copious Urine, a Ringing of the Ears, a strong Pulsation in the Head, and a Discharge of a few Drops of Blood from the Nose: Its Presence is known from the following Signs: The Eyes are red, fiery, and stern; there is an Alienation of Mind; the Words are senseless and incoherent; the Patient makes improper Answers to the Questions put to him, often discharges Tears involuntarily, gnashes his Teeth, and has no longer any Appetite for Drink. If the Phrenitis is succeeded by a Convulsion, it is a pretty infallible Sign of a soon approaching Death. These are the principal Causes which, in acute Disorders, take off the Patients. Persons of sanguine Temperaments, those of choleric or sanguineo-choleric Habits, young Persons and Adults, those of delicate Constitutions, those prone to Anger, those of lean and constricted Habits, or who have indulged themselves in high, rich, and spirituous Living, are principally subject to these acute Disorders, which are produced by violent Inflammations and Spasms.

But, in acute and continual Fevers, there is another Cause of Death, in those who are of a plethoric and spongy Habit of Body, who are phlegmatic, or whose Strength is exhausted, either by Diseases, Hunger, long Grief, or Hæmorrhages; for these

these are not so much destroy'd by vehement Spasms, and a terrible Train of Symptoms, as by an Imbecility and Defect of the Motions, a Want of due Tone in the Parts, and a Loss of Strength. In Cases of this Nature, the Stagnations of the Blood and Humours, in the very Beginning of the Disorder, dispose to a putrid Corruption. And as these Disorders are attended with mild Symptoms, they often deceive the Physician, and elude his Prognostics. Hence, because their Nature is not so evident, but occult, their Events are, with Difficulty, prognosticated, and they are generally classed among the Fevers of the malignant Kind. Such Fevers are known by the following Signs: They appear with a slight Coldness and Horror; but, in the very Beginning of the Disease, there is an uncommon Loss of Strength, and a languid, frequent, and contracted Pulse. In an erect Posture the Patient easily faints away; the Urine is thin, and without a Sediment; the Patient cannot sleep, though he has a perpetual Propensity to it. This Condition is succeed by a still greater Loss of Strength, and an Alienation of Mind; he complains of no Pain, Thirst, or any great Uneasiness; he is, however, pretty restless, and tosses in Bed; and if his Extremities become cold, and his Pulse begins to be defective, and can no longer be felt in his Wrists, we may justly prognosticate, that the Death of the Patient is not far off. But tho' such Patients are not taken off without an Inflammation of the Stomach, and Membranes of the Brain, yet this Inflammation is not accompanied with violent Spasms, or terrible Symptoms. But a Corruption is easily brought on, which accounts for their Death.

But since all Inflammations generally terminate in a Morrification, or sphacelous Corruption, we shall subjoin some Marks or Signs, by which the Transition from the Inflammation to the Sphacelus may be known. In this Case, therefore, a certain internal Sense of Coldness is perceived; the before-intense and acute Pain about the Head, or inferior Parts, suddenly ceases; the Mind before disorder'd, in some measure, resumes the Exercise of Reason; the Defect of Strength is increased, and the Pulse is either totally deficient, or highly unequal, contracted, and intermittent: The Patient, though before excessively costive, has his Body rendered soluble, or discharges his Excrements involuntarily; his Countenance is unseemly and pale, his Temples, Neck, and Breast, are moist, with chilly Sweat; his Extremities are cold, his Pulse begins to be palpably defective, Rumbling and Noise arise in his Belly; and when the Liquids he drinks descend, they make a Noise, as if they were poured into a deep Vessel: All these are Prognostics of a quickly approaching Death; because, in consequence of the Increase of the Sphacelus, the Tone of the Parts is incredibly destroy'd, and the Strength wonderfully impaired. When plethoric Patients suddenly die of an internal Sphacelus, a few Hours after their Death, their Abdomen becomes surprisingly tumid, large Vesicles arise upon the Surface of the Body, the Face becomes hard and green, the Corps is intolerably fetid, and an ill-smelling Blood is frequently discharged from the Mouth and Nostrils.

There is another Kind of Death incident to those who labour under violent Disorders of the Breast; and that is, Suffocation; which generally takes off those afflicted with a Quinsy, a Peripneumony, a suffocative Catarrh, a convulsive Asthma, and a Dropsy of the Thorax; for these Disorders not only totally intercept the free Ingress and Egress of the Air from the Lungs, but, also, destroy the Circulation of the Blood from one Ventricle of the Heart, thro' the Vessels of the Lungs, to the other. Thus an Angina, possessing the internal Muscles of the Larynx, when there is neither any Pain nor Redness in the Neck and Fauces, but, at the same time, an intense Pain, and violent Fever, quickly destroys the Patient by Suffocation. In this Case, as *Lommius*, in *Lib. 2. Obs. Medic.* has observed, the Eyes are distorted, red, and prominent; as in those who are strangled; the Voice is inarticulate, small, and resembling the Squeaking of Puppies; the Mouth gasps eagerly for the cold Air, a frothy Saliva is discharged from it, and the Tongue hangs out; Liquors drank regurgitate through the Nostrils; the Patient is totally uneasy, frequently leaps out of Bed, and at last dies of a Suffocation and Syncope. A Peripneumony, also, destroys the Patient by Suffocation; for, if nothing is expectorated, if there is a great Difficulty of Breathing, and Restlessness, if the Matter of the Spit is perceived to make a Noise in the Breast, if the Pulse is unequal and intermittent, if the Strength is impaired, and the Patient seized with a Flux, if what is thrown up on Coughing is frothy, and sometimes bloody, and sometimes yellow, if there is a continual Watching, if a Phrenitis succeeds, if the Desire of drawing in the cold Air is excessively great, if the Patient is fond of lying on his Back, and in an erect Posture; for when he lies reclined upon his Face, he is ready to be suffocated; and in this Case the Patient infallibly dies on the fifth, or, at most, on the seventh Day.

Those who die of a convulsive Asthma, are, also, destroy'd by Suffocation; for this Disorder generally arises from a Dropsy of the Thorax, suddenly produced by a Rupture of the Hydatides: When, for Instance, a large Quantity of Water, by its Weight, hinders the Motion of the Diaphragm, and the free Expansion of the Lungs, so that the Air can neither enter them, nor the Blood pass freely through them. A suffocative Asthma is, also, pro-

duced, when the interior glandular Coat of the Bronchia, which is furnished with many large Glands, is so contracted, that the Air contained in the Lungs can neither be expelled, nor fresh Air received. Convulsive Spasms, also, frequently contract the Bronchia so powerfully, that the Patient miserably dies of a Suffocation. In all these Disorders, there is the greatest Anxiety and Restlessness, a tremulous Breathing, an irregular and unequal Pulse, a Rattling and Noise are perceived in the Breast; the Patient cannot rest in one Place; a certain frothy, or bloody Matter is expectorated; and, at last, the Extremities becoming cold; the Patient dies of a Suffocation and Syncope. The like happens in a suffocative Catarrh, which is principally incident to old Persons, those of weak Habits, and Infants; and generally arises from a Palsy of the pneumonic Nerves. In this Disorder, also, the Breath is drawn with the greatest Difficulty and Uneasiness; the Bronchia are filled with an Humour secreted from the Blood; and, because no Spit is expectorated, the received Air makes a great Noise in the Breast, till at last the Patient is suffocated for want of Air. Besides the Signs already mentioned, there are; also, other infallible Marks of Death; such as an intermittent, small, and totally defective Pulse, which frequently happens a few Hours before Death. It, also, often happens, that a violent Uneasiness, accompanied with a Coldness of the Extremities, comes on. In Phthisical Patients, when a considerable Cavity, corroded in the Lungs, contains a large Quantity of Pus; and the Pus, in consequence of a Defect of Strength, ceases to be expectorated, Death soon succeeds.

Having considered those Disorders, which destroy by Suffocation, together with their mortal Signs, we shall now treat of some other acute Diseases, which destroy the Patient, both by Inflammation, and violent Spasms; and consider by what Signs Death may be foreseen and prognosticated in them. If, therefore, a white Purple Fever, which arises from an highly vapid and corrupted Lymph, appears in the End of other Fevers; the Measles; or Small-pox, or in Childbed, after the Lochia are suppressed, it is always dangerous, and generally destroys the Patient by an Inflammation of some of the internal Parts, especially of the Stomach and Intestines. It is a mortal Sign, when a violent Heat of the Præcordia, and a great Uneasiness, are succeeded by a Sense of internal Coldness, accompanied with a small, weak, and unequal Pulse; when the Purple Eruptions disappear; when the Patient faints away, has his Mind disturbed, and his Respiration difficult. I have rarely known any young Person to escape in the Small-pox, if the Disorder seizes him with a violent Pain of the Loins, and a Delirium; if, on the second Day, rough Efflorescences and Spots, like the Purple Fever, appear on the Skin; if, on the fifth and sixth Days, after a total Eruption, the Pulse is not more moderate, but continues equally quick; and if the whole Body is covered with Pustules. But, about the ninth Day, a burning intense Pain of the Hands, produced by the Exulceration, frequently changes all the Symptoms which promised the Recovery of the Patient; for this intense Pain, affecting the whole nervous System, produces the greatest Uneasiness, Tossings, and a subsiding of the Pustules; and afterwards a difficult Respiration, a Disturbance of Mind, Convulsions, and a small languid Pulse, coming on, soon put an End to the Patient's Life.

Those who die by any highly emetic, or purgative Poison, are destroy'd by a sphacelous Inflammation, as is obvious from dissecting their Bodies. The Signs of an approaching Death, in this Case, are, when internal Heats, and violent Uneasiness, are succeeded by a small, unequal, or totally defective Pulse, accompanied with a cold Sweat, a Delirium, and Convulsions; which, when brought on by a purgative Medicine, are by *Hippocrates*, in *Aph. 25. of Sect. 7.* and, in several other Parts, pronounced mortal. Those who die of the Stone, are generally taken off by an Inflammation of the Stomach and Meninges; for, if a Vomiting, and acute Pain, are succeeded by a Fever, accompanied with great Uneasiness, and an insatiable Thirst, and if afterwards an Hiccup, a Delirium, and a Coldness of the Extremities, come on, the Patient will not live long. In a Cholera, if acute Pains and Gripes happen; if Humours, especially of a green Colour, are imperiously discharged by Vomit and Stool, if there is an insatiable Thirst, if the Countenance is yellow or pale, and the Pulse small or contracted, the Disorder is not without Danger. But if the Pulse is totally defective, if the Legs are contracted, the Body covered with a cold Sweat, and the Patient seized with Deliquiums, these are pretty sure Signs, that the Inflammation is degenerated into a Sphacelus. Now the most certain Signs of a Sphacelus are, when the acute Gripes suddenly cease, when the Extremities become cold, and the Strength is greatly impaired. An Hiccup, a Cardialgia, Heat, and Uneasiness about the Præcordia, generally precede this Condition, and indicate a fatal Inflammation of the Stomach. In the Iliac Passion, where the Pains are intense, and accompanied with Costiveness, and a continual Vomiting of fetid Matter, if an Hiccup, a Delirium, cold Sweats, Refrigeration of the Extremities, and Convulsions of the Nerves, come on, these are certain Signs of an approaching Death, as *Hippocrates*, in *Sect. 7. Aph. 10.* has justly observed. Violent convulsive Colics take the Patient off in the same manner; for, in this Disorder, there is often such an intense Pain in the Intestinum Rectum, produced

produced by the stagnant hæmorrhoidal Blood, that this Intestine is not only seized with an Inflammation, but, also, a mortal Sphacelus; under which, in consequence of the putrid State of the Intestine, highly fetid Excrements are discharged; a frequent and weak Pulse, accompanied with a great Loss of Strength, succeeds; and the Sphacelus often spreads to the external Parts, and the Scrotum; after which, the Patient is seized with Delirium, and soon dies.

'Tis certain, that many Women die either during, or after Labour; for which Reason we shall consider some of the most fatal Presages and Prognostics, in Cases of this Nature. If, therefore, a Woman, in consequence of an unnatural Situation of the Fœtus, especially when too large, is, for some Days, successively racked and fatigued with violent Pains, accompanied with internal Heat, which may be known by the Celerity of the Pulse, it frequently happens, that in Labour, or after it, the Strength being suddenly lost, she falls into a kind of Delirium, or Disorder resembling an Apoplexy, and can by no means have Strength and Life restored to her: In such a Situation, it is a Sign of Death, when the Disorder lasts for some Hours, and the Patient cannot be roused by the most penetrating Medicines, such as Spirit of Sal Ammoniac, prepared with Quick-lime, and mixed with Oil of Rue, put into the Nostriils. If the Face, during the Paroxysm, remains red, it is a Sign, that the Blood, too impetuously convey'd to the Brain by the Spasms, has produced this Disorder, in every respect so like an Apoplexy; and, after the Death of the Patient, a bloody fetid Serum is generally discharged from the Mouth and Nostriils. If, after the Fœtus is dead in the Uterus, the Mother dies in Labour, the Child is frequently expelled, in consequence of the Relaxation of the Passages, and the internal fermentative Motion. Those Women who die in Childbed, for the most part, suffer great Pains from a Retention of the Lochia; but if these Pains are not succeeded by the Lochia, but rather accompanied with a Flux, a fatal Inflammation of the Uterus, and a Fever, generally succeed. Such an Inflammation is known from a burning Heat, reaching from the inferior Parts to the Region of the Heart; and, if it is accompanied with great Uneasiness, Loss of Strength, Restlessness, and a total Loss of Appetite; if afterwards there is an internal Sense of Cold, with an Horror, a frequent, small, and weak Pulse, and if the Sight begins to grow dim, these are Signs, that Death, proceeding from a Sphacelus, is not far off. Many Women in Childbed die with the full Use of their Reason, which frequently returns to them a few Hours before their Death; so that unskilful Persons conclude them to be in a fair way of Recovery, whilst the more skilful and judicious know, from the State of the Pulse, that Death is approaching. If, in consequence of a large Effusion of Blood, after Labour, and in Childbed, a slow Heat, accompanied with a frequent and weak Pulse, and which is not allay'd in the Morning after Sleep, is brought on, and attended with a total Loss of Appetite and Strength, the Patient generally dies of a Syncope, about the End of Childbed, that is, in the sixth Week.

In an exulcerated Cancer, scarcely any Patient is preserved, on account of the violent Corruption, which is indicated by the black, thin, and highly fetid Sanies. In this Case, the Patient is afflicted with a slow Fever, and the Strength daily decreases; the Sleep, also, is uneasy, restless, or none at all, till, at last, a Delirium and Death ensue. Persons are sometimes suddenly taken off by the Retrocession of Inflammations of the external Parts; such as Erysipelas, and the Gour, either in the Feet or Hands. Nor does this happen in any other manner, than by an Inflammation of the Stomach and Intestines. But 'tis still more dangerous, if, in the Plague, Carbuncles and Buboes recede, or are not sufficiently expelled; for, in this Case, the Death of the Patient is certain, since he is seized with an Horror, becomes restless and uneasy; an Heat seizes the Region of his Stomach, whilst his Extremities are cold; he has a Desire to vomit, or is seized with an Hiccup; after which, the Patient is afflicted with a Perturbation of Mind, and dies of a Syncope. If any one dies of an excessive Loss of Blood, which may happen in Miscarriages, a Spitting of Blood, a Vomiting of Blood, the Morbus Niger of Hippocrates, or violent Hæmorrhages in Fevers, such a Patient is taken off by a Delirium and Syncope. But 'tis to be observed, that, for the most part, Death is preceded by an insatiable Thirst, an Inclination to vomit, a weak and frequent Pulse, and Convulsions of the Extremities, which are Signs, that the Blood, stagnating in the internal Parts, such as the Head and Stomach, still excites some Spasms; for Thirst generally arises from a spasmodic Stricture of the glandulous Coat of the Oesophagus. The Disorders of which Children die, are generally of the spasmodic and convulsive Kind, and bring on an Inflammation and Sphacelus, especially of the Stomach, Intestines, or Head; for, in consequence of the acute Pains, they easily fall into Epilepsies and Convulsions, Fevers and Athmas. If one epileptic Fit succeeds another, and if the Patient was before very colic, he spontaneously discharges highly fetid and black Excrements: If the Voice becomes thrill and interrupted, and the whole Body is intensely hot, we may prognosticate, that Death is not far off.

We now come to consider the Presages of Death in some chronical Disorders, the most considerable of which are the Dropsy, a Cachexy, the Scurvy, a Consumption, an Hætic, a Phthisis, and a Tabes. Those who are destroyed by these Distempers, die slowly, but certainly; because, though the Corruption of the Viscera, from a Stagnation or Extravagation of the Humours, proceeds slowly, yet it cannot be removed by any means. The Signs of a Corruption of the Abdominal Viscera, and, consequently, of approaching Death, are, a Loss of Appetite, and a Loathing of such Aliments, as the Patient was fond of, when in Health. If the slow Fever increases, and the Pulse becomes quicker, these Signs always denote an internal Corruption; which is, also, indicated by a Loss of Strength, a great Difficulty of breathing, and restless Sleep, which rather weakens, than refreshes. If these Symptoms afflict the Patient long, and yield to no Medicine, they are certain Prognostics of Death, especially in old Persons, or those, who, in consequence of a previous Disorder, have fallen into such a chronical Disease. These are some of the most common Signs of Death in chronical Disorders. But we shall add some, peculiar to certain Diseases of the chronical kind. As for a Phthisis, then, the Signs of Death in this Distemper are; if the whole Body is consumed; if a continual Hætic Fever afflicts the Patient; if the Face is red, and the Body preternaturally soluble; if there are colligative Sweats, and oedematous Swellings of the Feet; if the Spit is suppressed, the Nails pale, the Eyes sunk, and the Nostriils sharp and pinched. In case a Dropsy succeeds a long-continued Asthma, and Palpitation of the Heart, or an Induration of the Liver, a Quartan, we may pretty certainly prognosticate, that the Patient cannot be preserved; and if the Urine is small in Quantity, turbid, and red, it is a very bad Sign. If the superior Parts become slender, and the Face assumes a yellowish Colour, we may pretty infallibly prognosticate Death some Months before it happens; but the Patient is infallibly destroyed, if the Fever is increased, and the Respiration rendered more difficult. Those who frequently, and especially after violent Exercise of the Body, or Commotions of Mind, perceive an obstinate Palpitation of the Heart, and afterwards fall into a convulsive Asthma, a Spitting of Blood, or a Dropsy, may have their Death prognosticated a long time before it happens, especially if they are afflicted with Deliriums; for the Cause of all these Disorders is a polypose Concretion in the Vessels of the Heart, which cannot be removed by any Medicine; and which, with the Concurrence of other Causes, generates these terrible Disorders; and if Deliriums, also, produced by the Polypus, happen frequently, and without any manifest Cause, the Patient generally dies suddenly. This Doctrine is, also, confirmed by the Authority of Hippocrates.

When a sphacelous and mortal Corruption affects the Liver, there is a great Loathing of Food, especially of Flesh; there is a frequent and insatiable Thirst, a Fever, a Loss of Strength, an Hiccup; now-and-then Serum, or yellow Bile, is discharged by Vomit, and the Body is gradually consumed. In such Cases, after Death, I have observed the Liver evidently sphacelous and black. An Exulceration of the Stomach, also, produces a long and mortal Disorder, and is known, if a great Uneasiness and Vomiting succeed Eating: And these Misfortunes are increased by any acrid and saline or spirituous Medicines; the Body is wasted, the Pulse is always quick, the Extremities seized with a Rigor, and sometimes with an Horror; Fontanels are dried up, and the Sleep is little and restless; such Patients die in the third or fourth Month, and their Death may be prognosticated a long time before it happens. In a Cachexy, if the whole Body becomes tumid, inflated, and pale; if there is a Loathing of Food; if the Patient frequently vomits a fetid Matter, and discharges little by Stool; if the Urine is crude, and in small Quantity; if the Respiration is difficult, and the whole Body fetid; if afterwards a frequent Pulse, and a more difficult Respiration, happen, the Patient's Death, in some Months, may be prognosticated; and it happens the more infallibly, the more Errors in Diet, or excessive Drinking, the Patient commits; or the more he is afflicted with long Grief.

We shall, farther, subjoin some useful Cautions with respect to forming Prognostics. Spasmodic chronical Disorders are, therefore, to be carefully distinguished from those of the acute Kind; for, in hypochondriac and hysteric Disorders, such Symptoms occur, as in acute Disorders prove mortal, but are less dangerous in the former; for nothing is more frequent in hypochondriac and hysteric Affections, than for the Patient to be afflicted with violent Uneasiness, a Difficulty of Breathing, a Coldness of the Extremities, a thin and watry Urine, a small and weak Pulse, and frequently violent Deliriums; which Symptoms are, however, soon carried off, without any Danger. The Stages of Distempers are, also, to be carefully distinguished; for, of all the mortal Signs already enumerated, if some, or even a considerable Number, should appear in the first Days of a Disorder, those would act inconsiderately, who should

should thence conclude, that Death was at hand. But it is otherwise, if, after the Strength is, for several Days, exhausted by excessive Heat, Want of Appetite, Anxiety and Pain, those fatal Spasms, and the Symptoms produced by them, appear; especially at those times, on which the Disorder is generally terminated in a salutary manner; which is, for the most part, on the odd Days, that is, the seventh, ninth, and eleventh Day. Great Regard is, also, to be had to the Habits of Patients, whether they are of weak and languid, or of vigorous and robust Constitutions, since the former are always in greater Danger, than the latter. Among the Weak, we reckon old Persons and Infants, those of spongy full Habits, those who have small Vessels, those sprung from weak and infirm Parents, and those weakened by previous Disorders, immoderate Hæmorrhages, long Hunger, the Affections of the Mind, Grief, Care, and Thoughtfulness. Among this Class we, also, reckon Childbed Women, and those, who, in consequence of a bad Regimen, and a Suppression of the Excretions, have contracted a Redundance of impure Juices in their Vessels; for, in all these tender Habits, the Pains and Inflammations easily degenerate into a mortal Sphacelus. We ought, also, carefully to observe, whether the Symptoms, which appear, are excited by external Causes, such as Anger, a Frigate, Refrigeration of the Body, improper Aliment, or Medicines of a drastic or virulent Quality; all which, in dangerous Diseases, and in Persons of weak Habits, are of such a Nature, as to prove mortal, and accelerate the Death of the Patient. But if, in less dangerous Diseases, and in robust Habits, these terrible Symptoms appear, they are not forthwith to be pronounced absolutely mortal. And, lastly, in order to form a right Prognostic, it is of great Importance, duly to consider the Beginning of the Disorder; for every Disease, which, in the Beginning, destroys the Strength, and is accompanied with a frequent Pulse, portends no Good; because it clearly discovers a Loss of Strength, an Impurity of the Juices, and a fatal Dyscrasy of the Blood. *Frederic Hoffman.*

PRÆSCRIPTIO. A Prescription.

PRÆSEPIA, or PRÆSEPIOLA. The Sockets in the Jaw-bones, in which the Teeth are contained.

PRÆSERVATIVA REMEDIA. Remedies, which preserve Health, and prevent Diseases.

PRÆSERVATORIA INDICATIO. The Preservatory, or Prophylactic Indication. See **INDICATIO**, and **FIBRA**.

PRAMNIOS, *πράμνιος*. A Sort of black and austere Wine, mentioned by *Hippocrates*, in his Treatise of the Disorders of Women.

PRASINUM VIRIDE, is the same as *Flus Æris*. See **Æs**.

PRASINUS, or PRASOIDES; the same as **PORRACEUS**.

PRASIS is explained by *Rulandus*, *Creta viridis*.

PRASITES. An Epithet for a sort of Wine described by *Dioscorides*, *L. 5. C. 58*. It is made by infusing the Leaves of Horehound in fermenting Must.

PRASIUS. *Offic. Charl. Foss. 33. Calc. Mus. 217. Kentm. 47. Boet. 203. Worm. 95. Aldrov. Mus. Metall. 897. Prasus sive Prasus. De Laet. 42. Lapis, Prasus dictus, aliis, Plasma, aut Nilium, aut Leda. Lapis Nebriticus viridis Mali Aurantii foliorum viride. Cup. Hort. Cath. Supp. 2. 51. THE GREEN STONE.*

It is green for the greatest Part of it, but is seldom without black, and sometimes white Spots. Many take it for the Mother of the Emerald, because this Gem is sometimes found in it. The *Prasus* has the Virtues of the Emerald, but in a lower Degree.

PRASION, *πράσιον*. White Horehound.

PRASUM, *πράσινον*. A Leek.

PREHENSIO. A Name for the **CATALEPSIS**.

PREMNON, *πράμνον*. The Extremity of the White of the Eye.

PRESBYTÆ. Vision is commonly divided into three Sorts; the good Sort, that of the Myopes, and that of the Presbytæ.

A Person is said to enjoy a good Sight, when he can see to read at a Foot Distance; In this Case the Crystalline Humour is in its most perfect State, and such People can distinguish distant Objects, like the Presbytæ, but more accurately. This Species of Vision has three Degrees, or Focuses; one at the Distance of half a Foot, another at a Foot Distance, and a third a little farther.

The Sight of the Myopes has a very short Focus; they can see distinctly, when the Object is near, and require little Light to read. At a Distance they see confusedly, and Objects considerably remote they cannot perceive at all. This Defect of the Sight is attributed to the too great Convexity of the Crystalline.

The Myopes have, also, three Degrees or Focuses. The first is, when they cannot read, without bringing the Book

close to the Nose; the second hold it two or three Fingers-Breadth farther; and the third hold it at half a Foot Distance, or more. In order to distinguish distant Objects, the Myopes should use concave Glasses.

The Presbytæ have their Focus very long; they observe remote Objects distinctly, but those which are near, confusedly: This Defect of the Sight is imputed to the too great Flatness of the Crystalline. The Presbytæ have, also, three Degrees or Focuses; one at the Distance of a Foot and an half; another at two Feet and an half; and the third at a greater Distance: Upon this account they cannot read without Spectacles. This Species of Vision is common among the Aged, and is directly contrary to that of the Myopes.

Of these three Species of Sight, two of them are subject to Alteration. The good Sort may sometimes be changed into that of the Myopes, especially in those who read much, or apply themselves to fine Work; and in Old-age it is liable to change to that of the Presbytæ. The Sight of the Myopes admits of no Variation; and that of the Presbytæ sometimes becomes good. These different Changes of Vision proceed from the different Degrees of Convexity, of which the Crystalline Humour is capable. When the nutritious Juice, necessary to maintain the Convexity of the Crystalline, is sufficiently fluid to pass through the Extremities of the finest Vessels belonging to it, then the Sight is perfect. But, if the Juice is too thick, it cannot enter these Vessels in a sufficient Quantity; for which Reason the Convexity will be diminished, in proportion to the Tenacity of the Juice. *St. Ives.*

PRESIS, or PRESMA, *πρῆσις*, or *πρῆσμα*. *Galen* explains this Word, Inflation.

PRESMUCHUM, or PRESMUKIS. *Ceruss. Rulandus.*

PRESSORIUM. A Press. *Rulandus.*

PRESSURA. Pressure, or Compression. *Pressura Gentium*, in *Paracelsus*, is the Venereal Disease.

PRESTER, *πρεστήρ*. The external Part of the Neck, which is inflated by Anger. *Goræus*. But *Prester* is, also, the Name of a Serpent, the same as *Dipsas*.

PRIAPEIA. A Name for the **NICOTIANA MINOR**.

PRIAPISCOS, *πριάπισκος*. The Name of a small Piece of Wood, which constitutes a Part of the *Scamnum Hippocraticum*. *Priapiscos*, also, imports a Tent made of Linen, rolled up in the Form of a **PENIS**. *Paul. Ægineta, Lib. 3. Cap. 24.*

PRIAPISMUS, *πριάπισμος*. A Priapism. See **SATYRIASIS**.

PRIAPOLITHUS. The Name of a Stone mentioned by *Borelli*, found about *Castro* in *Italy*, resembling in Shape the Penis.

PRIAPUS, *πριάπυς*. A Penis.

PRIMÆ VIÆ. The first Passages; that is, the Stomach, and Intestinal Tube.

PRIMITIÆ. The Waters which precede the Fœtus at the Birth.

PRIMORES. A Name for the *Dentes Incisores*, or Fore-teeth.

PRIMULA VERIS.

The Characters are;

The Root is perennial; the Leaves are oblong, and wrinkled; the Calyx is quinquefid, pentagonal, and soft: In this Calyx is seated a monopetalous Flower, shaped somewhat like a Salver, with its Margin divided into five Heart-shaped, bifid, Segments; this Flower is furnished with five Stamina, which arise from the Inside of its tubulous Part. The seminal Vessel is an oblong Shell, concealed in a Calyx, furnished with a long Tube, and gaping at its Apex; the Seeds are roundish.

Boerhaave mentions twenty Species of *Primula Veris*; the first twelve of which are of the Class of those which bear a single Flower on every Stalk, and are enumerated as follows;

1. *Primula Veris*; pallido flore; humilis. *Boerb. Ind. A. 198. Primula Veris. Offic. Primula Veris minor. Ger. 636. Emac. 781. Primula Veris vulgaris. Park. Theat. 535. Raii Hist. 2. 1080. Synop. 3. 284. Primula Veris, floribus ex singularibus, majoribus, simplicibus. J. B. 3. 497. Tourn. Int. 125. Verbasculum sylvæ majus, singulari flore. C. B. P. 241. THE PRIMROSE.*

The common Primrose has large wrinkled Leaves, of a dark Green above, and whiter underneath, broad and round at the End, and growing narrower towards the Roots; the Flowers arise directly from the Root on long slender Foot-stalks, consisting of single Tubes spread out at Top, and cut into five large, round Segments, of a pale-yellow white Colour, set in loose Calyces. The Root is small and fibrous. It grows in Thickets, and under Hedges, and flowers in *March* and *April*. The Flowers and Roots are used, though but seldom.

The Flowers are commended by some, as good against Disorders arising from Melancholy, and phlegmatic Humours; the Juice

Juice of the Root is sometimes used as an Errhine to purge the Head of tough slimy Phlegm. *Miller's Bot. Off.*

2. *Primula Veris*; Constantinopolitana; flore albo. *T. 125. Verbasculum Turcicum sive Carchiæc Turcarum. M. H. 2. 555.*

3. *Primula Veris*; Constantinopolitana; flore dilute carneo. *T. 125.*

4. *Primula Veris*; Constantinopolitana; flore dilute purpureo. *T. 125.*

5. *Primula Veris*; Constantinopolitana; flore majore purpureo. *T. 125.*

6. *Primula Veris*; Constantinopolitana; flore minore purpureo. *T. 125.*

7. *Primula Veris*; Constantinopolitana; flore miniato. *T. 125.*

8. *Primula Veris*; Constantinopolitana; flore luteo. *T. 125.*

9. *Primula Veris*; Constantinopolitana; flore hævescente. *T. 126.*

10. *Primula Veris*; Constantinopolitana; flore obsolete pallido. *T. 126.*

11. *Primula Veris*; Constantinopolitana; flore obsolete. *T. 126.*

12. *Primula Veris*; flore pleno. *H. Eyst. Vern. o. 1. F. 5. Fig. 3. Verbasculum, sylvestre, magno, plenoque flore. C. B. P. 242.*

The second Class contains those Species, which, on one Stalk, bear a Multitude of Flowers, disposed somewhat in the Form of an Umbella; they are as follows:

1. *Primula Veris*; umbellata; odorata; pratensis. *Boerb. Ind. A. 199. Paralysis. Offic. Paralysis vulgaris pratensis, flore flavo, simplici odorato. Park. Parad. 244. Primula Veris major. Ger. 635. Emac. 780. Raii Hist. 2. 1081. Synop. 3. 284. Primula Veris odorata, flore luteo simplici. J. B. 3. 495. Tourn. Inst. 124. Verbasculum pratense odoratum. C. B. P. 241. COWSLIPS, or PAIGLES.*

The Cowslip is well known to have somewhat soft, large, wrinkled Leaves, green above, and whitish and hairy underneath, and full of Veins, broadest at the End, and growing narrower towards the Stalk; among these arise one or two round smooth Stalks, five or six Inches high, bearing on the Top several yellow Flowers, in a kind of Umbel, each on a long Foot-stalk, and set in a loose whitish pentangular Calyx; the Top being round, and cut into five Segments, with Saffron-coloured Spots in the Middle of each; the Part inclosed in the Calyx being hollow, and Pipe-fashioned; they are of a pleasant sweet Scent. The Root is composed of several Strings or Fibres, arising from a small Head; it grows in moist Meadows and Marshes, and flowers in *April*. The Leaves sometimes, but the Flowers are mostly used.

They are accounted cordial and cephalic, and beneficial to the nervous System, and serviceable against the Epilepsy, Palsy, Apoplexy, and Pains in the Head; they are anodyne; and supposed to have a Tendency to procure Sleep, for which Purpose a Tea is sometimes made of the Flowers. The Leaves are used in warming, strengthening Ointments, particularly the *Unguentum Nervinum*.

Official Preparations from Cowslips are, the simple Water, the Syrup, and the Conserve. *Miller's Bot. Off.*

The Flowers of this Plant, being analysed, yield a good deal of Acid, a little urinous Spirit, no concreted volatile Salt, and a pretty deal of Oil and Earth; these Flowers have a volatile, aromatic, oily Salt, pretty much tempered. They are very aperitive, and good to restore the Course of the Spirits. In the Apoplexy and Palsy, *Tragus* prescribed the Conserve, or distilled Water, of these Flowers. To draw the Spirit from them, they must be sprinkled with common Salt, left to ferment some Days, and then distilled; this Spirit has the same Virtues. The Leaves and Roots are very aperitive. *Martyn's Tournefort.*

The Plant is heating and drying, and has something of an acrimonious and bitterish Taste; it is, also, somewhat astringent, and has an anodyne Virtue. The principal Uses, to which it is applied, are in cephalic Disorders, and the Arthritis, and other Pains and Affections of the Joints.

2. *Primula Veris*; pallido flore; elatior. *Boerb. Ind. A. 199. Tourn. Inst. 124. Herba Petri. Offic. Primula pratensis inodora lutea. Ger. 635. Emac. 780. Raii Hist. 2. 1081. Synop. 3. 284. Primula Veris caulifera, pallido flore inodora aut vix odora. J. B. 3. 496. Paralysis altera odorata, flore pallido polyanthos. Park. Parad. 244. Verbasculum pratense aut sylvaticum inodorum. C. B. B. 241. GREAT COWSLIPS, or ORSLIPS.*

They grow in Woods and Thickets, and flower in *April*. The Leaves, infused a Night in White-wine, are recommended against the Anasarca. *Dale.*

3. *Primula Veris*; geminato flore. *H. Eyst. Vern. o. 1. F. 5. Fig. 4. Verbasculum proliferum. C. B. P. 242. M. H. 2. 554.*

4. *Primula Veris*; Anglicana; flore pleno. *H. Eyst. Vern. o. 9. F. 3. Fig. 2. Verbasculum, bortenise, multiplex. C. B. P. 242.*

5. *Primula Veris*; hortensis; umbellata; caule & flore folioso, coccineo, majore.

6. *Primula Veris*; hortensis; umbellata; flore folioso; luteo, minore.

7. *Primula Veris*; umbellata; odorata; hortensis; simplicis varietas uberrima pro varietate jucundissima coloris multiplicis.

8. *Primula Veris*; umbellata; geminato flore abundans & grata ratione pigmenti discrepantis copia. *Boerb. Ind. alt. Plant.*

It is called *Primula Veris*, because it flowers in the Spring before all other Plants. It is recommended in a Palsy proceeding from Want of Spirits. The Leaves are eatable in Salads, or boiled with other Greens; and their expressed Juice is good against the Palsy, for it is restorative; the Flowers have a very sweet and innocent Smell, and are dissolvent, without Danger of an Inflammation. The Leaves and Roots are aperitive, and effectual in Apoplexies and Rheumatisms, being comfortable and strengthening to the Nerves and Joints; externally used, they are of Service in Tumors arising from the Bites or Stings of venomous Animals, and in the Gout. Vinegar impregnated with the Roots, and attracted into the Nostrils instead of an Errhine, is an admirable Remedy for the Tooth-ach. A Conserve of the Flowers is very good for the Palsy; *Willis* and *Sydenham* prescribe it in acute Diseases. The Flowers, when young and tender, are used instead of the Flowers of the Tilia; for they procure Sleep, and are of an anodyne Quality. *Hist. Plant. adscript. Boerhaav.*

PRINCEPS. A Name for the *Intestinum Rectum*. *Principes Dies* are Critical Days.

PRINCIPIA. The Principles, or Elements, of Bodies.

It is impossible to discover the Virtues of any Body, or how mixed Bodies of different Kinds stand related to the human Body, either for the Preservation of its Functions entire, the restoring them when lost or impaired, or for the total Destruction thereof, till we know the Principles of which they consist, and, likewise, the Mixture and Proportion of such Principles in Bodies, to which their Effects are principally owing. Wherefore, having discovered, by various Ways, the Parts into which a true chymical Analysis resolves Bodies, we must look upon such simple Parts, into which all mixed Bodies are capable of being resolved, and of which they seem to be compounded, as their true and genuine Principles. The Antients, having observed, that, in analysing all Bodies whatever, they obtained a Spirit, or Mercury, Sulphur, Salt, Water, and Earth, concluded the Number of Principles to be five.

If Wine, for Instance; be distilled in a proper Alembic, a burning Water, or Spirit, will first arise, next an insipid Water, which they call *Phlegm*, a thick, viscid Mass alone remaining in the Still. This they put into another Vessel, or Retort, which being exposed to a more intense Heat, a small Portion of Phlegm comes over first; then an acid Water, which, according to them, is still Spirit, or Mercury; next, a fat, oily Substance, called *Sulphur*. What remains still in the Retort, is burnt to Ashes in an open Fire. These Ashes are thrown into an earthen Vessel, with a proper Quantity of boiling Water, which they impregnate with Salt. This Water, being tread through Cap-paper, and afterwards evaporated, leaves the Salt at the Bottom. The other Part of the Ashes, which the Water does not take up, is termed *Earth*, or *Caput Mortuum*.

Of these five Substances the Chymists have reckoned two to be passive, Water, and Earth; and three active, Spirit, Sulphur, and Salt; and on these last they thought the whole Virtue and Efficacy of the mixed Body depended. In this Analysis we may observe, that there is a twofold Spirit; one oily and inflammable, which rises first by a gentle Heat, and is termed *Spirit of Wine*; another acid and penetrating, like that of Vinegar. Besides, these Chymists give the Name of *Spirit* to other penetrating, volatile, or urinous Liquors, obtained from the Parts of Animals, such as the *Spirit of Urine*, *Hartshorn*, *Blood*, and such-like Substances: But the later Chymists have banished these Spirits from the Number of their Principles, as being nothing else than Sulphur, or Salt, dissolved in Water. Thus Spirit of Nitre, and others of that Kind, are only acid Salts in Water; Spirit of Hartshorn, or Urine, alkaline Salts; and Spirit of Wine, or of Turpentine, an ethereal, attenuated Oil.

Some of the Moderns deny, likewise, that either Sulphur or Salt deserve the Name of Principles, or Elements; as not being the most simple Substances producible by Chymistry. For Sulphur, when treated with due Care, may be resolved into Salt, Water, and Earth; as is evident by distilling fetid distilled Oils several times with Quick-lime; which, by this Treatment, yield,

yield, in large Quantities, a volatile Salt dissolved in Phlegm, together with a Caput Mortuum, or Earth. Likewise ethereal Oils are only fat, thick Oils like that of Olives, attenuated by Salts, and dissolved in Water, as may be proved by the two following Experiments: If Oil of Olives, or any other of that kind, be mixed with a fermenting Liquor, such as a Solution of Honey in Water, the Whole will be converted into an inflammable Spirit. And if a Quart of Spirit of Wine, diluted with six Quarts of common Water, be exposed in a cold Place to the open Air, the volatile Salts will fly off, and leave Drops of Oil swimming at the Top, which are, in every respect, the same as Oil of Olives, or Almonds.

Salt has no better Title to a Principle, than Sulphur, because it may, by proper Management, be at length reduced to Earth and Water. Thus Nitre, by Distillation, may be almost wholly reduced to an acid Spirit; but, if it be burnt with Tartar, or Charcoal-dust, it becomes an alkaline Salt, called *fixed Nitre*.

This, if suffered to run per Deliquium, and afterwards filtered through Cap-paper, will leave a large Quantity of Earth behind; and, if the same Liquor be distilled to Driness, a large Quantity of insipid Water will come over, and the Salt remaining at the Bottom of the Retort will have lost a great Part of its first Quantity. If this Operation be repeated, nothing will at length remain, but Earth. Again, the Vitrification of alkaline Salts seems to be nothing, but the Conversion of them into Earth; for Glass has no Qualities different from those of Earth.

What we have proved by Experiments made by resolving Bodies, may be further confirmed by others relating to the Formation and Composition of them, and particularly by *van Helmont's* famous Experiment on the Willow, which has been often quoted by succeeding Authors. He took about two hundred Pounds of Earth dried in an Oven, and put it into a Vessel covered with an iron Lid full of Holes. In this Earth he set a Branch of Willow, weighing about five Pounds, which soon took Root, and grew so much, that in eight Years time it weighed an hundred and sixty Pounds, the Earth it stood in, having, during all this Time, lost only a few Ounces; so that the whole Increase of the Tree must have been owing to Rain-water, and a very small Proportion of Earth, and the Salts and Sulphur therein must have been composed of these two Elements alone. The Experiments of this kind, made by the illustrious *Mr. Boyle* on small Sprigs of Mint, Marjoram, Pennyroyal, Baum, and the like, set in Phials filled with clear Water, are more to be depended on. They increased in a short time to double their first Weight, and, being afterwards distilled, they yielded the very same Principles, as they would have done; had they grown in the most proper Soil; from whence it is plain, that Salt and Oil owe their Original to Water and Earth.

Water and Earth, in the strictest Sense, deserve the Name of Principles; but, in the Formation of mixed Bodies, a third Principle must necessarily concur with them; for as they are of themselves wholly inactive, something must be supposed to give them their Motion and Activity. Without this, Water would immediately turn to Ice; and as there are few Bodies, out of which Fire may not be drawn, it is evident, that there must be some active, moveable Principle in them all, to which the Motion of the other Parts is to be ascribed. Therefore, though this Principle should not fall under our Senses in the same manner as the others, that can be no Reason for doubting of its Existence, since it must concur in the Composition of all Bodies, which, if they were made of Water and Earth alone, would remain for ever without any Virtue or Energy. This they must receive from another Principle, and, according to the different Combinations of all the three, Bodies are formed with different Properties and Powers. We acknowledge, therefore, three simple Substances in Bodies, which are properly Elements, or Principles: One active, which may be termed *Fire*; and two passive, Water, and Earth. From the most simple Union, or Connection of these three, Salt arises, which is to be looked upon as the most simple of all mixed Bodies. The next to that is Sulphur, or Oil, made by the Union of the three Principles, and of Salt.

Thus far concerning the Principles of Bodies in general: We now proceed to consider each of them in particular.

FIRE CONSIDERED AS A PRINCIPLE.

We reckon elementary Fire the first Principle of Bodies, as being that, from whence all the rest receive their Activity. It is a simple and most subtle Body, in a continual swift Motion, filling, and easily permeating, the Pores of all other Bodies. Its immense Subtlety is evident from this, that it penetrates all Bodies whatsoever; and its swift Motion, from that Rapidity which it is capable of communicating to them. Its Force is in proportion to the Quantity of it any-where collected. In the Sun, which may be looked upon as a vast Congeries of this Substance, its Motion is most violent. In culinary Fires, the Quantity and Motion of it are not so great, but still greater, than in spirituous and volatile Liquors, where it is hardly to be

perceived, except when they are set on Fire. Not only all Motion, but, also, Heat, proceeds from it, which, as it exists in Bodies, is nothing but the excessive Motion of their Parts. It is, also, too subtle and active ever to be collected pure in Chymical Analyses; where-ever it is found, it is always united with Water and Earth, in Salts and Sulphurs; and is sometimes concentrated with Bodies in so great Quantities, as considerably to increase their Weight, as is evident in calcined Antimony, in which there is an Addition made of almost a Fifth Part.

WATER CONSIDERED AS A PRINCIPLE.

Elementary Water is a simple, liquid, insipid, inodorous, pellucid Substance. Its Fluidity is owing entirely to the Action of Fire, and, when that Action is very great, its Parts are actually divided, and the Whole turned to Vapour; but, when it is very small, they cohere strongly, and turn to Ice. This Element the Chymists call *Phlegm*, and it may be conceived to consist of small, smooth Particles, of an oblong or oval Figure, and perfectly rigid or inflexible. From the Minuteness of its Particles, it easily penetrates the Pores of almost all Bodies. An oval Figure seems more agreeable to the Fluidity and Motion of Water, than a spherical; and, likewise, to the Solidity we observe in Ice; the Points of Contact being too few, in spherical Bodies, to form so strong a Cohesion. Were its Particles angular and flexible, they would be too weak to penetrate and dissolve Salts; and would, likewise, be too much resisted; but, as their Surface is smooth, they can easily enter the Pores of Salt, and afterwards they easily separate their Parts, that is, dissolve them by their Rigidity, and oval Figure. The Want of Taste or Smell in Water seems to proceed from the Smoothness, Obtuseness, and Smallness of its Particles, which cannot vellicate the Nerves of the Tongue and Nostrils. The Fluidity of Water arises from the Smallness, Smoothness, and Figure of its Particles, and from the easy Motion thereof by the Fire contained in their Interstices. Without the Action of Fire separating these Particles, and keeping them in continual Motion, their Fluidity would presently be lost, how much soever their Structure may dispose them to it, and they would become one solid Mass. On the other hand, if the Action of Fire upon them be very great, they are farther separated from one another, and fly off in Vapour or Smoke. In fine, Water is transparent, because its Pores are so disposed, as readily to transmit the Rays of Light.

EARTH CONSIDERED AS A PRINCIPLE.

Elementary Earth is the same with the *Terra Damata*, or Caput Mortuum, of the Chymists; being a simple, friable, porous Substance, without Smell or Taste, consisting of Particles of no regular Figure, and altogether unfit for Motion. The Porosity of Earth seems to arise from the irregular Figure of its Particles; and as these Particles often touch one another only by their Angles, the whole Mass must necessarily be friable. The Want of Taste and Smell seems to be owing to their Inaptitude for Motion.

In the Analyses of Bodies, the last Thing is always this Principle of Earth; and, in their Composition, it seems to serve as a Basis or Foundation for the other Parts of the Mixture; and to it the Driness, Solidity, and Hardness, of Bodies are, in a great measure, to be ascribed.

SALT CONSIDERED.

Salt, as has been said, is a mixed Body; but I chuse to introduce it immediately after the Principles, because, in all the common Analyses of Bodies, it is obtained entire, and a great deal of Pains and Accuracy is required to decompose it, or reduce it to its Principles. It is, also, the sole Origin of the Taste, Smell, and many other Properties of Bodies. It may be defined to be a mixed Body, formed by the Concretion of Fire, Water, and Earth, into a solid rigid Substance, soluble in Water, and fusible by Fire. As its Particles may be conceived to cohere by large Surfaces only, Salt cannot be friable like Earth; but requires a considerable Force to separate its Parts, which fly off from one another, like those of Glass, with a sensible Noise. It becomes the Cause of Taste and Smell, because its Particles terminate in strong Points, which vellicate the nervous Membranes of the Tongue and Nose.

Salt is of three kinds, acid, acrid, or alkaline, and a third, compounded of the other two, called, in *Latin*, *Sal salsus*.

Acid Salt is a Congeries of inflexible solid Parts, of an oblong Figure, and pointed at both Ends. That its Particles are rigid and hard, appears from the Force, with which it divides and dissolves solid Bodies; and its Sharpness and Pungency are evident from the Effect it has on the Tongue, different from the Corrosion of acrid Salts. Acid Salt is easily dissolved by Water, and after this Solution its Particles are equally dispersed thro' that Fluid, and have the same Motion with it. Hence it appears, that the Particles of both Substances have nearly the same specific Gravity; and likewise that the Motion of the aqueous Parts is great enough to overcome the Cohesion of the Parts of Salt.

Concerning the Manner, in which the Particles of acid Salt are compounded of Fire, Water, and Earth; nothing can with Certainty be determined. It may be conjectured however, that several Particles of Water, being collected into one little Mass, are cemented together by some Particles of Fire and Earth, lodged in the Interstices left between them; and that all these, taken together, are disposed in an oval Form, or that of two Cones joined by their Basis. This Configuration, however, is not the same in all acid Salts; but the Differences may all be reduced to three; the nitrous acid, the muriatic, and the vitriolic.

The Word *Alkali* is derived from *Calī*, the Arabic Name of a Plant, from the Ashes of which a Salt is obtained, proper for making Glass: And thence it came to be used for all Salts, got from the Ashes of Plants, and afterwards for all Salts, and other Substances whatever, that ferment with Acids.

Acrid or alkaline Salt seems to be a Congeries of spherical Particles, with rough prickly Surfaces, because of their great Disposition to Motion, and their corrosive burning Taste, the Points of their Surfaces acting on the nervous Papillæ of the Tongue, like so many Files, whereas acid Salt is only pungent. But then, by these Points, a larger Surface is exposed to the Action of Fire, than could otherwise be; and thus the Particles of alkaline Salt are very volatile, or easily raised by a gentle Heat. The Origin of their Salt is probably from a certain Connection of acid Points, and terrestrial Particles, because, in many Operations of Chymistry, such Salts arise from the Mixture of acid Salts, and Earth; as we see particularly in the Preparation of fixed Nitre, and Fomentation of Urine. Nitre, being distilled, leaves a compound fixed Salt behind, of the same Nature with Sea-salt, out of which, by a nicer Distillation, an acid Liquor may be extracted, without any volatile Salt, or at least, but a very small Quantity; but if the same fixed Salt be previously fermented, and then distilled, it yields a large Quantity of volatile Salt, and very little fixed Salt, or Acid; because by Fermentation or Calcination the acid and terrestrial Particles are intimately mixed, the acid Spicula entering the Pores of the Earth, and so forming new Molecules, which are dense and close towards the Centre, and prickly on the Surface, by the acid Points sticking out. Such are the Particles of volatile Alkalī, of which if a great Number be joined together, they must cohere very strongly, by means of their Points, and form Molecules of irregular Figures, in the Pores of which watry, earthy, sulphureous, or acid Particles may be received and absorbed. Hence it is that acid Salts are seldom pure; and as they are very often filled with Particles of Earth, they resist the most violent Degree of Fire, and will sooner melt than be raised by it. This is the true Nature of fixed alkaline Salt, such as Salt of Tartar, or the Salts got from the Ashes of Plants called Lixivial Salts. If they be impregnated with sulphureous Particles, they continue very volatile, and are raised by a small Degree of Fire; as we see in Salt of Urine, Hartshorn, and others got from Animals. Acrid Salts easily melt, when exposed to a moist Air, because the Particles of Water contained in it readily enter their Pores. When thus melted, they become properly Lixivia, and are commonly termed Oils, as Oil of Tartar per Deliquium. Volatile alkaline Salts, diluted with Water, are called volatile urinous Spirits; such as the volatile Spirit of Urine, of Hartshorn, Blood, and others.

The *Sal Salsus*, or third Kind, is compounded of acid and alkaline Molecules united together; and the Figure of its Particles is principally produced by the Kind of Acid that enters its Composition. The Impression these Particles make on the Tongue, is more dull and languid, than that made by acid or acrid Parts alone; because the Molecules formed by the Union of these are larger in Bulk, and consequently less disposed for Motion; and therefore, though there is a greater Quantity of Aculci, or Points, in one of these Molecules than in the former, yet their Bulk makes them less capable of entering the Pores of the Skin, and vellicating the nervous Papillæ, than when they are in a disjointed State. The Taste of these Salts is termed saline, and varies according to the Thickness of the Spicula, their Number, and the other Parts that may be mixed with them. That this is the true Original of this kind of Salts, is evident, both from the artificial Composition thereof, from acid and acrid Particles blended together; and from the Resolution of them into the same. Thus, by pouring Spirit of Nitre, of Sea-salt, or of Vitriol, on Salt of Tartar, new Salts are produced exactly of the same Appearance with Nitre, Sea-salt, or Vitriol; and, by analysing these three Salts, the essential Salts of Plants, Sal Ammoniac, and others, an acid and alkaline Salt may be obtained, in some fixed, in others volatile.

OIL, OR SULPHUR, CONSIDERED.

What the Chymists call Oil, or Sulphur, is not a simple Substance, but a Body compounded of Fire, Water, Earth, and Salt; but we chuse to introduce it here, as it is most commonly separated entire in the Operations of Chymistry, and is not resolved without Difficulty into its component Principles. It may be defined to be a fluid, viscid, inflammable, transparent Body, without Taste or Smell, (though, by mixing it differently

with Salts, these sensible Qualities are produced) compounded of Fire, Water, Earth, and Salt; and it may be conceived to consist of many Flakes, or Flocculi, each of which is again made up of very small flexible Filaments, formed of the four Principles before-mentioned, by Fermentation, as well in the Bowels of the Earth, as in the Bodies of Vegetables and Animals: Thus an aromatic Plant, growing in Water, will, by Distillation, yield an Oil, which could never have been obtained from the Water, in which it stood; and all Oils may by Art be resolved into Water, Earth, and Salt. From these Filaments variously concreted arise the Flakes already mentioned, which are of different Thicknesses; and in the Pores thereof is lodged the Element of Fire, which, also, runs in Rivulets through their Interstices. Upon these depend the specific Levity, Inflammability, and Fluidity of Oil; but, as, notwithstanding the intestine Motion caused by the Element of Fire, the small Flakes still adhere, in some measure, together, this Fluid must be more viscid than any other.

From what has been said concerning the Nature of alkaline Salts, and the Figure and Structure of the oily Flocculi, it is easy to conceive, why all Alkalies dissolve Sulphurs; for since the alkaline Particles are spherical and prickly, they cannot enter the Interstices of the Flakes, without carrying away some of them from the rest; and thus, by degrees, thoroughly dissolving them. But the dense, rigid, and pointed Molecules of Acids, being forced into these Interstices, increase the Density, and strengthen the Texture, of the Flocculi; and from the Diversity of these, and of the acid Spicula mixed with them, arise the different kinds of Sulphurs. Sulphurs formed in the Earth of Fire, acid Salt, Water, and a very fine Earth, are termed Bitumens. Thus Bitumens dissolved in a large Quantity of Water form the mineral Oils, or Petrolea. But if they are mixed with Earth and Salt, the solid Bitumens are produced, differing from one another in Degrees of Purity, according to the Quantity or Grossness of the Earth, or different Degrees of Mixture. Thus fossil Coals, Jet, Amber, and the common Bitumens, and bituminous Earths, are produced. If there be but a small Quantity of Earth, and much acid Salt, the common mineral Sulphur, or Brimstone, is formed. If the mineral original Bitumen is joined to a fusible Earth, capable of Vitrification, it communicates to it a metallic Form; that is, the Sound, Brightness, Softness, Ductility, Malleability, and all the other sensible Qualities of Metals.

This Origin of mineral Bitumens may be confirmed by many Experiments: If a Mixture of equal Parts of Oil of Vitriol, and Oil of Turpentine, be digested together, for a considerable time, in a very gentle Heat, and afterwards distilled in a Retort, there will come over first a yellowish Liquor, resembling Petroleum, both in Smell and Consistence. What remains in the Retort, is, at first, a soft Bitumen, and afterwards turns into an hard black Mass, easily inflammable, and, when burnt, smelling exactly like a fossil Coal. But if the Distillation be continued, a white acid Liquor will next be obtained, which, by standing, lets fall a grey Powder, which is true common Brimstone, a yellow Substance of the like Nature adhering likewise to the Neck of the Retort; what is left behind being a black, shining, light Substance, disposed in thin disgregated Strata, like Talc, in which, by the Help of the Loadstone, Iron may be discovered. Thus, therefore, all these Bitumens may be artificially produced; and the Analysis of the natural ones further confirm the Manner of their Formation. Thus the Chymists have shewn, that Metals are nothing but bituminous Substances, which have undergone a long Digestion; for, by depriving them of their Sulphur, they are reduced to Ashes, and then to Glass. This is easily seen in the imperfect Metals; for if any of them be exposed to a long Heat, and especially to the Rays of the Sun, collected by a large Burning-glass, the sulphureous Principle flies off, and only a Calx, or Ashes, will be left behind, which, in a more vehement Degree of Fire, are presently vitrified; and, by restoring the Sulphur, this Glass may be again reduced to Metal.

The inflammable Substances in Animals and Vegetables consist of a different Combination of the Principle of Sulphur, and acid Salt; for the Oil, or Sulphur, in these, is formed by a small Portion of Earth joined to the elementary Fire, acid Salt, and Water: This Oil, when joined to an acrid Salt, produces Gums; when joined to a fine Acid, and a new Accession of fiery Particles, it produces essential Oils, and inflammable Spirits; but if the Acids are more gross, by reason of a larger Quantity of Earth joined to them, it forms Resins, as we learn from the artificial Composition of all these Substances. By mixing Spirit of Wine with volatile Spirit of Urine, we obtain a mucilaginous Concretion, or thin Gum. Oil of Olives, and Salt of Tartar, melted together, makes a kind of Soap, or thick Gum; and if Spirit of Wine be digested for a long time with Oil of Vitriol, and then distilled, an inflammable Oil is obtained, resembling in Smell, and other Qualities, the essential Oils of Plants, a true Resin being left behind in the Retort.

In Animals this same oleaginous Principle forms the Fat, and other glutinous or gelatinous Substances; these left being com-

composed of an acrid volatile Salt and Oil, as appears from their Analysis: But Fat is made of the same Oil, and acid Salt; for if Oil of Olives, and Spirit of Nitre, be mixed together, and digested, a Substance will be formed in every thing resembling the Fat of Animals.

Sulphureous Substances found in Bodies are either fixed, or volatile. The fixed Sulphurs are either solid, such as Fat, Resin, and the Bitumens; or fluid, as Oils. Volatile Sulphurs are such as fly off with a small Degree of Fire, and have an Appearance compounded of that of Oil and Water. Such are inflammable Spirits obtained from the Flowers and Fruits of Plants.

THE MIXTURE OF ELEMENTS.

All Bodies consist of the five Principles above-mentioned; and the Diversity of Bodies arises entirely from the different Combination of them. These Combinations, or Mixtures, of the five Principles are produced by Motion, and that Motion entirely by the Element of Fire. This Motion is sometimes slow and insensible, as in the Growth and Maturation of Fruits; more lively and quick, as in the Fermentation of Must; or very vehement, as in the Deflagration of Bodies. All these Motions go by the general Name of Fermentation; and if they tend to the Destruction or Dissolution of Bodies, they are termed Corruption.

The most simple, or least compounded, Mixture of Principles is seen in the Fermentation of Salts, which consist principally of Water, and Earth; next of Sulphur, made up of Water, Earth, and Salt; then of the acrid Salts, both fixed and volatile, with the essential Salts of Plants, and sulphureous Bodies, whether solid or liquid. The Manner how these Mixtures are brought about, and the Changes arising from thence, will best be understood by Examples.

The Fruit of the Vine, just beginning to put on the Form of Grapes, is insipid, or, at least, tastes only like Grass. As it grows, a certain Acidity is discovered in it, which at first produces an austere Taste; then an acerb one, in which State the Juice is termed Omphacium, which, in Distillation, yields a great Quantity of Water, some acid Liquor, and a small Portion of Oil, a large Proportion of Earth being left behind. In this Juice, therefore, the austere and acerb Tastes are owing to the acid Spicula, just breaking out through the earthy Parts, but not wholly disengaged from them. When the Grapes come to be fully ripe, the austere Taste is changed to a sweet one, because the Juice, being more thoroughly penetrated by the Element of Fire, is rarefied, and put in a more violent Motion, by which the Salts throw off their earthy Involucra entirely, and by a new Combination of these Salts, Water, and Earth, are formed Sulphurs, or Oils. But if any of the acid Salts remain after the Composition of the Sulphurs, they continue still entangled by the Filaments thereof; and their sharp Points, vellitating the nervous Papillæ of the Tongue, create that agreeable Taste, which is perceived in Must. This Must in Distillation affords a great Quantity of Phlegm, next a pretty large Portion of an acid Water, some acrid or volatile urinous Salt, and a Quantity of thick Oil, much beyond what was gained by the former Distillation. Lastly, from the Mass that remains in the Retort, an acrid fixed Salt may be obtained by the common Method. However, even in this Juice of ripe Grapes, or Must, the Salts and Oils are not carried to the greatest Degree of Fineness, and Part of them remain still involved in the earthy Involucra. But if a large Quantity of it be set to ferment, the igneous Particles begin to act again, and by them this intestine Commotion is continued, till all the gross Parts are either attenuated, or thrown out from the Liquor, and the Salts and Sulphurs perfectly set free from the earthy Parts, and intimately mixed with one another. The Liquor in this State is Wine, and the gross Parts, that fall to the Bottom of the Vessel, are termed Lees. The Briskness and penetrating Quality of the Wine seems to be owing to the large Proportion of the Element of Fire, which harbours among the Filaments of the sulphureous Flocculi; and this Liquor being distilled, we obtain, first, a great Quantity of inflammable Spirit, then a copious Phlegm, next an acid Liquor with some Portion of an oily Spirit, a thick Oil, and, lastly, a small Quantity of Caput Mortuum, which will yield a little fixed Salt. In this Distillation a far less Quantity of acid Liquor is obtained, than from Must, which, on the other hand, yields no inflammable Spirit. If the Lees of Wine be well dried, and then distilled, they yield a very large Quantity of volatile urinous Salt, the acid Salts, combined with the sulphureous and earthy Particles, being, by Fermentation and Heat, converted into alkaline Salts.

In the same manner, if green Peas or Beans be distilled, they yield a great deal of acid Liquor and Phlegm, with a small Proportion of Oil. If they are first fermented with common Water, an inflammable Spirit is got from them in the same manner as from Wine; and if they are kept for some Months in a dry Place, they yield a volatile alkaline Spirit, without any acid Liquor, or, at least, but very little. Whence it is evident, that acid Salt, by its Union with other Principles, is changed into Sulphur; and, by its Union with earthy and sulphureous Parti-

cles, becomes an alkaline volatile Salt; as, by being driven into earthy Particles, alone, by the Force of Fire in Calcination, it is changed into a fixed Alkali.

It may be proper, upon this Occasion, to observe, that the Salts of all Plants are not entirely alike, but differ from one another, not only as the Quantity of Sulphur, Water, or Earth, which is joined to the Acid, is greater or less; but, also, according to the original Nature of the Acid which enters their Composition. Acid Salts, as we have already said, are of three Kinds, muriatic, nitrous, and vitriolic. Muriatic Salts, such as Sea-salts, and Sal Gemmæ, being crystallized, put on a cubic Figure, the Particles thereof appearing to be formed of two quadrilateral Pyramids, joined together by their Bases. Nitrous Crystals represent Prisms with six Sides, formed by the juxtapositions of two triangular Pyramids; and Crystals of Vitriol seem to consist of two hexagonal Pyramids, as far as can be judged by the Particles thereof, when carefully separated from all Metals. These original Salts, combined with others, form compound Salts; of almost all Kinds. Thus, in the Vegetable Kingdom, the different Sorts of Vinegars are nothing but some original acid Salt dissolved in Phlegm. The essential Salts of Plants obtained without Fire consist of some Acid joined with Particles of Earth, or of the other Principles. Sal Ammoniac arises from the Union of acid and volatile alkaline Salts. Fixed Alkalies are only the acid Spicula struck into earthy Molecules; and volatile Alkalies consist of the same Acid, joined to very fine Particles of Earth and Sulphur, so as to form prickly Globules. Moreover, the same Varieties of acid Salts are to be met with in Vegetables, that are found in Minerals. Thus the essential Salts of Pellitory of the Wall, Borage, wild Cucumber, and the like, are nitrous; and, when thrown upon burning Charcoal, they fulminate like Nitre. The fixed Salts of Carduus Benedictus, Glasswort, and Spurge, are like Sea-salt, their Particles having the same cubic Figure; and, when thrown upon burning Charcoal, they decrepitate. The Crystals of Tartar are like those of Vitriol; and that they are formed by a vitriolic Acid, appears from the sulphureous Smell of Tartar, when artfully calcined. Besides the saline Compounds already mentioned, other Mixtures are formed in Plants, such as Gums, Resins, Honey, and the like. Gums are something between Acid and Oil, being an acid Salt, so fixed in the Earth, as that the greatest Part of it is changed to an Alkali, the other into Oil; so that the Mixture arising from thence is an oily Salt, resembling the saponaceous Concretes of the Chymists, made of Oil of Olives, and a Lixivium of Tartar, or the mucilaginous Bodies formed of Spirit of Wine, and the volatile Spirit of Urine. And thus we see, that all Seeds which are oily when ripe, are in the Beginning only a Mucilage, or imperfect Oil. Resins consist of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either solid, or liquid; but these differ from one another only in the Proportion of Earth, that enters their Composition. Melleous Juices, which either exude spontaneously from Plants, such as Manna, or are obtained by Art, as Sugar, are essential Salts, consisting of a Mixture of Acid and Alkali, with a large Proportion of Oil.

The Mineral Kingdom furnishes us with a great Variety of Instances, of the way how the Principles of Bodies may be combined together. The Lime-stone and Parget are so framed; that, by being calcined, a vast Number of Cells are opened by the Fire, into which Water easily enters, with an Hissing or Collision of the included igneous Particles. If the Water remain long in these little Receptacles, nitrous Parts are formed, as we see in old Walls, built with these Materials, from which Nitre may always be obtained. The greatest Part of this Nitre, by Distillation, is changed into an acid Spirit; but, by Calcination, turns to an alkaline Salt. And it may be, that the Nitre of the Antients, or that alkaline mineral Salt, which was dug out of the Earth in Egypt, and other Countries, and is obtainable by Art from mineral Waters, was nothing but Nitre calcined by the Heat of the Earth, and so converted into a fixed alkaline Salt. The vitriolic Acid, joined with different metallic Substances, produces all the Kinds of Vitriol; with an astringent Earth, it forms Alums; and with the Principle of Fire, common Brimstone, which, by Deflagration, may be again converted into Oil of Vitriol, the other Principles flying off. Brimstone may, likewise, be artificially produced by uniting the Principle of Fire to any vitriolic Acid.

The like Mixture of the Principles of Bodies may be observed in the Animal Kingdom. Chyle and Milk contain a latent Acid; which easily discovers itself by Putrefaction; but this acid Salt, having undergone a due Fermentation, or some other Action analogous to that in the animal Body, is changed into a volatile Alkali, obtainable in great Plenty from the Blood, Serum, Bile, Urine, and other Juices. In an healthy Body, however, these volatile Alkalies are never perfectly formed, the animal Salts being more of the Nature of Sal Ammoniac, with a Mixture of earthy and oily Parts, to which Mixture the glutinous Quality of the Blood and Serum is owing. By Putrefaction, or Calcination, all animal Liquors are changed, so as to afford

afford perfect volatile Alkalies, as has been evidently shewn by Experiment. *Geoffroy*.

PRION, *πρίων*. A Saw, or *Terebra*.

PRISIS, *πρίσις*, from *πρίω*, to saw. A Saw, or *Terebra* of the Trepan. A Sawing. Or a Grinding of the Teeth.

PRISMATA, *πρίσματα*, from *πρίω*, to saw. Saw-dust, or Rasps.

PROBARBIUM. The first Appearance of the Beard on the superior Lip.

PROBLEMA, *πρόβλημα*, from *πρόβαλλω*, signifying, among other Actions, to object, or lay some Hindrance in the Way, is any kind of Obstacle laid to obstruct an Entrance into any Place, or guard the Avenues leading to it. In this the Term *πρόβλημα* is used by *Hippocrates*, *Lib. πει γυναικ. φύσ.* and *Lib. 2. πει γυναικ.* to signify the Membrane which, growing to the Neck and Orifice of the Uterus, obstructs the Passage of the Semen, and so prevents Conception. This Membrane, he says, will offer itself to the Touch of the introduced Finger.

PROBOLE, *προβολή*, from *προβάλλω*, to project, is a Projection, or Prominence, of any kind. Thus, *Lib. de Artic. Hippocrates* observes, that, in other Cattle besides Oxen, *προβολή τῆς χεῖλεος λεπτή*, "The Prominence of the Lip is but thin," and the upper Jaw is but thin, and therefore they can feed upon short Grass; but in Oxen it is quite otherwise. And, *Lib. de Vulneribus Cap.* *προβολή τῆς κεφαλῆς ἐν τῇ ἐμπροσθεν*, "The Prominence of the Head towards the anterior Parts," is explain'd by the Author to be when the round Eminence [*ἐξέχων σφαιρῶς*] of the Bone juts out beyond the rest.

PROBOSCIS. The Trunk of an Elephant, and of some Insects.

PROCARDION, *περιγάρδιον*. The Pit of the Stomach.

PROCATARCTICA CAUSA. The antecedent, pre-existent, or predisposing Cause of a Disease. See **CAUSA**.

PROCESSUS, in Anatomy, is a Process, Protuberance, or Eminence of a Bone. In Chymistry, a Process is properly a Series of Operations, tending to the Production of something new.

PROCHEILA, *πρόχειλα*. The Extremities of the Lips.

PROCHYMA, *πρόχυμα*. Must which flows from the Grapes spontaneously, before they are pressed.

PROCIDENTIA. The falling of any Part out of its proper Place. It is the same as **PROLAPSUS**.

PROCLESIS, *πρόκλησις*, from *προκαλέω*, to provoke, call forth, signifies, in *Hippocrates*, a provoking or inviting the Senses to the external Parts, in order for their Gratification. Thus we read, *Lib. de Liquid. Usu*, *διὰ τὸ τοῦ καὶ ἀπὸ τοῦ θερμῆς ἡδοναὶ καὶ προκλήσεις*, ἀπὸ δὲ τοῦ ψυχρῆς ἀλγύνδους καὶ ἀποτρέψεις "For this Reason, hot Water gives Pleasures and Allurements to the Senses; but cold Water, on the contrary, creates Uneasiness and Aversions." Here *ἀποτρέψεις*, which import a Retreat, Shrinking back, and Retirement, as it were, of the Senses inwards, is set in Opposition to *προκλήσεις* in the Sense before given. The Word occurs, also, *Lib. περὶ εὐχην*. in the following Passage; *νομίζετο δὲ τὰτο βίη εἶναι ἐς πρόκλησιν βερεπνῆν*. "For he thinks this necessary towards the inviting or procuring Health." But it is here to be observed, that the printed Copies read *πρόκλησιν*, which cannot much alter the Sense.

PROCONDYLOS. The first Joint of every Finger.

PROCONIA ALPHITA, *περώνια ἀλφίτα*, *Lib. 2. πει γυναικ.* as explained in *Galen's Exegesis*, signifies Meal of Barley prepared while the Grain is new and tender; and the Reason why it was so called, was, because it was prepared *πρὸ τῆς τῆς κώνεος*, "Before the Erection of the Cone," or before the Barley was erected into Piles of a conic Figure. For *κόνος*, according to *Galen*, is a wooden Structure erected in Areas, and especially in humid Places, about which the Corn and Fruits were piled up in a tapering Figure, or in the Form of a Cone. Some, however, as *Galen* says, in *Exeges.* by *περώνια ἀλφίτα* understand *τὰ τῶν ἀρτύλων μόνον*, "Nothing but Meal made of Barley not torrefied."

PROCTOS, *πρωκτός*. The Anus.

PRODROMUS, *πρόδρομος*, from *πρὸ*, before, and *τρέχω*, to run. It imports the same as **PROCHYMA**. Certain Winds which blow before the Dog-days, are called *Prodromi*. See **ETESIA**. *Prodromus* is, also, any Circumstance which precedes a Distemper, and indicates its Approach.

PROEGUMENE. See **CAUSA**.

PROFLUVIUM. A Flux of any kind.

PROFUNDUS MUSCULUS. A Name of the Muscle otherwise called **PERFORANS MANUS**.

PROGERMINUS ABSCESSUS. An Abscess arising from a viscid, and almost corrupted Phlegm. *Castellus* from *Marc. Aurel. Severinus*.

PROGLOSSIS, *πρόγλωσσις*. The Tip of the Tongue.

PROGNOSIS, *πρόγνωσις*, from *πρὸ*, before, and *γινώσκω*, to know. The Prognostic of a Distemper. See **FIBRA**.

PROHIBENS. The same as **CONTRAINDICANS**. See **ANTENDEIXIS**.

PROJECTIO. Projection. A chymical Term, importing the casting of any Substance, to be calcined, into a Crucible, by a Spoonful, or a small Quantity, at a time. Projection is, also, an Addition of a small Quantity of something to a greater Quantity of a Metal, in order to meliorate the Metal. *Wilson's Chymistry*.

PROJECTURA. An *Apophysis*. *Blancard*.

PROLABIA. The same as **PROCHEILA**.

PROLAPSUS ANI. See **ANUS**.

PROLAPSUS UTERI. See **UTERUS**.

PROLECTATIO, is defined, an Extraction, by the Extension of the most subtle Parts, in such a manner, that these, being rarefied, separate spontaneously from the more gross Parts. *Rulandus*.

PROLEPTICOS, *προλεπτικός*. Anticipating; an Epithet of the Fever, the Paroxysms of which return sooner than they ought to do regularly.

PROMALACTERION, *πρωμαλακτήριον*. The first Apartment in the antient Baths, where the Body was softened, before going into the Bath.

PROMANUS. The Thumb.

PROMETOPIS, *πρωμετωπίς*. The Skin of the Fore-head.

PRONATOIRES. The Name of two Muscles of the fore Arm. One is the

PRONATOR TERES, SIVE OBLIQUUS:

This is a small Muscle, broader than it is thick; situated on the upper Part of the Ulna, opposite to the Supinator Brevis, with which it forms an Angle like the Letter V.

It is fixed to the internal Condyle of the Os Humeri, partly by fleshy Fibres, and partly by a Tendon common to it with the Ulnaris Internus; thence it passes obliquely before the Extremity of the Tendon of the Brachizus, and reaches to the middle Part of the convex Side of the Radius, where it becomes flat, and is inserted below the Supinator Brevis by an Extremity almost wholly fleshy.

It is called the *Teres*, to distinguish it from the *Quadratus*. The Name of *Pronator Superior* would be more proper, but that of *Pronator Obliquus* is the most proper of all.

This Muscle can have no other Action but that of Pronation, in the different Situations of the Radius, whether that Bone be in a middle State between Pronation and Supination, or in the greatest Degree of Supination: And, in this Case, though it is but a small weak Muscle, it overcomes the *Supinator Longus*.

PRONATOR QUADRATUS SIVE TRANSVERSUS.

This is a small, fleshy Muscle, nearly as broad as it is long, lying transversely on the Inside of the lower Extremity of the fore Arm.

It is fixed by one Side, or Edge, in the long Eminence, at the lower Part of the internal Angle of the Ulna; and, by the other, in the broad, concave Side of the lower Extremity of the Radius.

It is wholly fleshy, without any Mixture of tendinous Fibres. It is situated transversely, but that Extremity which lies on the Radius, is nearer the Carpus, than that on the Ulna. It is of a moderate Thickness, and the Fibres nearest the Surface are the longest, the rest decreasing in proportion as they lie near the Interval between the two Bones, and the interosseous Ligament.

It has a ligamentary, or tendinous Frænum, belonging to it, one End of which is fixed in the interosseous Ligament, the other in the inner Edge of the Basis of the Radius.

The *Pronator Quadratus* is capable of no other Motion but Pronation, and it acts with much more Force than its Congener, the *Pronator Teres*; both because of the Number and Direction of its Fibres; and because it acts upon the Radius near the lower Extremity, where its Effects, in Pronation, are, much greater, than if it acted near the Head of that Bone. The Fibres lie almost in the same Direction in which the Bone moves; and in this it has the Advantage, not only over the other *Pronator*, but over all the *Supinators*, the *Biceps* itself not excepted.

The Fibres, of which this Muscle is composed, are so disposed, as that the longest adhere to the internal Angles of both Bones of the fore Arm; the shortest lie nearest the interosseous Ligament; and the intermediate Fibres are longer or shorter, according to their greater or less Distance from the Ligament.

By these different Degrees of Length, the whole Number of Fibres is advantageously disposed, and their Action rendered uniform. In the greatest Degree of Supination, the Extremity of these Fibres, inserted in the two Bones, make a very oblique Plane, which becomes almost fruit, in the greatest Degree of Pronation. *Winslow's Anatomy*.

PRONERVATIO. A Tendon, or tendinous Expansion. *Castellus*.

PRONOMŒA, προνομία. The same as PROBOSCIS.

PROPHASIS, πρόφασις. The Cause, or Occasion, of a Disorder.

PROPHYLACE, προφυλακή; PROPHYLAXIS, προφυλαξίς; and PROPHYLACTICE, προφυλακτική, from προ, before, and φυλάσσω, to preserve. The Method of preserving Health, and averting Diseases. See INDICATIO.

PROPOLIS. Bee-bread. This is a rude, wax-like, and thick Matter, or Grew, found in the Entrance of Bee-hives. It is gently heating, abstergent, and attracting: It softens indurated Parts, alleviates Pains, and induces Cicatrices on Ulcers. Schrod. See AMBRA.

PROPOMA, πρόπομα, or προποτισμός. A Potion prepared of one Sextary of despumated Honey, and four of Wine, boiled together. Paulus Ægineta, Lib. 7. Cap. 15.

PROPTOSIS, πρόπτωσις. The same as PROLAPSUS; a falling out of the natural Situation; from προπίπτω, to fall out.

PRORA. The Occiput. Os Proræ is the Os Occipitis. Sutura Proræ is the Lambdoidal Suture.

PRORRHESIS, προρρησις, from προ, before, and ρέω, to tell. A Prediction, or Prognostic.

PROSARMA, προσάρμα, from προσάρισω, to offer. Aliment.

PROSARTHROSIS, προσάρθρωσις. The same as ADARTHICULATIO.

PROSCARABÆUS. Offic. Mouff. Insect. 162. Jons. de Insect. 74. Mer. Pin. 201. Scarabæus unctuosus. Schrod. 5. 345. Pinguiculum. Agricola. Meloan. Paracels. THE OIL-BEETLE.

It is to be found creeping about every-where by the Sides of Paths, and in Woods, in the Months of May and June; and the Parts used in Medicine are the Insect itself, and its oily yellowish Liquor.

The Oil-beetle is much of the Nature of Cantharides, forces Urine and Blood, and is of extraordinary Efficacy against the Bite of a mad Dog. Taken in Powder, or preserved, it cures the Vari, or wandering Gout, as we are assured by Wierus. The Liquor is, by some, esteemed of Efficacy in Wounds; it is an Ingredient, also, in Plaisters for the Pestilential Bubo and Carbuncle, and in Antidotes; an Oil is prepared by Infusion of the living Animals in common Oil, which some use instead of Oil of Scorpions. Dale from Schroder.

PROSCEPHALÆON, προσκεφάλαιον, from προς, to, and κεφαλή, the Head. A Pillow, to support the Head, or a disordered Limb.

PROSCLYSMA, πρόσκλυσμα. An Asperision, or Sprinkling, of any Part with a Fluid.

PROSCOLLEMA, προσκόλλημα. An Agglutination.

PROSCRIPTIO. A Retardation. Rulandus.

PROSECHES, προσεχής. The same as SYNECHES, or CONTINENS.

PROSERPINACA. A Name for the Polygonum Latifolium.

PROSERPINALIS HERBA. A Name, in Marcellus Empiricus, C. 10. for the Dracontium.

PROSOEMA, πρόσοιμα. The same as PROSARMA.

PROSOPITES, προσωπίτης. The same as ARCION. The Burdock. Paulus Ægineta, L. 7. C. 3.

PROSPHEROMENA, προσφερόμενα, (from προσφέρω, to bring, or offer; properly, in a medicinal Sense, Food, or Aliment) are usually spoken of such Things as are offered to the Sick for their Support and Nourishment; but, however, often signify the external Apparatus necessary to the due Treatment of a diseased Part; or, in short, whatever a Surgeon ought to be provided with when he undertakes a Cure. Hippocrates, Lib. de Medico. Προσφερόμενα, in the more usual Sense, as signifying Food offered, are also called προσοίσματα (Prosoismata), and προσοίσεια (Prosoisēia); as in that Passage, Lib. de Locis in Homine, καὶ ὅταν κενήνται τὸ σῶμα ὅτ' τῶν προσοισμάτων. "Whenever the Body is overcome by (is too weak to concoct) the Foods exhibited;" πρόσοισμα, a few Lines farther, is also spoken in the other Sense of a hot Bath; and Lib. de R. V. I. A. near the Beginning, παρυσία comprehends all manner of Assurances offered to the Sick, whether of Food, or Medicine. Again, Epid. 3. Sect. 3. we read, τοῖσι δὲ προσφερόμενοισι δυσκόλως ὑπακούοντα. "They [the Bodies of the Patients] were not easy to be affected, or wrought upon, by the Things which were exhibited;" where Galen, on the Place, says, that by προσφερόμενα we are to understand all manner of Helps, and Assurances, in general; and, particularly, Meats and Drinks. In 2 Aph. 33. προσφορὰ are expounded, by Galen, τῶν σιτίων προσφορὰ, "Exhibitions of Food."

PROSTASIS, πρόστασις, from προϊσάμαι, to preside in Power or Dignity, is used, by Hippocrates, in a particular Sense, for that Humour, which prevails and predominates over the rest. Thus, we read, 6 Epid. Sect. 5. Aph. 15. γλῶσση δὲ μύχρως τῇσι πρόστασις, "The Tongue is of the Colour of the prevailing Humour." Galen here confesses it to be an ob-

scure Word, but understands it of the Humour with which the Tongue appears, chiefly, impregnated. Prostatas, Lib. de Locis in Homin. as derived from προϊσθαι, to stand by, to adhere; signifies no more than an Adhesion, or Accrescence, in that Expression, αἱ τοιαύται κοῦσαι πρόστασις ποιεῖσιν τὴν σὰρκα πρὸς τὸ ὀστέον, "Often-repeated Sections cause Flesh to come, or grow up, about the Bone."

PROSTATÆ. The Prostate Glands; from προϊσάμαι, to be adjacent to. See GENERATIO.

PROSTETHIS, προσθεσις. The anterior Part of the Thorax; or the fleshy Parts in the Concavities of the Hands, and Feet, and betwixt the Fingers.

PROSTHESIS, πρόσθεσις, from προσθίμι, to add. That Part of Surgery which supplies what is deficient.

PROSTHETA, πρόσθετα, from προσθίμι, to apply, signify, in Hippocrates, subditious Medicines, whether Suppositories, or Pessaries. Prostheton, προσθῆτον, frequently signifies a Suppository; and προσθῆς, or προσθῆναι ἐν εἰρήῃ, is often spoken of a Pessary, applied in Wool, throughout the whole Treatise de Morb. Mul. Sometimes, instead of προσθῆτον, we read πρόσθεμα, in the same Sense; and once, Lib. 1. περὶ γυναικ. we meet with προσθῆσις, for προσθῆς; tho' προσθῆσις, in other Places, signify Exhibitions of Food; and προσθῆναι is often used with relation to the same.

PROSTHEMENE, προσθεμένη, in Hippocrates, is a Woman under the Application of a Pessary. Thus, 1 Epid. Ægr. 4. προσθεμένη δὲ ταῦτά μιν ἐκεῖσθαι; "Being treated with a Pessary, these (Symptoms) were alleviated." Galen, on this Place, says, "The Signification of this Word, προσθεμένη, when it is joined with βάλανθ (Balanus), a Glands, or Suppository, is obvious; but when it is used without an Addition, we are either to understand it of βάλανθ, as some will have it; or of a lenitive and antiphlogistic Pessary."

PROSTHION, πρόσθιον. The Penis.

PROSTOMION, πρόσθμιον. The Part where the Lips meet, when closed.

PROTARCHI MEDICAMENTUM. The Name of a Medicine, recommended by Celsus, against the Scabies, L. 5. C. 28. Sect. 16.

PROTASIS, πρότασις, from πρότεινω, to stretch, or put forth, or propose, is, properly, a Proposition, or Problem, offered to be discussed; but πρόστασις πνεύματων, Lib. de R. V. I. A. "Stretchings of the Spirits (Breath)," are expounded, by Galen, on the Place, by Obstacles and Interruptions of Respiration. For τὰ προτεταμένα πνεύματα, "Breath drawn out in Length," he says, ἀρὰ τὸ διονέγκοντο, "such as is, in a manner, interrupted;" and which, in another Place of the same Book, is described as πνεῦμα προσπίπτον ἐν τῇ ἀνω κορῇ, "Breath which strikes, or impinges, in its Passage upwards." It is to be observed, that all the vulgate Copies of Hippocrates read πρόστασις (Prostatas); but those of Galen have it, πρόστασις, (Protasies) as above.

PROTEUS. The Name of a Collyrium, described by Paulus Ægineta, L. 7. C. 16.

Proteus was represented, by the ancient Poets, as a God, the Son of Oceanus and Thetis, who could transform himself into any Shape. Hence Morton, in his Pyretologia, calls the irregular Appearances of intermitting and remitting Fevers, Proteiform. And certain it is, that, in consequence of the Violence of the Symptoms, when almost the whole System is briskly stimulated to a Conflict with the peccant Matter, these Fevers often resemble most other Diseases, especially of the acute Kind, but yield to the Efficacy of the Bark; tho', at the same time, they often prove fatal, if that Medicine is not exhibited: For, among the various Symptoms which generally accompany these Fevers, there is one, which does not, sometimes, rage with such Violence, as not only to endanger the Life of the Patient, but, also, so totally to conceal and oppress the Form of the Fever, in its various Stages, of Chills, Heat, and Sweat, that it can neither be distinguished by the Urine, the Temperament, the Pulse, or any other usual Method; but, appearing under the Mask, as it were, of a terrible Chills, an incessant Vomiting, a Diarrhoea accompanied with Gripes, a Cholera Morbus, a Colic of the Stomach, a periodic Hemicrania, an Apoplexy, a Syncope, a Rheumatism, universal Spasms, a Pleurisy, a Peripneumony, a punctory Pain of the Side, or some other Disorder, frequently misleads the Physician from the true Intention of Cure. In this Case, an Attempt may, indeed, be made, to remove the Symptoms, by proper Medicines, but all in vain; for, as the febrile Ferment is neglected, on the Approach of the next Paroxysm, the former, or worse Symptoms, unexpectedly recur, the Physician labours in vain, and the Patient falls a Victim, or, at least, sustains a considerable Injury, by the Ignorance or Carelessness of his Physician.

When, in consequence of the highly deleterious Quality of the Poison, the animal Spirits are so weakened, that they can by no means expand themselves, after the first Shock, the Shivering, which,

which, generally precedes the first Approach of these Paroxysms, is so long protracted, that the Patient, spent with frequently recurring Deliquiums, at last falls a Sacrifice to his Disorder. Internal and external Medicines, are, in the mean time, used in vain, to rouse the languid Principle of Life; but the Fever cannot, even by the most accurate Observer, be discovered, from any Signs, either in the Urine, the Heat, or the Pulse.

In like manner, when, in the first Stage of the Paroxysm, the poisonous Fomes only oppresses the Spirits, so that they cannot expand themselves beyond their usual Sphere, the Patient without any Signs of a present Fever, complains of a Nausea, Sicknefs, and Vomiting, till the Poison being subdued by the *Peruvian Bark*, or some other Antidote, the Spirits are restored to their natural State.

Sometimes, about the Beginning of the Paroxysm, the febrile Poison is convey'd to the Glands of the Intestines, and excites a Flux, accompanied with Gripes, or a Dysentery. But when the Spirits are long oppressed in an uniform manner, these Symptoms, though continual, are at stated Periods augmented, become periodical, without any manifest Signs of a Fever, and cannot be removed by the Efficacy of Opium and Astringents, till, by a Mixture of the *Peruvian Bark* with Laudanum, the Cause, or febrile Ferment, which contaminates the whole Mass of Blood, is removed, together with all the Symptoms arising from it.

When the Poison partakes of an emetic, and at the same time, a cathartic Quality, the Patient is seized with frequent Vomiting and Purging; and, unless the Spirits, by their due Expansion, throw off the Virulence of the Poison in the first Stage of the Paroxysm, a Cholera Morbus is by that means formed, whilst the Fever, in the mean time, can neither be discovered by the Pulse, the Urine, nor the Heat. The Stomach, in the mean time, or the Intestines, or both together, being sphacelated by the intensely poisonous Acrimony of the Humours, the Patient soon dies; or, at least, after a delusive and fallacious Respite, when the next Paroxysm approaches, the same violent Symptoms are again produced by the Poison, unless such a Misfortune is prevented by a seasonable Exhibition of the Bark.

By the like Degree of Virulence in this Poison, I have frequently observed Patients, especially such as laboured under long and confirmed Fevers of this Kind, after the Form of the legitimate Fever was lost, so spent with a perpetual Nausea, Sicknefs, Vomiting, colliquative Sweats, hysteric Suffocations, and other like Symptoms, affecting the nervous System, that they seemed just about to die; and these, though incurable by any other means, I have speedily recovered by a due Dose of the Bark.

Every one conversant in the Practice of Physic knows, that violent spasmodic and lancinating Pains, equal to those excited by Poison, frequently accompany the first Attacks of legitimate intermittent Fevers, especially those of the quartan Kind, during the Shivering and Rigor, till the Spirits, being forcibly expanded and agitated, become capable of eliminating the acting Poison. The febrile Flame being by this means roused in the Mass of Blood, the painful Spasms gradually cease. But, when the Spirits are not only depressed by the Force of the Poison, but, also, forced into a kind of explosive State, I have, in consequence of this, found the whole Body not only for a long time continually cold, and without any Mark of a Fever, but, also, vellicated and twitched by universal violent and flitting Spasms. Nor is it to be wondered at, if, as it often happens, the Patient spent with perpetual Sicknefs, Vomiting, and Deliquiums, soon becomes desirous of Death, unless languishing Nature is seasonably assisted by Art.

The Spirits, also, in consequence of their natural Weakness, an Obstruction, and especially Cold, or any other evident Cause, are frequently forced into a kind of explosive State; by which means, some particular Parts, especially those of the Thorax, such as the Pleura, the Diaphragm, or the Stomach and Intestines, are vellicated and afflicted with spasmodic Pains. The Patient, in consequence of the intense Pain, shivers perpetually, and is spent with frequent Deliquiums, Suffocations, and Vomiting, without any ardent Mark of a Fever; he discharges clear Urine, and without any Pulse he is at the Point of Death, till the Spirits, affected by the Poison, being expanded either by Nature or Art, again rouse the Principle of Life in the Body. This Disorder can only be distinguished from a Cholera Morbus, a Pleurisy, or a Peripneumony, by the want of a Cough, and the Privation of the Pulse, by the excessive Vomiting and Pain, by the Deliquiums, and the Coldness of the Extremities.

I have, also, frequently known Patients complain of a punctory Pain in one or other of their Sides: But, in these, I could not for several Days discover any of the Marks of a Fever, except that the Pulse was somewhat too quick. But after by Venesection, and the Use of Laudanum mixed with Alexipharmics, these Spasms were mitigated, and by that means the natural elastic Force of the Spirits increased, the Signs of a

febrile Flame in the Mass of Blood soon discovered themselves. The Urine was tinged and turbid, the Pulse became equally strong and quick, the whole Body was render'd hot, a violent Thirst seized the Patients, and Aphthæ covered their whole Tongues and Mouths. But directing my Intentions to the febrile Flame, and the Exacerbation of the periodically returning Pain, by a sufficient Quantity of *Peruvian Bark* mixed with Laudanum, and exhibited in the Intervals between the Paroxysms, I subdued the Poison, and totally freed the Patients from their Fever and Pain.

I have often with Surprise observed, that, after the subduing of the febrile Poison, in some measure brought about by the Expansion of the Spirits, when by a strong and quick Pulse, an intensely red and turbid Urine, the Heat of the Body, and other Signs, the Fever manifestly discovered itself, the Joints were affected with these spasmodic Pains, which returned at stated Periods, like a Rheumatism removed from Place to Place, and produced a Tumor and Heat in the Parts affected, by means of the Efforts of the Spirits endeavouring to expand themselves in these Parts: But I always happily removed these Pains by due Venesection, and a copious Use of the *Peruvian Bark*, exhibited between the Paroxysms.

Every Physician knows, that, on the first Approach of legitimate intermittent Fevers, the Brain is affected, not only from the Vertigo, and the Oppression and Disturbance of the Spirits by the active Poison, but, also, from the acute and violent Pains arising from the Effort of the Spirits endeavouring to expand themselves in the Membranes of the Brain. But sometimes the Spirits are at this Period of the Fever so oppressed and disturbed, that the Patient, like one under an Apoplexy, lies, during the whole Paroxysm, without any Signs of the Fever; and the same Symptoms often return with the succeeding Paroxysm. But, though we are to endeavour the Mitigation of these Symptoms by Venesection, Vesicatories, and the other Remedies appropriated to the Cure of Apoplexies, yet their Return cannot be prevented without the Use of the Bark.

I have, also, observed a periodic Hemicrania produced by an Effort of the Spirits to expand themselves in the Membranes of the Brain. But this Symptom I totally removed in two Days time by Venesection, and the Use of the Bark; though, for its Removal, I had, for some Weeks before, in vain used Venesection, Vesicatories, Emetics, Cathartics, Errhines, and Massicatories. *Morton. Pyretologia.*

The above-quoted Author gives a great Number of Cases, in Confirmation of this Doctrine, which are very much worthy of Perusal, because this Subject is of infinite Importance in the Art of Healing. See *Exercitatio 1. Cap. 9. and Exercitatio 2. Cap. 9.*

PROTMESIS, *πρωτισμος*. The Navel of a Child, when first cut. According to *Pallux*, it signifies the same as *Lumbus*, a Loin.

PROTOGALA. Beestings; the first Milk, after an Animal has brought forth Young.

PROTOPATHEIA. A primary, or idiopathic Affection.

PROTOPLASTUS. The first Man. *Paracelsus.*

PROTORRHYTOS. See *CAPNELÆON*.

PROTOS POROS, *πρωτος πορος*. The internal Mouth of the Uterus. *Ruffus Ephesius, de Appel. Corp. Human. Lib. 1. Cap. 31.*

PROTOSMA. The first Woman. *Paracelsus.*

PROTOSTACTON, *πρωτοστακτον*. A Lixivium from Ashes, with an Addition of Quick-lime.

PROTOTOMI, *πρωτοτομι*. The tender Stalks, or Asparagi, of Cabbages.

PROTROPON, *πρωτροπον*. The same as *PROCHYMA*.

PROULIMATESIS, in *Forestus*, is a Disorder of the Stomach, consisting in its Prominence, exciting an external Tumor. *Castellus.*

PROVOCATORII DIES are the same as the *Dies Intercalares*; that is, those which fall betwixt the Critical Days, and the *Dies Indices*. They are the third, fifth, ninth, thirteenth, and nineteenth.

PRUINA, in *Paracelsus*, is a sandy Sediment in the Urine. According to *Rulandus*, *Pruina* is the first Species of Tartar. *Pruina Chymica*, are Sublimates.

PRUNA. See *PRUNUS*.

PRUNELLA. *Offic. Ger. 577. Emac. 632. Raii Hist. 1. 551. Synop. 3. 238. Prunella vulgaris. Park. Theat. 526. Prunella flore minore vulgaris. J. B. 3. 428. Brunella major folio non dissecto. C. B. P. 260. Tournef. Inst. 182. Boech. Ind. A. 169. SELF-HEAL.*

The Roots of Self-heal are slender, creeping, and fibrous; the lower Leaves grow on long Foot-stalks, beset with a few Hairs, as is the rest of the Plant; they are broadest in the Middle, and narrower at both Ends, less than Betony, and not at all indented about the Edges. The Stalks are square, about a Foot high, with two Leaves set opposite at a Joint, which are not many on a Stalk; the nearer they grow to the Top, the shorter

shorter are their Foot-stalks. The Flowers are set on the Top of the Branches in thick verticillated Spikes; of a purple Colour, having an hollow Galea, and a three-lobed Labella, standing in brown flatish Calyces, six standing round the Stalk in a Whorle; each Flower is succeeded by four longish brown Seeds growing in the Bottom of the Calyx. It grows everywhere in Meadows and Pasture-grounds, flowering all the latter Part of the Summer: The Leaves and Flowers are used.

Self-heal is reckoned among the vulnerary Plants, and is accounted serviceable for all Sorts of Wounds, and putrid Ulcers. It is restraining, and good for inward Bleedings, and making bloody Water; and is much used in Gargles, for Ulcers in the Mouth, Throat, or Gums, either the Juice, or a strong Decoction. *Miller's Bot. Off.*

Self-heal gives a pretty deep red Colour to the blue Paper; it is of an herby, styptic, and glutinous Taste, mixed with a very little Bitterness; from which we may conjecture, that the acid Part of the natural Salt of the Earth is in this Plant disengaged from a good deal of the acrid Part; and that, being united with abundance of Earth and Sulphur, it produces there a Salt which resembles Alum. This Mixture of Principles renders Self-heal vulnerary, astringent, and deterfive; and is an Ingredient in the Arquebuse Water, and in vulnerary Potions. *J. Bauhine* esteems a Lotion of it for Gunshot Wounds. It is prescribed in Pisans, Broths, and Apozems, for spitting of Blood, for bloody Urine, for the too great or too frequent Flux of the Menes, for the Bloody-flux, and for all Sorts of Hæmorrhages. It is used by way of Injection in deep Wounds, and by way of Clyster in the Bloody-flux. For Diseases of the Throat, Gargarisms of it must be frequently used. They bathe the Gums of scorbutic Persons with it, adding some Grains of Mastich. The distilled Water of the whole Plant, and the Conserve of its Flowers, may be used for the same Purposes. *Cæsalpinus* used the Leaves bruised, and applied in form of a Cataplasm, to suppurate Boils, and to heal Wounds. He used the Juice for the Ulcers of the Mouth, and, in great Pains of the Head, he bathed the Temples with it, after having mixed it with Oil of Roses and Vinegar. *J. Bauhine* added to it a little Rose-water, and gave it to drink to those who had been bitten by any venomous Creature. *Martyn's Tournefort.*

Prunella absterges and consolidates; its principal Use is in Wounds, especially of the Lungs, and in Coagulations of Blood. It is, also, frequently employed outwardly in Wounds, and in the Quinsy, and other Affections of the Mouth and Fauces. *Buxb.* This Plant is, also, of excellent Virtue in all inflammatory Distempers, Hæmorrhages, and Dysenteries, and in spitting or pissing of Blood. *Hist. Plant. adscript. Boerhaave.*

PRUNELLUS. See PRUNUS.

PRUNUS.

The Characters are;

The Calyx is monophyllous and quinquefid; the Flower roseaceous, pentapetalous, and furnished with thirty or more Stamina. The Ovary in the Bottom of the Calyx becomes an ovated or globous Fruit, containing under a thin, smooth Membrane, or Skin, a soft Pulp, in the Middle of which is inclosed an oblong or oval flatish Stone, acuminate at both Ends, and containing a single Kernel; the Pedicle of the Fruit is of a good Length.

Boerhaave mentions seven Species of *Prunus*; which are,

1. *Prunus*; sylvestris. *Ger.* 1313. *Emac.* 1497. *Park. Theat.* 1033. *C. B. P.* 444. *J. B.* 1. 193. *Raii Hist.* 2. 1527. *Synop.* 3. 462. *Boerb. Ind. A.* 2. 241. *Prunellus sylvestris.* *Offic. Acacia Germanica.* *Schrod.* THE SLOE-TREE, or BLACK THORN.

This is a Bush, or small Tree, whose tough Branches are full of hard sharp Thorns, sending forth its white five-leaved Flowers early in the Spring, before the Leaves appear, which are small and oblong, finely indented about the Edges. The Flowers are succeeded by small round Fruit growing on short Stalks, green at first, but, when ripe, of a fine purplish-black Colour, of a rough, sour, austere Taste, and not fit to be eaten till mellowed by the Frosts. The Sloe-bush grows every-where in the Hedges.

The Fruit is principally used, being restraining and binding, and good for all Kinds of Fluxes and Hæmorrhages. It is, likewise, of Service for Gargarisms for sore Mouths and Gums, and to fasten loose Teeth.

The Juice of Sloes, being boiled to a Consistence, is the *Acacia Germanica*, *Off.* which is now used instead of the true, and put into all the great Compositions. It is of a darkish Colour on the Outside, and redish within. *Miller's Bot. Off.*

The Leaves of the Sloe-tree are bitter, a little styptic, glutinous, and give a faint Tincture of Red to the blue Paper; but the Fruits give it as deep a Red as Alum; they are a little sour, and extremely styptic: Thus it is likely, that the natural Salt of the Earth predominates in the Leaves, where it is mix'd with a little fetid Oil; but that its acid Part, being disengaged in the Fruits, is united with the Earth, and forms a Salt resem-

bling Alum. *Tragus* found by several Experiments, that the distilled Water of the Sloe-tree is an excellent Remedy for the Pleurisy, and for the Oppressions of the Stomach: When this Author had not the distilled Water of these Flowers, he gave Wine, in which they had been macerated, to be drank by his Patients, or else made use of the same Wine distilled in Balneo Mariæ. He affirms, that those Fruits, preserved with Honey, are very good for the Dysentery, and all Sorts of Loosenesses. The Wine made of Sloes has the same Effect. *J. Bauhine* says, that in *Assatia* they dry the Sloes in an Oven, and put them into their Must; and that renders them agreeable and astringent. *Matthioli* made use of the Decoction of the Fruits and Roots for Ulcers of the Mouth and Throat. The Juice of the Fruits asswages the Inflammation of the Eyes; the same Juice, thickened, is called *Acacia Recentiorum*, or *Germanorum*, because it is substituted in the room of the *Acacia* of the Antients, to cool and bind. *Wittichius* prescribes as a good Purgative, the Syrup made with several Infusions of the Flowers of this Tree. *Schroder* mentions it also. *Ettmuller* relates, that a very strong Vinegar is obtained from the Juice of the green Fruits by distilling them in Balneo Mariæ. *Martyn's Tournefort.*

2. *Prunus*; fructu cerei coloris. *T.* 622.

3. *Prunus*; fructu majore; rotundo; rubro. *T.* 622.

4. *Prunus*; fructu maximo; rotundo; flavo & dulci. *T.* 622.

5. *Prunus*; fructu parvo, ex viridi flavescente. *T.* 623.

6. *Prunus*; fructu parvo præcoci. *T.* 623.

7. *Prunus*; fructu magno, dulci, atro-cæruleo. *Tourn. Inst.* 622. *Boerb. Ind. A.* 2. 241. *Prunus Damascena.* *Offic.* *Prunâ, magna, dulcia, atro-cærulea.* *C. B. P.* 443. *Prunâ atro-cærulea, Theophrasto Bartyla, aliis Damascenâ dicuntur.* *Jonst. Dendr.* 77. THE DAMASK-PRUNE.

The best Plums, or Prunes, being formerly brought from *Damascus*, the Fruit has kept that Name ever since; though it is seldom or never brought from thence now, we making use of the Fruit that is brought from *France*, or the *Pruna Gallica*, *Offic.* which I take to be the Fruit of the *Prunus Damascena*, or Damson Plum; *Ger.* the great Damson or Damask-Plum of *Park. Parâd.* They are brought over dried in great Quantities from *France*, being a larger and sweeter Plum than the common Damson.

Prunes are cooling and moistening, rendering the Body loose and soluble; they assuage Thirst, and mitigate the Heat and Acrimony of the Bile. A good Quantity of the Pulp is put into the lenitive Electuary.

Medicines deriving their Name from Prunes, are the *Electuarium Diaprunum*, *Lenitivum*, & *Solutivum*. See DIAPRUNUM. *Miller's Bot. Off.*

Besides the foregoing Species of *Prunus*, *Dale* mentions the two following;

1. *PRUNUS GALICA.* *Offic. Prunus.* *C. B. P.* 443. *Prunus sativa.* *J. B.* 1. *Prunus domestica.* *Ger.* 1311. *Emac.* 1497. *Prunus vulgaris.* *Park. Theat.* 1511. *Prunus fructu parvo, dulci, atro-cæruleo.* *Tourn. Inst.* 622. THE COMMON PRUNE.

This Plant is frequently cultivated in Gardens, and flowers in April. It is transported dry to us from *Provence* and *Languedoc*, and its Gum is hard and pellucid. It is thought to be possessed of the same Virtues with the former. *Dale.*

2. *PRUNUS BRIGNOLENSIS.* *Offic. Prunus Brignoniensis fructu suavissimo.* *Tourn. Inst.* 632. *Prunus Brignoliensis aut Brignolensis.* *Raii Hist.* 2. 1526. *Pruna ex flavo rufescentia, mixti saporis, gratissima.* *C. B. P.* 443. THE PRUNELLO.

These are small yellow Plums, brought over from *France* in little long Boxes; they are moist, flat, and without Stones.

They are seldom prescribed by Physicians; but being of a pleasant grateful Taste, and not subject to purge, they are frequently eaten by Persons in Fevers. *Miller's Bot. Off.*

PRURIGO. The Itch. See LEPRO. Or an Itching.

PRURITUS. The same as PRURIGO.

PSAISTE MAZA, פסאיסט מזה, is expounded in *Galen's Exegesis*, by "a Maza worked up with Honey and Oil, because, says he, the Psaiста were so prepared." Now the *Psaiста*, according to *Hesychius*, were *Alphita* wet with Oil, or, as *Suidas* says, with Oil and Wine, which they burnt in Sacrifice to the Gods. *Psaiста* was, also, a Name for a sort of wide and round Cakes, by some called, also, פסא (psêstâ); agreeably to which, all the Copies read פסא פסין, *Lib. תעודת העשרה מאבין*, tho' *Calvus* seems to have read פסין, which occurs in another Place of the same Book, where we find פסא פסין דה פסין וס פסין, "a Maza very well work'd up with Oil and Honey;" but *Aldus* reads it here, too, פסין, as he does, also, in another Place of the same Book.

PSAGDAS, פסגדס, is expounded in *Galen's Exegesis* by פסגדס תרופה, "a kind of Ointment," which is, also, the Exposition which *Erotian* gives of it, and for which he quotes *Eupolis*. But some Copies of *Erotian* read פסדס; and *Hesychius* expounds פסדס, פסגדס, by פסגדס תעודת, "some fort

"Sort of Ointment." Upon the Whole, it seems to be a foreign and barbarous Term. *Foefius*.

PSALACANTHA. *ψαλακάνθα*. *Suidas* informs us, that *Ptolemaeus Cyptherius* wrote a Poem on the *Psalacantha*, which he said was an Herb possess'd of many extraordinary Virtues. *Photius*, from *Ptolemaeus Hephaestionis*, mentions it as an Egyptian Plant, with some fabulous Circumstances, not worth relating. Some, he says, represent it to be like the *Artemisia*; others like *Melilot*.

PSAMMISMOS, *ψαμμισμός*. A Sort of Cure of the Dropsy, by covering the Body with Sand.

PSAPHEROS, *ψαφρός*, is expounded in *Galen's Exegetis* by *ψαθύρος*, (*psathyrus*) and *ψαφρός*, *ψαφάρος*, are the same as *ψαθύρος*, *ψαφύρος*, *ψαφάρος*, *ψαφύρος* and all signify brittle, or friable, and are applied to such Foods as contain nothing of a fat or viscous Substance; but are tender, friable, or incoherent. *Galen*, *Lib. 3. de Alim.* The same Author, *Lib. 3. de Diff. Puls.* opposes their Signification to *γλισχρός*, (*glischros*) viscid, or glutinous; and, *Lib. 11. de M. M.* expresses it by *κραυρός* (*crauros*); as *Aristotle*, *Lib. 4. Meteor.* does by *θραυστός*, (*thraustos*), Words importing Friability, and Looseness of Contexture: *ψαφρός*, in *Coac. 608.* is joined with *μαλθακός*, and both are apply'd to Excrements of a loose and soft Contexture, which are condemn'd; *ψαφάρος διαχώνημα* is the same as *ψαφάρος*, and signifies loose, incoherent Excretions by Stool; and, in an Epithet, joined with *ξηρός*, dry, *ψαφάρος* is expounded also by *ξηρός*, *αυχμυρὸν*, *ασθενὲς*, *ελαφρὸν*, dry, squalid, weak, light. In *Coac. 583.* we read *ὕρον ὡς ὕδατος*, ἢ τρισαεταμίονον *ψαφρὸν*, *τριχύτην*. "Urine like Water, or disturbed with a loose, or rough, and sand-like Substance."

PSARON. The Name of a Powder described by *Aetius*. *Tetrabib. 4. Serm. 2. C. 36.*

PSATHYROS. *ψαθύρος*. The same as **PSAPHEROS**.

PSEGMMA. *ψῆγμα*. A Name for the *Flos Aëris*. *Dioscorides*, **PSELAPHIÆ**, *ψελαφίη*, (from *ψελαφάω*, properly, to touch the Strings, in playing on a musical Instrument, as *Eustathius* in *Iliad.* observes; but commonly signifying to feel or grope like Persons in a Delirium) in *Hippocrates*, *Lib. περὶ εὐσχημ.* signifies Friction with the Hands, and is reckoned Part of the Office of a Physician, which he should always be in a Readiness to perform, when the Subject requir'd it.

PSEUDES, *ψευδής*, False, or Bastard. Hence the following Articles, beginning with *Pseudo*, are derived.

PSEUDO-ACACIA.

The Characters are,

It has a papilionaceous Flower, from whose Calyx rises the Ovary, involved in a fimbriated Membrane, and becoming, at last, a flat Pod, opening into two Parts, full of Kidney-shap'd Seeds.

Boerhaave mentions two Species of *Pseudo-Acacia*; which are,

1. *Pseudo-Acacia*, vulgaris. *Tourn. Inst. 649. Boerb. Ind. A. 2. 39. Pseudo-Acacia. Offic. Pseudo-Acacia Americana Robini.* *Park. Theat. 1550. Acacia Americana Foliis coluteæ, monococcos, siliquis echinatis.* *Raii Hist. 2. 1719. BASTARD ACACIA.*

This Plant is naturally produced in America; but is with us found in the Gardens of the Curious. I know nothing of its Use and Virtues; at Paris, however, a distilled Water is prepared from its Flowers. *Dale.*

According to *Robinus*, the Leaves of this Plant when boiled and expressed, purge in the same manner with *Sena*. Others recommend a Decoction of the Leaves, for its corroborating and refrigerating Quality. It is exhibited in Dysenteries, but excites violent Pains and Flatulences. *Hist. Plant. adscript. Boerb.*

2. *Pseudo-Acacia*; siliquis glabris; *Acacia Virginiana, siliquis glabris.* *Raii Hist. 1719. Boerb. Ind. alt. Plant. Vol. 2.*

PSEUDO-ACORUS. See **ACORUS ADULTERINUS**.

PSEUDO APOCYNUM, *hederaceum, Americanum, tubuloso Flore phœnice, Fraxini Folio.* A Name, in *Boerhaave*, for the *Bignonia, Americana, Fraxini Folio*; *Flore amplo, phœniceo.*

Pseudo-Apocynum, Americanum, capreolatum, tetraphyllum, tubuloso Flore, Foliis longioribus. A Name, also, in *Boerhaave*, for the *Bignonia, Americana, capreolis donata, siliquâ breviori.*

PSEUDO-ASPHODELUS. *Ray*, in *Hist. Plant.* takes notice of three Plants under this Name. The first is the;

Pseudo-Asphodelus minor, sive Pumilio, Folio Iridis, sive 2 Cluf.

Pseudo-Asphodelus Alpinus, C. B. Minor, Folio Iridis. THE LESSER BASTARD ASPHODEL. *Park. Asphodelus Lancastrie, Lancashire Asphodil.*

I find no medicinal Virtues ascribed to this Plant.

The second is the,

Pseudo-Asphodelus palustris vulgaris nostras. Asphodelus Lancastria verus, Ger. Emac. descr. TRUE LANCASHIRE ASPHODEL. *Pseudo-Asphodelus primus, Cluf. Palustris Anglicus. C. B. Luteus, acrisolius, palustris Anglicus. Lobelii I. B.*

This is said to be an excellent Application for the Cure of Wounds. Women dye their Hair with the Flowers of this Plant, macerated in a *Lixivium*.

The third is the

Pseudo-Asphodelus palustris, Scoticus minimus. THE LEAST SCOTISH ASPHODEL.

No medicinal Virtues are ascribed to this Species.

PSEUDO-ASTHMA. An *Asthma* excited by an Abscess, or Vomica, in the Lungs.

PSEUDO-BUNIAS. See **BARBAREA**.

PSEUDO-BUNIUM. See **BUNIAS**.

PSEUDO-CADMIA. A Name for the **ANTICADMITA**.

PSEUDO-CAPSICUM. A Name for the *Solanum, fruticosum, bacciferum*.

PSEUDO-CHAMÆBUXUS. A Name for the *Polygala, frutescens, Folio buxi, Flore maximo*.

PSEUDO-CHINA. A Name for the *Senecio, Asiaticus, Jacobææ Folio, radice lignosa, China officinarum dicta nobis*.

PSEUDO-COLOCYNTHIS. A Name for the *Pepo, fructu ovato variegato*.

PSEUDO-CORALLIUM. A Name for the **CORALLIUM NIGRUM**.

PSEUDO-COSTUS. A Name for the *Pastinaca, Olusatris folio*.

PSEUDO-CYTISUS. See **CYTISUS**.

PSEUDO-DICTAMNUS.

The Characters are;

The Root is perennial; the Calyx is orbicular, open, and contains the ripe Seeds, under Covert, as it were, in a Sawcer. The Galea is erect, fornicated, or arched, and bifid; and the Beard tripartite. The Whorles of the Flowers, resemble those of white Horehound; and are disposed in close Order, with aculeated Apices.

Boerhaave mentions eight Species of *Pseudo-dictamnus*; which are,

1. *Pseudo-dictamnus, acetabulis moluccæ. C. B. P. 222. M. H. 3. 378.*

2. *Pseudo-dictamnus, verticillatus, inodorus. C. B. P. 222. Tourn. Inst. 188. Boerb. Ind. A. 173. Pseudo-dictamnus. Offic. Park. Theat. 27. Pseudo-dictamnus. Ger. 651. Emac. 797. Dictamnus adulterinum, quibusdam verticillatum, vel potius Gnaphalium veterum. J. B. 3. 255. Marrubium Pseudo-dictamnus dictum. Raii Hist. 1. 557. Gnaphalium veterum, Centunculus, Dictamnus adulterinum quibusdam. Chab. 410. BASTARD DITTANY.*

This Plant is cultivated in Gardens, and flowers in July. The Herb is only used, and as in external Appearance, so in Virtues, it agrees with Horehound. *Dale.*

The Virtues of this Plant are by some said to be the same with those of the Dittany; but this is by no means true, since the odorous Smell of the former is not so strong as that of the latter. It is by some thought to be the *Alypion* of the Antients, but unjustly. *Hist. Plant. adscript. Boerhaave.*

3. *Pseudo-dictamnus, Hispanicus, amplissimo Folio nigricante, & villosa. T. 188.*

4. *Pseudo-dictamnus; Hispanicus, Folio Scrophulariæ. T. 188. Galeopsis Anguillaria. 278.*

5. *Pseudo-dictamnus, Hispanicus, amplissimo Folio candicante & villosa. T. 188. Marrubium subrotundo Folio. Boc. Mus. 2. 167. Tab. 122.*

6. *Pseudo-dictamnus, Africanus, foliis subrotundis, subtus incanis. H. A. 2. 179. Marrubium rotundifolium, Africanum, Folio Hedera terrestris. Flor. 2. 67.*

7. *Pseudo-dictamnus, Hispanicus, Foliis crispis & rugosis. T. 188. Marrubium, Dictamni spurii Foliis & Facie. Par. Bat.*

8. *Pseudo-dictamnus, Hispanicus, Folio amplissimo, candicante & villosa. T. 188. Boerb. Ind. alt. Plant. Vol. 1.*

PSEUDO-DIGITALIS. A Name for the *Dracocephalon; Americanum*.

PSEUDO-FUMARIA. A Name in *Boerhaave* for the **CAPNOIDES**.

PSEUDO-GNAPHALIUM. A Name for the *Gnaphalodes, Lusitanica*.

PSEUDO-HELICHRYSUM. A Name for the *Helichrysum, sylvestre, latifolium, capitulis conglobatis*.

PSEUDO-HELICHRYSUM FRUTESCENS. A Name for the *Senecio, Africanus, Folio retuso*.

PSEUDO-HELICHRYSUM VIRGINIANUM. A Name for the *Senecio, Virginianus, arboreescens, atriplicis Folio*.

PSEUDO-HELLEBORUS. A Name for the *Helleboro-Ranunculus, Flore luteo globoso*.

Pseudo-Helleborus Ranunculoides. A Name for the *Populago, Flore majore*; and for the *Populago, flore pleno*.

PSEUDO-IPECACUANHA. See **APOCYNUM**.

PSEUDO-IRIS. See **ACORUS ADULTERINUS**.

PSEUDO-LIEN. A Name for certain Glands observed by *Ruysh* adjacent to the Spleen.

PSEUDO-LOTUS. A Name for the **GUAJACANA**.

PSEUDO-LYSIMACHIUM. A Name for the *Salicaria, vulgaris purpurea, foliis oblongis*; and for the *Veronica, spicata, longifolia*.

PSEUDO-MARRUBIUM. A Name for the *Lycopus, palustris, glaber*; and for the *Lycopus, Foliis in profundas laciniâs dissectis*.

PSEUDO-MELANTHIUM. A Name for the *Lychnis, segetum major*.

PSEUDO-MELISSA. A Name for the *Melissa, humilis, latifolia, maximo flore, purpurascens*.

PSEUDO-MOLA. A false Mole, form'd by a Piece of the Placenta, left in the Uterus after the Exclusion of the Fetus.

PSEUDO-NARCISSUS. A Name in *Boerhaave* for several Sorts of *Narcissus*.

PSEUDO-NARDUS. A Name for the *Lavandula*; *latifolia*; and for the *Lavandula*; *angustifolia*; *Flore albo*.

PSEUDO-ORCHIS. A Name in *Boerhaave* for the *Orchis*; *lilifolia*; *minor*; *jabuletorum Zelandia & Batavia*.

PSEUDO-PETASITES. A Name for the *Petasites*; *Africanus*; *Calthea palustris Folio*.

PSEUDO-POLYPUS. A Bastard Polypus.

PSEUDO-RHABBARBARUM. A Name for the *Thalictrum*; *majus*; *siliqua angulosa, aut striata*; and for the *Thalictrum*; *majus*; *flavum*; *staminibus luteis*; *vel glauco Folio*.

PSEUDO-RUBIA. A Name for the *Rubeola*; *latiore-Folio*; and for the *Rubeola*; *angustiore-Folio*.

PSEUDO-SALVIA. A Name for the *Phlomis*; *fruticosa*; *salvia Folio latiore & rotundiore*; for the *Phlomis*; *fruticosa*; *salvia Folio longiore & angustiore*; and for the *Phlomis*; *fruticosa*; *Folio subrotunda, brevior*; *Flore luteo*.

PSEUDO-SELINUM. A Name for the *Caucalis*; *Semine aspero*; *Flosculis rubentibus*.

PSEUDO-STACHYS. A Name for the *Stachys*; *Cretica*; *proPseudo-stachyde I. in prodromo describitur*; for the *Stachys*; *Alpina*; *magna*; *Flore ex albo rubescente*; and for the *Galeopsis*; *Alpina*; *Betonica Folio*; *Flore variegato*.

PSEUDO-STRUTHIUM. A Name for the *luteola Herba*; *salicis Folio*.

PSEUDO-SYCOMORUS. See *AZEDARACH*.

PSEUDO-VALERIANA. A Name for several Sorts of *VALE-RIANELLA*.

PSIDA. The external Rind of the Pomegranate.

PSILOTHRON. *ψιλοθρον*. A Depilatory.

PSIMMYTHION. *ψιμυθιον*. Cerufs.

PSINKUS. Cerufs. *Rulandus*.

PSITTACION. *ψιττακιον*. The Name of a discutient Plaster, described by *Paulus Aegineta*, *L. 7. C. 17*. *Scribonius Largus* describes a *Collyrium* by the Name of *Collyrium Psittacinum*. *N^o 27*.

PSITTACUS. The Parrot.

PSOÆ. *ψοα*. The Name of two Pair of Muscles of the Loins.

The first is the

PSOAS, five, LUMBARIS INTERNUS.

This is a long thick Muscle, situated in the Abdomen, on the lumbar Region, adhering to the Vertebrae of the Loins, from the posterior Part of the Os Ilium, to the anterior Part near the Thigh.

It is fixed above to the last Vertebra of the Back, and to all those of the Loins, that is, to the lateral Parts of the Bodies of these Vertebrae, and to the Roots of their transverse Apophyses. The Insertions in the Bodies of the Vertebrae, are by a kind of Digitations, and are very little tendinous.

From thence, the Muscle runs down laterally over the Os Ilium, on one Side of the Iliac Muscle, and passes under the *Ligamentum Fallopii*, between the anterior, inferior Spine of the Os Ilium, and that Eminence, which, from its Situation, may be termed *Ilio-Pectinea*.

Before it goes out of the Abdomen, it unites with the *Iliacus*, and is sometimes fixed by a few fleshy Fibres, in the Outside of the Eminence last mentioned. It afterwards covers the fore Side of the Head of the Os Femoris, and is inserted in the fore Part of the little Trochanter, by an oblique Tendon, which is folded double from behind forward.

This Muscle is sometimes accompanied by another smaller Muscle almost like it, called *Psoas parvus*, of which hereafter.

The *Psoas* bends the Thigh on the Pelvis, or brings it forward; it may, also, move the Pelvis on the Thighs, and hinder it from being carried along with the rest of the Trunk, when the Body is inclined backward, while we sit, having the lower Extremities fixed by some external Force. In this Situation it may, also, move the Vertebrae of the Loins. *Winflow's Anatomy*.

The second is the

PSOAS PARVUS.

This is a long slender Muscle, lying upon the *Psoas major*. It is sometimes wanting; and *Riolanus*, who met with it often in Men, takes notice of his having found it once in a Woman, as a Thing very extraordinary. As for my Part, I found it several times in Women, before I ever met with it in Men; and I still continue to observe it most frequently in that Sex.

It is fixed above by a short Tendon, sometimes to the last transverse Apophysis of the Back, or higher; sometimes to the first of the Loins, and sometimes to both: From thence it runs down wholly fleshy, and more or less complex, on the great *Psoas*, in a Direction a little oblique.

Having reached the middle of the *Regio lumbaris* or thereabouts, it forms a slender flat Tendon, which, gradually increasing in Breadth, like a thin Aponeurosis runs over the *Psoas major*, and *Iliacus internus*, at their Union, and from thence down to the Symphysis of the Os Pubis, and Os Ilium; and is inserted principally in the Crista of the Os Pubis, above the Insertion of the *Pectineus*, sometimes sending an Aponeurotic Lamina farther down.

Besides the *Psoas parvus*, there is another still smaller, between it and the *Vertebrae*, inserted much in the same manner. This Muscle I discovered in the Year 1713.

The *Psoas parvus*, when it is found, serves to sustain the *Pelvis*, much in the same manner with the *Musculi Recti* of the Abdomen, in climbing. But when we stand, we have no need of such a Support, the *Pelvis* resting then upon the *Os Femoris*, in such a manner, as that the largest Portion thereof, and that which supports the whole Body, lies behind that *Fulcrum*, and the smallest Part before. It may, also, serve to hinder the vertebral Pillar from bending backward on some Occasions. *Winflow's Anatomy*.

PSOMISMA. *ψωμσμα*. Meat which is put into the Mouth of a Child.

PSOPHOS. *ψωπος*. A Noise, a Sound. *ψωπος τῶ σῆθε*, are Noises, or Sounds, proceeding from the Breast, occasioned by flatulent Matter attempted to be expectorated. *Ψωπάδες* (*ψωφώδεις*) are those who start and tremble at every Noise; such are they who labour under a Phrensy or Delirium, *Prorrh^{et}*. 16. *Coac*. 96. where the *Ψωπάδες* are expressed by *ψωπαδισκῶν*, which *Galen* in his *Exegesis* expounds by *ψωπαδισκῶν* "Such as are very quick in their Perception of a Noise or Sound."

PSORA. *ψωρα*. A Species of Itch. See *LEPRA*.

PSORIASIS. A Species of Itch affecting the *Scrotum*. *Blancard*.

PSORICA. Medicines for the Itch.

PSOROPHTHALMIA. A *Psora*, or scurfy Disorder of the Eye-lids.

PSUCHAGOGICA. from *ψυχη*, Life. Medicines which recal Life in an Apoplexy, or Syncope.

PSYCHOTROPHON. A Name for Betony. *Dioscorides*, *L. 4. C. 1.*

PSYCHROLUSIA. *ψυχρολυσία*, or **PSUCHROLUTRON.** *ψυχρολutron*, from *ψυχρος*, cold, and *λutron*, to wash. Cold-bathing, or a Cold-bath. Sir *John Floyer* has given this as a Title to a Book wrote upon the Subject of Cold-bathing.

PSYCTICA. Refrigerating Remedies.

PSYDRACIA. A Species of Pustule, of which *Trallian*, *L. 1. C. 5.* gives the following Definition. These are small Tubercles of the Head, which resemble Pustules, and corrode the Skin; But *Exanthemata* are superficial Exulcerations of the Skin, of a reddish Colour, and rough to the Touch. Both these Disorders, especially when of the moist Kind, are cured by an Ointment thus prepared:

Take of Licharge and Cerufs, each four Ounces; of Alum, and the green Leaves of Rue, each two Ounces; and of Vinegar, and the Oil of Myrtle, a sufficient Quantity to make an Ointment.

PSYGMATA. *ψυγματα*. Refrigerating Medicines, either internal, or external.

PSYLLI. A People of *Africa*, celebrated by the Antients, for curing the Wounds of venomous Bites by sucking them; but *Celsus*, *L. 9. C. 27.* is of Opinion, that any one may do the same thing without any Injury to themselves.

PSYLLIUM.

The Characters are;

It agrees, in all respects, with the *Plantago*, and *Coronopus*; only the Stalks are leafy and ramous, or divided into a Multitude of Branches.

Boerhaave mentions four Species of this Plant; which are,

1. *Psyllium*; *majus*; *erectum*; *latifolium*; *annuum*. *Boerb. Ind. A. 2. 101.* *Psyllium*. *Offic.* *Psyllium vulgare*. *Park. Theat. 277.* *Psyllium majus erectum*. *J. B. 3. 513.* *C. B. P. 191.* *Tourn. Inst. 128.* *Psyllium sive Pulicaris Herba*. *Ger. 471.* *Emac. 587.* *Plantago caulifera Psyllium dicta*. *Raii Hist. 1.* **FLEAWORT.**

Fleawort has round hairy Stalks, a Foot or more high, beset at the Joints with two, and sometimes three, long, narrow, sharp-pointed, somewhat hairy Leaves, often lightly cut in about the Edges. From the Bosom of these, toward the upper Part of the Stalks, arise pretty long slender Foot-stalks, bearing at the Ends round short Spikes of small staminous Flowers, of four Leaves apiece, with Apices standing out, and somewhat resembling the Heads of the long Plantain; and are succeeded by round Seed-vessels, containing two round shining reddish-brown Seeds, that look like Fleas, whence it takes its Name. The Root is stringy and fibrous; it grows in the Southern Parts of *France*, from whence we have the Seed which only is used.

Some attribute a purgative Quality to this Seed, but we use it only to extract a Mucilage for sore Mouths and Throats, and to help Thrushes and Quinsys. It is, likewise, useful to obtund; sharp acrimonious Humours, which corrode the Bowels, and cause Dysenteries. Outwardly it is good for sore, inflamed, Blood-shot Eyes. *Miller's Bot. Off.*

The Salt of this Plant resembles that of Coral; but is mixed with a little Sal Ammoniac, a great deal of Sulphur, and terrestrial Parts.

By the chymical Analysis, it yields a great deal of Oil and Earth, no volatile concrete Salt, a little urinous Spirit, and several acid Liquors.

Psyllium-seed is used in the *Electuary de Psyllio*; but its purgative Virtue ought to be attributed to the Scammony, and the other Cathartics. The Mucilage of *Psyllium* is very lenifying, and good to allwage the Inflammation of the Eyes: It is given in a Clyster, for the Dysentery, and Inflammation of the Kidneys. *Martyn's Tournefort.*

2. *Psyllium*; majus; supinum; angustifolium & perenne.
3. *Psyllium*; maximum; ex Littore Veneto.
4. *Psyllium Indicum*; foliis crenatis. *J. B. 3. 514. Boerb. Ind. alt. Plant. Vol. 2.*

PSYTHIOS. An Epithet of Wine, importing Sweetness.

PTARMICA.

The Characters are;

The Leaves are serrated, crenated, dissected, and void of Smell; the Calyx is squamous; the Flowers are altogether white, and generally disposed in Umbellæ; the Seeds are very thin and slender.

Boerhaave mentions nine Species of *Ptarmica*; which are,

1. *Ptarmica*; vulgaris; folio longo, serrato; flore albo. *J. B. 3. 147. Boerb. Ind. alt. 111. Tourn. Inst. 496. Ptarmica. Offic. Ger. 483. Emac. 606. Raii Hist. 1. 344. Synop. 91. Ptarmica vulgaris. Park. 858. Dracunculus serrato folio pratensis. C. B. P. 98. Achillea foliis integris minutissime serratis. A&T. Reg. Par. Ann. 1720. 321. SNEEZWORT, BASTARD PELLITORY.*

From a woody, creeping, fibrous Root, of an hot biting Taste, this Plant sends out upright Stalks a Foot or more high, stiff, and not much branched, having long narrow Leaves, finely serrated about the Edges, growing on them without any Order: The Flowers grow Umbel-fashion, on the Tops of the Stalks, consisting of a Border of white Petala, set about a fistular Thrum; they are larger than the Flowers of Yarrow: It grows in moist Meadows, and in watery Places; and flowers in July.

It is of an hot biting Taste; and, therefore, it is sometimes put into Salads, to correct the Coldness of other Herbs: The Root, held in the Mouth, helps the Tooth-ach, by evacuating the Rheum, like Pellitory of Spain: The Powder of the Herb, snuffed up the Nose, causes Sneezing, and cleanses the Head of tough slimy Humours. *Miller's Bot. Off.*

2. *Ptarmica*; vulgaris; pleno flore. *Clus. H. 12. Dracunculus, pratensis, flore pleno. C. B. P. 98.*
3. *Ptarmica*; foliis profundè serratis, lætè viridibus; elatior. *H. L. 694. Flor. 2. 51. Dracunculus Alpinus, latiore folio serratus. Sch. B. P.*
4. *Ptarmica*; foliis profunde ferratis; minor & humilior. *Flor. 2. 51.*
5. *Ptarmica*; vulgaris; folio longo; serrato & humilior. *Flor. 2. 51.*
6. *Ptarmica*; Alpina; incanis, ferratis, foliis. *H. L. 694.*
7. *Ptarmica*; incana; humilis; foliis laciniatis, Absinthii æmulis. *H. L. 510. Absinthium Alpinum, umbelliferum, latifolium. C. B. P. 139.*
8. *Ptarmica*; Alpina, Tanacetii foliis, flore purpureo. *T. 497. Millefolium montanum, purpureum, Tanacetii foliis. M. H. 3. 39.*
9. *Ptarmica*; Orientalis; foliis Santolinæ incanis; flore pallido. *Vaill. Boerb. Ind. alt. Plant. Vol. 1.*

The first and second Species of this Plant are of an heating and penetrating Quality. The Antients exhibited it in all Disorders, where it was necessary to stimulate and open; for which Purposes it is very proper. By its Heat it corroborates the Stomach: Its Leaves, if chewed, procure a copious Discharge of Saliva; for which Reason they are beneficial in Tooth-achs: They are, also, exhibited in mucous and viscid Obstructions of the Fauces, where Sweats are to be excited. The Juice of this Plant, when boiled, is proper in all those Disorders for which Feverfew is recommended; but does not contain so large a Quantity of Oil, and, consequently, is not so adhesive. *Hist. Plant. adscript. Boerhaav.*

PTERIS, πτερίς. Fern.

PTERNA, πτερνα. The CALCANEUM.

PTERYGION, πτερυγιον. A Film of the Eye. See OCULUS.

But *Pterygion*, in *Celsus, Lib. 6. Cap. 19.* is a Disorder of the Fingers: The Description and Cure of which he gives in the following manner:

Old Ulcers of the Fingers are most commodiously cured by Lycium, or boiled Amurca, with an Addition of Wine to each. In the Nails there sometimes arises a Species of Caruncle, accompanied with great Pain, and by the Greeks called πτερυγιον. In order to cure this Disorder, we must dissolve round Melian Alum in Water, till it is of the Consistence of Honey. Then we must add a Quantity of Honey, equal to that of the Alum, and mix them with a Spatula, till the Preparation has assumed a Saffron-colour. With this the Parts affected are to be anointed. Some, for the same Purpose, rather choose a Decoction

of equal Quantities of dry Alum, and Honey, mixed together. If the *Pterygia* are not, by this means, removed, they are to be extirpated, and the Fingers are to be fomented with a Decoction of Vervain, and the following Medicine.

Take of Chalcitis, Pomegranate-peel, and the Squamæ *Æris*, each a proper Quantity: Mix them with a fat Fig; boil gently in Honey, and apply to the Part affected. Or,

Take of burnt Paper, Auripigmentum, and native Sulphur, each an equal Quantity: Mix with a Cerate, prepared of Oil of Myrtle, and apply to the Part. Or,

Take of the Powder of Verdegrise, one Dram; and of the Squamæ *Æris*, two Drams: Mix with a sufficient Quantity of Honey, and apply to the Part affected. Or.

Mix equal Parts of Lime-stone, Chalcitis, and Auripigmentum, and apply to the Part.

These Medicines, when applied, are to be covered with a Linen Cloth, dipt in Water. On the third Day, the Dressing is to be removed; the dry Parts, if any, are to be cut off, and the like Dressing is again to be applied. If the Disorder is not removed by these means, the Part affected is to be cleansed with the Knife, cauterized with small Irons, and cured like other Burns.

PTERYGOIDES, πτερυγοειδής, in *Hippocrates*, are those People whose Chests are narrow and flat, so that their Scapulæ are prominent, like Wings. Such Persons have been always esteemed subject to Consumptions.

PTERYGOIDES PROCESSUS. The Pterygoide, or Wing-like Processes of the Os Sphenoides. See CAPUT.

PTERYGOPALATINUS MUSCULUS. A Name of a Muscle of the UVULA; which see.

PTERYGOPHARYNGÆUS MUSCULUS. A Muscle of the Fauces. See OESOPHAGUS.

PTERYGOSTAPHYLINI MUSCULI. Some Muscles of the Uvula are thus called. See UVULA.

PTILOSI, πτελοσις, from πτελος, a Person who has lost his Eye-lashes. A Baldness of the Eye-lashes. *Paulus Ægineta, Lib. 3. Cap. 22.* says, the Ptilosis and Madarosis are Disorders of the external Margins of the Eye-lids. The Madarosis is only a Falling off of their Hairs, produced by a Defluxion of acrid Humours; whereas, in a Ptilosis, the Margins of the Eye-lids become thick and callous; so that it is a Disorder complicated of a Madarosis, and an hard Lippitude: For which Reason the Remedies proper for the one are, also, conducive to the Removal of the other. For procuring the Growth of the Hairs, and preventing an Itching and Corrosion of the Corners of the Eyes, the best Medicine is that of *Philoxenus*, distinguished by the Epithet dry. For removing a Dimness of Sight, the following Preparation is excellent:

Take of Cadmia, eight Drams; of Sal Ammoniac, two Drams; of Saffron, and Spikenard, each two Drams; and of white Pepper, one Dram: Mix all together for Use. Antimony, also, answers the same Purpose.

For a Corrosion of the Corners of the Eyes, and a Ptilosis:

Take of calcined Antimony, extinguished in Womens Milk, thirteen Drams; of Aloes, Myrrh, and Spikenard, each two Drams; and of calcined Barley, carefully triturated, four Drams: Mix, and use dry.

Another Medicine for a Ptilosis, and Corrosion of the Eye-lids, is thus prepared:

Take of the Marrow of an Ox's Right fore Leg, a sufficient Quantity; triturate it duly with Soot, and use it.

The Soot intended for this Purpose is to be thus prepared: Immerse a sufficient Quantity of Paper in the Oleum Sesamini: Put the Paper in a Lamp, kindle it, and hold above it a smooth Shell, or brazen Vessel, in order to collect the Soot, which, when triturated with the above-mentioned Marrow, is to be used. The Rennet of a Calf is, also, excellent for the same Purpose. For a Milphosis, an Increase of Flesh in the Corners of the Eyes, and other inveterate Disorders of them, *Sofander* directs the following Medicine:

Take of Cadmia, Antimony, crude Chalcitis, and crude Misy, each eight Drams: Bruise these; mix them with Honey, and torrefy them, after extinguishing them in Wine, and triturating them: Add to them, of Spikenard,

two Drams; of torrefied Saffron, two Drams; and of Pepper, one Dram: All these, when triturated together, are to be used.

The more simple Medicines contributing to the Cure of a Ptilosis, and a Corrosion of the Eye-lids, are boiled Amurca, Indian Lycium, and Armenian Stone, used by the Painters; which last, when mixed with Water, and used by way of Ointment, consumes the peccant Humours, and augments the natural Hairs; the Rust of Iron, triturated for many Days in the Heat of the Sun, and reduced to the Form of a Collyrium, with Wine and Myrrh; and Spodium, mixed with the Juice of Onions.

PTISSANA, *sive* **PTISANA**, *πισσάνη ἢ πτίσανη*, from *πισσάνω*, to decorticate, bruise, or pound. Ptisan, or Ptisan, is properly Barley decorticated, or deprived of its Hulls; or, as *Suidas* expounds the Word, *ἡ πεποιημένη κελθὴν*, "pounded Barley;" because the antient Way of clearing Barley from its Hulls was not by grinding, as it is now performed, but by pounding in a Mortar: For the Antients, in preparing their Ptisana, first sprinkled their Barley with Water; then left it to swell; afterwards dried it in the Sun; and then pounded it in a Mortar, with a wooden Pestle, till it was separated from its Hulls; and then reposit it. Some, after wetting their Barley, and drying it in the Sun; as before, pounded it in a Mortar till it was deprived of its Hulls; then ground it to a Meal; and, afterwards, boiled it for a very considerable Time, to deprive it, as they imagined, of its Flatulency; then they dried it, and reduced it into small Lumps, or Balls, with which they made forbile Liquors on occasion. Others, again, as we are informed by *Constant. Casar*, *Lib. 12. de Agricultura*, after macerating, cleansing, decortivating, and drying their Barley in the Sun, pounded it over-again; and, after giving it a second Drying in the Sun, before they reposit it, sprinkled it over with the thin Particles which they had beaten out in pounding it, because they had found them to contribute towards its Preservation.

Though Ptisana was properly prepared only of Barley, yet it used to be made, also, of other Grain, as of Wheat, Alica, Spelt, Rice, and Lentils; but, then, it was not called simply *Ptisana*, but with an Addition, expressing the Grain of which it was prepared, as, when they called it *πισσάνην αὐρίνην*, "Wheaten Ptisan;" *χορδὴν πτίσανην*, "Ptisan made of Alica;" *τὴν ἐκ ζείης ἢ ἐκ ῥυζὸς πτίσανην*, "Ptisan prepared of Spelt, or Rice;" and so of the rest. Ptisan; thus prepared, was reserved for Use, with a prudent Regard to Health, which deserves Imitation; and, when Occasion required, was ready at hand, to be boiled in Water. There were different Ways of boiling it; but the most common Method among the Greeks was that described by *Galen*, *Lib. 1. de Alimentis*, and is as follows: They boiled a Portion of Ptisan in ten; or, as *Paulus* says, in fifteen times the Quantity of Water, taking care to make it swell as much as possible, during the Time of boiling; for what readily swells, and that to a considerable Degree, is esteemed the best; as, on the contrary, what swells but little and slowly, is accounted the worst. When it is swelled up to a considerable Degree, they pour in a little Vinegar upon it, and then a little Oil; but this last may be added at the Beginning: When it is perfectly boiled, they sprinkle it with powdered Salt, without any other Addition, except, perhaps, of a small Quantity of Dill, or Leeks. Thus *Galen*. And this is the best Way of preparing Ptisan; and far to be preferred to that where many superfluous Ingredients are unskillfully added, in order to season it; for some added Amylum, others Sapa; and some put Honey and Cummin to it, making of it an Hotch-potch, rather than a Ptisan; and, perhaps, they had some Reason for thus preparing it, which might be with a View to attenuate its Grossness, correct its Viscidity, or discuss its Flatulences. We who far excel the Antients in Delicacy, and, in point of Cookery, outdo *Apicius* himself, (who, *Lib. 4. de Obsoniis*, speaks of those superfluous Seasonings) despise them all, and are contented with putting thereto some triturated Almonds and Sugar, with a moderate Quantity of Salt, which are indeed of some Efficacy against the Grossness, Viscidity, and Flatulency of the Barley; but far inferior, in that respect, to Leeks and Dill, which are not only grateful to the Palate, but not a little conducive to Health.

Ptisana, thus boiled, as aforesaid, is no longer called *Ptisana*, but *πισσάνης χυλὸς ἢ ῥόφημα*, "the Cream or Soup of Ptisan," or, what is the same Thing, *Ptisanae Jus vel Succus*, "the Broth, Gruel, or Juice of Ptisan." *Celsus* usually calls the Broth of entire Barley, boiled till it bursts, *Cremor Hordei*, "Cream of Barley;" and prescribes it in bilious and burning Fevers.

Πτίσανη, "Ptisan used simply;" *ἔλη πτίσανη*, "entire Ptisan;" and *πισσάνη κελθὴν*, "Barley Ptisan;" in

Hippocrates, signify all three the same Thing, that is, Ptisan not strained: For if, after boiling, you strain it, and set aside the Liquor, this Liquor is neither called entire *Ptisana*, nor *Barley Ptisan*, nor simply *Ptisana*, but only *χυλὸς πτίσανης*, "the Juice of Ptisan." Thus *Galen*, *Com. in Lib. de R. V. I. A. In Lib. 2. Epid.* near the Beginning, this entire or unstrained Ptisan is called *πισσάνη παχύν*, "thick Ptisan." *Goraeus*. *Foetus*.

See *Hippocrates's* Treatise, *de Ratione Victus in Acutis*, under the Article **ALCALI**.

PTOLEMÆI CHIRURGI MEDICAMENTUM. The Name of a Medicine mentioned by *Celsus*, *Lib. 6. Cap. 7*.

PTOLEMÆI EMPLASTRUM. The Name of a Plaster mentioned by *Marcellus Empiricus*, *Cap. 36*.

PTOLEMÆI EUERGETÆ STOMATICA. The Name of a Medicine calculated for the Mouth, and described by *Marcellus Empiricus*, *Cap. 13*.

PTOLEMÆI REGIS COLLYRIUM. The Name of a Collyrium; mentioned by *Aetius*, *Tetr. 2. Serm. 4. Cap. 110*.

PTOSIS, *πτῶσις*, from *πτίσω*, to fall. This imports falling down, and is a Disorder of the Eye-lid, consisting in the Descent of the superior Eye-lid, either on account of a Palsy of the Muscle, which should elevate it; or a Flux of Humours, which depresses it.

PTYALAGOGA, from *πτύελας*, Saliva; or Spittle; and *ἀγω*, to bring away. Medicines which promote a Discharge of Saliva.

PTYALISMOS, *πτύελισμος*. A frequent and copious Discharge of Saliva. *Hippocrates*. Among the Moderns, it generally signifies a Salivation excited by Mercury.

PTYAS. The Name of a Species of Asp. See **ASPIS**.

PTYELON, *πτύελον*. The Saliva, Spit, or Spittle. See **SPUTUM**.

PTYGMATA, *πτύγματα*, from *πτύσσω*, to fold. Folded Cloths. *Caelius Aurelianus*. Perhaps what we call *Stups*.

PTYSIS, *πύσις*. A Defluxion of Humours upon the Thorax, or Lungs. *Caelius Aurelianus*, *Chron. Lib. 2. Cap. 7*.

PTYSIS, also, implies Exputition, or Spitting.

PTYSMA, *πύσμα*. The Spit, or what is brought up by Spitting, or Expectoration.

PTYSMAGOGA. Medicines which promote a Discharge of Saliva.

PUBES. See **ABDOMEN**.

PUBIS OS. See **INNOMINATA OSSA**.

PUCHAMIAS. The Name of a Tree which grows in *Virginia*, bearing a Fruit like a Medlar, extremely astringent, whilst immature; but, when ripe, of a delicious Taste. *Raii Hist. Plant.*

PUDENDA. The private Parts in both Sexes.

PUDENDAGRA. The Venereal Disease.

PUERPERA. A lying-in Woman.

PUFFINUS. A Sea-bird, which the *French* call a *Macreufe*, that is reckoned in the Number of wild Ducks: It is dark-coloured, and flies heavily; but, when it has a mind to come hastily away from a Place, the Bird sustains itself upon the Ends of its Wings and Feet, and, in this manner, runs lightly and swiftly upon the Surface of the Water: This Bird feeds upon Insects, Sea-weeds, and Fish: Its Flesh is hard, and like Leather, especially when it is old; and, therefore, it should not be eaten but when young: This same Flesh tastes, also, of Fish; and the *Roman Catholics* allow the Use of it in Lent.

PUGILLUS. A Pugil. The eighth Part of an Handful.

PULEGIUM.

The Characters are;

The Flowers, which are very small, are disposed in close thick Whorles, and their upper Lip is entire: In other respects this Herb resembles the *Mentha*, or Mint.

Boerhaave mentions four Sorts of *Pulegium*; which are,

1. *Pulegium*; latifolium. *C. B. P. 222. Boerb. Ind. alt. 186. Pulegium*. *Offic. J. B. 3. 256. Raii Hist. 1. 533. Synop. 3. 235. Pulegium regium*. *Ger. 545. Emac. 671. Pulegium vulgare*. *Park. Theat. 29. Mentha aquatica seu Pulegium vulgare*. *Tourn. Inst. 189. PENYROAL*.

Penyroal has many creeping fibrous Roots; from which spring a great many smooth roundish Stalks, hardly able to support themselves, but leaning on the Ground, and sending out small Fibres, by which it roots itself in the Ground: It bears two small, round, but yet pointed Leaves, at a Joint: The Flowers grow towards the upper Part of the Branches, coming forth just above the Leaves, in thick close Whorles; they are of a pale-purple Colour, small and galeated, set in small, somewhat downy Calyces, in which grow four small Seeds. The whole Plant has a very strong Smell, and an hot aromatic Taste: It grows frequently upon moist Commons, and in Places where Water has stood all Winter, and flowers in July. But what we use in the Shops is generally cultivated in

in Gardens, where it grows tall and large: The whole Herb is use.

It is hot and dry, of very subtle volatile Parts, and is peculiarly appropriated to the Female Sex, being a good Uterine, provoking the Menfes and Lochia, expelling the Birth and Secundines: It, likewise, warms and comforts the Bowels, and helps the Colic and Jaundice, and is good against Coughs and Shortness of Breath: The Juice, or a strong Decoction of the Leaves, sweetened with Sugar, has been accounted a Specific against a whooping Cough.

Official Preparations are only the distilled Water and Oil. *Miller's Bot. Off.*

This Plant, which is very bitter, acrid, and of a very penetrating Smell, gives a deep Tincture of Red to the blue Paper; so that it is probable, it contains a volatile, aromatic, and oily Salt, loaded with Acid; whereas, in the artificial, volatile, oily Salt, this Acid is detained by the Salt of Tartar.

Thus this Plant is aperitive, hysseric, and good for the Diseases of the Stomach and Breast; since it evacuates those glutinous Sordes, which fill part of the Bronchia, and Vesicles of the Lungs; especially if it is boiled with Honey and Aloes; for then (as *Dioscorides* observes) it purges, and procures Expectoration. *Tragus* very much commends the Decoction of Penroyal in White-wine, for the Suppression of the Menfes, and Fluor Albus. The Juice of this Plant, according to the same Author, clears the Sight, and removes Lippitude. *Montanus* prescribes the Powder of Penroyal, mixed with equal Quantities of Vinegar, Honey, and Water, for the Diseases of the Eyes. The Conserve of its Flowers and Leaves is good for the Dropsy and Jaundice. *Ray* affirms, from *Mr. Boyle*, that a Spoonful of the Juice of Penroyal is a good Remedy for the Chin-cough of Children. *Chefneau* prescribes a Glass of its Decoction for Hoarseness; and advises to take it before going to Bed. *Martyn's Tournefort*.

2. *Pulegium*; angustifolium. *Ger.* 546. *Emac.* 672. *Raii Hist.* 1. 534. *C. B. P.* 222. *Boerb. Ind. alt.* 186. *Pulegium cervinum*. *Offic.* *Pulegium angustifolium* sive *Cervinum*. *Park. Theat.* 30. *Pulegium cervinum angustifolium*. *J. B.* 3. 257. *Mentha aquatica Satureia folio*. *Tourn. Inst.* 190. **HART PENYROYAL.**

This grows more erect than the common Penroyal, with much longer and narrower Leaves, somewhat like Savory; the Flowers grow in thick Whorles, like the former, and the Smell is much alike; but this is rather pleasanter. It grows in *Provence* and *Languedoc* in *France*, and in divers Parts of *Italy*.

It has the same Virtues with the common Penroyal, and is, by the Physicians about *Montpelier*, preferred before it; but is seldom or never prescribed here, or brought into our Shops. *Miller's Bot. Off.*

3. *Pulegium*; angustifolium; flore albo. *H. R. Par. Mentha, aquatica, Satureia folio, flore albo.* *T.* 190.

4. *Pulegium*; latifolium; hirsutum; flore cœruleo. *Boerb. Ind. alt. Plant. Vol. 1.*

Besides the foregoing Species of *Pulegium*, *Dale* mentions the following;

PULEGIUM ERECTUM. *Offic. An.* *Pulegium latifolium alterum*. *C. B. P.* 222. **UPRIGHT PENYROYAL.**

This Plant grows in marshy Places: The Herb itself is used, and in Virtues agrees with the common Penroyal. *Dale.*

PULEX. A Flea.

PULICARIA. A Name for the *PSYLLIUM*.

PULMO. The Lungs.

The Lungs are two large spongy Bodies, of a redish Colour in Children, greyish in adult Persons, and bluish in Old-age, filling the whole Cavity of the Thorax; one being seated in the Right Side, the other in the Left, parted by the Mediastinum and Heart, and of a Figure answering to that of the Cavity which contains them, that is, convex next the Ribs, concave next the Diaphragm, and irregularly flatted and depressed next the Mediastinum and Heart.

When the Lungs are viewed out of the Thorax, they represent, in some measure, an Ox's Foot, with the fore Part turned to the Back, the back Part to the Sternum, and the lower Part to the Diaphragm.

They are distinguished into the Right and Left Lung; and each of these into two or three Portions, called *Lobi*; of which the Right Lung has commonly three, or two and an half, and the Left Lung two. The Right Lung is generally larger than the Left, answerably to that Cavity of the Breast, and to the Obliquity of the Mediastinum.

At the lower Edge of the Left Lung, there is an indented Notch, or Sinus, opposite to the Apex of the Heart, which is, therefore, never covered by that Lung, even in the strongest Inspirations; and, consequently, the Apex of the Heart and Pericardium may always strike against the Ribs; the Lungs not surrounding the Heart in the manner commonly taught. This Sinus is expressed in *Eustachius's* Tables.

The Substance of the Lungs is almost all spongy, being made up of an infinite Number of membranous Cells, and of different Sorts of Vessels, spread among the Cells, in innumerable Ramifications.

This whole Mass is covered by a Membrane; continued from each Pleura, which is commonly said to be double; but what is looked upon as the inner Membrane, is only an Expansion and Continuation of a cellular Substance.

BRONCHIA.

The Vessels which compose part of the Substance of the Lungs, are of three or four Kinds; the Air-vessels, Blood-vessels, and Lymphatics: To which we may add the Nerves. The Air-vessels make the principal Part, and are termed *Bronchia*.

These Bronchia are conical Tubes, composed of an infinite Number of cartilaginous Fragments, like so many irregular Arches of Circles, connected together by a ligamentary elastic Membrane; and disposed in such a manner, as that the lower easily insinuate themselves within those above them.

They are lined on the Inside by a very fine Membrane, which continually discharges a mucilaginous Fluid; and in the Substance of the Membrane are a great Number of small Blood-vessels; and, on its convex Side, many longitudinal Lines, which appear to be partly fleshy, and partly made up of an elastic Substance of another Kind.

The Bronchia are divided in all Directions into an infinite Number of Ramifications, which diminish gradually in Size; and, as they become capillary, change their cartilaginous Structure into that of a Membrane. Besides these very small Extremities of this numerous Series of Ramifications, we find, that all the subordinate Trunks, from the greatest to the smallest, send out, from all Sides, a vast Number of short capillary Tubes, of the same kind.

VESICULÆ BRONCHIALES.

Each of these numerous Bronchial Tubes is widened at the Extremity, and thereby formed into a small membranous Cell, commonly called a *Vesicle*: These Cells, or Folliculi, are closely connected together in Bundles; each small Branch producing a Bundle proportionable to its Extent, and the Number of its Ramifications.

These small vesicular, or cellulous Bundles, are termed Lobules; and as the great Branches are divided into small Ramifications, so the great Lobules are divided into several small ones. The Cells, or Vesicles, of each Lobule have a free Communication with each other; but the several Lobules do not communicate so readily.

The Lobules appear distinctly to be parted by another cellulous Substance, which surrounds each of them, in proportion to their Extent, and fills up the Interstices between them. This Substance forms, likewise, a kind of irregular, membranous Cells, which are thinner, looser, and broader, than the Bronchial Vesicles.

This Substance is dispersed through every Part of the Lungs; forms cellulous, or spongy Vaginae, which surround the Ramifications of the Bronchia and Blood-vessels; and is afterwards spread over the outer Surface of each Lung, where it forms a kind of fine, cellular Coat, joined to the general Covering of that Viscus.

When we blow into this interlobular Substance, the Air compresses and flattens the Lobuli; and, when we blow into the Bronchial Vesicles, they presently swell; and, if we continue to blow with Force, the Air passes, insensibly, into the interlobular Substance. We owe this Observation to *M. Helvetius*.

All the Bronchial Cells are surrounded by a very fine reticular Texture of the small Extremities of Arteries and Veins, which communicate, every Way, with each other. The greatest Part of this admirable Structure is the Discovery of the illustrious *Malpighi*.

BLOOD-VESSELS.

The Blood-vessels of the Lungs are of two Kinds; one common, called the Pulmonary Arteries and Veins; the other proper, called the Bronchial Arteries and Veins.

The Pulmonary Artery goes out from the Right Ventricle of the Heart; and its Trunk, having run almost directly upward, as high as the Curvature of the Aorta, is divided into two lateral Branches, one going to the Right Hand, called the Right Pulmonary Artery; the other to the Left, termed the Left Pulmonary Artery. The Right Artery passes under the Curvature of the Aorta, and is, consequently, longer than the Left: They both run to the Lungs, and are dispersed through their whole Substance, by Ramifications nearly like those of the Bronchia, and lying in the same Directions.

The Pulmonary Veins, having been distributed through the Lungs, in the same manner, go out, on each Side, by two great Branches,

Branches, which open laterally into the Reservoir, or muscular Bag, of the Right Auricle.

The Ramifications of these two Kinds of Vessels in the Lungs are surrounded, every-where, by the cellular Substance already mentioned, which, likewise, gives them a kind of Vagina; and the Rete mirabile of *Malpighi*, described above, is formed by the capillary Extremities of these Vessels. It must be observed, that the Ramifications of the Arteries are more numerous, and larger, than those of the Veins, which, in all other Parts of the Body, exceed the Arteries, both in Number, and Size.

Besides these capital Blood-vessels, there are two others, called the bronchial Artery and Vein; the Artery has become very famous, of late, by the Description given of it by *M. Ruysch*. The Vein was doubted of, for some time; but it exists as really as the Artery, and may be easily demonstrated.

These two Vessels are very small, appearing only like very fine Arteries and Veins coming from the Aorta, Vena Cava, and their Branches; and they seem to have no other Use, but that of nourishing the Lungs.

The Varieties in the Origins of the bronchial Arteries and Veins, especially of the Arteries, their Communications, or Anastomoses, with each other, and with the neighbouring Vessels, and, above all, the immediate Anastomosis of the bronchial Artery with the common pulmonary Vein, are of great Consequence, in the Practice of Physic.

The bronchial Arteries come sometimes from the anterior Part of the Aorta descendens superior, sometimes from the first intercostal Artery, and sometimes from one of the Oesophagææ. They go out, sometimes, separately, towards each Lung; sometimes by a small common Trunk, which afterwards divides to the Right and Left, near the Bifurcation of the Aspera Arteria; and follow Ramifications of the Bronchia.

The Left bronchial Artery comes often from the Aorta, and the Right from the superior Intercostal, on the same Side, because of the Situation of the Aorta: There is, likewise, another, which arises from the Aorta posteriorly, near the superior Intercostal, and above the anterior Bronchialis.

The bronchial Artery gives off a small Branch to the Auricle of the Heart, on the same Side, which communicates immediately with the coronary Artery.

In the Year 1719, I observed a very plain Anastomosis between some Branches of the Left pulmonary Vein, and of one of the Arteriæ Oesophagææ, which came from the first Left Intercostalis, together with a bronchial Artery of the same Side.

In that, or the following Year, I likewise observed an Anastomosis between the Left bronchial Artery, and the Vena Azygos; and in April 1721, I saw an Anastomosis between a Branch of this Artery, and the Body of the just-mentioned Vein.

Sometimes one bronchial Artery gives Origin to several superior Intercostals, and sometimes several bronchial Arteries send off separately the same Number of Intercostals. The bronchial Veins, as well as Arteries, were known to *Galen*; these Veins are sometimes Branches of the Azygos, coming from the upper Part of the Curvature, or Arch. The Left Vein is sometimes a Branch of the common Trunk of the Intercost of the same Side; and sometimes both Veins are Branches of the Gutturalis.

NERVES.

The Lungs have a great many Nerves distributed through them, by Filaments which accompany the Ramifications of the Bronchia and Blood-vessels, and are spread on the Cells, Coats, and all the membranous Parts of the Lungs. The Nervi Sympathetici medii, and majores, commonly called Nerves of the eighth Pair, or the Intercostals, form, behind each Lung, a particular Intertexture, called Plexus pulmonaris, from whence nervous Filaments go out, which communicate with the Plexus Cardiacus and Stomachicus.

LYMPHATIC VESSELS.

On the Surface of the human Lungs, between the external and cellular Coat, we observe something that looks like lymphatic Vessels; but we ought to take care not to mistake, for such Vessels, a transparent reticular Substance, observable on the Surface of the Lungs, after blowing strongly into the Lobuli; this Appearance being entirely owing to the Air which passes through the bronchial Vesicles into the interlobular Cells, and which, by separating a certain Number of Lobuli, finds Room to lodge between them. The true lymphatic Vessels of the Lungs are most visible in Brutes; and in an Horse, particularly, I have observed one of these Vessels to run along a great Part of one Edge of the Lungs.

LIGAMENTS.

Under the Root of each Lung, that is, under that Part form'd by the subordinate Trunk of the pulmonary Artery, by the Trunks

of the pulmonary Veins, and by the Trunk of the Bronchia, there is a pretty broad membranous Ligament, which ties the posterior Edge of each Lung to the lateral Parts of the Vertebrae of the Back, from that Root all the Way to the Diaphragm.

TRACHEA, OR ASPERA ARTERIA.

The Bronchia, already described, are Branches or Ramifications of a large Canal, partly cartilaginous, and partly membranous, called Trachea, or Aspera Arteria. It is situated anteriorly, in the lower Part of the Neck, from whence it runs down into the Thorax, between the two Pleuræ, through the upper Space left between the Duplication of the Mediastinum, behind the Thymus.

Having reached as low as the Curvature of the Aorta, it divides into two lateral Parts, one towards the Right-hand, the other towards the Left, which enter the Lungs, and are distributed through them in the manner already said. These two Branches are called Bronchia, and that on the Right Side is shorter than that on the Left; whereas the Right pulmonary Artery is the longest.

The Trachea is made up of Segments of Circles, or cartilaginous Hoops, disposed in such a manner, as to form a Canal open on the back Part, the Cartilages not going quite round; but this Opening is filled by a soft glandular Membrane, which completes the Circumference of the Canal.

Each Circle is about the twelfth Part of an Inch in Breadth, and about a Quarter of that Space in Thickness; their Extremities are round, and they are situated horizontally above each other, small Interstices being left between them, and the lower Edge of the superior Segments being turned toward the upper Edge of those next below them.

They are all connected by a very strong elastic membranous Ligament, fixed to their Edges. I have observed the first three Segments united into one, bent alternately in two different Places, according to its Breadth: Sometimes two are continuous in the same Manner.

The Canal of the Aspera Arteria is lined on the Inside by a particular Membrane, which appears to be partly fleshy, or muscular, and partly ligamentary, perforated by an infinite Number of small Holes, more or less imperceptible, through which a mucilaginous Fluid continually passes, to defend the inner Surface of the Trachea against the Acrimony of the Air which we breathe.

This Fluid comes from small glandular Bodies, dispersed through the Substance of the Membrane, but especially from Glands something larger than the former, which lie on the outer or posterior Surface of that strong Membrane, by which the Circumference of the Canal is completed. The same Structure is observable in the Ramifications of the Trachea, from the greatest to the smallest.

All the Vessels of which the Lungs are principally composed, that is, the Air-vessels, or Bronchia; and Blood-vessels, that is, the pulmonary and bronchial Arteries and Veins; accompany each other through this whole Viscus.

They are disposed, commonly, in such a manner, even to the last Ramifications, as that a subordinate Trunk or Branch of the Bronchia lies between the like Trunks or Branches of the pulmonary Artery and Vein; the bronchial Vessels being immediately joined to the Bronchia. In some Places these three Kinds of Vessels touch each other, in such a manner, as to leave a triangular Space in the Middle.

The Bronchia are divided into a very great Number of Ramifications, and the last Branches are the Pedicles or Foot-stalks of the small Lobuli. All the Lobuli are angular, oblong, broad, and thin; the Foot-stalks send out other small membranous Pedicles, which are very short, and terminate in the bronchial Vesicles, or Cells, of which they are Continuations. The subordinate Trunks and Ramifications detach a great Number of these Pedicles from their convex Surface.

When we blow into the Lungs, the bronchial Cells, nearest their outer Surface, appear like small Portions of round Vesicles; and, from this Appearance, all the bronchial Cells have got the Name of Vesicles, though they are all angular, except those which I have now mentioned.

When we examine a Lung, without blowing it up, we find, that the cartilaginous Segments of the Bronchia lie so near, as to be engaged in each other; and, in drawing out any Portion of the Bronchia by the two Ends, these Segments are parted, and the whole Canal is increased in Length; but it contracts again, by means of its elastic Membrane, as soon as that Force is taken off.

When we open, lengthwise, any Portion of the pulmonary Artery and Vein, in the same Lung, we meet with a great Number of transverse Rugæ, which are destroyed when these Vessels are elongated: This is an Observation made by *Helvetius*.

By virtue of this Structure, all the Ramifications, both of the Bronchia, and pulmonary Arteries and Veins, have constantly the same Direction, whether the Lung be inflated; or collapsed; and they contract in Length, without being either contorted, or folded. In Expiration, these Vessels are elongated, and shortened in Inspiration.

These three Vessels lie in a sort of cellular Vagina, which accompanies all their Ramifications, and is a Continuation of the interlobular Cells, or cellular Substance in the Interstices of the Lobuli. The Pelliculæ which compose it, are, however, disposed there, in a more regular manner, and more longitudinally, than in other Places; and thereby appear to form a true Vagina.

When we blow through a Pipe, introduced so far as to touch immediately a Trunk of the Blood-vessels, or Bronchia, the Air runs, at first, through all the Cells that lie nearest that Trunk, or its Branches; but if we continue to blow, it insinuates itself through the whole interlobular Substance.

BRONCHIAL GLANDS.

At the Angle of the first Ramification of the Trachea Arteria, we find, on both the fore and back Sides, certain soft, roundish, glandular Bodies, of a bluish, or blackish Colour, and of a Texture partly like that of the Thymus, and partly like that of the Glandulæ Thyroides. There are other Glands, of the same Kind, at the Origin of each Ramification of the Bronchia; but they decrease proportionably, in Number and Size: They are fixed immediately to the Bronchia, and covered by the interlobular Substance; and they seem to communicate, by small Openings, with the Cavity of the Bronchia.

The Trachea has several Coats; the outermost, or common, Covering surrounds that Part of the Trachea which lies in the Thorax; but out of the Thorax, this first Coat is derived from the aponeurotic Expansions of the Muscles of the Neck; and it is between this, and the following Covering, that the Glands, already mentioned, are situated.

The second is a proper Coat, being a Continuation of the cellular Covering of the Lungs; and the Pellicles thereof, nearest the cartilaginous Segments, serve them for an external Perichondrium. The third Membrane lies on the Inside, adhering closely to the same Cartilages, and supplying, to these, the Place of an internal Perichondrium.

The fourth Membrane is that which completes the Circumference of the cartilaginous Circles of the Trachea: It consists, principally, of two Laminæ, or Strata, partly muscular, and partly tendinous; the external, or posterior, Lamina being made up of longitudinal Fibres; and the internal, or anterior, of transverse Fibres. This Membrane is perforated by the small Ducts of the above-mentioned Glands, which discharge a Fluid, when pressed; and, being examined through a Microscope, they appear vesicular, or folliculous, much like those of the Stomach.

The Ligaments between the cartilaginous Circles are very strong, and elastic; and each of them is confined to two Cartilages, without communicating with any of the rest; being fixed to the Edges of these Cartilages, much in the same manner as the intercostal Muscles are inserted in the Ribs.

As the Bronchia penetrate into the Substance of the Lungs, they gradually lose their Cartilages; but the muscular Lines, or Columnæ, of Morgagni appear as much, and sometimes more than before. The two Planes above-mentioned continue, likewise, to be visible; and we observe very distinctly, sometimes, even without a Microscope, a great many small Holes in the Pedicles of the Lobuli, and bronchial Vesicles, or Cells, which open from within outwards.

USES.

Respiration is performed by Organs of two Kinds, one of which may be looked upon as active, the other as passive. The Lungs are of the second Kind; and the first comprehends, principally, the Diaphragm, and intercostal Muscles.

As soon as the intercostal Muscles begin to contract, the Arches of the Ribs are raised, together with the Sternum, and placed at a greater Distance from each other; by which means, the Cavity of the Thorax is enlarged on the two lateral and anterior Sides.

At the same Instant, the Diaphragm is flatted, or brought toward a Plane, by two Motions, which are, apparently, contrary; that is, by the Contraction of the Diaphragm, and the Dilatation of the Ribs, in which it is inserted. The external Surface of the Thorax being thus, in a manner, increased, and the Cavity of the Bronchia being, at the same time, and by the same means, less resisted, or pressed upon, the ambient Air yields to the external Pressure, and insinuates itself into all the Places where the Pressure is diminished; that is, into the Aspera Arteria, and into all the Ramifications of the Bronchia, all the Way to the Vesicles. This is what is called Inspiration.

This Motion of Inspiration is instantaneous, and ceases in a Moment, by the Relaxation of the intercostal Muscles; the elastic Ligaments, and Cartilages of the Ribs, bringing them back, at the same time, to their former Situation. This Motion, by which the Ribs are depressed, and brought nearer each other, is termed Expiration.

The pulmonary Arteries and Veins, which accompany the Bronchia through all their Ramifications, and surround the Vesicles, transmit the Blood through their narrow capillary Extremities, and thereby change or modify it, at least, in three different Manners.

The first Change, or Modification, which the Blood undergoes in the Lungs, is to have the Cohesion of its Parts broken, to be attenuated, pounded, and, as it were, reduced to Powder. The second is, to be deprived of a certain Quantity of Serum, which transpires through the Lungs, and is what we commonly call the Breath. The third is to be, in a manner, re-animated, by the Impression of the Air, whether the whole Body of the Air enters the Blood, whether the common Air is only the Vehicle of some finer Parts which are conveyed to it, or whether the Air only compresses, or shakes the Blood, as it passes round the bronchial Vesicles in the reticular capillary Extremities of the Vessels.

The Cartilages of the Aspera Arteria, and Bronchia, serve, in general, to compose a Canal, the Sides of which will not sink in, or subside, by Compression, but will, nevertheless, yield to certain Pressures and Impulses, without breaking. As these Cartilages are not complete Circles, or Rings, and as their Circumferences are completed by elastic Membranes, they allow of these Dilatations and Contractions, which modulate the Voice; and as they are connected by elastic Ligaments, of a considerable Breadth, the alternate Elongation and Contraction of the Bronchia is facilitated, in the Motions of Respiration. *Winflow's Anatomy.*

PULMO MARINUS. *Offic. Aldrov. Exang. 577. C. B. P. 369. Jonsf. Exang. 56. Bellon. Aquat. 438. Gesn. Aquat. 760. Rondel. Aquat. 2. 131. Charlt. Exer. 68. SEA LUNGS.*

This Substance floats in the Sea; is of a pellucid bluish Colour, resembling, in some measure, that of Crystal; and is so tender, that it can hardly be taken out of the Sea entire. When recently triturated, and used by way of Ointment, it cures Gouts and Chilblains. *Discor. Dale.*

This Substance, according to Lemery, in his *Traité des Drogues*, contains a large Quantity of Oil, and of Salts, both of the volatile, and fixed Kind. It removes the Hairs, when applied to any Part covered with them. A Lixivium, prepared of calcined Sea Lungs, with a large Quantity of Water, if drank, is proper to dissolve the Stone, excite the Menfes, and provoke Urine.

PULMONARIA.

The Characters are;

The Calyx is like a Tube, pentagonal, and quinquefid. The Flower is monopetalous, cylindrical in its lower Part, and shaped like a Basen above, with its Margin cut into five round Segments. From the Sides of the internal cylindrical Part, which are neatly fimbriated, arise five Stamina.

Boerhaave mentions six Species of *Pulmonaria*; which are, 1. *Pulmonaria, vulgaris; latifolia; flore albo. T. 136. Boerb. Ind. A. 193. Pulmonaria maculosa. Offic. Ger. 662. Emac. 808. Raii Hist. 1. 488. Park. Parad. 448. Pulmonaria Italorum ad Buglossam accedens. J. B. 3. 595. Symphytum maculosum sive Pulmonaria latifolia. C. B. P. 259. SAGE OF JERUSALEM.*

The lower Leaves of this Plant are large and oval, five or six Inches long, growing on broad Foot-stalks, thick-set with fine Hairs, of a deep Green above, and spotted with white Spots; but of a paler Green, and unspotted, underneath. The Stalks rise to be near a Foot high, having several smaller Leaves on them; and on their Tops grow several Flowers together, each in a long hairy Calyx, having their Brims appearing but a little above it, of a reddish Colour, being single, and Cup-fashion, cut at the End into five round Segments; and are each succeeded by four rough Seeds, growing in the Bottom of the Calyx. The Root is small and fibrous. It is planted in Gardens, and flowers in May; the Leaves are used.

This is accounted a pectoral, balsamic Plant, and good for Coughs, Consumptions, Spitting of Blood, and the like Disorders of the Lungs: It is, likewise, put into Wound-drinks, and traumatic Decoctions; being agglutinating, and good to heal Wounds and Ulcers, and old Sores. *Miller's Bot. Off.*

The *Pulmonaria* has a saltish, herby, glutinous Taste, and reddens the blue Paper pretty much; it is very sweetening. It is used in Pisans, and Broths made of Calves Lungs, for the Diseases of the Breast, when the Spittle is salt, or purulent. *Martyn's Tournesfort.*

2. *Pulmonaria; Alpina; foliis mollibus, subrotundis; flore cœruleo. T. 136. Symphytum maculosum. Dod. p. 135.*

3. *Pul-*

3. *Pulmonaria*; foliis Echii. Ger. 662. Emac. 808. Raii Hist. 1. 489. Synop. 3. 226. Tourn. Inst. 136. Boerb. Ind. A. 193. *Pulmonaria angustifolia rubente cœruleo flore*. C. B. P. 260. *Pulmonaria angustifolia*. Park. Parad. 248. *Pulmonaria rubro flore, foliis Echii*. J. B. 3. 597. *Symphytum maculosum seu Pulmonaria maxima, foliis quasi Saccharo incrustatis*. Raii Hist. 3. 266. NARROW-LEAVED SAGE OF BETH-LEHEM.

This Plant is cultivated in Gardens, and flowers in May. Its Leaves are only used, and, in Virtues, agree with those of the Sage of Jerusalem. Dale.

4. *Pulmonaria*; folio non maculoso. Clus. H. 169. *Symphytum, minus, non maculatum, Germanicum, angustifolium, floribus è rubentibus cœruleis*. M. H. 3. 444.

5. *Pulmonaria*; major; non maculosa. J. B. 3. 493.

6. *Pulmonaria*; Orientalis; calyce vesicario; foliis Echii; flore purpureo, infundibuliformi. T. Cor. 6. Boerb. Ind. alt. Plant. Vol. 1.

This Plant contains a mild, benign Juice; but is no more efficacious in Disorders of the Lungs, than Borage, or Houndstongue, since it is equally proper in all Disorders where Medicines of a demulcent, emollient, and relaxing Quality, are indicated.

It is, like Mallows, of an emollient, conglutinating, consolidating, moistening, and inspissating Quality. The Flowers or Leaves are recommended in a Spitting of Blood, an Hætic, and a Phthisis. It is classed among the vulnerary Plants, and accounted highly beneficial in Hoarseness, and long-continued Coughs. Hence it is proper in a Pleurisy, a Peripneumony, and Hepatides, where Expectoration is required. It procures a free Breathing; and is beneficial to the Kidneys. Hist. Plant. adscript. Boerb.

PULMONIA. The same as PERIPNEUMONIA.

PULPA. The Pulp of Fruits.

PULPEZIA. An Apoplexy.

PULS. The same as ETNOS.

PULSATILLA.

The Characters are;

The Root is fibrous and perennial; the Leaves are jagged, and surround the Stalk like a Crown, as in the *Anemonoides*, and *Anemone*. The Apex of the Stalk is expanded into a Placenta, whose Base has its Bottom surrounded with a naked, hexapetalous Flower, furnished with very numerous Stamina, which arise from the Bottom of the Placenta within the Petals. The Ovary becomes a little globous Head, to which grow Numbers of little hairy Husks, furnished with a long hairy Sheath, ending in a sort of long slender Capillament, like a plumous Tail.

Boerhaave mentions two Species of *Pulsatilla*; which are,

1. *Pulsatilla*; folio crassiore; & majore flore. C. B. P. 177. Tourn. Inst. 284. Raii Synop. 3. 260. Boerb. Ind. A. 39. *Pulsatilla*. Offic. *Pulsatilla vulgaris*. Ger. 314. Emac. 385. Park. Theat. 341. Raii Hist. 1. 633. *Pulsatilla Anglica purpurea*. Park. Parad. 199. *Pulsatilla purpurea cœrulea*. J. B. 3. 409. PASQUE-FLOWER.

This Plant is so acrid, that the mere Vapour of its Leaves, rubbed between the Fingers, seems to burn the Nose, and penetrate to the very Brain: It might be made use of in the Lethargy; the Leaves bruised are applied to Ulcers, but especially to the Wounds of Horses.

By the chymical Analysis this Plant yields some Marks of Acidity, a great deal of Sulphur and Earth, and a little fixt, and no volatile concrete Salt. Martyn's Tournefort.

2. *Pulsatilla*; flore minore; nigricante. C. B. P. 177. Boerb. Ind. alt. Plant.

PULSATIO. Pulsation; that is, a morbid Sensation of something beating in any Part. Hence a sort of Pain, attended with this sort of Sensation, is called a pulsatory Pain.

PULSILOGIUM. A Pulse-watch, or Instrument to measure the Celerity of the Pulse. Sanctorius is said to be the first Inventor of this Machine; and Sir John Floyer has wrote a Treatise expressly upon this Subject.

PULSUS.

No Doctrine has been involved in more Difficulties than that of Pulses; since, in giving a physiological Account of them, Physicians have espoused quite opposite Sentiments; whilst some doubt whether the Pulse is owing to the Systole, or the Diastole; as, also, whether the Motion of the Heart and Arteries is one and the same for a Moment of Time: Others, especially among the Antients, mention an incredible Number of different Pulses, most of which can neither be felt by the Touch, nor comprehended by the Mind. Others run into the opposite Error, and will only admit of two or three different Kinds of Pulses. Others take different Kinds of Pulses for one and the same Species, whilst others assert, that their Distinction is absolutely necessary, to prevent Confusion and Blunders in Practice. Thus many of the Moderns affirm a quick and frequent Pulse to be the same; whilst others maintain, that the Distinction between

them is of the last Importance in Practice. A vehement, strong, large, and quick Pulse, are now-and-then said to be of the same Species; whilst others will have them to be entirely distinct: And, indeed, if we consult Experience, we shall hardly ever find two Physicians agreeing in their Appellations of the Patient's Pulse. The Opinions of the Learned are no less various, with respect to the Use of the Doctrine of the Pulses in Practice; whilst some assert, that they are highly fallacious Signs in most Disorders, and can only be of Use in some Fevers; whilst others assert the Knowledge of Pulses so necessary to a practical Physician, that he cannot, without it, form a certain Prognostic; especially with respect to latent Diseases; for which Reason, they, with the Chinese, greatly esteem the Knowledge of the Pulses; and maintain, that they ought to be, for a long time, accurately explored, in various Parts of the Body. But, in all Probability, the Origin of those Differences is, that the Antients were ignorant of the Circulation of the Blood, and invented different Species of Pulses, from the speculative and abstracted Differences of any solid Body, at different Times, variously impelled. But as the Moderns have rarely applied the Doctrine of the Circulation of the Blood to Pathology, and Practice, so they have rested contented with the Rules of the Antients, with respect to Pulses, without attempting a just Account of their Nature and Differences, from the Discovery of the Circulation of the Fluids. But, to lay a Foundation for Certainty in this Point, and prevent future Mistakes, I shall, from the Laws of Mechanics, and especially from the Circulation of the Blood, shew the Nature, Differences, and practical Use of Pulses.

But, before we proceed to this, we shall, for the sake of Accuracy and Connection, give the Physiology, or natural Constitution, of the Pulse; that the Truths connected with it may be the better discovered and explained. But here a Controversy occurs; which is, Whether the Motion of the Heart be the same with the Pulse; or whether, at the same time the Heart is in its Systole, the Arteries are so too, and the Systole of the Heart and Arteries is the true Pulse; or, rather, whether the Systole of the Heart, and Diastole of the Arteries, are not reciprocal; or whether, when the Heart is in its Systole, the Arteries are in their Diastole; and whether the Pulse is not the Systole, but, rather, the Diastole, of the Arteries. Sennertus, in his Institut. Lib. 3. Part 1. Sect. 4. Cap. 1. embraces the former of these Opinions; and informs us, that the Heart and Arteries are dilated; and contracted, at one and the same time; and that it is rash, not to acquiesce in the Evidence of Sense. He seems, indeed, in the Part now quoted, to oppose his own Opinion, by a Doubt conveyed to his Reader, in the following manner: "If, at the same time in which the Heart is contracted, and expels its Contents, the Arteries were also contracted, it would follow, that the Arteries could not receive the Blood; and, on the contrary, that at the time the Heart and Arteries are at once dilated, the Heart could not receive the Blood from the Arteries; because these mutual Attractions would hinder each other." Yet he answers this Doubt, in the following manner, by telling us, "That no Disadvantage arises from this, since the Arteries are not so compressed, and shut up, as that they are absolutely capable of receiving nothing; but still retain a sufficient Cavity for receiving that which is transmitted by the Heart; as, also, that the Heart receives Blood from the Lungs; and that the Arteries not only receive Blood from the Heart, but, also, from the adjacent Parts, and the Veins, in their Dilatation." But 'tis easy to perceive, that this Doctrine is entirely inconsistent with the justest Notions of the Circulation of the Blood; of which Sennertus was ignorant.

But it is surprising, that some, sufficiently acquainted with the Circulation of the Blood, should tread in the Steps of Sennertus, and assert, that the Motion of the Heart, in its Systole, is the same with the Motion of the Arteries perceived in the Pulse; and that the Systole of the Heart, by way of Eminence, denotes the Pulse: By this means, they pretend to refute those who assert, that the Motion of the Heart and Arteries is not the same, but alternate. It is, also, surprising, that so great Men as Galen, and Johannes Baptista Montanus, in Lib. 1. de Pulsibus dignosc. Cap. 5. should affirm, that the Systole, or Contraction of the Pulse cannot be perceived; but even reject the Opinion of those who believe, that when the Pulse vibrates, the Artery is in its Diastole. But we assert, with almost all the Moderns, that the Pulse is nothing but the Dilatation or Expansion of the Arteries by the Blood, protruded, by the Contraction of the Heart, from its Left Ventricle, into the Arteries, which are stretched and dilated by the Impulse of the Blood coming from the Heart, and communicated to the whole Fluids; then, after their Dilatation, they not only recoil, and are restored to their former Figure, but are, also, in some measure, farther contracted, and, with a new Impulse, propel the Blood more into the minute Arteries and Origins of the Veins: For, according to Bellini,

in *Tract. de Pulsibus*, the Arteries have a double Motion, the one a Dilatation, or the Impressions they make on the Finger; and the other a Contraction, or receding from the Finger; which, according to *Galen*, is not to be perceived without great Difficulty: For the Circulation of the Blood, on which Life depends, is carried on, without Intermission, by the reciprocal Motions of the Heart and Arteries: Nor, without these, can the Motion of the human Fluids be accounted for. When, therefore, the Heart is in its Systole, and expels its Contents, the Arteries are in their Diastole, and receive them. So, also, when the Arteries, in consequence of the large Number of spirital and muscular Fibres, of which they consist, contract themselves, the Veins and Heart are in their Diastole, and receive the Blood from the Arteries. *Galen* entertained the same Opinion, which excellently quadrates with the Circulation of the Blood. For, in *Lib. 7. Anatom. administr.* he tells us, *That the Pulsation of the Heart and Arteries is such, that when the Heart is filled, the Arteries are emptied; and when the Heart is emptied, the Arteries are filled.* *Fernelius* is, also, of the same Opinion: For, says he, *the Pulse consists of a Systole and Diastole; the latter is a Dilatation or Expansion of the Artery every Way; whereas the former is a Contraction or Subsiding of it in every Dimension.*

With respect to Pulses, there is no small Difference of Opinions and Sentiments; for almost all the Antients maintained, that all the Species of them were distinct, and different from each other; whereas some of the Moderns take the quick, and the frequent, Pulse for one and the same, as is sufficiently obvious from their Works. Others, fond of being thought uncommonly wise, dissent from them; and affirm, that there is so great a Distinction between them, that a practical Physician would look upon the Man as a Fool, who should give them out for the same Pulse. But, in order to get clear of all Doubts and Difficulties, we shall more accurately investigate this Matter. The Antients, then, were unanimously of Opinion, that since the Pulse was a local Motion, whatever was requisite to the latter, or could be affirmed or denied of it, was, of course, applicable to the former. Now, according to *Galen* and *Sennertus*, five Things are requisite to local Motion: First, a moving Cause. Secondly, the Space through which the Body is moved. Thirdly, the Time consumed during the Motion. Fourthly, Rest, when Bodies, moving in opposite Directions, meet. And, fifthly, the Instrument by which the Motion is performed. From these they deduce the simple Differences of Pulses. Upon the moving Cause depend Vehemence and Weakness; hence a vehement, or weak, Pulse are produced. On the Space or Quantity of the Distention, or Dilatation, depend the Greatness and Smallness of the Pulse. On the Time in which the Artery performs its Motion, depend the Quickness and Slowness of the Pulse. According as the Artery remains long or short in a State of Rest, the Pulse is said to be frequent, or rare. And from the Organ of the Pulse, which is the Artery, and which is sometimes harder, and sometimes softer, arises a soft and hard Pulse.

But though *Sennertus*, in his *Institut.* defines a quick Pulse to be, when the Artery, in a short time, performs its Motion; yet he afterwards confesses, that the Celerity of the Pulse cannot be estimated by Space, because that Space cannot be known by the Touch; for which Reason, in defining a quick Pulse, he orders us to regard the Quality of the Motion; whether, for Instance, it is brisk, or slow. Hence *Fernelius*, and some others, have defined a quick Pulse, such an one as, in a short time, distends the Artery; and a slow Pulse, that which produces the same Effect in a long time. *Bellini*, in *Tract. de Pulsibus*, informs us, *That it is a quick Pulse, which, upon the Application of the Finger, persists a very short time; whereas a slow Pulse continues longer.* According to *Sennertus*, *Fernelius*, and others, it is a frequent Pulse which has a short Time of Rest, or in which there is but a short Time interposed between each Diastole; a rare Pulse is that which has a long State of Rest, or in which there is a long Time between one Distention of the Artery and another; or a frequent Pulse is that which, in a short time, distends the Artery, and becomes perceptible to the Touch; whereas a rare Pulse only produces these Effects at longer Intervals. The Word Frequency cannot, however, be properly applied to Motion; but the Celerity or Slowness, the Intension or Remission, of the moving Force are properly competent to Motion; since every Degree of Motion is to be estimated by its Celerity or Intension, and its Slowness or Remission: But one Motion, considered in itself, cannot be said to be frequent, or rare; but this Difference only holds, with respect to the Plurality and Number of Pulsations happening in a certain determined Time. Thus, for Instance, the Motion, or Impulse, is said to be frequent, when, in half an Hour, Water is an hundred times forced from a Syringe; whereas the Motion is said to be rare, when the Water is forced from it only thirty times during half an Hour. Thus, when a Globe, for In-

stance, is impelled, the Celerity of the Impulse may justly take place, with respect to each Stroke; and yet these Strokes be applied more rarely, or at longer Intervals; and thus any Stroke, applied to a Globe, may be remiss, or small, with respect to Violence, and yet frequently repeated.

This Doctrine holds excellently in those Motions which are not continual, but have certain Intervals of Rest, and in which this Distinction is of singular Use; so that quick and frequent Pulses ought not to be joined and confounded with each other. But 'tis far otherwise in the Motion of the Arteries, which is continual, and requires no Rest, in order to carry on a continual Circulation of the Blood from the Heart to the Arteries, from these to the Veins, and from these to the Heart again. It is not to be imagined, that, when after the Pulse, or Dilatation of the Artery, no Motion or Stroke is perceived by the Touch, the Artery becomes inactive, and remains in a State of Rest, since we have already shewn, that, immediately after its Dilatation, it not only by its proper elastic Force, but, also, in consequence of the Influx of the Spirits into its muscular Fibres, recoils, and is contracted; by which Contraction the Blood is forced into the Veins, and a fresh Dilatation of the Artery immediately succeeds. Hence the Pulse may justly be compared to a Pendulum, which performs a continual oscillatory Motion from one Side to another, without any perceptible Rest. With respect to this continual Motion, which the Antients did not understand, but which is sufficiently comprehended by the Moderns, there arises a Dispute, whether Frequency, and Celerity, applied to the Pulse, are separate and distinct from each other. We shall now examine this Difficulty in order to prevent Mistakes: When, therefore, in a Quarter of an Hour, a Physician counts two thousand Pulses in a Patient, he calls the Pulse preternaturally frequent; when, during the same time, he in another Patient counts only a thousand Strokes, he pronounces the Pulse rare. Now, if another Physician, being call'd, should denominate the frequent Pulse quick, and the rare one slow, the Question is, Which of them is in the right? I answer, Both; for, since the Motions of the Heart and Arteries consists in their continual Systole and Diastole, it is impossible, that, during a small Portion of Time, the Number of Pulses should increase, and be observed greater, unless every Systole and Diastole of the Arteries should become more brisk and intense, that is, be performed in a shorter time; just as we observe in the Vibrations of Pendulums, which, the more numerous they are in a certain time, the more short and quick they must of course be; for 'tis to be observed, that the Celerity of one Pulse by itself cannot be perceived, because it hardly lasts an Instant. Hence *Sylvius*, that happy Practitioner, in *Prax. Med. Lib. 1. Cap. 19.* informs us, "That the Celerity of the Pulse can be conceived in the Mind, though not estimated by the Touch." *Bellini*, also, in *Tr. de Pulsibus*, speaks in the following manner: "A quick Pulse, because it affects the Touch but for an Instant, in a State but a little receding from a natural one, either does not happen at all, or, if it does, cannot be distinguished by the Touch, since the natural Dilatation of the Artery hardly lasts an Instant. Much less can the Celerity of the Pulse be perceptible in a preternatural State." Hence 'tis obvious, that a Pulse cannot be called frequent, unless it is, at the same time, accompanied with Celerity; nor quick, unless it is frequent; because one Stroke cannot be easily distinguished with respect to Celerity. Hence *Schellhammer*, in *Tr. de Pulsibus*, justly observes, that the Frequency of the Pulse is not to be found without a concomitant Celerity. Hence the Reason is obvious, why in physical Authors we never read of a frequent and slow Pulse accompanying each other, or of a quick and rare Pulse going hand-in-hand; which Species of Motions may easily be conceived to happen in an interrupted Motion, but can never occur in one of the continued and uninterrupted Kind. Hence it follows, that the various Species of Pulses are by no means to be refer'd to the Nature of any local Motion, or Impulse of a Body, so as to lay a Foundation for asserting that of the Pulse, which can be affirmed of such a local Motion; for the Antients were ignorant of the Circulation of the Blood, from which all the Species and Differences of Pulses ought to be sought, and accounted for.

'Tis sufficiently known, that almost all Physicians, both antient and modern, constitute a peculiar Difference between a quick and a vehement Pulse, since they call the former intense, quick, and brisk, and its Opposite remiss; and the latter strong and robust, and its Opposite weak and languid. And as they deduce the Celerity of the Pulse from its Motion performed in a short time, so they derive its Vehemence from the strong or weak Force of the moving Cause. But a considerable Difficulty occurs here; Which is, whether a quick Pulse may not, also, be called a vehement one, and accounted as such, since Celerity, in the Opinion of all Mathematicians, is nothing but an increased, or more intense, moving Force. But an Increase,

or an Intension of the moving Force, or Celerity, is capable of producing considerable Effects, or of overcoming a great Resistance. Now the Vehemence of Motion is only properly applied with respect to the Effects, when, for Instance, by the Action of the moving Cause, a large Quantity of moveable and resisting Matter is removed. Hence all who are Masters of statical and mechanical Learning, agree, that the Celerity of a small Body may be able to remove a large Weight or Bulk of Matter, since 'tis certain, that a Globe of a certain Diameter, moving with double Celerity, produces more considerable Effects, than a Globe of double the Diameter, moving with less Celerity.

Besides, 'tis remarkable what surprising Effects are produced by some of the most subtle Bodies, such as Air, Ether, and Fire, when in a quick and rapid Motion. *Galen*, in *Lib. 3. de Different. Puls. Cap. 5.* seems to think, that the Celerity and Vehemence of a Pulse are not much different from each other, as he informs us in the following manner: "The Word *Vehemence*, says he, is commonly used in order to express some strong, and, at the same time, quick Action; and the Persons who perform such Actions, are called *opodesi*." The same Author, also, informs us, in the Part last quoted, that if he had a Power of giving Names to the Pulses, he would call the simple Quality, or Difference, of such Pulses as resist the Touch, "*Force or Strength*, or some such thing; and the Difference compounded of this Strength, and the Celerity, *Vehemence*." But because the Word *Vehemence* is, by most Physicians, used to express one of the simple Differences of Pulses, he thinks it is to be retained, and not changed. But that this Affair may be rendered more clear and perspicuous, we are here, according to the Principles of Statics and Mechanics, to suppose that Vehemence may be considered in a double respect, either with respect to the Body in Motion, or with respect to the Augmentation of the moving Force. In general, Motion is said to be vehement, when it has great Force, produces great Effects, or overcomes much Resistance. Hence a Pulse is said to be vehement, which makes a strong Impression on the Hand which feels it; whereas, that is called *languid* and *weak*, which affects the Hand in a faint and languid manner. But Vehemence, with respect to the Body in Motion, is, when either its Quantity of Matter, or its moving Force, is great. Hence a Body of great Bulk, and moving Force, is of great Force when put in Motion, or produces a vehement Motion.

The Word *Vehemence* is, also, applied to the Increase of the Motion, that is, when it becomes brisk, intense, and quick. Hence 'tis obvious, that a very small Body may, by being put into a quick Motion, produce very considerable Effects; but that a still more considerable Efficacy is exerted, when the Quantity of Matter, and the Celerity of Motion, concur. Though, therefore, according to *Galen*, a quick Pulse, considered in itself, is never free from Vehemence, yet that Pulse is only properly and strictly called *vehement*, where a large Quantity of Spirits animate the Fibres of the Heart. This Pulse, when without Celerity, is called *strong*; but, when accompanied with Celerity, *vehement*, and at the same time large, when not a small, but a great Quantity of Blood is forced into the Arteries by one Systole of the Heart; and then, which is the Sign of a vehement Pulse, it beats the Finger strongly, and with a kind of Violence. But because it is not necessary, that under a quick Systole of the Heart there should always be a great Quantity of Strength or Spirits, nor that the Blood should always be expelled copiously, but few Spirits are often sufficient, hence the Artery is not in this Case forcibly struck, though the Pulse is at the same time quick.

Since the Antients, as we have already observed, deduced the Species of Pulses from the Nature of local Motion, and feigned as many Species of Pulses as there are Species of Motion; so there are, especially in *Galen*, numberless Differences of simple and compound Pulses described with respect to Time, Space, Instrument, Order, Equality, Proportion of Strokes, and moving Force. But afterwards, when they found these speciously contrived Differences either incomprehensible, or useless in Practice, they justly exploded and discarded them. Thus *Joh. Bapt. Montanus*, in *Consil. 256.* frankly confesses, that he was ignorant of the minute Differences of the Pulses; and tells us, that he believed *Galen* had something of the Greek Subtlety about him, and laugh'd in his own Mind, when he was reducing the Kinds of Pulses to their several Species. He afterwards adds, that though these Differences may possibly be conceived in the Mind, yet they are not all perceptible by the Touch. *Caspar Hoffman*, in *Institut.* speaks in the following manner: "The short Compendium of *Goldaldinus*, de *Pulsibus*, is, in my Opinion, preferable to the three Volumes of *Galen*, concerning the Difference, Causes, and Prognostics, of Pulses. These last Works I take to be *Herophillean* Subtleties, which he might have invented, not only when young, but, also, when he had the Advantage of Experience and Practice. This Opinion I was induced

to entertain by *Montanus*, in *Consil. 257.*" I was told by a Friend in *Italy*, who heard the Account from the Mouth of *Bartholomaeus Schwalbius* himself, a celebrated Physician of *Prague*, that this Practitioner was content with three Differences of Pulses, an equal, and an unequal; a quick, and a slow; a strong, and a weak. *Plempius*, also, in *Fundam. Medic. Lib. 5. Sect. 2. Cap. 2.* tells us, "That Physicians trifle egregiously about Pulses, since the Subtlety of some of their Minds had induced them to constitute Differences of Pulses, which could not be perceived by the Senses." The celebrated *Welschius*, in *Oper.* tells us, "That, in the whole Doctrine of Pulses, many things uncertain, superfluous, and imaginary, have long ago been discovered by the Learned, who have observed a quite different Motion in the Circulation of the Blood, which they ascribe to the Pulsation and vital Force of the Heart, whilst others attempt to account for it by Inventions of their own, rather than by mechanical Reasons." *Sylvius* has reduced the numerous Differences of Pulses invented by the Antients, to three Heads, that is, the Strength, the Largeness, and the Frequency, of the Pulse. By a strong Pulse, he means one of the vehement Kind, which with a certain Force strikes the Finger that touches it. The weak Pulse is, when it gently, or slightly, affects the Finger. The large Pulse is, when the Artery is dilated much; and the small, when it is only a little dilated, or expanded. The frequent Pulse is, when, in the same Space of Time, the Pulsations happen oftener than at other times, or more frequently than in other Patients. And the rare Pulse is, when the Strokes or Pulsations of the Artery, happen less often than they used to do.

But, that we may reduce things to the better Order, and establish the genuine Differences of Pulses, which occur in Practice, both in a natural and preternatural State, we must, first, from the Principles of Mechanics, suppose that all Motion is quick or slow; for Celerity and Slowness are genuine Properties of Motion. Hence *Galen*, in *Lib. de Pulsibus ad Tyrones, Cap. 3.* justly informs us, that Celerity and Slowness properly belong to Motion; that the former is a brisk, and the latter a slow and remiss Motion; and that from these we were to form a kind of comparative Judgment concerning the natural Pulse. Secondly, all Motion is performed in a large, or in a respectively small Space; and is consequently either vehement, or languid. Thirdly, with respect to Order, Motion is either equal or unequal; and the Equality is to be understood, both with respect to Time or Celerity, and with respect to Magnitude or Vehemence. And, fourthly, with respect to the moveable Body, Motion is either great or small.

Now we suppose, that the Motion of the Heart and Arteries is continual, and consists of the reciprocal Systole and Diastole, without any Interruption; for which Reason, every Pulse is either large or small. The large is, when much Blood is by one Contraction of the Heart thrown into the Artery; in consequence of which, its Dilatation is large and full. The small Pulse is, when, in consequence of little Blood forced into the Artery by one Systole of the Heart, the Expansion of the former is but small and inconsiderable. Besides, the Pulse is either quick or slow. The quick is produced, when the Heart quickly, and in a short time, contracts itself, and throws the Blood into the Artery. The slow, on the contrary, is, when the Contraction of the Heart requires a longer Time, or when the Conveyance of the Blood into the Artery lasts considerably long. But, as, in every Pulse, the Degrees of Celerity and Slowness cannot be accurately estimated and computed, because they happen in a Moment, hence, from the Frequency, that is, when, during the same time, the Expansion of the Artery is observed oftener than at other times, the Celerity of Pulses ought to be determined; but in such a manner, that the Frequency be only made the Sign, Characteristic, or Measure, of the Celerity, and the Rareness of the Slowness; because Frequency is not applicable to any Motion, considered in itself. But, in a continual Motion, which, however, consists of different Species, a Systole, for Instance, and a Diastole, where one is perceived, and the other not, we ought in Justice to make an Estimate of the Celerity from the large Number of the perceived Motions, or Strokes. Thirdly, the Pulse is either equal or unequal; equal, when there is an exact Equality with respect to the Celerity or Frequency of the succeeding Pulses, as, also, with respect to their Largeness and Smallness. The Pulse is said to be unequal, when one Stroke is large, and another small and weak; or when one is quick, and the other very slow; so that the Pulse seems to be intermittent, though the Intermision of the Pulse may be more properly referred to that Species of Inequality which consists in a great Slowness. Fourthly, the Pulse is either vehement and strong, or weak: The vehement Pulse is, when the Systole of the Heart is performed by a large Quantity of moving Force, or Spirits; and the weak, when the Heart is contracted by a small Quantity of Spirits.

The Differences, formed by the Antients, of the vermicular, formicating, tremulous, ferrated, and caprizating Pulse, depend partly on the Inequality of the Pulses, but, most of all, on the Convulsion of the Coats composing the Arteries; for which Reason they are almost always to be esteemed dangerous in acute Disorders. As for the hard and soft Pulse, these depend only on the State and Condition of the Artery; for, when, in consequence of an excessive Pain, Spasms, or Convulsions, the Coats of the Artery become hard, so that the Resistance makes a strong Impression on the Touch, the Pulse is said to be hard. The soft Pulse is, when the Fibres of the Coats of the Arteries are flaccid, relaxed, and moist. When a large and vehement Pulse concurs with such a soft State of the Arteries, it is called an *undulating Pulse*, which is the Forerunner of a profuse and copious Sweat.

From these simple Differences, we may easily discover what Species of Pulses may be joined with each other, and what not. First, then, there is a Pulse compounded of the large and quick; of the large and vehement; of the strong and quick; and of the vehement and small. Secondly, there is a Pulse compounded of the frequent and weak, and of the quick and small. There is, also, a slow and a large Pulse, such as that which happens in a natural State, and in plethoric old Persons, as, also, in some melancholic and scorbutic Patients. But there is never a quick and a slow Pulse, nor a slow and a rare, nor a vehement and weak Pulse, unless we intend to confound Words.

As the Motion of the Heart and Arteries depends, first, upon the Quantity and Strength of the spirituous, elastic, and expansive Substance, contained in the Blood, and nervous Fluid; secondly, on the due Tone of the muscular Fibres of the Heart and Arteries; and, thirdly, on the proper Temperature, Quantity, and Consistence of the Blood, so it is to be deduced and accounted for from these Sources. Now 'tis certain, that Life, Health, and the due Order of the whole Body, depend upon a proper and equable Circulation of the Blood and Humours through the solid Parts; so that the better regulated, and the more equable, the Circulation is, the more perfectly Nature preserves herself, and cures the Diseases incident to her; and, on the contrary, the more this Circulation recedes from a due and equable State, the weaker Nature is said to be, and the more subject to Misfortunes and Diseases. 'Tis, therefore, of the greatest Importance, that the Physician should know the Circulation peculiar to each Patient both in a natural and preternatural State, that he may be the better able to form a Judgment of their Disposition to Diseases, and of the Nature and Event of their Disorders. Now every one must own, that the Circulation of the Blood cannot be better investigated than by feeling the Pulse, not in a superficial manner, but frequently, and for a sufficient Time; for the Pulse not only discovers the Imperfections and Strength of the whole Body, but, also, the Nature of the Blood, and the State of the various Secretions. And, as a Pendulum of a Clock, by its equable and regular Vibrations, manifests the Worth of the Clock; so the Pulse discovers the Habit of the Patient, and the Vigour or Depravation of all his Functions.

We now come to inquire what a moderate, constant, and equable Pulse is, since it is, as it were, the Rule and Measure by which we are to judge of the rest. A moderate Pulse, therefore, is that which is large, but neither quick nor slow, hard nor unequal. This is the Pulse with which all others ought to be compared, and which denotes the best State of Health; the Absence of all preternatural and foreign Things, and a due and temperate Degree of Heat; for when such a Pulse is present, the Fluids are duly spirituous, the Fibres possessed of their natural Tone, the Blood temperate and fluid, and consequently the Transpiration free, the Nutrition good, the animal Functions vigorous, the Secretions duly carried on, and the Patient in a State of good Health. But when the Pulse is quicker, and consequently more frequent than usual, it indicates a preternatural Irritation of the Heart, as the Antients express it, unless it proceeds from external Causes; but if such a Pulse continues long, it infallibly denotes a Disorder accompany'd with an Increase of Heat, and even a Fever. It is generally produced by an inordinate intestine Motion of the Blood, and a Change induced on the Crasis of the Spirits by an Admixture of heterogeneous, and often caustic Particles. When the Pulse is vehement, and, at the same time, quick, it indicates a feverish Intemperature, an Admixture of something heterogeneous with the Blood, Lymph, and Spirits; but, at the same time, a large Quantity of Strength and Spirits. If a vehement and quick Pulse is, also, large, the Circulation of the Blood is brisk, the Heat and Thirst great, and the whole Habit red and turgid. Where the Pulse is small, and little Blood is conveyed from the Heart to the Arteries, and from the Veins to the Heart, the Circulation of the Blood is faint and languid. Hence the Transpiration and Secretions are but

small, and the Strength little: But, if a small Pulse is, at the same time, weak and frequent, or quick; it denotes a great Languor of the Strength, a preternatural intestine Motion, and a weak Circulation of the Blood; and, if this Species of Pulse continues long, it indicates Malignity, and great Danger.

A slow Pulse generally denotes a Viscidity, Thickness, and weak Circulation of the Blood, together with a Languor of the Secretions; but if it is at the same time weak, it is dangerous, and raises a Suspicion of a total Loss of Strength. But a Pulse which is slow and large, denotes sufficient Remains of Strength, Tension, and Thickness, of the Fibres, of the Heart and Arteries, and a viscid and tenacious Blood. All unequal Pulses are very bad, since they denote, that there is neither a due Influx of the Spirits, nor a proper and equal Mixture of the Blood; but, particularly, such Pulses always prognosticate unlucky Events, when they are weak. Intermittent Pulses are, also, of a bad Kind, or generally accounted the Presages of Death. But it is not universally so; for an intermittent Pulse frequently happens without Danger, where, for Instance, the Symptoms are of a bad Kind, and the Patient's Strength still entire. Hence this Species of Pulse frequently happens in hypochondriac and melancholic Patients, where the intestine Motion of the Blood is diminished by its Thickness. But when the Pulse is weak and quick at the same time, it generally prognosticates Death. An hard Pulse generally indicates Pains, Spasms, and Convulsions, because the Fibres of the Heart and Arteries are spasmodically constricted. The irregular, caprizating, and discontinued Pulses, denote a very bad State of the Body, both with respect to the fluid and solid Parts.

It is carefully to be observed, that one Kind of Pulse is not found in all Persons; for as the Pulse depends on the Tone of the muscular Fibres; on the Influx of the Spirits, and the Nature and Temperament of the Blood, and as all these are surprisingly various in human Bodies, with respect to Age, Sex, the Season of the Year, the Climate, the Method of Life, the Sleep, and the Passions of the Mind, so, also, the Pulses vary from each other according as these Circumstances differ. Thus Men generally have a large and vehement Pulse, and Women one of a more slow and weak Kind; for the former have stronger Fibres, and an hotter Blood, than the latter: For this Reason, also, the Circulation of the Blood is brisker in Men than in Women, and the former do not generate such Loads of redundant Blood and Humours, as Women, who are generally weaker, and more subject to Diseases. Choleric Persons, and those of sanguine choleric Constitutions, have a larger, quicker, and more vehement Pulse, than phlegmatic and melancholic Persons; for which Reason the Fluids move more quickly, the Excretions are made more expeditiously, and the Blood is more fluid, in the former than in the latter; for the Blood of the former is impregnated with a larger Quantity of oleous and sulphureous Parts, which are, as it were, the Source and Matrix of Heat, and a spirituous Quality. Thus, also, those of a slender Habit, who have strong Fibres, and large Vessels, have a larger and stronger Pulse, than those who are fat, have lax Fibres, and narrow Vessels. Hence they are, also, sounder, more robust, and more capable of enduring Fatigue. This is, also, the Reason, why those who are naturally thick and fat, are more readily seized with Sickness, and destroy'd by it, than those of slender Habits.

In Infants and Children the Pulse is frequent and soft, whereas in old Persons it is slow and large, whilst in young Persons, and those full-grown, it is large and vehement; for, generally, Infants and Children generate a large Quantity of Humours, which are necessary to their Growth, and collect a great deal of Sordes, which is the Reason why Infants and Children are more generally seized with Sickness, and more readily die of it, than Youths and Adults. Old Persons have thick Blood, but rigid Fibres; for which Reason their Pulse is hard, and makes a forcible Impression on the Touch. But in Infants and Children the Pulse is soft, on account of the Tenderness and Laxity of the Fibres. The Pulse is, also, changed by the Season of the Year, the Exercise of the Body, the Aliments, and the Affections of the Mind. In the Middle of the Spring, the Pulse is large and vehement; at this Season, also, the Strength is greatest; for which Reason Persons are at that time most rarely sick, and recover most easily. In the Middle of the Summer, the Pulse is quicker and weaker, because, by the intense Heat, the Strength is impaired, whilst the intestine Motion of the Fluids is greater than it usually is. In Autumn the Pulse is slower, softer, and weaker, than at any other Season, and in the Winter harder, a little more vehement, and slower. Among Kingdoms and Climates, those which are hot and sultry, may be compared to the Middle of the Summer; those which are cold, to the Winter; and such as are temperate, to the Spring.

Exercise increases the Pulse, and consequently the Circulation of the Blood, whilst an idle and inactive State renders the Pulse slow, weak, and languid, and diminishes the Circulation of the Fluids. Spirituous Aliments render the Pulse large, vehement, and frequent. The Pulse of such as are asleep is slow, small, and languid; but as soon as they awake, it forthwith becomes large, quicker, and stronger. The Pulse of those who are angry is large, vehement, and quick; that of such as are frightened, frequent, small, and inactive; and of those who are sorrowful, small, languid, and slow. So that, according to *Fernelius*, in *Lib. 3. de Pulsibus*, "The common, and ordinary Affections of the Body change the Pulse; so that, without duly adverting to these Affections, the Pulse cannot be certainly understood, nor can it be determined how far it recedes from a natural State, in consequence of Diseases." The natural Pulse is, therefore, to be felt and observed, not immediately after Exercise, Bathing, immoderate Eating, drinking Wine, or other Causes, which exagitate the Heart and Spirits; for we are to determine nothing about the Pulse, till the Force of external Causes has ceased, and all Perturbations of the Body are allay'd; for the Pulse is the most certain Sign and Criterion for judging of the Motion of the Heart and Blood. But if the Pulse alone is observed, without paying a due Regard to other Circumstances, it may lay a Foundation for forming a false Judgment; because, as *Celsus* says, in *Lib. 3. Cap. 6.* the Pulse may be disturbed by a thousand things.

There has almost always been a considerable Dispute among Physicians, what Pulse is essential to Fevers; or constitutes their pathognomic Sign. Many of the Antients, among whom *Galen* was the first, inform us in their Works, that a quick and frequent Pulse denotes a Fever. But many of the Moderns take a frequent Pulse for the genuine Sign and Characteristic of a Fever. Thus *Sylvius*, in *Prax. Med. Lib. 2.* speaks in the following manner: "A preternaturally frequent Pulse is the Sign, which, at all times, belongs to a Fever alone, and is consequently its pathognomic Sign; so that, when this Sign is present, a Fever is present; and, when it is absent, so is the other, also; nor is any other Sign universally proper to all Fevers, hitherto discovered by Practitioners." For all other Signs do not so properly denote a Fever, as the Species, the Degree, or the Time, of a Fever. *Ettmüller* tells us, "That a preternaturally frequent Pulse is, justly accounted the pathognomic Sign of Fevers, by *Sylvius*, both in his *Dissertatio de Natura Februm*, and in his *Praxis*, whatever *Deusingius*, in *Tract. de Disquisitione Antisyloana*, may affirm to the contrary." *Decker*, a practical Physician of *Holland*, in *Not. ad Barbette*, informs us, "That there is a Fever, where-ever a preternaturally frequent Pulse is observed." *Schellhammer*, in *Tr. de Puls.* tells us, that in all Fevers there is a frequent Pulse, which, when accompanied with Heat, is their pathognomic Sign. The celebrated *Bohnius*, speaks in the following manner: "In a frequent Pulse, the Strength of the Heart seems equal to the morbid Cause, if this frequent Pulse remains in an uniform manner, and is consequently the pathognomic Sign of Fevers; but if a Weakness of the Pulse is combined with its Celerity, it indicates Loss of the Strength more or less, as more or fewer and vehement Strokes are observed." Other Authorities would be of no Use; only we must observe, that, upon a false Hypothesis, not only the Antients, but, also, many of the Moderns, made a Distinction between quick and frequent; for they called the Pulse frequent, if within a certain time frequent Pulsations were made, whereas by a quick Pulse they meant one of the vehement Kind. Hence *Willis*, in *Tr. de Febris*, calls that a febrile Pulse, in which the Arteries vibrate vehemently and quickly; where he, also, asserts, that if the Pulse becomes more vehement, the Fever is augmented. *Caelius Aurelianus*, in *Lib. 1. Acut.* tells us, "That the Sign of Fevers is an intense Heat, and a vehement Pulse, unless it should be produced by some external Cause."

For these Reasons *Brown*, in *Observationibus Medicin.* every-where asserts, that a quick and a weak Pulse are contrary to each other; so that by the Word quick, 'tis obvious, he meant vehement. Tho' Authors hardly as yet seem to have formed distinct Notions of Pulses, yet all, both antient and modern, seem to agree in this, that a frequent Pulse in every Species of Fever, whether continual, or intermittent, whether benign, or malignant, whether in its Beginning, or at its Height, proves such a Fever to be present: Hence they always join the frequent either with the quick, or with the weak, Pulse; so that they agree, that the frequent Pulse is rather to be called the essential Sign of Fevers, than the quick, which none of them, will hardly assert to be found, either in the Beginning or Horrors of Fevers, or in any of the malignant Kind.

But, from what we have supposed, it is sufficiently obvious, that these Differences may be excellently reconciled, since the quick Pulse is nothing else but the frequent, which is the true pathognomic Sign of Fevers. But this Frequency is either greater or less, and associates itself with the great or vehement, or with the small and weak, according to the Diversity of Fevers, and the Times of the Disease. A frequent Pulse, when weak and small, is scarcely ever good, since it denotes a languid and slow Circulation of the Blood. But a frequent, large, or vehement Pulse, such as is generally observed in the Height of continual Fevers, denotes a brisk Circulation of the Blood, and an increased Heat of the Body. In investigating the Cause of a frequent Pulse, which is generally preternatural, and accompanies several Disorders, we shall follow the accurate *Bellini*, who, in *Tract. de Pulsibus*, accounts for the Motion of the Heart from the Influx of the Blood through the Coronary Arteries, and of the nervous Fluid through the Nerves into the Fibres of the Heart; from which he concludes, that the Muscles of the Heart are most frequently moved, when the nervous Fluid is most frequently convey'd into them, which happens when it is forced into them by a sufficient Quantity of Blood flowing forcibly into the Brain. Now, by a frequent Contraction of the Heart, a frequent Pulse is produced; which indicates, that a proper Quantity of Blood is convey'd to the Brain, and that the Brain is forcibly pressed; which will happen, either when the Blood stagnates therein, in consequence of an Obstruction of its Veins; or when the Blood contain'd in these Veins cannot flow into other Parts, the Blood, in the mean time, stagnating, either in the internal Parts, or in the Lungs; or when the Blood is thrown into a State of Effervescence, by which it assumes a Tendency to move in every Direction with a greater Impetus, and by that means presses the Brain more powerfully. The Muscles of the Heart, also, move more frequently, when irritated by any Stimulus. If, therefore, the Blood is too acrid, or hot, so as to stimulate the Sinuses of the Heart, the Heart will be more frequently contracted, and the Frequency of the Pulse will indicate a stimulating Quality in the Blood.

Since we have shewn, that from the Pulse we are to form a Judgment, not only of the Circulation and Temperature of the Blood, but, also, of the Motion of the Spirits, and the Strength of the Patient; so the Knowledge of the Pulse, and a due Attention to it, must be of singular Use to the Physician, not only in investigating the Natures of Disorders, and forming a right Judgment concerning them, but, also, in prescribing Medicines for their Cure. But it is to be observed, that the Pulse is to be carefully, and not superficially, consulted. The Physicians of *China* are far more careful in this respect, than those of *Europe*; for those often spend a whole Hour in feeling the Pulse, whilst the Physicians of our Country have hardly Patience to feel above two Pulsations; a Practice highly culpable, since after ten Strokes of the Artery, an Inequality, or Intermision, often occurs; which happens whilst the unequally mixed Blood passes through the Heart. The Pulse is, also, to be felt in both Wrists, in the Neck, and in the Temples, since 'tis certain from Experience, that the Pulse in the Wrists frequently varies; and may be more commodiously felt in one than in another. We ought, also, to advert to the Pulses of other Parts. Thus, sometimes, hypochondriac Patients perceive a large Pulse under the Ribs on the Left Side; which happens, when a quick and viscid Blood, exagitated by Heat, or any other Cause, endeavours to procure a quick Passage through the Pancreas and Spleen; but, stopping in their narrow Vessels, produces a Pulsation, and a kind of pricking Pain. Hence *Job. Ant. Vander Linden*, in *Select. Medic.* tells us, "That the Blood, in this Case, raises a kind of Tumult within, by pricking and striking on the Spleen." How intense the pricking Pains of the Spleen are, some sound Persons experience, as soon as they are over-heated. *Tulpius*, in *Cent. 2. Obs. 28.* mentions a Man who had a preternatural Pulsation in the Spleen. In continual and malignant Fevers, a large internal Pulsation in the Veins of the Head generally denotes a subsequent Delirium; since it is a Sign, that the Blood there congested circulates slowly, till at last, becoming stagnant, it produces a violent Inflammation of the Meninges. *Hippocrates*, in *Coac. Praenot.* informs us, "That if a large Pulse arises from an excessive Ebullition of the Blood, so that in Fevers the Veins of the Temples beat, and the Face is turgid, without a Softness of the Præcordia, there is Reason to suspect, that the Disease will be long, and that it will not terminate without a large Hæmorrhage from the Nose, an Hiccup, Convulsions, or Sciatic Pains." The Reason of this, in my Opinion, is, that the redundant Blood seeks for an Outlet, either by the Nose, or the hæmorrhoidal Veins; and the sooner this happens, the sooner the Patient is freed from his Disorder.

When a Pulsation is observ'd in any Part of the Body, where at other times it is not felt, we may certainly conclude, that the Part is inflam'd, and dispos'd to a Suppuration; especially when it is accompanied with Tumor and Pain. An hard Pulse is almost an infallible Sign of an Inflammation in the Membranous Parts; for this Hardness of the Pulse, or excessive Tension and Vibration of the Artery, indicates something of a spasmodic Nature, arising from the Consent of the Parts, and produc'd by the Inflammation and Pain. The Pulse of Persons labouring under Disorders of the Breast, or a Palpitation of the Heart, is generally frequent, unequal, and languid. But such a Pulse, unless when vehement, is accompanied with no preternatural Heat; and happens because the Blood does not pass thro' the Sinuses of the Heart, and the Lobes of the Lungs. In Weakness, and a Disposition to Syncope, the Pulse is generally small, rare, and languid; but if the Pulse is absolutely imperceptible, the Body cover'd with a cold Sweat, and the Functions of the Mind are not totally destroy'd, I have frequently observ'd, that the Patient infallibly dies in six Hours; and such a Situation I have seen twice produc'd by corrosive Poison. It is to be observ'd, that about the critical Times in Fevers, when Nature endeavours to throw off the superfluous and peccant Matter by Stool or Sweat, the Pulse, tho' languid, is yet more regular, and less frequent, which is a certain Sign of Recovery. But if the Pulse is soft and undulating, it is a Sign, that a salutary critical Sweat is just coming on.

It is, also, to be observ'd, that the Pulse is chang'd by Medicines. Thus, after drastic Purgatives, which procure too many Stools, the Pulse is generally preternaturally quick. After Venesection, especially in plethoric Habits, the Pulse becomes quicker, a Sign that the Circulation of the Blood, in consequence of its having a larger Space, is happily increas'd; since, by this means, a Suppression of the Menstrue or Hæmorrhoids is generally remov'd. 'Tis certain, not only from the Authority of Sydenham, but, also, from Experience, that after the Use of Chalybeates, the Pulse is quicker, the Face redder, and the Heat greater. Strong Sudorifics, compos'd of volatile oleous Substances, greatly increase the Pulsation of the Heart and Arteries. On the contrary, Anodynes, Opiates, Preparations of Nitre, precipitating Powders, Acids, and such things as diminish the intestine Motion of the Blood, and fix its Sulphur, render the Pulse calm and moderate in Pains, Inflammations, and a febrile Intemperature. Such an Effect I, also, once saw produc'd by a due Mixture of Nitre and Camphire. As Dr. Willis has justly observ'd in *Traët. de Febribus*, some very useful and important Rules for the Exhibition of Medicines are drawn from the State of the Pulse. Thus Purging and Vomiting are contra-indicated by a too quick and vehement Pulse; as, also, by a low and depress'd Pulse; for when the Blood is in a violent Motion and Ebullition, the Secretions are generally very languid. If the Strength is defective, which may be known by the languid State of the Pulse, Emetics and Purgatives diminish the Strength still more; so that the Physician ought to consult the Pulse, before he exhibits them; for when the Pulse is strong, and the Motion of the Blood regular, these artificial Evacuations are most beneficial, and succeed best. The same Caution is necessary in the Exhibition of Sudorifics, and all Analeptics, which convey Heat and Motion to the Blood; for if the Pulse is strong and frequent, such spirituous Substances do more Injury than Good, because they rarefy the Blood too much, and accelerate its intestine Motion; by which means a Delirium, and other Inflammations, are frequently brought on. Great Circumspection, and Attention to the Pulse, is, also, requisite in the Exhibition of Narcotics or Opiates; for as these are possess'd of a Power of stopping the Motion of the Blood and Spirits, and consequently of impairing Strength, so they ought never to be exhibited when the Pulse is weak, languid, and small, but are to be avoided like Poison. But if the Pulse is unequal and intermitting, Opiates readily procure a perpetual Sleep. *Fred. Hoffman.*

PULVERATIO, or PULVERISATIO, Pulverisation, in Pharmacy is the reducing any Substance to a Powder. See **TRITURATIO** and **PULVIS**.

PULVILLUS, in Surgery, is a Pledget, Bolster, or Compress.

PULVIS. A Powder.

The Operation of reducing Medicines into Powders is so very simple in itself, that it requires no other Skill, than having those Things which come under its Management, sufficiently dry, in order to be so divided.

In judging of the Fitness of Materials for this Treatment, only these two Considerations necessarily require our Attention. The first is, whether the Things themselves are thus reducible, without any previous Management, that may hurt their medicinal Virtues; and, next, whether their Virtues are conveniently preserved in this Form, when reduced into it.

Under the first of these, it naturally occurs, that viscid and oily Substances cannot be thus managed, without first reducing them to some Brittleness, which cannot be done without drying. If such things, therefore, cannot be sufficiently dried for Triture,

without exhaling their better Parts, or destroying that particular Quality, for which the Simple is valued in Medicine, as it happens with many Seeds and Gums, they are much fitter for some other Forms than for this; though these Inconveniences may be avoided, where such Things bear so small a Proportion to those which are very dry and brittle, that they are so lost, and, as it were, absorbed by them in Triture, that all pass the Sieve well enough together. But this, however, should make the Prescriber wary of crowding into any Composition, under this Form, too many Gums or Seeds; and the Preparer careful in giving them a requisite Brittleness by drying; which latter may, in some measure, be known by the Compositions preserving the Scent, or particular Qualities, of the Ingredients suspected.

The other Requisite in this Form, relating to the Preservation of Things reduced into it, directs not to prescribe Materials therein, which are volatile, or will any other way change in the open Air: Thus the finer Aromatics will decay, and every thing very volatile, as the Radix Ari; for which Reason it is now ordered to be mixed at the time of taking. All the alkaline Salts, likewise, are not to come into this Form, because they will dissolve in Air; on which Account the Salt of Wormwood is an improper Ingredient in the *Pulvis Radicum Ari compositus*. These latter Inconveniences may indeed be, in some measure, avoided, by keeping such Compositions as have in them these exceptionable Ingredients, in Vessels stop'd close from the Air: But the Necessity of frequently opening them in the Shops, for common Occasions, will subject them more to such Decay, than is consistent with keeping them any long time good.

Having a View of these two Requisites, we are better able to judge, both of officinal and extemporaneous Prescriptions in this Form: And, for our better Inquiry into the former, it may be, also, of Use, as is already done in some other Forms, to range them under such general Intentions, as they seem contrived, by their first Inventors to answer.

The *Species Diambrae*, *Pulvis Diacinnamomi*, *Species Dianthus*, and *Pulvis laticians Galeni*, seem, by most of their Ingredients, to be intended for Cephalics and Cordials, as they consist of the warmer Spices, and Simples of similar Properties; but in the *Pulvis Diacinnamomi* the Cassia is much inferior to the Cinnamon in Flavour, and gives a Sliminess to the moist Form; but the Elecampane-root is a powerful Detergent, and quire out of the Intention. The Sugar, likewise, occasions an unnecessary Bulk in a Dose, when given in Powder, an Electuary, or a Bolus; and therefore would be better omitted: In the *Species Dianthus*, the Liquorice is blameable, on the same Account as the Elecampane-root in the foregoing; and in the *Pulvis laticians Galeni*, the Rasure Eboris, Epithymum, Os Corde Cervi, and Margaritæ, are chargeable with contributing nothing to the main Intention of a Cordial, though the Leaf Silver and Gold are very beautiful Decorations, if rubbed but coarsely in at last, that they may be seen to Advantage; but the Camphire, it is to be feared, will render it not so fragrant while it lasts, though even very close Keeping will not long retain its Volatility.

Some others, near approaching to this Intention, take in Simples, that give them, also, an Astringency; such as the *Aromaticum Rosatum*, *Pulvis Granorum Kermes compositus*, and *Pulvis Cardiacus Magistralis*; none of which are chargeable with an useless or unsuitable Ingredient, unless the Bezoar be reckoned so in the latter: However, it is pretty certain, that its Virtues do not compensate for its Cost; and indeed not much can be said for the Saunders and Aloes-wood; but the Custom of mixing them with those things has long prevailed.

The *Pulvis Diacalamintus simplex*, thus intitled, in Distinction from a much larger Composition given in former Dispensatories, and the *Species Diatrium* and *Piperum*, seem principally intended for Carminatives; though the former hath something in it aimed, also, against Hysterical Affections, and is pretty much used in both these Intentions with Success. The *Pulvis de Guttura* was heretofore a Composition, consisting principally of such things, as were supposed to be very efficacious in some nervous Cases, by their specific and secret Virtues; as the Viscus Quercus, the Ungula Alcis, and Cranium Humanum; but there are now added many things of very manifest Properties, as the Radix Valerianæ, Contrayerva, and Serpentaria; but whether the calcined Hartshorn, Coral, Hyacinth, and Bezoars, will yet allow this to be duly reformed, and an uniform Composition, is much to be doubted; for if they can, with the Specific before-mentioned, be supposed to contribute any thing to the main End, yet it must be allowed to be so little, that they have not their Share, but are a Clog upon the Efficacies of some others, which, by these means, cannot be so conveniently given in their due Quantities. By long Experience, it has, likewise, been found, that Musk does Harm in many nervous Cases: Where, therefore, there is Reason to judge it proper, it is very easily ordered at the time of extemporaneous Prescription. The Leaf Gold, as was before observed, is an agreeable Ornament, and can do no Harm. The *Pulvis Cephalicus* is designed for a Snuff.

The next Class of alterant Species may be reduced under the Title of Alexipharmics, at the Head of which it may be thought Injustice not to put the compound Powder of Crab-claws: But the Lapis Contrayerva seems to come under the same Rank much more properly; which the present Practice acknowledges, by taking notice of it much oftener than the other, though the greatest Dependence upon this is from the Contrayerva-root, which, both in its Smell and Taste, manifestly discovers the Quality of an Alexipharmic, which principally consists in a volatile Pungency.

The *Pulvis Radicum Ari compositus* is the only Composition in this Form, that aims at being an antiscorbutic; but its principal Ingredients, as has been already observed, will not keep long in this Form; and, when mixed with Boluses, or Electuaries, the Oculi Cancrorum, and Sal Absinthii, soon make it ferment and sour.

Some of this Form are given for Emollients and Diuretics, as the *Species Diatrageanthæ frigidae*, *Pulvis Haly*, *Pulvis Saxifragia compositus*, and *Pulvis Dialthææ*. But the principal Ingredients of these, especially of the former three, which are the cold Seeds, those of Poppies, and the like, are not only difficult to powder, but, when so reduced, will soon grow rancid. The Starch and Sugar are, indeed, some Helps against the first Inconvenience, by assisting the oily Seeds to pass the Sieve, and they seem intended for no other Purpose; but they are not sufficient to preserve them, when so done. Besides, all these things are so much easier brought into Emulsions, and with such greater Advantages to the Patient, that these Forms are now little used. The *Pulvis Dialthææ* does not, indeed, take in so many of these oily Seeds, and is more agglutinant by reason of the Quantity of Gums in it; but it is not often met with in common Prescription.

All the rest of this Division of Compounds, unless the *Pulvis Antilyssus*, are Cathartics. The greater and lesser Compositions with Sena are so crouded with Seeds and Spices, under the Notion of Correctors, that a sufficient Quantity for a Dose makes the Bulk too large to take in any Form; which seems to be the Reason, why they are very seldom prescribed or made.

But the *Pulvis Diasenæ* takes in Diagrydium enough to avoid this Inconvenience. There hath been in some of the old Dispensatories a *Pulvis Artheiticus Turnerii*, of which the *Pulvis Diaturpethi compositus* seems to be a good Abridgment, as taking in some of the principal Ingredients, and leaving out many useless ones, with which that was crouded. The *Pulvis Cornachini*, and *Pulvis Comitissæ Warvicensis*, are exactly the same, except in the Proportion of Ingredients, in which respect they likewise differ but little. They are quick enough of Operation in small Quantities, which occasions them to be given frequently to Children.

What hath been already taken notice of, as necessary to be regarded in the Official Prescriptions of this Form, should, also, be equally attended to in the extemporaneous Practice; that is, not to direct any thing in a Powder, which will waste by its Volatility, or which is not reducible to it, without such previous Management, as will hurt its medicinal Virtues. All volatile Salts, in particular, ought to be avoided in these Prescriptions, as that of Hartshorn, Sal Ammoniac, and the like; though, in the Salt of Amber, there is somewhat so fixed, that it will remain a considerable time in this Form, without any discernible Loss. Some regard, also, in common Practice, is to be had to the Vehicle, with which some things have, and others have not, a peculiar Fitness for Moisture. Thus the Æthiops, and every thing that takes in Sulphur, when prescribed in Powders, should be ordered to be taken in a Syrup, or some Pulp, because it is very troublesome to mix with any thing thinner; its offensive black Colour is, also, best disguised with Prunes or any thing of like Kind. Every Powder, likewise, that takes in crude Antimony, any of the Mercurials, or Things of light Weight, must be trusted in thin Vehicles, because they will immediately settle, and, by reason of the small Quantities, be liable to be left, at the Bottom of what they are given in. Sufficient Notice hath been already taken of the Unfitness of all Salts, made by Incineration, for this Form, and every thing dissolvable, or any way changeable, by the Air. Powders, likewise, which take in any resinous Substances, as Scammony, Resin of Jalap, or any thing of like Texture, should be directed in Vehicles of some Consistence, and be carefully mixed, because in thin ones they are subject to run into Lumps, which are not easily again dissolvable.

The Doses of most Powders ought seldom to exceed half a Dram, because of the Difficulty of taking them; and, rather than to put things together, which have not sufficient Efficacy in that Quantity, it is more eligible to have recourse to things of like Intention in some other Form.

There is one Convenience, indeed, in this Form, which in common Practice may not be so duly considered as it deserves; and that is, where Persons have a great Aversion to many Medicines, they are sooner decoyed into a Compliance with Powders, than as many Boluses or Draughts, because they do not make so formidable a Saew; but in acute Cases, where the

Stomach has been dried with much Heat, too many of these, especially of the warmer Alexipharmics, as the Contrayerva and Snake-root, are not usually judged so proper as the liquid Forms, and the Virtues of the same things drawn out by Infusion. *Quincy's Prælect. Pharm.*

PULVIS ANTILYSSUS. See ANTILYSSUS.

PULVIS RADICUM ARI COMPOSITUS. See ARUM.

PULVIS CARDIACUS MAGISTRALIS:

The magisterial Cardiac Powder.

Take of oriental Bezoar, and of calcined Hartshorn, of each one Dram and an half; of white and red Coral prepar'd, white Amber, prepared Pearls, Armenian Bole, Japan Earth, and of Tormentil-root, of each two Drams; of Aloes-wood, Citron-peel, Angelica-root, and Zedoary, of each two Scruples: And make them into a Powder together.

PULVIS E CHELIS CANCROCORUM COMPOSITUS: See CANCER.

PULVIS CEPHALICUS:

A Cephalic Powder.

Take of the Leaves of Asarabacca; Marjoram; and Lilies of the Valley, each any Quantity: And make them into a Powder together.

PULVIS CORNACHINI.

Cornachini's Powder.

Take of sulphurated Diagrydium, ten Drams; of diaphoretic Antimony, six Drams; of Cream of Tartar, two Ounces and an half: Make them together into a Powder.

Schroder tells us, its Author was so fond of it, as to write a whole Treatise about it, wherein he recommends it in almost all Cases that require Purging. Its Dose is from eight Grains to one Dram.

PULVIS GRANORUM CHERMES COMPOSITUS:

Compound Powder of Cherries-berries.

Take of Cherries-berries one Dram, of Nutmegs, two Scruples; of Tormentil-root, and of yellow Sanders, of each half a Dram; of Cloves, prepared Pearls, and both Corals prepared, of each one Scruple. Let them all be made into a Powder together.

PULVIS DIACALAMINTHES SIMPLEX:

Simple Powder of Calamint.

Take of Mountain Calamint, Penny-royal, Origany, Seeds of Macedonian and common Parsley, and of Hartwort, of each two Drams; of Smallage and Thyme, of each half an Ounce; of Privet-seeds, and white Pepper, of each one Ounce: And mix them into a Powder.

PULVIS DIATURPETHI COMPOSITUS:

Compound Powder of Turpeth.

Take of Turpeth, Jalap, and Hermodactyl-roots, of Tartar of Vitriol, each equal Quantities; and make into a Powder, S. A. Its Dose is from half a Scruple to a whole Scruple.

PULVIS DIALTHÆÆ. See ALTHÆÆ.

PULVIS DIACINNAMOMI:

Compound Powder of Cinnamon.

Take choice Cinnamon, fifteen Drams; of Cassia-bark, and Elecampane-root, of each half an Ounce; of Galangal, seven Drams; of Cloves, Long-pepper, both the Cardamoms, Ginger, Mace, Nutmegs, and Aloes-wood, of each three Drams; of Saffron, one Dram; of white Sugar-candy, five Drams: Make them into a Powder.

PULVIS DIASENÆ. See SENÆ.

PULVIS ERYSIPELATODES. A Mynsichti.

Take of volatile Meal, half a Pound; of calcined Lead, and red Bole, each two Ounces; and of Mastich, Olibanum, and Cerufs, each one Ounce: Mix all together, and reduce to a fine Powder.

Pulverize together the Bole, and the Cerufs: Then pulverize separately the Olibanum in a Mortar, rub'd over with some Drops of Oil, and the Mastich moisten'd with some Drops of Water. Then mix these Ingredients, when pounded, with

with the calcined Lead, and the fine Meal, for a Powder, to be preserv'd for Use.

It is proper to dry and cure the Tetter or Ring-worm: A small Quantity of it is to be laid on the Part affected, and cover'd with blue Paper, after the Patient is blooded and purg'd. This Powder may cure a mild and simple Ring-worm: But, when it is obstinate and rebellious, much happier Effects will be produc'd by the following Powder;

Take of the volatile Meal of Barley, half a Pound; of dry Elecampane-root, one Ounce; of the Salt of Lead, and white Precipitate Mercury, each three Drams: Mix all together. *Lemery Pharmacop.*

PULVIS AD GUTTETAM. See GUTTETA.

PULVIS HALY:

Powder of Haly.

Take of white Poppy-seeds, ten Drams; Starch, Gum Arabic, and Tragacanth, each three Drams; the Seeds of Purslain, Marshmallows, and Mallows, each five Drams; Cucumber, Melon, Gourd, Citruls, and Quince-seeds cleansed, each seven Drams; Liguorice, three Drams; white Amber, two Drams; Sugar-candy, the Weight of the Whole: And make them into a Powder. It may be given from half a Dram to two Drams.

PULVIS LÆTIFICANS. GALENI:

Galen's Cordial Powder.

Take of cloved Basil-flowers or Seeds, Saffron, Zedoary, yellow Sanders, Cloves, Citron-peels, Galangal, Mace, Nutmegs, and Storax, each two Drams and an half; Ivory-raspings, Aniseeds, Thyme, and Dodder, each a Dram; the Bone of a Stag's Heart, Pearls, Camphire, Ambergrise, and Musk, each half a Dram; Leaf-gold and Silver, each half a Scruple: Make them into a Powder together, according to Art.

PULVIS MARCHIONIS. See MARCHIONIS PULVIS.

PULVIS COMITIS WARWICENSIS.

Earl of Warwick's Powder.

Take of Scammony, prepared with the Fumes of Sulphur, two Ounces; diaphoretic Antimony, one Ounce; the Crystals of Tartar, half an Ounce: Make them all together into a Powder. It is a smart Purge, and frequently given to Children, against Worms, from five to fifteen Grains; and, to Adults, from fifteen Grains to half a Dram.

PUMEX. Offic. Schrod. 355. Marth. 1371. Kentm. 37. Boet. 400. Gefn. de Lap. 31. De Laer. 130. Worm. 47. Charlt. Foss. 21. *Scyrus Lapis*. Aldrov. Mus. Metall. 696. *Lapis Pumex dictus*. Cap. Hort. Cach. Supp. 2. 53. THE PUMICE-STONE.

This is a porous and spongy Stone, full of small Cavities and Perforations, and found in Germany, whence it is transported to us. It is of a refrigerating, drying, and extenuating Quality. It gently cleanses Ulcers, and renders Cicatrices full and seemly. *Schrod.* In Mount *Vesuvius*, *Ætna*, and other burning Mountains, large Quantities of this Species of Stone are found with the Sulphur. The Uses of it are enumerated by *Wormius* in his *Museum*. *Dale*.

PUNCTA LACHRYMALIA. See FISTULA LACHRYMALIS, and OCULUS.

PUNCTICULARIS FEBRIS. An eruptive Fever, or a Fever attended with Purple Spots.

PUNCTUM SALIENS. The first Rudiments of the Heart in the Fœtus.

PUNCTURA. A Puncture. *Punctura aurea*. See HERNIA. PUNICA.

The Characters are;

The End of the Pedicle passes into an Ovary, on whose Top grows a monophyllous multifid Calyx, of a very florid red Colour, and shaped like a Bell. The Flower is rosaceous, polypetalous, growing on the Ovary within the Calyx, and furnished with very numerous Stamina. The Ovary, after the Flower is fallen off, and the Stamina wither'd, contracts the Calyx into an Umbilicus, and passes into a Fruit, resembling an Apple, and containing, under a very rough Rind, and vinous Pulp, a Multitude of Capsules full of numerous Seeds;

Boerhaave mentions three Sorts of *Punica*; which are,
1. *Punica*; quæ *Malum Granatum* fert. *Tourn. Inst.* 636. *Boerb. Ind. A.* 2. 250. *Granata*, *Mala Eunica*. Offic. *Malus Punica*. J. B. 1. 76. *Raii Hist.* 2. 1462. *Malus Granata sive Punica*. Ger. 1262. *Emac.* 1450. *Malus Punica sativa*. C. B. P. 438. *Park. Theat.* 1510. *Parad.* 428. THE POMEGRANATE-TREE;

This Tree grows not to be of any great Bigness, even in its native Countries, having on its Branches here-and-there a few Thorns; the younger Shoots are of a redish-brown Colour, and have their upper End pretty thick-set with long narrow smooth Leaves, two Inches in Length, to half an Inch in Breadth; among these come forth the Flowers, of a glorious scarlet Colour, consisting of five Leaves, set in a tough brown Calyx, which, in time, enlarging itself, becomes the Bark or Covering of the Fruit, having a Crown on its upper Part, being, in Shape and Bigness, like an Orange, but with a browner and harder Peel, in the Inside of which grows a great Number of corner'd Acia or Kernels, compacted close together in a regular Order, containing either a sweet vinous Juice, or one more acid and acerb, with a little Stone in the middle of each. Pomegranates grow in Spain, Italy, and many other Countries, and flower in June, and the Fruit is ripe in September. The Balaustines are the large double Flowers of the wild Pomegranate Tree; which differs not in its manner of Growth from the other. See BALAUSTIA.

The Balaustines, as well as the single Flowers, and the Bark, are very drying and restringent, good for all sorts of Fluxes, Hæmorrhages, and Bleedings, both inward and outward: They strengthen the Gums, fasten loose Teeth, help the Falling down of the Uvula, and cancerous Ulcers in the Mouth and Throat. The Fruit is grateful to, and strengthening of the Stomach; stops Looseness, and the immoderate Flux of the Terms; and is useful in hot bilious Fevers, and Gonorrhœas.

Official Preparations are only the Syrup of the Juice. *Miller's Bot. Off.*

2. *Punica*, fructu dulci. T. 636.

3. *Punica*; flore pleno; majore. See BALAUSTIA, and *Punica*; quæ *Malum Granatum* fert. *Boerb. Ind. Als. Plant.*

PUPILLA. The Pupil of the Eye. A Dilatation of the Pupil of the Eye is esteem'd a Sign of a general Relaxation of the Fibres; and a Contraction thereof, a Mark of Stricture. See OCULUS.

PUPPIS OS. The Os FRONTIS. The Suture in this Bone is call'd the *Sutura Puppis*.

PUPULÆ. The Extremities of the Fingers.

PURETTA. An heavy sort of Sand, or magnetic Powder, found near Genoa, on the Sea-shore. It is not us'd in Medicine.

PURGAMENTUM. The Lochia; or the Excrements discharg'd by Stool.

PURGAMENTUM STELLARUM. The same as COS-LIFOLIUM.

PURGANTIA. Purgative Medicines. See CATHARTICA.

PURGATIO. See CATHARSIS.

PURGATORIUM, in *Paracelsus*, is a Name for any Disease.

PURPURA. Offic. *Purpura nostras violacea*. Col. de Purp. 1. *Purpura violacea*. *Fab. Columnæ*. List. Hist. Conch. 4. Sect. 15. n. 1. *ex Terentino Sinu allatæ*. *Bonan.* 150. n. 172. THE PURPLE-FISH.

This Fish is frequently found in the Mediterranean Sea. In the Shops no Part of it is us'd, except the Shell, which is strong, furrow'd, striated, and rough, with short Tubercles. In former Ages the Sanies of this Fish was us'd for dying: The Shell is of an alkaline Quality, and in Virtues agrees with other testaceous Medicines.

In describing the Purple-fish, the Antients were so short and obscure, as to lay a Foundation for the Moderns to dispute what kind of Shell-fish they meant by that Name, since they describe various Species, the Sanies of which dyed a purple Colour. But *Fab. Columnæ* has determined the Controversy, by discovering the true Purple-fish. But tho' at present the true Purple-fish is hardly known in our Shops, yet, as Dr. *Martin Lister* observes, an Account of its Juice has been traditionally handed down from the earlier Ages to our own Times; but that this Juice was reckon'd among the Arcana, and carefully conceal'd, till Dr. *William Cole* discover'd it in *Act. Philosoph. Lond.* N° 178. Besides, Dr. *Robert Southwell*, President of the Royal Society many Years ago, informed Dr. *Lister*, that whilst his Mother liv'd in Ireland, she was famous for staining Handkerchiefs with the Juice of a certain Fish, the Colour of which could not be washed out. The Art of Dying Purple was, also, not only known, but highly esteem'd, in England, in the Times of *Bede*; for, says that Author, in *Hist. Eccles. Gentis Angliæ*, Lib. 1. Cap. 1. there are large Number of Shell-fishes, by means of which a purple Colour is dyed so strong and beautiful, that, instead of being tarnish'd by the Influence of the Sun, or the Injury of the Rain, the older it grows, the more beautiful it becomes. *Dale*.

PURPURA.

The Purples, a Disorder which at present rages universally, is a Disease of a peculiar Nature; proceeds from a Scurvy; and is accompanied with an Eruption of Efflorescences, on the Surface of the Body, sometimes with a pretty acute and malignant Fever, and, at other times, without such a concomitant Symptom, gently, though for a long time, disturbing the Functions of the Body.

As the Purples is a peculiar Species of Exanthematous Disorder, it is expedient to inquire, by what Circumstances it may be distinguished from other Diseases of the Exanthematous Kind. The peculiar and essential Characteristics, therefore, of the Purples are these following: First, the Papulæ, which appear, are accompanied with a Corrugation, Roughness, and Driness of the Skin. Besides, no Exanthematous Matter is so moveable, as that of the Purples, which frequently and quickly retire, to the internal Parts, and, after some time, appear again on the Surface of the Body. Nor is any of the Exanthematous Disorders so frequently attended with alternate Heat and Cold, Itchings, and pungent Pains. Besides, all the other Species of Exanthematous Disorders appear equally on all the Parts of the Body; whereas the Purples principally discover themselves on the Neck, Breast, Back, and Arms, rarely infesting the inferior Parts: By which peculiar Marks it may be easily distinguished from the Small-pox, Measles, Petechial Fever, scorbutic Spots, Chicken-pox, that Fever accompanied with Efflorescences resembling those excited by the Stinging of Nettles, the Herpes, the Itch, Phlyctenæ, and the Impetigo.

The Efflorescences of the Purples differ much with respect to Bulk, Figure, and Colour; for sometimes the Papulæ are red, and sometimes white. Hence the Purples are distinguished into those of the red and those of the white Kind. The former Kind has Vesicles more or less broad, which contain a Liquor; whereas the latter has no Vesicles, but only small Nodes, deep-seated in the Skin, resembling the Figure of a Grain of Millet, rough to the Touch, and infarcted with a thickish, and, as it were, purulent Humour. Hence the former Disorder is called the *white Miliary Purples*.

The Purples are, also, observed to be more or less benign or malignant; those of the malignant Kind are more acute than the other, accompanied with a continual Fever, and Symptoms highly offensive to Nature. But the benign Kind continues long without a Fever, is accompanied with Symptoms less offensive to Life, and seizes and proceeds principally with these Signs: This Disorder is preceded by a slight Horripilation; which is succeeded by an intense Heat, accompanied with a Languor, and Loss of Strength, which, in weak Habits, proceeds to a Delirium. The Præcordia are constricted, and the Breast oppressed. The Patient, is, also, afflicted with deep Sighs, Anxieties, Inquietudes, Watchings, or laborious and disturbed Sleeps; an Heat, and pungent Pain, are perceived in the Back, whilst the Heat and Cold are alternate, and most sensible, in the Palms of the Hands. In Child-bed Women, the Lochia are retained; and the Milk in the Breasts, being reformed, ceases to flow from them. These Symptoms are succeeded by a Roughness and Corrugation of the Skin, like that of a Goose, with innumerable Papulæ, either red or white, or both, mixed with each other, in Figure and Smallness resembling Millet-seeds; and which first appear on the Neck, then on the Breast and Back, and, last of all, on the Arms and Hands; and, upon the Eruption of these on the Surface of the Body, the Symptoms, which were before violent, especially the Anxiety of the Præcordia, the Cardialgia accompanied with a Syncope, the Inquietude, the Compression of the Breast, and the Difficulty of breathing, are considerably mitigated. The Pulse, which was before hard and quick, is now soft, free, and slow; the depressed Vigour of the Mind returns; the dry Skin becomes moist; and the Patient, who was before so costive, that he could discharge no Flatulences, has his Body rendered soluble; and sometimes not only the Flatulences, but, also, the Fæces, are spontaneously discharged.

There is a considerable Remission of the Symptoms, either in the red or white Purples, or in a Mixture of both, if they constantly continue after the Eruption; for the Vesicles, which are full of a fetid Ichor, are gradually enlarged; nor do they quit their Station, and retire: The Urine is, also, more saturated; the Sweat, which in this Disorder is highly fetid, breaks out; the Discharge of the Lochia returns; and the Milk is restored to the Breasts; the Body being either spontaneously soluble, or rendered so by a Clyster, or Suppository, the Fæces and Flatulences are discharged; and, in seven, or more Days, the Pustules disappear, with a considerable Itching of the Extremities, and the Patient is gradually restored to Health: For all these Circumstances indicate, that the Patient is not excessively weak; but that the solid Parts as yet retain their moving Force and Vigour; and that the whole Temperature of the Blood, and lymphatic Juice, is not destroyed; in consequence of which, the adventitious and unfriendly Matter is continually and equally separated from the vital Juices, and conveyed from the internal to the external Parts.

But it is otherwise in the malignant Purples, in which, after a sufficient Eruption of the Efflorescences, the Pulse is preternaturally quick; nor does the Sleep return, nor is the Inquietude allayed, nor the Respiration rendered free; besides, there are generally too copious Profusions of Serum by Sweat, which, if they happen in the Beginning of the Disorder, induce a great Loss of Strength, and, as it were, a paralytic Resolution of the Skin. Purples of the malignant Kind may be, also, known by the pale, thin, and copious Urine, or the continual Stimulus to discharge the Urine; as, also, when the Urine, which was before high-

coloured and saturated, suddenly becomes pale, limpid, and thin; in consequence of the spasmodic Stricture of the Kidneys, and urinary Passages.

It, also, frequently happens, as a bad Omen, that in the Purples the Pustules sometimes appear, and at other times disappear, whilst the Symptoms are always equally violent; all which evince, that the Force of Nature is impaired, the Strength diminished, and the Tone of the Skin, that nerveo-tendinous and porous Emunctory, through which the whole Mass of Blood and Humours is purged, is destroyed; so that its most external, nervous, and sensible Portion is sometimes spasmodically contracted, and sometimes relaxed. But it is still a worse Sign, if the peccant Matter, returning, is firmly lodged in the internal Parts, and resists all Attempts to expel it again to the Surface of the Body; by which means the Symptoms are rendered more violent; the Oppression of the Breast, and Sighing, are augmented; the Loss of Strength, and the Anxiety of the Præcordia, accompanied with Inquietude, increased; and all the other Circumstances rendered worse. Hence all, who are taken off by the Purples, die on account of the Recess of the peccant Matter, and the Increase of the Symptoms produced by that Cause; for tho', before the Eruption of the Purples, the Matter producing the Disorder is highly malignant and peccant, yet, when it is separated from the Mass of Blood, and placed without the Limits of the Circulation, it, by its Continuance, assumes a far worse Nature; and, if it returns to the Parts subservient to Life, especially those destined to the Purposes of Sensation and Motion, it operates in a manner resembling that of Poison. Hence, as, in all Exanthematous Disorders, such as petechial Fevers, Small-pox, Measles, Gutta Rosacea, Itch, Scald-head, Gout, and Arthritis, a certain Matter, unfriendly to Nature, and at the same time propelled to the external Parts, renders the Symptoms more violent if it returns to the internal Parts, and mixes with the vital Juices, so it is certain from Experience, that, upon the Disappearance of the Purples, the Sordes received into the internal Parts of the Body are of a like hurtful and prejudicial Quality.

That the Event will be fatal, and that the Death of the Patient is not far off, may be known from the following Signs: If, in consequence of a deleterious Matter firmly lodged within, the internal Parts are excessively hot, whilst the external Parts, being constricted, are covered with a profuse cold Sweat; or if an intense Heat of the external Parts, and a considerable Sense of Refrigeration in the Abdomen, are alternately perceived; if there is a subsultory Motion of the Tendons; if the Hippocratic Face appears; if the Defect of Strength increases; if an uneasy Despair disturbs the Mind; and if the Pulse is hard, unequal, and tremulous: For, if these Symptoms happen, the Patient is generally soon after seized with a Delirium, which proves mortal.

Though the Purples, with or without a Fever, is often a primary or idiopathic Disease, yet it is frequently, as a Symptom, complicated with other Disorders, especially continual Fevers, when near terminating, and is then not without Danger; for it very frequently happens, that the red or white Purples, or both together, happen in the Decline of the Small-pox, Measles, putrid Synocha, burning Fevers, petechial Fevers, and those resembling them, and other epidemical Disorders; on which Occasion they induce a new Fever, accompanied with a violent Train of Symptoms; so that when Persons, labouring under acute Fevers, are apparently out of all Danger, they are suddenly seized with an Horror, Uneasiness, Inquietude, Watching, preternatural Heat, and Loss of Strength, whilst the Purples, in the mean time, here-and-there appear on the Surface of the Body; and, by extinguishing the Strength exhausted by the preceding Disorder, generally put an End to the Patient's Life. I have, in a particular manner, often observed, that the symptomatic Purples were fatal to young Persons labouring under acute Fevers, who have before lived intemperately, indulged themselves in drinking to Excess daily, consumed their Strength in Venery, and induced a foreign Crasis and Disposition of their Humours; as, also, to Patients, who, during the Progress of the Disorder, have been so costive, as to discharge none of the Excrements for some Days; and to those, who have had too large Quantities of refrigerating and acidulated Medicines exhibited to them, such as Julaps and Potions. The Purples not only frequently appear in the Decline of acute Disorders; but, also, often, in the Beginning and first Days of the Disorder, something like the Purples appear with a kind of Roughness, especially in the Small-pox and Measles, tho' very rarely with an happy Termination of the Disease; for this Circumstance is an infallible Proof, that the Mass of vital Humours is filled and contaminated with various excrementitious Sordes. The Purples, also, accompanied with a Cough, and Difficulty of breathing, a Vomiting, or Flux, frequently attend the catarrhus Fevers of Children. In this Case, if the Disorder is in the Decline, the Purples are succeeded by a Swelling of the Feet, and sometimes of the Abdomen, with or without a Driness of the superior Parts; and the Purples, as is observed in the mountainous Parts of the upper *Black Forest*, are totally removed by Sweats, either arising spontaneously, or procured by Art.

The red Purples are, from the Beginning, always accompanied with a kind of febrile Commotion, which is perpetually exasperated towards the Evening: Yet, in Process of Time, the Fever, and Frequency of the Pulse, are mitigated; the Symptoms allayed; and

and the Disorder assumes a benign Nature. Hence, if, in the Beginning, this Disorder is imprudently treated, and if the Body is cacochymic, or full of impure Juices, it frequently continues for several Months, nor without great Uneasiness to the Patient, and fresh Returns of the Symptoms, though the Disorder generally terminates happily.

That the Purples are the Offspring of the Scurvy, we have already observed: But this will be more effectually evinced, if we diligently consider the material Cause of both Species of Purples, which, as well as that of a Scurvy, depends upon a Dyscrasy of the Blood. But, in assigning this Cause, I am of Opinion, that our Sentiments quadrate with Truth, when we affirm, that the red Purples arise from an impure, saline, acrid, sulphureous, and excrementitious Serum; and the white Purples, and an acute Miliary Fever, from the Lymph, and nutritious Juice, approaching to an acid, vapid, and putrid Nature; for both these Juices of the human Body are of a different Nature; for the Serum is called that Humour, which, being mixed with the Blood, and impregnated with many saline and mucid Parts, to be secreted and eliminated through numberless Emunctories and Strainers, is of a thickish Consistence, and of various Colours and Tastes. But the Lymph is that pellucid, inspid, and pure Liquor, the more subtle Part of which affords the Matter of the Fluid of the Brain, Spinal Marrow, and Nerves, as, also, of the seminal Liquor. The gelatinous Parts of this Fluid nourish all the Solids of every kind, and its finer aqueous Parts are, through the lymphatic Vessels, by means of the Valves, and conglobate Glands, again conveyed to the Heart; where, being again united with the sweet aereo-elastic Parts of the Blood, and, as it were, animated afresh, it is with it conveyed to all the Parts of the Body, for proper Uses. Hence, when these Fluids recede from their natural State and Disposition, they acquire a peculiar kind of Corruption; from which afterwards arises the different Genius of the Disease, the different Violence of the Symptoms, and the greater or less Danger.

That, in the white Purples, the Lymph is tainted with a kind of Acidity, is obvious from many Circumstances; and especially that a redundant Acid is contained in the Mass of Blood and Lymph, we may know from the excessive Secretion of Serum, usual, if not essential, to this Disorder; for such is the Force and Nature of an Acid, that, when it insinuates itself into the Blood, it coagulates its thicker Parts, and produces a Secretion of Serum; we may know by which means profuse Sweats are promoted, a copious Discharge of thin Urine occasioned, a Salivation excited, or aqueous Stools brought on.

Having premised these things, we now come to inquire, why the white Purples are most incident, and generally fatal, to Child-bed Women. As, therefore, in general, all those, whose Bodies contain a Redundance of lymphatic and aqueous Humours, as most Women do, are rather subject to an acid Vapescence, than a salino-sulphureous Corruption of the Humours; for which Reason they are principally seized with the white Purples; and this is, in my Opinion, the true Cause of the Frequency of this Miliary Fever in Child-bed Women; for, in the Uterus of pregnant Women, both the Progress and Return of the Blood, by reason of its too great Congestion in that Part, and the Distention of the Vessels, is very languid, slow, and difficult; hence, the Blood stagnating long there, the lymphatic Humour is copiously secreted into the Vessels destined for its Conveyance; and, remaining, as it were, pent up in their Cavities and Windings, by its long Continuance becomes vapid, is corrupted, and contracts an Acidity, whilst the more subtle spirituous Parts, the best Preservers of the due Mixture of the Fluids, fly off. When, therefore, after the Birth of the Fœtus, the Uterus collapses, and is contracted, whilst the squalid lymphatic Humour, and feculent Blood, are not discharged and eliminated, on the third Day, generally, after the Labour, a febrile Motion happens; by which the peccant Lymph and Blood are repressed into the larger Vessels, conveyed to the Heart; and thence, like a malignant Leaven, diffused through the whole Body in such a manner, as to infect and contaminate the whole Mass of Blood, Lymph, nutritive Juice, and nervous Fluid.

But if the Impurity and Dyscrasy of the Blood and Serum is of the saline, acrid, and sulphureous kind, the Symptoms are not so violent, but the Efflorescences are more chronic; the Face is inflated and high-coloured; the Eyes are sparkling; the itching Heat, and Sense of Puncture, in the Skin, are greater; nor is the Patient afflicted with so great Inquietude, Anxiety, and Difficulty of breathing; which Circumstances lay a Foundation for greater Hopes of Recovery. He may, also, be presumed to be in a fair way, unless the white Purples succeed those of the red Kind, or the red should be changed into white, which frequently happens in consequence of a bad Regimen, a preposterous Cure, or the Influence of violent Passions; whilst the superabundant Lymph is corrupted, and, at last, in the Fever, and hot intestine Motion of the Parts, the spirituous, fine, and sulphureous Parts, fly off, leaving behind those of a gross, acrid, and vapid Nature.

Besides, if we more narrowly consider the Origin and Nature of that Matter, which produces Purples of a chronic and less dangerous Kind, we shall find, for several Reasons, that it principally

consists of the salino-sulphureous and acrid Particles of the Serum, which are not eliminated through the Emunctories, especially the Skin, but remain in the Habit, and, by the hot intestine Motion, assume a worse Quality. This is confirmed by Experience, because the Purples of a chronic Kind generally seize those, whose Bodies abound with impure Blood, such as scorbutic Persons; old People; Women whose Menstrues are suppressed; Men whose usual hæmorrhoidal Discharge is obstructed; those who are accustomed to a saline, vinous Diet, coarse Malt Liquors, and smoking Tobacco; as, also, those, who have loose Habits of Body, and such as lead too sedentary Lives. Besides, the Cause of this Disorder is generally a sudden Suppression of Perspiration; and, by that means, a Repulsion of the Sordes; either by a cold Air compressing the Pores, drinking too cold Liquors, or sudden Frights. I have known Instances, in which Persons overheated, and covered with a profuse Sweat, have, after a Train of violent Symptoms, been seized with an Eruption of the Purples; many, also, upon exposing their Bodies to cold Northerly Winds, after they have been overheated in Bed, by the Heat of the Sun in travelling, or that of dry Baths. The cold and tempestuous Constitution of the Atmosphere long continuing, and obstructing Perspiration; is the Cause that the Purples so frequently recur, particularly after the Winter Solstice, especially in the Months of *January* and *February*. The surprising Influence of a cold and Northerly Wind, in intercepting and suppressing even the preternatural Excretions through the Skin, is, by a memorable Instance, confirmed by *Lazarus Riverius*, who, in *Obs.* 53. informs us, that a certain Boy was afflicted with an Imperigo, which discharged an ichorous Matter; but that Northerly Winds coming on, this fetid Matter was suppressed, conveyed to the Lungs, and excited an Asthma, which did not cease till the Return of Southerly Winds.

But nothing more effectually discovers the salino-sulphureous Substance, in the Purples of the chronic Kind, than that those Medicines, which involve and correct the saline Spiculæ, such as Whey, together with Goats and Asses Milk, mixed with the *Selterian* Waters, as, also, temperate Decoctions used for ordinary Drink, not only afford Relief, but, also, totally cure the Purples. Besides, though this Species of Purples is free from Danger, yet, if it is treated with too much external Heat, internal heating, or volatile Medicines, in the same manner as in the Itch, ulcerous Pustules, and other Defections of the Skin, arising from a peccant and saline Disposition of the Humours, the Heat, Pain, and Itching, are increased, and frequently a Thirst and Fever excited; because the Salts, being, by these means, rendered more acrid, insinuate themselves deeply into the small Fibres of the Skin, which they lancinate and vellicate.

This chronic Exanthematous Disorder is more uneasy, and accompanied with a far greater Itching and Heat, than the white Purples mixed with the red; which can only be ascribed to the saline and acrid Particles pricking the sensible Substance of the Skin. The saline Acrimony of the Humours is, also, evinced from this; that salutary, sweet Waters, free from a saline Element, and a purgative Quality, such as those of *Laubstad*, when drank by those afflicted with the habitual Purples, have rendered the Body remarkably soluble, procuring daily six or eight Stools, the Matter of which is so acrid, as to corrode the Anus; whilst, a few Days after, the purgative Effect gradually ceases; nor, if next Year the Drinking these Waters is repeated, does the same purgative Effect follow. It is, also, to be observed, that, in the Purples, especially of the obstinate, chronic, and scorbutic Kind, after the Use of Milk, or temperate mineral Waters, I have, with great Success, ordered a Bath of sweet Rain-water, by the repeated Use of which all the Puncture, Heat, and Itching, of the Skin were removed, and the Efflorescences disappeared; an infallible Proof, that, by correcting the Acrimony of the Humours within, and eliminating the acrid Recrements lodged under the Skin, through the Pores relaxed in the Bath, the Disorder is removed, and the Patient cured.

We shall now specify the Reasons, why no Exanthematous Disorder, when cured, so easily and frequently returns, as the red scorbutic Purples. This Effect, then, seems to be produced by two Causes: First, because, in this Disorder, the Tone of the Skin is considerably injured and destroyed; and, secondly, because the Subject and Seat of frequently returning Purples are the conglobate Glands; for as the Skin is an universal Emunctory to all the Humours, and of singular Use in the Preservation of Health, so the Injuries done to the Constitution by any Disorder in this Emunctory are certainly very great: But this Covering of the Body is easily injured by various Causes; since it is not only composed of the sensible Filaments of the Extremities of the Nerves, but is, also, totally tubulous and porous, because the small Mouths of the minute Arteries, which convey the subtle, exhalable Matter, terminate in it; for which Reason, both with respect to its Tubes and Pores, as, also, with respect to its Substance, it has not only a subtle Motion, and Tone of Dilatation and Constriction, but, also, an exquisite Sensation. Hence, the greater the Sensibility of the Skin is, the more subject to Injuries it is, and the more easily its due Motion is perverted. It is, in a particular manner, easily altered and constricted by cold Northerly Winds,

Winds, and relaxed by moist warm Southerly Winds; so that it constitutes a true microcosmical Hygrometer. External Causes, also, which hurt, prick, cut, or are possessed of a corrosive Acrimony, as, also, acrid Medicines, those of a too heating Quality, and refrigerating, pinguious, and inspissating Substances, are possessed of a singular Power, not only of impairing, but, also, of destroying, the Tone of this Integument. But when this Tone is changed and destroyed, the salutary Excretion of Perspiration through the small Orifices of this Strainer, must, at the same time, be greatly injured.

When, therefore, the vascular and fibrous Texture of the Skin is injured, and its Tone, by the Assistance of which the recrementitious Matter is eliminated by Exhalation; and laudable Juices restored, is destroyed, a bad Disposition and Weakness are induced, and more firmly take Possession of the Fibres; so that the impure Humours, easily conveyed thither, again act upon this weakened Part, and become stagnant. And certainly, this preternatural Disposition of the Skin to produce such Stagnations, and the Difficulty of removing them, are sufficiently obvious from the Gutta Rosacea, which, by injuring and depraving the tender and tubulous Texture of the Skin in the Face, by a copious Congestion of Ichôr, is not to be cured, and totally extirpated, without great Difficulty. Hence, since, by a frequent Approach of the purpuraceous Matter to the Skin, its Tone, Motion, Strength, and tubular Texture, are greatly changed and corrupted, it is not to be wondered at, if, the excrementitious Matter being again there collected, the same Disorder should again happen, and an Efflorescence of the Purples be produced.

Having thus explained what seemed necessary to point out the material Cause of both Species of the Purples, we now come to consider what Circumstances contribute, in a more remote manner, to the Generation of these Disorders. First, then, the Purples, especially of the chronical and protracted Kind, are most incident to those, who abound more with Serum than Blood, such as Infants, and Women of a spongy Habit, generally called *phlegmatic*; and the more the ferous Humours discharged recede from their natural Purity, and mild Temperature, and the more sordid they are, the more difficult is the Cure, and the more dubious the Success, of the Disease.

It is, also, certain from Experience, that the Purples, both chronical and acute, as, also, malignant Miliary Fevers, are most incident to Women of weak and delicate Habits, to such as have their Strength impaired by violent Passions, especially long Grief, or by profuse Hæmorrhages during Abortion, or an Excess of the menstrual Discharge, or by a long-protracted previous Disorder; for, in such infirm and weak Habits, the lymphatic, mild, and nutritive Humours easily contract a foreign Nature and Taint, because, in consequence of the weakened Strength of the Solids, the Circulation of the Fluids is restored slower, and, the Secretions and Excretions being hindered, Crudities and Sordes are generated and accumulated in the Body.

But a Fever, accompanied with Miliary Purples, is principally incident, and often fatal, to Child-bed Women. This generally appears about the third Day after Labour, when the Milk Fever generally comes on; but it, also, sometimes seizes on the seventh, and sometimes on the fourteenth Day. In order to investigate the Causes of this Disorder, we are to overlook no Circumstance which can lead us to understand its Origin and Generation. Now it is certain from Experience, that poor Countrywomen of robust Constitutions, and accustomed to Exercise, are not in Child-bed seized with this Fever, whereas rich, tender Women, addicted to a sedentary Life, much Sleep, Luxury, and high Living, as, also, those, who are of delicate Constitutions, and such as are subject to tumultuous Passions and Commotions of Mind, are easily obnoxious to the Purples after Child-birth: And it seems to be true, that, as rich and easy Living, which, excluding hard and saline Aliments, consists of light Aliments, farinaceous Substances, light Cakes, Sweetmeats, fermentable Substances, Summer Fruits, and palatable Meats and Drinks, as, also, an impure, vapid Air, impregnated with sordid and putrid Exhalations, arising from adjacent Marshes and Standing-water, together with the Impurity of the Water, contribute greatly to the Generation of all Diseases, so they, in a particular manner, induce the Purples. From these Circumstances we are to deduce the Reasons, why this Disorder rages so much at *Leipsic*, which is situated low; and, on account of the adjacent Marshes, affected by an insalutary Air, whilst, at the same time, the Inhabitants live in a delicate and luxurious manner. For these Reasons, also, in *England* this Disorder first appeared in *London*, where the State of the Air, and the Method of Living, are the same; nor is it to be doubted, but that, elsewhere, Women, who live in the same manner, and in unhealthy Places, are frequently subject to this malignant Fever.

It is, also, observable, that pregnant Women, who are costive, use a sedentary Life, and, neither in the middle nor last Months of their Gestation, diminish the Plenitude of the Vessels by Venesection, are, when in Child-bed, in a very bad Condition, and generally afflicted with the Purples: For, since almost all pregnant Women contain a Redundance of Blood, and since, by reason of the Distention and Relaxation of the Tone of the Vessels,

the Circulation of the Blood and Humours is slow, and the Evacuation of the Sordes, by Secretion and Excretion, scanty, they successively contract impure and peccant Humours; so, if improper Aliments are used, and the Elements necessary for the Support of Health, are peccant, a far greater Corruption is induced, insinuates itself into the internal Parts, and afterwards proves prejudicial to Health, and sometimes produces mortal Diseases.

The Purples, especially of the Miliary Kind, generally seize Child-bed Women, if, in the first Days after Labour, the Lochia are not duly discharged, but are either totally suppressed, flow too scantily, stop too slow, or are forthwith suppressed by a sudden Fright, or the free Admission of Cold; for, in pregnant Women, by means of the Redundance of Blood and Humours, the vascular and cellular Texture of the Uterus is surprisingly distended and obstructed by the Congestion of the Humours; so that the Blood circulates slowly and with Difficulty there; and, not being totally consumed for the Nourishment of the Foetus, stagnates in the uterine Vessels, and becomes thick and feculent, till at last, the Foetus being excluded, the Lochial Blood is discharged from the Veins, by which the Placenta adhered to the Uterus. If, therefore, from a peccant Quality of the Blood itself, or a Defect of natural Strength, the corrupted Lochial Blood is not sufficiently evacuated, but, by an inverted Motion, passes into the larger Vessels, and is conveyed into the nobler Viscera, such as the Heart, Lungs, and Brain, it is not to be wondered at, that Fevers accompanied with a great Impurity and Corruption of the Serum, such as the Purples are, and other violent Symptoms complicated with them, should, by these means, be produced.

Besides, 'tis constantly observ'd in Practice, that Women, in consequence of an Obstruction of their Menfes, are far more severely and frequently afflicted with Purples, both of the acute and chronical Kind, than Men; for the Uterus may be justly accounted the Source of this Disorder, since according to *Democritus*, in *Ep. de Nat. Hum. ad Hippocrat.* that Part is the Source of a thousand Woes to Woman; and the Purples rarely happen to Women, if their menstrual Discharge is regular, sufficient in Quantity, and continued for a due time; but, if otherwise, they are frequently afflicted with this Disorder. Hence 'tis certain from Experience, that Women who from advanced Age, or any other Cause, have their Menfes totally suppress'd, labour under this Disorder longer than other Patients. Besides, if in young Women the Menfes are not regular, or discharg'd too scantily, especially if other Causes concur, the Purples, accompanied with a Variety of Symptoms, are generally produced.

'Tis, also, certain from Experience, that Women subject to the Fluor Albus, when that Evacuation is too small, or check'd, or totally suppress'd, by improper Measures, have been seiz'd with the Purples; and, when these have been cur'd, the Fluor Albus has again appear'd; and, when this has been remov'd, the Purples have again succeeded. Hence 'tis sufficiently obvious, that this Exanthematous Disorder is the Off-spring of the Serum. Nor is it to be wonder'd at, if at present, when the Fluor Albus is more common than in former Ages, the Purples should, also, for that Reason be more frequent.

Though the immoderate Redundance of Blood in those in whom it is not lessened by the menstrual or hæmorrhoidal Discharge, or by stated Venesections, greatly contributes to the Generation, especially, of the chronical Purples; yet the Impurity of a copious Serum, arising from the Penury of laudable Blood, contributes still more to the Production of the same Disorder. It is, also, frequently observed, that by imprudent Venesection, or immoderate Hæmorrhages, in consequence of Abortion, especially with the Concurrence of a violent Fright, or Anger, Refrigerations of the Extremities, Deliquiums, Inflammations of the Stomach accompanied with Anxiety, an Oppression of the Breast, and an alternate Sense of Heat and Cold in the Surface of the Body, have been produced; which Symptoms, upon the Appearance of the Purples on the third or fourth Day, are mitigated, and allayed: For nothing more effectually destroys the Tone, Force, and Strength of the Solids, or has a more immediate Tendency to bring on a virulent Quality of the Fluids, already impure, than tumultuous Commotions of Mind, especially long-protracted Sorrow, and Grief: Hence, if pregnant Women, hysterical Patients, or those labouring under Irregularities of the Menfes, are afflicted with violent Grief, it is a pretty sure Sign, that they will, in Child-bed, be seized with Purples of a bad Kind: Besides, Purples of a mild and benign Nature, in weak Habits, and such as are often under the Influence of enormous Passions, easily acquire a great Degree of Malignity, and portend the greatest Danger; and it is certain from Experience, that studious Men, and those addicted to a sedentary Life, after obstinate Grief, have contracted the Purples, and struggled under that Disorder for a long time.

A bad State of the Air, the Use of which is continually necessary to Life, and an irregular Constitution of the Weather, contribute greatly to the Production of the Purples; for as the Influence of the Air is very great, in perverting the State and

Crafs of the fubtile, nervous, and membranous Fluids, and all the other Juices; fo it is, alfo, of great Efficacy, in modifying and altering the Tone of the Skin, and the falutary Excretion of Perfpiration: So that it is not to be doubted, but epidemical Difcafes, and Purples, more or lefs malignant, are produced by the Impurity of the Air. Thus, fome Years ago, the Purples, accompanied with a catarrhus Fever, raged epidemically, efpecially among the Children of the *Lower Saxony*; and this Diforder derived its Origin from a previous, long-continued, cloudy, and rainy State of the Weather, fucceeded by cold eafterly and northerly Winds; as we are informed by *Boettigerus*, in his *Differt. de Purpura rubra epidemica*. In *Miscellan. Nat. Curiof. Dec. 1. An. 6.* we are told, that, in the Spring fucceeding an open and cloudy Winter, a malignant Purple Fever arofe, which, through the whole Spring, had its epidemical Circuits, and was principally incident and fatal to Children. An impure Air, impregnated with foreign and active Exhalations, is, alfo, the Cause why this Diforder is not only more eafily generated, but, alfo, more obftinately fupported, in fome Places, than in others. Thus, in large Towns, where the Air is impure, Perfons feized with the Purples are often cured by removing to more falutary Places; and again afflicted with the fame Diforder, upon their Return to fuch Towns, and ftaying in them for fome time. Hence the Reason is to be deduced, why the Months of *March* and *April* fo much favour the Production of catarrhus, exanthematous, and purple Fevers; for during thefe Months the Weather is generally heavy, rough, and changeable, whilft the Atmosphere is impregnated and contaminated with noxious Exhalations, arifing from the Rains, and melted Snow.

We have already confidered the principal Causes, which, efpecially in chronical Purples, have a great Affinity with thofe which generate the Scurvy; for, in this laft-mentioned Diforder, there is an acrid, faline, and fulphureous Dyfcrafy of the Blood, which, in the Purples, is only more exalted, and fubtile. The Generation of the Purples is promoted by a lax Habit of Body, long Diforders of Mind, Obftructions of the natural Secretions and Excretions, a vapid Intemperature of the Air, moift and low-fituated Places, improper Aliments, and thofe of hard Digeftion, a Defect or a Redundance of Blood, and other Things of a like Nature. Hence a difficult Queftion arifes, which is, Why, tho' all the Circumftances requifite to the Production of the Purples were prefent, this Diforder only began lately to appear. In deciding this perplexing Queftion, it muft neceffarily be acknowledged, that the fame Diforder muft have the fame common Cause: Now we have already fhewn, that in the Purples, efpecially of the chronical Kind, there is an impure, faline, and excrementitious Serum; that in the miliary Purples there is a Redundance of putrid, vapid, and acrid Serum; and that this Matter, contained in the Blood, whether acid, or acrid and faline, by the hot inteftine Motion, acquires a worfe Nature, fo as violently to affeet and irritate the nervous Parts, and, at laft, to produce this Exanthematous Fever, accompanied with violent Symptoms. We muft, therefore, direct our Views to other Circumftances, and confider whether, in Diet and Regimen, which afford the Matter, Temperature, and Intemperature, of the vital Humours, there is not fome Error, which about forty, and fome more Years ago, was unknown, or, at leaft, not fo univerfally praftifed. This Error, therefore, is the almoft univerfal Ufe, or rather Abufe, of warm Liquors, and efpecially of Coffee and Tea; for, in fome Parts, efpecially in *Germany* and *England*, Women of all Conditions ufe this Liquor, both in the Morning and Afternoon; and think it unpolite to fend their Neighbours away without drinking large Quantities of it: And it is obfervable, that the Purples reign and increafe moft, fince the drinking of thefe Liquors became fo customary, and efpecially in thofe Places where it is moft frequently ufed.

Though this Obfervation is fo fupported by Experience, that it cannot be doubted; yet its Truth may poffibly feem to be weakened by this, that though in the hot *Afiatic* Countries Coffee is much ufed, the Purples are yet unknown in thofe Climates. But this feemingly fpecious Objection falls to the Ground, if we carefully confider, that in thefe Places the Regimen is quite different from what it is in ours; that their Inhabitants do not ufe coarfe, hard, and falted Aliments; that the Air is purer and hotter, and Perfpiration more copioufly and expeditioufly carried on; and, which is of all other Circumftances of the greateft Importance, that the Inhabitants have no fcorbutic Taint in their Blood; for that a fcorbutic and impure State of the Humours is to be clafs'd among the Causes which contribute to the Generation of the Purples, is fufficiently obvious from this, that the Purples rage moft in Places moft infefted with the Scurvy, fuch as *England*, *Holland*, *Sweden*, and *Germany*: Hence the Diforder is called the fcorbutic habitual Purples. It is, alfo, obfervable, that where the Purples already rage, and afflict the Inhabitants, the fcorbutic lacerating Pains of the Limbs, the malignant Ulcers, the putrid

and bloody Gums, the broad and livid Spots, which are the effential and peculiar Symptoms of a Scurvy, are rarely afterwards obferved; or, at leaft, they are lefs frequent and violent, as we fhall afterwards fhew.

As, therefore, thefe Things which happen in other Climates, under another Regimen and Conftitution of Body, cannot be transferred and accommodated to the Situation of *Eurpeans*; fo this Subject will be more perfpicuous, if, from this Source, we explain the Method in which the Purples are generated. Now it is fufficiently known, that the excrementitious Impurities of all Kinds, feparated from the Blood and Humours, efpecially the bilious Sordes, and the fermentable Juice of a falival Nature, fupplied from the pancreatic Glands; as, alfo, the mucid Humours fecreted from the Blood, principally in the large Inteftines, fall down into the Inteftines: It is, alfo, certain, that in this winding Canal Feculences are produced, from Aliments of various Kinds, fuch as improper Acids, fermentable and half-corrupted Subftances, and Fifh; and that thefe Feculences, when mixed and collected, ought to be difcharged by Stool, as unfriendly and prejudicial to the vital Fluids. Whatever Things, therefore, hinder the Difcharge of thefe Sordes, and occafion their again entering the Mafs of Blood, certainly greatly contribute to render the Blood impure, by conveying into it thefe Sordes, which may be along with it propelled to the Emunctory of the Skin; tho' they cannot, like the Matter of the Sweat, be quickly diffipated; but, on account of their acrid Nature, deftroy the fenfible Skin, and, lodging there, form Spots, or Puffules: For it is daily obferved, that if cachectic and fcorbutic Patients are coftive, Puffules, a Gutta rofacea, and ulcerous Defedations of the Skin, are produced. It is, alfo, obfervable, that, in acute and burning Fevers, Coftivenefs is fucceeded by the Purples; whereas thofe who in the Decline of fuch Fevers have a critical Flux, are not feized with this fatal Exanthematous Diforder.

Now, upon an accurate Inquiry, we find it confirm'd, by Experience, that all warm Liquors, Tea, as well as Coffee, by increafing Perfpiration, and provoking Sweat, render moft Perfons coftive; and that violent Fluxes are ftopped by Sudorifics, exhibited with a proper Regimen, and drinking fome warm Infufion. Hence, if Perfons whose *Prima Via* are loaded with Impurities and Crudities, which ought to be eliminated by Stool, frequently ufe large Quantities of Coffee or Tea, it is not to be wonder'd at, if the bilious, faline, and fulphureous Sordes, being attenuated by the Heat, and afrefh diffolved with an aqueous Liquor, fhould return through the lacteal and lymphatic Veffels, which every-where occur in the large Inteftines, to the Mafs of Blood, where, by reafon of their Continuance and Commixture, acquiring a worfe Nature, they induce a foreign and hurtful Intemperature of all the Fluids; unlefs, by covering the Body well, or by the Advantages of a warm and temperate Atmosphere, they are duly and quickly eliminated by Perfpiration. Hence we infer, that all Perfons, whether Men or Women, who are coftive, and drink thefe warm Liquors, efpecially Coffee, whilft the Skin, at the fame time, does not duly tranfmit the Sordes, receive great Injury from fuch Liquors; fince, in fuch a Cafe, they greatly difpofe to the Generation of the Purples, efpecially if there is a previous fcorbutic Difpofition of the Humours; or if the Patient is under the Influence of violent Paflions, efpecially long-protracted Sorrow and Anger, which greatly favour the Accumulation of bilious Sordes in the *Prima Via*. On the contrary, thefe Liquors are not only harmlefs, but falutary, to thofe whose Bodies they render foluble, and who are difpofed to Perfpiration; for, in fuch Perfons, they contribute to the Elimination of Sordes of various Kinds.

Befides, Coffee-berries, the Product of another Climate, contain fomething of a foreign Quality, unfriendly to the natural Temperature and mild Mixture of the Blood in our Parts of the World; and in burning thefe Berries, efpecially in a ftrong manner, which is ufual, they contract fomething of a faline, volatile, and empyreumatic Sulphur, which is unfriendly to the Tone and Motion of the nervous Parts. Hence it happens, that in fome the drinking of Coffee produces a Tremor of the Hands, and Anxiety; and thefe Effects are produced the more, the more the Water is infpiffed by the Powder of the Berries much burnt. Befides, in this Liquor much Sugar is ufed, which, lodging in the Inteftines, and not finding an immediate Difcharge by Stool, ferments, and increafes the mucous and acid Crudities. From what has been faid, it is not to be wonder'd at, if, by the common Abufe of Coffee, the natural Mixture and Crafs of the confluent Parts of the Blood are greatly changed, and a foreign State of the Fluids induced; which, being conveyed to the Infants in the Uterus, along with the Blood, lays a Foundation for the Purples.

Though this Doctrine, with refpect to the Origin of the Purples, feems to be overthrown by an Affertion of *Welfchius*, in *Differt. de Purpura Lipf.* that this Diforder was known at *Leipf.*

Leipsic above sixty Years ago, when the drinking Tea and Coffee was not used; yet it will be found not to be subverted by this means, when we assert, that warm Liquors, especially Coffee, do not concur materially, but rather formally, to the Generation of the Purples; whilst, by the frequent Use of such warm Liquors, the Impurities of the *Primæ Viæ*, in consequence of the Patient being rendered costive, insinuate themselves into the Blood. Besides, if we carefully attend to the Living, Diet, and Regimen, used by pregnant and Child-bed Women at *Leipsic*, at the Time this Disorder appear'd, we shall find, that it proceeded from the Cause assign'd; for it is certain, that the Women of that Town are much addicted to Pleasure, lead an idle Life, indulge themselves in sleeping long, and almost daily use Sweetmeats, Summer Fruits, and farinaceous Substances, fried with Butter and Sugar; in consequence of which, they are costive, and, during their Pregnancy, collect a Redundance of Impurities: For which Reason they are frequently afflicted with the Fluor Albus. It was at that Time, also, customary, not only to confine Child-bed Women closely to Bed, but, also, as it were, to macerate them in warm Rooms; and, during the first Days of Child-bed, to exhibit only boiling-hot Broths, and Drinks; whilst they did not venture to remove the costive State of the Patient, by a Clyster, or Laxative; nor to use Venesection upon a Suppression of the Lochia. Any one who duly considers these Things, and compares them with what has been already said, must readily perceive, that such Management was the Cause why, at *Leipsic*, this Exanthematous Disorder appear'd before the Use of Coffee. This was, also, afterwards confirm'd by Experience; for after they discarded the hot Regimen, with respect to Child-bed Women, and admitted the Use of Laxatives and Venesection, the Purples became far less frequent, less dangerous and fatal. Though, therefore, the Use of Coffee cannot be accused of generating the Purples in *Leipsic*; yet it cannot be denied, that the Purples, which for a Tract of Years were confined to that Town, upon the Introduction of Coffee appeared elsewhere: So that the more this Liquor was used, the more this Disorder raged, and spread itself; and, which was a singular Circumstance not before observ'd, it generally associated itself with acute Fevers.

These Things are sufficient to demonstrate, that warm Liquors contribute to the Generation of the Purples, or the Conversion of the Scurvy into the Purples. But this Doctrine will be farther illustrated by the following Observation: The City of *Hall*, in *Germany*, both on account of its low Situation, and the adjacent stagnant and saline Waters, which emit large Quantities of aqueous Vapours, is surrounded with a moist Atmosphere; for which Reason it appears all beset with Clouds, to a Person who views it at a Distance. Hence the Reason is to be deduced, why, from the remotest Times, the Scurvy has raged in this City, so that the Inhabitants are frequently afflicted with the wandering Gout which they call scorbutic, Colics, Tumors, and scorbutic Spots; together with other Symptoms peculiar to the Scurvy; especially the various Disorders of the Gums. This I learned, when young, partly from my Father, and partly from other Physicians of that Town, who hardly prescribed any Medicine in which there was not some antiscorbutic Ingredient. And I myself, in my future Practice, observed the same Method with those who committed themselves to my Care, whose Disorders, on account of a scorbutic State of the Humours, I happily removed by Antiscorbutics. But, as soon as the Inhabitants began to use warm Liquors, especially Coffee, the Scurvy disappeared, and the Purples, both of the malignant and benign chronical Kind, began to rage, and proved very fatal at first, when the Nature of the Disorder was unknown. The same Effects were afterwards produced, by the same Causes, in *East Friseland*; so that it is not to be doubted but the Scurvy lays a Foundation for the Purples.

The Scurvy is, also, frequently converted into the Purples, by means of a Regimen, or particular Choice of Aliments, which our Forefathers used, either not at all, or but moderately; for in our Days most Men, addicted to Idleness and Luxury, think of nothing but gratifying their Palates by Variety of new-invented Dishes: Besides, not content with the various Products of their own Country, they are foolishly fond of Substances brought, through dangerous Seas, from the remotest Parts of the *Indies*. Though I do not absolutely condemn exotic Aliments, yet I must find fault with the modern Taste, which relishes none but somewhat acid and gently-pungent Food; which must, consequently, be prepared with large Quantities of Salt, Aromatics, Garlick, Onions, Pepper, and the various Kinds of Funguses: For such Aliments, by imparting a grateful Acrimony to the Tongue, partly make Persons eat too liberally, and, by that means, produce a Redundance of Crudities in the *Primæ Viæ*, just as scorbutic Persons do, by the Use of coarse Aliments; and partly procure a greater Effervescence of the Blood; which greatly contribute to the copious

Generation of saline and sulphureous Particles: So that, with the Concurrence of other Causes, the Purples are easily produced. Besides, the Use of spirituous Wines is at present so frequent, that in some almost the whole Mass of Blood is, as it were, converted into Wine.

To this Luxury in eating and drinking it is to be ascribed, that various Hæmorrhages, especially the hæmorrhoidal Discharge, are so familiar to many. Hence some Physicians, being misled, derive the Origin of all chronical Diseases in Women from an undue Discharge of the Menfes; and in Men, from a Suppression of the Hæmorrhoids: For which Reason, if such Disorders happen, they order the whole Intention of Cure to be directed to reduce these Evacuations to due Order; and, particularly, frequently, or even every other Day, exhibit Pills made after the manner of the *Pilule Becherianæ*, with a small Quantity of Aloes. But though this Hypothesis is less agreeable to Truth, yet I shall not hesitate to affirm, that the frequent Use of these Pills, in other respects safe enough, in some Persons greatly contributes to the Generation of the Purples; for if there is no natural Propensity to any Excretion of Blood, especially by the hæmorrhoidal Veins, it must necessarily happen, that by these means the Mass of Blood must be exagitated, and thrown into Commotions, and, by an Increase of the intestine Motion, a greater Quantity of saline and sulphureous Particles produced, which are the material Cause of the Purples: Soon after, all the Circumstances concur which accumulate the saline and sulphureous Parts of the Blood, render them more acrid, and fix them deeper in the Fibrils of the Skin. Hence it is not to be wondered at, that the Scurvy, which is a saline Disorder, changing its Nature, should degenerate into another Disease, such as the Purples.

Though we have intermixed the Prognostics of both Species of the Purples with the History of the Disease; yet we shall subjoin some Things with respect to the chronical Purples. Since, then, this Disorder is not accompanied with a Fever, it is not dangerous, unless when cured in a preposterous manner: It is, however, an obstinate Disorder, and generally creates great Trouble both to the Patient, and the Physician; for if the Fomes of the Purples fixes its Seat in the solid or internal Parts, it does not easily quit the Body, but, remaining within, generates violent Disorders; if, on the contrary, it is too impetuously expelled, it produces no less terrible Misfortunes. But this principally happens to those who have weak nervous Systems; or who, in consequence of an unequable Circulation of the Blood and Humours, are disposed to spasmodic Strictures; by which it happens, that a Redundance of impure Blood is with Impetuosity and Danger congested sometimes in the Head, sometimes in the Breast, and at other times in the Joints; by which means, a Train of violent Symptoms is excited: For if the Matter of the Purples retained in the Habit is conveyed to the Head, it produces Cephalalgias, Ringing of the Ears, Weakness of Memory, an Aphony, and sometimes Madness, apoplectic Fits, and Lethargies. If it is conveyed to the sensible Membranes of the Lungs and Diaphragm, it produces spasmodic Asthmas, and pungent lancinating Pains of the Breast. If it is deposited on the Membranes of the Stomach, Anxieties of the Præcordia, and Cardialgias, arise: If it seizes the Intestines, it produces Gripes, and Inflations of the Hypochondria, accompanied with an uneasy Sensation of Heat: If it is lodged in the Joints, they are distorted by cruel and lancinating Contractions: And, lastly, if the malignant Matter acts upon the tendinous and nervous Ligaments of the Hip, ischiadic Pains are produced. But all these cruel Symptoms lay aside their Virulence, and become milder, when the acrid caustic Matter is expelled to the Surface of the Body.

THE METHOD OF CURE.

For preventing a Return of the Purples, whether of the chronical, or of the acute and miliary Kind, nothing is more effectual, than Abstinence from all kinds of Malt Liquors, which are improper in this Disorder; since all of them, when old, contract an Acidity, and become too spirituous; and, when recent, are not only feculent and fermentative, but, also, contain coarse and mucid nutritive Parts: But all such Substances are so far from promoting, that they rather obstruct the Depuration of the Blood and Lymph, on which, however, the Whole, both of the Prevention, and of the Cure, depends. Hence, in hot and Summer Weather, I advise the Use of temperate mineral Waters, such as the *Selteran* Springs, and those of *Wildungen*, mixed with a small Quantity of Wine; but in the Winter, and to such Persons as could not procure such medicinal Waters, I have ordered, for common Drink, either pure Spring-water, or Decoctions of the Roots of Vipers-grafs, *Sarsaparilla* and Succory, Shavings of Hartshorn, and clean Barley, with the Addition of a few Fennel-seeds; taking a Pint of Water for every Ounce of the Ingredients, adding a little Wine, if the Patient's Situation can afford it. I have, also, on account

count of Custom, permitted the Use of small and well-defecated Beer, in some Cases.

In Purples of the Chronical Kind, I order Exercise, Traveling, and Change of Air, by removing from low to higher Places, Diversion, and Tranquillity of Mind, a Freedom from Care, and profound Meditations: I, also, prohibit the Use of all such Things as render the Patient costive, obstruct Perspiration, and generate a Redundance of Blood. Nor is the Patient liberally to use Flesh, especially Pork; nor Aliments highly peppered, or prepared with aromatic Substances. In the Summer Months I have ordered the Cure to be totally performed by Asses Milk alone, or Whey of Cows, or Goats Milk, or by the *Selteran* Waters, mixed with a third Part of Cows or Goats Milk, and drank for a Month, or six Weeks, interposing, now-and-then, a Bath of sweet Water, or of the *Lauchstad* Springs. And this Method, if the Disorder has been deep-rooted, I have ordered to be persisted in for three Years. In some Men, of corpulent Habits, I have, also, ordered the Use of the *Sedlitz* Waters; by a moderate Draught of which, for seven or eight Days, in the Spring and Autumn, the Fomes of the Disease has been carried off by Stool. I have, also, ordered many, afflicted with chronical, scorbutic, and habitual Purples, to drink the Waters of *Lauchstad*, by which the Sordes were copiously eliminated, the Patient continuing the Use of them, till their purgative Effects ceased.

When the Chronical Purples have been produced by a Disorder of the Uterus, and an irregular Discharge of the Menfes, my principal Intention has been, to restore these to their natural State; for which Purpose, besides the Measures already prescribed, I have ordered the Powder of Rhubarb, the Elixir viscerale, and washing of the Feet, to be daily used, a few Days before the menstrual Eruption. But if, as it generally happens, they are accompanied with spasmodic Strictures, an Inflation of the Stomach, Anxieties of the Præcordia, and Pains of the Back, I have used Antispasmodics; such as the *Pulvis Marchionis*, mixed with a little Nitre and Cinnabar, a Grain or two of Castor, and of the Extract of Saffron: This Intention is, also, answered by the anodyne mineral Liquor, mixed with the Essences of Castor and Saffron, and the bezoardic Liquor. The Patient must, also, use Baths of sweet Water and Milk. In order to provoke the Menfes, I have ordered weak Essence of Amber, extracted with an alkaline Liquor, by which means the Disorder was removed. In order to prevent the chronical Purples in plethoric Persons not subject to the Hæmorrhoids, Scarifications and Venesections are of great Efficacy for diminishing the Redundance of Blood; as, also, repeated Purgings, which may be most commodiously obtained by a Solution of Manna, which is in a peculiar manner adapted to Diseases arising from a saline Acrimony, adding to the Solution a saline Stimulus; such as the *Terra foliata Tartari*. The Night-sweats, also, with which those disposed to the Purples are often much infested, I have happily removed, by frequent Purgings, brought on by gentle Laxatives; such as Raisins, Rhubarb, the *Terra foliata Tartari*, and Cream of Tartar.

In the Cure of the chronical Purples, I order, that from the very Beginning of the Disorder the Patient should not be kept in too hot a Bed, or Room, but in a moderate Heat, lying as little in Bed as possible; by which means, I have found the troublesome Sweats prevented. Besides the above-mentioned Decoction for ordinary Drink, I have found no Medicine produce better Effects than a diaphoretic nervous Powder prepared of Hartshorn, both calcined and not calcined, Crabs-eyes, Mother of Pearl, Amber, purified Nitre, and Cinnabar. I have, also, observed excellent Effects produced by the anodyne mineral Liquor; so that by these two Medicines, exhibited in proper Doses, either in Conjunction, or separately, without the Use of any other Remedy, I have happily cured Purples, both of the acute and chronical Kind.

We now proceed to the Method of preventing and curing that bad Species of Purples generally incident to Child-bed Women in the Beginning, or about the Middle, of their lying-in. The Cause and Origin of this we have already derived from the improper Regimen of pregnant Women, and Errors committed with respect to their Diet; for which Reason these are carefully to be guarded against. In order, therefore, to prevent the Purples in Child-bed Women, the first Intention to be pursued is, to take care, that, during Pregnancy, a Redundance of Humours, and much more an Impurity of them from their Stagnation about the Uterus, be prevented, and no Weakness induced on the nervous System. This Effect, if the Body is turgid with Blood, can in no manner be better obtain'd, than by Venesection three or four times, though not very copiously, performed in the superior Parts of the Body. The Patient must, also, abstain from Idleness, long Sleep, Commotions of Mind, Sweetmeats, fermentable and farinaceous Aliments; but she is to use Aliments of a laudable Juice, and a pretty large Quantity of some salutary Drink: She is, also, to use moderate Ex-

ercise, and keep her Body soluble, rather by Aliments, than Medicines; exhibiting Raisins impregnated with Rhubarb, and prepared with or without Manna; for these are of singular Service to pregnant Women. And since Refrigerations of the Lower Belly are considerably troublesome to pregnant Women, and have a Tendency to generate violent Disorders, I always advise them to fortify their inferior Parts against the Cold; and, for that Purpose, to wear Drawers. In order, also, to prevent noxious Stagnations of the Humours about the Uterus, it is expedient, sometimes, especially after the middle of Gestation, to anoint and rub the Abdomen, before a warm Fire, with the *Balsamum Embryonum*, or with old generous *Hungarian* or *Rhinish* Wine, made hot, dropping a few Drops of the Balsam of Life into it: And these Measures are carefully to be taken during Gestation.

We shall now inquire, what Measures are to be taken before and after the Labour, and during the first Days of lying-in, in order to hinder Women from falling into violent Disorders, and the Purples, both of the acute and chronical Kind. As, therefore, this Disorder is easily produced, and Women weakened, by the imprudent Management of Midwives, who before the due Time solicit the Pains, and for that Purpose exhibit hot and spirituous Substances, I injoin great Moderation, with respect to every thing, lest the Strength should be impair'd, the whole Mass of Humours surprisngly exagitated by the violent Pains, and the Use of Analeptics, and the seculent impure Humours about the Uterus put into a more violent Motion; but the Discharge of the Lochia, and other Excretions, are to be duly promoted, that the Disposition to Diseases may be as little as possible.

The second Day after the Delivery, when all the Pains are over, it is necessary the impure Blood, collected in the Uterus during Gestation, should be evacuated, and the vital Juices freed from the Cacochymy they have contracted. Hence the Excretions of all Kinds, especially those by Stool and Perspiration, are gradually, but not impetuously, to be promoted, and carried on; which may be most commodiously done by the following means: Let the Patient carefully avoid the excessive Heat, either of the Bed, or Fire; and let her Drink be neither too hot, nor cold, but tepid. Let her guard against all Commotions of Mind, especially Dread and Sorrow; let her, also, every other Day, for four times, take balsamic corroborative Pills; such as those of *Becher* or *Stahl*; for these not only evacuate the Sordes by Stool, but, also, provoke a Discharge of the Lochia, and bring on a Diaphoresis. But if, at the Beginning, all the Symptoms are not allayed, but a Quickness of the Pulse, and an external Heat, are perceived, these Pills may be mixed with a precipitating absorbent Powder, which, for a Dose, may contain four or five Grains of Nitre. In such a Situation it is, also, expedient, in weak Broth, to take such Medicines as allay the Spasms, resolve the grumous coagulated Blood, and procure a free Diffipation of the Sordes by Perspiration; which Intentions are excellently answered by *Sperma Ceti*, Oil of Sweet Almonds, Infusions of Elder-flowers, Chamomile-flowers, and the Tops of Yarrow; a temperate Essence of Orange-peel mixed with Essence of Saffron, the anodyne mineral Liquor, and the bezoardic diaphoretic Powders, to be exhibited in some analeptic Water. A Mixture, also, of the analeptic and pectoral Waters, prepared with distilled Vinegar, Crabs-eyes, and Syrup of Sorrel, is of singular Service, in resolving the grumous and stagnant Blood.

By a due Observation of these Cautions, no mortal Disease will readily attack Child-bed Women, nor are the Purples to be dreaded: But if, in consequence of a Neglect of these Rules, the Corruption of the Serum and Lymph is so increased, as to dispose to the Purples, whether of the red or white Kind, or if these Disorders are already present, I use the following Method, which I have often found successful. After injoining an equal and temperate Regimen, with respect to Heat, I order Child-bed Women, seized with the Purples, to use Water-gruel, with or without an Infusion of common Chamomile; and this I have found of very great Efficacy. In the malignant and white Purples, I do not render the Body soluble by stimulating Medicines; nor is it expedient to produce that Effect by Clysters. I, also, forbid, as much as possible, all Change of Apparel and Bed-cloaths; but rather advise, that such as are already used, be put on, after having been well dried, and warmed before a Fire. I, also, dissuade an erect Posture, or Rising out of Bed; because, by these means, the Patients easily fall into Deliquiums; and, the Motion of the Humours being directed to the internal Parts, the Efflorescences disappear, and the most terrible Symptoms are brought on, as is shewn in *Fred. Hoffmanni Dissert. de Situ erecto in Morbis periculosissimè valde noxio*.

After the Eruption, I exhibit, at different times, about a Scruple, or half a Dram, of the temperate bezoardic Powders, to which I sometimes add, a small Quantity of Saffron, or Castor, interposing now-and-then a Dose of the anodyne

mineral Liquor, which is of singular Efficacy in allaying Spasms, quelling the hot intestine Motion, and correcting the Acrimony of the Humours: But, if, for various previous Causes, the Retrocession of the Purples is to be dreaded, or has already happened, I mix with the anodyne mineral Liquor, a fourth Part of the bezoardic Liquor, prepared according to the Directions of *Bussius*, and described in under the Article *Bussius*: Which Mixture excellently promotes a Diaphoresis, and forces the peccant Matter to the Surface of the Body. For restoring the Strength, which, in the White Purples, is greatly impaired, I recommend an analeptic Potion, prepared of the Waters of Baum, Citron-peel, the Flowers of Lilies of the Valley, Primroses, *Egyptian Thorn*, and Cinnamon. This Potion must be impregnated with Juice of Quinces, adding a sufficient Quantity of Mother of Pearl, and Pearl-sugar, dropping into it a few Drops of the *Spiritus Nitri dulcis*. In this Mixture, as a proper Vehicle, the Powders may be exhibited, or a Spoonful of it may be frequently taken by itself.

As it often happens, that in the Milk, or Purple Fever, the Lochia are suppressed, and, in consequence of a Congestion of Blood to the Head, mortal Symptoms produced, it is a Question whether, if the Lochia are totally suppressed, or not sufficiently discharged, if a Fever is present, and if the Purples are apprehended, Venesection may be safely and usefully used. In *Fred. Hoffman. Dissert. de Venesectionis prudenti Administrat.* 'tis shewn, that Venesection is sometimes highly beneficial in Exanthematous Fevers, even when the Efflorescences appear; and I can affirm, that by Venesection alone, proportioned to the Circumstances of the Patient, and performed either in the Foot or Arm, Child-bed Women at the very Gates of Death, and labouring under spasmodic Strictures, by which the Blood is impetuously forced to the Heart and Brain, have not only been preserved, but, also, received speedy Relief. Hence, if Child-bed Women die of a Suppression of the Lochia, we may justly ascribe the Cause of their Death to a Neglect of Venesection. Nor are there wanting celebrated Authors, who agree with me in this Opinion; such as *Willis de Febribus, Cap. 16. Welschius, de Purpura Lips. Rolsinckius, Lib. de Ord. & Meth. Consult. Lib. 4. Sect. 2. Cap. 6.*

In both Species of Purples, whether benign or malignant, nothing is so prejudicial, or has such a direct Tendency to increase the Cause of the Disorder, heighten its Symptoms, and render it malignant, as an Excess either of Heat or Cold; for this, of all Disorders, can least bear Refrigeration, or excessive Heat, but, with respect to both, requires great Moderation: So that the Room in which the Patient lies, and the Air she breathes, are always to be kept in a due and equal Temperature; for, if the cold Air is freely admitted to the Surface of the Body; or if only the Arms, after being hot and moist in Bed, are stretched out, the whole Body is forthwith seized with Horror and Shivering; and, after great Anxiety and Languor, the Pustules disappear; and this happens more easily, and with the greater Danger, the warmer the Room is, or the more closely the Patient has been covered with a Load of Bed-cloaths. In like manner, in all Exanthematous Disorders, especially the Purples, nothing, especially in the Vigour of the Disease, is more prejudicial, than frequent changing the Degrees of Heat produced by the Fire in the Room, because the sudden Changes from hot to cold, and from cold to hot, violently affect the nervous and sensible Substance of the Skin, and surprisngly vary and disturb its Tone, Strength, and Motion; so that the Pustules either cannot appear, or, if they appear here-and-there, cannot long continue.

Great Injury is done to Persons labouring under the Purples, by an excessive Heat of the Room or Fire; as, also, by Heat raised by the Exhibition of hot Liquors, or Medicines of an heating Quality; since, by these means, all the Parts being agitated by a continual Heat, the Strength is not only impaired, and, the porous Substance of the Skin being too open, too great a Quantity of the Moisture dissipated, but the morbid Matter, by the hot intestine Motion, is, also, rendered more subtle, penetrating, and acrimonious; so that the Itching, Heat, and Anxiety, are so far from being diminished, that they are increased. Hence we often observe, that the Symptoms are augmented, and rendered more dangerous, by drinking large Quantities of hot Tea, or any other Infusions, or by eating hot Aliments, or using hot Liquors.

Much less can the Purples bear the internal Use of heating Medicines, Wines, spirituous Liquors, sudorific and expelling Substances, bezoardic Tinctures, and Essences, together with Alexipharmics, since, by means of these, the Disorder is always augmented. Thus I have seen chronical Purples of a mild Nature, and free from a Fever, and violent Symptoms, by external Heat, the Use of Antiscorbutics, and purifying Decoctions, and a strict sudorific Regimen, converted into Purples of the malignant Kind; so that the Patient has afterwards

been afflicted with febrile Heat, a Loathing of Food, a Languor of the Strength, and a Want of Sleep. It has, also, been found from Experience, that the sooner and more impetuously the Purples are expelled by Medicines, and an hot Regimen, the more easily they are repelled to the internal Parts, by the slightest Cause.

Besides, in the Purples, excessive and liberal Purging is highly prejudicial; for so peculiar is the Nature of this Disease, that it admits neither too great Costiveness, nor too great Solubility of Body, much less artificial Evacuations by Stool. Hence, if the Patient is for a long time costive, the pent up Recrements are convey'd to the Surface of the Body; and the bilious, mucous, and fermentable Scoræ, which ought, by means of the Liver, Pancreas, and glandular Coats of the Intestines, to be evacuated by Stool, are convey'd to the Skin; or, being collected, and mutually mixed, in the long and winding Canal of the Intestines, they are more corrupted by their Continuance there; and, being thence convey'd to the Mass of Blood, along with the chylous and nutritive Juices, lay a copious Foundation for the Disease, and the Increase of the morbid Matter. Hence, unless the Evacuation by Stool, and the other Excretions, are recalled and reduced to Order, the Disease is rarely perfectly cured, but either frequently returns, or is long protracted.

We are, also, to take care not to procure the Excretions, by acrid stimulating Medicines; for which Reason we are carefully to abstain from all, even the mildest Emetics, all Purgatives and Laxatives, tho' destitute of Virulence, as, also, from all saline Substances; nor is it always safe to render the Body soluble by a Clyster, or Suppository, especially before, and a little after, the Eruption of the Pustules; for, the internal Parts being stimulated by this means, the Motion of the Fluids to the Surface of the Body is forthwith disturbed, the Perspiration obstructed, and the Pores of the Skin contracted, so that the Efflorescences disappear.

Unseasonable Venesection, also, contributes a great deal to the dangerous Retrocession of the Purples; for as in all Exanthematous Disorders, so especially in the Purples, it is of the greatest Importance, that the Blood should be in a due Quantity and Proportion, and that it should be convey'd to the Surface of the Body; for either an Excess, or a Defect, is attended with Danger. If the Quantity of Blood is too great, from the spasmodic Strictures of the Parts, fatal Congestions of the Blood in the nobler Parts are to be dreaded. But, if the Quantity of the Blood is too small, it cannot be forced to the most minute Vessels of the Skin, and the Organs destin'd for the Secretion of the Sweat; and the peccant Matter is less duly eliminated through this capillary Strainer, but with the greatest Danger remains immoveable in the internal Parts of the Body. Hence hardly any thing is more to be dreaded in this Disorder, than the Danger arising from unseasonable Venesection. I myself have frequently seen the Practice of some, who, in chronical Purples afflicting hypochondriac Patients, subject to spasmodic Strictures, advised Venesection, so unlucky, that, the Exanthematous Efflorescences ceasing suddenly, an apoplectic Fit was brought on. In Cases of this Nature, I have, also, known the most violent Contractions of the Joints, and almost fatal convulsive Motions of the Parts, brought on by ill-timed Venesection.

In the Miliary Fever, some advise Vescicatories, if the Disorder proceeds from an acid corrupted Lymph, that by this means the peccant Matter may be extracted, and, at the same time, the oppressed nervous Fibres stimulated to a stronger Contraction. Thus *Hamilton*, in his *Treatise de Febre Miliari*, highly extols the repeated Application of them to the Scapulae, in the following manner: "The Serosity of the Humours is excellently lessen'd by Vescicatories; for, by their means, the morbid Matter being in some measure lessened, can more easily throw off the rest in the manner to which she is accustomed; so far are Vescicatories from hindering the Eruption of the Pustules." But, though this Method of affording Relief in the Pustules seems pretty consonant to Reason, yet, I confess, I never used it; and must, therefore, leave it to others to make Trial of it. *Frederic Hoffman.* See MILIARIS FEBRIS.

PURULENTIA. Purulence, or Suppuration.

PURULENTUS. Purulent, full of Pus, or Matter.

PUS. Matter. See ABSCESSUS, INFLAMMATIO, and SUPPURATIO.

PUSCA. The same as POSCA. *Blancard.*

PUSILLATUM, or PUSULATUM. A coarse, or grossly Powder.

PUSTA. A Digestion of Sanies. *Rulandus.*

PUSTULA. A Pustule. These principally appear in the Spring, and are of various Kinds; for sometimes a certain Roughness arises all over the Body, resembling that which is produced by the Application of a Nettle, or the Obstruction of Sweat,

Sweat, and are by the *Greeks* called *ἰκθυήματα*. These are sometimes red, and sometimes retain the natural Colour of the Skin; sometimes large Numbers of them appear of the Bulk of *Vari*, and sometimes larger. There are, also, Pustules of a livid, a pale, a black, or any other unnatural Colour, with an Humour contained in them. When these break, the adjacent Flesh appears, as it were, ulcerated. These are by the *Greeks* called *ελυκταίαι ἐλλοδῆς*, and are produced by Cold, Fire, or Medicines.

But the *φλυζάνη* (*Phlyzation*) is a Species of Pustule, somewhat harder, whitish, and rising in a sharp Point. But Pustules are sometimes converted into small Ulcers, either moist or dry, sometimes accompanied only with an Itching, at other times with Inflammation and Pain; and a Pus, or Sanies, or both, are discharged. This happens principally in Children, rarely in the Trunk of the Body, but frequently in its Extremities.

The worst Species of Pustule is, that call'd *ἐπιφυκτις*, which is generally of a somewhat livid, blackish, or even of a white Colour. Round about this Kind of Pustule, there is a violent Inflammation; and, when it is laid open, a mucous Exulceration of the same Colour, contained in the Pustule, is found within. The Pain accompanying it is far more intense than could be expected from its Bulk, which is no greater than that of a Bean. This Species of Pustule, also, arises on the Extremities of the Body, and generally in the Night-time; from which last Circumstance, the *Greeks* gave it the Name of *ἐπιφυκτις*.

In the Cure of all Pustules, the first Step to be taken is, to use much Exercise and Walking; and, if these cannot be practis'd, Gestation is their best Succedaneum. The second Step is, to diminish the Quantity of Aliments, and abstain from all acrid and extenuating Substances. The same Measures are to be taken with the Nurse, when a sucking Infant is affected with Pustules. Besides these Steps, when the Patients are robust, and the Pustules but small, they ought to sweat in a Bagnio, have Nitre sprinkled on the Pustules, and be anointed with a Mixture of Wine and Oil, after which they are to go into the Bath. If these Measures prove ineffectual, or if the Pustules are of a large Kind, Lentils are to be applied to them; and, when the Skin is removed, we are to have recourse to mild Medicines. After the Application of the Lentils, the *ἐπιφυκτις* is commodiously cured by Knot-grass, or green Coriander.

Ulcers formed from Pustules are removed by Litharge mix'd with the Seeds of Fenugreek, adding Oil of Roses, and the Juice of Endive, till the Preparation is of the same Consistence with Honey. The Pustules of Infants are very properly anointed with the following Preparation:

Take of the Stone by the *Greeks* called *πυλῆτης*, eight Drams; mix with fifty bitter Almonds; and add three Cyathi of Oil, in order to make an Ointment: Before the Use of which, however, the Pustules ought to be anointed with Cerufs. *Cels. Lib. 5. Cap. 28.*

PUTORIUS. The Fitchet. The Flesh of this Animal is said to be resoluteive, externally applied.

PUTREDO, or PUTREFACTIO. Putrefaction.

The happy Influence of Natural Philosophy and Chymistry upon Medicine is in no Instance more palpably evinced, than in the Doctrine of Putrefaction; the great Importance of which in Medicine, and its Necessity to the Physician, we shall prove from several Arguments, after having investigated its Nature, Causes, and Effects, from physical and chymical Principles, that its Use, in the Application of things of a medicinal Nature, may be the more apparent. The Putrefaction, therefore, of a Body, is nothing but an intimate Dissolution of the Parts of which a Body consists, from their Union and Connection, accompanied with a volatile and fetid Exhalation, and changing the whole Crasis, Properties, and Qualities, of the mixed Body.

The Dissolution of Bodies is justly distinguishable into superficial and intimate, or radical. In the former, the Body is only divided into its most minute Parts, every one of which still retains its peculiar Nature, Virtues, and specific Qualities. Thus, in a Solution of Gold with Aqua Regia, though the Gold is resolved into highly minute Atoms, as is obvious from this, that a few Drops of such a Solution are capable of giving another Taste to a whole Pint of Spirit of Wine, yet by a Precipitation made by some Salt, either of the lixivial, or volatile Kind, these Particles, or Atoms, appear to have perfectly retained the Nature of Gold. But an intimate, or radical Solution is that, in which the Parts of a Body are so removed from their Situation, and so resolved from their intimate Mixture, on which the specific Differences of Bodies depend, that, being absolutely transformed into another Texture and Disposition, they assume new Qualities and Virtues. Thus, in the Solution of the Aliments in the Stomach and Intestines, by the subtil and universal salival Menstruum of the Stomach, and the Influence of the animal Heat, the intimate Mixture and

Texture of the Aliments are so destroy'd, that their Taste, Smell, Colour, Consistence, and other Qualities, being destroyed, they produce Chyle and Fæces. Thus, also, in the Fermentation of Vegetables, the sweet Juices of Grapes, and Summer Fruits, by means of Fermentation, lose their sweet and temperate Nature, and are either changed into an acid, spirituous, or a vinous intoxicating Liquor; among these intimate Solutions, we ought, also, to reckon Putrefaction, the Nature and Effects of which consist in extinguishing the Mixture, Form, Qualities, and Virtues of Bodies.

The Cause of this intimate Dissolution, whether of the fermentative, or putrid Kind, is an intestine Motion of the moist Parts, and a copious Influx of a hot and violently agitated Matter; for as there can never be a Solution of a solid Body without Moisture, so without Water, the original Fluid, there can neither be Fermentation nor Putrefaction; for Water is the universal Menstruum, which not only deeply insinuates itself into the Pores of Bodies, but, also, because its Parts are in a continual intestine Motion, is able to disjoin and remove from their Situation the Parts of Bodies, which are variously mixed and united: But it produces this Effect most happily, when assisted with Heat; which is no more than the rapid Motion of an ethereal and celestial Matter, furnish'd with a great expansive Power, propelling from the Centre to the Circumference. The Moisture, then, when acting on Matter capable of Fermentation and Putrefaction, resolves the saline, sulphureous, and earthy Parts, receives them into itself, and carries them off with it in its Motion.

But though both Fermentation, and Putrefaction, are produced by an intestine Motion of the Moisture, and of the hot Principle, yet their Effects are very different, since, by Fermentation, a sulphureous inflammable Spirit, but, by Putrefaction, a volatile urinous Spirit, is produced; for which Reason Putrefaction is always accompanied with a fetid Smell. 'Tis, also, to be observed, that the Juices of Animals admit of no Fermentation, nor can any vinous inflammable Spirit be prepared from them, since these are the Properties of Vegetables alone; which, however, are capable of Putrefaction, as well as the Juices of Animals. The Reason why Animals, and their Parts, are only capable of Putrefaction, but can never, by Fermentation, yield an inflammable Spirit, is only to be sought for in the different Mixtures of Animals and Vegetables, since these last admit into their Mixture not only an Oil, but, also, an Acid, which in Distillation is obtain'd from them; whereas in Animals no such thing is found, since they are rather impregnated with an Oil, and a subtil volatile Earth, which, by the Action of the Fire, becomes saltish. In the Fermentation, therefore, of Vegetables, by the warm intestine Motion the tartareous Acid is first dissolved, by which, when it begins to act on the sulphureous and oleous Parts, an Effervescence, in consequence of this mutual Action and Reaction, is not only excited, but, also, a copious penetrating Vapour is raised, and carried off in the Air; and, lastly, by the mutual Combination of acid and oleous Parts in the Acid, a spirituous or vinous Liquor is produced. But in Putrefaction, where the Acid is defective, the oleous, sulphureous, and saline volatile Principles are forthwith carried off; and, being neither fixed nor corrected by the Acid, are freely dissipated in the Air with a nauseous and fetid Smell; which, according to indisputable chymical Experiments, is produced by an oleous, or sulphureous Principle, and a volatile Salt. A palpable Instance of this we have in mineral Sulphur, which, in its native State, is without Smell; but, when fused over the Fire with a lixivial Salt, assumes an ungrateful Odour. If, therefore, we intend to obtain a volatile oleous Salt from Animals, we must either subject them to Putrefaction, or burn them with a strong Fire; by which means both their oleous and volatile Parts are freed from the Contexture of other Parts with which they were entangled.

We have already observed, that Moisture and Heat were the principal Instruments of Dissolution, both in Fermentation and Putrefaction; so that, without the former two, neither of these can be performed. Hence it follows, that a Body, which has otherwise a great Tendency to Putrefaction, cannot be more effectually preserved from it, and kept sound, than by removing Heat and Moisture. For this Reason, Bodies sufficiently dried are never observed to be subject to Putrefaction and Corruption. Pork and Beef dried by Smoke, and the Influence of the Air, do not easily become putrid: But, if, by Maceration in Water, they receive a due Degree of Moisture, they soon become putrid in a warm Air. Such, also, is the peculiar Nature of Cold, that it preserves Bodies from Putrefaction, for no other Reason, than that by a certain rectilinear Motion it presses and conjoins the Parts, so that they are not easily disjoined, and put out of their Situation; whereas Heat, by its vertical Motion round its own Axis, expands and enlarges the Pores, and propels the Parts from the Centre to the Circumference.

But as there are various ways of removing Moisture, or Humidity, so there are as many Methods of preserving Bodies from Putrefaction. Thus 'tis certain from Experience, that highly rectified Spirit of Wine is very proper for preserving Bodies from Putrefaction, when kept in it, because it quickly imbibes and absorbs the Moisture of Vegetables and Animals from their internal Pores and Parts. Hence Bodies, before soft, are indurated: But the Experiment succeeds more happily, if fresh dephlegmated Spirit is frequently pour'd to them. And though by means of distil'd Oils, and liquid Balsams, the Embalming and Preservation of Bodies from Putrefaction may be obtained; yet highly rectified Spirit of Wine is far preferable to them all, because it is of a more penetrating Nature, and more easily enters the internal Parts of the Bodies, than resinous balsamic Substances.

There is, also, another Method of preserving Bodies from Corruption, which is by Salts; the most considerable of which are common Salt and Alum, which excellently imbibe the Moisture, by the Absorption of which the fleshy Fibres are rendered harder. The more pure and dry these Salts are, the more happily they produce this Effect. And as Alum, in consequence of its large Number of terrestrial Particles, is of an astringent Quality, by which the Parts are more intimately united and connected with each other, so by means of a Lixivium prepared of Alum, and common Salt, all the Viscera of the human Body may for several Years be preserved entire.

'Tis to be observed, that corruptible Fluids, if agitated with a continual Motion, do not easily become putrid; but that stagnant and putrescent Fluids, such as are observed in Marshes, are easily susceptible of Corruption: For Heat and Moisture, continually acting upon quiescent Particles, more easily dissolve and destroy their Mixture, than if they perpetually changed their Place and Situation, in which case the Action and Change of Heat is more transitory; whereas, in quiescent Particles, it is more durable and permanent. We, also, observe, that Vegetables abounding with Moisture, and collected in a large Heap, become more easily warm and putrid, than when they are scattered; in which Case, they remain free from Putrefaction: The Reason of which is this, that, when they are collected into an Heap, the Effluvia excited by the Motion of the Moisture, and the intestine Warmth, cannot be exhaled and dissipated in the Air; but, being pent up, and returning, as it were, on themselves, accelerate the intestine putridous Motion, instead of diminishing it. But nothing more effectually prevents the Corruption of corruptible Bodies, and dissipates it when beginning, than the Access of a free Air, especially of the dry and cold Kind. 'Tis, also, to be carefully observed, that a beginning Putrefaction is of a very multiplying Nature, and diffuses itself very quickly; for it acts like Leaven, which quickly puts the homogeneous, and especially the most adjacent, Parts into the like putridous Motion with itself; as we plainly see in fermentable Substances, where a little Leaven added to a farinaceous Mass, or the Juice of Vegetables, immediately throws them into the like fermentative Motion.

Having thus, from the Principles of Natural Philosophy and Medicine, investigated the Nature, Generation, and Effects of Putrefaction, it will be far more easy to apply what we have said to medicinal Purposes in the human Body, in which a singular and wonderful Phenomenon recurs to be explained, that is, why the Bodies of Animals, and the Juices contained in them, which in their own Nature are so prone to Putrefaction, when Moisture and Heat are present, do not, however, become putrid so long as the Animal is alive, but remain sound and entire; whereas they quickly become putrid after the Death of the Animal. And in this principally consists the Preservation of Life, the Causes of which ought to be carefully investigated by every Physician. Those are greatly deceived, who seek for the Cause of the Preservation in a certain vital Spirit, or Balsam, and the innate Heat, since, instead of specifying the true Causes, unmeaning Words which explain nothing, are only used. They are, also, no less deceived, who think that this Preservation is the Effect of the Salt and Sulphur contained in the vital Juices; for 'tis certain from Experience, that neither saline, nor spirituous Substances, nor balsamic Medicines, copiously exhibited, are of such Efficacy as to remove Putrefaction, since they rather contribute greatly to promote it; for we observe, that the Bodies of scorbutic Patients, whose Juices abound with saline and sulphureous Parts, easily fall into a sphacelous Corruption; so that other Causes must be assigned for this vital Duration, or Preservation. Now we observe, that so long as the Mass of Blood and Humours, of themselves very corruptible, is continually, by a progressive and circular Motion, carried through the vascular Structure of the Body, it remains free from Corruption; but so soon as these Humours, ceasing to move, or circulate, stop, or become stagnant, in the solid Parts, they soon become subject to Putrefaction, which immediately diffuses itself, and, spreading to the adjacent Parts, brings on a Mortification and Sphacelus of

them. Whenever, also, the Circulation of the Blood is totally removed, which happens in Death, Putrefaction immediately ensues, unless it is prevented by Cold, or some other external Cause.

Hence 'tis obvious, that the Circulation of the Blood is the Cause which defends the Bodies of Animals from Corruption; and so long as the Circulation is entire, the Body is free from all the Injuries of Putrefaction. But we must inquire, whether this Flux and Reflux of the Blood produces this Effect only by its progressive Motion, or whether other Causes, also, concur with it, which seems most probable; for, by means of this continual Circulation of the Blood, the hot intestine Motion of its constituent Parts is greatly increased, and the Juices not only consumed, but, also, gradually converted into a saline sulphureous Excrement. Hence 'tis obvious, that the Circulation has rather a Tendency to destroy than preserve the due Mixture of the Mass of Blood, as is obvious from the intense Heat of Fevers, where, in consequence of the brisk Circulation of the Blood, a greater intestine Agitation of the Parts is produced, and a more violent Heat excited, which not only consumes the Body, together with its Strength and Juices but, also, resolves these last into excrementitious Parts, which ought to be eliminated partly by Perspiration, and partly by Urine and Stool. Besides, with the Air, Aliments, and Drink, many Parts foreign to the Mixture of Blood, and highly subject to Corruption, are often mixed with the Blood; and, if these are retained in the Habit, they must naturally disturb and destroy the Nature and benign Mixture of the Blood. During the vital Action, and perpetual Motion, of the Fluids, we, also, observe, that a corruptible Matter fit for inducing Putrefaction, is generated in the Blood. Hence Reason dictates, that these Parts, so prejudicial to Life, by spoiling the due Crasis and Mixture of the Blood, should, with all Care, be separated, secreted, and eliminated from the Body.

Hence it is, that unerring Nature, in the curious Structure of Animals, has formed numberless secretory and excretory Organs; by means of which, not only the Excrements of a more fixed, but, also, of a more moveable, volatile, saline, sulphureous, aqueous, and aerial Nature, are continually and uninterruptedly separated from the Blood and vital Humours. This Purpose is excellently answer'd by that large Organ the Liver, which is continually employ'd in separating from the Blood the sulphureous Scorix, together with the hot, saline, and serous Parts. There are, also, here-and-there in the Body, numberless conglomerate Glands, which consisting of infinitely small Tubes, continually secrete a subtle and highly fermentable Fluid of a salival Nature, which, having performed its Office, is eliminated from the Body. The Skin, also, being full of Tubes and Pores, is, as it were, an universal and common Emunctory, through which the serous, sulphureous, saline, and excrementitious Parts of the Humours are eliminated. The Kidneys are the Organs through which a saline, sulphureous, and thick Serum is strained; and through the large Intestines the feculent Sordes and Fæces are evacuated.

For, in order to preserve the due Mixture of the vital Fluids, 'tis not only requisite there should be a perpetual Separation of the superfluous Parts, but 'tis, also, necessary there should be another Preservative of Life and Health, not mentioned by modern Writers; which is a fresh Accession of mild and temperate Juices, in the room of the corrupted Fluids, eliminated from the Body. Hence we see the Reason, why Men, and brute Animals, in order to prevent internal Putrefaction, and preserve Life, ought constantly to have due Supplies of Aliments, from which laudable, temperate, sweet Juices, fit for nourishing and increasing the Strength, such as the chylous and lacteal Juices are, may be again generated; for, without such a new Accession and Afflux of fresh Juices, Life and Strength cannot be long preserved; so that Life is excellently preserved, and a mortal Putrefaction prevented, in the Bodies of Animals, by means of Aliments, and due Excretion. It must, also, be observed, that in Adults, who stand in no need of having the Parts of their Bodies farther increased, the Excretions ought, in order to a due and equable State of Health, to be equal to the Aliments taken.

This firm and unshaken Foundation of Health, consisting in this, that every Substance approaching to Corruption, and capable of inducing Death and Destruction, ought carefully and perpetually to be abstained from, furnishes us with various Corollaries and Theorems, of singular Use in Practice: For, first, from what has been said, we may deduce the Nature and immediate Cause of Death, and the Putrefaction which succeeds it, and is, in its own Nature, highly unfriendly to Life: The Cause, then, of these Effects is a destroyed Circulation of the Blood, and the Putrefaction and Corruption arising thence, which, on the contrary, is generally the Cause of the Destruction of the Circulation, and, consequently, of Death; for, from a careful Dissection of those who have died both of acute and

and chronic Disorders, the Causes of Death are always manifest and conspicuous; since one or more of the Viscera, or more noble Parts, appear corrupted, putrefied, or sphacelated, by an Extravasation or Stagnation of the Humours: But in those who die suddenly, or of violent acute Disorders, which are not to be known without Difficulty, polypose Concretions, consisting of various Fibres and Membranes, are frequently found in the large Vessels; especially in the Ventricles of the Heart, and the Sinuses of the Dura Mater; which, by obstructing the free Circulation of the Blood, destroy the Patient.

Since, therefore, the whole Business of the Physician consists in procuring long Life, preserving the Body sound, and preventing untimely Death, and the Disorders which bring it on, he certainly cannot, in a more effectual manner, answer these grand Intentions, than by preventing and removing Corruption and Putrefaction, both in the internal and external Parts. But this End cannot be better obtained, than by preserving a free Circulation of the Blood through all the Parts of the Body, and removing every Cause which may in the least obstruct and hinder it.

But several Causes are capable of disturbing and hindering this Circulation; the most considerable of which is, a Redundance of Blood and Humours, which, by its strong Resistance and Expansion, impairs the Elasticity of the Fibres of the Heart, and its Auricles, so that the Circulation becomes very slow and languid: And this Circumstance, unless soon removed, produces Stagnations of the Humours, Infarctions of the Viscera, Obstructions, Indurations, Extravasations of the Humours, and putridinous or apoplectic Corruptions of the Parts. By this slow Circulation of the Blood and Humours, the Excretions are lessened, and particularly those made by Perspiration, and that of the bilious Humours, large Quantities of which are daily secreted in the Vessels of the Liver. Hence large Quantities of Impurities, of various Kinds, must necessarily be accumulated in the Mass of Blood.

But a Plethora so unfriendly to Health and Life is very incident to those, who, being of spongy Habits, live luxuriously, and indulge themselves in Ease and Quiet: But Women are still more disposed, than Men, to generate a larger Quantity of Blood than is necessary to Nutrition and Life. Left, therefore, this Redundance of Blood and Humours should injure Health, or threaten Death, the Structure of our Bodies is so artfully contrived, that the Vessels and nervous Parts have a peculiar Kind of Motion, by which they prevent Stagnations, and free themselves from the Load of redundant Blood, so unfriendly to Nature; in Childhood, generally by the Nose; in Women, by the Uterus; and in Men, by the hæmorrhoidal Discharge returning at stated Periods: When, therefore, the usual and salutary Excretions, destined for diminishing the redundant Blood, are, by any Cause, rendered defective, diminished, or violently suppressed, numberless Misfortunes are produced; and, unless Relief is soon afforded, the Body is rendered subject to Disorders of all Kinds, both of a chronic and acute Nature, as is shewn in *Medicin. rational. Fred. Hoffman. Tom. 2.* I have frequently seen plethoric Women, who, having their Menstrues suppressed by a Fright, upon the Access of Cold, or the Use of a drastic Purgative, have soon after died of a sphacelous Corruption of the Parts; and immediately after Death, their Bodies became tumid, and were seized with an highly fetid Putrefaction, large Blisters rising here-and-there upon them.

From what has been said, any one may conceive, that Putrefaction and Death may be generated only by a Redundance of laudable Blood: In order to prevent which, no Remedies are more proper than Venesection, or a Restitution of the usual Excretions of Blood: But if any one is unaccustomed to Venesection, and naturally abhors it, and at the same time feeds and lives in such a manner as is fit for generating large Quantities of Blood, whilst Nature is slow, or absolutely defective, in carrying on the Excretions; such a Patient is to be treated in another manner, and great Care taken, lest he fall into some violent, or, perhaps, mortal Disorder, arising from Putrefaction: For, according to his peculiar Circumstances, such Things as lessen the Redundance of the Blood and Humours, are to be used; such as proper Exercise, Abstinence, light Drink and Aliments, Bathing, Laxatives, Infusions, and a due Use of the Mineral Waters, both of the hot and cold Kind.

It is, also, certain, that a mortal Putrefaction may be produced, by a Penury or Defect of Blood: For though it is seemingly most probable, that different Causes must produce different and dissimilar Effects; yet it is certain, from various Instances, that, in the human Body, contrary Causes may conspire in the Generation of the same Disease: But we shall now content ourselves with shewing, in what manner both a Redundance and Penury of Blood may induce a mortal Corruption on the Humours, and solid Parts. We have already observed, that the redundant Blood easily stagnates in the Vessels,

and soon becomes impure, in consequence of the Diminution, occasioned by a Plethora, of the Secretions and Excretions, which ought to free the Blood from impure Sordes, and excrementitious Matter, which have a great Tendency to Corruption: The same, in like manner, happens from a Defect of laudable Blood; for, as, by a natural and due Quantity of Blood, all the Vessels are kept open, so, in consequence of a Penury or Scarcity of it, they collapse, and have their Diameters lessened, or, perhaps, are at last totally blocked up: Hence the benign and nutritive Juices can neither be conveyed to the solid Parts, nor a sufficient Quantity of the nervous Fluid be generated in the Brain; by which means the Strength is greatly impaired: Besides, as the Impulse of the Blood, by the due Diastole of the Heart and Arteries, such as is observable in the Pulse, depends upon a sufficient Quantity of Blood, it must necessarily happen, that, under a Defect of this Fluid, the Pulse must become very weak and languid, whilst the Blood itself is not duly propelled through the minute capillary Vessels of the Viscera, but stagnates here-and-there in the Viscera; such as the Lungs, Spleen, and Liver: And this State is succeeded by Corruptions, Cachexies, slow and hectic Fevers.

Now there is not a nearer Way to Corruption, and the Disorders arising from it, than when, after the Strength is consumed, by violent Hæmorrhages, severe previous Diseases, long-continued Passions of the Mind, Grief, or Hunger, Persons voraciously eat large Quantities of Aliments, which, as they cannot be sufficiently digested, and the useful separated from the useless Parts, on account of the weak and languid Force of Nature, so they not only generate a large Quantity of peccant Humours in the *Prima Viæ*, but the Vessels, also, in consequence of the obstructed Excretions, are filled with impure and corruptible Juices, and a great Disposition to malignant and putrid, or to slow and hectic Fevers is brought on; for it is certain from Experience, that terrible Camp Diseases, as malignant and petechial Fevers, the *Hungarian Fever*, Diarrhoeas, and malignant Dysenteries, afflict the Soldiers most, spread themselves farthest, and are most contagious, in the Autumn, and when they begin to leave the Camp, for no other Reason than that, during the Summer, under the long Heat, the Night-colds, the continual Fatigues and Watchings, or, perhaps, corrupted Aliments and Liquors, they have lost their Strength, and laudable Blood; instead of which they have their Veins and *Prima Viæ*, stuffed with large Quantities of corrupted Juices, which are highly subject to Putrefaction, and, in acute Fevers, generally induce a mortal Sphacelus on the internal Parts.

Having thus considered the Cause of malignant Disorders, which is a Defect of laudable Blood and Juices, and a consequent easy Transition to Putrefaction, every thinking and judicious Physician must certainly perceive, that nothing is more dangerous than to exhibit too much Aliments, especially of bad Juices, to Persons weakened by Diseases, or any other Causes; since such Persons are, according to *Celsus*, highly subject to putrid Diseases: But it is better, in such a Case, gradually, and by little and little, to restore the consumed Blood, to eliminate the Crudities attending such a State, either by Perspiration or Stool, by means of gentle Evacuants; and then to corroborate the Digestion, and concoctive Power of the Stomach, by temperate, corroborating, and stomachic Medicines, by which means the violent Disorders, to be dreaded from a Corruption and Putrefaction of the Humours, may be excellently prevented.

There is, also, another expeditious Method of bringing on a mortal Putrefaction, in sound vigorous Persons, in the very Flower of their Age; which is by the Exhibition of Poisons, especially those of a caustic Quality, such as the three Species of factitious Arsenic, highly acrid Purgatives, or drastic Emetics prepared of Antimony; for, unless the violent Operation of all these is soon stopt by proper Remedies, they quickly prove mortal, by inducing terrible Spasms of the nervous Parts, and a Putrefaction of the nobler Organs of Life. Upon dissecting Patients taken off by these means, sphacelous Spots of the Stomach and Intestines, accompanied with an intolerable Stench, present themselves to our View; for Poisons of this Kind, by constricting the nervous Parts, and Vessels of the Stomach, produce Inflammations, which degenerate into a Sphacelus, which is the more fatal to Life, because it seizes the nervous and membranous Parts, such as the Stomach and Intestines, which have an intimate Consent with those Parts, which are furnished with an exquisite Sensation, and a brisk lively Motion, and which they, also, draw into the like irregular Commotions: It is, also, observable, that cold Liquors drank by a Person over-heated, and covered with a profuse Sweat, are highly prejudicial, and, in their Operation, frequently imitate Poisons, by quickly inducing a Sphacelus and Death: And though the Effect is not always so fatal, yet we have Instances in which cold Liquors, drank by over-heated Persons,

Persons, have proved mortal; and, upon laying open their Bodies, their Viscera were found sphacelous. Thus, some Years ago, a young Man of eminent Distinction, in the Flower of his Age, being covered with a profuse Sweat, after violent Exercise, drank a large Quantity of cold Ale, at a Draught; in consequence of which, being seized with a great Languor, an Uneasiness about the Præcordia, a Desire of vomiting, and frequent Deliquiums, he died of Convulsions on the fourth Day; and, upon opening his Body, a Part of his Stomach was not only sphacelous, but his Spleen, and the Left Lobe of his Lungs, were found resolved into an highly fetid and putrid Mass, black as Ink: For as the Viscera consist almost entirely of a Congeries of highly minute Vessels, it is of course obvious, that they must readily be subject to Infarctions, and a Stagnation of Blood. When, therefore, a large Quantity of Liquor, actually cold, arrives at the Blood, which, in consequence of its Motion and Heat, is pretty thin and fluid; it is not surprising, that the Blood should be immediately coagulated, and, being firmly impacted in the Vessels, become putrid. In this Case there is not a more efficacious Remedy than speedy and seasonable Exercise and Motion, whether by riding on Horseback, or in a Chariot, after drinking a large Quantity of a warm Infusion of the Flowers of Daisies, common Chamomile, Carduus Benedictus, Paul's Betony, and Scordium; by which the Coagulation of the Fluids is prevented, and the free Circulation of the Blood, through the Vessels, promoted; Hence we see how simple, and yet how efficacious, the Remedies for preventing the most terrible of Deaths sometimes are.

Among the terrible Disorders arising from Putrefaction, we may justly class the *Morbus Niger* of Hippocrates; under which, Humours of a black Colour are not only vomited, but, also, highly fetid Excrements discharged by Stool. Here it is to be observed, that a Vomiting of bloody, or black, Matter rarely proves mortal; but if a large Quantity of Blood is, from the ruptured Veins of the Ileum, conveyed to the Fæces of the Colon, and is not immediately discharged, but, stagnating, is put into a putredinous Motion with the Fæces, accompanied with an highly fetid Smell, it soon kills the Patient: For, in my Opinion, those who die of this Disorder are not so much destroyed by the Effusion of Blood, which is not sufficient to destroy Life, as by the Putrefaction arising from the Mixture of the Blood with the Excrements; for this fetid Vapour is highly unfriendly to Nature, since, by its Subtlety, it penetrates to, contaminates, and totally destroys, that Fluid which animates the nervous and membranous Parts, and governs Sensation and Motion; because the Strength, the Origin of which is no other, than a pure and subtle State of the Humours, immediately begins to fail, and at last is totally destroyed, as we observe in a Sphacelus, and ulcerated Cancer of the external Parts, where the Putrefaction, penetrating into the internal Parts, proves the only Cause of Death, by destroying the Agility of the animal Spirits.

Among the putrid and malignant Disorders, the most terrible are the Plague, and petechial Fevers, which are sometimes more violent, though less contagious, than the Plague itself; for these Disorders are propagated, and conveyed to the Body, by a kind of Miasma, which is nothing but a putredinous Leaven; for as a small Quantity of any Mass already putrid, mixed with corruptible Substances, forthwith infects them, and surprisingly propagates itself, so highly subtle Vapours arising from Persons labouring under the Plague, or petechial Fevers, and received by the Air into other Bodies, partly by the Mouth and Nostrils, immediately reaches the Mass of Blood, and being partly swallowed with the Saliva, passes to the *Primæ Viæ*, quickly multiplies itself, and, at last, contaminates the whole Mass of Humours, producing the most terrible Symptoms. That the Nature and Essence of these Diseases consist in Putrefaction, is obvious from the uncommon Loss of Strength, the great Weakness and Inequality of the Pulse, the Conversion of the Carbuncles and Buboes into Abscesses, the highly fetid Exulcerations, the nauseous Scent of the Excrements, the black and livid Spots dispersed over the Body, which are only Species of Sphacelations, and the Smell of the Body after Death. And though these Miasmata infect sound and healthy Persons who contain a temperate Blood in their Veins, yet it is generally observed, that they exert a greater Force and Influence on Persons of cacochymic Habits, whose *Primæ Viæ* are full of peccant Juices, because they there meet with Humours already disposed to Putrefaction and Corruption; such as those of the salival Kind, which are easily thrown into a fermentative Motion: Hence the Reason is obvious, why the Plague rages most among poor People; and why those who are oppressed with Hunger, and live in an irregular manner, are most subject to those putrid Disorders. If a Dysentery, the Small-pox, the Measles, or a Purple Fever, are accompanied with Signs of a malignant Nature, and prove very mortal, they derive their malignant Nature from nothing but peccant Humours, and Juices dis-

posed to Putrefaction, and corrupted by a depraved Habit of Body.

Having thus investigated the Nature of the Plague, and of malignant Disorders and Fevers, which consists either in Putrefaction itself, or an easy Transition to it, it will be no hard Task for the skilful Physician to find out proper Remedies, and a due Method of using them, both for the Prevention and Cure of these Disorders; for nothing is more effectual for Prevention, than a good Diet, and a proper Regimen, taking care not to load the Stomach with too great a Quantity of Aliments, especially of a corruptible Kind. We must, also, take care, that the salutary Excretions, by which the Blood is excellently depurated, be duly and expeditiously carried on; for, by this means, the Miasma, not finding a Substance similar to itself, either does not operate at all, or renders the Progress and Termination of the Disease far more happy than they would have otherwise been. Under the Cure, those things are carefully to be avoided, which increase the intestine Motion of the Blood and Humours, such as all alexipharmic, hot, bezoardic, and spirituous Substances, which are so far from hindering the Putrefaction, that they rather accelerate and diffuse it: The Patient ought, also, to abstain from all alkaline, volatile, fetid, and oleous Substances, which are only the Produce of Putrefaction: On the contrary, Acids, which, by fixing the volatile and oleous Parts, strongly resist Putrefaction, are the best Medicines in the Plague. To this Class, also, belong earthy bezoardic Substances, and such as keep the Body in a gentle Diaphoresis; since there is not a more expeditious Method of removing a beginning Putrefaction, and evacuating the subtle fermentable Parts, than by the Emunctory of the Skin: And this Intention is best answered by such Analeptics as restore the Strength, and promote the Circulation of the Blood. Earthy and bezoardic Substances have this peculiar to themselves, that they, in some measure, preserve the Mixture of the Blood, and hinder its Dissolution.

To malignant Disorders, also, belong hectic Fevers, which arise not from so active, but a slow-proceeding Putrefaction, which preys upon the Strength: For, upon opening the Bodies of those who have died of hectic Fevers, they have been found to proceed from corrupt Abscesses, degenerating into a Sphacelus, in some of the Viscera, especially the Liver and Lungs. And this Corruption of the internal Parts is the Cause, why these Fevers are with Difficulty, if at all, susceptible of a Cure.

It is, also, to be observed, that most acute Fevers prove mortal by no other means than Putrefaction, as is obvious from dissecting those who die of them immediately after Death; on which Occasion an intolerable Stench, arising from nothing but the Putrefaction, is perceived; and, for the most part, the Stomach and Intestines, or some of the nobler Viscera, are found sphacelated: But as nothing more resists the Generation of Putrefaction, and the Sphacelation of the internal Parts, than hindering the Stagnation of the Blood, and preserving its equable Circulation, so the whole Business of the Physician is to prescribe such Medicines as preserve the Circulation of the Blood, restore Strength, and promote Perspiration; such as temperate bezoardic Mixtures, consisting of the Waters prepared from the Flowers of Egyptian Thorn, black Cherries, Cinnamon without Wine, Carduus Benedictus, and Roses, distilled Vinegar, Syrup of Citron-juice, the *Mixtura Simplex*, Crabs-eyes, diaphoretic Antimony, Hartshorn philosophically prepared, and native or common Cinnabar; the Use of which is to be long persisted in. Nor are we to suffer the Patient to be long coctive, because the putrid Sordes, when translated from the whole Body to the Intestines, and there fermenting together, prove the Fomes of Putrefaction: For the Prevention of greater Mischief, the *Primæ Viæ* are to be carefully cleansed. But, for this Purpose, we are never to use drastic stimulating Medicines, since only gentle Laxatives, and mild Clysters, are to be prescribed, not in every Period of the Disease, but in its Remission.

We now come to consider, whether Camphire, which so powerfully resists Putrefaction, that nothing is found more effectual against an external Sphacelus and Gangrene, and, for this Reason, is called the best of Alexipharmics, may be safely used, to check a Putrefaction. Now, tho' Camphire is an highly subtle, though coagulated, and very evaporable Oil, yet it differs from other distilled Oils in this, that these induce a much greater Heat on the Blood, than Camphire, which soon transpires; whereas the others, in consequence of their viscid Nature, and tenacious Texture, continue longer in the Pores and Parts: This may be confirmed by an Experiment; for half a Dram of Camphire, dissolved in one Dram of Brandy, and taken internally, by a sound Man, produces rather a Sense of Cold, than of Heat, in the internal Parts; nor is the Pulse increased, or the Urine tinged of a red Colour: But if twenty Drops of the Oil of Cinnamon, or Cloves, are diluted in Brandy,

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Brandy, and taken, there is a remarkable Increase; not only of the Pulse, but, also, of the Heat. For this Reason, in malignant Disorders, I greatly recommend the internal Use of Preparations of Camphire, both for the Cure of Inflammations and malignant Fevers: And in this I do not rely upon Speculation only, but, also, upon Fact and Experience, by which we ought to conduct ourselves in the Use of all powerful and efficacious Medicines. In the Height and Exacerbation of the Disease, if the Skin, and all the Parts subservient to Excretion, are spasmodically constricted, and the internal Parts excessively hot, especially if the Patient is young, and accustomed to spirituous Liquors, it is expedient to abstain from Preparations of Camphire, which are most commodiously used in the Beginning, after cleansing the *Primæ Viæ* by a Vomitus, if necessary, in Conjunction with cinnabarine bezoardic Powders, and a few Grains of purified Nitre, using at the same time a sudorific Regimen. I know some Persons, who, by certain Signs, appearing to be infected with a contagious malignant Fever, have, by the seasonable Use of Preparations of Camphire, once or twice exhibited, had a profuse Sweat excited, and been perfectly freed from their Disorder. In the time of the Remission, when the Skin is moist, the Pulse weak, and the Strength low, Camphire, with the Addition of bezoardic acidulated Substances, is an excellent Preservative against Malignity; and in violent Deliriums, no Medicine is more efficacious than Nitre, mixed with a small Quantity of Camphire. When the Strength is so far exhausted by the Violence of the Disease, that it begins to be insufficient, as it were, for promoting the Circulation of the Blood, it is excellently restored by a few Grains of Camphire, dissolved in Oil of sweet Almonds. And, lastly, in Fevers, arising from Inflammations of the internal Parts, half a Grain, or a Grain, of Camphire, mixed with Nitre, and frequently exhibited, is of singular Service: This Powder I have, also, used with Success, in violent Peripneumonies.

We now come to inquire, why scorbutic Patients, and those wasted with Age, are, generally, so subject to a fatal Sphacelus, from the slightest external Cause, or some Fault of the Blood: This, then, happens, in consequence of the Propensity of the Blood to a putridous Corruption; for a Scurvy is an excessive Impurity, or Cacoehymy, of the Blood, arising from a Redundance of saline and sulphureous Particles, which, in consequence of the diminished Secretions, not only remain in the Habit, but, also, contaminate the benign and temperate Humours, whose due and natural Mixture they destroy. A Blood, therefore, impregnated with Impurities of this Kind, easily degenerates into a State of Putrefaction; for which Reason scorbutic Patients are often afflicted with ichorous fetid Exulcerations of the Mouth, Fauces, and other Parts, whilst the Gums become tumid and putresced, with an intolerable Stench of the Mouth, and the inferior Parts of the Body are covered with Spots of a livid bluish Colour; which are the Signs of a slight Sphacelation. It is not, therefore, to be wondered at, that, from the slightest Cause, the Blood, becoming stagnant in the Parts, should degenerate into a sphacelous mortal Putrefaction; as, also, that a Sphacelus, arising from an internal Cause, is incapable of being cured; for the Blood, already greatly disposed to Corruption, is soon so infected by the Putrefaction already began in one Part, that the Danger cannot be averted by the most efficacious Medicines. Sphacelations, both of the internal and external Parts, are, also, very familiar to old Persons, because they have many Circumstances in common with scorbutic Patients; for, in consequence of the Thickness and Rigidity of the Fibres, contracted by Age, all the secretory and excretory Ducts become narrower, and have their Diameters lessened: Hence the Secretions of the laudable Humours, the Application of the nutritive Juice to the minute Vessels of the Parts, and the Influx of the nervous Fluid into the Nerves, are diminished, the Strength of the whole Body, and all its Parts, impaired, and the Constitution rendered dry, parched, and wasted, by a slow Consumption: But as in this Decline of Age, in consequence of the contracted Emunctories, and diminished Excretions, saline and acid Sordes are accumulated in the *Primæ Viæ*, hence the Blood of old Persons is full of scorbutic Salts: Hence it is, that Itching, a dry Scab, red Urine, calculous Concretions in the Kidneys and Bladder, and staphaceous Concretions in the Gout, Catarrhs, Coughs, Rheumatisms, Stranguries, and Exulcerations of the Parts, are so frequent and familiar to old Persons: Hence appears the Reason why they have this in common with scorbutic Patients, that both their internal and external Parts are highly subject to a Sphacelation. I have seen the slightest Injury of the external Parts, the Sting, for Instance, of a Wasp, a gentle Contusion, or the unskilful Paring of a Corn in the Foot, produce a Sphacelus in old Persons. I have, also, seen very old Men die of a Cardialgia, or Colic, brought on by some slight Error in Regimen; for no other Reason, than that

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in those Parts, which were afflicted with Pain, a sphacelous Stagnation was brought on.

Since, therefore, cacoehymic, scorbutic, and old Persons, are so subject to violent, putrid, and dangerous Diseases, those who intend to keep themselves free from those Disorders, ought carefully to abstain from every thing which can render the Blood impure. But, in particular, old Persons, who are already half scorbutic, ought carefully to abstain from all such Things as are fit for generating the Scurvy; such as all Sea Substances, which do not afford laudable Juices; Flesh, and other Aliments, indurated in the Smoke, salted Substances, all rancid, corrupted, and semiputrid Substances; Aliments of strong Juices, such as Pulses; a sedentary Life free from Exercise; a foggy, cold, moist, and heavy Atmosphere; heavy, sharp, or semiputrid Waters; living, and sleeping, in moist Places; long-protracted Care and Grief; a Neglect of usual Evacuations; the too great Use of acid and spirituous Substances; all which, as they are never beneficial, but highly injurious, to weak Habits, so they ought carefully to be avoided by old Persons. *Frederic Hoffman.*

PYCNOCOMOS. A Name for the *Scabiosa*; *integri-folia*; *glabra*; *radice præmorsa*.

PYCNOTIS. *πύκνσις*. Condensation.

PYCNOTICA. Incrassating Medicines.

PYCTE. *πύκτις*. A Mixture of Curds, and Honey.

PYE. *πύς*. The same as **PHTHISIS**. *Arctæus, de Caus. & Signis Diuturn. Lib. I. Cap. 8.*

PYELOS. See **CHOANA**.

PYGÆ. *πύγαι*. The Buttocks. *Ruffus Ephesius, de Appel-lat. Part. Corp. Human. Lib. I. Cap. 15.*

PYGARGUS. A Name for a Sort of wild Goat; for the Heron; and for a Species of Eagle.

PYLORUS. The Right Orifice of the Stomach is thus called.

PYODES. *πυώδης*. Purulent.

PYON. Pus.

PYOPCEUS. *πυοποιός*. Suppurative.

PYOSIS. *πύσις*. Suppuration; Or an *Hypopyon*; a Disorder of the Eye.

PYR. *πῦρ*. Fire.

PYRACANTHA. A Name for the *Mespilus*; *spinosa*; *Pyræ Folia*.

PYRACEUM. Perry. See **POMACEUM**.

PYRAMIDALES MUSCULI. The Pyramidal Muscles of the Abdomen. See **ABDOMEN**.

PYRAMIDALIA CORPORA. Two Protuberances of the Medulla Oblongata, are thus called. See **CEREBRUM**. By some Authors the Spermatic Vessels are thus named.

PYRAMIS. A Cone. In Chymistry, used for making Regulus of Antimony.

PYRAMISTA. An Insect, very subject to fly into the Fire, or a Candle. The Poets make frequent Allusions to this in their Love Songs; but it is of no other Use, that I know of.

PYRENOIDES. *πυρηνόειδης*, from *πύρην*, a Nucleus, or Kernel. A Name for the Tooth-like Process of the second Vertebra of the Neck.

PYRETERION. The Part of a chymical Furnace, which contains the Fire.

PYRETHRUM. Offic. *Pyrethrum Officinatum*. Ger. 618. Emac. 758. *Pyrethrum vulgare Officinatum*. Park. Theat. 858. *Pyrethrum flore Bellidis*. C. B. P. 148. *Bellis montana frutescens acris*. H. Monsp. 31. *An Buphthalmum Canariense Leucanthemum*. Pluk. Almag. 73. Phytog. 272. 6? **PELLITORY OF SPAIN.**

The Roots of the common Pellitory are about a Finger thick, hard, and of a yellowish-brown Colour on the Outside, and whiter within; of a very hot burning Taste; from which arise Stalks about a Foot high, much branched, and clothed with large winged Leaves, in Shape like those of Chamomile, but larger, and thicker: Among these grow several Flowers, much like the Flowers of Chamomile, but larger, set upon long Foot-stalks. It grows in Spain, and other warmer Countries, flowering in June and July. The Root is used.

The Root of Pellitory of Spain, held between the Teeth, helps the Tooth-ach, by drawing forth the cold watry Rheum: It, also, helps the Palsy of the Tongue, and the Loss of the Voice consequent therefrom: It is put into Masticatories for that Purpose; as, also, into drawing Cataplasms and Plaisters, particularly the *Emplastrum Cephalicum*. *Miller's Bot. Off.*

Pyrethrum has its Name from *πῦρ* (*Pyr*), Fire, because of the igneous Heat of its Root: It differs from the *Anthemis*, or *Chamæmelum*, by the Largeness of its Flower, and the acrid and fervid Taste of its Root.

It is imported from the Eastern Parts. *Matthioli* says, that it grows on some Mountains of Italy; but is there less acrimonious.

It stimulates to Venery, cures a Quartan, and gives Relief under an Hemicrania. *Schroder.*

Morison, or *Eobart*, affirm this Plant to be the genuine *Pyrethrum*; for what is esteemed by some the *Pyrethrum verum*, is an umbelliferous Plant. Authors were imposed upon by a corrupt Reading of *Discozides*, where, in the Description of the Flower, some Copies, for *ἀνέμω*, erroneously substitute *ἀνθε*. *Hist. Oxon.* 3. 34.

PYRETHRUM VERUM. Offic. *Pyrethrum sylvestre.* Ger. 618. Emac. 758. *Pyrethrum umbelliferum.* C. B. P. 148. Raii *Hist.* 1. 462. *Pyrethrum umbelliferum primum.* Park. Theat. 891. *Pyrethrum umbelliferum Matthioli.* J. B. 3. 20. TRUE PELLITORY OF SPAIN.

The Roots and Leaves are like those of the *Cotula foetida*; the Umbella is supported by a Multitude of Pedicles, proceeding, as it were, from one common Centre, after the manner of the *Pecten Veneris*, or *Anethum*; the Flowers are white, and of a fervid and bitterish Taste; to these succeed round blackish Seeds, larger than Aniseeds: The Roots are an Inch, and sometimes two Inches, thick, a Foot in Length, run deep under Ground, are of a brown Colour, inclining to yellow on the Outside, black within, and of an hot and acrimonious Taste.

Guilandinus cultivated this Plant in his Garden at *Padua*, and presented it to *Lobel*, by the Name of the *Pyrethrum verum*. The *Pyrethrum* of *Cæsalpinus*, which bears a round compressed Seed, of the Figure of a Lentil, belongs to another Genus.

The Root of this *Pyrethrum* is often, and with good Success, held in the Mouth for the Tooth-ach, which it removes, by attracting a Multitude of Humours into the Mouth, together with the Spittle: It excites, therefore, a Salivation, which, perhaps, it would excite in a more plentiful manner, and of longer Duration, if it were taken inwardly, in small and repeated Doses. *D. Soame & Sylvii Lib.*

Besides this Species, *Ray* mentions the

PYRETHRUM umbelliferum alterum. Park. *Foliis Anethi.* C. B. *Gesneri.* J. B.

It has a long simple Root, moderately fibrated, creeping, of the Thickness of a Finger, of an hot and burning Taste; the Leaves are like those of *Anethum*; and the Stalk like that of Fennel, and the Flowers grow in Umbellas exactly circular. *Raii Hist. Plant.*

This *Pyrethrum* is cultivated in the Gardens of the Botanists, and flowers in Summer.

It is used in lethargic Affections, the Palsy, and the like Disorders. The *Pyrethrum* sends forth a Stalk and Leaves like the *Daucus Sylvestris*, or Fennel, and has the circular Umbella of the *Anethum*. The Root is long, an Inch in Thickness, and of a very hot Taste. *Dale* from *Discozides*.

PYRETICA, according to *Blancard*, are Febrifuges.

PYRETOLOGIA, in Pathology, is the Doctrine relative to Fevers.

PYRETOS, πυρετός. A Fever.

A Fever is a very frequent Disorder, inseparably attended with an Inflammation, the Cause not only of many Diseases and Death, but, also, frequently of an happy and successful Cure.

As the Nature of this Disorder is of an highly latent and concealed Kind, so we ought the more carefully to guard against Mistakes and Errors in investigating it.

But, in a Research of this kind, Errors are easily fallen into, in consequence of the large Train of Symptoms, with which this Disorder is generally attended, and without which, however, there may still be a Fever.

That such Errors may be avoided, it is necessary, from among numberless Symptoms, to select those Phenomena alone, which always accompany every Fever; from the Presence of which Physicians know, that a Fever is present; and from the Absence of which they conclude, that a Person is free from a Fever.

Then, from these Symptoms and Phenomena, duly discovered, and maturely weighed, the particular Nature of the Fever is to be found out.

All Fevers, arising from an internal Cause, are accompanied with Horripilation, a quick Pulse, and Heat, at different Times, and in various Degrees of the Disorder.

The Fever in which the Horripilation, quick Pulse, and Heat, proceed with Velocity and Danger, is called an Acute Fever.

The Fever, on the contrary, in which these three Symptoms proceed slowly, either with or without Danger, is called a Slow Fever.

Both these Species of Fevers are either common and epidemical, or only affect particular Persons.

Those are called Acute Febrile Disorders, which are accompanied with an Acute Fever; whereas those are called Chronical Febrile Diseases, which are attended with a Slow Fever.

Hence it is, that all these febrile Disorders are not to be explained, without a previous Knowledge of the Nature of that Fever with which they are accompanied.

Now the Nature of the attendant Fever is to be estimated from the three common Symptoms before-specified; which are, Horripilation, a quick Pulse, and Heat.

Though these three Symptoms are present, at some time, in every Fever, yet the Velocity of the Pulse is the only Symptom which continues from the Beginning to the End of the Disorder, and by which the Physician judges, that a Fever is present.

In consequence of this, whatever Knowledge a Physician has of a Fever, depends entirely on the Velocity of the Pulse.

The proximate Cause, therefore, of this Velocity of the Pulse is, in like manner, the proximate Cause of the Fever, thus known from its Symptoms.

This Cause may, therefore, be a too quick Contraction of the Heart, or a too speedy reciprocal Influx of the nervous Fluid, conveyed from the Cerebellum into the Muscles and Cavities of the Heart.

Almost all Fevers hitherto observed, arising from an internal Cause, begin first with a Sense of Cold, Concussion, and Horripilation; and this Sense is greater or less, shorter or longer, internal or external, according to the Diversity of Patients, Causes, and Fevers.

In the Beginning, therefore, of every Fever arising from an internal Cause, the Pulse is quick, small, and frequently intermittent; whilst there is often a Paleness, Coldness, Rigor, Tremor, and Insensibility of the Extremities.

Hence it is obvious, that in this Period of the Disorder the sanguineous Humours become stagnant in the Extremities of the minute Vessels, whilst, at the same time, there is a Cause irritating the Heart to a stronger Contraction.

From these two Circumstances we discover the Cause of all the Symptoms which appear on such an Occasion, and are before enumerated.

In all Fevers where these Symptoms have preceded, there arises an Heat, which is greater or less, shorter or longer, internal or external, according to the Diversity of Fevers.

As this Heat succeeds the Fever already produced, it is obvious, the former must be rather the Effect, than the Cause and Essence, of the latter.

Hence, a quick Contraction of the Heart, and an increased Resistance of the Capillary Vessels, are Circumstances which account for all acute Fevers. Both of these Circumstances may, in a live Animal, be produced by numberless and infinitely various Causes; and as they may happen either jointly or separately, so when one is produced, the other easily follows.

For this Reason, the proximate Cause of a Fever, which consists in the quick Contraction of the Heart, and the increased Resistance of the Capillary Vessels, may itself have an almost infinite Number of proximate Causes, which are either singular, and peculiar to some Persons; or universal, and common to many: And these depend on the State of the Air, the Quality of the Aliments, and the Patient's Method of Life.

The Causes, therefore, of a Fever, are either particular, or epidemical.

The proximate particular Causes of a Fever may be reduced to five Classes; which are, first, Acrid Aliments, Drinks, Sauces, Medicines, or Poisons, when either possessed of such a Property as that they cannot be digested, moved, and evacuated; or when taken in such a Quantity as to irritate, suffocate, and obstruct the Vessels, by their Putrefaction. Secondly, The Retention of such Things in the Habit as ought to be evacuated, in consequence of Cold, Unctions, gloomy Dispositions of Mind, improper Aliments, Drinks, Medicines, Poisons, a cloudy and foggy Air, Ease, a Remission of usual Exercises, Obstructions of the Vessels by their Contents, or Compressions of them by surrounding Substances. Thirdly, Too much Exercise of the Mind, or Body; and acquir'd Heat. Fourthly, External Applications of an acrid, pungent, corroding, lacerating, caustic, and inflammatory Nature. And, fifthly, Such Substances as induce a great Change in the Humours and their Motion, such as many external and internal Things; Hunger; excessive Evacuations; the Pus, Water, and Ichor, in a Dropsy and Empyema; an acrid Serum collected in any Part; an hot State of the Bile; an Inflammation; a Suppuration; a Gangrene; a Cancer; long-protracted Watchings; intense Study, of any kind; and excessive Venery.

The Effects of a Fever are, a brisk Expulsion and Propulsion of the Fluids; an Agitation of their stagnant Parts; a Mixture of all their Particles; a Prevalence over the resisting Matter; a Concoction of the Humours; a Secretion of the concocted Parts; and a Crisis of that which, by its stimulating and coagulating Quality, produced the Fever; a Change of Health and Soundness into a morbid State; a Change of Health into a Disposition fit for bearing those Things to which the Patient was little accustomed before; an Expression of the most fluid

fluid Parts of the Humours; and an Inspissation of the rest; Thirst, Heat, Pain, Anxiety, Weakness, Lassitude, a Sense of Weight, and Loathing of Food.

The sooner the Viscidity of the Juices is resolved, and the more expeditiously the Irritation is allayed, the slighter, shorter, and more salutary, the Fever is; and, on the contrary, it is the more violent, long, and injurious, the longer it is before the Viscidity of the Humours is resolv'd, and the Irritation allay'd. Fevers are, also, various, according to the several Degrees and Conjunctions of this Irritation and Viscidity.

Hence it is, that Fevers often exert the same Efficacy with Medicines, with respect to other Diseases.

Hence, also, the Beginning, Increase, Height, Decrease, Crisis, Change, and Cure of Fevers are various, in acute and particular Fevers.

A Fever terminates in Death, some other Disorder, or in Health.

It terminates in Death, when the Solids are destroyed by a Force acting too strongly on them; or when the Fluids are so depraved and peccant, as to obstruct the vital Vessels, or those through which new Fluids ought to be conveyed, in the room of those lost. Hence arise Inflammations, Suppurations, and febrile Gangrenes, in the vital Viscera, the Heart, Lungs, and Cerebellum; or aphthous Ulcers in the Primæ Viæ, the frequent Causes of Death in Fevers.

A Fever terminates in other Diseases, when either, by a too violent Agitation, it injures the Vessels, and, dissipating the more fluid Parts of the Humours, inspissates the rest; or when, by a too weak Action, it is unable, by its Force, to resolve the coagulated Parts of the Fluids; or when it deposits the critical Matter in some obstructed, dilated, or ruptured Vessels. Hence arise red Spots, Pustules, Erysipelas, Measles, Small Pox, Phlegmons, Bubos, Inflammations of the Parotid Glands, Abscesses, Gangrenes, Sphacelus, and Scirrhus.

A Fever terminates in Health, first, When by its Force it subdued, resolves, renders moveable, and carries off, by insensible Perspiration, the material Cause of the Fever; and, at the same time, checks its Impetus, by restoring an equable Circulation. This universal Resolution almost resembles the Resolution in the Inflammation of a particular Part. Secondly, A Fever terminates in Health, when the Matter of the Disease, being, by the Force of the Fever, subdued, resolved, and rendered moveable, yet retains a certain Quality, by which it resists the equable Circulation of the Blood, stimulates the Vessels, and, by exciting some sensible Evacuation, is expelled. Hence Sweat, a Discharge of the Saliva, Vomiting, a Diarrhoea, and copious Discharge of Urine, happen critically, after the Concoction of the Matter, and the State of the Disease, generally within fourteen Days.

A Fever, also, terminates in Health, when the Matter of the Disease being, by the Force of the Fever, subdued, resolved, rendered moveable, and again assimilated with the sound Humours, circulates without any Crisis, or the Induction of any other Disease.

The Genius, Difference, and Duration, of Acute Fevers, when observed from the Beginning, through the Increase to the Height of the Disease, enable us to prognosticate its Event, several Changes, and final Termination.

From all the Circumstances, therefore, already enumerated, the general Diagnostics and Prognostics of Fevers may be easily deduced.

The general Cure of Fevers is most effectually obtained, first, By preserving and supporting that Strength on which Life depends. Secondly, By correcting and expelling the acrid irritating Matter. Thirdly, By dissolving and expelling the viscid Juices. And, fourthly, by mitigating the Symptoms.

The Strength on which Life depends, is supported by Aliments and Drinks of easy Digestion, opposite to Putrefaction, allaying Thirst, fit for increasing the Appetite, and contrary to the known Cause of the Disorder.

The Aliments are to be exhibited at the time the Fever is absent, or, at least, when its Force is least.

The Aliments are to be exhibited in a small Quantity, tho' at frequently repeated Intervals, lest the Viscera should be oppressed, or a Change induced on them.

The Quantity and Quality of the Aliments are to be estimated and determined, first, From the Probability of the Duration of the Fever, whether for one, four, seven, nine, eleven, fourteen, twenty-one, thirty, forty, or sixty Days; for as much Aliments ought to be exhibited as are sufficient for supporting the Strength, and rendering it fit for the Purposes of Concoction, and a Crisis: The shorter the Disease, the less and the weaker the Aliments ought to be; whereas the longer the Fever, the more and the stronger they ought to be. Secondly, From the Age of the Patient; for the younger and the older Persons are, with the greater Difficulty they bear Hunger. Thirdly, The Height and Vehemence of the Disorder, when

known, require Aliments of various Virtues, and exhibited in different Quantities. In the Height, a small Quantity of light Aliments are to be used; but, in the Increase and Decline, the more and the stronger the Aliments ought to be, the more the Disease is distant from its Height. Fourthly, From the Place in which the Patient lives: For those who live near the Equator, commodiously bear light Food, which does not so well agree with those who live near the Poles. Fifthly, From the Season of the Year; because the Summer requires light, and the Winter stronger Aliments. Sixthly, From the Custom and natural Constitution of the Patient: For the Person who, when in a State of Health, using delicate Aliments, has them easily dissipated, requires a pretty large Quantity of Aliments, because the Vessels and Viscera were accustomed to them before. And, seventhly, From the Sense of Lightness or Weight succeeding the Use of the Aliments.

Any external irritating Substance, such as the acute Fragments of Glass, Metal, Wood, Stone, and Bones, stimulating, corroding, vesicating, caustic, septic, and poisonous Substances, or such as produce a Redness of the Parts, are, with all Expedition, to be removed; and the Parts in which such Substances were lodged, and are injured by them, are to be fomented with viscid, mucous, mild, oleous, anodyne, and gently aperient Fomentations. Thus,

Take six Quince-seeds; and of the distilled Waters of Rose and Elder-flowers, each three Ounces: Make into an Emulsion, to which, when pure, add half an Ounce of rectified Spirit of Wine, and one Dram of the Tincture of Opium.

This Intention is, also, answered, by the Unguentum Aureum, Basilicon, Diapompholygos, the Unguentum Nutritum, Ointment of Poplar, and Ointment of Roses.

The acrid irritating Substance lodged internally, such as the Acrimony of an Inflammation, Suppuration, Gangrene, Sphacelus, Cancer, carious Bone, Ichor, Pus, and acrid or stagnant Lymph, is to be removed, or corrected, by the Methods prescribed under their respective Articles.

An acrid irritating Quality, induced on the Fluids, may and ought to be corrected by the Use of the six Nonnaturals, and various Remedies adapted to the known State and Nature of the Disorder. This Intention is excellently answer'd,

First, By Rest, both of the Body and Mind; Abstinence from too much Exercise; by moistening, diluting, mild, and lenient Substances, such as Ptisans, and laxative Decoctions.

Secondly, By temperating the excessive Heat of the Air, by cooling Exhalations, especially those of Plants proper for this Purpose; by drinking subacid, gently-nitrated Water, with a small Quantity of subacid Wine; by subacid, gently demulcent, and a little salted, Aliments; and by Medicines of a similar Nature. Thus,

Take of the Decoction of Barley, twenty-five Ounces; of pure Nitre, one Dram; of Rhenish-wine, six Ounces; of the Robs of Currans, and Elder, each two Ounces: Mix all together, and let the Patient take an Ounce or two every Quarter of an Hour.

Take of the distilled Waters of Succory, Fumitory, and Baum, each three Ounces; of the Spirit of common Salt, one Dram; of the Syrup of Mulberries, two Ounces; and of pure Nitre, half a Dram: Mix all together, and let the Patient take a Spoonful every Half-hour.

Take of the Crystals of Tartar, two Drams; and of pure Nitre, half a Dram: Reduce to a Powder, of which let the Patient take half a Scruple every three Hours, in some proper Pisan.

Thirdly, By correcting the excessive Moisture of the Air, by large Fires of aromatic and resinous Woods, and by the Exhalations of aromatic Substances. Thus,

Take of the recent Herbs of Marjoram, curled Mint, Origanum, and Rosemary, each two Handfuls; of the Flowers of Roman Chamomile, red Roses, Tansey, and Lavender, each one Handful; of Syrian Marum, half an Handful; of the Roots of Florentine Orris, Garden Angelica, and Masterwort, each three Ounces; of the Shavings of Sassafras, two Ounces; and of bruised Celeriseeds, three Ounces: Cut all down, and reduce to a Powder, to be sprinkled in the Room where the Patient is.

Fourthly, By correcting the putrid State of the Air, by throwing Nitre, Gunpowder, Vinegar, and Salt, upon live Coals.

Fifthly,

Fifthly, If a Fever is excited by Affections of the Mind, the Passions of the Mind are to be regulated by Reason, and contrary Affections; by Variety of Objects, Anodynes, and Opiates.

Sixthly, When a Fever proceeds from acrid acid Aliments, this Acrimony is to be diluted, check'd, absorb'd, and changed into a compound Salt; and this Effect is produced by the aqueous and gelatinous Parts of Animals, by oleous and cretaceous Substances, Shells of Fishes, Crabs-eyes, pinguious Earths, alkaline, fixed, volatile, simple, and compound Salts.

Seventhly, When the Fever arises from acrid saline Aliments; this Acrimony is to be diluted by aqueous Medicines, and evacuated at the same time; tempered by mild oleous Medicines; and corrected by lixivious Preparations of Quick-lime.

Eighthly, When the Fever proceeds from acrid, aromatic, and heating Aliments, the Acrimony is to be diluted by aqueous Fluids, corrected by Acids, resolved and deterged by saponaceous Acids, and tempered by mild glutinous Substances. As calefcent acrid Substances belong to this Class, so we hence learn the Method of treating Fevers produced by them.

Ninthly, When a Fever is produced by the calefcent Parts of Animals, it is to be cured by the Measures directed under the Article ALCALI.

Tenthly, When a Fever proceeds from too large a Quantity of Aliments, or the use of such as constrict the Stomach, it is to be cured by Dilution, Fasting, Vomiting, and rendering the Body soluble. Gentle Vomits may be prepared, in the following manners:

Take of light Bailey-water, thirty-six Ounces; of Oxymel of Squills, three Ounces; and of vitriolated Tartar which is not acid, two Drams: Mix, and let the Patient take two Ounces every Half-hour. Or,

Take of the Rob of Elder, three Ounces; Vinegar of Squills, one Ounce; and distil'd Baum-water, six Ounces: Mix all together, and let the Patient take half an Ounce every Half-hour. Or,

Take five Grains of Emetic Tartar, for one Dose. Or,

Take one Ounce and an half of Emetic Wine for a Dose. Or,

Take of white Ipecacuana-root, one Scruple: Reduce to a Powder, to be taken for one Dose. Or,

Take of the Powder of Ipecacuana-root, four Scruples; and of White-wine, three Ounces: Boil in a long Phial, for four Hours; and exhibit the Liquor, when strain'd, for one Dose. Or,

Take five recent Leaves of Asarabacca, cut down; pour upon them boiling Water; let them infuse for half an Hour; and exhibit the express'd Juice for one Dose.

Eleventhly, A Fever brought on by acrid, fermented, or fermenting Liquors, acid, oleous, aromatic, or distil'd Fluids, or a simple Acrimony, is to be removed by the same Remedies with those mentioned above in N^o 5. 6. and 8.

Twelfthly, A Fever arising from excessive Watching is cured by the same Methods with those recommended above in N^o 1, 2. and 5.

Thirteenthly, If a Fever arises from an alkaline, acid, oleous, or saponaceous putrid Acrimony, contracted by a Retention of the excrementitious Humours, these must be rendered moveable, their Passages must be lubricated, and their proper Emisseries opened; mean time, the vital Powers, which expel them, must be stimulated, and augmented: And this is to be done both by internal and external Remedies.

The principal excrementitious Humours, which, if retained, are capable of exciting a Fever, are the Fæces of the Belly, the Urine, the Lochia, the hæmorrhoidal Blood, and the perspirable Matter.

The Emisseries are opened by resolving the Matter fixed therein, and by relaxing the obstructed Emisseries: This is done by Baths, Clysters, Frictions, Abrasions of the Hairs, and cleansing of the Skin.

What stagnates at the Extremities of the conical Vessels, on account of too great a Quantity of Blood, by which the Vessels are compressed, is reduced to a State of Fluidity, by diminishing the Quantity of Blood by Venesection; and we learn, that this is the Case, by the Signs of a PLETHORA, specified under that Article.

What adheres to the Extremities of the Capillary Vessels, on account of spasmodic Contractions of their Fibres, by which their Capacities are diminished, is resolved by relaxing the

Fibres, and removing the Acrimony which causes their Contraction; for the Methods of doing which, see the Articles FIBRA, and OBSTRUCTION.

What adheres on account of its own Viscidity and Lentor, is resolved by various Remedies, the principal of which consists in a due Moderation of the Fever itself, in such a manner, that by means thereof the Coagulation may be resolved. It is, therefore, necessary to regulate the Fever in such a manner, first, that no Inflammations, Suppurations, Gangrenes, or Sphacelations, may be produced; the Danger of which is evinced, by the Violence of the Symptoms, particularly Heat, compared with the Strength of the vascular System.

Secondly, That the most fluid Parts of the Blood may not be dissipated by too violent a Motion thereof; the Signs of which Dissipation are; a Dryness of the Nostrils, Eyes, Throat, and Tongue; an Hoarseness, a Dryness of the Skin, a diminished Excretion of Urine, and a small, quick, and unequal Pulse.

Thirdly, That, before the Concoction of the febrile Matter, the Fever may not languish too much, so as to be incapable of subduing, moving, secreting, and excreting the Cause of the Disease. This State is distinguished by an universal Languor of all the vital Actions, before the Signs of Concoction appear.

In case the febrile Motion is exorbitant, (*See the Dissertation on Disorders arising from an Excess of the Circulation, under the Article SANGUIS*), it must be moderated by Abstinence, or an extremely thin Diet, by aqueous Drinks, by a somewhat cool Air, by calming the Passions of the Mind, by Venesection, refrigerating Clysters, and by mild, aqueous, glutinous, refrigerating, anodyne, and opiate Medicines.

Refrigerating Clysters may be prepared in the following manner:

Take of pure Nitre, two Drams; of Honey of Roses, one Ounce; and of recent Whey, twelve Ounces: Mix for a Clyster. Or,

Take of common Vinegar, one Ounce; of Native Nitre, three Drams; of solutive Syrup of Roses, with Sena, two Ounces; and of a Decoction of Barley, twelve Ounces: Mix for a Clyster. Or,

Take of Butter-milk, ten Ounces; and Syrup of pale Roses, two Ounces: Mix up, for a Clyster. Or,

Take of the common emollient Decoction, eleven Ounces; of pure Nitre, three Drams; and of Honey of Mercury, one Ounce and an half: Mix for a Clyster.

If the Fever is too languid, it must be raised by a cardiac Regimen, consisting of the more generous Sorts of Food and Drink; by respiring a somewhat warm Air; by exciting the Passions of the Mind; by acrid, volatile, aromatic, fermented Medicines; by Frictions, Heat, muscular Motion, Baths, and Fomentations.

FORMS OF MEDICINES IN A FEBRILE LANGUOR.

Take of Oxymel of Squills, three Ounces; of *Matthioli's* Spiritus Vitæ, three Drams; of distilled Mint-water, four Ounces; and of distilled Cinnamon-water, one Ounce: Mix all together, and let the Patient drink an Ounce every Hour.

Take of the Diascordium of *Sylvius*, one Scruple and an half; of the Theriaca Andromachi, one Dram and an half; of the Syrup of the Five aperient Roots, two Ounces; and of the distilled Water of Carduus Benedictus, six Ounces: Mix all together, for the same Use.

Take of the Confection of Alkermes, one Dram; of candied Ginger, six Drams; of the Roots of Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Syrup of the Five aperient Roots, a sufficient Quantity for making a Conserve: Of which let the Patient take half a Dram every four Hours.

Take of the Countess of *Kent's* Powder, one Scruple and an half: And exhibit it for a Dose every four Hours.

Take of White Ginger, *Winter's* Bark, of the Roots of Zedoary, Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Troches of Vipers, two Drams: Reduce to a fine Powder, to be divided into Doses of one Scruple and an half; one of which is to be taken every four Hours.

Take of the Salt of Carduus Benedictus, half a Dram; of burnt Hartshorn, one Dram; of red Coral, two Scruples;

ples; and of the distilled Oils of Cinnamon, and Citron-peel, each three Drops: Reduce to a Powder, to be divided into ten Doses, for the same Use.

Next to the due Regulation of the febrile Motion, the most important Remedy against the Viscidity of the Juices is, the Restitution of the elastic Force of the Vessels, by diminishing the Quantity of Fluids, by copious Venesection, performed with Expedition, and from a large Wound; and immediately after, or at the same time, increasing their Motion by stimulating Remedies.

Lastly, The viscid Juices are render'd fluid, by diluting with aqueous Drinks, Baths, Fomentations, and Clysters; using, at the same time, Frictions. And these have a much better Effect, if taken warm; if resolvent Salts, as Nitre, are mix'd in a due Proportion with the aqueous Fluids; and if gently aromatic, bitter, and lactescent cooling Vegetables are boiled in them.

The bitter lactescent cooling Vegetables hinted at by the Author, are the

Chondrilla. Gum Succory.

Cichorea. Succory.

Hieracia. Several Species of Hawkweed.

Intubus. Endive.

Lactuca. Lettuce.

Scorzonera. Vipers-grass.

Sonchus. Sow-thistle.

Taraxaca. Several Species of Dandelion.

Tragopogon. Goats-beard.

But, that these may operate well, expeditiously, safely, and with Efficacy, Venesection is to precede their Use; for this facilitates their Ingress, their Mixture with, and Action upon, the Blood.

So soon as, by these Remedies, the morbid Viscidity is dissolved, by a Continuation of the same, and sometimes augmenting their Actions, it is forced through the Vessels, and expelled: Sometimes, however, it may be so far subdued and amended, as to be rendered similar to the healthy Juices, and require no Expulsion.

The usual Symptoms, accompanying an acute Fever, are, Cold, Tremors, Anxiety, Thirst, Nausea, Eructations, Vomiting, Weakness, Heat, Exesuation, Dryness, Delirium, Coma, Watchings, Convulsions, Sweats, Diarrhoeas, and inflammatory Pustules.

All these Symptoms arising from, and caused by the Fever, cease spontaneously, when that is removed: For this Reason, they require no particular Method of Cure, provided they can be supported without endangering Life, till the Termination of the Fever.

But it must be remarked, that these Symptoms frequently arise from an Attempt of the vital Powers to form a Crisis, and expel the critical Matter; and then they precede, accompany, and follow the Crisis; in which Cases, nothing must be done to moderate them, which can in any Degree interfere with the salutary Work carrying on.

But if any of these Symptoms are unseasonable, or too severe to be supported without the Hazard of Life; if so troublesome, as to render the Patient insupportably uneasy; or if there is Danger of their producing some more formidable Disorder; in such Cases they must be mitigated by Remedies adapted to them; always having due Regard to the Cause and State of the original Distemper.

FEBRILE SYMPTOMS; and first of

FEBRILE COLD.

Cold, in the Beginning of Acute Fevers, arises from a decreased Attrition of the Liquids with each other, and with their respective Vessels; a Diminution of the circulatory Motion; a Stagnation of the Liquids at the Extremities of the Vessels; a diminished Contraction of the Heart, and only a partial Evacuation of its Ventricles; and a less copious Influx of the Spirits conveyed from the Cerebellum.

This Cold, if of long Duration, causes polypose Concretions in the larger Vessels near the Heart; and in the small Vessels an Evacuation of the Fluids they ought to contain, in consequence of their Contraction; and in both these Cases many and severe Disorders are excited.

Hence the Reasons are evident, why intense Coldness, in the Beginning of Acute Fevers, is of very bad Prefage; why the Fever is dangerous, in Proportion to the Cold perceived upon its first Attack; and why, in the Beginning of the Plague, an excessive Sensation of Cold is succeeded by as excessive a Degree of Heat.

If any Attempts are made to remove the Coldness in the Beginning of Acute Fevers, by any Remedies which stimulate briskly, under whatever Denomination, a Foundation is frequently laid for an incurable Inflammation in the Sequel. For

this Reason, all kinds of acrid saline Medicines, aromatic and oleous Substances, and Veficatories, are to be condemned, in these Cases, as highly pernicious.

But a much more safe, and effectual Method of Cure, may be pursued, by exhibiting warm aqueous Drinks impregnated with Nitre, a little Honey, and Wine; by Baths, Vapours, Fomentations, and Lotions, made of the same Sorts of Liquors; and by moderate Frictions: For these, applied at first, are capable of curing and preventing very great Disorders.

Take of Barley-water, thirty Ounces; of pure Nitre, two Drams; of simple Oxymel, three Ounces; and of distilled aromatic Clove-water, two Ounces: Mix all together, and let the Patient, every Quarter of an Hour, drink two Ounces, pretty warm.

Take of the Four greater and lesser cold Seeds, each two Drams: Make into an Emulsion with Water, with three Pints of which mix, of distilled Fennel-water, four Ounces; of Sal Prunellæ, two Scruples; of the Syrup of the Five aperient Roots, two Ounces; and of the Syrup of Violets, half an Ounce: To be exhibited for the same Purposes with the other.

Take of distilled Borage-water, one Pint; of the distilled Water of Rose-flowers, one Ounce; of distilled Elder-flower-water, eight Ounces; of Distilled Cinnamon-water, one Ounce and an half; of *Matthioli*'s Spiritus Vitæ, half an Ounce; and of *Fernelius*'s Syrup of Mugwort, two Ounces: Mix all together, and exhibit for the same Use.

Coffee, Decoctions of Sassafras and Sanders, together with others of a like Nature, are of singular Service in the cold Fit, especially if towards the End of their Preparation a small Quantity of some aromatic Substance is added. Thus,

Take of the White, Yellow, and Red Sanders, each one Ounce: Boil in Water for a Quarter of an Hour: Then add, of the Roots of Fennel, four Ounces; of the Shavings of Sassafras, two Ounces; and of Liquorice, half an Ounce: Let them boil for a Moment, and strain off four Pints; for the same Use with the others. *Boerhaave*.

PROGNOSTICS FROM COLDNESS IN ACUTE DISEASES.

A Coldness of the Body, which may rather be called a *Coldness*, or moderate *Heat*, after some good Evacuation, by which the Pulse is rendered better, and stronger, is a very good Sign, as it indicates a critical Solution of the Fever: That *Coldness*, also, which is the Consequence of refrigerating or allaying the Heat of a Fever, and is attended with Signs of Concoction in the Urine, Spit, or Stools, (where the Disease has affected the Nervous System, spirituous Parts, or Belly) and an Alteration of the Pulse for the better, is a very good Symptom, and signifies a safe and speedy Return of Health. A *Coldness*, also, is sometimes observed to be critical, or preceding a very good Crisis.

Though a *Coldness* thus qualified, as before described, is to be esteemed salutary; yet it rarely happens that we can draw any good Prognostic from a *Coldness* of the Body. This *Coldness*, to proceed, is observed either in the whole Body, or in the external Parts; in continual Fevers it is generally mortal, but in very robust Constitutions it portends not Death, but the long Continuance of the Disease. Under great Weakness it is always mortal, that is, where the Disease has been great and violent; when it is the Consequence of an Extinction of the Faculty, it shews Death to be very near: But that it proceeds from such a Cause, will be indicated by other preceding destructive Signs.

Some who labour under an Anasarca, but especially under an Ascites and Leucophlegmatia, have a *Coldness* almost of the whole Body; and the same is observed in Persons affected with inward Suppurations when dying; such have a *Coldness* or Chilness in almost every Part, either from an extraordinary Refusion of the natural Heat, or a Redundance of cold Humours.

A *Coldness*, however, of this Nature, in the extreme Parts, affords not always sure Grounds for Prognostication; for in some Patients, not under any acute Distemper, such a *Coldness* is not much to be feared. In Diseases, says *Galen*, not attended with a Fever, which happen in Winter, and to old Persons, for the extreme Parts of the Body, as the Ears, Nose, Feet, and Hands, to be cold, is not at all surprising; since, as he attests, in his second Comment on the *Prognostics*, those Parts are naturally bare of Flesh, and, also, at a great Distance from the Viscera.

But a *Coldness* of this Sort, in Acute Diseases, is no small Evil; for, by means hereof, through Weakness, the natural Heat is prevented from penetrating to the extreme Parts of the

the Body; besides, under acute Disorders, through the Violence of the Inflammation infecting the Viscera, the Blood is distributed but in small Quantities over the Body. In these Kinds of Disorders; therefore, for the Body to be cold, and chilled, and not only in the Extremities; but in every Part together, is very pernicious, unless occasioned by the Approach of a Fit; for it indicates the natural Heat to be either extinguished, or to labour under a Suffocation from the Multitude of Humours; but such a Coldness is attended with many other mortal Signs. Many dying Persons appear cold, with Desudations, or cold Sweats, and an extreme Languor; and they appear not only to be excessively cold, but, also, hard; whence we read, 1 *Prorrh.* 77. "That a Refrigeration with an Hardness, is a destructive Sign." But we shall proceed to examine more accurately into the Prognostics, which may be drawn particularly from a Coldness of the extreme Parts.

OF PROGNOSTICS FROM A COLDNESS OF THE EXTREME PARTS OF THE BODY.

The extreme Parts of the Body, which *Hippocrates* in his *Prognostics* calls the *Head, Hands, and Feet*; *Galen* on 7 *Aph.* 1. more distinctly, the *Nose, Hands, and Feet*, are affected with a Coldness in acute Diseases; when the natural Heat is either contracted, resolved, oppressed; or suffocated; or, in the last place, extinguished. The natural Heat is contracted inwardly to the Viscera, relinquishing the extreme Parts of the Body, and possessing the middle Parts; the Thorax, and the Belly, either on account of a violent Inflammation, or Erysipelas, affecting the Viscera, and, as *Galen* says, by its Heat attracting the Blood, in manner of a Cupping-glass, to the affected Part, or from a severe Pain in the Stomach, or its Mouth, or in the Colon, small Intestines, Uterus, or Kidneys; or, lastly, on occasion of the Fit, when Nature is at Work in the internal Parts, and makes its utmost Efforts to expel the redundant Humours with which it is oppressed; from which we prognosticate sometimes Death, sometimes Recovery, according to the present extraordinary Degree of Strength or Weakness of the Patient.

The natural Heat is resolved, either by the Violence of the febrile Estuation, or some vehement Pain, or immoderate Evacuation, or some poisonous Juice offending the Heart, and the Mouth of the Stomach, or by a sudden and immoderate Fit of Mirth.

The natural Heat is oppressed or suffocated in the Viscera; whence the remote Parts, being left destitute of their wonted Supplies of Heat, are refrigerated, when the Mouth of the Stomach is either overloaded with an immoderate Quantity of Food, or strongly vellicated by mordacious Humours, as *Galen* expresses it, *Com. in Lib. de R. V. I. A.* or when, the Viscera are infected with a Multitude of corrupt or crude Humours, by which the natural Heat is either suffocated, or remarkably oppressed, in the same manner as when by heaping great Quantities of green Wood upon a Fire, the same is so far from being increased, that it is quite suffocated, or, at least, much diminished, by so doing. Thus is the Heat shut up, and confined, within the Viscera by the Redundance and Coacervation of the Humours, so that it cannot penetrate or expand itself to the exterior Parts; the Veins and Arteries, by which it was diffused from the Viscera, being obstructed by those crude or corrupt Humours. A Fever proceeding from such a Cause is, by some, called *Lipypria*, [*λεπυρία, λιπύριον, λιπυρία*] by others, *Asaphodes*, that is, obscure and latent [see *ASAPHES*]; by others is described as mild and gentle externally, but violent and tumultuous within: The Reason is, because the Fever owes its Original to a Multitude of putrid Humours, or a Redundance of cold, crude, and gross Humours, by which the Heat is suffocated; or to a Phlegmon affecting the Viscera, or to a malignant and poisonous Putrefaction; in all which Cases there is a Coldness, or, at least, a Coolness, and Absence of Heat, in the extreme Parts.

The natural Heat is not only destroyed or diminished by Strangulation or Suffocation, but is even extinguished by an intense Coldness, or an occult poisonous Quality, by which the vital Parts are corrupted; as may be observed in the Effects of cold Poisons, and such things as are mortal from a Property inherent in their whole Substances, as *Galen* expresses it.

Again, the natural Heat, which has its Seat in the solid Parts, according to *Galen*, may be wasted, resolved and dissipated, by a greater or flameous Heat consuming the humid Parts, by which the natural Heat itself is preserved, and lives. Thus it happens in hectic Disorders, and under violent Pains of the Viscera, by which the natural Heat of those Parts is corrupted and resolved; on which account, *Hippocrates* had Reason to pronounce, 7 *Aph.* 26. a Coldness of the extreme Parts, under a violent Pain in the Parts of the Region about the Belly, a bad Sign.

In the last place, a Coldness may be generated, or Heat be destroyed, by an immoderate Evacuation, either spontaneous, or procured by Art; the Consequence of which, when extreme, is a mortal Syncope; in which the Patient dies under a Coldness of the extreme Parts: And the Symptom is occasioned by a Resolution of the Heat from opening an Artery.

We have hitherto been employ'd in examining into the Causes of this Coldness, or Extinction or Diminution of Heat, in the extreme Parts, and proceed now to the Prognosis, or Signs, afforded by it for our Observation; from whence we may predict a good or bad Event in an acute Disease.

In the first place, then, a Coldness of the extreme Parts, when Nature makes Attempts towards a Crisis, with other good Signs, must be esteemed salutary. But at the periodical Return of a Fit, or under a long Disease, such a Coldness affords no certain Prognostic; neither is it to be accounted a mortal Sign in old Persons, and in the Winter-season.

"A Coldness of the extreme Parts (with the before-mentioned Exceptions) in acute Diseases is, as *Galen* says, *Com. in 7 Aph.* 1. no slight Disorder, but a very pernicious Symptom, as it is the Consequence of a violent Inflammation of the Viscera." But here we are to except, also, a Coldness of the Extremities from unseasonable Eating, and what is occasioned by a Paroxysm, in which, says *Galen* on the *Prognostics*; not only the extreme Parts, but the Skin about the Ribs and Belly, are rendered cold.

A Coldness of the extreme Parts sometimes begins at the same time with the Disease; and this Symptom was observed by us one Year in many wandering malignant Fevers, which derived their Original either from a most intense Degree of Putrefaction; by which the Viscera are affected, as it were, with Poison, and the natural Heat on that Account very much resolved, or else retracted inwards, or almost suffocated by the Redundance of the highly putrid Humours; or, which is the last Account to be given for it, the Fever was kindled up, and took its Rise, from crude and pituitous Humours, as we observe in a *Febris Amphemerina*, or Quotidian.

A Coldness of the Extremities, in continual Fevers, is always bad, and imports Death, or Malignity, but most commonly Death. When this Symptom appears in the Beginning, together with the Fever, and not in an extraordinary Degree, it foreshews only a Malignity; and is accounted by Physicians a pathognomic Symptom of malignant Fevers, in which the Patient is often not very thirsty, nor has his Tongue very much dried; and this Coldness is sometimes equal, or of one Temperature, during the whole Course of the Disease, and sometimes unequal, or more or less increased and diminished.

A Coldness of the extreme Parts, not in the Beginning of the Disease, but on a critical Day, with critical Signs, indicates a Crisis, or a Change of a continual Fever into an Intermittent. But an intense Coldness of the Extremities, and of long Duration, with bad Signs, is always bad, and worst of all on a critical Day.

An almost invincible Coldness of the extreme Parts is a mortal Symptom: And this is confirmed by *Hippocrates* in his Observations, 1 *Epid. Sect. 1.* on a very mortal epidemic Fever, in which the Patients, he says, "were very subject to Refrigeration of the extreme Parts, into which it was very difficult to recal the Heat." And by what he tells us, 3 *Epid. Sect. 3.* in his Account of the Symptoms of an epidemic, and very malignant burning Fever, among which was "a remarkable Coldness of the Extremities of the Feet and Hands, and especially about the time of the Paroxysms, into which the Parts the Heat returned but by slow Degrees, and not in a kindly manner." To the same Purpose he says, of some who died of a Tabes, that, towards their End, "they were much affected with Coldness, and were hardly capable of receiving Heat." In *Prorrh.* 65. we read, that "Refrigerations after a Rigor, which are not succeeded by a Return of Heat, are bad." Thus they proved, for Instance, in the Case of *Philiscus*, 1 *Epid. Sect. 3. Aeg. 1.* "whose extreme Parts [the Day before he died] were cold on every Side, and never recovered any Heat afterwards." The same happened to *Silenus*, *ibid. Aeg.* and others mentioned in the *Epidemics*, not long before their Death.

In Persons very near Death, there is observed a Coldness of the extreme Parts equal to that of a Marble-stone, and often attended with an Hardness and Lividness. Now an Hardness, with an intense Degree of Coldness, is accounted a mortal Sign, as we read 1 *Prorrh.* 77. on which *Galen* says, "If the Coldness be so intense as to cause a total and absolute Refrigeration, with an Hardness, it is a Sign of Extinction," or that the natural Heat is extinguished.

A Coldness of the extreme Parts, attended with a Lividness, is no less mortal; for this latter is of all Symptoms the most pernicious, and shews Death to be at the Door. For a livid Colour

Colour in those Parts indicates an Extinction of the natural Heat, as we are taught by *Galen*, who, in his Comment on the third Epidemic, tells us, that a Coldness of the extreme Parts, attended with a Lividness, is an evident Sign of Death. And this is confirmed by *Hippocrates*, *Lib. Prognost.* where it is said, that, "If, besides this dead Heaviness of the Body, [before mentioned] there be, also, a Lividness of the Nails and "Fingers, nothing is to be expected but immediate Death." And, in what follows, we read, "That for the Fingers and "Feet to be quite black, is less pernicious than for them to "be livid;" and not without Reason, since a Lividness of these Parts always proceeds from an Extinction of the natural Heat, but a Blackness is not always from that Cause; for it may be owing to a black Humour settled in those Parts. We may conclude, therefore, that if to a Coldness of the extreme Parts there accedes a Lividness of the same, it is a most mortal Symptom, and shews Death to be near at hand. This we have abundantly confirmed by *Hippocrates* in his first and third Epidemics, by Instances in *Philiscus*, *Silenus*, the Woman who lay ill of a Quinsey at the House of *Aristion*, 3 *Epid. Sect. 1. Agr. 7.* the Daughter of *Euryanactes*, *ibid. Agr. 6. Erasimus*, and the young Man who lay ill in the *Forum Mendacium*, in all whom this Symptom was observed as they lay dying.

A great Coldness, or Chilness, of the extreme Parts, attendant on an intense Thirst, with a vehement Heat in the Thorax or Belly, is esteemed very pernicious, because it indicates a violent Inflammation of the Viscera, and is, as *Galen* says, *Com. in 7 Aph. 1.* an usual Symptom of the same. This is asserted, also, by *Hippocrates*, *Prognost.* where he says, that "For the "Head, Feet, and Hands, to be cold, whilst the Belly and "Sides are in an Heat, is bad;" and *Galen*, in his Comment, says, "it is not only bad, but mortal." The Sense of this Passage is very well and fully expressed by *Cornelius Celsus*, in the following Words: *Cui Febre aque non quiescente exterior Pars friget, interior sic calet, ut etiam sitim faciat, lethale:* "A Coldness of the exterior Parts, where the Fever ceases "not in Proportion, and an Heat in the interior Parts so great "as to cause a Thirst, is mortal."

A Coldness of the Extremities is accompanied with other pernicious Signs, besides those mentioned; such as a violent and continual Pain of the Head or Viscera, Want of Sleep, a Coma, a furious or gentle Delirium, Dotage, Loss of Memory, Deafness, Blindness, Convulsions, Tremor, Loss of Voice, Hiccup, Restlessness, Anxiety, difficult Respiration, and cold Expiration from the Mouth and Nostrils, turbid Urine, which will not become clear, black Urine, with a black ENÆOREMA, [see that Word] white, aqueous, lucid Urine, and Suppression of Urine, Drops of Blood from the Nose, virulent Vomitings, bad and copious Stools, which give no Relief, and other Symptoms of the like Kind. Any of those, appearing with a Coldness of the extreme Parts, portends Death; and the more there are of them, the more certain and speedy is the fatal Event. This is illustrated by *Hippocrates* in the Case of *Silenus*, so often quoted, of whom he observes, that "On "the sixth Day he had a thin small Sweat about his Head, "his extreme Parts were cold and livid, he was very restless, "voided nothing by Stool nor Urine, and had an high Fever." And of *Pythion*, 3 *Epid. Sect. 3. Agr. 3.* who died in *Thasos* in ten Days, it is observed, that "On the second Day about "Noon, his extreme Parts, and especially his Head and Hands, "were affected with a Coldness; he was speechless, and lost "his Voice, fetched his Breath short, and at long Intervals, "βραχύνοντες ἐν χεῖρσι ποναῖν. We have here, with *Galen*, "and some few Copies, joined the three last Words with the "first, and not with ἀνθερμάνον which follows them. See "BRACHYPNOEA; his Heat returned with a Thirst, he had "a quiet Night, and sweated a little about the Head." From these Instances, with what has been said, it appears, that a Coldness which is perpetual, or in a very high Degree, or attended with an Hardness, or Lividness, is a very pernicious Symptom, as indicating an Extinction of the natural Heat.

We may form Prognostics of a bad Event, also, from a Coldness, with respect to the preceding Symptoms, as, for Instance, when it succeeds a Rigor, and is not removed, according to 1 *Prorrh. 65.* where we read, that "Refrigerations "succeeding a Rigor, and not followed by a Return of the "Heat, are bad."

For the extreme Parts to be much chilled after bad Evacuations, is pernicious, and especially if these Evacuations themselves are of the Number of mortal Signs; such as Blood falling by Drops from the Nose, cold Sweats, Desudations in the Head, Urine aqueous, livid, icteric, turbid, depositing no Sediment, black, with a black Enæorema, a Suppression of Urine, Stools fat, liquid, very fetid, too frequent, or immoderate in Quantity, Spit black, livid, viscid, expectorated with much Difficulty, or quite intercepted. A Coldness, or Refrigeration

of the extreme Parts, succeeding any of these bad Symptoms just enumerated, is pernicious.

A Coldness of the Extremities is known to be destructive, not only by preceding, but by concomitant and subsequent bad Signs. A Refrigeration, or Coldness, of the extreme Parts is usually followed by many other Symptoms of mortal Signification. And here, with respect to the Coldness itself, if this be first moderate, but increases afterwards to a violent and intense Degree, it is pernicious, because, as we have said out of *Galen*, it indicates an extreme Languor of the Faculty. It is no less fatal, in the second place, if this Coldness of the Extremities be succeeded by little or no Degree of Relaxation; as we find it confirmed in the Case of dying *Philiscus*, 1 *Epid. Sect. 3. Agr. 1.* of whom *Hippocrates* observes, "That his extreme Parts were cold on every Side, and never afterwards "recovered their Heat;" and of *Silenus*, "who, it is said, "on the seventh Day was speechless, and could never from that "time have the Heat recalled into his extreme Parts."

A Part, after extreme Refrigeration, becomes livid, and sometimes hardens, in which Circumstance, if it long continues, Death, as was said, is at the Door. The same Event may be predicted from a subsequent Coma, Dotage, Forgetfulness, Deafness, Blindness, Loss of Voice, Convulsions, Tremor, cold Sweats, especially in the refrigerated Parts themselves, (which kind of Sweats seems indeed proper only to a Syncope and Death) Evacuations not good, no way relieving the Patient, or suppressed, Difficulty of Respiration, and the like Symptoms, many of which were observed by *Hippocrates* in dying *Silenus*, after a Refrigeration of the extreme Parts, and described by him as follows: "On the sixth Day he sweated a little about the Head, his extreme Parts were very cold, "and grew livid, he was very restless, had no Excretion by "Stool nor Urine, and was in an high Fever. On the seventh "Day he was speechless, his extreme Parts recovered no more "Heat, and he made no Water. On the eighth he had a "cold Sweat over all his Body, and, with the Sweat, an Eruption of small, round, red Exanthemata, resembling *Vari*, "which settled without forming an Abscess; he voided, with "little Provocation, much thin, and, as it were, indigested "Matter by Stool, and with some Difficulty; his Urine was "sharp, and excreted with Pain; his extreme Parts recovered "some little Heat; his Sleep was but slight and comatous; "and his Urine was thin and pellucid. On the ninth Day "the Symptoms were much the same. The tenth he refused Drink, was affected with a Coma, and slept in a "slight manner, his Stools were the same, but he discharged "Plenty of thickish Urine, which deposited a white and branny "kind of Sediment; his extreme Parts were again refrigerated. "On the eleventh Day he died." We conclude, then, upon the Whole, that a Coldness of the extreme Parts, preceded, attended, or succeeded, by any of these before-mentioned, or the like pernicious Symptoms, gives just Reason for predicting a fatal Event in acute Diseases.

OF PROGNOSTICS FROM A CHANGE OF HEAT TO COLD, AND OF COLD TO HEAT, IN ACUTE DISEASES.

It often happens in acute Disorders, that the whole Body changes from hot to cold, and from cold to hot, sometimes slowly, sometimes suddenly. A sudden Change to Cold, unless occasioned by a Paroxysm, is always bad; since, as it has been observed, it indicates the natural Heat to be either resolved, or by the Multitude of crude Humours oppressed and suffocated to such a Degree, as to be incapacitated, the Vessels being obstructed, for expanding itself externally; or that it is entirely collected in the inward Parts, on account of some malignant Humour, or violent Inflammation, infesting some of the principal Viscera.

We conjecture the natural Heat to be resolved, if there has appeared some preceding Cause of a Resolution; such as a violent and continual Fever, continual Watchings, severe Pains, and immoderate Evacuations of Blood or Humours.

A Suffocation is indicated by a Plethora, in which the Veins and Arteries are obstructed by the Multitude of crude Humours.

That the natural Heat is not expanded externally, we know by all those Signs which indicate the Redundance of the Humours; and that it is retracted inwardly by some acrid or malignant Humour infesting the Mouth of the Stomach, the Heart, or some other noble Part, we conclude from Pains about the Region of the Part affected, Loathing, ANGOR, [see that Word] Nausea, virulent or bilious Vomitings, Despondency of Mind, Anxiety, Watching, the Pulse highly irregular, weak, and low, and the like, as may be observed in those who have the Mouth of their Stomach vellicated by Worms, or some acrid Juice.

When

When some internal Inflammation is the Cause that the Heat retires inwards, it is known by the Heat of the inward Parts; and, by proper Signs, which *Celsus*, as above-quoted, has expressed from *Hippocrates*, where he says, "That a Refrigeration of the extreme Parts, where the internal Parts are parched with Heat in such a manner as to excite a Thirst, is mortal;" for such a Refrigeration has for its Cause an internal Inflammation, and that in a very violent Degree.

In whatever manner, as we said, the Body is refrigerated, it is never good; but it is often highly pernicious, and most of all, if the Coldness, or Refrigeration, be long and intense, or, if an Hardness, or Lividness, accede thereto; for then Death, as was observed, is very near. A sudden and immediate Refrigeration of the actually warm Parts is, also, constantly bad, except that Refrigeration of the extreme Parts, which is occasioned by Nature in her Attempts towards a critical Excretion of the Humours; for it often happens against a Crisis, from the impetuous Course and Conflux of the malignant Humour to some noble Part, that the extreme Parts are refrigerated, and never, or but very seldom, and by slow Degrees, recover any moderate Degree of Heat; after a Propulsion of the Humour to some more ignoble Part of the Body.

On the contrary, for refrigerated Bodies to recover Heat by equal and slow Degrees is a very good Sign; for it shews, that no inward, latent, acrid, or malignant Humour infects a noble Part, that there is no Inflammation in those internal Regions, nor any thing to prevent or intercept the Heat from diffusing itself over all Parts of the Body.

For the Parts to be unequally heated, is never good, and is sometimes esteemed a very bad Sign; but for the outermost Parts of the Body to be suddenly and frequently changed from hot to cold, and from cold to hot, in malignant Diseases, is pronounced by *Hippocrates* very pernicious, and is indeed esteemed more dangerous than the like Mutations in other Symptoms. To the same Purpose we read in 1 *Prorrh.* 43. "That sudden Mutation of the remote Parts to either Extreme is bad, as is, also, a Thirst of the like Nature;" that is, subject to the like Permutations. Here *Galen*, in his Comment on the Place, says, that in Diseases highly malignant there is a Mutation of these Qualities into their Contraries in the Space of one Hour, in such a manner, that the Patient shall at one time feel himself as cold as in Winter, and, soon after, as hot as in the Summer-season; and the Reason is, he says, because he has no Heat of his own, but is heated by that of the Fever, which, beginning at the Middle of the Body, and like a Flame spreading itself every-where, kindles an Heat in the extreme Parts, which being spent and transpired, those Parts grow cold again, because the natural Heat is extinguished.

Such swift Mutations of Heat and Cold, and, also, of Colour, and every other Symptom, frequently indicate a Complication of Affections in the Body, which requiring a considerable Length of Time for Nature to subdue, shews, that the Disease will be long and tedious; as is expressly affirmed by *Hippocrates*, 4 *Apb.* 40. where he says, that "Mutations in the whole Body, as when the same is refrigerated, and then again heated, signify the Length of the Disease."

In very acute and violent Disorders such sudden Mutations are a Sign that Nature is stinted in its due Time by the Violence of the Disease, and is in imminent Danger of being extinguished before it can put itself in a Posture of Resistance. Upon this Consideration it is, that we are told by *Galen* on the *Prorrhetica*, that Mutations of this Kind in highly malignant Distempers, are mortal, and that they are occasioned by an Extinction of the natural Heat.

Mutations of this Kind, or sudden Changes in other Symptoms, as from a Thirst to an utter Extinction of the same, from a placid Stillest to Restlessness, from Watching to profound Sleep, from the perfect Use of Reason to Deliriousness, or the Reverse of all these, are generally, also, of fatal Signification.

A Change of Symptoms in such a manner as, for Instance, there shall be a Pain of the Head, soon after of the Belly, then of the Legs, and soon after a Cessation of Pain, followed in a short time by a Delirium, which quickly gives place to another Symptom, has for its general Cause a *Metaptosis*, that is, a Transflux of the Humours; for Migrations of the Humour from one Part of the Body to another, or Turgescencies of the Humour appearing successively in different Parts, have the Name of *Metaptosis*, which of itself bears no other Prognostic than does the turgescent Humour. Every Turgescence or Orgasm of the Humours is, however, to be dreaded, since it threatens an Injury to some principal Part; for which Reason *Hippocrates*, 1 *Apb.* 22. *Galen*, and indeed all other Physicians, in Turgescencies, or Orgasms of the Humours, have immediately prescribed Purging even in the Beginning, when all things are in a crude State.

Permutations of Heat, Cold, Colour, and other Symptoms and Qualities, appearing with Signs of Concoction, indicate a

critical Perturbation of the Humours. And in this Sense, perhaps, we are to understand, *Coac.* 125. where it is said, that "Frequent Changes of the Colour with the Heat are of Service."

In malignant Diseases these Mutations are of Use, if made for the better, according to that of *Hippocrates*, 6 *Epid.* Sect. 6 *Apb.* 16. ἐν τοῖσι παλιμβέλοισι αἱ μεταβολαὶ ὠφελεῖσι, τῶν τοῖσι μεταβάλλειν πρὶν κακῶσαι ἐς τὰ πρόποια, "In deceitful (malignant) Diseases, Mutations are serviceable, if directed to proper Places, before they have received some Injury." [*Forsius* for παλιμβέλοισι reads παλιμβέλοισι, which he owns to be an obscure Word, and renders it in his Notes by *inconstantibus*, inconstant; and in this Sense, which seems most probable, the Sentence may be otherwise translated, thus, "In mutable, and inconstant Diseases, Changes are beneficial, if made in proper Places, and before any Malignity is contracted."] *Prosper Alpinus de Præfag. Vit. & Mort.*

FEBRILE TREMOR.

A Tremor is a Vacillation of the Muscles betwixt the State of Tension, and that of Relaxation, the distending and relaxing Causes suddenly, and involuntarily, succeeding each other; which supposes an alternate Cessation, and Repetition of the Influx of the arterial, and nervous Fluid into the Muscles: In the Beginning of a Fever, therefore, it arises from a partial Stagnation of both the above-mentioned Fluids; but, in the latter End of a Fever, a Deficiency of them, after they have been too much dissipated.

A Tremor, if of long Duration, causes Impediments to the Circulation of the vital Humours, and all their fatal Consequences.

Hence the Diagnostic and Prognostic of a febrile Tremor may be understood; and hence 'tis evident, why a Tremor joined with Coldness, and why a very great Tremor, are of extremely bad Presage: Why a Tremor accompanies very great Affections of the Mind: Why a Tremor happens about the time of Death: Why it is excited by exorbitant Evacuations of any kind: And why, when the Body has been habituated to a too copious Use of Liquors of any Sort whatever, a Depletion of the Vessels, by Abstinence from these Liquors, is accompanied with a Tremor.

A febrile Tremor is cured by restoring an equable Influx of the arterial Fluid into the Arteries, and its due Pressure upon them, and of the Spirits of the *Cerebellum* into the moving Fibres. This is done in the Beginning of the Fever, by such Remedies as dissolve Viscidities, and restore the Strength, which are specify'd above: But at the latter End of a Fever, by whatever expeditiously recruits the dissipated Liquids, and corroborates the Fibres and Viscera. See *FIBRA.* *Boerhaave.*

PROGNOSTICS FROM A TREMOR.

In treating of this Subject, we are first to shew what a Tremor is; and, next, from what Causes it proceeds. *Galen*, *Com.* 1. in 3 *Epid.* makes a Tremor a Diminution not of natural, but voluntary Motion; in which the Will or Faculty endeavours to move the affected Part, but fails of its Purpose, through the Imbecillity or Oppression of the same Part, which makes a Motion contrary, at least in some respect, to what was intended.

This kind of Affection differs from a convulsive Motion, which several have mistaken for a Tremor in Acute Fevers, under a Persuasion that *Hippocrates* makes a Tremor to be a convulsive Motion in many of his Patients, particularly in the fair Daughter of *Nerius*, 5 *Epid.* T. 50. of whom it is said, ἡ σπασμὸς, ἡ τρομῶδης ἦν. There were Convulsions, also, and she was affected with a Tremor. On some such Consideration, perhaps, it was, that *Sabinus* and *Metrodorus*, two ancient Physicians, said, that a Tremor was a small Convulsion; intending, by this Expression, it is supposed, an Affection complicated of a Tremor and Convulsion; which kind of Tremor is, also, among Physicians, usually called a convulsive Motion, and *Convulsio ex Materia non proportionata*.

Others think that *Hippocrates* sometimes by Tremor means a Rigor; particularly 4 *Epid.* T. 13. where he relates of the young Stranger Patient, that on the sixth Day he had a Crisis; on the seventh the feverish Fit returned, and went off with a Tremor; that is, as they would have it, with a Rigor. In this Matter, however, they seem to be mistaken, since we persuade ourselves that *Hippocrates* means a real Tremor, and not a Rigor; if for no other Reason but that the Crisis, on the sixth Day, was not a perfect one, but effected partly by an Excretion, partly by a Translocation of the morbid pituitous Matter upon the Nerves and Muscles, which was the Occasion of the Tremor.

But we have said enough on this Point, and proceed to shew the Generation of a Tremor. And here we are told by *Galen*, *Lib. de Trem. Rig. Palp. & Convuls.* that a Tremor is occasioned

tioned by Weakness, or an Imbecility of the motive Faculty, which is sometimes infirm of itself, as in old Persons; and sometimes accidentally from other Causes; particularly, as the same Author proceeds, from want of Aliment, from a violent Flux of the Belly, or a profuse Hæmorrhage; also, from long Fasting; by which the Aliment is consumed, and, consequently, the Faculty weakn'd; or from a Resolution of the vital Force, as the Case is in Stomachics, Cardiacs, in Faintings, violent Colds, and a Plethora oppressing the Muscles and Nerves. And he seems to speak much to the same Purpose, *Com. 1. in 3 Epid.* when he makes the Cause of a Tremor to be the Imbecility of the muscular Force, which is occasioned either on its own Account, or from an oppressive Redundance of Humours, or by Hunger, Lassitude, Watching, Cares, or immoderate Venery; all which resolve the natural Heat, or Strength. But let us hear the same Author more explicitly declaring the Cause and Generation of a Tremor, as follows, in the Place just before quoted. A Tremor, he says, is occasioned not only when the Muscles and Nerves are disorder'd, but when they are in a sound State; when any Person undertakes to heave, or carry in his Hands, something above his Strength. Thus some very strong young Men, in carrying some very heavy Burden, and especially when they have tried to ascend with it by Steps, have been observ'd to tremble in their Legs; and what happens to them from an extraordinary Weight, the same is occasion'd in old and weak Persons by a Weight which is lighter; for that is heavy to them. And a little after, comprehending under one all the Causes of a Tremor, he says, *We had the greatest Reason, therefore, in our Treatise de Tremor. Convuls. & Rig. for ascribing always a Tremor to Imbecility.*

But since the Virtue, or Faculty, is sometimes weak of itself, sometimes from some Passion of the Mind, and sometimes not at all from itself, but from a Load which oppresses it; hence there are three different Causes of a Tremor; which are, a Disorder in the Organs under the Command of the Faculty, the Passions of the Mind, and an heavy Load.

First, then, a want of due Temperament, or a Distemperature, whether hot, cold, dry, or moist, may render the Muscles so weak, as to occasion a Tremor in their Parts: For Heat, if excessive, resolves or dissipates the natural Strength; violent Cold, on the other hand, extinguishes the natural Heat; Humidity, when imbibed in an excessive Degree, oppresses the Muscles; and immoderate Dryness consumes the Humid, which preserves and maintains the natural Heat: Hence some mortal Phrenesies are observed to end in Tremors, from an excessive Diccation of the Origin of the Nerves, as well as of the Nerves themselves.

Secondly, The Passions of the Mind, as Fear, Sorrow, immoderate Joy, and others, which dissolve the Strength: Or, Lastly, An heavy Burden, by which the Muscles, being oppressed, are disabled from moving according to the Directions of the Will, may be the Causes of a Tremor.

These things being premised, we proceed to the *Prognosis*: And here, first, we observe, that some Tremors affect the Patient in the Beginning, others in the End of the Disease. As to the former, we learn from *Galen, Com. 2. in 3 Epid.* they never appear but in a violent Disorder: Tremors, we have said, are occasioned either from Hunger, Lassitude, Watching, immoderate Venery, or an oppressive Quantity of Humours; in which last Case they afford nothing certain alone on which to ground a Prediction in the Beginning, but are only Indications of the Violence of the Disorder; because all Redundances of Humours render a Disease dangerous. Of this Nature was the Tremor of *Pythion, 3 Epid. Ægr. 1.* who was taken the first Day with a Tremor of the Hands, an high Fever, and Delirium. Such, also, was the Tremor of *Charion* observed on the third Day, *3 Epid. Ægr. 5.* But though Tremors, in the Beginning of Diseases, indicate only a Redundance of Humours oppressing the Nerves and Muscles, unless they proceed from Hunger, Lassitude, Watching, or immoderate Venery, or are excited by some Passion of the Mind, the Patient, however, will not be free from Danger, if he be visited with a severe, malignant, or even long Distemper, since not only such, but every other, Disorder is to be dreaded in a Patient by any means debilitated. These Tremors, as we said, are no sure Grounds alone for predicting any thing of Certainty concerning the Fate of the Patient; but if they are accompanied with other severe Symptoms, the Case will be dubious, as it was, for Instance, in the Wife of *Eumyris, 4 Epid. Tr. 40.* "who, it is said, look'd like one free from any Distemper, and had no Fever; but lost her Wits, and was afterwards seized with a Tremor of the whole Body, attended with a Colliquation, Loathing, Thirst, and a Coldness." The same is further illustrated in the Case of the old Man, *4 Epid. Tr. 41.* who, after a Relapse, fell first into a Tremor of the Lips and Voice, at which time the Skin of his Body was observed to be more tense, and his extreme Parts were cold; he dy'd, as no less could be ex-

pected, tho', perhaps, his Tremor might proceed from Worms; as it was thought to do in some other Instances.

And thus much may be prefiged from Tremors in the Beginning of Diseases; but when they appear without any other Disorder accompanying or immediately succeeding them, they are usually Signs of an Apoplexy: This Prefage is hinted to us by *Hippocrates, 4 Epid. T. 36.* where it is said, "That some were seized at the Beginning with a Tremor of the Fingers, and of the Lips in speaking, and, also, of other Parts; but had their Tongue more ready, and Speech more fluent, than usual: They were more remarkable, also, for a Redness of the Face. These, also, drank Wine to a Degree of Intebriation, or were swelled by Vomiting."

Having thus shewn what may reasonably be predicted from Tremors, in the Beginning of Diseases, what we have to say of those which are observed afterwards is, that some of them indicate a critical Translation of the Humours, when Nature propels Part of the noxious Humours from the Viscera to the Muscles: And such Tremors are very good, provided they are attended with Signs of Concoction. Such was the Tremor of the young Stranger, *4 Epid.* before-mentioned, whose Fever went off on the seventh Day with a Tremor, the noxious Humours being critically translated from the principal Parts to the Muscles: It often happens, also, that at the Approach of a Crisis, by Vomiting, there is a Tremor of the lower Lip, which *Galen, Lib. 3. de Cris. Cap. ult.* reckons among the Signs of a critical Evacuation by Vomit.

These, then, are the Tremors observed in Diseases after their Beginning, which we have not the least Reason to dread; but, on the contrary, those which attend burning Fevers, and Inflammations of the Brain, when the Nerves are dried, or when the Origin of the Nerves, that is to say, the Brain, are all mortal. Tremors, from a Dryness of the Nerves in Phrenesies, are mortal, and seem to be proper to deadly Phrenesies. Justly, therefore, was it said by the Author of the *1 Prorrh. T. 9.* "That phrenetic Affections end in Tremors," or Tremors follow mortal Phrenesies. *Galen*, also, in his Comment on the Place, says, "That a Tremor succeeds mortal Phrenesies; for Infirmities of the Nerves are of very long Continuance in Phrenesies, on account of the Dryness of the Affection, the Faculty being worn out with Watching, and much Motion, and the Nerves immoderately dried, which are the Causes of Tremors." In a Phrensy, therefore, you see, all Tremors are mortal; and much more, if they appear attended with Convulsions, which are, also, the usual Attendants of vehement Phrenesies. But, in the Beginning of a Phrensy, a Tremor is not mortal; for a Trembling of the Tongue and Speech are then only Prognostics of a Delirium, as we are taught by the Author of *1 Prorrh. 19.* In obscure and mild Phrenesies Tremors are, also, usually observed, from a Resolution of the animal Faculty, and are all pernicious: Of these Kinds of Phrenesies we have the Author of *1 Prorrh. pronouncing, T. 34.* where he tells us, that "Tremulous, obscure, mild, and tractable Deliriums, are very phrenetic; as was the Case of *Didymarchus*, in *Coos*." For these are occasioned by a Resolution of the Faculty. In the last Place, a Tremor, from a considerable Injury of the Brain, by which the motive Faculty, for the Reason given before, is debilitated, is mortal in the highest Degree; of which we have an Instance in the fair Daughter of *Nerius, 1 Epid. T. 50.* *Prosper Alpinus de Præ-sag. Vit. & Mort. Ægrot.*

FEBRILE ANXIETY.

Anxiety is caused by some Impediment to the Egress of the Blood from the Heart; and, in consequence of this, from an Impossibility of its due Circulation through the Ramifications of the Pulmonary Vessels, and those of the Aorta: And these arise either from a spasmodic Contraction of the small Vessels, or an inflammatory Spissitude of the Blood, which renders it incapable of circulating through the proper Canals. Or the same Symptom is produced by an Impediment to the Passage of the Blood through the Vena Portæ, from the same Causes: Since, therefore, all the Blood conveyed to the Abdominal Viscera by the Coeliac and Mesenteric Arteries, and thence to the Vena Portæ by the Veins, cannot pass farther, it must there stagnate, distend the Vessels, and resist the fresh Influx of Blood into the Arteries last-mentioned, thereby producing the most fatal Consequences. On this account it is absolutely necessary, in all acute Distempers, to observe, with the utmost Diligence, the Causes of both these Species of Anxiety; and, by all possible means, to remove them.

If such an Anxiety continues long about the Heart, and vital Parts, it will produce polypose Concretions, Inflammations, and sudden Gangrenes, accompanied with intolerable Uneasiness, and soon succeeded by Death: But that, whose Cause is situated in the Hypochondria, will produce an excessive Sick-

ness at the Stomach, the other Viscera, mean time, having not so acute a Sensation: This is succeeded by sudden Putrefactions of the Blood, contained in the large and weak Vessels about the Liver; whence Gangrenes, Putrefaction of the Liver, and a fatal Dysentery, arising from such a Putrefaction.

From what has been said, the Physician may understand the Cause and Nature of such an Anxiety, and what Presages may hence be drawn; and, at the same time, he will distinguish betwixt that Species of Anxiety, excited by some nervous Disorder only, without a Fever, and that which is caused by an acute Inflammation, previously discovered by its proper Signs. And by comparing this with the Violence and Duration of the Symptom, and the Part where the Disorder resides, he will be enabled to discover its Nature; and to learn why, in all Diseases, at the Approach of Death, the last Scene is closed with extreme Anxiety; why a convulsive Anxiety is not attended with much Danger, but an inflammatory Anxiety with a great deal; and why Uneasiness, Restlessness, Sighing, Anhelation, and obstinate Want of Sleep, in suppuratory or inflammatory Distempers, are the Forerunners of Death.

Hence, likewise, it is evident, that various Methods of Cure are required, in order to mitigate the Severity of this Disorder; in the Discovery and Application of which the Physician will be duly instructed by a previous Knowledge of the particular Nature of the Symptom.

When, therefore, it is discover'd, that the Affection is excited by Spasms, it is to be removed by rendering the acrid, irritating Matter, of whatever Nature, mild; by expelling it, by means of Vomits, Cathartics, Sudorifics, Diuretics, and Abstersives; by diluting with warm aqueous Fluids; by calming the Affections of the Mind; by relaxing the Fibres, Vessels, and Viscera; and by moderating the Tumult of the nervous Fluid with Anodynes and Narcotics.

Boerhaave recommends the following Medicines, as Vomits, proper in Fevers.

Take of Oxymel of Squills, three Ounces; and of distilled Succory-water, five Ounces: Mix for a Draught.

Take eight recent Asarabacca-leaves; infuse for four Hours, in the distilled Water of Carduus Benedictus; and exhibit five Ounces, of the expressed Tincture for a Draught.

Take of white Vitriol, twenty-five Grains: Reduce to a Powder, to be exhibited in a small Quantity of Beer.

Purgatives proper in Fevers are these following:

Take of the Crystals of Tartar, five Drams: Reduce to a Powder, and exhibit in warm Whey.

Take of the Crystals of Tartar, two Drams; of Sal Prunellæ, twelve Grains; and of Sal Polychrestum, sixteen Grains: Reduce to a Powder, to be taken for a Dose.

Take of Scammony, seven Grains; and of distilled Succory-water, half an Ounce: Make an Emulsion; to which add twelve Drams of the solutive Syrup of Roses, with Sena, to be taken for a Draught.

Take of Tamarinds, three Ounces; of the Troches of Agaric, three Drams; of Sena-leaves, one Dram; and of Figwort, half an Ounce: Boil in Water, and to eight Ounces of the expressed Liquor, add half a Dram of Sal Prunellæ, and an Ounce and an half of solutive Syrup of Roses, with Sena: Of this let the Patient take two Ounces, every Half-hour, till he begins to be purged.

Take of Prunes, four Ounces; of Tamarinds, one Ounce; of Sena-leaves, two Drams; and of Figwort, six Drams: Boil with Water for half an Hour; express through a Cloth, and, with twelve Ounces of the Liquor, mix two Ounces of the Syrup of Succory with Rhubarb: Of this Preparation let the Patient take three Ounces every Half-hour, till he begins to be purged.

Take of the Electuarium Diaprunum of *Sylvius*, one Dram and an half; and of the Powder of Sena-leaves, one Scruple: Make up for a Bolus.

The same Intention is, also, answer'd by the following Medicines, exhibited in the Doses specified. The Electuarium Diaprunum, or Cholagogum, of *Sylvius*, half an Ounce; the Confectio Hamech, four Drams; the Hiera Picra of *Galen*, one Dram and an half; Lenitive Electuary, one Ounce; and Electuary of the Juice of Roses, half an Ounce.

Sudorifics proper in Fevers are always of a diluting and acient Nature, and may be prepared in the following manner:

Take of the Roots of Smallage, half an Ounce; of the Roots of Burdock, and China-root, each one Ounce; of the Roots of Succory, Grafs, Navew, Parsley, Rapes, and Butchers-broom, each half an Ounce; of Sarsaparilla, one Ounce; and of Vipers-grafs, half an Ounce; of the Leaves of Sorrel, Succory, Endive, and Dandelion, each one Handful; of Elder-flowers, two Ounces; and of the bruised Seeds of Smallage, and Parsley, each one Ounce: Boil in three Pints of Water, of which the Patient is every Quarter of an Hour to drink three Ounces warm, till a gentle Sweat is excited.

After this Formula a great many more may be prepared.

Diuretic Medicines, proper in Fevers, are these following:

One Part of recent Milk, mixed with three Parts of Water. Whey; Buttermilk; the Juice of the Birch-tree; the recent Juices of mature Summer-fruit, diluted in Water; Nitre; antimoniated Nitre; Sal Polychrestum; and the preceding sudorific Decoctions, used with a diuretic Regimen.

Absterfives Medicines, proper in Fevers, are the same with those already mentioned.

If the Anxiety is excited by an inflammatory Viscidity of the Blood, this Viscidity must be dissolved and diluted; the Vessels must be relaxed; and the Impetuosity of the vital Fluid must be checked. With these Views, let the Patient drink copious Draughts of aqueous Liquors, in which farinaceous Vegetables have been boiled, impregnated with Honey and Nitre, somewhat accecent, and slightly aromatic. Let Fomentations, Cataplasms, Epithems, and Plaisters, composed of diluting, relaxing, emollient, and anodyne Ingredients, be applied to the Region affected. Let Clysters, at the same time, made of the like Ingredients, and small in Quantity, be frequently injected, and, if possible, be retained a long time. And let the Vapour of warm Water, mixed with Emollients, be perpetually drawn into the Lungs, through the Mouth and Nostrils.

And let it be remarked, that this Symptom, above all others, requires a safe and immediate Cure, on account of the Severity thereof, and its Consequences. *Boerhaave*.

PROGNOSTICS, OR PRESAGES, FROM AN ANXIETY.

There occur in the *Prognostics*, *Prorrhetica*, and all the Books of *Hippocrates*, relating to Prediction, four synonymous Words, ἀλυσία (*Alyce*), ἀλυσμός (*Alysmus*), ἀπορία (*Aporie*), and ἀσθενία (*Ase*), or ἀσθένια (*Ase*): These all signify the same thing which we express by *Anxietas* (Anxiety), *Inquietatio* (Restlessness), *Implacabilitas* (Uneasiness), and *Jactatio* (Jactation, or Tossing). [To these may be added *δυσσώπια*]. Some indeed would have *Alyce* to have respect to an injured Respiration, when it is too frequent and irregular; but it appears from *Galen*, to have relation to a vitiated Decubiture, for, *Lib. de Humoribus*, he says, "He (*Hippocrates*) called it *Alyce* (an Anxiety) though many call it *Dysarephia* (a Self-dispiciency), for they say, those Patients are under an Anxiety (ἀλυσία), who cannot continue in one Posture of Decubiture, but are continually changing their Position, because the present is always uneasy to them." And he repeats the same in his Comment on 7 *Aph.* 56. By these Terms, then, we understand no more than a vitiated Decubiture, when, through the Violence or Malignity of the Disease, the Sick is perpetually shifting his Position, and cannot in the least rest in one Place, but moves, tosses, and throws himself about, in various manners; sometimes raising himself up, then sinking down, sometimes on one Side, sometimes casting himself on his Belly, and sometimes on his Back, but never resting in one Place or Figure of Decubiture.

An Anxiety proceeds either from the Stomach, labouring under some Disorder, or oppressed with Food, and under a Nausea; or from a great Inflammation of one of the internal Viscera; or an Imbecillity, incapable of sustaining the Disease; or from an occult Malignity infecting the Heart, as in a pestilential Fever; or from an Agitation of the Matter in the turgent Veins about the Præcordia; or, lastly, from a critical and violent Perturbation, occasioned by an Intumescence of the Humours, tending to an Excretion.

First, then, an Anxiety may be owing to some Indisposition of the Stomach, or an Oppression of that Part by an immoderate Quantity of Food, as appears from *Hippocrates*, *de R. V. I. A.* and *Galen's* Comment on that Book. Thus, when the Patient, after long Abstinence, the Disease not being past its Height, feeds too freely; or when the Mouth of the Stomach,

as *Galen* says, *Com. in Aph. & in Lib. de Humor.* contains some Humour particularly offensive, which Humour is not much in Quantity, nor diffused in the open Cavity of the Stomach, but immersed in its Coats; or, lastly, which is perhaps the same, when, as that Author says, *Com. in Prorrh.* the Mouth of the Stomach is vellicated by depraved Juices: An Anxiety, he there tells us, is known to proceed from the Stomach by the Attendance of a Nausea.

In the next Place, as Anxiety is produced by the Violence of the Disease, in hot and burning Fevers, especially at their Height, when the Sick becomes restless and impatient, through the Vehemence of the febrile Heat, and, what is no small Sign of Malignity, has his Anxiety occasioned by a Corruption of the bilious Humours swelling and estuating in the larger Veins. This Anxiety is most apparent, when one of the Viscera is affected with a great Phlegmon, or Erysipelas; in which Circumstance the Patient is not very hot in his outward and extreme Parts, but burns inwardly.

An Anxiety may, also, be owing to Weakness, as we are told by *Galen*, *Com. in 1 Prorrh.* when the Faculty is oppressed by the Body; as when immoderate Evacuations have preceded, or the Faculty is extinguished by the Malignity of the Distemper.

Lastly, The Patient becomes seized with an Anxiety, from a Commotion of the Humours vellicating the Parts, in order to a critical Excretion: Hence we are told by *Hippocrates*, 2 *Aph.* 13. "That they who undergo a Crisis, have a severe Night before the Fit." For when Nature intends an Excretion of the Humours, she raises a Commotion and Perturbation in the whole Body, which must, of Necessity, create a Restlessness and Anxiety in the Patient. To this we may add, that those who labour under a Suppuration, are often molested with this Symptom, either from a Decay of Strength, and Depression of Nature, or from the Use of Respiration much injured; or an Estuation in the Thorax; or from the Acrimony of the Pus corroding and vellicating the sensible Parts; or from an acrid Distillation from the Head upon the Mouth of the Stomach.

We have given you the Causes of an Anxiety, and proceed to speak of the Prognostics, which may be formed from this Symptom: And, in general, we say, with the Author of 1 *Prorrh.* 39. 76. and in other Places, that an Anxiety is always bad, except when it is critical, or precedes a happy Crisis: There are, however, some Anxieties from which nothing certain can be prognosticated; such are those occasioned by some Disorder of the Stomach, which, though bad, never afford, by themselves, any sure Prognostic of the Death or Recovery of the Patient. And indeed such an Anxiety as is excited by some Affection of the Stomach, is distinguished, according to *Galen*, *Com. in 1 Prorrh.* from other Anxieties by *vauſin*, a Nausea, and *épuſe*, Vomiting; because they who are molested with this Sort of Anxiety have a continual Nausea, and Inclination to vomit; whence it is justly said, by the Author of the *Coaca Præſagia*, that an Anxiety, with a Loathing and Nausea, indicates an Affection of the Stomach. Now in Intermittent Fevers, and in many other Diseases, an Anxiety, or Inquietude, with a Loathing and Nausea, is far from being malignant, since the Anxiety is often removed by Vomiting. Of this we have an Instance given us by *Hippocrates*, 7 *Epid.* T. 102. "The Wife of *Theotimus*, he says, labouring under a Semitertian, was seized with an Anxiety, Vomiting, and Horror, all at once; and as the Fit came on with a Thirst, in the Progress of the Fit, the Heat increasing with the Fever to a vehement Degree, she drank Hydromel; and, after Vomiting, was freed from the Horror and Anxiety together." An Anxiety and Inquietude, therefore, attended with a Loathing and Nausea, are not much to be dreaded, and least of all, when, by the Benefit of Nature, or the Assistance of Art, a Vomiting excited, relieves the Patient from them; as, on the other hand, an Anxiety which is increased by Vomiting, is not usually void of Malignity. Thus, also, in the Height of burning Fevers, under the greatest Estuation, an Anxiety is not to be feared, because it is a proper Symptom of that kind of Fevers. Anxieties of a good Sort are, also, frequently observed before an happy Crisis; for, at the Approach of a Crisis, the Patient grows restless and turbulent, and for very good Reasons, since the whole Body is then thrown into a Commotion and Perturbation, while Nature attempts an Excretion of the morbid Humour: But such critical Anxieties and Inquietudes are distinguished from others by critical Signs, and chiefly by a supervening Rigor, succeeded by a copious Sweat, or by plentiful Vomiting or Purging, or a copious and critical Hæmorrhage. With Respect to this Subject, we read, *Coac.* 19. that "Such as labour under an Horror, Anxiety, and Lassitude, with a Pain in the Loins, fall into a Flux of the Belly." And *ibid.* 111. "They, who, after Watchings, are seized with an Anxiety, may expect an Hæmorrhage

"from the Nose." An Anxiety, also, often happens, when Nature makes Efforts to propel the putrid and malignant Humours to the Skin, as in an Expulsion of Exanthemata, after whose Appearance the Anxiety ceases.

These, then, are the Anxieties from which we have no Reason to be apprehensive of any Danger in a Disease. But, as an Anxiety under a burning Fever, especially at the Height, and utmost Intensity and Estuation, at which time it is common to all, merits not our Concern, so, on the other hand, a malignant Anxiety observed in Fevers, where the outward Parts are in no extraordinary Degree of Heat, whilst the internal Parts and Viscera are in a burning State, is justly to be dreaded. Such an Anxiety seems to be a proper Symptom of malignant Fevers, which are mild and gentle, as to outward Appearance, but full of inward Perturbation and Uneasiness, occasioned, as we said, either by some violent Inflammation of one of the Viscera, or by an Erysipelas, or by an Estuation and Effervescence of the highly putrid Humours in the Veins about the Præcordia, or from mere Weakness, or from an extraordinary Redundance of crude Humours, with which Nature seems to be oppressed: In such a Circumstance the Patient in a Fever labours under a remarkable Anxiety, which we take for no slight Indication of Malignity.

But the "worst of all Anxieties, according to *Coac.* 2. are those which are attended with Refrigerations," particularly of the extreme Parts, the Feet, Hands, and Ears. To this Purpose we find *Hippocrates* thus speaking, in his Book of Prognostics: "If the Patient, he says, lies with his Feet bare, and not very hot, and throws about his Hands, Neck, and Legs, in an unequal and disorderly manner, it is a bad Sign; for it indicates an Anxiety."

An Anxiety, under Refrigerations of the extreme Parts, where Heat is not to be recalled, is mortal in the highest Degree, and shews Death to be at hand: Thus it proved in the Case of *Silenus*, 1 *Epid.* Sect. 3. *Ægr.* 2. and of the Woman who lay ill in *Fora Mendacium*, 3 *Epid.* Sect. 2. *Ægr.* 12.

No less pernicious is accounted an Anxiety which appears attended with bad Sweats, on a critical Day. Bad Sweats, according to *Hippocrates*, are all such cold Sweats, as in a continual Fever appear on the upper Part of the Body, as the Head, Neck, and Clavicles. Of such an Anxiety we read, 1 *Prorrh.* 27. where it is said, "That a Restlessness and Uneasiness [*δυσκοπία*] with Refrigerations, and a Sweating of the upper Parts, where the Patient is not free from a Fever, prognosticate a Phrensy and Death, as in the Instance of *Arifagoras*." And it was observed, by *Hippocrates*, of *Silenus* before-mentioned, "That on the sixth Day he sweated a little about the Head, his extreme Parts were cold and livid, and he was under a great Anxiety." And of the Woman mentioned, also, before, he says, "On the seventh Day she had a new Fit of a Rigor, succeeded by an high Fever, and an intense Thirst, with an Anxiety: Towards Evening she had a cold Sweat over all her Body, with a Coldness of the extreme Parts, and no Return of Heat." Anxieties, therefore, under Refrigerations, attended with bad Sweats, are destructive; which is the same thing as if he had said, that Anxieties, with bad Signs, are bad; and with pernicious Signs, pernicious and deadly. Now, that cold Sweats of the Head, and Refrigerations of the extreme Parts, are pernicious Signs, we are taught by *Hippocrates*, *Coac.* 572. 573. *Prognost.* & *Lib. de Crisibus*.

Anxieties on critical Days afford surer Prognostics, and are esteemed very bad, when succeeded by no salutary Evacuation, as by an Hæmorrhage from the Nose, or by Stool, Vomit, or Urine, but especially by Sweat. For Confirmation hereof we read, 1 *Prorrh.* 61. "Refrigerations of the whole Body, attended with an Anxiety, but no Sweat, are bad Signs." And of Anxieties, attended with bad Evacuations by Stool, we are told by *Hippocrates*, *Lib. de R. V. I. A.* "That such Stools [spumous, and saturated with pure Bile] were very pernicious on many Accounts, as not extinguishing, but increasing the burning Heat of the Hypochondria, and exciting a Restlessness, Anxiety, and Jactation of the Members." Which *Galen*, in his Comment, tells us, are Symptoms of an Inflammation, affecting the Hypochondria themselves. Of the same Symptom, in Conjunction with Vomiting, it is said, 1 *Prorrh.* 62. "Pure and unmixed Vomiting, attended with Anxieties, are bad."

An Anxiety under an utter Decay of Strength, from immoderate Evacuations, is pernicious in the last Degree. Such a Sort of Restlessness and Uneasiness is observable in many dying Persons. We have an Instance, 7 *Epid.* T. 12. in the Person of *Chartades*, who (after vast Hæmorrhages by Stool) was affected with an Anxiety about the Mouth of the Stomach, [*ἐπὶ τῇ καπνίᾳ*] a slight Sweating in almost every Part of his Body, and a slow Fever. At first he seemed to have the free Use of his Reason; but, as the Day went forward,

ward, the Anxiety and Uneasiness increased upon him, and he fetched his Breath somewhat shorter: He was more hearty and obliging in his Salutations, and Receptions of Persons, than Occasion required, and some Symptoms of a Lipothymy appeared, which were not at all relieved by drinking Ptisan, or Barley-water [*τὸ ἀπὸ κριθῶν ὕδωρ*]: Towards Evening he drew his Breath very thick, with much Agitation and Tossing, and Turning from Side to Side, without the least Intermission, or Rest."

In acute Diseases, if a Pain, affecting some ignoble Part, ceases, and the Patient is afterwards taken with an Anxiety, it is of bad Prognostication. An Instance of this we have in the bald Man of *Larissa*, 3 *Epid. Sect. 3. Aeg. 5.* "Who, *Hippocrates* says, on the third Day, was freed from the Pain in his Thigh, but was under much Perturbation and Deliriousness, with great Jactation and Uneasiness; and the fourth Day about Noon he died."

For a Person, after receiving a Wound or Blow, to be under an Anxiety, or very restless and uneasy, is, also, a bad Sign; as was observed by *Hippocrates*, 5 *Epid. T. 59.* in one who received a Stroke on the Head with a Stone; and in another, who had his Liver pierced with a Dart. *Ibid. T. 61.*

Anxieties, also, are often observed attendant on mortal Phrenesies, as we learn from the Author of 1 *Prorrhet. 12.* where he says, "That in the Beginning of a Phrensy for the Patient to be mild and gentle, but often shifting from Place to Place, is a bad Sign."

We conclude, therefore, from the Whole, that all Anxieties are bad, except those which precede a salutary Crisis, and such as proceed only from an Affection of the Stomach, and are not preceded, accompanied, or succeeded by other pernicious Signs; or such as were observed in the Cases of *Silenus*, the Woman in the *Forum Mendacium*, the bald Man of *Larissa*, and *Chartades*, before-related. *Prosper Alpinus, de Prasag. Vit. & Mort. Aegrot.*

FEBRILE THIRST:

Thirst is excited by a Dryness of the Solids, an Immeability of the Fluids, and a saline, alkaline, or bilious and oleous Acrimony.

Thirst, therefore, always witnesses that some one of these Causes is present; and, on this Account, it prognosticates all the Evils which are capable of being produced by such Causes.

Care must, therefore, be taken, to remove immediately this Symptom of Thirst, particularly in Acute Distempers.

Thirst is removed, first, By drinking frequently, and in small Quantities at a time, aqueous, subacid, nitrous, demulcent, warm Liquors; of which kinds are the following.

Take of common simple Barley-water, forty Ounces; of the Rob of Currants, four Ounces; as many Drops of the Spirit of Salt, as is sufficient to procure a grateful Acidity; and of distilled Cinnamon-water, one Ounce: Mix, for ordinary Drink.

Four Ounces of the Robs, Jellies, or Syrups, of the following Fruits taken as above, may be used: The Robs, Jellies, or Syrups, for Instance, of Currants, Quinces, black Cherries, Barberries, Mulberries, Raspberries, Pomegranates, Lemons, Citrons, common and China Oranges. Thus,

Take of the Jelly of Quinces, one Ounce; of the Diamoron of *Nicolaus*, two Ounces; of the Syrup of Citron-juice, one Ounce; of the distilled Waters of Borage, and Baum, each four Ounces; of common Water, twenty-four Ounces; and of Rhenish-wine, three Ounces: Mix all together.

Drinks proper in a febrile Thirst are, also, these following: Milk and Water, Whey, Butter-milk, Small Beer, Coffee, and one Part of Wine mixed with twelve Parts of pure Water; and a little Lemon-juice.

Secondly, Thirst is removed, by washing the Nostrils, and gargarizing the Mouth and Fauces, with the same kinds of Fluids as those above recommended.

Thirdly, By applying Fomentations, Epithems, and Cataplasms, of the same Nature; to the Region of the Hypochondria.

Fourthly, By the Use of similar Clysters, retained a considerable time.

But if a very great Thirst is accompanied with extreme Weakness, it will be safe to exhibit vinous, or more spirituous Liquors, mixed with those above recommended. Thus,

Take two of the best Citrons; take out the Seeds; pare off the yellow Bark, throw away the whole fungous Substance, and, bruising the yellow Bark and the Pulp to-

gether, put them in thirty-two Ounces of simple Barley-water; to which add, of the Syrup of Mulberries, an Ounce and an half; of Rhenish-wine, eight Ounces; and of toasted Bread, two Ounces: To be preserved in a close earthen Vessel. Or,

Take of the Syrup of Lemons, three Ounces; of the best Spirit of Wine, one Ounce and an half; of Rhenish-wine, four Ounces; and of pure common Water, fourteen Ounces: Mix all together, for ordinary Drink, *Boerhaave.*

PROGNOSTICS FROM THIRST IN ACUTE DISEASES.

It is natural for Persons under acute and burning Fevers to be molested with Thirst, as conflicting with a hot and dry Distemper, since it is much worse for the Patients, in such Cases, not to thirst at all, as it is, also, for them to have their Urine of no Colour, but thin and aqueous. It is best, therefore, on all Accounts, since the Reason of the thing requires it, that Persons under hot Distempers should be affected with Thirst: But immoderate and intense Thirst in no Case is good; as indicating a vehement and burning Heat in the internal Viscera; but, on the contrary, is, for the most part, a bad and dangerous Symptom, and signifies that the Disease is very strong and urgent upon the Patient, and difficult to be subdued; and that Nature is in Danger of sinking under the Weight which oppresses it. We may, therefore, safely pronounce an immoderate Thirst, as it is an Indication of the extraordinary Strength of the Disease, a dangerous and formidable Symptom in acute Disorders, but most pernicious, and fatal, when it precedes, accompanies, or follows other very bad Signs; in which Case it is a certain Preface of Death.

But from a Thirst alone, as well in acute as other Diseases, we can prognosticate nothing with Certainty, but regard it only as a Sign of the Strength and Violence of the Disease. With Respect to this Subject may be considered, what *Hippocrates* writes, 1 *Epid. Sect. 2. Stat. 3.* where he says, *That the burning Fevers (of that Constitution) afforded Signs in the Beginning in what Subjects they would prove mortal; for the Patients were first seized on a sudden with a high Fever, attended with a small Degree of a Rigor, they were incapable of sleeping, were very restless, and afflicted with a Thirst and Nausea.* Such was the Case of *Philiscus*, 1 *Epid. Sect. 3. Aeg. 1.* of whom we read, *That on the third Day in the Morning, and till the Middle of the Day, he seemed to be free from a Fever; but towards Evening he was seized with a high Fever, attended with Sweat; and a Thirst, a Dryness of the Tongue, and a Blackness of the Urine.* In this Case, a Thirst, attended with black Urine, and other bad Symptoms, signified that the Disease would prevail over Nature, and prove mortal. The like Thirst was observed by *Hippocrates* in *Pythion*, 3 *Epid. Sect. 3. Aeg. 3.* who, he says, *was seized with a vehement Rigor, succeeded by a high Fever, a Dryness of the Tongue, a Thirst, Redundance of Bile, black Urine, which had an Enæorema [see the Word], but no Hypostasis.* This Thirst continued upon him till the fifth Day, accompanied with other pernicious Signs, particularly a Coldness of the extreme Parts, and a Loss of Voice: We conclude, therefore, that an intense Thirst, accompanied with other bad Signs, is of the most fatal Consequence. Of this Nature, perhaps, was the Thirst which the Wife of *Hermopolemus* endured, 7 *Epid. T. 13.* who, it is said, *was affected with a Trembling of the Hands, and a Shaking of the Head, a depraved Cast of the Eye, with a violent Thirst; and as soon as she had drank, still craved for more Drink; and snatched the Cup from the Attendant, and took large Draughts, and would not suffer the Cup to be pulled from her; her Tongue was dry, and very red; and, when under a Tremor, she would put both Hands to her Mouth, and chew them.* Like to this was the Thirst of *Aristocrates*; who died in four Days of a pestilential Carbuncle. We conclude, upon the Whole; then, that an immoderate Thirst in acute Diseases is never good, oftentimes bad; and, when attended with other bad Signs, most pernicious and fatal.

WHAT IS TO BE PROGNOSTICATED FROM A REMOVAL OR ABSENCE OF THIRST IN DISEASES.

A moderate Thirst in Diseases is always good; and to thirst more or less, as the Reason of the thing; and the Nature of the Disorder, with respect to Heat, require, can be no bad Sign. But for the Patient to be molested with an intense and continual Thirst, is never a good Prognostic; as, on the contrary, not to have the least Desire of drinking, when labouring under a hot and dry Distemper, is highly pernicious, and fatal; and the more, when the Thirst, with which they were before afflicted, ceases, without any Reason to be given for it. The Author of 1 *Prorrhet. 57.* tells us, that "a Thirst in acute Diseases, which ceases for no Reason, is bad." And *Galen*, in his Comment on the Place, endeavouring to account for it, has

these Words: "When, therefore, it happens, that the Thirst cannot be removed, either by Vomiting, Sweating, or Purging, or by a critical Abscess, so as that the Disorder itself is not mitigated, but that the Sense thereof is blunted or abated, this is no good Sign; but if the Thirst ceases whilst the Tongue continues dry, and the Urine crude, this is a surer Evidence of the Malignity of the Disease; and still the more, if no refrigerating or moistening Remedies have been outwardly applied; a proper Use of which Medicines, in acute Diseases, is not so much to extinguish a Thirst, as to abate it. But in acute Distempers, if the Thirst be perfectly removed, it is pernicious in the highest Degree." From this Passage of Galen it is obvious to every one, that it is highly pernicious, in acute Disorders, for a Thirst to cease for no manifest Cause, as, for Instance, a beneficial and salutary Evacuation or Purgation, but in a crude State of the Distemper.

But this want of Thirst, in such Cases, is most fatal and deadly, when attended with other destructive Symptoms. To this Purpose we find Galen discoursing, in his Comment on the first of the *Epidemics*: "As an Accumulation to all those pernicious Symptoms under which the Patients laboured, must be reckoned, that though they were afflicted with a violent Heat, and Estuation, they had no Thirst; but as for those who were at first molested with a violent Thirst, and were afterwards freed from it, such an Event must be necessarily owing to one of these two Causes; that is, either a Solution of the Disease, or an Extinction of the Faculty, in such a manner, that the Sick are no longer sensible of the Evils under which they suffer: But the first was not the Case in those Disorders, since these Symptoms prov'd mortal in the Event."

They who labour under acute Diseases, are not thirsty; first, On account of a cold and moist Humour distilling from the Head upon the Stomach; whence Hippocrates justly says, 4 *Aph.* 5. that they who are molested with a Cough, are not very thirsty, because the Phlegm, which distils from the Head upon the Stomach, takes off the Thirst: And this want of Thirst is observed in some pleuritic and peripneumonic Patients; from which, however, nothing can be prognosticated with Certainty, since the Sick, in such Cases, are distinguished from others, who are not afflicted with Thirst by their Tongue, which is not dry and parch'd, but moist and soft, from the Phlegm which moistens it.

Secondly, A want of Thirst in very hot Distempers, where the Patient is in a very high Estuation, proceeds either from a Delirium, which renders him insensible of what he suffers; or an Extinction of the appetitive Faculty of the Stomach, or from both Causes. Of Persons in a Phrensy, the Author of 1 *Prorrh.* 16. says, *Little Drinkers, who are startled at the least Noise, are subject to Tremblings.* And Galen, in his Comment, tells us, that *Phrenetic Patients are σπασμωδικοί, that is, have little Desire to drink, though their Disorder be of a hot and dry Nature, and their Tongue rough with excessive Dryness.* But we are taught by Hippocrates, that such Patients are disorder'd in their Senses, 2 *Aph.* 6. where he says, *They who are affected with Pain in any Part of the Body, and yet have but little Sense thereof, have their Reason disturbed.* Hence he says of those Persons who labour'd under a Phrensy, and whose Cases he describes, 3 *Epid.* Sect. 3. that they were all free from a Thirst. And he gives a particular Instance of this kind in the same Book, Case the last, of the young Man of *Melibæa*, who labour'd under a Phrensy, unattended with a Thirst.

In such Cases as these, then, not to thirst, is a bad Sign; and, if attended with others of the like Nature, mortal; but without these nothing certain can be prognosticated from it: For there are many Persons in a Delirium who never call for Drink, and yet recover, though, it is true, they are such as have no violent Delirium, nor other concomitant destructive Symptoms, particularly, which is much to be regarded, a Dryness of the Tongue. But where that Part is not only very dry, but, also, black and foul, not to thirst is mortal in the highest Degree, as it shews, that the Disease is very strong and urgent upon the Patient; and that Nature is ready to sink under its Burden.

In a very hot Distemper, not attended with a Delirium, but a great Dryness and Adustness of the Tongue, a want of Thirst is infallibly mortal, as it demonstrates the Faculty to be extinguished; and with the more Certainty, if the Thirst, under which the Patient laboured before, ceases unaccountably, and for no Reason; for this is a sure Indication of the Extinction of the Faculty. And we have very good Reason to assert it fatal, since it is impossible for Nature to be oppressed, and totally subdued, by the Disease, without the Appearance of several other mortal Signs. Thus it happened in the Case of *Erasmus*, 1 *Epid.* Sect. 3. *Ægr.* 8. "who had a continual Fever, with Sweating; an Elevation and painful Tension of the Hypo-

chondria; black Urine, which had a round Encephaloma, but no Hypostasis, a great Dryness of the Tongue, but no extraordinary Thirst." Another Instance is in *Hermocrates*, 3 *Epid.* Sect. 1. *Ægr.* 8. "whose Tongue at first was parch'd with Heat, and soon after he was seized with Deafness, and was incapable of sleeping, but not very thirsty." And a little after we read, "On the twentieth Day he had an Aversion to all Food, had the perfect Use of his Reason, but could not speak; his Tongue was very dry and parch'd, but he had no Thirst; and he slept, but labour'd under something of a Coma." The same was observ'd in the Virgin Daughter of *Euryanax*, 3 *Epid.* Sect. 2. *Ægr.* 6. who through the whole Course of her Fever, of which she died, had no Thirst, but abhorred Food. From these, and the like Instances, we conclude, that in acute Diseases it is always a bad Sign for the Patient to be without a Thirst, when he has been freed from it in an unaccountable manner; but when a Thirst ceases for good Reasons, which may be given, such a Cessation is so far from being bad, that, on the contrary, it is a very good Sign; as it proved, for Instance, in the Person who lay sick in the Garden of *Dealces*, 3 *Epid.* Sect. 1. *Ægr.* 3. who had several times, in the Course of the Disease, been thirsty and delirious, but was, at last, for a very good Reason, which was the Solution of the Disorder, freed from his Thirst. On the twentieth Day, says Hippocrates, he fell into a Sleep, was restor'd to the perfect Use of his Reason, sweated, and was freed from his Fever and Thirst. This Person underwent several Crises, which were preceded by a Thirst, a Dryness of the Tongue, and a Delirium; and these Symptoms were all alleviated, and the Thirst, in particular, diminished, after a Crisis, as the Reason and Nature of the thing required: But a want of Thirst, contrary to Reason, or just Expectation, and attended with other pernicious Signs, is destructive and fatal, in the highest Degree. *Prosper Alpinus, de Præ sag. Vit. & Mort. Ægrot.*

A FEBRILE NAUSEA.

A Nausea is an ineffectual Effort to vomit, accompanied with an Idea of Horror; it is, therefore, excited by slight Convulsions of the muscular Fibres of the Fauces, Oesophagus, Stomach, Intestines, and abdominal Muscles: These are caused, first, By an acrid, putrid, and bilious Matter, received into the empty Stomach, thence ascending into the Fauces, which, together with the Stomach, it vellicates, and irritates. Hence the Parts above-mentioned are drawn into Consent, and excited to similar Motions: And that a Nausea is thus caused, we distinguish, by previous Fasting, by a putrid Breath, and Sordidness of the Mouth, and Fauces. Or, secondly, By a tenacious, viscid, fluctuating Matter, residing in, and vellicating the same Parts. This Species of Nausea is distinguished by the previous Signs of such a Viscidity. See LENTOR. Or, thirdly, by a slight Inflammation of the Stomach, Oesophagus, Intestines, and adjacent Viscera: This is distinguished by the proper Signs of such Inflammations.

Fourthly, By the Remembrance of something, which, formerly taken into the Stomach, excited such a Nausea.

Fifthly, By an inordinate Motion of the nervous Fluid, excited by any Cause whatever: This is distinguish'd by *Deliria*, *Spasms*, a *Vertigo*, and *Tremor*.

If a Nausea persists long, it produces Emptiness, Abstinence from proper Drinks and Medicines, Vomiting, and many Misfortunes which may hence be excited; the principal of which are, Weakness, an alkaline putrid Acrimony, and universal Dryness.

A Nausea, from the first Cause, is to be cured by the Use of acid, nitrous, aqueous Drinks, Aliment, and Medicines, which are the same as those recommended against febrile Thirst; by the Exhibition of a lenient Purge of the same Kind; by acido-austere Medicines, which corroborate the Fibres; or, if these do not succeed, by a Vomit.

The second Species is to be remov'd by diluting, attenuating, purging, and Emetics. The Medicines here proper are the same as those recommended in a febrile Anxiety.

The third Species is only to be removed by curing the Inflammations which excite it.

The fourth Species is cur'd by forgetting and avoiding the Ideas which cause it.

The fifth Species is remov'd by austere Remedies, Rest, Narcotics, and cold Water. Thus, for Instance,

Take of the Rob of Quinces, four Ounces; of the Syrup of Lemons, two Ounces; of *Matthioli*'s distill'd Aqua Vitæ, one Ounce; of distill'd Cinnamon-water, six Drams; of the distill'd Water of Citron-peels, six Ounces; and of the Tincture of Opium, sixty Drops: Mix all together, and exhibit one Ounce for a Dose, till the Nausea is remov'd.

Take of strong distill'd Mint-water, a sufficient Quantity : And let the Patient drink an Ounce of it cold, every Quarter of an Hour.

Take of the Rob of Quinces, a sufficient Quantity : Of which let the Patient take one Dram every Half-hour.

Take of recent Lemon-juice, half an Ounce ; and of Rhenish-wine, one Ounce : Mix both sufficiently together ; add one Dram of the Salt of Wormwood ; and exhibit during the Effervescence.

Take thin Slices of Lemon, sprinkled with Sugar : To be kept lying on the Tongue.

Most Patients receive Relief from Epithems, Fomentations, Cerates, and stomachic Applications ; especially when there is no Inflammation. Thus,

Take of the aromatic Powder of Roses, of Diagalanga, and the Diarrhodon Abbatis, each one Ounce : Mix all together, sew up in a Piece of Muslin, and apply to the Epigastrium.

Take of the stomachic Cerate of *Galen*, a sufficient Quantity for making a stomachic Plaister, to be spread upon Leather. This Plaister affords Relief, so long as it adheres.

Take of *Matthioli*'s Aqua Vitæ, one Ounce ; of the Spirit of Angelica-roots, of the carminative Spirit of *Sylvius*, and of the Spirit of Mint, each two Ounces : Let a small Slice of toasted wheaten Bread, well soak'd in these, be applied warm to the Epigastrium, applying over it a Swine's Bladder moisten'd with Oil, and secur'd by a Bandage. This Dressing is to be renew'd every twelve Hours.

Hence we learn why, in acute Diseases attended with a *Nausea*, a Purge, or an Emetic, exhibited in the Beginning, are of such great Service ; and in what sort of acute Distempers : Why Patients, under acute Fevers, abhor pinguious Aliments, Flesh, Eggs, and Fish : And why, on the contrary, they covet Water, Acids, ripe Fruits, and cooling Liquors :

Why Medicines can be of no Service, unless the *Nausea* is first cur'd :

Why the Symptom of a *Nausea* is often incurable :

And why Diseases, attended with a *Nausea*, are generally, when they cease, succeeded by a sudden, unusual, and surprising Appetite.

FEBRILE ERUCTATIONS, AND FLATULENCES.

Eructations are caused by an elastic Matter, dilatable by Heat, Effervescence, or Fermentation ; which one Moment is confin'd, and the next set free, by a Relaxation of the Part which confines it, and is forcibly exploded, with a Noise.

Thus Air, opposite Salts, ripe Fruits, putrefying Humours, and fermenting Vegetables, afford Matter for Eructations and Flatulences ; the Force and Fetidness of which vary, according to their different Natures.

These, however, if suffer'd to pass off freely, are productive of no forcible Explosion : It is evident, therefore, that Spasms of the *Sphincter* of the *Oesophagus*, of the *Oesophagus* itself, of the superior and inferior Orifice of the Stomach, and of the Intestines, concur, and are alternately relax'd, in order to produce Eructations, Flatulences, Explosions of Wind from the Anus, and Murmurs of the Intestines from Wind confin'd.

If the two Causes above-mention'd, that is, a Production of Flatulences, and their Confinement by Spasms, concur, act strongly, and continue long, then the elastic Matter, dilated by Heat, Motion, and its own proper Force, and confin'd in a Cavity, the surrounding Fibres of which are spasmodically constricted, distends, stretches, and excites Pain in the Membranes which confine it ; and compresses the adjacent Parts : Hence Pains, and intolerable Anxieties, are excited, which cease upon the Emission of the Flatulences. To this, if the Force of a Fever is added, it is evident, that insupportable Torments may be produced.

The Cure of these Disorders consists,

First, In removing the Matter which excites them, by diluting Remedies ; by warm, aqueous, and somewhat aromatic, dissipating Drinks ; by Remedies which render the effervescing Salts perfectly neutral ; such as correct Putrefaction, and put a Stop to Fermentation.

Secondly, In mitigating the Convulsions by proper Remedies ; among which are, those which destroy Acrimony, and compose the Spirits ; the principal of which are, Opium, and mild Antihysterics.

Thirdly, In the Application of warm, relaxing, anodyne, and somewhat aromatic Clysters, Fomentations, and Epithems ; and of Cupping-glasses without Scarification, to the *Abdomen*.

Hence we understand what sorts of Meats, Drinks, Aliments, and Medicines, are flatulent ; why Flatulences happen particularly in the Stomach, and superior Intestines, when empty ; in the Intestines, when wounded ; when the Abdomen is, by any means, compressed ; and why they accompany hypochondriac, hysterical, convulsive Disorders, and the Colic.

FEBRILE VOMITING.

Vomiting is a violent Expulsion, first, of the Contents of the Stomach ; then of those of the Intestines ; and, lastly, of those of the Viscera, which evacuate themselves into the Intestines. The proximate Cause of Vomiting is, a convulsive Motion of the muscular Fibres of the *Fauces*, *Oesophagus*, Stomach, Intestines, Diaphragm, and abdominal Muscles ; the remote Cause, whatever is capable of stimulating the Fibres above-mention'd, or the easily-irritable Viscera, to spasmodic Contractions.

Vomiting is sometimes excited by a primary Disorder of the Stomach, upon the Access of a Fever ; as, if it is affected with Convulsions, Inflammation, Suppuration, or Scirrhus ; or if any Part of it is become cartilaginous ; in these Cases it is excessively obstinate, and may be distinguished by the Signs of the Distemper which produces it ; and when that is remov'd, it ceases spontaneously.

But, frequently, Vomiting is caused by similar Disorders in the Viscera, and circumjacent Parts, when they are irritated by the Stomach distended with Aliment, especially upon the Access of a Fever. In such Cases, it is extremely obstinate, and the Cause is sometimes not easily discovered.

Or a Vomiting may be excited by every Cause of a considerable *Nausea*, mentioned above, from the Doctrine of which this Species of Vomiting may be distinguish'd ; and hence, also, we may learn how to treat, and cure it.

If the Symptom of Vomiting continues long, it produces an Atrophy, the Iliac Passion, Convulsions, and all the Effects of a great and obstinate *Nausea*, mention'd above.

The Cure of that Species of Vomiting which is excited by primary Disorders of the Stomach, and those of the adjacent Parts, is to be learnt from the History of those particular Diseases.

That Species which is produced by the same Causes as a *Nausea*, is to be cur'd by the Remedies recommended for a *Nausea*, diligently applied ; especially Opiates, and corroborating, attracting, and dissipating Epithems.

Hence the Reason is evident, why Vomiting is so difficult to be check'd in many acute Diseases ; and hence we learn the Falsity and Danger of the Maxim, *that Vomiting is cur'd by Emetics*. This Doctrine of Vomiting farther teaches us, why Sudorifics sometimes remove Vomiting, as in the Plague ; why it often ceases, immediately after a Crisis, as in the Small-Pox ; why it is frequently cured by Bleeding, as in acute inflammatory Distempers ; why those who vomit perpetually in the Beginning of acute Distempers, without any Inflammation of the Stomach, or adjacent Parts, have a Crisis by way of Diarrhoea, which may be prevented by an Emetic exhibited in the Beginning of the Distemper ; and why a Discharge, by Vomit, of whatever is taken into the Stomach, as soon as receiv'd, is one of the worst Symptoms that can happen in acute Distempers.

An Hiccup may be excited by the same Causes as a Vomiting, and is to be cur'd by the same means.

Predictions from VOMITINGS ; and first of those of a salutary Kind.

Since it is certain, that the Humours may suffer a good or a bad Expurgation by way of Vomiting, the Events of Diseases may, therefore, in a great measure, be prognosticated from such Excretions ; from those which are bad, otherwise call'd *symptomatical*, we may predict either Death or a long Disease ; and from the good we may venture to foretel the Recovery of the Patient.

Vomiting in the Beginning of acute Distempers, is excited by an Irritation of the Stomach, through the excessive Quantity, or depraved Quality of the Food, or Humour contained in it ; or from an Exudation of a Humour, either from the circumjacent Parts, the Liver, for Instance, when under an Inflammation, or from the whole Body, and a *Catachymy* of the Blood and Juices ; but Vomitings, in the Increase and Progress of the Disorder, are produced by the Redundance or Malignity of the Humours stimulating the Stomach to Excretion. Vomitings, thus occasion'd, are by Physicians call'd *symptomatical*, and bad ; because they are seldom or never succeeded by a Recovery, or, at least, not till after a long time, much Pains, and frequent Relapses. It is usual, also, for the Patient, in the Height of the Disease, or a little before, when Signs of Concoction have preceded,

preceded, to be suddenly taken with Vomiting in a plentiful manner; and this Vomition they call *critical*, because it is the Work of Nature prevailing over the Disease, and employ'd in cleansing the Body; on which account it is most salutary, and indicates a safe and speedy Crisis and Solution of the Disease.

Of the Signs which indicate Vomiting, we have the following Account from Hippocrates in the *Prognostics*: If a Person, he says, not seized with a mortal Fever, tells us that his Head aches, or that a Mist appears before his Eyes, or that he has a gnawing Pain at the Mouth of his Stomach, bilious Vomiting are at hand. If he be, also, under a Rigor, with a Coldness of the Parts about the Hypochondria, the Vomiting may be expected still sooner; and if he eats or drinks at this juncture, he will vomit immediately. And 1 *Epid. Sect. 2.* we are told, that they who were affected with burning, or other epidemic Fevers incident to that Constitution of the Seasons there described, and were oppressed with a Heaviness of the whole Head, attended with a Cardiomus, and a Nausea, had those Symptoms succeeded by a Vomiting of bilious and pituitous Matter. Galen, in his Book of *Crisis*, says, that the Signs of Vomiting are, a gnawing Pain at the Mouth of the Stomach, with a Pain of the Head, a Scotomy, an Agitation of the lower Lip, and a Flux of much thin Spittle from the Mouth; and these not attended with Signs of an Hæmorrhage, Sweat, Flux of the Belly, or an extraordinary Flux of Urine, the Menes, or Hæmorrhoids. But the Author of the *Coac.* 142. gives us only three Signs of Vomiting; which are, a Nausea, Cardiomus, and Ptyalismus, or Flux of Spittle. In a Phrensy Galen affirms, that frequent Spitting alone foretells Vomiting.

These, then, are the Signs which indicate Vomiting; and so, without insisting more largely or accurately on this Head, we proceed to what we principally intend here, which is, to give the proper Marks and Characters by which we may distinguish those Vomitings which are good, useful, and salutary.

For lean or thin Bodies, which are prompt and easy to vomit, Expurgations by Vomiting, in the Summer Season, are useful and proper; as we are taught by Hippocrates, 4 *Aph.* 4. 6. especially in Disorders of the Parts seated above the Diaphragm, *ibid.* 18. where we read, that Pains above the Diaphragm indicate Purgation by Vomiting; Pains below that Part, Purgation by Stool.

As to Substances discharged by Vomiting, we read, in the *Prognostics*, that Vomiting is most serviceable when the Matter evacuated is mostly a Mixture of Bile and Phlegm, and not very thick, nor much in Quantity. Galen, *Com. in 4 Lib. Aph.* says it is good for bilious Vomiting to succeed a Rigor; because they indicate a Solution in a burning Fever, from an Expurgation of the Cause; whence not all Vomiting are good and serviceable, but only such as critically discharge a Multitude of bilious Humours. And not only bilious, but pituitous Vomiting, if critical, are beneficial; since Hippocrates, 6 *Epid. Sect. 1. Aph.* 5. commends pituitous, as well as æruginous Vomiting, in Pains of the Kidneys: And Galen, *Com. in 5 Aph.* 1. assures us, that æruginous Vomiting have proved salutary in Convulsions; and speaks of a young Man, who under violent Vomiting was convulsed in all Parts of his Body; but as soon as he had discharged an æruginous Matter, his Fever and Convulsions immediately ceased. Hippocrates, in his Book de *Prisica Medicina*, touches very elegantly upon the Benefit of this Expurgation of bilious Humours. "When a kind of Bitterness, he says, which we call yellow Bile, is effused, what Anxieties, burning Heats, and unruly Disorders, immediately arise! But when we become free from this Humour, and the same is discharged, either spontaneously, or by the Help of Medicines, provided it be done either way in Season, we find manifest Relief from our Pains and Heat." And a little after, "When Persons are molested with a sharp, acrid, and æruginous Bile, what furious Passions, what Gnawings of the Viscera and Thorax, with Desperation and Despondency of Mind, seize upon them! Nor are any of those Symptoms removed before the peccant Humour is purged off, subdued, and mixed with others."

Hence we conclude, that all Vomiting, which duly evacuate the Humours, which are the Causes of Diseases, are good: They are, also, as we before observed, called *critical*; the proper Marks or Qualifications of which are, that they appear when the Disease is in a State of Concoction, that is, when Signs of Concoction have preceded; that they happen on critical Days; that they be conformable to the Nature of the Disease; and, above all, that they entirely remove the Symptoms of the Disease; or, at least, alleviate and diminish them. And this agrees with what Hippocrates has determined, 1 *Aph.* 2. where we read, that "spontaneous Evacuations by Stool or Vomit, if the Matters discharged are such as require an Expurgation, are beneficial, and easily supported; if otherwise, the Effect is contrary." Of the Marks or Signs of

critical Excretions, we find the Author of the *Coac. Prien.* thus speaking, *T. 77.* "In a continual Fever, if the Patient lies speechless, with his Eyes shut, and now-and-then twinkling, if he be seized with an Hæmorrhage from the Nose, or with Vomiting, succeeded by a Return of his Speech and Senses, he recovers."

Those Vomiting, also, are salutary, which are attended with other good Evacuations: Of this Nature was the bilious Vomiting of the sick Woman in the *Strand*, who was three Months gone with Child, 1 *Epid. Sect. 3. Agr.* 13. on the fourteenth Day of her Illness, and attended with a Sweat, succeeded by a perfect Crisis, and Removal of the Fever.

Vomiting without Signs of perfect Concoction, though they may be good, and alleviate the Disease, and diminish its Symptoms, yet they promise no Recovery till after a long time, and many Relapses. Such was the Vomiting of the Wife of Epicrates, 1 *Epid. Sect. 3. Agr.* 5. who "on the fifteenth Day was seized with frequent Vomiting of bilious, yellow Matter; sweated, and was free from a Fever; but towards Night had a high Fever, and discharged a thick Urine, with a white Hypostasis." Here the Crisis and Recovery were delayed till the eightieth Day.

Vomiting of a pernicious Tendency, such as the black, pure, and others, if the Disease under which they happen be pretty favourable, portend not Death, but a long Disease, and Relapses. Thus of the Patient last mentioned it is said, that "about the twentieth Day, in the Morning, she had a small Return of a Rigor, lay under a Coma, slept quietly, and vomited bilious and black Matter, in small Quantities." Another Example we have in Cleonærides, 1 *Epid. Sect. 3. Agr.* 6. who, also, recovered not till the eightieth Day; and was observed by Hippocrates, "on the twenty-fourth Day to be affected with a Pain in the Extremities of the Hands, and to vomit up a yellow, bilious Matter, at pretty frequent Returns, and, a little after, virulent Matter, by which all the Symptoms were alleviated." These Vomiting, as they indicated some sort of Concoction of the Urine, which, it is said, "was during all the time thin, but not colourless," since it was of a good Colour, (which, according to Galen, in his Comment on the Case of the Virgin of Abdera, 3 *Epid. Sect. 3. Agr.* 7. is the greatest Sign of Recovery in those who labour under a Redundance of Humours) and alleviated the Disease, and its Symptoms, were justly to be accounted salutary, and procured a salutary, though imperfect Crisis, from which might be prognosticated a future Recovery, though at a good Distance of time.

We conclude, then, that all Vomiting in acute Distempers, which alleviate the Disease, and render it more supportable to the Patient, are salutary; but those which are not good in their own Nature, such as pure, æruginous, black, fetid, virulent, scanty, and particoloured Vomiting, if the Disease be of the milder sort, and not in an absolutely crude State, are Prognostics that the same will be long, if not mortal, and attended with much Pain and Trouble, and frequent Relapses.

A spontaneous Vomiting, succeeding upon a long Diarrhoea, is said by Hippocrates, 6 *Aph.* 15. to remove the Disorder; and bilious Vomiting, in a Woman of a bilious Constitution, whose Menes flow'd in less Quantity than was requisite, are by the same Author, 1 *Epid.* pronounced good.

Of destructive Vomiting portending Death.

Vomiting of a bad Kind, portending a fatal Event, happen in the Beginning of the Disease, or soon after; and are attended with none, or, at least, very obscure Signs of Concoction; for, at such times, Nature, as has been observed, makes no due Excretions, according to that 2 *Epid. Sect. 1.* "Critical Symptoms determining for the better appear not presently." The Nature of destructive Vomiting, then, appears, in the first Place, from their happening in the Beginning of a Disease, and being attended with Signs of Crudities.

Secondly, Excessive Evacuations by Vomiting, which exhaust the Strength, indicate a depraved Excretion; and copious Discharges this way, under a violent Disorder, if they relieve not, in some measure, the Patient, portend his Death; and with the greater Certainty, if accompanied with other pernicious Signs; but most certainly and infallibly, when they are in their own Nature destructive; as when they are porraceous, livid, æruginous, black, particoloured, virulent, fetid, pure or unmixed, and scanty, or discharging small Quantities of Matter; of which we are to treat singly: These Kinds of Vomiting were observed by Hippocrates in the phrenetic Patient, 3 *Epid. Sect. 3. Agr.* 4. the Woman who lay ill in *Foro Mendacium*; *ibid.* *Sect. 2. Agr.* 12. and the Son of Hægetorides, 7 *Epid. sub T.* 61. a little before their Death.

Small and scanty Excretions by Vomiting in acute Diseases, are one of those Signs, which, as Galen says, *Com. 2. in 1 Prorrh.* *T. 47.* are in the Whole to be regarded, as of bad Signi-

Signification. For an Evacuation truly critical ought not to be in small Quantities, since a scanty Discharge, of what Kind soever, indicates either an intolerable Redundance of the morbid Matter, too copious to be suffered by the affected Parts, or the Imbecillity of Nature, which proposes to itself an Excretion of Superfluities, but is too weak to effect it. Hence it appears, that scanty Vomitings are of the Number of critical Signs which determine nothing, and always indicate a difficult and dangerous, and generally a mortal Crisis, or Turn of the Disease, especially if they are, besides, bad in their own Nature; and are so far from relieving the Patient, that they reduce him to a worse State than he was in before.

Pure, sincere, or unmixed Vomitings, in acute Diseases, are very bad; because the excreted Humour is not only crude, but indigestible, as excluding not only the Act, but the Power of Concoction. Hippocrates, *Lib. Prognost.* bestows the Epithet of ἀγνός [from a Negative, and κερδννύμι, to mix] on whatever Humour is void of Mixture, or every crude and fervid Excretion which is not diluted with its proper Serum, but owes its Generation to the Disorder of some Part, or to the Fervor of the febrile Heat, by which the aqueous and serous Part is consumed. This Kind of Excretion, therefore, by Vomiting in acute Fevers, indicates a violent internal Heat, and such as generally proves too strong for Nature. If it be attended with other bad Signs, it is of fatal Prognostication: Hence the Author of 1 *Prorrh.* says, that "Pure and unmixed Vomitings, attended with much Nauseating and Anxiety, are bad." And Hippocrates, *Prognostic.* tells us, that "The purer or more unmixed Vomitings are of the worst Sort."

The same Author, in the Treatise just mentioned, passes his Judgment on bad Vomitings, with respect to their Colours, where he says, "If the Matter discharged by Vomiting be porraceous, or livid, or black, any of these Colours is to be esteemed bad; but if the Excretions be of all these Colours, it is a most fatal Prognostic; but if the Matter be of a livid Colour, and, also, fetid, it shews Death to be very near." All these Colours in Excretions by Vomiting are very bad; but porraceous, æruginous, livid, black, and fetid Substances may sometimes be vomited critically, though never but in a concocted State of the Disease, that is, at its Height or Decline; and then they will be sure to effect an entire Solution of the Fever, or at least an Alleviation of it and its Symptoms. However it seldom happens, that Substances are critically excreted of these Colours; and therefore, in a violent continual Fever, where no Signs of Concoction have as yet appeared, they are to be esteemed most certain Signs of Death.

Vomitings of different Colours are, in their own Nature, very bad, because, as Galen says, they indicate a Variety of Disorders affecting the internal Parts: Whence the Author of 1 *Prorrh.* T. 60. tells us, that "Vomitings of various Colours are bad; and especially if they are discharged at short Intervals," that is, as Galen says, follow fast one upon another.

Virulent, also, or æruginous Vomitings are, for the same Reason, mortal in acute Diseases, and most of all in a Phrensy, because they indicate the Brain to labour under a deadly Inflammation from an adust Bile. To this Purpose is the Observation of Hippocrates, 1 *Epid. Sect. 2.* where we read, that the epidemic Phrenesies ended in Convulsions, and æruginous Vomitings, under which some of the Patients died suddenly. And of the phrenetic Patient, 3 *Epid.* that "On the first Day of the Decubiture, he vomited much thin virulent Matter, and had a Fever, attended with an Horror." For æruginous, which we suppose we may, also, call virulent Vomitings, to happen after bad and destructive Signs, portend Death unavoidable; for mortal Signs, succeeding one upon another, shew the Case to be desperate. These kinds of Vomitings, attended with Pains of the Head, Watchings, or Deafness, which are Signs of an Inflammation of the Head, indicate an approaching Mania, 1 *Prorrh.* 10. From the Premises we infer, that æruginous or virulent Vomitings indicate, in the first place, the near Approach of a destructive Disorder, as Delirium, Madness, and Mania, or Melancholy, attended with a Ferocity, and, at last, Death with Convulsions; since, as we have elsewhere declared, it is the Nature of these Kinds of Deliria, on account of an extraordinary Dryness, occasioned by an intense Degree of Heat, to end, at last, in Tremblings and Convulsions.

Fetid Vomitings seem to indicate no less Danger, but are rather most certain Prognostics of Death, as being, in their own Nature, extremely bad and destructive, according to the *Prognostics*, where it is said, "That Vomitings of a livid Colour, if they have, also, a fetid Smell, portend very speedy Death; and all subputrid and fetid Smells in Vomitings are bad." The Woman who lay ill in *Foro Mendacium*, 3 *Epid.* before her Death, vomited black and fetid Matters.

All bilious, that is to say, yellow, croceous, portaceous, and all Vomitings accompanied or preceded by bad Signs, are pernicious; and if reducing the Sick to a worse State than before, destructive: Those of the former kind are to be esteemed among those Pseudo-critical Signs, which determine nothing, but indicate a doubtful future Crisis; and, in the last Case, they appear to portend nothing but Death; and with the more Certainty, if they happen to be malignant. To this Purpose is that in 1 *Prorrh.* 62. before-quoted, "Pure or unmixed Vomitings with Anxieties are bad." And, *ibid.* 72. "They who vomit up black Matters, and are affected with a Nausea, accompany'd with a Delirium, and a slight Pain in the Pubes, who have a fierce Look, and shut their Eyes, ought not to be purged, because Purging would prove destructive to them." And a little after, T. 79. we are told, that "Scanty and bilious Vomitings are bad; and especially when attended with Watchings: Blood falling by Drops from the Nose, in this Case, is, also, bad." Of this Nature were the Vomitings observed by Hippocrates, in the sick Woman in *Foro Mendacium*, 3 *Epid. Sect. 2. Ægr. 12.* "Who, he says, on the twelfth Day vomited much black fetid Matter, and was much affected with the Hiccough, and a troublesome Thirst: On the thirteenth she brought up great Quantities of black virulent Matter, had a Fit of a Rigor, and about Noon was speechless."

All Vomitings which give no manner of Relief to the Patient, are bad; but those which render his State worse, are very pernicious, though they happen not to be malignant: Thus they proved in the Case of the Woman before-quoted, of whom we read, that "On the eighth Day, about Noon, she recovered Heat, was thirsty, under a Coma, with a Nausea, and vomited small Quantities of a bilious yellowish Substance; at Night was very ill, took no Rest, and made great Plenty of Water, which flowed from her imperceptibly." This Woman, if her bilious Vomitings had been good, should have rested, and found herself better; and thus it ought to have been, also, after the Vomitings on the ninth Day; whereas, on the tenth, the Fever was exasperated: And on the eleventh Day, after some bilious and virulent Vomitings, she was taken with a Rigor, her extreme Parts were cold, and she fell afterwards into a cold Sweat; and though she had vomited plentifully that Day, yet she had a very troublesome Night. All these Vomitings were of deadly Signification, as appearing not only in a violent Disorder, but attended with other bad Signs, and producing a Mutation in the State of the Patient for the worse; which last is the proper Character of all useless and remarkably bad Signs.

In Wounds of the Head, also, bilious Vomitings are bad, according to Hippocrates, 6 *Aph.* 50. "A Cut received by the Brain is necessarily succeeded by a Fever, and Vomiting of Bile."

Vomitings in the Iliac Passion are, also, very pernicious, as appears from 7 *Aph.* 10. where we read, that "Vomitings, the Hiccough, a Delirium, or Convulsions, succeeding the Ileos, are bad." Here Galen, in his Comment, says, "That in the Ileos nothing descends to the lower Parts; and that this is an inseparable Property of that Disorder. But Vomiting is not always a Symptom; but when the Disease is mortal, and the Patient violently racked, the Excrements ascend, and a Hiccough succeeds." And *Lib. 6. de Loc. affect.* he says, that "He never knew one who vomited up his Excrements ever recover."

These, then, are the Vomitings which are justly to be dreaded in acute Diseases, the immoderate, scanty, yellow, red, porraceous, æruginous, livid, black, fetid, pure, particoloured, which happen in the Beginning of Diseases, where no Signs of Concoction have preceded. In such a Circumstance they are generally mortal; and if the Disorder be violent; and if other bad Signs appear together with them, or precede, or follow them, they are to be regarded as certain Prognostics of Death; especially when, as we observed, they in no manner relieve the Patient, but rather alter his Case for the worse. *Prosper Alpinus, de Præfag. Vit. & Mort. Ægror.*

FEBRILE DEBILITY.

Great Debility arises from an Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles.

This Impediment may be, an Emptiness of the Canals, when the Fluid they should convey is exhausted; or an Imbecility of the Fluid; or an Obstruction, or Compression of the Canals, especially near their Origins in the Cerebrum, or Cerebellum; or a Weakness of the Heart, thus rendered incapable of furnishing the Brain with a Quantity of Blood, sufficient for the due Secretion of the nervous Fluid.

That the Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles, and the consequent Weak-

Weakness, arise from the Emptiness of the Vessels; is known from the preceding or present Symptoms of large Evacuations, and from the long Duration of the Disease they accompany or succeed; from morbose or artificial Hemorrhages; Sweats; a Diabetes; Salivation; or Diarrhoea; from a Defect of Aliment, with Respect to its being taken in, its Retention, Digestion, and Conveyance to the Blood; from Paleness, a Smallness of the Pulse, collapsed Vessels, and flaccid Muscles.

That they arise from an Immeability of the Fluid, may be distinguished from what has been said under the Article LENTOR.

That they are caused by Obstructions, may be known from the Doctrine of Obstructions, given under the Article OBSTRUCTION.

We distinguish, that a Compression of the Cerebrum and Cerebellum is the Cause of Debility, when we perceive those Functions injured, which depend upon the Integrity of these Organs; as in case of Deliria, profound Sleep, Tremor, Vertigo, and Ringings in the Ears.

That Debility arises from a Weakness of the Heart, is known by the Signs of a languid and deficient Circulation. See PLETHORA.

Liquid Aliments, nearly approaching the Nature of the Blood, which are previously digested by Art, gelatinous, and mild, and artfully impregnated with vinous and aromatic Substances, if exhibited frequently, and in small Quantities at a time, serve excellently to fill the exhausted Vessels, gentle Frictions of the Extremities being used at the same time; particularly if these are prepared of proper Materials, opposite to the Nature of the Disease.

Among these Aliments are the Broths made of Beef, Veal, Mutton, and Fowls of the gallinaceous Kind, either separate, or mixed together, with the Addition of Salt, and Lemon-juice; new Milk; and the Decoctions of Bread, mentioned under the Article FIBRA.

That Species of Debility arising from an Immeability of the Fluid, is to be cured by the Methods recommended under the Articles LENTOR, and OBSTRUCTION.

That caused by an Obstruction of the Canals, is to be relieved by the Methods considered under the Article OBSTRUCTION.

That Species which arises from a Compression of the Cerebrum, and Cerebellum, is generally cured by such Applications near the Part affected, as are capable of removing the impacted obstructing Matter, and of deriving the Force thereof to other remote Parts. The Nostrils, therefore, Head, Face, Mouth, and Neck, are to be moistened with mild Fomentations; and Epispastics are to be applied to the Feet.

The debilitated Heart usually recovers Strength very slowly: But the general Methods of removing Debility, recommended above, may do some Service.

From what has been said, we may learn, how little the Use of Cardiacs in acute Diseases is understood: And that Debility, in Fevers, is frequently an insuperable Symptom.

FEBRILE HEAT.

External Heat may be determined by a Thermometer; internal, by the Sensation of the Patient, and Redness of the Urine.

A greater Quantity of Fire is always present in that Part which is most hot.

This increased Quantity of Fire arises from a more violent Attrition of the fluid Parts of the Body on each other, and on the Vessels, and of the Vessels reciprocally on these.

This violent Attrition is caused by a strong Motion of the Fluids from the Heart, and a great Resistance of the Vessels to the Force of the Heart.

This Motion is to be estimated, by the Density of the Blood impelled from the Heart, and its Velocity through the Vessels.

The Density of the Blood is known by examining the Blood taken out of the Vessels; by a preceding Dissipation of the most fluid Parts; and by an Hardness of the Pulse.

The Velocity may be calculated from the Number of Pulsations of the Heart, compared with the Magnitude of these Pulsations.

The great Resistance is to be known by the Bulk of the inert Fluids to be moved; and from the Paucity, Narrowness, and Immobility of the Canals, which transmit them.

The Bulk of the Fluids is perceived by the Signs of a Plethora, or Cacochymia; or by a sudden Solution of those Liquids, which before were in a State of Stagnation, as of the Fat; but principally by an Inflation of the Veins, together with a quick and strong Motion of the Arteries.

The Paucity of Vessels is to be learned from the History of Obstructions, or of Wounds. See OBSTRUCTION, and VULNUS.

The Narrowness of the Vessels is known by the Sight, the Touch, a dry Temperament, and a great Increase of Heat, upon a very small Degree of Motion.

The Immobility of the Canals which resists their Dilatation, is learned from all the Signs of a Rigidity of the Fibres, Vessels, and Viscera. See FIBRA.

Upon so many Causes depends the Origin of Febrile Heat; which, however, may have a great Variety of other remote Causes.

But Heat may be increased, by an Increase of one of these Causes only; and, in this Case, the Increase of Heat is in proportion to the Cause.

But if two of the Causes are, at the same time, increased, the Heat is as the Product of the Increases of the Causes multiplied by each other.

And this Method of calculating will hold, with respect to the Accumulation of more Causes.

An increased Heat dissipates the most liquid Parts of the Blood, that is, the Water, Spirit, Salts, and most subtle Oils; dries and condenses the Rest of the Mass, and causes it to concrete into an immoveable, irrefoluble Substance; disengages, attenuates, renders acrid, exhales, and moves the Salts and Oils: Hence the smallest Vessels are fretted and broken; the Fibres are rendered dry, rigid, and contracted; and hence many acute, dangerous, and fatal Diseases are produced, which may be accounted for from what has been said relative to Heat.

From this Doctrine we learn, what is required to mitigate Heat; and how various the Remedies are which tend thereto.

Thus, if an increased Velocity of the Blood excites Heat, the Remedy is, whatever diminishes that Velocity: The principal of these are, Rest of the Muscles, and of the Mind; Venesection; a slight Compression of the Veins in the Limbs, continued a very short time, by Ligatures; a gradual and cautious Application of cold Substances, both externally and internally; and Preparations of the Poppy prudently exhibited.

If Heat arises from the Density of the Fluids, it is cured by those Remedies mentioned above, which diminish the Velocity; and by drinking Water, and Oxymel, and such Medicines as relax the Vessels.

The Bulk of the Fluids, in a Plethora, is easily diminished; but in a Cacochymia, the Diminution is to be brought about by evacuating slowly, and at Intervals: But when the Fat, which was before stagnant, is resolved, the greatest Difficulty arises; in this Case, aqueous Fluids, impregnated with an Acid, Honey, the Yolks of Eggs, or Sugar, together with perpetually continued Evacuants, are of the utmost Importance, because they render the Fat, or Oil, miscible with the Blood.

The Cure of Heat excited by Obstruction, may be learned from the Article OBSTRUCTION; and that Part of the Article VULNUS, which treats of the Accidents supervening upon Wounds, attended with Loss of Substance.

If Heat depends upon the Narrowness of the Vessels, they are to be dilated by relaxing Remedies. See FIBRA.

And Heat arising from a Rigidity of the Vessels, is removed by the same relaxing Remedies. See FIBRA.

When Heat is excited by many of these Causes combined, it must be removed by the proper Remedies above described, combined, also, together.

From all this Doctrine of Heat we learn, why a Fever, attended with excessive Heat, is acute, quick in its Progress, putrid, and, if there is the greatest Degree of Heat, pestilential: Why the Heat of a Bed, of Air confined, of Regimen and Medicines, must necessarily be, in such Cases, extremely prejudicial; and why Heat about the Heart and Hypochondria is of fatal Presage.

From this Doctrine, also, the Origin, Nature, and Effects of Dryness may be understood; and the Cure may hence be learned, which consists in the Exhibition of Drinks, Fomentations, Baths, Clysters, and Gargarisms, which are aqueous, somewhat acid, impregnated with Honey, and relaxing. *Boerhaave.*

PROGNOSTICS IN ACUTE DISEASES FROM HEAT.

Since Heat, Coldness, Dryness, Humidity, Softness, Asperity, and Pains, have relation to the Sense of Feeling, and furnish us with Signs and Symptoms for Prediction, as good and firm as any taken from other Heads, we think ourselves obliged to treat of them distinctly, with regard to our Subject of *Prognostication*. And here, first, we shall begin with Heat, from whence, the Observation of other Signs not being neglected, may be drawn Presages of Life and Death.

Heat, then, it must be observed, with relation to Prognostics, is either mild, or tepid, or high and vehement. A mild and gentle Heat is always good, especially if, according to *Hippocrates*, in his Book of *Prognostics*, it be attended with an equal Softness of the whole Body, or be like the Heat of the

the same Person when in Health. The Flesh of some Persons in Health is observed to be cool; of others temperately hot; of others again, hot to a pretty high Degree: Whence, if the Heat of the Sick be much the same as usual in a State of Health, it is a good Sign: And hence it is, that sometimes an high and vehement Heat, and sometimes a moderate Degree of the same, or Coolness, are laudable in the Patient, on account of their Approach to the Degree of Heat familiar to the Body whilst in Health: And the like Judgment is to be formed of the Urine, and other Excretions, which, if resembling those usually discharged in time of Health, are esteemed good. It is best, therefore, when the Body, under a Disease, suffers little or no Alteration with respect to Heat.

Of febrile Heat, the best Kind is what is mild, temperate, equal in all Parts of the Body, and united with a sort of Humidity, in which it chiefly resembles the natural Heat, which, as *Galen*, in 2. de Natur. Hum. tells us, is not only temperately hot, but, also, humid, in Opposition to acute and igneous, which kind of Heat is most contrary to the natural. This temperate Degree of Heat, therefore, will always be best, unless it happens, that we are deceived by the Malignity of the Disease: For there are several malignant Distempers, attended with a mild and gentle Heat, extremely like the natural; the Heat, in reality, being confined to the inward Parts, and not freely diffused abroad; for which Reason this good Heat must be accompanied with an equal Softness of the whole Body, as required by *Hippocrates*, in his *Prognostics*: "It is best, he there says, for the whole Body to be equally hot and soft;" for an equal Softness distinguishes a good Heat from bad ones, since the Heat of a Patient may seem to be temperate and equal, and yet proceed from a very malignant Disorder. In such a Circumstance the State of the Sick is known, and distinguished by an unequal Softness of the Body; where, in particular, the Hypochondria are commonly observed to be hard, and the Heat is by no means equally diffused over the whole Body; the extreme Parts, for Example, being less hot than the Belly, whose Region and Contents are under a more intense Degree of Heat. We conclude, therefore, that a temperate Heat, equally diffused over the Body, and united with an equal Softness, will always be a good Sign, since it is impossible for a Body, under such an equal Heat and Softness, to be fatally sick; the Union of these Properties being a sure Indication, that the Viscera are free from a Phlegmon, Obstructions, and any considerable Degree of Putridness.

An equal Softness of the whole Body distinguishes, also, a good from an hectic Heat, which latter being sometimes observed mild and gentle to the Touch, has given Occasion to mistake the Case of an hectic Patient: But an hectic Heat is not usually attended with a Softness, but rather with a Squalidness; and an Hectic Fever is not only known by this Mark, but, also, by an Inequality of the Heat itself: For the Fever, as *Galen*, on the *Prognostics*, observes, is exasperated after taking Food.

The best Heat, therefore, is what is temperate, equally diffused over the whole Body, and united with an equal Softness of the Flesh. And not only an Heat thus qualified, but even an intense and vehement Heat, diffused over all Parts of the Body in burning Fevers, is not to be condemned, since it is a Property of malignant burning Fevers, as *Galen* on the *Prorrhetica* observes, not to heat the outer Parts; as it is, on the contrary, of those which are not malignant, to put the whole Body in an equal Degree of burning Heat, even to the outermost Parts, by which they indicate, as *Galen* tells us, on the *Aphorisms*, the Viscera to be free from any violent Inflammation.

It is, also, often best, and most desirable, for presaging a Recovery in acute Disorders, for some Parts of the Body to grow hot, or kindle into an extraordinary Degree of Heat, especially the Parts towards the Skin, upon which Nature often discharges and deposits both the Vehemence of the Heat, and the peccant Humours. For the extreme Parts, in such Cases, to undergo an extraordinary Degree of Heat, is a very hopeful Sign; as the contrary is of bad Prognostication: Hence a Coldness of the extreme Parts in acute Diseases is a very bad Symptom, as, on the other hand, an Heat in the same Parts is a good Sign, as indicating the internal Viscera to be free from any great Phlegmon, Inflammation, or considerable Putrefaction of Humours; and that Nature is not oppressed with a Multitude of Crudities. It, also, signifies, that the febrile Heat has left the Viscera, and discharges itself upon the remote Parts; or, that the noxious Humours are propelled and deposited upon the same; for an extraordinary Heat extending itself to the Feet, is, in many Cases, a Sign of the Decline of the Disease: Whence we are directed by *Hippocrates*, de R. V. I. A. in the Decline of a Fever, when the Heat descends to the Feet, to offer the Patient Food.

An Heat of the extreme Parts, attended with a Redness and Inflammation, is, also, a good Prognostic. In Confirma-

tion hereof we are told by *Hippocrates*, in his *Prognostics*, that "The Patients [under a Quinsy] are very much relieved, if the Neck and Breast contract a Redness, and the Erysipelas returns not upon the inward Parts." And a little after he says, "It is safest when the Tumor and Redness are for the most part turned outwards."

Having made these Observations concerning good and salutary Heats, we are to take some Notice of the contrary to these, or the bad and pernicious; of which Nature is, first, an Heat of the Body, attended with a Colliquation and Tabes; such is the Heat of Hectics, which, unless corrected before it has colliquated the solid Parts, infallibly brings the Patient to the Grave. This kind of Heat is equal and uniform, acute, and not very obvious to the Touch and Senses; on which account an hectic Fever, in the Beginning, escapes the Knowledge of many Practitioners. *Galen*, as we have observed in another Place, in his Comment on the *Prognostics*, has taught us to know this Heat by the following Signs: "By an Hectic Fever the solid Parts of the Body become ignited; for which Reason the Fever remains constant to itself, without Alteration, under an Heat weakly affecting the Touch, after the manner of Lime-stone. As often, therefore, as the Patient eats or drinks, it is much the same as if you poured Water on Quick-lime; whence the Heat becomes much more sensible to the Touch."

That uniform Heat, also, of the whole Body under a continual Fever, though amounting to no more than a tepid Warmth, or perhaps Coolness, is to be suspected, as indicating the whole Force of the Burning to be contained within the Viscera. *Galen*, in his second Comment on *Hippocrates*, de R. V. I. A. and on the Book of the *Prognostics*, tells us, that "For the Body, under acute Diseases, not to be hot in proportion to the Nature of the Fever, and to lie with the Limbs naked, though cold or tepid, as if they were in a burning Heat, is a Sign of Malignity." Such a tepid Heat, though never good, is, however, no sure Prognostic alone, no more than a vehement Heat, which, though always bad in itself, will yet afford no certain Grounds for predicting a fatal Event; since, on the contrary, for the Body to grow hot to an intense Degree, after a Rigor, is a Sign to us of the near Approach of a Crisis; and therefore that Measure of Certainty which it may carry with it, must be taken from other Signs.

A vehement Heat, either of the whole Body, or only of the Thorax and Belly, if it continue long, is pernicious, since it exhausts the Strength, dries and colliquates, and, if succeeded by Spasms, portends Death; for Convulsions from such a Cause as produces a Dryness of the Nerves, are all mortal. Hence *Hippocrates*, 7 Aph. 13. pronounces Convulsions, or a Tetanus, after violent burning Heats, a bad Sign.

A violent Degree of Heat, also, in the Face, or in the Hypochondria, or in the Thorax, is very bad; since the two latter indicate a Phlegmon of some one of the Viscera; and the first an Inflammation of the Brain; though it must be confessed, that a fiery Redness of the Face is not always a Sign that the Brain is thus affected, but, on the contrary, is sometimes the Forerunner of a critical Hæmorrhage; but when it appears accompanied with some other pernicious Sign, it forebodes a bad Event. Hence we read, 1 *Prorrhetic*. 49. "That a good Colour in the Face, with a very stern and sour Aspect, is a bad Sign." For, as *Galen* says, when the Face is of a florid Colour, and the Countenance remarkably sour and sad, it indicates the Brain to labour under some very hot Affection, by which the Blood is rendered adust. A very high and fiery Redness of the Face, attended with Sweating, is, by the same Author, pronounced a Sign of Malignity, and a just Ground for predicting a fatal Event to the Disease, since it indicates a great Inflammation of the Brain, which is reckon'd among mortal Distempers, as the Sweat, also, which in no measure relieves the Patient, is one of the pernicious Signs. The same is confirmed, and in a manner repeated, 1 *Prorrhetic*. 67. where it is said, that "Burning Rigors are, in some measure, pernicious, and a fiery Redness of the Face, with Sweating, in such Cases is bad."

An Estuation, or intense Heat in the Belly, or Thorax, is always bad, for it often indicates some great and deadly Disorder in those Parts; as when it proceeds from a great and malignant Phlegmon of one of the Viscera. In this Case the extreme Parts are either tepid or cold; agreeably to what we read 1 *Prorrhetic*. 7. where it is said, that "Those burning Heats which remain in the Hypochondria, after a general Refrigeration, are bad at all times, but especially when attended with Sweats." And more expressly to the Purpose, in 4 Aph. 48. "In Fevers not intermittent, if the outward Parts are cold, whilst the inward burn with Heat and labour under a Thirst, the Case is mortal."

In Fevers, a vehement burning Heat about the Stomach, with a CARDIOGMOS [see that Word], is bad, 4 Aph. 64. And

And burning Heats in the Sides, attended with Pain, and a Rigor, are condemned by the Author of 1 *Prorrh.* 66. "For a burning Heat in the Side, attended with a Pain, says *Galen* on the Place, is a Sign of a Phlegmon infesting that Part; and if a Rigor supervenes, expect a Suppuration of the Phlegmon." Now a Suppuration of a Phlegmon of the Viscera is seldom cured; but, when the Strength is much exhausted beforehand, never at all.

For the Patient, after some preceding Evacuation, to be so far from being relieved from his Fever, that he perceives an Increase of Heat, it is bad, according to 1 *Prorrh.* 66. where we are told, "That a Return of the febrile Heat, after Refrigeration from Sweats, is bad; and burning Heats in the Sides, with Pain, and a supervening Rigor, are bad." "For, as *Galen* says in his Comment, if any Person under a Disease, after Sweating, grows colder than Nature requires; and afterwards becomes feverish again, his Case is not free from Danger." Again, the Author of 1 *Prorrh.* T. 68. says, "That a Return of the febrile Heat, after Watchings and Sweating is bad." And the same is repeated *Coac.* 41.

We may add, with relation to this Subject, that for refrigerated Bodies to be almost totally incapacitated for recovering Health, is highly pernicious in acute Diseases, as it is occasioned by an Extinction, Resolution, or Suffocation of the natural Heat. And the Case seems to be no less mortal, if the Symptom be observed of the exterior and outermost Parts of the Body, or if these are hardly capable of recovering Heat. To this Purpose we read, 1 *Epid. Sect. 1. Stat. 1.* that in a very mortal epidemic Fever, the Patients were much affected with Refrigerations of the extreme Parts, and that it was scarce possible to recal the Heat into them.

For Bodies, also, in the last Place, to be soon heated, and soon cooled, is a bad Sign; for it shews, as *Galen* says, the Disease to be highly malignant, and if not mortal, yet of long Continuance: But in acute Diseases, which speedily exhaust the Strength, the same Symptom portends Death. *Prosper Alpinus, de Præfag. Vit. & Mort.*

PROGNOSTICS IN ACUTE DISEASES FROM HUMIDITY AND DRYNESS.

We sometimes form Presages in acute Distempers, from the Humidity or Dryness of the whole Body, or of some of its Parts. In those who die of an Empyema, or a Phthisis, may often be observed a little before their Decease, a copious Humidity, sometimes diffusing itself over the whole Body, sometimes no farther than the Legs and Belly. And *Hippocrates, Lib. Prognost.* pronounces a Dropsy in or from acute Diseases, mortal, as proceeding from an utter Decay of the natural Heat. "Dropsies, he there says, caused by an acute Disease, are bad; for they remove not the Fever, but increase the Pain and Sickness, and end in Death."

Deficcations, Dryness, and Hardness, either of the whole Body, or of any of its Parts, give, also, frequent Occasions for prognosticating an unhappy Event in acute Disorders. A Dryness and Extenuation of the whole Body, after a long Burning Fever, are just Grounds for presaging an hectic Habit of Body, terminating at last in Death, as every one versed in Medicine knows. An extraordinary Dryness, also, of the Forehead, Tongue, and other Parts, pretty often portend a fatal Event, as it did, for Instance, in the Case of the young Man of *Melibæa*, 3 *Epid. Sect. 3. Æg.* 16. who, before his Death, was observed by *Hippocrates*, to have the Skin of his Forehead extremely dry and tense. *Prosper Alpinus, de Præfag. Vit. & Mort.*

FEBRILE DELIRIUM.

A Delirium is a Production of Ideas not corresponding to external Causes, but excited by the internal Disposition of the Brain, whilst the Judgment is conformable to such Ideas, and the Affections of the Mind, and Motions of the Body, correspond therewith: And these, either alone, or combined, form various Species of Deliria.

It always, therefore, witnesses a morbose Affection of the medullary Part of the Brain, which may arise from any kind of Obstruction; from an Impediment to the Influx, Transflux, or Efflux of the Fluids, through the Brain; from a violent Velocity, or Stagnation, of the Liquids, and many other Causes, which must be investigated with the utmost Diligence, in order to acquire a just Knowledge of the Method of Cure.

For various Remedies, and Methods of Cure, must be adapted to the various Causes; among which the principal are, Baths for the Feet; Epispastics apply'd to the Feet and Legs, and Frictions of these Parts; diluting Clysters frequently administered; a thin Diet; sedative, deobstruent, and diluting Portions; emollient Applications to the Head; gentle Anodynes; Bleeding in the Feet; and exciting the hæmorrhoidal, or menstrual Flux.

For an Account of Prognostics from a *Delirium*, see the Article DELIRIUM.

A FEBRILE COMA.

A *Coma* is a perpetual Inclination to sleep in a Fever, either with, or without Sleep; and always witnesses such a State of the Brain, as prevents the Exercise of the Senses, and animal Motions. It may arise from a Deficiency of the Arterial Fluid convey'd to the Brain; from an Impediment to its Circulation through the Brain; from an Impediment to the Secretion of the nervous Fluid from the Blood; or from whatever prevents the Flux and Reflux of the Spirits through the Nerves.

Hence various, and those often different, and even contrary Causes, may produce this Symptom, in a Fever; as all violent Evacuations, or Repletions; all glutinous, pinguious, or inflammatory Inspissations of the Blood; all Causes, of what kind soever, which may excite a Compression of the Brain, which may, also, have the same Effect, if they act upon the Nerves.

Hence appears the Necessity a Physician is under of investigating the particular Cause of a *Coma*, before he can determine what Remedies are to be apply'd, and in what manner: For, frequently, quite contrary Methods are required; and it often happens, that a *Coma* obstinate to all Remedies, ceases spontaneously, when the Concoction of the Fever is completed.

Those Remedies, however, recommended above in a *Delirium*, are proper in this Case; especially Fomentations apply'd to the Head and Neck.

But if there are Signs of a great Inflammation, it must be treated as an original Disease. See PHRENITIS, and SOMNUS.

A FEBRILE PERVIGILIUM, OR OBSTINATE WATCHING.

A *Pervigilium*, or obstinate Want of Sleep, is the direct contrary to a *Coma*; whence its Nature may be understood: It is caused by the first Tendency to a slight Inflammation of the Brain; an Increase of which often excites a *Coma*.

It is cured by Rest of the Muscles; Calmness of Mind; the Absence of all Objects of Sense; moderate Cold; a moist Air; mild and emollient Aliments; a gentle, continual, grateful, agreeably ringing hushing Murmur; farinaceous, subuleous, moistening, and demulcent Medicines; the Smell of soporiferous Vegetables; and the prudent Use of Anodynes, Paregorics, soporiferous Remedies, and Narcotics; always premising those Remedies, which are capable of checking and curing the Inflammation.

OF PROGNOSTICS IN DISEASES FROM WATCHING.

Watching, as well as Sleep, with respect to what they may portend, are to be considered first in their natural State; for when no Change or Alteration can be perceived on this Head, we have good Room and Opportunity for Prediction; since, if the Patient sleeps and wakes, according to Custom in time of Health, it is a good Sign, and gives Occasion to preface an happy Event. For it seems impossible for a Person to die of any Distemper, while his Times of Sleep and Watching remain entire, and without any manner of Alteration. On this Subject, *Hippocrates*, in his *Prognostics*, thus pronounces: "As to Sleep, it is best when conformable to natural Custom, or when the Patient wakes by Day, and sleeps by Night; but if there be any Alteration in this respect, it is so much the worse." And 2 *Aph.* 2. he says, that "when Sleep comes poses a Delirium, it is a good Sign."

As to *Watching*, of which we will now treat in particular, it is defin'd by *Galen*, "An Extension of the Soul from its Original to all Parts of the Body, which sometimes happens to be great and copious, at other times little and inconsiderable; because the Soul is extended from its Original sometimes for a long time together, and in an abundant manner; at other times, for a shorter while, and more sparingly." Hence then proceed much and little Watching; But what we treat of at present is, a great and preternatural Extension and Effusion of the Soul from its Original to all Parts of the Body, proceeding from a Dryness of the Brain, occasioned by hot and acrid Juices, or Exhalations; as we are taught by *Galen* in many Places, particularly *Lib. 3. de Loc. Affect.* and *Com. 4. in Lib. de R. V. I. A.* And *Com. in Prognost.* and *Lib. 4. de Præfag. ex Puls. Cap. 4.* and *Lib. 3. de Loc. Affect.* and in other Places, he tells us, that Watching is the proper Effect of Dryness, as Sleep is of Humidity; and that, as it is a Property of Heat to produce Deliriousness, so it is of Dryness to be the Cause of Watching: Whence they who have their Brains affected at the same time with an Excess of Heat and Dryness, are at once both wakeful and delirious, as the same Author observes, *Lib. 4. de Præfag. ex Puls. Cap. 8.* And in his *Comment* on 3 *Aph.* 31. he says, that old Persons are wakeful from Dryness.

From the Causes of *Watchings*, we shall now consider what may be learnt for prognosticating their Event; and here, first, we shall speak of *Watchings*, from which we may draw favourable Prognostics: For though all *Watchings* are in themselves bad, yet there are some which have a very good Signification; and such are those which precede good Crises, and are accompanied with Restlessness, Anxiety, Delirium, Convulsions, Pains, and other Symptoms, as *Galen, Lib. 3. de Crisibus*, observes. These *Watchings* are perceivable in the Increase or Height of the Disease, at which time it is usual for the Patients to be almost perpetually waking, to be under great Disorder, and to have the Fever more and more exasperated, the nearer they approach to a Crisis, as we are told by *Galen in 4 Aph. 70*. And the same Author, *Lib. 3. de Crisibus*, pronounces *Watching* with Signs of Concoction, in acute Diseases, the Forerunner of a Crisis. Of such Patients we read, *1 Prorrh. 132—135, 136*. where it is said, "They who on a sudden [*ἐκθῶς*, for which some read *ἐκθῆς*], sedate, composed] appear very much disorder'd, are wakeful, and bleed at the Nose, are in some measure relieved on the sixth Day." And, *Text. 135*. "They who are affected with an Heaviness of the Head, and a Pain in its fore Part, with perpetual *Watching*, are subject to an Eruption of Blood at the Nose." And, *Text. 136*. "Perpetual *Watchings*, with sudden Jactations and Inquietude, signify an Hæmorrhage, and especially if there has been any previous Discharge of that Nature." "Again, *Text. 149*. "An Horror, attended with critical Sweats, and returning on the next Day, with unaccountable *Watchings*, portend, in my Opinion, an Hæmorrhage." Once more, *Coac. 110*. "Sudden Inquietudes with *Watchings*, and black and hard Stools, are sometimes Forerunners of an Hæmorrhage." These then are the *Watchings* from which we may venture to predict the Recovery of the Patient, on the same Ground, as from Pains, Convulsions, Deliriums, and Anxieties preceding a Crisis.

All *Watchings*, except those before taken notice of, however caused or circumstantiated, are bad; for *Watching* dries the whole Body; and as *Galen, 7 M. M. Cap. 6*. observes, is extremely prejudicial to such as labour under a Dryness, and induces on them, if it continues long, Convulsions, and a Consumption. It is no Wonder, therefore, that, in burning Fevers, obstinate and perpetual *Watchings* bring on mortal Convulsions, since in other Cases they cause violent Inflammations, and, in some Subjects, Fevers, especially as *Galen, Lib. 1. de Sanitatuenda*, observes, in Infants, *Watchings* refrigerates the internal Viscera, by resolving their Heat. Agreeably to this, it is asserted by *Hippocrates, 6 Epid. Sect. 4. Aph. 12*. "In *Watching*, he says, the external Parts are evidently hotter, and the internal colder." He there teaches us, also, that *Watching* digests and resolves Bodies: Whence it is necessary, as *Galen, Lib. 12. de M. M. Cap. 8*. infers, that by its long Continuance, the Patient must be extremely weakened and exhausted. We may add to this, that *Watching* foment and increases the Crudities of the Humours, as we are told by *Galen, Com. 1. in Lib. de R. V. I. A*.

For the Reasons aforesaid, all *Watchings* in acute Diseases, are to be esteemed bad; but the most pernicious are those which are perpetual, and which by inducing all the bad Symptoms before-mentioned, cannot but afford too just Grounds for prognosticating a fatal Event. It is, indeed, customary for perpetual *Watchings* to bring on Convulsions, and a Delirium; which they effect by two different Ways and Means, one by drying and inflaming the Brain, and the other by an Oppletion of that Part with an hot Humour; since all *Watching*, as we observed before, indicates either a Vacuity and Exsiccation of the Brain, or a Repletion of it with hot Humours, or an Inflammation of that Part. Convulsions and a Delirium from *Watching*, procured by this latter means, are not indeed absolutely fatal; for either by a Resolution and Evacuation of the hot Humour, or a Propulsion of it to some other Part, they are sometimes removed. With relation to this Subject, we read *Coac. 109*. "That in Children under an acute Fever, Costiveness with *Watching*, much Crying and Striving, Alteration of Colour, and great Redness, indicate Convulsions." But tho' *Watchings* with those Symptoms are not always mortal, they are, however, very much to be dreaded. Wherefore, *Hippocrates, 7 Aph. 18*. justly pronounces *Watchings*, attended with Convulsions and a Delirium, a bad Sign.

Convulsions and a Delirium, attendant, or consequent, on perpetual *Watchings*, and not caused by a Repletion of the Brain with hot Humours, are absolutely mortal, in the same manner as Convulsions, supervening upon burning Fevers, indicate inevitable Destruction. Thus it was in the Case of the phrenetic Patient, who could not sleep, and dy'd on the fourth Day, as is observed by *Hippocrates, 3 Epid. Sect. 3. Agr. 4*. *Watchings*, with some other attendant Signs, as æruginous Vomitings, and Pain of the Head, portend a furious Delirium

and Death; agreeably to what we are told by the Author of *1 Prorrh. 10*. "A Pain of the Head, he says, attended with æruginous Vomitings, *Watchings*, and Deafness, are soon succeeded by a Mania;" as it was in the Instance of the phrenetic Subject before-mentioned.

We may conclude, that constant and perpetual *Watchings* in acute Diseases are deadly; as they were in the Case of the phrenetic Person aforesaid; and of the Wife of *Dromeades, 1 Epid. Sect. 3. Agr. 11*. who continued without Sleep from the first to the fourth Day, and dy'd on the sixth. *Hippocrates, 1 Epid. Sect. 2. Stat. 3*. informs us, that many, under burning Fevers, dy'd after perpetual *Watchings*: Whence, in *Prognost.* he justly pronounces it "a very bad Sign," when the Patient can neither sleep by Day nor by Night, for either Pain, and great Anxiety, or a Delirium, are signified by it.

Watchings, attended with some mortal Sign, are absolutely fatal. Here we ought attentively to consider the Evacuations attending this constant Want of Sleep; and, if these are all bad, as indicating a symptomatical, useless, or depraved Excretion of Nature, they portend certain Death.

Watchings, accompanied with Cold, copious and constant Sweating of the Head, are bad. With relation to this, we read *Coac. 41*. that "They who are affected with cold Sweats, *Watchings*, and Vicissitudes of Head and Cold, are in a bad State."

Of no better Signification are *Watchings*, attended with other Excretions, which give no Relief to the Patient, but are Signs of Crudity; such are a Stillation, or Falling by Drops, of Blood from the Nose, and virulent Vomitings.

Sometimes *Watchings* are succeeded by Evacuations, which, affording no Relief, are esteemed very bad, prove injurious to the Sick, and increase the Disease: Such a Consequence in all Evacuations and Symptoms, under which, the Patient might reasonably expect to be eased, is pernicious, as we are taught by *Galen, Com. in Prorrh.* and other Places, because in acute Diseases, Excretions, or other Circumstances, which use to relieve the Patient, if they answer no such Purpose, are said to be bad; but if they are so far from proving beneficial, that they render the Case of the Sick really worse than it was before, they may safely be pronounced fatal.

As pernicious Convulsions, furious Phrensies, and Tremblings, are frequently the Consequences of continual *Watchings*, so it sometimes happens, that a mortal *Coma* succeeds them: For, as a long Sleep, after much *Watching*, which refreshes the Sick, is a very good Sign, so a long Sleep, which is so far from refreshing, that the Patient rather finds himself fatigued and injured by it, must be of deadly Signification; agreeably to that of *Hippocrates, 2 Aph. 2*. "Sleep which composes a Delirium, is good;" and the preceding Aphorism, "A Disease, in which Sleep creates Pain and Anxiety, proves mortal." But where Sleep helps and relieves the Patient, the Disease is not mortal.

A *Coma* succeeding a perpetual *Watching* is generally fatal, as proceeding from a Refrigeration and Resolution of the natural Heat, which must be highly destructive, as *Galen, Com. in 4 Aph. 67*. observes; for Coldnesses, he there says, which are consequent upon hot and dry Affections, are incurable. A *Coma* sometimes succeeds a *Watching*, or Want of Sleep, from a Resolution of the Bile, and a dry Evaporation, which was the Cause of that *Watching*, the pituitous Humour still remaining, which moistens and dilutes the Brain; and such a *Coma*, with Signs of Concoction, and the Strength not much injured, cannot be thought pernicious. *Prosper Alpinus de Præseg. Vit. & Mort. Agrot.*

FEBRILE CONVULSIONS.

See VULNUS.

A Convulsion in a Fever, is always excited by some Injury done to the Brain, either by Vellications convey'd to it by the Nerves from the inferior Parts, or from an inordinate Appulse, Transflux, or Egress, of the Liquid secreted in the Brain; which may arise from every Cause capable of exciting a *Delirium*, *Coma*, or obstinate *Watching*: And on this Account, there is a great Variety in the Ætiology and Cure.

If it continues long, it easily affects the entire nervous System: Whence fatal Disorders are excited.

If Convulsions succeed the Signs of an Inflammation of the Brain, they are generally fatal Symptoms.

If a Discharge of thick Urine is succeeded by one of the aqueous and pellucid kind, and Convulsions immediately follow, it is the worst of Symptoms.

If Convulsions arise in Fevers, after profuse Evacuations, they generally prove fatal; as do those, also, which are accompanied by a perpetual *Delirium*.

In order to a Cure, the particular Cause is, first, to be investigated, and the affected Part must be discovered, whence the Convulsions primarily arose; then Medicines are immediately to be apply'd, which are capable of correcting Acrimony, of resolving the impacted Matter, and relaxing the Parts

Parts which are contracted. We are, therefore, to attempt the Cure of Convulsions by diluting, relaxing, making Revulsion, and lenifying, never trusting to the specious Character of Antispasmodics.

But if the Head is found to be primarily affected, recourse must be had to the Methods of Cure recommended above, in case of a Delirium, and Coma. Boerb. Aph.

PROGNOSTICS FROM CONVULSIONS.

Convulsions, when alone, or attendant on other Disorders, though always bad, yet sometimes prove Indications for prognosticating a good Event; but oftener portend Death than Recovery; of which fatal Tendency are those excited in Fevers from a Dryness of the Nerves. *Convulsions* suddenly seizing the Patient in the Beginning of the Disease, afford no certain Prognostic. They are much attendant, also, on Fevers, and indicate nothing of themselves but a Multitude of Humours, without any Tokens of a Recovery, unless they are critical. But we shall treat more accurately of the Prognostics of *Convulsions*, after we have first shewn what they are, with their Causes and Differences.

A *Convulsion*, in Greek *σπασμός*, *Spasmus*, according to *Galen*, de Sympt. Caus. Lib. 2. Cap. 2. is an involuntary Tension of the Nerves and Muscles, by which they are reduced to the same Posture and Disposition, as would happen to them from a natural and spontaneous Motion. And in the *Definitiones Medicæ*, ascribed to the same Author, it is said, that a *Convulsion* is an Affection incident to the Nerves and Muscles; by which sometimes the whole Body, sometimes a Part of it, is distended. Hence, this Kind of Disorder is by many properly enough called a *Tension*, and a *Distension*, tho' some make a Distinction between a *Convulsion*, or *Spasm*, and a *Distension*, from that Passage of *Hippocrates*, 4 Aph. 57. "A Fever coming upon a *Convulsion*, or *Distension*, [τὸ σπασμὸν], removes the Disorder." But *Galen*, in Comment, has removed this Difficulty, and very well stated the Case, where he tells us, that of the three different Kinds of *Convulsions*, what the *Greeks* call *Tetanus*, may more properly be called a *Distension*, and not a *Convulsion*, if it were only, because in such a Disorder the Parts appear not convulsed, but are equally distended both Ways; on which account principally it has the Name of *Distension*.

There is, also, a twofold Distinction of *Convulsions*, one permanent, and without conspicuous Motion, of which there are three subordinate Kinds, one called by the *Latins*, *Distentio*; by the *Greeks*, *Tetanus*, and by *Celsus*, particularly *Rigor*, in which Affection, the Neck, together with the rest of the Body, remains immoveable, and inclined to neither Side, but erected in a right Angle to both. And this seems most properly to be what *Hippocrates* calls *Tetanus*, a *Distension*, which differs from a *Convulsion*, in that, as we just said from *Galen*, the Parts appear not to be convulsed.

A second Kind is called *EMPROSTHOTOSIS*, [see *TETANUS*] which is, when the Head, Neck, and rest of the Body are contracted towards the Breast; on which account it is called *Tentio ad anteriora*, "a Tension towards the anterior Parts."

The third has the Name of *OPISTHOTOSIS*, [see *TETANUS*] from the *Greeks*; and by the *Latins* is expressed by *Tentio ad posteriora*, "A Tension towards the posterior Parts." *Galen*, in his Book of Medicinal Definitions, has comprehended these three Kinds of permanent *Convulsions*, in the following Words: "Travellers, says he, who die of Cold on the Roads, are seized with such Kinds of Rigors as the *Greeks* call *Emprosthotonos*, *Opisthotonos*, and *Tetanos*, because under such Accidents the Body is inflected sometimes to the anterior, sometimes to the posterior Parts, sometimes neither Way, but is distended in a strait and immoveable Posture."

The other Kind of *Convulsions* is distinguished by frequent and interrupted Motion; and, therefore, called by Physicians, *convulsivæ Motions*, or *Convulsions*, ex *Materia non proportionata*, as when they are excited by a Stimulation and Vellication of the nervous Parts, or a violent Straining, and Stretching of the same, as in the Disease which the *Greeks* call *Epilepsia*, or are caused by Consent from a biting Sensation at the Mouth of the Stomach, or from some Injury received first by the Brain. This last Species of *Convulsions* is not *per se*, and in Strictness of Speech, called a *Convulsion*, but rather a *convulsivæ Motion*: And this is either universal, as when the Brain is primarily affected; or particular, from a Vellication of some particular Muscle or Nerve, in the same manner as a permanent or motionless *Convulsion*, is called *universal*, when, from an Affection of the Brain, it seizes the whole Body; and *particular*, when it affects only one Part; as, for Instance, in the Disorder which some call *Spasmus Cynicus*, in which the Mouth is distorted, or rather the Parts of the Mouth are convulsed.

As to the Parts which may labour under a *Convulsion*, or *Distension*, and the Place affected in *Convulsions*, *Galen*, de Loc. Affect. Lib. 3. Cap. 6. tells us, that all Parts of the Body

which are fitted for Motion, may be convulsed; for the Parts of the Body which are moved, are put in Motion by Help of the Nerves and Muscles, which being convulsed, there is a Deprivation of that Motion, as it happens in a Grinding of the Teeth; which the *Greeks* call *Trysmos*, and is a *Convulsion* of the Muscles, as we are taught by *Galen*, de Loc. Affect. Lib. 2. Cap. 2. And in the same Treatise, Lib. 3. Cap. 6. he teaches us from the convulsed Part to know, whether the spinal Marrow, or the Brain, or the Nerves, or which of them, are affected, in the following Words: "When the whole Body is convulsed, all imagine such a Part to be affected, as, like the Trunk with respect to the Branches of a Tree, is the common Trunk of all the Nerves, and not of a few only in one Part, in nature of a Branch; as is the Case, when a Leg, or one of the Hands, happens to be convulsed, where a Convulsion of the whole Member shews the Original of the Nerves distributed on it to be affected, from the Example of a Branch of a Tree. But when the whole Body is affected, we must suppose the common Origin of all the Nerves below the Face, which answers in proportion to the Trunk of a Tree, to be affected, that is, the first Parts of the spinal Marrow; for which Reason, the most experienced Physicians adapt their Remedies to those Parts, and take no Notice of the Heart. But if, with the rest of the Body, the Face be, also, convulsed, we take care not only of the Beginning of the spinal Marrow, but of the Brain itself. And, indeed, we often see the Lips, the Eyes, the Skin of the Forehead, the whole Jaws, and the Root of the Tongue, affected with *Convulsions*; and, because we learn from Anatomy, that all these Parts are moved by Muscles, which receive their Nerves from the Brain, we judge that to be affected whenever those Parts are convulsed; but when we see the other Parts of the Body labouring under *Convulsions*, while those remain in a due Disposition, we conclude the Origin or Beginning of the spinal Marrow to be affected."

Having thus learnt to know the Part originally affected by the Part convulsed, we proceed to inquire into the Causes of *Convulsions*; and, first, of those which are perpetual and permanent without Motion. *Convulsions*, says *Hippocrates*, 6 Aph. 39. "are occasioned either by Repletion, or Inanition." The same is confirmed by *Galen*, Lib. 2. & 3. de Loc. Affect. & in 4. & 6. Lib. Aph. & Lib. de Trem. Palpit. & Convuls. and in innumerable other Places; but especially, Lib. 2. de Symptom. Caus. where he says, that "a *Convulsion* draws the Nerves and Muscles into the same Posture and Disposition, as that into which they were brought by the animal Force, when in their natural State. Whether, therefore, voluntary Motions are performed by a Tension of the Muscles at their Origin, or an Impletion of them by a flatuous Influx, the Effects are the same in a *Convulsion*, whether from a flatulent Spirit, which may be generated in the Veins, or a Multitude of other Disorders, among which is a Phlegmon, which may create a Tension." And these are all comprehended, according to *Hippocrates*, under the two general Heads of *Repletion* and *Inanition*, of which the first takes place in a Phlegmon, and the other in burning and dry Fevers. And that immoderate Impletion and Inanition may either of them cause a Tension in nervous Bodies, we may learn from what happens to the tense Strings of musical Instruments, which break whenever those Instruments be laid in a moist and humid, or a dry and dusty Room; and they are therefore relaxed, before laid aside. This Generation of *Convulsions* is illustrated by *Galen*, Lib. 3. Cap. 6. in the following Words: "If you observe nervous Bodies, particularly the Strings of an Harp, by an immoderate Distemperature of the Air, distended to such a Degree as to break, you will easily imagine, that the same thing may happen to the Nerves of Animals." But how are Strings, from an Affection of the Air, as when it is immoderately dry or moist, stretched in such a manner as to break? The Humour, to answer, moistens them so as to raise them into a preternatural Tumor, which must of Necessity cause extraordinary Tenseness; on the other hand, as the Sun by drying Skins contracts them, so Dryness draws and stretches Cords and Strings; and thus we observe Thongs of Leather, when dry'd by the Fire, reduced to a State of Tenseness and Contraction.

To these two Causes of *Convulsions*, *Galen*, in Aph. 25. adds a third, which is, the Weakness of the nervous Parts; on which account Children, he says, are much subject to *Convulsions*, as well as from the crude Aliment with which they abound.

The nervous Parts often labour under a Repletion from a crude Humour, by which they are convulsed, as we are told by *Galen*, de Sympt. Caus. Lib. 2. Cap. 2. Thus it is with Children, who, abounding with crude Aliment, and having their nervous Parts not very strong, are easily affected with *Distensions*,

sions, as *Hippocrates* tells us, 3 *Aph.* 25. Hence, 2 *Epid. Sect.* 5. he advises, when Children * are affected with *Convulsions* to excite a Fever, by which means that Disorder, together with the Fever; is sometimes removed in a safe Manner.

To this Head of *Repletion* may be reduced *Convulsions* from an Humidness of the Air, as when we are told by *Galen*, in *Epid. Sect.* 2. that in a moist and cold Constitution of the Air, many Persons, and especially Children, as *Hippocrates* writes, were afflicted with *Convulsions*; and, also, those proceeding from an immoderate drinking of Wine.

Sometimes, also, the nervous Parts are stretched and convulsed from their being imbued with Blood, or bilious Excrements, sometimes from a Flatus, and frequently from a Phlegmon, either immediately, or by Consent of the neighbouring Parts. After this manner are occasioned Tensions of the Hypochondria, which proceed from a violent Inflammation of the Diaphragm, Pleura, or Liver; and to the same Head appertain *Convulsions* from Wounds attended with an Inflammation.

The Parts are dry'd, or, to speak in the Phrase of *Hippocrates*, emptied, or evacuated, as well by a burning Heat, as an immoderate Cold. Of the latter we read, 5 *Aph.* 17. that it "produces *Convulsions* and Distensions;" and, *ibid.* *Aph.* 20. it is said, that "Cold is biting to Ulcers, hardens the Skin, renders Pain insupportable, blackens, and excites febrile Rigors, *Convulsions*, and Distensions." Here *Galen*, in his Comment, says, that "Immoderate Cold excites those *Convulsions* and Distensions, with a Refrigeration of the Nerves; for as it is not convenient, that this Substance should be dissolved by an immoderate Heat, it is no less prejudicial to them to be refrigerated and contracted." For excessive Cold, affecting the Nerves, Muscles, Tendons, and Ligaments, first causes an Inequality of the Skin, by repelling the Heat and Moisture inwards; then dries by expressing the finer Parts, compresses, condenses, hardens, and, by closing the interior Sinuses and Bores, prevents Diffusion and Perspiration, as well as Reception of Aliment, so that the Parts remain rigid, hard, and distended. To this Purpose we read, *Coac.* 23. that "a Rigor, producing an *Opisthotonos*, is mortal;" and *Galen*, in his Book of medicinal Definitions, before quoted, says, that "Travellers oppressed with Cold, die of an *Empoisthotonos*, *Opisthotonos*, or *Tetanos*."

Immoderate Heat produces the same Effect, and much more efficaciously; for by dissipating all the humid Substance of the Muscles, and other nervous Bodies, it renders those Parts extremely dry'd and parched; whence they are distended and convulsed. Burning Fevers, therefore, which, like a Fire, dry the Nerves, produce a Distension and *Convulsion* of the same; and, as *Galen*, on 4 *Aph.* 66. teaches, induce *Convulsions* of a pernicious Kind. After the same manner mortal Phrenesies, by dissolving the Substance of the Nerves with their immoderate Heat, usually end in *Convulsions*. On the same account, all considerable feverish Estuasions have the like Effect by Drying, as we are assured by *Galen*, on 7 *Aph.* 13. and the same Consequence follows from constant Watchings, and all great and immoderate Evacuations and Purgations, as we learn from the same Author, on 5 *Aph.* 3. 4 & 7. *Aph.* 9. And he calls all those Drynesses, if I may use the Word, the Causes of *Convulsions*, de *Loc. Affect.* Lib. 3. Cap. 5. comprehending them all in the following Words: "For since a *Convulsion* is occasioned either by Labour, Watching, Hunger, Solitude, or a dry and burning Fever, as we see in Phrenesies, you may justly impute the Cause to a Dryness and Inanition."

Thus have we assigned the various Causes of perpetual and permanent *Convulsions*, and have reduced them under the general Heads of *Repletion*, and a Dryness, Evacuation, or Inanition, of the nervous Parts. But *Convulsions* attended with manifest Motion, such as those of the epileptic Kind, and those they call *convulsive Motions*, have other Causes. For sometimes they proceed from a gross and viscid Humour obstructing the Ventricles of the Brain; which is the Cause of that universal *Convulsion* which the Greeks call *Epilepsia*, and others *Morbus Comitialis*, according to *Galen*, de *Loc. Affect.* Lib. 3. Cap. 7. where he tells us, that "the Epilepsy is a *Convulsion* of all the Parts of the Body, not perpetual, as is observed in the *Empoisthotonos* and *Tetanos*, but incident at certain Intervals; and this *Convulsion* is occasioned when the Brain is primarily and in itself affected; whence, by Consent of Parts, we often observe Bodies to labour under *Convulsions* both general and partial." The same Author, de *Loc. Affect.* Lib. 5. Cap. 6. has demonstrated, that a Disorder of the Mouth of the Stomach has not only occasioned *Convulsions*, by communicating the Injury to the Brain, the Origin of the Nerves,

but other very severe Symptoms; and, he tells us of a young Grammarian, who, whenever he was too intent on Teaching or Thinking, or fasted too long, or fell into a Passion, was seized with a Fit of an Epilepsy, from a bilious and acrid Juice vellicating the Mouth of the Stomach. And, in his Comment on 5 *Aph.* 1. he speaks of a young Man who was frequently affected with an universal *Convulsion*, from an æruginous Humour gnawing the Mouth of the Stomach; and recovered not from his Fit, before he had discharged the æruginous Matter by Vomit. Again, in his Book of *Venefection* against *Erasistratus*, he tells us, that *Diodorus* the Grammarian was affected with *Convulsions* after long Fasting.

A *Convulsion*, also, is occasioned by much Straining and Retching, when the Stomach labours to expel some malignant and noxious Matter, in the same manner as a true Epilepsy is induced, while the expulsive Faculty in the Brain makes Efforts to expel the gross and viscid Juices which obstruct its Ventricles, and intercept the Passage of the animal Spirits thro' them. *Hippocrates*, therefore, had good Reason to say, that *Convulsions* were produced from White Hellebore, by its pernicious Juices gnawing and vellicating the Mouth of the Stomach. An Instance of this fell within our own Observation, while we practised Medicine at Padua, in a young Man, who, by the Carelessness of an Apothecary, took White instead of Black Hellebore. But many Instances may be given of such as have been affected with convulsive Disorders from some bilious, or æruginous Humour, or some poisonous Juice infesting the Stomach, and vellicating its Mouth.

It appears, therefore, that an Injury done to the Mouth of the Stomach is, by Consent of Parts, communicated to the Brain; whence *Convulsions* are excited. And not only the Mouth of the Stomach, but the Uterus, and this last, most of all, communicate, by Consent, their Disorders to the Brain; whence hysterical Women are often observed to be molested with *Convulsions*. *Galen*, de *Loc. Affect.* Lib. 6. Cap. 5. gives an Instance of this in a Widow, who was affected with *Convulsions*, from the Uterus being injured by a Retention of the Semen; and was freed from them by gross, ferid, feminal Excretions. Hence the Author of 1 *Prorrh.* T. 129. says, "that Women affected with Hysterics, without a Fever, are subject to *Convulsions*; as was the Case, for Instance, of *Doria*."

And not only from the Uterus, but from other Parts, by a poisonous and highly pernicious Vapour ascending to the Brain, may convulsive Disorders be excited; in Proof of which, *Galen*, de *Loc. Affect.* Lib. 3. Cap. 7. gives Instances of two Boys affected with an anomalous Epilepsy.

Such, then, we may suppose, are the Causes not only of permanent, but moveable *Convulsions*; but *Galen*, Lib. 12. *Meth. Med.* Cap. ult. has comprehended in few Words the Cause of all *Convulsions*, and convulsive Motions, where he says, they are occasioned either by a Dryness, *Repletion*, a considerable Inflammation, a biting Humour, or violent Cold.

But we have treated, we hope with sufficient Accuracy, of the Causes of *Convulsions*; and proceed now to consider the Signs from which we may predict their future Appearance. And here we read, *Coac.* 85. 157. that Deliriums increasing sensibly in Ferocity become at last outrageous, and portend *Convulsions*; and a little after, T. 162. "They who are affected with a Pain of the Head, and labour under a Catochus, with a Constipation of the Belly, have a fierce Look, and a florid Colour in the Face, are seized at last with an *Opisthotonos*." That *Convulsions* should succeed mortal Inflammations of the Brain, is agreeable to Reason, since they are Signs of a mortal Phrensy, under which it is proper and usual for the Patient, as *Galen* says in 1 *Prorrh.* to be convulsed, and to die in *Convulsions*. The Author, also, of 1 *Prorrh.* T. 28. tells us, "That frequent Mutations in Phrenesies indicate *Convulsions*." And, *Coac.* 171. we read, "That an acute Pain in the Head, attended with a Torpor and Heaviness, are usually succeeded by *Convulsions*." And, *ibid.* T. 177. "That a Pain of the Head, with a small Sweat, and a Constipation of the Belly, end in *Convulsions*."

These, then, are the prognostic Signs of *Convulsions*, of which Signs only violent Pains of the Head, and a furious or outrageous Delirium are to be reckoned as certain, the other Marks not affording any sure Grounds for Prediction. As for Children, we are told by *Hippocrates*, in the *Prognostics* towards the End, that "They become affected with *Convulsions*, if they labour under an high Fever, and are costive, wakeful, frightful, much given to Crying, and change their Colour to pale, livid, or red; and these Symptoms are incident to Children from their Birth to their seventh Year."

* The Author of the Notes and Emendations to *Prosper Alpinus*, reads *Puerperas* with *Foetus*, as rendered from *παιδίαι*, and not *Pueros*, with *Alpinus*, because, as he says, no such Directions concerning Children are to be found in all the *Epidemics*.

Children more advanced in Years, and full-grown Persons are not so subject to *Convulsions* in Fevers, unless at some very violent and dangerous Crisis, as is usual under a Phrensy.

But we have said enough on this Head, and shall now take into Consideration the *Prognostics* from *Convulsions* which offer themselves to our Examination, in order to the Prediction of Death, or Recovery in acute Diseases. And here, first, we shall speak a little of those *Convulsions* which are not attended with a Fever. *Convulsions* of this Kind, which proceed from a Repletion of the nervous Parts with a crude Humour, are less dangerous than such as are excited by a Dryness and Arefaction of the Nerves; and *Convulsions* which owe their Original to a Repletion, are distinguished from the others by their Suddenness.

Of the three distinct Kinds of *Convulsions*, what they call the *Tetanus* is the most acute Disorder, and often kills in three or four Days; the Muscles of the Jaws and the Gullet being convulsed in such a manner, that Deglutition is entirely destroyed, and the Patient rendered incapable of being nourished with Food, or relieved with Medicines: But when the Disease is protracted to a greater Length, there are good Hopes of Recovery. What we have said is the same with that of *Hippocrates*, 5 *Aph.* 6. *Whoever happen to be seized with a Tetanus, die in four Days; but if they survive that Term, recover.* The Patient, in such a Case, always meets with the best Relief from a supervening Fever; for the febrile Heat consumes the Humours which obstruct the nervous Parts. On this Subject we find *Galen* discoursing, in 2 *Aph.* 26. where he says, *If any Person in Health happens to be suddenly seized with Convulsions, they must of Necessity be occasioned by a Plenitude. Now the Nerves suffer a Repletion from cold and viscid Humours, by which, also, they are nourished, so that they become convulsed: And this Disorder is remedied by a supervening Fever, which heats the cold, and attenuates and discusses the viscid Humours.* This is no more than a Comment on that of *Hippocrates*, 4 *Aph.* 57. before-quoted. Very justly, therefore, it is said, 2 *Aph.* 26. that it is better for a Fever to come upon *Convulsions*, than *Convulsions* upon a Fever. And with good Reason does the same Author*, 2 *Epid. Sect.* 5. advise exciting a Fever in Children for *Convulsions*; by which means, the crude and gross Humours are heated, attenuated, and discussed. Hence the more violent the supervening Fever, and the more intense its attendant Rigor, the more effectually will it remove the *Convulsions*. Thus qualified is a Quartan, which is accompanied not only with an intense Degree of Coldness, but a most efficacious Heat; by virtue of which it gives Relief under a great Disease, if we may believe *Hippocrates* and Experience, for which we have good Reason; for this Kind of Fever is attended with a more effectual Heat than other Fevers; because it has its Foundation in a more gross and dense terrene Matter; as may be inferred from what we read 5 *Aph.* 70. where we are told by *Hippocrates*, that they who are seized with a Quartan are not very subject to *Convulsions*; and such as are first taken with *Convulsions*, are relieved by the coming-on of a Fever. Such is the good Effect of a Quartan, not only by its Heat, which effectually discusses the Repletion of the nervous Parts; but by the Intenseness of its Cold, with which it shakes the Body so long till the Humour is by that Motion digested, or expelled from the nervous Parts. A Fever, therefore, coming upon *Convulsions*, is good; because it removes the Repletion by a Discussion. And this is further illustrated and confirmed by *Hippocrates*, in what he says of those who are convulsed from Drunkenness, 5 *Aph.* 5. where we read, that if a Person who is drunk be taken suddenly speechless, he dies in *Convulsions*, unless a Fever seizes him.

And these are the *Convulsions* from which we may hope a good Event, especially in Children; who, the more subject they are to *Convulsions*, both on account of the crude Aliment with which they abound, and the Weakness of their nervous Parts, as *Galen*, on 3 *Aph.* 5. has it, the less are they in danger from such Disorders, and the more easily are they relieved from them by a supervening Fever. Hence *Convulsions* in Children labouring under Fevers, are not so much to be dreaded; but in adult Persons they are usually pernicious, as they are generally owing to a Dryness and Rarefaction of the nervous Parts by the febrile Heat, than which nothing is more pernicious, in the Opinion of *Galen*; who, in his *Metb. Med. Lib.* 12. *Cap.* 8. has these Words, with respect to a *Convulsion* from Dryness: *We must know, he says, that an Affection of this Kind, if ever it be cured, requires Humectation. But it is extremely difficult to be cured, or rather incurable, if it be contracted by a Fever, and succeeds a Phrensy of the most mortal Kind. For my part, I never knew, nor heard of any one cured, who was convulsed in this manner.* In Children, indeed, affected with feverish Disorders, *Convulsions* are not so bad, or so much to be dreaded, as we

shall by-and-by demonstrate more plainly, from 1 *Epid. Sect.* 2. but in all other Ages, *Convulsions* proceeding from Dryness are pernicious. For this Reason, *Convulsions* attending Fevers are to be dreaded. Whence *Hippocrates* might very justly say, that it is better for Fevers to succeed *Convulsions*, than for those to come upon Fevers; for if they are the Consequence of Purgation, or any other considerable Evacuation, they are of the worst Sort, because all Evacuations dry the Body. In Confirmation of this Doctrine, we are told, by the Author of 1 *Prorrhet. T.* 145. that a violent and copious *Hæmorrhage* from the Nose sometimes induces *Convulsions*; and, by *Hippocrates*, 5 *Aph.* 3. that *Convulsions* or *Hicups* succeeding a copious Discharge of Blood by the Anus, are bad: And *ibid.* 56. that *Convulsions* and a *Lipobymy* after a Flux of the Menses, are bad. Again, 7 *Aph.* 9. we read, that a *Delirium* or *Convulsions* succeeding an *Hæmorrhage*, are bad. The same Position is more generally and expressly asserted by *Galen*, in his Comment on *Lib.* 6. *Aph.* where he says, that *Convulsions* from an Evacuation are most acute and pernicious. To the same Purpose we read, 7 *Aph.* 13. that *Convulsions*, or a *Tetanus*, after violent burning Heats, are bad; and, *ibid.* *Aph.* 18. *Convulsions* and a *Delirium* after Watchings, are bad. The Reason is, because violent Heats, or burning Fevers, and immoderate Watchings, resolve and evacuate the humid Parts. In the same manner; that is, by drying the Body, do immoderate Purgations produce pernicious *Convulsions*, according to 5 *Aph.* 4. where it is asserted, that *Convulsions* or *Hicups*, succeeding an *Hypercatarrhis*, (or profuse Purgation) are bad. Moreover, we read, 7 *Aph.* 25. that *Convulsions* from a purging Draught are mortal: And 5 *Aph.* 1. that *Convulsions* from (white) *Hellebore* are deadly.

Having spoken hitherto of the *Prognostics* from what they call permanent, or perpetual *Convulsions*; we proceed to treat, in a few Words, of such *Convulsions* as are occasioned by a Straining, or Stimulation, while Nature attempts an Excussion of the gross and viscid Humours which obstruct the Ventricles of the Brain, as in a Fit of the Epilepsy. *Galen*, in *Lib.* 5 *Aph.* says, that an Epilepsy is not a very acute nor dangerous Disease; and justly, because it belongs to the Lists of chronic Diseases; and the Patients are often perfectly freed from it, especially Children; according to that Aphorism of *Hippocrates*, 2 *Aph.* 45. *Very young Persons subject to an Epilepsy, are cured chiefly by Change in Age, Place, and Way of Living.* And 5 *Aph.* 7. we are told who are capable, and who are incapable of a Cure; where it is said, "An Epilepsy before the Age of Puberty, admits of a Metastasis (a Solution, see *METASTASIS*); but if it molests the Patient after twenty-five, it generally accompanies him to his Grave." And *Galen*, in his *Treatise de Puero Epileptico*, tells us, that he had cured several Children; and in his Book *de Purg. Med. Fac.* that in several others, who were not cured, he had prevented a Return of the Disorder, by the proper Precautions of Purgings and Phlebotomy in the Spring.

As for other Kinds of *Convulsions*, which are excited from Consent of Parts, by some acrid Humour, or Poison, or from some poisonous and malignant Vapour, they are all curable. Of this Nature were the *Convulsions* under which the Grammarian before-mention'd labour'd, from bitter Bile; and the young Man, also, spoken of, who was molested with an æruginous Matter, gnawing and vellicating the Mouth of the Stomach; and was freed from the same by Vomiting. Examples may, also, be given, of *Convulsions* from malignant Vapours, remov'd; and perfectly cur'd; but we have, perhaps, said enough, as to the *Prognostics* from *Convulsions* excited without a Fever; and shall, therefore, proceed to speak of such as happen under acute Fevers.

Of the Signification of CONVULSIONS in acute Fevers.

All *Convulsions* which happen in the Beginning of Diseases, indicate a Multitude of Humours, by the nervous Parts labouring under a Repletion, which occasions a Tension, or *Convulsion*. This Kind of *Convulsion* affords no sure Grounds for Prognostication, but indicates, however, that the Disease is very severe, and not void of Danger; since all Disorders, proceeding from a Multitude of crude Humours, are violent, and dangerous. Instances of this are many, in the Books of the *Epidemics*, of those who were restored to Health; particularly, the Woman who was three Months gone with Child, and lay ill in the Strand; Pythion, who liv'd near the Temple of Tellus; the Man who lay ill in the Garden of *Deacles*; *Charion* at *Demæretus*; and the morose Woman, who was seized with *Convulsions*, as it were, on a sudden, on the first Day. In all these Cases, except his who lodged in the Garden of *Deacles*, where a Crisis was indicated, *Convulsions* were Signs of a Multitude

* The Passage here meant runs thus: *ἢν λέγοις σπασμὸς ἐπιγίνεται. τὸν πύει.* Where our Author, for λέγοις, reads παύσεις; and translates τὸν πύει, literally, *Ignem exerceamus seu inuramus*; but we have followed *Feesius*. See the preceding Note.

of Humours, and had nothing in them of Certainty, with respect to Prediction. In *Charion* and *Pythion*, indeed, they were not so much to be dreaded, because on the ninth Day attended with a Discharge of Urine, in which appeared some Signs of Concoction; but in the Case excepted they were critical: For, as *Galen* says, in his Comment, "the Delirium on the ninth Day, and squinting of the Right Eye, were usual Incidents in a Crisis."

Convulsions, also, in Fevers which proceed from the Brain, affected by Consent of Parts from a Disorder in the Mouth of the Stomach, are not to be feared, since they may be remov'd by a Vomit. An Instance to this Purpose we find recorded by *Hippocrates*, 5 *Epid. T. 40.* in "the Son of *Hermophilus*, who was ill eleven Days. His Disorder was a Fever, and he took no Sustainance: On the first Day he was delirious, but recovered his Senses at Night. The next Day he lay speechless, under a Stertor, with his Eyes distorted, and was feverish; but by Intromission of a Feather he vomited black Bile; and, by means of a Clyster, had a plentiful Discharge of stercoraceous Matters by Stool."

Convulsions, in such Cases, proceeding from the Uterus, are, also, easy to be cured; according to that in 1 *Prorrh. T. 119.* "*Convulsions* in hysteric Women are easily removed; as in the Case of *Dorcas*." [See a more just Translation of this Passage before.]

Convulsions, also, in Children affected with feverish Disorders, as they are no Indications of any great Alteration from a healthy State, because Children abound much with crude Aliment, and have, besides, weak Nerves, are not much to be dreaded. "Children, says *Galen*, *Com. in 1 Epid.* because of the Weakness of their Nerves, are very subject to *Convulsions*." And the more easily they are liable to be convulsed on slight Occasions, the less is the Danger. It is no wonder, therefore, if Disorders of this Kind are not so formidable in Children, even under Fevers, as in adult Persons. To this Purpose is the Observation of *Hippocrates*, 1 *Epid. Sect. 2.* "that many were at first seized with *Convulsions*, and a Fever, especially Children; the Fever was, also, succeeded by *Convulsions*. These Symptoms were generally of long Continuance, and had no ill Consequence, except in those where all other Signs were pernicious." And the same is confirm'd by the Author of the *Coac. T. 356.* where he says, that "*Convulsions* succeeding a Fever are mortal, but least of all so to Children." But if to *Convulsions* there succeeds a Fever, or, if there be a Fever already, an Exacerbation of the same, it is a good Sign, with respect to the *Convulsions*, provided they proceed from a Repletion of the nervous Parts. Hence we are told, *Coac. 358.* "that an acute Fever, coming upon *Convulsions*, removes the Disorder; whether it is a new Fever, or an Exacerbation of the old." The same Symptom is much alleviated by a Discharge of much vitreous Urine, or what resembles Semen.

Convulsions in the Beginning of Fevers, if the Fever increases, usually cause an Alleviation of the Rigor. Thus it was in the Case of *Philistides*, the Wife of *Heraclides*, 7 *Epid. T. 130.* "who, it is said, was seized with a high Fever, and a Redness of the Face, without manifest Cause; soon after, on the same Day, she was affected with a Rigor, and recovered no Heat; then was convulsed in her Fingers and Toes; and, shortly after, her Heat was revived. On the second Day she had a new Fit of a Rigor, but recovered a little more Heat than before; her Redness was less, and the supervening *Convulsions* were more moderate."

We may add, that some Sorts of *Convulsions* in Fevers much alleviate, and even remove the Disease; and these ought to be called critical, being occasioned by a Translation of the morbid Matter from the Veins to the Nerves and Muscles; and if they effect a Solution the first Days, they are critical and salutary, according to *Coac. 157.* where we read, "that a *Convulsion* excited in a Fever removes it the first, second, or third Day; but if it transgresses the Time in which it first began, and ceases not, it is a bad Sign." *Convulsions* of this Nature are occasioned, as we said, by a Metastasis of the morbid Matter from the Veins to the nervous Parts; which Metastasis, or Translation, may possibly diminish, or even quite remove the Fever, the Humours being excreted from the Veins, and no longer left to putrefy in them.

And thus far have we spoken of those Kinds of *Convulsions*, which, though not properly good, for all *Convulsions* in themselves are bad, yet sometimes happen to be salutary Prognostics. We come now to treat of those which are universally bad and pernicious, and of destructive or fatal Signification.

It is an Observation of *Hippocrates*, *Lib. Prognost.* that in acute Diseases a *Convulsion* of the Testes and Pudenda is succeeded by a violent Pain, or Death; and *Convulsions* in acute Fevers are always of bad Signification to adult Persons, but worst of all in burning Fevers, as we are assur'd by *Galen*, in

4 *Aph. 66.* because these dry the Nerves like a Fire, and excite pernicious *Convulsions*. We have observ'd, that *Convulsions* from a Dryness of the nervous Parts are not only difficult, but impossible to be cur'd; for which Reason, they must be always pernicious in acute Fevers, as being occasion'd by a Dryness of the Nerves, from a Consumption of the humid by the igneous Heat of the Fever. Thus *Galen*, in 4 *Aph. 35.* tells us, "that in burning Fevers, if the whole Body be dry'd, and a *Convulsion* of the Nerves happens to proceed from that Dryness, it is a very great Disorder, and almost incurable, because a long time is requir'd for removing the Dryness of the Nerves; whereas the Violence of the Disease will not allow Time to Nature, but speedily exhausts the Strength, and destroys the Patient." *Hippocrates*, therefore, had good Reason to say, that "*Convulsions* and violent Pains about the Viscera, in acute Fevers, are bad;" but if attended with a Decay of the Strength, they shew Death to be very near. *Hippocrates*, 4 *Aph. 49.* is very express and elegant to this Purpose, when he says, "In a not intermittent Fever, if the Lip, or Eyebrow, or Eye, or Nose, be distorted, or the Patient cannot see, or hear, the Body being at the same time very weak; which ever of these Symptoms appears, Death is at hand." Thus it happened, for Instance, to the Wife of *Dromeades*, 1 *Epid. Sect. 3. Aeg. 11.* who died suddenly in *Convulsions* which began at the Head.

Convulsions in a Delirium are very dubious, but in Phrenesies are the most pernicious of all Symptoms, and indicate the speedy Approach of Death. *Galen*, as before observ'd, *M. M. Lib. 12. Cap. ult.* says, he never knew or heard of any Person who recover'd in such Circumstances. *Hippocrates*, in his Description of the Epidemic Constitution, 1 *Epid. Sect. 2.* says, that those who were affected with Phrenesies, were convulsed, and molested with virulent Vomiting; and some of them died suddenly. And this he had an Opportunity of observing more exactly, in the Case of the phrenetic Patient, 3 *Epid. Sect. 3. Aeg. 4.* who on the second Day, in the Morning, lost his Voice, had a high Fever, sweated, without Intermision of the Fever, was affected with Palpitations in all Parts of his Body, and at Night with *Convulsions*. On the third Day all the Symptoms were exasperated; and on the fourth he dy'd.

We have before demonstrated, from *Hippocrates* and *Galen*, that it is a Property of mortal Phrenesies to end in *Convulsions*: For it is the Nature of a true Phrensy to excite *Convulsions* a little before Death, the Nerves being dry'd by an Inflammation of the Brain: We have an Instance to this Purpose in the Maid-servant of *Conon*, 7 *Epid. T. 98.* who dy'd at the End of forty Days, and was speechless and convuls'd for some Days before her Decease.

Tremors ending in *Convulsions*, or *Convulsions* from Tremors, are affirm'd by *Galen*, on the *Prorrh. T. 119.* to be mortal.

Convulsions occasion'd by Pains, or obstinate Watching, in acute Fevers, are pernicious, 7 *Aph. 18.* and so are those which proceed from profuse Purgation, or immoderate Evacuations of any Kind, 5 *Aph. 3, 4. 56.* before quoted. The Reason is, because all immoderate Evacuations dry the whole Body, and occasion a *Convulsion* from a Dryness of the Nerves, which is of the worst Sort, as we have observ'd. Hence *Galen*, *Com. in 7 Aph.* says, that "a *Convulsion* from an Evacuation is most acute and pernicious."

A *Convulsion* proceeding from an Inflammation of the Ileum is pernicious, 7 *Aph. 10.*

Convulsions from Wounds are, for the most part, mortal. Death is not the necessary Consequence of all *Convulsions* occasion'd by Wounds, as *Galen* observes, *Com. in 5 Aph.* though *Hippocrates*, 5 *Aph. 2.* pronounces them mortal. They are, however, for the most part, deadly; and we have many Instances of it in the *Epidemics*, particularly in *Scamander*, who was convulsed after a Section; another from a Wound with a Dart; the fair Daughter of *Nireus* from a Blow; a certain Pilot from a Fracture of the Finger; another from a Luxation of the Finger; who all died of *Convulsions*. Of *Scamander*, 5 *Epid. 15.* it is said, that "his Hip was sphacelated, and the Bone had for a long time been dislocated. The Operation of the great Section was performed upon him, and he was cut home to the Bone, and the Wound afterwards cauterized. The twelfth Day after the Section he began to be taken with *Convulsions*, which held him pretty strongly; he was convulsed from the Leg, on the infirm Side, up to the Ribs; and the *Convulsion* was communicated to the other Side; the Leg was contracted and extended; the other Limbs were moved, and his Jaws set. The Patient died in *Convulsions* on the eighth Day after he was first seized with them." In the second Instance, *ibid. T. 47.* it is said, "that a certain Person received a Wound with a sharp-pointed Dart, a little below the Neck behind, which appeared scarce worthy Notice; for it was not deep. But, not long after the Dart was taken out, the Patient felt himself distended, and drawn backwards,"

“ backwards, like one seized with an *Opisthotonos*; his Jaws
 “ were under a Constriction, and if he received any Liquid
 “ into his Mouth, and tried to swallow it, the same was dis-
 “ charged again at his Nostrils, and he immediately grew worse
 “ and worse in all other respects, and died on the second Day.”
 The tragical Story of the beautiful Virgin-daughter of *Nireus*
 is thus related: “ This young Woman being about twenty
 “ Years of Age, in playing and sporting with one of her
 “ female Friends and Companions, received a Blow from her
 “ with the Flat of the Hand, on the fore Part of the Head:
 “ She was immediately taken with a Dimness of Sight, and her
 “ Breath failed her; and when she came home she was imme-
 “ diately seized with a high Fever, attended with a Pain of
 “ the Head, and a Redness about the Face. On the seventh
 “ Day she had a Discharge of above a Cyathus of fetid, red-
 “ dish Pus by her Right Ear, and she seemed to be better, and
 “ easier; but the Fever increased again upon her, with a Cata-
 “ phora; she lost her Voice; the Right Side of her Face was
 “ contracted; she fetch'd her Breath with Difficulty; labour'd
 “ under Convulsions and Tremblings, with an Impediment of
 “ the Tongue, and a Stupor of the Eye; and died on the
 “ ninth Day.” Again, *ibid.* T. 74. we have a pretty remark-
 “ able Case of a “ Pilot belonging to a great Ship, who crushed
 “ the fore Finger of his Right Hand, and the Bone below it,
 “ with an Anchor: The Consequence was, an Inflammation,
 “ Sphacelus, and a Fever; he had a gentle Purge administer'd,
 “ and his Heats and Pains were mild and favourable. Some
 “ Part of his Finger was separated, and after seven Days a
 “ laudable Ichor was discharged from the Wound. Some time
 “ after he complained of an Impediment in his Tongue,
 “ whence an *Opisthotonos* was predicted, and a Tendency to
 “ that Disorder further appeared first from a Constriction of
 “ the Jaws, and afterwards by an Affixion of the same to the
 “ Neck. On the third Day he was wholly convulsed, and
 “ under a perfect *Opisthotonos*, attended with a Sweat; and
 “ on the sixth Day from the Prediction he died.” Much of
 “ the same Nature was the Case of *Telephanes*, the Son of *Har-
 palus* by his freed Woman, related *ibid.* T. 75. “ This young
 “ Man had his Thumb luxated towards the lower Parts, the
 “ Consequence of which was, an Inflammation, and Pain.
 “ When the Luxation was reduced, he went into the Field,
 “ and at his Return had a Pain in his Loins; he bathed, and
 “ towards Night had a Constriction of the Jaws, and was
 “ seized with an *Opisthotonos*. A spumous Saliva made its
 “ way through his Teeth, with much Difficulty; and on the
 “ third Day he died.” In the same manner one *Tychon*, *ibid.*
 T. 94. who received a Wound in his Breast by a Dart from an
 Engine, at the Siege of *Datos*, died suddenly, on the third Day,
 in Convulsions. From these Cases it appears, that Convulsions
 from Wounds are generally mortal.

Convulsions of the permanent Kind from drastic, or
 very strong Cathartics, or poisonous Medicines, are fatal.
 Thus Convulsions from Hellebore taken inwardly, are by
Hippocrates pronounced mortal, 5 *Aph.* 1. and, in general,
 Convulsions from any violent Cathartic are by the same Au-
 thor judged fatal, 7 *Aph.* 25. And he gives an Instance of
 the same, 5 *Epid.* T. 53. “ in a young Woman about twenty,
 “ who took a Medicine to procure Abortion; after which she
 “ was taken with a Pain, and vomited much bilious, pale, and
 “ porraceous Matter; and when she drank was convulsed, and
 “ bit her Tongue. On the fourth Day I (*Hippocrates*) at-
 “ tended her, and observed her Tongue to be much swelled,
 “ [μεγάλη] and black, and the White of her Eye to be red:
 “ The same Day, towards Night, she died.” In the same
 Book, T. 85. he gives us a Relation of a young Man who died
 in Convulsions, from swallowing a Serpent [See the Story under
 the Article ARGES]. And 7 *Epid.* T. 20. we have an Ac-
 count of a Woman labouring under a Quinsy, who was con-
 vulsed on the fourth Day, and died on the fifth or sixth.

These, then, are the mortal Convulsions observed in acute
 Diseases; and the most pernicious of them all, as we have ob-
 served, are those which happen in acute and burning Fevers,
 especially when consequent upon a Phrensy; and that Convul-
 sions from Wounds are very much to be dreaded, we have
 proved, from Cases related out of *Hippocrates*. It remains to
 give some Marks or Signs by which we may know whether
 those Kinds of Convulsions, which in the Beginning of acute
 Diseases are necessarily owing to a Repletion of the nervous
 Parts, or at any other time of the same acute Diseases, are by
 the same Cause in any manner whatsoever excited, are salutary
 or pernicious. For our Satisfaction in this Point, we are taught
 to form a Judgment of such Convulsions from the Signs which
 precede, accompany, or follow them: And here we ought to
 have a principal Regard to the Signs of Concoction, and Cru-
 dity: For when Convulsions appear under an absolutely crude
 State of the Disease, they always threaten a bad Event. And,
 indeed, those Kinds of Convulsions, when pernicious, never use

to appear alone, but attended with other pernicious Signs.
 Thus it was in the Cases of the Wife of *Philinus*, the Wife of
Dromeades, *Philister*, the phrenetic Person, and the Woman of
Cyzicus, related in the first and third Books of the *Epidemics*;
 to all which Persons these Convulsions proved fatal. In the Wife
 of *Philinus*, 1 *Epid.* Sect. 3. Ægr. 4. these Convulsions appear'd
 on the eighth Day in great abundance, attended with Pain, and
 a high Delirium. The Convulsions continued upon her the ninth
 Day; on the eleventh Day, after being convulsed, she voided
 great Plenty of white, thick, turbid Urine, which deposited no
 Sediment; and these concomitant and subsequent Signs were,
 no doubt, to be esteemed mortal. Much of the same Nature
 was the Case of the Wife of *Dromeades*, 1 *Epid.* Sect. 3. Ægr.
 11. for “ on the sixth Day, in the Morning, she was seized
 “ with a new Rigor, but soon recovered Heat; sweat in all
 “ Parts of her Body; was cold in her extreme Parts, and de-
 “ lirious; her Respiration was great (full), and at long Inter-
 “ vals [ἀπαύς] See *ARÆAS*; and soon after she died suddenly
 “ in Convulsions, which began at the Head.” The Signs pre-
 ceding, it must be observed, are related, among others, to be
 an Evacuation of thin, oleous Urine, and a small Distillation of
 Blood from the Nose; which, with the others before-mention'd,
 portended nothing but Death. The same Judgment was to be
 form'd from a Tension of the Hypochondria in *Philister*, 3
Epid. Sect. 2. Ægr. 4. who died on the fifth Day; for his
 Convulsions were preceded by an Inflammation of the Dia-
 phragm, with other very bad Signs. In the phrenetic Patient,
 3 *Epid.* Sect. 3. Ægr. 4. besides what we have before proved
 out of *Galen*, that all Convulsions are destructive, his Convul-
 sions were, moreover, attended with other mortal Signs; such
 as, on the first Day, virulent Vomiting, a Fever with a Hor-
 ror; a copious, constant, and universal Sweat; and a high De-
 lirium: On the second Day a Loss of Voice; a high Fever;
 Sweating, without any Remission of the Fever; and Palpitations
 in all Parts of the Body: These, among others, were the per-
 nicious Signs which preceded those fatal Convulsions, which seiz'd
 him the same Night, and were sure Prognostics of his Death,
 which happened on the fourth Day. Thus, also, the Woman
 of *Cyzicus*, who was taken with Convulsions on the fourteenth
 Day, had them accompanied with a Coldness of the extreme
 Parts, and a Delirium, which never went off, in an absolutely
 crude State of the Disease.

Thus much we think proper to be said of Convulsions, with
 respect to their Prognostics; and under them some may, per-
 haps, think, that we should have comprehended the *Singultus*,
 or *Hiccough*, which is a Species of Convulsions: But since the
Hiccough is a very particular Convulsion, affecting only the
 Stomach, we have chosen to treat of it apart, under its proper
 Article; and the rather, because *Hippocrates* has written of the
 same as distinct from Convulsions. *Prosper Alpinus de Præsa-
 git. Vit. & Mort.*

FEBRILE SWEATS.

A Sweat in the Beginning of an acute Fever, whose Cause is
 somewhat obstinate, arises from a lax Debility of the extreme
 Vessels, a vehement Circulation of the Blood, and a ready
 Separation of the aqueous Particles from the other Principles of
 the Blood.

If it perseveres, it deprives the Blood of its diluting Fluid,
 inspissates the Remainder, and causes fatal Obstructions, it being
 afterwards almost impossible to dilute, or resolve the Blood:
 Hence almost every kind of acute Disease may be produced.

These Sweats are, therefore, always to be restrained in
 the Beginning, unless it is certain that the Matter, which ex-
 cites the Disease, is sufficiently thin to be carried off, together
 with the first Sweats.

Sweat is check'd by rising out of Bed, and sitting up; by
 avoiding too many Integuments; by admitting the cool Air;
 by abstaining from warm and heating Medicines; by using
 copious Draughts of mild, soft, and cool Liquors; that the
 Loss of what is dissipated may be quickly repair'd; and by
 checking the Violence of the Circulation.

PROGNOSTICS IN ACUTE DISTEMPERS FROM SWEAT.

As the Crisis of acute Diseases often turns upon Sweats, the
 Prognostics which may be formed from them, with respect to
 the Fate of the Patient, deserve to be carefully considered.
 For this End, therefore, we shall first explain the Nature of
 Sweat, with its Differences; and, also, its Causes; that we
 may understand how it is generated.

We say, then, a Person sweats, when he excretes through
 the Pores of the Skin a Humour which is actually moist; to
 distinguish it from Perspirations, or Exhalations, which pass
 through the same Pores, and are called, by Physicians, Insen-
 sible Evacuations; because they are imperceptible to the Senses.
 Whence it follows, that Sweat is a particular Sort of sensible
 Evacuation made through the Pores or Passages of the Skin.

As to the Differences of *Sweats*, they are of several Kinds : Some are taken from their *Substance* ; in which respect they are sometimes thick and viscid, sometimes thin, and without any Viscidity : They differ, also, in *Figure* ; for some, as we are assured by *Hippocrates*, *Lib. Prognost.* appear like Millet ; others are in the Form of Drops. There is a Distinction observ'd in their *Colour* ; for some are yellow, others green ; and, besides, they must of Necessity assume the Colour of the Humour from which they are excreted through the Skin. There is some Difference, also, to be made in their *Taste*, though they are all, as *Galen* says, *Lib. 10. Simpl. Cap. de Sudore*, more or less salt and bitterish, as are the Humours whence they are evacuated. They differ in *Smell*, since some are fetid, others not ; in *Quantity*, some are copiously effused, others are sparingly excreted, or vanish immediately after their Appearance. Again, as to their active Qualities, they are either hot, or cold, or of a middle Temperament ; and they have their Differences, also, with respect to the Times in which they appear ; for some are observed in the Beginning of a Disease, some at its Height, and others at its Decline : And with regard to the Times of their Duration, some are continual, others are observed at Intervals ; some *Sweats*, again, appear with Signs of Concoction ; others with Signs of Crudity : Some are critical, and determine the Fate of the Patient ; others symptomatical, as appearing only after the manner of Symptoms : And some are periodical ; as those which are observed in Tertian and Quartan Fevers. And these are all the Differences of *Sweats* which we shall observe at present.

In treating of the Generation of *Sweats*, we are to consider the Matter of which they consist, and the efficient Cause of them. The Matter of *Sweat* and *Urine* is the same, as *Galen* says, *Lib. 10. Simpl. Cap. de Sudore*, and in sound Persons is the Liquid they receive by the Mouth, only more elaborate, as having passed through all the Ducts, from the internal Parts to the Skin. Hence it appears to be the thinner Part of the Aliment, which they call the serous Humour, or Ichor, but what has acquired somewhat of a bilious Substance ; and by its Thinness is capable of being eliminated from the Body through the Pores of the Skin ; as a thick Humour, by a like Reason, seems indisposed for the Generation of *Sweat*. Such, then, is the Matter of *Sweat* in healthy Persons ; and hence it follows, that they who eat and drink plentifully, sweat copiously ; as do, also, plethoric Bodies, which have wide Pores, and such as have a moist Liver and Spleen. Hence it is said, by *Hippocrates*, 4 *Aph. 41. that copious nocturnal Sweats, without manifest Cause, indicate the Body to be too plentifully fed ; if this be not the Case, you may be assured that the Body requires Evacuation.* The Matter of *Sweat*, then, in healthy Persons, is either the thinner Part of the humid Aliment, as was said before ; or a redundant Humour in the Body. In Valetudinarians, or sick Persons, it sometimes consists of Serosities generated from too humid an Aliment, as may be observed in those who have transgressed the Laws of Temperance ; but most frequently from a Redundance of too thin Humours, as Blood, yellow Bile, and, also, from a cold pituitous Humour. Hence it is said by *Galen*, *Lib. 3. de Crisibus, Cap. 3.* that *Sweats* are proper to all Fevers, especially to burning Fevers ; and that Semitertians, Quotidians, and Quartans, form their Crises by them ; that they are a considerable Relief under excessive Heats, Inflammations, Parotides, Lethargies, and all other Cephalic Affections ; and that all Humours, whether cold or hot, with a proper Degree of Thinness, may excite a *Sweat*, or discharge themselves in *Sweat* ; but, most of all, putrid Humours find a Vent this way, as being the thinnest, and most fluid. Sometimes it happens, though only in malignant and dangerous Disorders, that the alimental Humidities of the solid Parts, which Physicians call the natural Humid, by which the natural Heat is maintained, being colliquated and dissolved, pass through the Pores of the Skin in the Form of *Sweat*.

The efficient Cause of *Sweat* is Heat, either natural or preternatural, existing in the Body ; for it is Heat which attenuates the Humour, and conveys it to the Skin : For Bodies, when they are heated, fall into a *Sweat*. Hence it is that in continual Fevers, under that extraordinary Degree of Heat which succeeds a Rigor, there is usually an Eruption of *Sweat* : For while the Body is under a Rigor, the Heat retires to the inward Parts ; but afterwards, if it be strong enough, breaks forth, and, diffusing itself through the Body, extenuates the Humours ; and, being resolved almost into Vapours, conveys them, with itself, to the Skin, and there causes a *Sweat*. *Hippocrates*, in his Book of *Prognostics*, says, *Some Sweats are occasioned by a Faintness or Feebleness of the Body ; others by the Violence of an Inflammation.* From the first Cause is produced not simply a *Sweat*, but a small Desudation, or rather a kind of dewy Moisture, which the *Greeks* call *epidrosis* (*Epidrosis* ; see that Word) and the *Latins* *Desudatio*, over all the Body ; as we are taught by *Galen* on the *Prorrhetica* ; or only on the

Head and Thorax, and indicates the Imbecillity of the retentive Faculty, or the Redundance of Humours in the sweating Parts. Desudations (in the Sense before implied) are occasioned by the Violence of an Inflammation oppressing or resolving Nature ; or because the thinner Part of the Humidities which are rarefied by the burning Heat, settles on the Skin : Wherefore *Sweat* is generated by Heat, changing into Vapour the thin Humour which is the Serum or Ichor of the Blood, proceeding from the Humidities of the Meat and Drink, or rarefying the Blood, Bile, or Phlegm, and raising them into Vapours. In Fevers, which the *Greeks* call *Eldes*, and we *Sweating Fevers*, *Sweat* is a proper Symptom ; for in this Case the suppressed Humour is, by the Violence of the Heat kindled in the inward Parts, resolved into a continual Exhalation and *Sweat*. But Desudations, which are, according to *Galen*, small *Sweats*, or Moistnesses, of no Signification or Benefit, affecting the whole Body, or rather the superior Parts, are to be ascribed to another Cause, as we observ'd, proceeding, as *Hippocrates* says, from a Faintness or Resolution of the Body, or the Violence of an Inflammation ; or, according to *Galen*, from a Resolution of the retentive Faculty, occasioning a Desudation not only of the redundant excrementitious Humour, but of the alimentary Portion appropriated to the solid Parts. These Things premised, concerning the Nature and Causes of *Sweat*, we proceed to the Prognostics which may be formed from them.

Of good and salutary SWEATS, prognosticating Recovery.

It often fortunately happens, that Persons under acute Diseases are freed from them by a profuse and critical Eruption of *Sweat* ; and with good Reason, since, as *Galen*, in *Lib. Art. Med.* observes, the whole Body is evacuated by sweating. *Sweats* of this beneficial Sort are distinguished from the contrary, by the following Properties or Characters.

First, These salutary *Sweats* appear when the Disease is concocted, and are attended with Signs of Concoction ; as we are taught by *Galen*, *Lib. 1. de Crisibus, Cap. 7.* where he writes, that *Sweats* effecting a happy Crisis, happen not in the Beginning, but in the Increase, or at the Height of a Disease, when Nature has either made a perfect Concoction, or has done Part of her Work, and proceeds in the rest with Vigour and Success. This, then, is one considerable Character of a good *Sweat*, without which *Sweats* are so far from being serviceable, that they portend a long Disease, much Pain and Anxiety, Relapses, and either no Crisis at all, or a fatal one ; according to the Observations of *Hippocrates*, 1 *Epid. Sect. 2.* *Sweats*, then, appearing after Concoction, are Signs of a speedy Crisis, and safe Recovery ; but in a crude and unconcocted State, they signify either that the Disease will be converted into an Abscess of a bad Kind ; or that the Crisis will be frustrated ; or that the Disease will be very painful and lingering, or mortal ; or else it foreshews a Relapse. A necessary Mark, then, of a salutary *Sweat* is, that it appear after Signs of Concoction.

Secondly, A good *Sweat* must make its Eruption on some critical Day. On this Subject we find *Hippocrates*, 4 *Aph. 36.* thus pronouncing : *Good Sweats in Persons labouring under a Fever, he says, are those which appear on the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, twenty-first, twenty-seventh, and thirty-fourth Days ; for these Sweats are critical : But those which break out at other times, signify that the Disease will be painful and tedious, and the Patient subject to Relapses.* *Galen*, in his Comment on this Place, says, that the fourth Day was either omitted by *Hippocrates* because there are several Diseases, of a very acute Nature, which have their Fits or Paroxysms on odd Days, and their Crises at the same time with their Fits ; or that the fourth Day was omitted by the Negligence of some Transcriber : But, for our Part, we have often admired the divine *Hippocrates* on this Head, since we have rarely observed *Sweats* of a very good Kind appearing on the fourth Day.

A third Character of a good *Sweat* is, its succeeding some critical Rigor : For when Nature has succeeded in her Efforts to expel the thin and sharp Humours out of the Veins into the superficial Parts, it occasions a vehement Rigor from a Dispersion of the same Humours over the sensible Parts, and vellicating them, as we are taught by *Galen*, *Lib. de Rigor. Convuls. & Palpit.* together with a Refrigeration of the extreme Parts ; the Consequence of which violent Rigor and Coldness, when Nature is strong and vigorous, is, the exciting an acute and high Fever, by the breaking forth of the Heat, which, also, attenuates and rarefies those Humours, and resolves them into a copious *Sweat*. As an Instance to this Purpose, *Hippocrates*, 1 *Epid. Sect. 2. Aeg. 6.* observes a very good Kind of *Sweat* succeeding a Rigor in the Case of *Cleonaides*. He was seized, he says, with a Rigor, had a high Fever, and fell into a copious *Sweat* ; the Consequence of which was, a perfect and salutary Crisis. This is further confirmed in the Case of the sick Woman in the Strand, *ibid. Aeg. 13.* of whom he says, *On the*

the eleventh Day she had a new Fit of a Rigor, succeeded by a high Fever; on the fourteenth she fell into a Sweat, which proved critical, and removed the Fever. Another Instance we have in Chæron, 3 Epid. Sect. 2. Ægr. 5. who on the seventeenth Day had a new Fit of a Rigor; had a high Fever; fell into a Sweat; underwent a Crisis; and was freed from his Fever. It is on this Account that we are told by Hippocrates, a Aph. 58. that a Rigor coming upon a burning Fever causes a Solution of the Disorder; because, says Galen, such Rigors are succeeded by Sweats, or some other good Evacuations. A Sweat, then, following a Rigor, is a very good Sign; and therefore Galen, Lib. 3. de Crisibus, Cap. 3. says, that those who are seized with a Rigor sweat very well; and Com. 1. in Prorebet. that Sweats succeeding a Rigor are good, if they appear with Signs of Concoction. And, as a further Confirmation, it is observed by Hippocrates, 1 Epid. Sect. 2. Stat. 3. that the greatest Part of those who lay sick (at that Season), were seized with a Rigor about the Time of the Crisis, and especially those who had not been affected with an Hemorrhage from the Nose; these latter had, besides, a Return of the Rigor with a Sweat.

A fourth Qualification of a good Sweat is, that it be copious, hot, and break forth from all Parts of the Body: These are Marks which shew the Firmness and Strength of the Faculty, in equally diffusing the Heat over all Parts of the Body, and resolving the superfluous Humours with equal Efficacy on every Side into a Sweat, which it were impossible for it to effect if it were either very weak, or were contending with a malignant Disease; in which Cases the Evacuations of that Kind would be unequal, in some Parts much in Quantity, in others little, or, perhaps, nothing. The best Kinds of Sweats, then, you see, are hot, copious, and universal; whereas those which appear only on the Head or Thorax, or on all Parts of the Body, but little in Quantity, or cold, are esteemed very bad and pernicious; as we shall shew hereafter. The Truth of this Observation is confirmed by Hippocrates, in many Instances in the Epidemics; particularly, 3 Epid. Sect. 3. Ægr. 6. in the Case of Pericles, of whom he writes, "that on the fourth Day, about Noon, a hot and copious Sweat broke forth over all his Body, he had a Crisis, and was freed from his Fever without any Relapse." And *ibid.* Ægr. 10. in Nicodemus, "who on the four-and-twentieth Day fell into a profuse and hot Sweat, which was universal, and proved critical, in the Removal of the Fever." And of the morose Woman, *ibid.* Ægr. 11. we read, "that on the third Day, towards Night, there was a plentiful Effusion of hot Sweat throughout all Parts of the Body; she was freed from the Fever, and fell asleep." Once more it is related of the Virgin of Larissa, *ibid.* Ægr. 12. "that after a Horror she fell into a hot and plentiful Sweat over all her Body, underwent a Crisis, and was freed from her Fever."

Fifthly, It is an additional Mark of a very good Sweat, that it be not only universal, copious, and hot, but discharges itself in Drops and Vapours. Lib. Prognost.

Lastly, A singular Mark and Character of the best and most salutary Sweat, given by Hippocrates, in the Book just quoted, is, that it effects an entire Solution of the Fever, or wholly frees the Patient from it. For this Reason, he always, in his Epidemics, gives it as a distinguishing Characteristic of a critical and most beneficial Sweat, that the Patient is, by means thereof, *ἀνρῶς*, "free from a Fever;" or *ἀνρῶς ἐκρίθη*, "that he had a Crisis with the Removal of his Fever;" or *ἰσπασεν ἀνρῶς*, "his Fever went off with a Sweat." Those Sweats, also, according to Hippocrates, Prognost. justly deserve the Name of salutary, which, by their free and plentiful Effusion in all Parts of the Body, though they do not entirely remove the Fever, are, yet, the Cause that the Patient can more easily support himself under it; since they alleviate the Disease, and diminish the Symptoms. But these Sweats differ from those of the best Kind, in not effecting a perfect Crisis, though they are Prognostics of Recovery at a longer Distance of time. Sweats of this Kind were often observed by Hippocrates, particularly of him who lay ill in the Garden of Deales, 3 Epid. Sect. 1. Ægr. 3. in whose Case it is related, "that on the seventeenth Day his extreme Parts were cold; they covered him with Clothes; he had a high Fever; sweated over all his Body; found some Relief, and had the freer Use of his Reason; but the Fever did not leave him, and he had a Thirst." On the twentieth Day he slept; had the perfect Use of his Reason; had an Eruption of Sweat; was without a Fever, or Thirst; which, however, return'd upon him; and it was the fortieth Day, when, after frequent Evacuations of white pituitous Matters by Stool, he fell into a profuse and universal Sweat, and had a perfect Crisis.

Thus we have given you the Marks or Characters of the best Kinds of Sweat, and such as are critical, which you will find comprehended by Hippocrates, in his Book of Prognostics, in the following Words: "In all acute Diseases the best Sweats are

"such as happen on a critical Day, and entirely remove the Fever. They are good, also, which arise over all the Body; and render the Disease more tolerable to the Patient; but those which produce no such Effect, are of no Service." And good Sweats are not only known by these Marks in themselves, but by the Attendance of other good Signs, as a good Hemorrhage, or some other salutary Evacuation; and, also, as we said, by the Patient's finding himself in some measure relieved by them. Sweats of this happy Influence were observed by Hippocrates in many Instances, particularly Cleonæides, Maton, the sick Woman who lived in the Strand, and Melidia, recorded in the first of the Epidemics; and in the Patient who lay ill in the Garden of Deales; Chæron, Pericles, the Virgin of Abdera, Anaxion, Nicodemus, the morose Woman, and the Virgin of Larissa; whose Cases you find related in 3 Epid. with many others: In whose Histories the intelligent Reader may find the forementioned Signs, and Matter to exercise his Judgment in forming such salutary Prognostics as will not fail to justify themselves by the Event.

Of bad and pernicious SWEATS, which portend a fatal Event.

Hippocrates, in his Book of Prognostics, speaking of bad Sweats, makes Degrees of them; and tells us, that such Sweats are in a great measure bad, as neither remove the Fever, nor render it more tolerable to the Patient; that is, afford him not the least Relief, though proceeding from all Parts of the Body. A worse Sort than those are such as neither proceed from the whole Body, nor alleviate the Disease: Still more pernicious are Sweats which exasperate the Disease; but the worst, and most pernicious of all are cold Sweats, and such as arise only about the Head, Face, and Neck; for such Sweats, he says, in a high Fever, portend Death; in one of a milder Nature the long Continuance of the Disease. But we shall consider all the bad Kinds of Sweat distinctly, under some general Heads, for the sake of Accuracy, and that we may be the better enabled to form just Prognostics from them.

First, then, we shall take into Consideration such bad Kinds of Sweat as appear in a crude State of the Disease, and unattended with the least Signs of Concoction. Secondly, We shall treat of bad Sweats with regard to their Quantity; or as they are more or less copious. Thirdly, We shall consider them with respect to Heat and Coldness. Fourthly, with regard to the Parts of the Body whence they proceed. Fifthly, as they injure, or at least no way relieve the Sick. And, lastly, as they appear attended with other bad Signs.

In examining the first general Head, that we may have a clearer Notion of what it contains, we shall distinguish Sweat into periodical, critical, and symptomatical. We call that a periodical Sweat, which attends the Periods or Returns of intermittent Fevers; as Tertians, or Quartans. Such was the Sweat observed by Hippocrates, 7 Epid. T. 4. in the Case of Pythodorus. A critical Sweat, of which we have spoken before, is such as appears, in continual Fevers, on some critical Day; and either entirely removes the Fever, or diminishes it, and relieves the Patient: And the Effect of this Sweat we call a Crisis, either perfect or imperfect. The Characters of a critical Sweat, we have told you, are, its Appearance with manifest Signs of Concoction, on a critical Day, when Nature is strong and vigorous; that it is hot, copious, and universal, yet not diminishing the Strength; and removes, or much diminishes the Fever, with its Symptoms. To a critical Sweat is opposed a symptomatical one, which happens in manner of a Symptom, and is never of any Benefit, but generally attended with destructive Signs; and portends Death, or, at least, a long Continuance to the Disease, with many Relapses, and much Pain and Trouble. On all such Sweats we bestow the Appellation of symptomatical, as we do, also, on all other Excretions which happen when the Disease is crude, or when no Signs of Concoction appear. Wherefore all bad Sweats appear in a crude State of the Disease, when there is no manifest Sign of Concoction. For which Reason Hippocrates, 2 Epid. near the Beginning, makes the Sweats which appeared at the Beginning of an epidemic Fever, there described, to be Prognostics of a difficult and dangerous Crisis: And these Kinds of Sweats are the worse, if they appear only on the Head, Neck, Throat, or Thorax; and if they are cold, scanty, or cease immediately; or if they are copious, continued, or immoderate, they are worst of all. Secondly, we are to speak of bad Sweats, with respect to Quantity, as they are copious, or scanty, or none at all. Sweat is said to be much, and copious, when it breaks forth in a thick and profuse manner; when it is assiduous and continual; and when it is both assiduous and copious. Copious Sweats, according to Galen, Lib. 3. de Sympt. Caus. are occasioned either by the Rareness of the Body, or the Thinness of the Matter evacuated. Sweat which flows for either of these Reasons, comes not forth in a pressing and profuse manner, but assiduously and constantly.

constantly. Much Sweating, therefore, in Fevers, if occasioned neither by the Thinness of the Matter, nor the Rareness of the Pores, (which sort of Sweat, according to *Galen*, in 4 *Aph.* 41. is never copious) always indicates a Redundance of Humours, as we are told by the same Author, in 4 *Aph.* 42. And hence, *Hippocrates*, in the first-mentioned *Aphorism*, says, that "Much Sweating from Sleep, without any manifest Cause, indicates too plentiful Feeding; but if it happens, though the Patient takes no Food, it shews that the Body wants Evacuation." Much Sweat, says *Galen*, signifies Plenty of Excrements: These Sweats, therefore, appearing in Fevers, and affecting nothing towards a Crisis, are constantly pernicious, for this very Reason, that they indicate a Redundance of Humours, which requires a long Time for Nature to digest and subdue; whence in acute Diseases, which extinguish Nature in a short time, they often portend Death. Hence *Hippocrates*, 4 *Aph.* 42. says, that "A constant Flux of much Sweat, if cold, indicates a severe Disease; if hot, a milder." Because, as *Galen* says in his Commentary, both of them are Signs of a Multitude of Humours, the cold Flux of cold Humours, which are the worst; and the hot of hot Humours, which are less dangerous than the other. These Sweats neither remove nor alleviate the Fever, and break forth when the Disease is crude; and therefore are, at best, Prognostics of a long Disease, subject to Relapses, and attended with much Pain and Trouble. The Author of 1 *Prorrh.* 58. calls those Sweats unserviceable in acute Fevers; and *Hippocrates*, 1 *Epid. Sect.* 2. speaking of an epidemic continual Fever, says, that the Patients sweated much; but were so far from being relieved, that they were rather injured by it.

Sweats not copious, but yet constant or perpetual, are, also, bad, and, for the most part, mortal; since they are occasioned, as *Galen* says, *Lib.* 3. *de Sympt. Caus.* Cap. 2. and *Com.* in 4 *Aph.* 41. either by the Rareness of the Pores, or Imbecillity from a Resolution of the Habit of the Body, as the Case is in a Syncope: These Sweats then, are all pernicious, as indicating a Languor of Nature; but the worst are those symptomatical Sweats which are copious as well as constant, since they indicate an extreme Weakness, as well as an extraordinary Redundance of Humours, in which Circumstance Death is unavoidable, as is confirmed from the Instances of *Erasinus*, 1 *Epid. Sect.* 3. *Ægr.* 8. and the phrenitic Patient, 3. *Epid. Sect.* 3. *Ægr.* 4. of the first of whom it is said, that He had a Fever with perpetual Sweating: And of the other, that He vomited much thin, virulent, and æruginous Matter; had a Fever, attended with an Horror, and a copious and continual Sweat over all his Body. Some read this Place not according to *Galen*, as above, but from other Copies, thus, He had a copious and continual Sweat, which affected his Head and Neck during the whole Day. And it is usual with Persons under a Lipothymy to sweat in their Head and Neck. But this is no Reason that we should not, with *Galen*, read δ' ὅλα τὰ σώματα, over all the Body; since every Physician knows, that Persons under a Phrensy, before their Death, fall into a Sweat, from an universal Resolution of the Parts: Hence we conclude, that copious Sweats, in acute Diseases, not being critical, are not only of no Benefit, but, for the most part, fatal, and, when attended with a Languor, or total Decay of Strength, are most certain Signs of approaching Death; and that constant Sweats, whether copious or not copious, are alike pernicious in acute Diseases.

Sweat, little in Quantity, is usually of the same pernicious Signification as when much. *Galen*, *Lib.* 3. *de Symptom. Caus.* Cap. 2. writes, that small Sweats are occasioned by the small Quantity, or gross and glutinous Quality, of the superfluous Humours, or the Straitness of the Pores, which are rendered narrower, either by Contraction or Obstruction. The cutaneous Passages are obstructed by thick and glutinous Juices, and closed up, or contracted from an Atrophy, Refrigeration, or Softness: These little Sweats, if they break forth on a critical Day, are an undoubted Indication, that Nature makes fruitless Efforts to expel the Humours; and that its Attempts are frustrated by their Thickness or Viscidity, or the Narrowness of the Passages. But where there is no Constriction of the Passages (as may be known, because the Skin is neither contracted by an Atrophy, nor much refrigerated, nor remarkably soft) and there are Signs of a Redundance of Humours, little Sweats indicate Plenty of gross and viscid Humours; and if the Strength, at the same time, be very much exhausted, are mortal; and so much the more, if they appear without Signs of Concoction; in which Case, all Excretions are symptomatical, and indicate a Redundance of Humours. Sweats of this Kind shew, that Nature had begun to expel the Humours through the Skin, and could eliminate no more than the thinnest Portion of them, which must prove insufficient for a Solution of the Disease. Under this Head may be reduced Sweats which cease immediately after their Eruption, and are con-

demned by *Galen*, *Com.* 1. in 1 *Prorrh.* Sweat, therefore, little in Quantity, is always bad.

But the worst and most fatal of all Sweats, is that thin scanty sort of Sweat which the *Greeks* call *Ephidrosis*, and the *Latins* *Desudatio*, or *Mador*, "A Desudation, or Moistness." This Kind of Sweat appears sometimes on all Parts of the Body, but generally about the Head, Neck, Throat, Breast, and sometimes about the Extremities. Of this Subject we find *Galen* discoursing, in his Comment on the *Prorrhetica*, where he says, "We meet with the Word *Ephidrosis* several times in this Book; but we are not certain whether the Author means by it, those Sweats which appear about the Head and Thorax, or those which break forth from all Parts of the Body, but in a weak and faint manner, and of no Benefit to the Patient." Both of these indeed are bad; but the worst of them is what appears only on the upper Parts: For since all *Desudation* demonstrates either a Plenitude in the sweating Parts, or an Imbecillity of the retentive Faculty, if either of these affects the Parts about the Head and Thorax, it is a worse Sign, than if it were in any other Region. Of the Judgment that is to be made of Sweats indicating a Redundance of Humours, we have said enough already; but we may conclude the other Sort to be, also, pernicious, since they proceed from an extreme Decay of Nature, which is too weak to retain the alimentary Humid of the solid Parts, dispersed by Oppression or Resolution. These *Desudations* are distinguished from those occasioned by a Multitude of Humours, in that they generally break forth about the Forehead, Neck, Breast, or extreme Parts, with a slight Moistness, not increasing, seldom hot, but generally coldish, with a very low Pulse, and other Signs indicating Nature to be in a very languid State. Of this Nature are the Sweats, which owe their Rise to immoderate Evacuations, concerning which we read, 1 *Prorrh.* 126. A slight Sweat with a Refrigeration, after an Hemorrhage from the Nose, is bad.

But is it not a bad Sign in some acute Disorders not to sweat at all? Yes, certainly, in all those which, as *Galen*, *Lib.* 3. *de Crisibus*, has taught us, are critically terminated by Sweats: Such are all continual, and especially burning Fevers, which form their Crises by Sweat, or some other laudable Evacuation; whence the Fever is either entirely removed, or much diminished, with its Symptoms, and the Case of the Patient altered much for the better. Without such an Evacuation we are not to trust to any Remission of the Disease, as *Galen*, in 3 *Epid.* advises, agreeably to that of *Hippocrates*, 2 *Aph.* 27. We are not to place our Dependence on Things which give Relief after an unaccountable manner. The Necessity of such Caution is exemplified in the Instances of *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. and the Virgin Daughter of *Euryanactes*, *ibid. Sect.* 2. *Ægr.* 6. Of the first it is said, On the fourteenth Day he was free from a Fever, did not sweat, slept, and was in his perfect Senses: His Urine was the same. About the seventeenth Day, the Disease returned, the Patient was very hot, and on the following Days he had an high Fever, his Urine was thin, and he was delirious. On the twentieth Day he had another Crisis, and was free from a Fever, but sweated not. Such deceitful Remissions of Diseases without Sweat, or any other laudable Evacuation, are distinguished from such as may be trusted by the subsequent Signs, which, in the latter, are very good, in the former bad; as appears in *Hermocrates*, from what followed after the Crisis. On the twentieth Day he had another Crisis, was free from a Fever, sweated not: He had all the Time hitherto an Aversion to Food; had the Use of his Reason, but not of his Speech; his Tongue was dried up, but without Thirst; and his Sleep was comatous. On the twenty-seventh he died. And thus you see, that not to sweat at all, in burning Fevers, is sometimes a Prognostic of a fatal Event.

We proceed to take into Consideration those Sweats which are cold, since they are often observed to be mortal in acute Distempers; but, first, we are to have a thorough Insight into the Generation and Causes of them, which will very much illustrate the Reasonableness of grounding Predictions upon them.

First, then, Cold Sweats, as they consist of a cold and crude Matter, demonstrate, in continual Fevers, a Redundance of crude Humours, as *Galen* shews, *Com.* in 4 *Aph.* 42. especially when there is a copious Eruption of them. These Sweats, according to *Galen's* Opinion, *Com.* in 4 *Aph.* 37. are generated when the Humours putrefy in the Vessels; and Nature, which moderates and rules the solid Parts, and is, according to *Hippocrates*, the natural Heat, is either wholly or nearly extinguished; the Matters evacuated are indeed cold to the Sense, though the Heat, proceeding from the Putrefaction, may, for all that, be very violent; for which Reason it is a very destructive Sign, as it shews, that the excessive Quantity of Humours in the animal Body is ended with so great a Coldness, as not to be heated by either the natural or febrile Heat. Cold Sweats, then, indicate a Redundance of very cold Humours, by which Nature is either totally,

totally, or very nearly, extinguished. But when there happens to be kindled in the Vessels a most violent Heat, from the Putrefaction of the Humours, and the natural Heat retires to the inward Parts, there is a Refrigeration of the Extremities, with a very cold Humour, without considering their acting one upon another; but when there comes to be a mutual Acting and Resistance of the Humours, it is necessary, either that the cold Sweat should be heated, or the Heat soon extinguished by it. Agreeable to this is the Observation of Galen, in *Lib. 4. Aph. In Diseases not acute, but of a milder Nature, if the natural Heat, after maintaining itself a long Time, prevails not at last, it is extinguished, which happens much sooner in a violent Disorder from a speedy Resolution of the Strength.* Justly, therefore, is it said by Hippocrates, 4 *Aph. 37.* that Cold Sweats, in an acute Fever, prognosticate Death; in a milder one, the long Continuance of the Disease: Since, as Galen, in his Comment, says, if the Fever be of a gentler Kind, the Patient may recover, the Redundance of the Humours being concocted, and subdued by Length of Time. But an acute Fever is both a Cause, and a very pernicious Sign: As a Cause, it naturally effects a Resolution of Bodies; and as a Sign, it shews the Multitude of Humours, which are too intensely cold to be altered by the febrile Heat.

But perhaps you will ask, How it is possible for these Humours, which are cold, and, consequently, unfit for Motion, and much more under an extreme Weakness, and almost Extinction of Nature, to be conveyed to the Skin?

I answer, That the Humour being in some measure heated by the febrile Heat, though naturally unfit for Motion, is conveyed to the Skin, where the adventitious Heat it had received being resolved, it begins to cool again, and so turns out cold.

Cold Sweats, then, in acute Diseases, are always of fatal Signification, whether much or little in Quantity, howsoever they come forth; or whether they proceed from the whole Body; or from the Head, Neck, and Breast; or from the Extremities. Instances of this were observed by Hippocrates, in the first and third Books of the *Epidemics*, in *Philiscus*, the Wife of *Dromeades*, the Woman who lay ill in *Foro Mendacium*, and *Philistion*, who all died with cold Sweats upon them. And the most destructive of this kind is a petty thin cold Sweat, which comes out about the Head, or extreme Parts, as the Hands and Feet, because they indicate a near Extinction of the Faculty. Justly, therefore, was it said by Hippocrates, *Lib. Prognost.* that Cold Sweats are worst, and, in acute Diseases, indicate Death; in milder ones, a long Continuance of the Disorder. Cold Sweats, then, are bad in all Cases; agreeably to the Observations of Hippocrates, 3 *Epid. Sect. 3. Stat. Pest.* where, among other Symptoms peculiar to the reigning Fevers of that Season, were Cold unseasonable Sweats, which came forth in a plentiful manner, and held the Patient continually. The destructive Tendency of these Sweats is confirmed by other concomitant Signs; which, taken all together, and especially such as are subsequent, are necessarily pernicious. Of this kind were those observed by Hippocrates, in *Philiscus*, and the others just mentioned. Of *Philiscus*, 1 *Epid. Sect. 3. Agr. 1.* it is said, "At the Close of the fifth Day he grew speechless, fell into a cold Sweat, and his extreme Parts were livid: On the sixth Day about Noon he died." It is farther remarked of this Patient, that "He was continually under a cold Sweat." The Wife of *Dromeades*, *ibid. Agr. 11.* "On the sixth Day in the Morning had a new Fit of a Rigor, succeeded by a speedy Return of the Heat, and a Sweat all over her Body; her extreme Parts were cold; she was delirious; her Respiration was great and rare [*ἀγυλόν*]. See *ARÆON*], and soon after she died in Convulsions, which began at the Head." And of the Woman who lay ill in *Foro Mendacium*, 3 *Epid. Sect. 2. Agr. 12.* we read, that "On the seventh Day she was seized with a Return of a Rigor, succeeded by an high Fever, with an intense Thirst, and Jaunditions [*ἰκτερίκη*]. See *BLESTRISMUS*]: Towards Evening she fell into an universal cold Sweat, and her extreme Parts were cold." From these Instances, and what has been said, it abundantly appears, that cold Sweats in acute Diseases are destructive, and constantly portend Death; which may be predicted with the greater Certainty, if those Sweats make their Eruption on some critical Day, and are succeeded by some pernicious and mortal Sign.

Let this suffice concerning destructive cold Sweats; and let us now proceed to consider Sweats, with respect to the Partiality, and the Parts of the Body whence they break forth. For Sweats, as we have said, are very good and salutary, when they make their Eruption from all Parts of the Body, because they demonstrate Nature to be robust, and under no inward Impediment, from a malignant Disorder, or any morbid Cause, which might frustrate her Efforts in making Excretions of the Humours from all Parts. But, on the contrary, when any one of the internal Viscera is seized with a

violent Inflammation, or oppressed with a Multitude of Humours, there arises a partial and unequal Sweat. Such Sweats, therefore, as make their Eruption not from the whole Body, but from the Head or Thorax, are, according to Hippocrates, *Prognost.* of the worst Kind; and, whether they be hot or cold, in acute Diseases portend Death; in milder Disorders, a long Continuance, Relapses, and much Pain and Sickness. Hippocrates, 1 *Epid. Sect. 1. Stat. 1.* speaking of epidemic, and very mortal kind of Fevers, says, that the Patients "were under a perpetual Sweat, but not in all Parts of the Body." And a little after, enumerating the Symptoms by which burning Fevers were known to be mortal, even at the Beginning, says, that "The Patients sweated a little about the Forehead and Clavicles; but not one of them in all Parts of the Body." Hence the Author of 1 *Prorrhetic.* 39. had Reason to say, that "Sweats, and especially about the Head, with a kind of Uneasiness [*ἀνέσις*], in acute Diseases, are a bad Sign." All Sweats, therefore, which proceed not from the whole Body, are bad, as being Prognostics of Death, or a long Sickness. Justly, therefore, has Hippocrates said, *Lib. Prognost.* that "The worst Kind of Sweats are those which are cold; and especially when they happen only about the Head, Neck, and Face: For such Sweats, in acute Fevers, portend Death; in less violent Distempers, their long Continuance." And very right is the Judgment which Galen on the *Prorrhetica*, passes on them, when he says, "Every Desudation, that is, Sweat breaking forth about the Forehead, the fore or hinder Part of the Neck, or Clavicles, indicates an Imbecillity of the retentive Faculty, or a Redundance of Humours." And, in another Passage of the same Comment, he tells us, that "Such Sweats are not good, both because they arise on the superior Parts, and, also, for a double Reason, which is, that they proceed from a Language of the Faculty, or an Oppression of the same in its Original." Sweats arising in the Head and upper Parts, are very bad, particularly in a Suppuration and Phthisis, of which the Author of the *Coac.* 402. says, "They who are affected with a Suppuration, especially from a Pleurisy or Peripneumony, have their Disorder attended with Heats, which are but slight in the Day, but more intense at Night; they, also, spit forth something not worth Notice, sweat about the Neck and Clavicles, have hollow Eyes, and red Cheeks." With good Reason, therefore, are such Sweats esteemed mortal in an acute Fever, as indicating an Extinction of the Faculty, before it can accomplish the Concoction of the Humours; and when they are occasioned through an Imbecillity of the retentive Faculty, being unable to retain the Humour, or even the alimentary Juice proper to the Solids, portend, in a Fever, not only unavoidable but speedy Death, and with the greater Degree of Certainty, if they are, also, cold; of which Nature were those observed in *Pythion*, and the Woman in *Foro Mendacium*, 3 *Epid.* before-mentioned; and in *Meton*, *Aristocrates*, and *Pherecydes*, 7 *Epid. T. 47. 57. 91.* and in many others, who all died. But if the Disease be more favourable, and the Strength extraordinary, such Sweats indicate not Death, but the long Continuance of the Distemper; as it was in the Case of the Patient who lay ill in the Garden of *Dealces*, 3 *Epid. Sect. 2. Agr. 3.* of whom Hippocrates says, that "On the fourth Day there flowed from his Left Nostril a small Quantity of pure Blood; he had a Sweat about the Head and Clavicles, a Tumor of the Spleen, and a Pain in the Thigh on the same Side."

Sweats are, also, known to be bad, from their being unattended with any other Evacuation; and more from the Injury the Patients experience from them. For when a Sweat is found to be so far from being beneficial that it proves of ill Consequence to the Sick, it is to be esteemed one of those pseudo-critical Signs which determine nothing, and, consequently, according to Galen, *Com. in Prorrhetic.* are mortal. Hippocrates, in his Book of *Prognostics*, pronounces such Sweats as neither remove the Fever, nor render the Disease more tolerable to the Patient, to be useless and bad, and Prognostics either of Death, or a long Sickness. And the Author of the *Prorrhetic.* 58. says, that "Much Sweating, in acute or high Fevers, is of no Service to the Patient," as not removing the Fever. And, *ibid. 7.* "Burning Heats in the Hypochondrium, remaining after a Refrigeration of the Fever, are a bad Sign; and especially when attended with Sweats." Because, as Galen says, in his Comment, they extend not over the whole Body; but are small and inconsiderable, and incapable of extinguishing the flammeous Heat in the Hypochondrium. Again, 1 *Prorrhetic.* 68. it is said, that "They who lie waking in a Sweat, and have a Return of the Fever [*ἀναβραρυμένη*], are in a bad State." And, *ibid. 67.* "A fiery red Face, and Sweating, in a burning Rigor, are bad;" because, if the Sweat were good, the Heat of the Face would be resolved by it, which the Sweat not doing, indicates a Malignity. To the

the same Purpose, but more express, is 4 *Apb.* 56. "If a Person under a Fever fall into a Sweat, and finds no Remission of his Fever from the same, it is a bad Sign; for the Disease is prolonged, and a Redundance of Humidities is indicated." Such Sweats, in an acute Fever, portend Death; in a more gentle one, a long Continuance.

Among bad Sweats are, also, to be reckoned, all those which precede, accompany, or follow, other pernicious Signs: From such Sweats as these we may prognosticate a fatal End; since, if succeeded by bad Signs, they prove themselves of the Number of those critical undetermining Signs, by which the Patient is so far from being relieved, that he finds himself worse; and, consequently, are to be esteemed mortal. Of pernicious Signs succeeding bad Sweats we find *Hippocrates* speaking, 1 *Epid. Sect. 1.* where he says of some Patients under an epidemic Fever, that "They had continual Sweats, but not diffused over the whole Body, and their extreme Parts were refrigerated, so as to become almost incapable of recovering Heat." And the Author of the 1 *Prorrhetica* 126. says, that "An Hæmorrhage from the Nose, with thin cold Sweats, and a general Refrigeration, indicate Malignity, and are bad for the Patient." And, *ibid.* 102. "They who in the Beginning (of acute Diseases) are affected with cold Sweats, make concocted Urine, and are in a burning Heat, then unaccountably [*ἀφ' ὧν*] refrigerated, till a sudden Return of the hot Fit, and moreover labour under a Torpor, Coma, and Convulsions, are in a very dangerous State." Once more, *Coac.* 40. "Refrigerations, with thin cold Sweats, succeeding a Rigor [for *ῥίγος* I read, with *Prosper Alpinus*, *ῥύγος*], are bad." Of this Nature were the Sweats observed by *Hippocrates*, in the Wife of *Dromeades*, 1 *Epid.* the Virgin Daughter of *Euryanactes*, and the young Woman who lay ill in *Foro Mendacium*, 3 *Epid.* and in the Wife of *Theodorus*, *Aristocrates*, and the Wife of *Euxenus*, 7 *Epid.* T. 27. 52. 58. who all died. Of the Wife of *Dromeades* we have taken Notice above; and of the Daughter of *Euryanactes* it is said, that "On the seventh Day after a Crisis she was seized with a Rigor, was feverish, and sweated: The eighth Day after the Crisis she had something of a Rigor; and afterwards her extreme Parts became cold, and always so continued. About the tenth Day, after a Sweat which she had, she was delirious; but soon recovered her Senses." Of the young Woman who lay ill in *Foro Mendacium*, we read, that "On the second Day all the Symptoms were exasperated; she had frequent and unseasonable Stools, had no Sleep, was disturbed in her Reason, and sweated a little. On the third Day she was very uneasy, thirsty, nauseating, very restless and impatient, delirious, and her extreme Parts were cold and livid." The Wife of *Theodorus* "had first a small Eruption of Sweat about the Forehead, which, after a considerable Time, diffused itself over the whole Body and Feet, after which the Fever seemed to remit. The Body of the Arteries seemed cold to the Touch; but those at the Temples had more than an ordinary Degree of Pulsion: Her Breath grew short; she was delirious at every Turn, and she became worse on all Accounts." The Wife of *Euxenus*, "Had a Remission of her Fever, with a copious Sweat; was much refrigerated; laboured under an Asthma of various Kinds," and so died. By these, and other Instances which might be given, it appears, that all Sweats which are succeeded by pernicious Signs, have a destructive Tendency.

Sweats are, also, pernicious, when attended with bad Signs and Symptoms; and this is confirmed by *Coac.* 10. where it is said, that "They who are molested with frequent thin or cold Sweats and Rigors by Turns, are in a very dangerous Way." And, *ibid.* 13. "They who labour under frequent Returns of Horrors and Sweats, are in a very dubious State." Again, *ibid.* 53. "Sweats with a kind of Uneasiness, in acute Diseases, are bad." And, *ibid.* 327. compared with 1 *Prorrhetic.* 127. "An Hæmorrhage at the Nose, on the contrary Side is bad; as, for Instance, if it proceed from the Right Nostril, in a Tumor of the Spleen; but it is worse if attended with a Sweat." And, *ibid.* 35. compared with 1 *Prorrhetic.* 74. "Fever, attended with a Coma, Lassitude, Dimness of Sight, Want of Sleep, and Sweats, are malignant." Such were the bad Symptoms attending the Sweats under which *Aristocrates* laboured, 7 *Epid.* T. 52.

The same Judgment is to be made of Sweats succeeding very bad Signs or Symptoms. Thus, 1 *Prorrhetic.* 126. "A small Sweat, with a general Refrigeration succeeding an Hæmorrhage at the Nose, is malignant and pernicious." And we may say the same of it, when succeeding any bad Evacuation in general, whether it be an immoderate Hæmorrhage; or Distillation of Blood by Drops from the Nose, in burning Fevers, or a bad Flux of the Belly, or Vomiting. Sweat therefore, consequent upon bad Signs, is very pernicious, and especially if it neither removes nor alleviates those bad Symptoms.

Thus it was in the Case of the Wife of *Olympiades*, 7 *Epid.* T. 49. of whom we read, that "Her Speech was not restored, nor was she any way relieved; that her Eyes were cast down, her Respiration was sublime [*πρεβυα μάλιστα*. See *PNEUMA*], and performed through the Nose; she had an ill Colour, and, when she was near Death, had a Sweat about her Feet and Legs." *Prosper Alpinus, de Præseg. Vit. & Mori. Egratorum.*

A FEBRILE DIARRHOEA.

The Matter of a Diarrhoea is the Mucus, Lymph, *Gluten*, Pus, Sanies, or Blood, from the Nose, Mouth, Fauces, Oesophagus, Stomach, Liver, Gall-bladder, Pancreas, Intestines, and Mesentery: It arises from too great an expulsive Force of these Substances into the Intestines, and a Weakness of the contracting Force of the Intestines; or from some Obstruction of the absorbing Vessels of the Intestines, which prevents the Admission of what ought to pass through them.

Hence it appears, that Fluxes of the Belly in Fevers are of various Kinds, with respect to the Matter, Cause, Effect, and Event; they are, therefore, sometimes utterly incurable; and sometimes colliquative, in which Case they seldom admit of a Remedy.

If a *Diarrhoea* perseveres long, it disposes the abdominal Viscera more and more to the same Disorder; weakens them, excoriates, and inflames them; empties and exhausts the other Vessels and Viscera: Hence arise an Atrophy, Emaciation, Weakness, a Dysentery, an Inspissation of the Fluids throughout the whole Habit of the Body; a Laxity of the Solids; a Loss of the Fluids; a *Leucophlegmatia*; Dropsy; and Tabes.

The Cure is performed by destroying the Acrimony which irritates the Intestines, and by expelling it by means of Emetics, Purges, and Clysters; by corroborating the relaxed Parts; by mitigating the Violence of the Diarrhoea with Narcotics; by determining the morbose Matter to some other Excretion; as those by Sweat and Urine; by diminishing the Cause, and correcting it at the original Fountain.

For an Account of Prognostics from Stools, see the Article *DEJECTIO*.

FEBRILE ERUPTIONS.

The Matter of inflammatory Pustules is, generally, something which cannot pass the cutaneous Vessels, but sticks therein; and they are excited by the Force of the circulatory, secretory, and excretory vital Powers: Hence Eruptions are various, according to the Variety of Causes which produce them; and on this account Fevers acquire different Appellations, from the different Eruptions with which they are attended, as *Erysipelatous*, *Scarlet*, *red Petechial*, *purple Petechial*, *Morbillose*, and *Variolose*.

It is customary to treat of the last three separately; as for the three first, the Diagnostics, and Prognostics are easily found.

The Cure is not difficult; for it only requires, that the eruptive Matter be kept in a moveable State, by the Exhibition of a sufficient Quantity of light Fluids, and preserving a due Moderation of the vital Powers; for by this means they soon come to a Period, with a Desquamation of the Cuticle.

The other febrile Symptoms, which are similar to these, and of the like kind, require the same Treatment as the Diseases on which they depend.

Hence we learn, what Judgment is to be formed of the Variety of acute Fevers; for those in which the febrile Motion, when once begun, is continued equally to the End, are called *Continual Fevers*; those in which the febrile Force remits, and is again exasperated alternately, in such a manner, however, that the Fever never ceases, are called *Continual Remittent Fevers*; those, lastly, which remit so entirely, that the Patient is absolutely free from a Fever in the Intervals betwixt the Paroxysms, are called *Intermittents*.

A CONTINUAL FEVER.

The most simple of continual Fevers, is an *Ephmera*, or Diary Fever, which goes through the different Stages, as the Beginning, Increase, State, and Declension, in the Space of twenty-four Hours. It arises from a more vehement Motion only, excited by some Error with respect to the Non-naturals; and has scarcely any material Cause. It is distinguished by the Slightness of the Cause; the Purity of the Body; the Mildness of the Symptoms; the expeditious Crisis; and a Restoration of the Pulse to its natural State, immediately upon the Cessation of the Fever. The Cure is easily performed, by Abstinence, Rest, and Diluting.

If this Species of Fever continues many Days, it is called *A continual but not putrid Fever*. The Causes, Signs, and Cure are the same with those of the *Ephmera*; but it requires particularly copious Bleeding; and refrigerating Medicines.

A CONTINUAL PUTRID FEVER.

That Species of Fever, which is called a *putrid Synochus*, arises from Causes somewhat greater than a simple Inflammation; an Obstruction of the Viscera; an Oppilation of the Skin, and almost all the Capillaries; and a considerable Degree of Acrimony.

It is known by a Degree of Heat which is pungent to the Touch; a febrile, but unequal and irregular Pulse; Urine which is thick, red, and turbid, without a regular Sediment; and by an hot and sanguineous Temperament, Age, and Habit of the Patient.

This Fever is distinguished by the Name *Homotenus*, when it preserves the same Tenor through all its Stages, neither increasing, nor diminishing: When it perpetually increases, it is called *Epacmaistica*, or *Anabatica*: But when it continues perpetually to decline, it acquires the Title of *Paracmaistica*.

Of these the first Species is esteemed salutary; the second the worst; and the third better.

This Fever is esteemed the more dangerous and fatal, in proportion as the Pulse is more weak, frequent, unequal with respect to Strength, inordinate with respect to Time, and intermittent; as the Respiration is more difficult, frequent, and laborious; the more the *Pinnæ* of the Nostrils are agitated; the more Pain it excites about the vital Parts; and the more inordinate it is; the more vehemently a Sensation of Lassitude and Weakness, is perceived; the more frequently the Patient changes his Posture of lying, tosses about, and lies on his Back, with his Limbs extended; the more the rational Faculties, and Affections, are injured; the more the Appetite is impaired, the Digestion difficult, the Urine red, thick, and turbid, or pale, watery, discharged in small Quantities, and difficultly retained; the more tremulous Motions are perceived in the Patient; the more he starts from the Touch; the more he trifles and fumbles with his Hands; and the more he picks the Naps of the Bed-cloaths; the more ghastly his Eyes appear, and the more moist they are with involuntary Tears; for these are all very bad Symptoms.

But when Sleep is laborious and difficult, and affords no Relief; when purple or livid Eruptions appear on the Body; when the Hypochondria are tense and inflated, the Patient generally dies.

The Cure delivered above, is to be varied according to the Variety of Indications, the Violence of the Symptoms, the Condition of the Patient, and the Stage of the Fever; and, therefore, does not require to be particularly treated of.

The Antients called these Fevers *ὑποχολα*, and the Schools, *Continentes*; because in them there is no Remission of Heat: But Continual Remittent Fevers, the Antients called *ὑποχολαίαι*, in Latin *Continua*.

A CAUSUS, OR ARDENT FEVER.

Among these Fevers, we may justly reckon the *Causus*, or burning Fever, on account of its Frequency, Danger, and Difficulty of Cure.

The primary Symptoms of this Disorder, are an Heat almost burning to the Touch, unequal in different Parts of the Body, most intense in the vital Parts, (but more mild towards the Extremities which are some times cold) and rendering the Breath intensely hot, a Dryness in the whole Skin, Nostrils, Mouths, and Tongue; a dense, difficult, and quick Respiration; a dry, yellow, black, parched, and rough Tongue; an insatiable Thirst often suddenly removed; a Leathing of the Aliments, a Nausea and Vomiting; the greatest Anxiety, Inquietude, and Weariness; a gentle Cough, and a shrill Voice; a Delirium, Phrenitis, obstinate Watching, Coma, and Convulsions, and Exacerbations on the odd Days.

The Causes of a burning Fever may be excessive Labour; long Journeys; the Heat of the Sun; Thirst long endured; the Use of heating, fermented, aromatic, and acrid Substances; excessive Venery; and immoderate Weariness, especially in the Summer.

This is the Progress of this Disease: On the third and fourth Day it often proves mortal; and, if it is violent, rarely exceeds the seventh, without putting an End to the Patient's Life. It is frequently terminated by an Hemorrhage, (which, if it is sparing on the third or fourth Day, is a mortal Sign) which may be predicted by the Pain of the Neck, the Heaviness of the Temples, a Distension of the Præcordia without a Sense of Pain, a spontaneous Discharge of Tears without any other mortal Sign, a Redness of the Face, an Itching of the Nostrils; and this Hemorrhage is most salutary on the critical Day. This Species of Fever is, also, terminated on the critical Day, by Vomit, Stool, Sweat, Urine, and the Expectoration of a thick Matter: If the Exacerbation of the Fit happens before the sixth Day, it is a very bad Symptom; black and thin Urine, discharged in a small Quantity, is, in this Disorder, a mor-

tal Sign; as, also, a Spitting of Blood, and a Discharge of bloody Urine; an injured Deglutition is a bad Sign; and a Refrigeration of the Extremities, among the worst of Symptoms; a Redness and Sweating of the Face is, also, a bad Sign; and an Inflammation of the Parotid Glands, which does not come to Suppuration, proves mortal; an excessive Flux is, in this Disorder, also, mortal: This Species of Disorder, when accompanied with a Tremor, terminates in a Delirium, and then in Death; it, also, terminates in a Peripneumony, often accompanied with a Delirium: That Species of burning Fever, which arises after violent Gripes of the Belly, is of the worst Kind; it is critically terminated by a Rigor.

From these Signs the Disorder is easily known to be present, nor can its proximate Cause be mistaken; for it arises from the Blood's being deprived of its milder and more liquid Parts by an Inflammation through the Whole of the Body, whilst the Strength of the Patient is vigorous. Hence, also, sure Prognostics may be made with respect to the Termination of this Species of Fever.

The Cure of a burning Fever requires a pure cold Air frequently renewed; Cloaths, which by no means suffocate or burden the Patient; a frequent erect Posture of the Body; large Quantities of mild, demulcent, subacid, aqueous, and warm Liquors used as Drink; light farinacious Foods prepared of Barley, Oats, and subacid Fruits; Venesection, if the Disease is in the Beginning, if the Marks of a Plethora appear, if there are Signs of a considerable Inflammation, if the Heat is intolerable, the Rarefaction of the Fluids excessive, a Revulsion necessary, and the Symptoms so violent, that they cannot be easily removed by any other Remedy; the Injection of mild, diluting, laxative, antiphlogistic, and refrigerating Clysters to be repeated as the Heat, Costiveness, and Revulsion require; Humectation of the whole Body, by drawing into the Nostrils a mild Air, impregnated with the Steam of warm Water, by washing the Mouth and Throat, by bathing the Hands and Feet with tepid Water, and by fomenting, with warm Sponges, the Places where most Vessels are exposed to the Touch; aqueous, mild, nitrous, gratefully acid, and gently laxative Substances; together with such as supply the Matter of the Urine, and without any Acrimony, by their Quantity, afford a Vehicle for the Sweat; such as remove Contractions of the Fibres, resolve and dilute the Thickness of the Humours, and, at the same time, correct their Acrimony.

To these if we add what has been said in the general Rules relating to the Cure of acute Disorders, and their Symptoms, and the Doctrine of each particular acute Disease, arising from the Affection of each of the Viscera, to be found under their respective Articles, he shall clearly understand what Remedies are proper for the Cure of any burning Fever.

Besides, from what has been said, all other particular acute Fevers may be understood, since they may either be referred to particular Symptoms, or are the Effects of some other Disorder. See CAUSUS.

INTERMITTENT FEVERS.

We have already given the Definition of an intermittent Fever, the Diagnostics of which are obvious, and its Distinction into various Classes easy, since these depend only on the Difference of Time.

But 'tis to be observed, that intermittent Fevers, in general, are either vernal, and rage from February till August; or autumnal, and rage from August till February; which Distinction is necessary on account of the various Conditions, Symptoms, Terminations, Durations, and Cures of different Intermittents: Besides, one Intermittent Fever sometimes removes another.

Intermittent Fevers, in the Beginning of the Autumn, often resemble those of the continual Kind, on account of their longer and redoubled Paroxysms, whereas their Nature and Cure are widely different.

Fevers of this Kind begin with an Oscitation, Pandiculation, Weariness, Weakness, Cold, Horror, Rigor, Tremor, and Paleness of the Extremities, a difficult Respiration, an Anxiety, a Nausea, a Vomiting, and a quick, weak, and slow Pulse. The more violent and numerous these Symptoms are, the worse the Fever is; and afterwards the Heat, and other Symptoms, are the worse. This is the first Stage of intermittent Fevers, which correspond to the Increase of continual Fevers, and is of all the other Stages the most dangerous; for, in this Condition, the Urine is generally crude and thin.

This Stage of intermittent Fevers is succeeded by another, which begins with Heat, Redness, a strong, large, and free Respiration, a small Anxiety, a large and strong Pulse, an excessive Thirst, and a Pain of the Limbs and Head, and generally a Redness of the Urine: This Stage corresponds to the State or Height of continual Fevers.

Then, last of all, there generally appears a profuse Sweat, a Remission of all the Symptoms, a thick Urine, with a Sediment resembling Brick-dust, Sleep, a total Absence of the Fever, Lassitude, and Weakness.

Intermittent Fevers frequently terminate in those of the acute and dangerous Kind, which is generally owing to an excessive Heat, and too brisk a Motion of the Fluids.

Intermittent Fevers, running through their three different Stages, greatly injure the minute Fibres of the Vessels and Viscera, by producing Stagnations, Obstructions, Coagulations, Impulsions, Resolutions, and Attenuations of the Fluids: Hence the Vessels are weakened, and the Fluids become morbid, especially in that Species of the Disease, in which their Parts are less assimilated, and not duly mixed, by which Circumstances in Conjunction, an acrimonious State of the Juices is produced. Hence all these things concurring produce an easy Propensity to sweat, which greatly weakens the Patient, since, sometimes, the viscid Part of the Blood transpires. In this Situation of the Patient, the Urine is surprisingly thick, turbid, pinguious, like that of Horses, or like Saliva. Hence the weak, resolved, and hardly coherent Blood, being deprived of its best Parts, is at once acrid and thick; so that, in consequence of the Laxity of the Vessels, and the Acrimony of the Humours, those long-continued Fevers sometimes terminate in chronical Disorders, such as a Scurvy, a Dropsy, a Leucophlegmatia, scirrhus Tumors of the Abdomen, and the several Misfortunes produced by these.

But if intermittent Fevers are not of the malignant Kind, they dispose the Patient to Longevity, and cleanse the Body from inveterate Disorders.

Hence, after an accurate Examination of the whole History of Intermittents, their proximate Cause seems to be a Viscidity of the arterial Blood upon the Accession of any Cause which produces a brisk and strong Contraction of the Heart, and a Resolution of the stagnant Fluids.

Since, therefore, this Order is always observed in Intermittents, the Physician who can surmount the first Time, and the first Cause, may by that means remove the whole ensuing Paroxysm.

Besides, as an infinite Number of Causes, and these not very considerable, may produce the first Stage of a perfectly intermittent Fever, and its Cause; and as many such Causes may be produced, increased, and fomented, in all the Fluids, formed and secreted in the human Body, it is more difficult to distinguish the Cause already formed from infinite possible Circumstances, than to invent one possible Cause, sufficient from the Laws of the animal Economy to account for the stated Periods of Intermittents. This is sufficiently obvious to every accurate Inquirer.

The Cure, therefore, requires that we should use aperient, saline, alkaline, aromatic, mineral, diluting, mild, and oleous Substances, Heat, Motion, Fomentation, and Friction, during the Intermittion, or in the first Stage. The Medicines of this Kind are all *Tachenius's* Salts of Herbs, the most considerable of which, are obtained from Wormwood, *Carduus Benedictus*, and Stalks of Beans; Nitre; antimoniated Nitre; diaphoretic Antimony unwashed; Sal Ammoniac; Sal Prunellæ; and Sal Polychrestus; Tartarus regeneratus; Tartarus Tartarificus; Salt of Tartar reduced to a saponaceous Mass with Oil of Turpentine; and all the Parts of all the aromatic Herbs, especially of those which are resolvent.

In order to purge the *Prima Via* from the redundant Sordes, a Purge, or a Vomit, are often very beneficial, exhibiting either so long before the Paroxysm, that its Operation may be over before the Fit comes on. That this Method is to be taken, may be known from the Patient's way of living, preceding Diseases and Symptoms, a Nausea, a Vomiting, Eructations, Tumors, the Breath, the Sordes of the Tongue, Throat, and Palate, want of Appetite, Bitterness of the Mouth, and a Vertigo accompanied with Dimness of Sight; and, after the Operation, the tumultuous Commotion of the Fluids is to be allayed by an Opiate before the Paroxysm. Thus,

Take of emetic Tartar, five Grains, reduced to a Powder; to be taken at one Dose: Or,

Take of emetic Tartar, five Grains; and of the Crumbs of Bread, a sufficient Quantity; to make five Pills, to be taken for one Dose: Or,

Take of emetic Wine, two Ounces; and of Oxymel of Squills, six Drams: Mix up for a Draught: Or,

Take of emetic Tartar, five Grains; Rob of Currans, half an Ounce; and Oil of Cinnamon, one Drop: Make into a Bolus.

Forms of Purges, are these following:

Take of the Pulvis Cornachini, two Scruples for a Dose: Or,

Take of the *Pilula Cochiae majores*, two Scruples; of Solutive Syrup of Roses, half an Ounce; and of distilled Elder-flowers, two Ounces: Mix for a Draught: Or,

Take of washed Aloes, twelve Grains; of Myrrh, ten Grains; of *Opopanax*, five Grains; and of Sal Gemmæ, five Grains: Mix, and make up into nine Pills.

These are beneficial, when, by their Stimulus, they operate both Ways.

But they prove injurious when they weaken, evacuate the most liquid Parts of the Juices, and disturb the necessary Digestions; and thus either protract the Disease, or bring on Death. The cold and hot Fits are often removed by Sudorifics, whilst a few Hours before the known time of the Paroxysm, after filling the Patient's Body with an aperient, diluting, and gently narcotic Liquor, an Hour before the Paroxysm, a Sweat is excited, and continued till two Hours after the Paroxysm usually began.

Take of Sal Polychrestum, two Drams; of the Syrup of the Five aperient Roots, two Ounces; of pure Opium, two Grains; of the distilled fermented Waters of *Carduus Benedictus*, Wormwood, Rue, Marjoram, and Mint, each one Ounce; and of the Extract of Wormwood, two Ounces: Mix all together, and let the Patient take one Spoonful every Quarter of an Hour, drinking after each, four Ounces of the following Decoction:

Take of the Root of Masterwort, six Drams; of the Roots of *Sassafras*, and red-Saunders, each two Ounces; of the Leaves of Golden-rod, two Handfuls; of the Leaves of the Lesser Centaury, half an Ounce; and of the bruised Seeds of Candy Carrot, six Drams: Infuse for two Hours in a close-stopt Vessel, without boiling, though very hot; then let them boil a little, and exhibit two Pints of the Decoction for a Dose.

Venefection, considered in itself, is always pernicious, though it may prove accidentally beneficial, as, also, a light and exactly regulated Diet.

When intermittent Fevers are in the second Stage, aqueous Substances actually warm, mixed with subacid aperient, nitrous Ingredients, or Preparations of Succory, and other mild Substances of a similar Nature, are indicated, whilst the Patient is to be kept in a State of Rest, and moderate Warmth. The Medicines before recommended in a febrile Anxiety and Thirst are to be used in this Stage of Intermittents.

When the Paroxysm is terminated by a Crisis, then it is expedient to supply the Matter of Sweat and Urine, by vinous Potions, Broths prepared with Fleth, and temperate Decoctions: Thus those two Excretions are to be excited, not by the Force of Heat, Medicines, or Bed-cloaths; but gently promoted by an increased Quantity of their Materials long persisted in.

Violent Symptoms are to be removed by the Rules laid down for the Cure of febrile Symptoms in general.

When the Fever is removed, the Patient is to have his Strength restored by analeptic Aliments, and corroborating Medicines; then after his Strength is increased, he is to be purged several times.

But if an autumnal intermittent Fever is very violent; if the Patient is weakened by the Disease; if the Disorder is of a considerable Standing; if there are no Signs of an internal Inflammation, nor of Pus collected any-where, nor of a considerable Obstruction of any of the Viscera, the Disorder is to be removed by the *Peruvian Bark*, exhibited in the Form of a Powder, an Infusion, an Extract, a Decoction, or a Syrup, with proper Specifics, during the Intermittion, in a due Order, a proper Dose, and in Conjunction with a proper Regimen. For this Purpose,

Take of the *Peruvian Bark*, one Ounce; reduce to a Powder, to be divided into twelve Doses; one of which is to be taken by the Patient every Hour in Wine: Or,

Take of *Peruvian Bark*, three Ounces; and common Water, twelve Ounces: Infuse for two Hours; then boil for an Hour; and add four Ounces of *French Wine*; then let the Whole boil a little longer in a tall Vessel; and of this Decoction, when pure, let the Patient take one Ounce and an half every two Hours: Or,

Take of the *Peruvian Bark*, three Ounces; boil for two Hours in a close Vessel in common Water to sixteen Ounces of strained Liquor, of which let the Patient take an Ounce and half every two Hours: Or,

Infusate the preceding Decoction to the Consistence of Honey, and divide into four Doses, one of which is to be taken every two Hours : Or,

Take the preceding Extract, dilute in one Ounce of the Syrup of the Five aperient Roots : Make a Syrup to be used in the same manner with the Extract : Or,

Take the preceding Extract ; mix with it a sufficient Quantity of the Powder of Liquorice, and reduce to a Mass of Pills, of which the Patient is to take four Grains, during the time of Intermiffion.

Epithems are, also, frequently beneficial, as, also, Unctions of the Spine of the Back, and the drinking astringent Liquors. Thus,

Take of the Oils of Scorpions, Castor, Juniper-berries, Camphire obtained from the Root of the Cinnamon-tree, Bays, and Turpentine, and of the terebinthinated Balsam of Sulphur, each half an Ounce : Mix for a Liniment.

Take of the Whole of the broad-leaved Plantain, ten Ounces ; and of recent Tormentil-root, two Ounces : Boil in two Pints of Water ; and let the Patient drink three Ounces of the Decoction every two Hours.

Take of Roch-alum, one Dram ; of Nutmeg two Drams ; and of the Powder of *Armenian Bole*, twelve Grains : Reduce to a Powder, to be taken an Hour before the Paroxysm.

Epithems for the Wrists may be prepared in the following manner :

Take of Currants, and Hops, each two Ounces ; and reduce to a Poultice, to be applied to the Wrists : Or,

Take of the Tops of green Rue, two Ounces ; and of Mustard-seeds, two Drams : Bruise, and apply to the Wrists.

That the Cure of particular Intermittents may be understood, 'tis to be observed, first, that the shorter the Intervals of true Intermittents are, the sooner they are cured ; and the longer the Intervals are, the more Time is required to their Cure. Secondly, that, for this Reason, they approach much to the Nature of acute Fevers, and are sometimes converted into them. Thirdly, that for this Reason, their Cause is more moveable, tho' more copious. Fourthly, that vernal Intermittents, upon the Approach of warm Weather, are spontaneously terminated. Fifthly, that autumnal Intermittents, on the Approach of cold Weather, are increased. Hence 'tis obvious what Fevers are curable, and by what Medicines. *Boerhaave Aph. & Mat. Med.* See ARANEA.

Sydenham, speaking of the intermittent Fevers, which raged from the Year 1675, to 1680, observes, that though Quartans were more frequent formerly, yet now Tertians and Quotidians were most common, unless the latter may be intitled double Tertians ; and, also, that though these Tertians sometimes began with Chills and Shivering, which were succeeded first by Heat, and soon after by Sweat, and ended at length in a perfect Intermiffion, returning again after a fixed time ; yet they did not keep this Order after the third or fourth Fit, especially if the Patient was confined to his Bed, and used hot Cardiacs, which increase the Disease. But afterwards this Fever became so unusually violent, that only a Remission happened in place of an Intermiffion ; and approaching every Day nearer to the Species of continued Fevers, it seized the Head, and proved fatal to abundance of Persons.

As to the Cure, I have learnt, says he, from the Experience of many Years, that 'tis dangerous to attempt to remove Tertians and Quotidians by Sudorifics ; for when they are recent, and have assumed no certain Shape, they nearly approach to continued Fevers. And though it is well known, that as soon as the Sweat flows, the Restlessness, and other Symptoms, presently go off, and a perfect Intermiffion succeeds, and consequently that it should be somewhat promoted, or, at least, not hindered, when the Fit is going off ; yet 'tis manifest, that, if Sweat be forced beyond the due Degree, the Intermittent becomes a continued Fever, and Life is endangered. I conceive the Reason of this to be, that so profuse a Sweat, (since it exceeds the Degree of the febrile Matter, already so exalted by the Heat of the Fit, that it may now be expelled by Despumation) after it has expelled that Part thereof, which might produce a single Fit, proceeds to inflame the Blood. Upon considering, therefore, the Inefficacy of this Method, and the Inconveniencies attending other Evacuations, as Bleeding and Purging, both which, by weakening the Texture of the Blood, prolong the Disease, the *Peruvian Bark* afforded me the surest Hopes ; of which I can truly affirm, notwithstanding the Prejudice of the Vulgar, and a few of the Learned, that I never found, or

could reasonably suspect, any ill Consequence follow its Use ; unless, that such as have taken it for a considerable time, are sometimes seized with a scorbutic Rheumatism. But this Disorder rarely proceeds from this Cause, and when it does, readily yields to the Remedies adapted to it.

And, in reality, if I were as certain of the Continuance of its Effects, as I am of the Innocence of the Bark, I should not scruple to prefer it to all the Medicines hitherto known ; since it is not only excellent in this Disease, but, also, in those of the Uterus and Stomach : So little Reason there is to complain of its Unwholsomeness.

But, I conceive, that the Bark has been ill spoken of, principally, for the following Reasons : (1.) Because the numerous Train of violent Symptoms, which accompany, previously to the Use of the Bark, inveterate Intermittents, are ascribed to it, though it has been taken only once. (2.) As it cures the Disease by a secret Virtue, and not by any sensible Evacuation, several Persons maintain, that the morbid Matter, which ought to have been expelled, is retained in the Body by its Astringency, ready to occasion fresh Disturbance, the Disease not being entirely carried off. But such Persons do not sufficiently consider, that the Sweats, happening at the Decline of the Fit, have expelled all the morbid Matter that was collected during the preceding Interval, so that only the Seeds of the Disease remain, which require time to be ripened ; and the Bark, by closely pursuing the retiring Fit, and cutting off the Supplies of the Disease, cannot be a means of retaining any morbid Matter in the Blood, which is now existent there only in Embryo ; consequently the Bark is not to be esteemed productive of those Obstructions, which are commonly judged to proceed from its Use.

But how does it appear, that the Bark cures Intermittents by its Astringency ? In order to prove this, other Astringents, possessed of the same Virtue, must first necessarily be produced : I have tried the strongest ineffectually. Besides, the Bark effects a Cure, even where it purges, which is sometimes the Case. Upon the Whole, therefore, they act the wisest Part, who limit their Inquiries to their Abilities. But, if a Person, imposing upon himself, should imagine, that he is possessed of other Faculties than such as are useful, either to Natural Religion, by which we learn that God, the Creator and Governor of all things, is to be worshipped with profound Veneration, as he justly merits ; or to moral Philosophy, that he may practise Virtue, and render himself every way useful to Society ; or, lastly, to the Medicinal, Mathematical, and Mechanical Arts, which supply Mankind with many Helps and Conveniences ; I would have him in the first place, deduce an Hypothesis from Natural Philosophy, that may enable him to explain the Cause of but a single specific Difference of Things in Nature. For Instance, let him account for the universal Greenness of Grass, and why it is never found of any other Colour, and the like. And if he can do this, I will readily embrace his Sentiments ; but, if not, I shall not scruple to affirm, that all the Diligence and Caution of a Physician should be employ'd in investigating the History of Diseases, and applying those Remedies which stand recommended by Experience for the Cure thereof ; observing, notwithstanding, that Method which is founded on right Reason, and not the Result of idle Speculations. I will, therefore, briefly deliver what Experience hath taught me, relating to the Method of exhibiting the Bark.

The *Peruvian Bark*, commonly called the *Jesuits Powder*, to the best of my Remembrance, began to be esteemed at London, for the Cure of Intermittents, and especially Quartans, about twenty-five Years since ; and, indeed, very deservedly, as these Diseases before this time were seldom cured by any other Method, or Medicine ; whence they were reputed the *Opprobria Medicorum*, and not without Cause. But, not long after, it lost its Character, and was entirely disused, for two considerable Reasons : (1.) Because, being exhibited only a few Hours before the coming of the Fit, according to the received Custom of that Time, it sometimes destroyed the Patient ; which I remember happened to Mr. *Underwood*, a Citizen and Alderman of London, and to one *Potter*, an Apothecary in *Black Fryars*. This fatal Effect of the Powder, though very rare, did, however, deservedly prevail with the more prudent Physicians to refrain from its Use. (2.) Because, tho' the Patient was, for the most part, freed from the Fit, that would otherwise have come, by this Medicine, yet a Relapse commonly happened within a Fortnight, particularly when the Disease was recent, and had not been weakened by a long Continuance. These Reasons weigh'd so much with the Generality, that they lost all Hopes they had hitherto conceived of this Medicine ; nor did they esteem it so material to prevent the Access of a Fit for a few Days, as, upon this account, to endanger their Lives by taking the Bark.

But, having some Years since thoroughly considered the extraordinary Virtues of the Bark, I was firmly persuaded, that Intermittents

intermittents could not be better cured than by this efficacious Medicine, provided it were given with proper Caution. For this Reason I spent much time in considering how I might prevent the Danger ensuing from its Use, and the Relapse that succeeded in a few Days, which were the two Inconveniencies to be remedied, and by means thereof, to restore the Patient to perfect Health.

1. I conceived, that the Danger proceeded less from the Bark itself, than from the unseasonable Use thereof; for when a large Quantity of febrile Matter is collected in the Body upon the intermediate Days, the Bark, if taken immediately before the Fit, obstructs the Expulsion of the morbid Matter in the natural way (that is by the Violence of the Fit); which, being preternaturally detained, usually endangers Life. But I judged I could remedy this Evil, and, also, prevent the fresh Generation of febrile Matter, by giving the Powder directly upon the Departure of the Fit, so that a Stop might be put to the succeeding one; and by repeating it upon the intermediate Days, at proper Distances, till the Approach of a new Fit; and that by this means the Blood might be impregnated gradually, and consequently safely, with the Virtue of the Bark.

2. As the Relapse, which generally happened in a Fortnight, seemed to me to proceed from not sufficiently impregnating the Blood with the Virtue of the Febrifuge, which, however efficacious, was not powerful enough to cure the Disease at once, I judged, that the best Method of preventing a Relapse, would be to repeat the Powder, at proper Intervals, before the Virtue of the preceding Dose was quite spent, even though the Intermittent appeared to be conquered for the present.

These Considerations led me to the following Method, which I now use. When I am called to a Person afflicted with a Quartan, suppose on a *Monday*, if the Fit is expected the same Day, I refrain from doing any thing, and only give the Patient Hopes, that he shall be freed from the next Fit. And, in order to effect this, I exhibit the Bark upon the two intermediate, or well Days, that is, *Tuesday* and *Wednesday*, in the following manner:

Take of *Peruvian Bark*, very finely powdered, one Ounce; Syrup of Cloves, or of dried-Roses, enough to make it into an Electuary, to be divided into twelve Doses; whereof let the Patient take one every fourth Hour, beginning immediately after the Fit is gone off, and drinking, after each Dose, a Draught of any Kind of Wine.

Or, if Pills be more agreeable;

Take of the *Peruvian Bark*, very finely pulverized, one Ounce; Syrup of Cloves, enough to make it into Pills of a middling Size; of which let the Patient take six every fourth Hour.

But an Ounce of the Powder may be mixed with a Quart of Claret, with less Trouble, and equal Success, and eight or nine Spoonfuls of it may be given at the Intervals above-mentioned. I order nothing on *Thursday*, when the Fit is expected, because, for the most part, it does not come, the Remainder of the febrile Matter being despumated and expelled the Blood by the usual Sweats, which terminated the preceding Fit, and a Collection of fresh Matter being prevented by the Repetition of the Powder upon the intermediate Days.

But, in order to prevent a Relapse, which was one of the Inconveniencies above recited, I always gave the same Quantity of the Powder, an Ounce divided into twelve Doses, upon the eighth Day precisely, after taking the last Dose. But though a single Repetition of the Bark in this manner frequently removes the Disease, yet the Danger is not over, unless the Patient will comply with the Directions of his Physician, and take it thus a third or fourth time; especially when the Blood has been impoverished by some preceding Evacuation, or the Body unadvisedly exposed to the cold Air.

Now, though there is no inherent purgative Virtue in this Medicine, yet a violent Purgings is frequently occasioned thereby, on account of some peculiar Idiosyncrasy in the Constitution. In this Case, it is indispensably necessary to exhibit Laudanum therewith, to prevent its having this Effect, which is manifestly as opposite to its own Nature, as it is to this Disease, and that it may be retained long enough to answer its End. Therefore I direct ten Drops of Laudanum to be given in a little Wine, after every other Dose of the Powder, provided the Purgings does not go off.

I follow the same Method in other Intermittents, whether Tertians or Quartans; for, immediately upon the Fit's going off, I administer a Dose of the Powder, and repeat it in point of Frequency, at as close Intervals, during the time of the Intermittion, as the Nature of the Disease will admit; but with this Difference, that a Tertian may be so far conquered with

six Drams of the Bark, as at least to give a Respite; whereas a Quartan can very rarely be removed with less than an Ounce of it, divided into proper Doses.

But tho' Tertians and Quotidians, after a Fit or two, may seem entirely to intermit, yet, as I have before observed, they afterwards frequently degenerate into a Species of continued Fevers, and only come to a Remission even upon those Days that promised an Intermittion; especially when the Patient has been kept too warm in Bed, or been tormented with Medicines to carry off the Intermittent by Sweat. In this Case, I have no other way left, but to take Advantage of the Remission, though it be ever so small; and accordingly, I give the Powder immediately after the Fit is gone off, as near as I can conjecture, and repeat it every four Hours, as above-mentioned, without waiting for a regular Intermittion, because otherwise the alexiterial Virtue of the Bark cannot be communicated to the Blood in so short an Interval.

And though the present reigning Intermittents, after the second or third Fit, incline to continued Fevers, yet they must be referred to the intermittent Kind; and, therefore, I scruple not to order the Bark, even in the most continued of this Species; the Repetition of which, in the above-mentioned manner, will certainly remove the Disease, provided the constant Warmth of the Bed, and the improper Use of Cardiacs, have not rendered it a continued Fever; in which Case, I have frequently observed, that the Bark proves ineffectual. Nor have I ever found, that the Wine, wherein the Bark is administered, did the Patient Harm, which might reasonably be suspected; but, on the contrary, the Heat, Thirst, and other febrile Symptoms, generally went off soon after taking a sufficient Quantity of this Medicine. But it must be here observed, that the nearer the Intermittent approaches to a continued Fever, either spontaneously, or from using too hot a Regimen, so much the more necessary it is to exhibit a larger Quantity of the Bark; for I have sometimes found, that Intermittents would not yield to less than an Ounce and an half, or two Ounces, of the Bark.

As some Persons can neither take the Bark in Powder, an Electuary, or in Pills, I give them an Infusion of it, which is made with two Ounces of Bark grossly powdered, infused cold for some time in a Quart of *Rhenish Wine*. This Infusion, being several times passed through a fine Strainer, becomes so clear, as not to be nauseated by the nicest Palate. Four Ounces of this Infusion, after it has stood some Days, should seem equivalent in Virtue to a Dram of the Powder in Substance; and, as it is neither disagreeable, nor lies heavy upon the Stomach, it may be exhibited with twice the Frequency of the other Formulæ, till the Disease vanishes.

When this Disease hath assumed no regular Appearance, it is sometimes attended with an almost continual Vomiting, so that the Bark cannot be retained in any Form; in which Case the Vomiting must be stopt, before it can be administered. For this Purpose I order a Scruple of Salt of Wormwood to be dissolved in a Spoonful of fresh Lemon-juice, and taken six or eight times in the Space of two Hours; and afterwards I give sixteen Drops of Liquid Laudanum in a Spoonful of strong Cinnamon-water; and soon after, if the Vomiting stops, I proceed to use the Bark.

For Children, who, on account of their tender Age, can scarcely bear to take this Remedy in any other Form, at least in a suitable Quantity to effect a Cure, I generally prescribed the following Julap:

Take of black Cherry-water, and *Rhenish Wine*, each two Ounces; *Peruvian Bark* finely powdered, three Drams; Syrup of Cloves, an Ounce: Mix them together for a Julap. Let a Spoonful or two (according to his Age) be given to the Child every fourth Hour, till the Fits return no more, dropping into every other Dose, in case of a Looseness, one or two Drops of Liquid Laudanum.

It must be further observed, that the Intervals between the Fits in Tertians and Quotidians are so short, that they do not allow sufficient time to impregnate the Blood perfectly with the febrifuge Virtue of the Bark; so that 'tis not to be supposed, that the Patient should so certainly miss the next Fit after the first time of taking it, as it commonly happens in a Quartan; for the Medicine, in these Cases, will frequently not effect the Cure in less than two Days.

It must, also, be remark'd, that if the Patient, notwithstanding the Observance of the Cautions above delivered, should relapse, which happens less frequently in a Quartan than in Tertians and Quotidians, it will become a prudent Physician not to adhere too closely to the Method of giving the Bark at the above-mentioned Intervals; but to attempt the Cure, as his Judgment shall direct, by some other Procedure: And here the bitter Decoction is generally esteemed of most powerful Efficacy.

With respect to Diet and Regimen, the Patient must be allowed the Use of all Kinds of solid and liquid Aliment that agree with his Stomach, Fruit and cold Liquors always excepted; because they impoverish the Mass of Blood, and are very subject to occasion a Relapse. Let the Diet, therefore, be Flesh of easy Digestion; and a moderate Use of Wine may be permitted for common Drink; by the sole Use whereof I have sometimes recovered such as have been so debilitated by the frequent Return of the Intermittent, that the Bark proved ineffectual to their Cure. The Patient, also, must not unadvisedly expose himself to the cold Air, till the Blood has recovered its former healthy State.

It must here be remark'd, that tho', in treating of Intermittents heretofore, we recommended due purging after the Disease was gone off, yet this practical Caution is only to be understood of such Intermittents as either went off spontaneously, or were cured without the Assistance of the Bark: For when the Cure is effected by this Medicine, Cathartics are unnecessary and injurious; so powerfully does the Bark, alone, resist the Fits, and the Indisposition they occasion. Hence, therefore, all Kinds of Evacuations must be refrained from; for the gentlest Purge, even a Clyster of Milk and Sugar, will certainly endanger a Relapse, and, perhaps, reproduce the Disease.

And here it is proper to mention, that a very remarkable Symptom sometimes succeeded these Intermittents in the first Years of this Constitution: For the Fits did not begin with Chills and Shivering, which were succeeded by a Fever; but the Patient was seized with the Symptoms of a true Apoplexy; though, in Reality, how nearly soever it resembled this Disease, it was nothing more than the Effect of the Fever's seizing the Head; as plainly appeared from other Signs, as well as the Colour of the Urine, which in Intermittents is usually of a deep red, though not so red as in the Jaundice, and, also, lets fall a lateritious Sediment. But though in this Case all Kinds of Evacuation seem to be indicated, in order to make a Revulsion of the Humours from the Head, as is generally practised in the genuine Apoplexy, yet they are to be wholly refrained from, because they are very prejudicial in the Intermittents, whence this Symptom originally proceeds, and, consequently, endanger Life, as I have observed. On the contrary, therefore, we must wait till the Fit goes off spontaneously, when the Bark, in case it could not be given sooner, must immediately be exhibited, and repeated with sufficient Frequency in the Intervals, till the Patient be perfectly recovered.

And these are the Observations I had to communicate, in a summary way, concerning the Use of the Bark; for my Design was not to consult the Pomp of Medicine: And, in reality, they who add any thing more to the Bark than a Vehicle, which is necessary to carry it into the Stomach, in my Opinion either do it ignorantly, or fraudulently; which every good Man must detest, who, as a Part of the Whole, would not be induced to commit such a Fraud, for his private Advantage. As to what remains, if my Contemporaries had pleased to have considered what I published in my History of acute Diseases, (which, it is highly probable, I was acquainted with before that time) relating to the Method of exhibiting the Bark in the Intervals of the Fits, and the succeeding Repetition of it when the Disease was gone off, perhaps the Lives of many Persons had been saved; how much soever some Men contemned my slender Endeavours for the public Good, and slighted the Cautions there delivered in the following Words; which contain, in a concise manner, what I have here judged proper to enlarge upon.

1. "Great Caution must be had not to give this Bark too early, that is, before the Disease be in some measure spontaneously abated; unless the extreme Weakness of the Patient requires it to be given sooner: For the giving it too soon may render it ineffectual, and even fatal, if a sudden Stop should be thus put to the vigorous Fermentation raised in the Blood, in order to its Despumation. 2. We must not direct Purging, much less Bleeding, in order to carry off a Part of the febrile Matter, and render the Bark more effectual; for they both weaken the Tone of the Parts, whence the Disease returns so much the more expeditiously and certainly, after the Virtue of the Bark is spent. It were better, in my Opinion, to impregnate the Blood with this Medicine by Degrees, and at distant Intervals from the Fit, rather than endeavour to stop it at once, just upon its coming; for by this means the Bark has more time to produce its full Effect in; and, besides, the Mischief is avoided that might happen by putting a sudden and unseasonable Stop to the Fit just approaching. 3. The Bark must be repeated at short Intervals, that the Virtue of the former Dose may not be entirely gone off, before another be given; and by repeating it frequently the Disease will, at length, be perfectly cur'd. For these Reasons, I prefer the following Method of giving the Bark to all others.

"Take of the *Peruvian Bark*, one Ounce; Conserve of "Roses, two Ounces: Make an Electuary thereof. Take "the Quantity of a large Nutmeg, every Morning and "Night, on the intermediate or well Days, till the whole "be taken; and let it be repeated thrice, interposing a "Fortnight between each time."

But though the Bark is the best Medicine hitherto discover'd, for the Cure of these Diseases; yet I have known Vernal Tertians, in Persons in the Prime of Life, and of a sanguine Constitution, yield to the Use of the following Remedies: For Instance, Bleed in the Arm upon the intermediate Day; and some Hours afterwards, upon the same Day, give an Emetic of the Infusion of *Crocus Metallorum*, regulating the time in such manner, that its Operation may be over before, the Fit comes on; and as soon as it is gone off, let the following Electuary be given.

Take of the Extract of Wormwood, Gentian, and the lesser Centaury, each two Drams: Mix them together, and divide the Whole into nine Doses. Of which, let one be taken every fourth Hour; drinking, after each Dose, of the bitter Decoction without Purgatives, and of White-wine, each three Ounces.

There is another Method of curing these Tertians in Persons of low Circumstances, who are unable to be at the Expence of a long Course of Medicines, in order to their Cure. As,

Take of *Virginian Snakeweed*, in fine Powder, a Scruple; White-wine, three Ounces: Mix them together. Let the Patient take it two Hours before the Fit comes on; and, being well covered with Cloaths, let him sweat three or four Hours afterwards; and let it be repeated twice in the same manner.

In the following Year 1679. these Intermittents re-appeared at the Beginning of July, and, increasing every Day, proved very violent and destructive in August: But, having already treated of these at large, I shall only observe, that they gave way to a new Epidemic, which proceeded from the manifest Qualities of the Air in November. *Sydenham*.

OF THE SALUBRITY OF FEVERS.

Such is often the wise and admirable Oeconomy of Nature, that what at first Sight appeared noxious and prejudicial, tends to promote and advance the Happiness and Health of Mankind. In no Instance is this Doctrine more remarkably verified, than in Fevers, since the febrile Commotions of the Blood, which accompany many Disorders, both of the chronic and acute Kind, are of such a Nature, as to banish and extinguish morbid Causes; and, consequently, they must be rather beneficial than detrimental to the human Body.

Before we proceed to the Confirmation of this Assertion, we shall observe, that this Doctrine is supported by the Authorities of the Antients. Thus the divine *Hippocrates*, in his Writings, often affirms, that a supervening Fever cures some Disorders, to be afterwards mentioned: And *Celsus*, in *Lib. 2. Cap. 8.* tells us, that a Fever itself, which to some may seem strange, often proves salutary: For a Fever allays Pains of the Præcordia, if not attended with an Inflammation, mitigates Pain, and, succeeding Convulsions of the Nerves, and a Rigor, totally removes them. It, also, relieves the Disease of the small Intestines arising from a Difficulty of Urine, if by the Heat it promotes a Discharge of it: Besides, a Fever was by the sagacious Antients defined the Struggle, Motion, or Contest of Nature, against the morbid Cause and Force of the Disorder; by which they intended to insinuate, that it was rather of a salutary, than of a noxious Nature: For that which fights against the Enemy of Life, which is the morbid Cause, cannot, in its own Nature, be pernicious. Hence *Linden*, in *Selectis Medicis*, cannot sufficiently wonder, that, notwithstanding the many Instances of this, in the Writings of *Hippocrates*, some should yet ascribe this Doctrine to *Campanella*, and damn it as a Novelty invented by a Man who was no Physician: For that Author, in *Tr. de Sensu Rerum, Lib. 7. Cap. 2.* affirms, that no Fever is a Disease, but a Remedy against other Diseases. This Opinion is, also, espoused by *Joh. de Meig.* in *Comment. Philos. Cap. 5. Loc. 5.* and the celebrated *Sydenham* is at a great deal of Pains to prove, that a Fever is the Effort or Instrument of Nature, by which the pure are separated from the impure Parts, and the morbid Cause exterminated and expelled.

Hence the Reason is obvious, why *Hippocrates*, in *Epidem. Lib. 2.* informs us, that it is the Office of a prudent Physician, sometimes, to excite Fevers: Besides, nothing more confirms this Doctrine, than the universal Agreement of the Antients in this, that Nature was the best Physician; cured best; terminated

nated Disorders most happily; and, as *Galen* expresses it, made a violent Insurrection against the morbid Cause; strongly attempted Crises and Excretions; and at last, by Concoction and Evacuation, freed from mortal Disorders: For the Struggle or Effort of Nature against the morbid Cause, is nothing but a Fever. Hence we justly conclude, that a Fever is the Instrument by which Nature preserves the human Body, opposes morbid Causes, and, by expelling them, restores Health.

All Physicians, both antient and modern, have accounted a Fever a Disease in a certain Sense; and *Hippocrates*, in *Lib. de Flatibus*, *Sect. 3.* calls a Fever a common Disease, which accompanies other Disorders, and especially an Inflammation: For a Fever is a preternatural Commotion of the Blood and Humours, which not only injures and weakens the Functions of the Body and Mind, but, also, proves mortal: For few are taken off without a Fever. But this does not hinder it from being, in other respects, the Remedy not only of its own Cause, but, also, of other Disorders: So that we cannot sufficiently admire the stupendous Skill of the adorable Architect, who has so artfully contrived the human Structure, that by its Force and Strength it cannot only defend itself from impending Injuries, but, the Commotions or Effects of the morbid Cause are of such a Nature, that, if all other Circumstances are equal, they are, also, sufficient for removing themselves, and the Disorder. But that this Doctrine may be the better comprehended, we shall inquire into the Nature and Essence of a Fever, examine how it is created by Nature, and determine what Fevers produce such salutary Effects, at what Time, in what Diseases, and under what Circumstances, such laudable Consequences may be expected.

How common a Fever is, how often it accompanies most other Disorders, and how much the Knowledge of it has hitherto been involved in Perplexities and Obscurities, is sufficiently known; for almost all the celebrated Writers embrace different Opinions and Hypotheses, with respect to Fevers: But, without enumerating them, we shall only observe here, that as Health and Life depend on the due Motion of the animal Spirits, and Circulation of the Blood, so the Origin and Causes of all internal Disorders ought to be deduced and explained from some preternatural Circumstance in these Fluids. Hence we define a Fever, a too brisk Motion of the Muscles, especially of the Heart, accompanied with an unequal Circulation of the Blood, a Change of the Excretions, of the natural Heat, Pulse, and remitting or intermitting at certain Times.

A Fever is, therefore, a strong and increased Motion of the muscular System. Motion, by the Consent of the greatest Physicians, is performed in the human Body by means of an highly subtil and fluid Substance, by some called the animal Spirits, and by others the vital Principle, which exists originally in the Semen, is contained in the Blood, and afterwards supported by the external Air, and spirituous Aliments. This Substance was by the Antients called *Nature*, the *Anima purpurea*, and the *Calidum innatum*; and is the Cause not only of intestine, but, also, of circular Motion; moves all the Limbs, and is the genuine Instrument of Sensation and Reasoning. This Substance is capable of having its Motion augmented and accelerated in the Nerves, and muscular Fibres; as evidently appears in Spasms of the Skin, and internal Parts, and during an increased and more frequent Action of the Heart, accompanied with preternatural Heat. We, therefore, affirm, with *Helmont*, in *Lib. de Febris*, *Cap. 1.* that the febrile Heat is not proper to the peccant Matter, or the Effect of it; but that it is the Effect of the animal Spirits acting too violently, which, as in a sound State, they are the Source of natural Heat, so they are, also, the immediate, primary, and efficient Cause of a febrile Heat. But I differ from *Helmont* in this, that he says the material Cause of a Fever is only occasional, and free from a material physical Influence and Concurrence, to the Production of a Fever; but that it affords an Occasion or Opportunity to the intelligent *Archæus*, or Nature, which, in the same manner as when an Object of Anger is externally presented, by her proper Force and Energy, rouses herself, attacks the Enemy, and endeavours to expel him. But I cannot deny, that the morbid Cause has a certain Power of Action and Motion, which, by acting inordinately on the animal Spirits, or vital Principle, by a certain mechanical Necessity, excites that impetuous Motion observable in the Heart, Arteries, and Muscles: For the febrile or morbid Motion is produced by the Action and Reaction of the active morbid Matter, and the moving vital Principle in the human Body; in which Sense it may be admitted, that Nature, or *Archæus*, is the Author of Fevers.

But we must determine by what means the febrile Matter acts on the animal Spirits in the Nerves and Membranes; what sort of Effect or Reaction succeeds this Operation, and how the Symptoms, common to Fevers, are produced. Now we assert,

that all Motion of the muscular Fibres is active, systaltic, or contractory: Hence such a Motion must be rendered preternatural, either by Intension, or Relaxation, of the Fibres. The Intension is generally called a Spasm, which is a preternaturally strong and long-continued Contraction of the muscular Fibres. Such Spasms constitute the first and fundamental Cause of all preternatural Disorders, and morbid Commotions, and produce many and various Effects; since there is hardly any Disease without Spasms: These happen more especially in Fevers, and the Generation of excessive Heat, where Spasms are the Cause of the unequal Circulation of the Blood, the irregular and increased Pulse, and the other Symptoms: For as when the Tone of the Muscles, and Pulsation of the Heart, are moderate, and in due Proportion, the Fluids circulate regularly, the excrementitious Parts are secreted and eliminated, and such Substances, as are subservient to Life and Health, are retain'd, so, on the contrary, as soon as the Tone of the Muscles is vitiated, or as soon as a Spasm happens, and the Motion of the Heart becomes inordinate, the whole Order of the vital Motions, and the Oeconomy of the Secretions and Excretions, are disturbed and perverted.

The evident Signs and Effects of spasmodic Contractions of the muscular Fibres and Membranes, which in the Beginning of Intermittents appear evidently, but in a more languid manner in the Remission of continual Fevers, are various, according to the Diversity of Patients and Fevers. The following Symptoms, especially in the Beginnings of these Disorders, appear: The Skin, which is highly sensible, and the Organ of Touch, is much constricted, the lax Pores contracted, and the Skin raised into Tubercles, like that of a Goose: The Vessels, which were before tumid, and full of Blood, subside and disappear; the natural Redness is converted into a livid Colour; the turgid State of the whole Body subsides; there is a violent Horripilation, Rigor, and Refrigeration, especially of the Extremities; the Skin, which was before moist, becomes dry and parched; and the Sweat is suppressed. But this Compression and Constriction of the Fibres and Vessels is not only found on the Surface of the Body, but, also, in the internal Parts; as is obvious, about this time especially, in flow and continual Fevers, from the copious Discharge of aqueous limpid Urine, an obstinate Costiveness, a Retention of the Flatulencies, the Impossibility of injecting Clysters, the Anxiety of the Præcordia, the Nausea, and Disposition to vomit, and the intense Pain about the spinal Marrow, and Region of the Loins; all which Symptoms sufficiently evince, that not only the Stomach and Intestines, but, also, the Kidneys, and hepatic Vessels, are spasmodically constricted. Nor is the Substance of the Heart, Arteries, and Muscles, free from such Spasms, which, being rooted in the Spirits, by Consent affect the whole Body; as is evident, from the small, frequent, hard, and weak Pulse, arising from an insufficient and less free Influx of the Spirits. All these Symptoms differ not only in Degree, but, also, with respect to the Time of their Accession; since in Intermittents they appear in the Beginning, whereas, in those of the continual Kind, they appear in the Height and Decline of the Disorder, without observing Time, Tenor, or Proportion. And, certainly, there is no Fever with which the skilful Physician will not observe such Symptoms complicated. These Things were diligently observed by *Helmont*, who, in *Lib. de Febr. Cap. 9.* gives us the following remarkable Observations: The Part in which the febrile Matter is lodged, is first corrugated, which is easily perceptible in the Præcordia; in the affected Part all the Veins are disorder'd and constricted, by a Contraction of their oblique Fibres: Hence arises a rare, hard, and small Pulse, at once the Sign and the Cause of the cold Fit. This corrugating Stricture of the Veins will be easily perceived by every feverish Person, if he carefully adverts to his own Condition; and even a sound Person, by careful Attention, may be sensible of the natural State of the Veins: For when the Scrotum is lax, and hanging down, it is spontaneously corrugated, when the Excrements arrive at the Sphincter of the Anus. It is, therefore, natural for the Veins, and Parts primarily affected, to corrugate themselves; and as almost all Veins have corresponding Arteries, these must, also, in Consequence of their Communication, be seized with Convulsions. Spasms constitute the principal Cause both of the febrile Rigor and Heat; for, by means of the Spasms, the Circulation of the Blood through the Parts of the Body is rendered unequal, so that some Parts are turgid with Blood, whilst others are entirely deprived of it. In some Parts it, also, moves more quickly, and in others more slowly: Hence some Parts are affected with a Horror and Coldness, whilst others are seized with a preternatural Heat: And this unequal Circulation of the Blood, arising from Spasms, constitutes the very Essence of a Fever. None, either of the Antients or Moderns, has more judiciously treated of this, than *Hippocrates*, in his Treatise *de Flatibus*. For, says he, when the lower Belly is obstructed, Flatulencies run through all the Parts of the

the Body [by Flatulencies he means irregular Motions of the Spirits, which produce Spasms, as is obvious from what he had before said], and, being conveyed to the Parts full of Blood, refrigerate them; since, by constricting them, they hinder the Afflux of the Blood. But when those Parts, which are the Source and Fountain of the Blood, are refrigerated, such as the Heart and Liver, an Horror penetrates through the whole Blood; and, when the whole Blood is refrigerated, an Horror must, of course, seize the whole Body. For this Cause, therefore, the Horrors first arise before the Fever; and, according to the Quantity in which the disorderly Spirits have made their Influx, such will the subsequent Rigor be: If many cold animal Spirits have made their Influx, the Rigor will be vehement; but if a smaller Quantity of less cold Spirits have made their Influx, the Rigor will be less violent. These Horrors are, also, accompanied with Tremors, which happen by this means: The Blood, dreading a present Horror, runs through all the Parts of the Body, and flows principally to the warmest Parts: For when the Blood flows rapidly from the Extremities, the Viscera and Flesh tremble; for some Parts of the Body are full of Blood, whilst others contain none at all: And the Parts without Blood cannot rest for Cold, but shake, because depriv'd of Heat: Those Parts, on the contrary, which are full of Blood, tremble, and are seized with Inflammations, in Consequence of the Redundance of the Blood. This Doctrine he confirms in *Lib. 2. de Morbis, Sect. 5.* The Blood being condensed, the Veins are contracted, and, in their Contraction, contract the Body, and excite a Tremor. If the Blood is but little condensed, the Symptom produced is only called a Rigor; but if it is greatly condensed, a Horror is excited, which greatly afflicts the Patient. That a greater or less Fever is necessarily produced after the Horror, is owing to this: When the Blood, by any Force, (that is, an increased Motion of the Heart and Arteries) becomes warm, and again resumes its own Nature, that is, exchanges a cold for a hot State, the Phlegm and Bile mixed with the Blood, by the violent Motion, also, become warm, and even much hotter than the Blood: When these Fluids are, therefore, warmed after the Rigor, a Fever must succeed the Heat of the Blood. In this Passage *Hippocrates*, from mechanical Principles, and the Laws of Motion, so accurately describes the Progress and Generation of these Fevers, that we may justly doubt whether the Moderns can give a more distinct Account of them.

Nor is the Doctrine of *Erasistratus* very different from this of *Hippocrates*: For that Physician, as *Celsus*, in *Lib. 1.* observes, was of Opinion, that if the Blood was conveyed into the Veins accommodated to the Spirits, that is, into the Arteries, and excite an Inflammation, which the *Greeks* call *Phlegmone*, that Inflammation excites such a febrile Commotion as is perceived in a Fever: And, afterwards, when, mentioning *Erasistratus*, he tells us, that he affirmed, that a Fever was produced by a Transfusion of the Blood into the Arteries, in consequence of its Redundance. By these Passages, the Inequality of the Circulation of the Blood, in all febrile Commotions, is excellently described: For the Rigor which generally precedes the febrile Heat, is a Kind of Spasm, by which the capillary Vessels, being obstructed, hinder the free Circulation and Return of the Blood through the Arteries to the Heart: Hence the Blood, regurgitating to the Arteries and Left Ventricle of the Heart, and pressing upon them by its Weight, invites a freer Influx of the Spirits, and increases the Pulse. Hence *Hippocrates*, in *Lib. de Flatibus*, informs us, that the Blood, when warm, and forcibly propelled, cannot pass through a narrow way (the Arteries) with Celerity, because many Things hinder and obstruct its Motion: By these means, the Pulsations of the Arteries are produced, and in this manner Fevers and Pains are excited.

From what has been said, it is sufficiently obvious, that, in Fevers, the Cold which is principally perceived towards the Extremities, is owing to the Defect of a sufficient Influx of Blood, and a languid intestine Motion of that Fluid; whereas the succeeding febrile Heat depends upon an increased intestine Motion of the Fluids.

But as the Effence of a Fever consists in an unequal Circulation of the Blood, and the Cold, Horror, Heat, and other Symptoms depending upon it; we shall, having already considered the Origin of the Refrigeration, now investigate the Source and Causes of the febrile Heat. The various Opinions of Authors, concerning this Phenomenon, are found in *Frid. Hoffmanni Dissertat. de Caloris & naturalis & præternaturalis Causis.*

It is an usual Question, among Physicians, Whether the Violence of the febrile Heat depends on an increased Circulation of the Blood. *Borelli*, in *Tr. de Motu animal.* seems to have been the first who maintained this Opinion: For, says he, the most proper Affection and Characteristic of a Fever is, an increased Pulse, and a violent Commotion of the Heart and Ar-

teries succeeded by a febrile Heat. This is not only universally agreed upon, but, also, confirm'd by Reason and Experience; because, upon a violent Commotion and Concussion of the Heart, there soon after succeeds a new and preternatural Heat of the whole Body, as is obvious in Anger, and violent Commotions of the Body. In like manner, when such a Motion of the Heart is removed, that is, when its Action is diminished, and rendered slower, a Tepidity, Rigor, and Coldness, succeed; as it happens in the Colds and Rigors of Quartan Fevers. He afterwards, in the same Work, tells us, that, by the vehement and quick Pulsation of the Heart, the Blood, which is return'd during the Rest of the Heart, being poured from the *Vena Cava*, must be impelled into the Arteries, as far as the minutest Capillaries, by the same brisk Motion with which the Heart is contracted; as is obvious, from the Laws of the Circulation. It is, also, certain, from the Evidence of Sense, that, by a violent and brisk Circulation of the Blood, a Fervor and Heat, which did not before exist, are excited through the whole Body; the Origin of which is not, in my Opinion, to be deduced from Motion, considered as Motion, but, rather, from the Nature of the Blood itself, which contains a Spirit, or Oil, or, rather, igneous Particles, sheathed up; which, when dissolved, and disengaged from their Fetters, in such a manner as to exert their Motion, excite a sensible Heat.

Next, therefore, *Borelli* deduces the Heat of the Blood from an increased intestine Motion of its subtil and sulphureous Parts; for, by the Consent of all modern Philosophers, Heat is nothing but an highly rapid Motion of sulphureous Parts: Nor is it to be doubted but this hot intestine Commotion of the Parts of the Blood is increased, by an accelerated Circulation, which is discovered by the Vehemence, the Frequency, and the Fullness of the Pulse: For when the Pulse is frequent, vehement, and full, the Blood must necessarily be moved briskly through the Vessels of the Body, and the Heat be sensibly increased. Nor is it to be doubted, that not only in a sound State, by an increased Vehemence and Largeness of the Pulse, in Consequence of a violent Motion of the Body, or Commotion of Mind, the Circulation of the Blood, and, consequently, the Heat is increased, but, also, in an unsound State, and even in Fevers, especially those of the intermittent, tertian, and continual Kind, as, also, those of the burning Kind, and the *Synocha*, the same Species of Pulse must produce a brisker Circulation, and, consequently, an increased Heat of the Blood. But this does not happen universally; nor do I assert, that where-ever there is a preternatural Heat in the Blood, there its Circulation must be increased: For an increased Circulation is not the only Cause of the hot intestine Motion of the Parts of the Blood, since various important Arguments convince me, that several other Causes may concur to throw the minute Particles of the Blood into a violent vertical Motion, even when its Circulation is slow and languid: For it is certain, that not only in malignant, but, also, in several other Fevers, there is a preternatural and intense Heat, where the Pulse is neither vehement, strong, nor large; but only quick, or frequent, small, and even weak; which Species of Pulse by no means discovers a quick Circulation of the Blood through the Heart: Besides, the inflammatory Stagnations of Blood in the Lungs, and other Viscera, which are accompanied with an internal uneasy Heat, a Thirst and Refrigeration of the Extremities, sufficiently evince that all excessive Heat does not proceed from an increased Circulation of the Blood: And, certainly, nothing is more observable in Practice, than that an intolerable Heat preys upon the internal Parts of the Body, when the external Parts are obstructed, contracted, dry, and parched; and that, on the contrary, that Heat is less troublesome, which seizes only the Surface of the Body, or tends towards the external Parts; since this latter Species of Heat indicates a free Circulation of the Blood through the Surface of the Body, whereas the former Species discovers an obstructed or retarded Motion of the Blood through the internal Parts: So that, in Practice, this Difference is to be perpetually observed, that, in an internal Heat, the Danger is always great; whereas, when the Heat is external, there are greater Hopes of the Patient's Recovery.

Besides, it is, also, confirmed by Experience, that all such Things as render the Blood fluid, and invite its Motion and Circulation to the external Parts, so that a gentle Sweat may succeed, which happens under a full and quick Pulse, which is, a Proof of the increased Circulation of the Blood, instantaneously extinguish the most uneasy Heat; so that the Physician acts a judicious Part, who, a few Hours before the Paroxysm, disposes the Body to sweat; by which means, the succeeding Paroxysm is always rendered more mild. It, therefore, seems consentaneous to Truth, that, under the intestine Commotion of the Fluids, many Effluvia, of an igneous Nature, are excited, that is, put in a violent Motion, which, if they can be freely discharg'd through the Emunctories of the Body, greatly lessen the Cause

of the Heat. But if these igneous Effluvia remain in the Habit, which happens by a Diminution of the Circulation, and an Obstruction of Perspiration, they must, by returning into the Blood, redouble, and greatly increase, the Heat: For we find, that the Heat excited on the Surface of the Body, proceeds more from the reflected intestine Motion of the subtil Parts, than from the Circulation of the Blood. It is, therefore, certain, that the Essence of Heat consists in an highly quick Motion of sulphureous Parts; and that this Heat becomes violent under every progressive Motion, by an increased Impulse and Attrition on the Vessels and Fibres of the solid Parts: But it by no means follows, that, where the Heat is increased, this should always happen by an increased Circulation, since such an Heat often proceeds from a Retention of the hot Exhalations, and their fresh Repercussions on the same Object; as is sufficiently obvious, in violent Inflammations, and hectic Heats.

But they who derive the Origin of febrile Heat from an increased Circulation of the Blood, build their Hypotheses on this Foundation, that a quick Pulse, which is the pathognomic Sign, and inseparable Companion of a Fever, is an infallible Proof of an increased Circulation of the Blood; and that there is a great Difference between a quick and a frequent Pulse, which are not to be confounded by Practitioners, since the latter is rather found in a natural State, and in young Persons, upon an increased Agitation, either of Body or Mind, upon drinking Wine, as, also, in a Palpitation of the Heart, and an Asthma; and, consequently, cannot be the genuine Sign of a Fever; whereas a quick Pulse is never absent from a Fever.

This Doctrine I have investigated with the more Accuracy, not only that we might be the more certain, with respect to the Origin of febrile Heat; but, also, that, knowing the Nature of the Pulses exactly, we might be able to form a Judgment, with respect to a Controversy long agitated among celebrated Physicians, Whether a frequent, rather than a quick Pulse, is the essential Mark of a febrile Commotion. See PULSUS.

Having already treated of the Causes of the Horror, Rigor, and Cold, which are always observed in Fevers, and generally precede them; having, also, explained the Nature and Origin of febrile Heat; and demonstrated the Reciprocation of two Kinds of Motions in Fevers, one of which tends from the external Parts to the Centre, and the other from the Centre to the external Parts; we now come briefly to inquire, whether these two Motions depend upon merely physical, or on moral in Conjunction with physical Causes; as, also, what End they answer, and for what Purposes they are destined. In order to answer the first Part of this Question, it is to be observed, that the Mind, though incorporeal, has, nevertheless, in thinking and reasoning, a powerful Influence on the vital Principle, or the Motion of the animal Spirits, which it either increases, diminishes, or variously determines. As this was never denied by any Person who knew the Powers of the Passions and Imagination, and in what manner they change not only the Motion and Crasis of the Fluids, but, also, the Configuration of the Solids; so it is not to be doubted, but a certain febrile Commotion may be excited by Causes merely of an intentional and moral Nature. But it is principally to be determined whether a Fever is not most frequently produced by Causes merely physical, acting without any Morality, and without any spontaneous Direction of such an increased febrile Motion. The first who asserted moral intentional Causes which tend to a certain End, and which are only on the Presentation of a certain Object, received into the internal Agent, or *Archæus*, was *Helmont*, in *Lib. de Morborum Ortu & Febribus*; where he preposterously attempts to reduce the physical Causes of Diseases to the Class of moral Causes. But I was always of Opinion, that where known Causes, and Explications by sensible, obvious, and physical Matters, are or can be found, and where Phenomena can be accounted for from the Properties of Bodies, we are never to have recourse to unknown or incorporeal Qualities in them; for it is to be observed, that the Antients carefully distinguished the Effects of Nature from the Operations of the Mind; for they never call the Mind the *Curer of Diseases*, which, however, they affirm concerning Nature.

Among the Antients, Nature was said to be the Cause and Principle of all the Motions of the Body: But they called the Mind the *Source and Principle of Knowledge and Perception*: Whereas Nature is, by *Hippocrates*, pronounced, absolutely without Knowledge and Intelligence: With respect to this, there is a memorable Passage in *Cælius Aurelianus, Lib. 1. de Passibus acutis*, in which he mentions *Asclepiades*, who called the Soul *A Collection of the Senses*; and affirmed, that in the human Body, all things happened necessarily; and every Phenomenon had its respective Cause; that Nature was no more than the Body, or its Motion; and that she was capable not only of being beneficial, but, also, of being injurious; for whether the Soul, which in Men is the Principle of Determination, and

in Brutes the Source of voluntary Motion, is only sensitive, or at once sensitive and rational, yet it can perceive nothing without Ideas, that is, without Motions impressed from external Objects: But these Motions are only received by various Sensories, destined for that End. Where, therefore, the various Sensories are defective, there, also, the Perception and Direction of the Motions are defective; for Touch is absolutely insufficient for accounting for, and understanding, the Nature, Figure, Motion, noxious Qualities, and Force of material morbid Causes: Hence, also, it is easily understood, that in Diseases the particular Direction of the Motions corresponding to the Nature of the morbid Cause can by no means be received by the Soul.

It is indeed true, that Nature is highly observant of Number, Order, Time, and Place, as is obvious in the Formation, Nutrition, and Conformation of the Body, the Cure of Diseases, and the carrying on of the Excretions. But this happens not by any Intelligence of the Things with which she acts, and an arbitrary Power of performing particular Motions, or of directing them to a particular End, of which she is entirely ignorant: But rather those Effects directed to a certain End, are produced alone, by mechanic Laws, and the Influence of Bodies acting and re-acting on each other, under a certain Measure, Degree, and Proportion; which is obvious from this, that these natural Motions may be at Pleasure suspended, increased, or diminished, by mere corporeal Actions. Besides, we have a manifest Instance of a regular and organic Structure in Vegetables, the Fabric of which expressing great Order and Art, does not depend upon any intelligent Faculty, but on a merely necessary Efficacy of Motion, though not without Order. But, without insisting any longer on this, we shall only observe, that it is of great Importance in Medicine, not to confound those Effects of Diseases, which flow from merely necessary Causes, with those which have, in Conjunction with them; a certain free and immaterial Principle of Action, as is obvious in the Passions of the Mind, where there is a great Difference between the Mind and the Disease, since the Disease is only called that, to the Production of which merely corporeal Causes concur; whilst a Passion of the Mind is said to be produced, when the Mind labours under any Disorder, though it often produces a morbid Effect of the Body.

From what has been said we conclude, that a Fever is not to be called *salutary*, because Nature knows the internal Matter to be peccant, and for that Reason endeavours at certain Times and Places to eliminate it from the Body, according to the different Quality of its Peccancy, in a certain Degree and Proportion. This may be granted, with respect to the Mind, when put in a Passion, upon the Presentation of some external Object of the disagreeable Kind; but it cannot be applied to Motions merely mechanical: For as a Passion of the Mind is different from a Disease, so, also, Anger is different from a Fever; but every Fever does not suppose an immaterial and ideal Act or Perception of the Mind. A Fever cannot, therefore, be properly called a salutary and useful Thing, excited for a good End, since Nature, and even the sensitive Soul, is absolutely ignorant of the Condition of the morbid Causes, the Ways, Places, and Ends intended by Nature, which are internal. A Fever, therefore, is not, in my Opinion, to be called *A Motion in itself salutary*, neither with respect to its Principle, or efficient Cause, nor with respect to its End or Effect; because it is often hostile, and even fatal, to human Nature; but only because it sometimes, by Accident, produces a salutary Effect. But to illustrate this by an Example: Thus the strong spasmodic Constriction of the Coats of the Stomach, or Intestines, by an Emetic or Purgatives, is not in itself a good and salutary thing, since it is plainly preternatural, and, consequently, morbid, and the Source of violent Symptoms; yet, as it removes the impure, viscid, and corrupted Sordes from these Parts, it does, for that very Reason, produce a salutary Effect. Thus, also, Spasms of the internal Parts, which generally produce spontaneous Hemorrhages, are not of themselves good, because they sometimes excite mortal Hemorrhages; but at other times, when the Blood is redundant, they accidentally produce this Effect in a salutary manner. The same holds true of a Fever, which, considered in itself, can neither be said to be useful nor salutary, since Half of Mankind are destroyed by it: Yet it often produces a salutary Effect, by restoring the impure morbid Body to perfect Health.

We now come to inquire, in a particular manner, in what Patients, and by what means, a Fever proves a salutary Medicine. But we must first of all observe, that the Cause which excites the febrile Commotion in the muscular System, is often not only a Redundance of Blood and Juices, but, also, a Collection of impure excrementitious and viscid Sordes, both in the *Primæ Viæ*, and in the Vessels: Which two Causes generally proceed both from a retarded Circulation of the Blood, and an Infarction and Obstruction of the Emunctories, as generally

generally happens in burning Fevers, a bilious *Synocha*, a continual Tertian, a catarrhus Fever, and others of a like Nature. In order, therefore, to expel the Cause of these Misfortunes, Nature arms herself not by a kind of Free-will, but from a physical Necessity, stimulated by the Action of the hostile and peccant Matter, whilst the spasmodic Motion, not only of the external and membranaceous Parts, but, also, of the Muscles, and especially of the Heart, is increased by a greater Influx of the Spirits; for both a more strong and intense intestine and progressive circulatory Motion are required, that the redundant and peccant Juices, formed under this double and languid Motion, may be eliminated from the Body, after the Obstructions are resolved, and the Humours prepared and disposed for an Evacuation; for the Antients justly observed, that the Cures performed by Nature, were performed, first, by Maturation and Concoction; then, by Discussion and Rarefaction; and, lastly, by Solution and Excretion. See *Hallerius, in Schol. ad Aphor. Hippocrat.*

By Concoction, or Maturation, they understood that of the pathologic Kind, a fitting of the excrementitious Matter for Excretion, just as physiological Concoction is a fitting of the Substance of the Aliments for Nourishment: For as the crude, coarse, partly immoveable Humours, and such as are not fitted to the Pores of the Emunctories, are morbid, these are first to be prepared for an Evacuation, that is, the viscid Matter is to be incised and absterged; that which is thick is to be rendered fluid, the intemperate and acrimonious Humours are to be tempered and corrected; all which were included in Maturation and Concoction among the Antients, who order, that not crude, but concocted Matter, should be expelled from the Body, both by Nature and Art.

But as the Excretion of the peccant Matter is less commodiously carried on, unless the Passages are previously free, and the Emunctories open, hence the Obstructions are to be resolved, and the stagnant Humours, fixed in the capillary and excretory Vessels, are to be resolved and colliquated. After these Ends are obtained, the Excretion of the peccant Matter afterwards succeeds happily.

These are the usual Manners; this the common Method; and this the Order used by Nature, in curing Diseases, or removing morbid Causes from the Body: But she brings about all these Ends by one Instrument, which is Motion.

But the Motion of the Blood is twofold; one, the hot intestine Motion of the sulphureous Parts; the other progressive and circular: Both these Motions are necessary, in order to prepare and, afterwards, eliminate the peccant Matter; for certainly the Circulation of the Blood alone, though intense and brisk, is not sufficient for these Purposes, unless when accompanied with an increased intestine Motion, or an Increase of Heat: And though it cannot be denied, that in Fevers an excessive Heat does Harm to the Body, yet Nature requires both an increased Circulation, and an accelerated, hot, intestine Motion, in order to subdue and remove the febrile Cause; for what more happily dissolves glutinous and viscid Humours than Heat? What is more efficacious or expeditious in removing Obstructions brought on by these Sordes, or in opening the obstructed Emunctories, than hot and fluid Blood? What sooner lessens the Redundance of the Blood and Humours, and renders that which is thick and immoveable, fluid, than Heat? Hence the Antients justly esteemed the febrile Heat necessary to concoct, that is, to incise, attenuate, and prepare the peccant Matter for Evacuation. And that moderate Heat is in itself highly beneficial to the Body, is sufficiently obvious from this, that Men of hot Constitutions, young Persons, and such as use Exercise, and drink warm Liquors, are rarely subject to chronical Disorders, and Obstructions of the Viscera. And this is, also, the Reason why all intermittent Fevers, especially those of the Quartan kind, as *Hippocrates* observes, if they seize in the Summer, are far shorter, and more easily cured, than if they happen in the Autumn and Winter; for the Summer Intermittents often cease spontaneously, in the Month of June, when the Air is most intensely hot. Besides the greater Heat is perceived in the febrile Paroxysms, the sooner the Fever is terminated; and, on the contrary, the more languid and slow the Heat is, the more fixed and radicated is the Cause of the Disorder. In order to destroy this Doctrine, it may be replied, that such Effects are to be ascribed not so much to Heat, as to an increased Circulation of the Blood, which is necessarily productive of Heat. But though an increased Circulation of the Blood cannot happen without an Increase of Heat, yet, as we have already observed, every Heat in the Body is not produced by an accelerated Circulation; since very often, when the Pulse is languid and frequent, and the Extremities cold, the interior Parts are hot, the Tongue dry and black, and the Thirst insatiable: Besides, as the intestine Motion is absolutely different from the Circulation of the Blood; so, also, the former, in a different manner, contributes to Life: Nor, if the

Circulation alone, and Excretion of the useless Parts, were sufficient for the Purposes of Life, would a certain Temperature, Mixture, and Moderation of the Elements of the Blood, and especially of the Sulphur, which is the Foundation of the intestine Motion, be necessary to the Preservation of Life and Health; the asserting the contrary of which is, however, absurd.

Hence the Antients justly asserted, that Life consisted in Heat; that Nature, by means of Heat, attacked the morbid Causes of Disorders; and that there was no Animal, in the Blood and Juices of which there was not some hot Substance; because, without an hot intestine Motion, there can be no Generation, no Life, nor any vital Motion performed: Nor does it hence follow, that there is no Heat which is not perceptible by the Touch; for the Senses are not the only Test by which Heat is to be judged of. The hot intestine Motion may be said to happen, partly with respect to Cold, and partly with respect to its Effect, especially that of the rarefactive Kind; so that, in order to oppose this Doctrine, it is to no purpose to assert, that Fishes may live without Heat: But Heat is absolutely necessary in Animals, to promote the spirituous Quality of the Humours, to preserve them fluid, to keep the Pores open; and to carry on Nutrition and Excretion. Hence *Galen*, in his *Treatise de Usu Partium, Lib. 14. Cap. 6.* calls Heat the first Instrument of Nature: For the same Reason, Nature, in subduing Diseases, uses a strong and preternatural Heat, as is obvious in Fevers; for, by means of Heat, the peccant Matter is not only subdued and attenuated, but, also, rendered fit for Excretion; for though it cannot be denied, that an intense Heat is prejudicial to the Body, by obstructing the Evacuations, especially that by Sweat; yet, if we carefully examine the Matter, we shall find, that Nature does not so much cure Diseases by Evacuation, as by a Dissolution and Rarefaction of the Humours. And if the Matter is to be evacuated, Nature disposes it for Excretion, concocts it, and opens the Pores, which Ends are commodiously answered by Heat; since a Cure consists not so much in the Evacuation, as in the Correction of the morbid Cause: Hence, in my Opinion, those are greatly mistaken, who imagine, that the Matter which, after the Height of the Disease, is evacuated on the critical Days, is the morbid Cause. It is not, however, to be doubted, but the Evacuations in Fevers, carried on in due Quantities, and at proper Times, are excellent Signs that the Patient recovers; and that Nature is superior to the morbid Cause; because they evince, that every Thing is calm in the Body; that a free and equable Circulation of the Blood is restored; and that the spasmodic Contractions of the Parts have ceased: Whence the Evacuations not only of the morbid Matter, but, also, of other excrementitious Humours, generated under the febrile Commotion, are freely carried on: Hence such critical Evacuations are salutary, and, consequently, not to be checked: For it is to be observed, that the morbid Causes of Disorders act principally by Spasms; and, under Spasms, the Circulation of the Blood, and the Excretions, are disturbed. Hence, if the Evacuations are duly carried on, it is a good Sign, that the morbid Cause is subdued; that the morbid Motions are allayed; and that every Thing is again returning to a natural State: For as soon as the Evacuations of the critical, but not of the symptomatic, Kind begin to be duly carried on, in consequence of a proper Circulation of the Blood, the Force of the Disease forthwith remits.

We, therefore, affirm, that a Fever is salutary, because, by the hot intestine Motion, and an increased Impulse of the Blood through all the Vessels, the viscid Crudities are attenuated and dissolved; the Obstructions of the Glands removed; the stagnant Humours rendered fluid; the corrupted and redundant Juices evacuated, and the excessive Humidity of the Habit dissipated: So that a Fever is often an excellent depurating and evacuating Remedy. This Doctrine is confirmed, not only by Authorities, but, also, by Experience. Thus *Hippocrates*, in *Aph. 70. Sect. 5.* informs us, that they who are seized with a Quartan Fever, are not subject to Convulsions; and that they who are afflicted with Convulsions, are freed from their Disorder, upon the Approach of a Quartan; for no Fevers are more salutary than those of the Tertian and Quartan kind, as is universally known: For, if these Fevers are periodical, and not too long continued; or if they happen before the Strength is consumed, or Old-age comes on, they excellently deplete the Blood, powerfully remove Obstructions about the Veins of the Mesentery, and resolve and carry off the coagulated, thick, and viscid Humours, which are the Cause of the Spasms: They, also, dry the too moist Nerves, and corroborate such as are paralytic and lax: Hence arises the Opinion of the common People, that a Quartan produces Strength; and that the Person who is seized with a Tertian or Quartan, will for some Years live free from all Diseases. This Doctrine is, also, confirmed by *Aph. 26. of Sect. 2.* where we are told, that "It is better a Fever should succeed Convulsions, than Convul-

"*fiens a Fever.*" But it is here to be observed, that the Convulsions here meant must arise from a Redundance, and not from a peccant Quality of the Juices; because both the intestine Motion, and the Circulation of the Blood, attenuates and discusses the thick, viscid, and compact Matter lodged in the Brain, Nerves, and *Prima Via*. But *Hallerius*, in his Commentary on the same Aphorism, justly observes, that every Fever does not put an End to Convulsions, but only one of the moderate Kind, which is neither too weak, nor so violent and malignant as to impair the Strength. *Hippocrates*, also, tells us, in *Epidem. Lib. 6.* that a Quartan cures Melancholy, the Epilepsy, the Leprosy, and the Itch: For these terrible Disorders arise almost from the same Cause which produces a Quartan; that is, a Stagnation of impure and viscid Blood, about the abdominal Viscera; and an Infarction and Induration of the Spleen, Liver, and Pancreas. But, as in a Quartan, a due febrile Motion dissolves obstinate and old Obstructions, these violent Disorders are by this means removed. *Langius*, in *Epist. 16. Lib. 1.* informs us, that upon the Crisis of Fevers, especially those of the Quartan kind, he has often seen the Itch spontaneously removed, without the Assistance of any Medicines. As for an Epilepsy, *Hippocrates*, in *Epidem. Lib. 5. T. 6.* informs us, that "Persons labouring under a Quartan are not seized with an Epilepsy; or if they have formerly been subject to it, they are freed from it by a succeeding Quartan." And this Assertion is expressly confirm'd in *Secl. 5. Aph. 20.* where we are told, that those afflicted with a Quartan are not easily subject to Convulsions; and, if they have formerly laboured under them, they are freed from them by a supervening Quartan.

Nor is it a difficult Task to assign a Reason for this; since it is universally agreed upon, that a chronical Epilepsy is produced by Obstructions, and the partly viscid Impurities arising thence, and which Nature, by an universal Spasm principally arising in the Meninges of the Brain, and extending itself through the whole muscular System, endeavours to remove. But such Obstructions, and viscid Humours, hindering the free Circulation of the Blood through the Vessels of the Head, are resolved, discussed, and eliminated, by the Heat and Horror of a Quartan: For certainly, by such a strong Motion of the Fibres, and such an increased Impetus of the Blood, as is observable in febrile Paroxysms, Obstructions are more effectually removed, and stagnant Humours more thoroughly discussed, than by any other Remedy, how valuable soever, whether of the sudorific, or of the aperient and evacuating Kind. It is, also, owing to this, that those who have formerly laboured under a Quartan, are not easily seized with an Epilepsy; because a regular Quartan, by resolving Obstructions, frees the Body from those Causes which produce an Epilepsy.

Besides, a gentle Apoplexy is discussed by a Fever: Thus *Hippocrates*, in *Aph. 5. Secl. 5.* informs us, that if drunken Persons are suddenly depriv'd of their Voice, they die convulsive, unless they are forthwith seiz'd with a Fever. In Drunkenness, when the Body is less perspirable, especially in consequence of a large Quantity of generous Wine, it may happen, that the Head may be filled with too large a Quantity of Blood, which too much distending the Arteries, and Veins of the Plexus Choroideus, intercepts the Passage of the Spirits: But in a Fever, the accelerated Circulation of the Blood not only opens the obstructed Vessels of the Brain, but, also, powerfully discusses the Matter, whether aqueous or viscid, which is stagnant in its Pores.

Hippocrates, also, pronounces a Fever a peculiar Remedy in hypochondriac Disorders, since in *Aph. 40. Secl. 6.* he informs us, that "A Pain of the Hypochondria, without an Inflammation, but arising from Obstructions, Flatulencies, or a cold unequal Temperament, is removed by a supervening Fever." It is perpetually inculcated by *Hippocrates*, that such Disorders as proceed from Obstructions, a viscid Sordes, or Infarctions of the Viscera, are commodiously terminated by a Fever; because in a Fever, the increased intestine, and progressive Motion of the Blood, attenuates, incides, and resolves the immoveable Matter, and disposes and prepares that which is fixed and stagnant, to an Evacuation. I have often observed in Practice, that hysteric Symptoms and Spasms in the abdominal Region of old Women, after a Suppression of the Menes, have been removed by a Fever, accompanied with an effectual Heat and Horror. And if we carefully consider the Thing, we shall find that the spasmodic and febrile Motions, so familiar to hypochondriac Patients, especially in the Autumn and Winter, are useful in carrying off, through the Emunctories of the Body, the excrementitious Sordes, lodged in the Mass of Blood and Humours.

But that a Fever is the salutary Instrument of Nature, by which she frees herself from present Danger, is obvious from this, that the Redundance of Serum, whether pure or tainted with excrementitious, acrid, or bilious Salts, by which Nature is oppressed, is by a strong febrile Motion, excited in the mus-

cular System, commodiously carried through proper Emunctories; as is obvious in catarrhus, rheumatic, and arthritic Fevers; as, also, in an Erysipelas, the Measles, Small-pox, and Purple Fever, where there is always a certain febrile Commotion; and a subsequent salutary and critical Evacuation. Besides nothing is more common than for a Fever of the inflammatory Kind to succeed an Extravasation and Stagnation of the Humours; and this Fever is not, in my Opinion, excited by the arbitrary Determination of the Mind, in order to remove the stagnant Humours tending to Corruption; but it is rather a mechanical and necessary Effect, whilst the peccant Matter, not only by its Redundance, but, also, by its irritating and hostile Quality, stimulates the Fluid which actuates the Membranes and Muscles to an exorbitant Motion, which, being afterwards increased, though preternatural, is nevertheless, if duly managed, of singular Service in discussing and resolving the extravasated Blood: Hence it is obvious, that *Hippocrates*, and the Antients, were in the right, when they asserted, that Nature was the best Curer of Diseases, that is, by an increased and intense Motion, which is of the febrile Kind: Hence, also, it is obvious, that *Asclepiades*, according to *Celsus*, in *Lib. 3. Cap. 4. de diversis Curationum Generibus*, was in the right, when he said, that, in the Cure of Diseases, he used the Fever as a Remedy. *Sydenham*, also, affirms, that a Fever is the Instrument by which Nature separates the impure from the pure Parts.

From what has been said, we may deduce the following Considerations, very useful in Practice: First, As a Fever is so beneficial to the Body, Physicians ought not in the Beginning to suppress febrile Commotions, because such a Practice, in continual and acute Fevers, such as the Measles and Small-pox, an Erysipelas and the Gout, induces not only immediate Danger, but, also, sometimes Death; and intermittent Fevers, when too soon suppressed, are found from Experience to terminate in violent Obstructions of the Viscera, and slow Fevers resulting thence, an Hectic, a Dropsy, and spasmodic and convulsive Disorders: The whole Skill of a Physician seems to consist in distinguishing those febrile Motions of Nature which may produce a good Effect, and be esteemed salutary and critical, from those which are prejudicial, symptomatic, and pernicious. The former are not to be immediately suppressed; but, if languid, promoted; and, if excessive, moderated: But they ought never to be totally checked, nor too much heightened; since the best Intention the Physician can pursue, is to attack the morbid Cause of these hot Commotions, and lessen it gradually till it is quite removed. It is, therefore, imprudent to abuse the *Peruvian Bark*, which, if rightly used, is a divine Medicine, as, also, Opiates, and Substances possessed of a styptic Quality, in the Cure of Intermittents: Those Physicians, therefore, err, who judging a Fever to be a bad Thing, whereas it is the Effect of a good Cause, immediately endeavour to suppress it; in which they are as faulty as those who immediately suppress the Menes, or Hæmorrhoids, by Astringents; a Practice generally productive of the worst of Symptoms. A Physician is, therefore, never to attempt the Suppression of a Fever; but to try the Removal of its Cause: And when that cannot be commodiously done, he is to moderate the Fever; which, also, tends to prepare and expel the morbid Cause.

From what has been said, 'tis obvious, that all Aliments and Medicines, which refrigerate too much, coagulate the Humours, and which, by their Viscidity, their Acidity, or their anodyne Quality, retard the Motion of the Blood, are so far from being useful in the Cure of Fevers, that they are rather injurious. The Physician ought rather to render the Humours fluid, and promote the Circulation of the Blood through all the Emunctories. Hence *Helmont*, in *Tr. de Febris*, *Cap. 9.* justly affirms, that Diaphoretics are the only specific Remedies for Fevers. Nor are Venesections, Evacuations, and Alteratives, any farther conducive to the Cure of Fevers, than as they promote a free Circulation and Transpiration; for if it is true, that Fevers generally arise from any obstructed Transpiration, and a diminished Circulation of the Blood, they must of course be cured by an Increase of the Circulation and Transpiration. It is, also, obvious from what has been said, that Medicines are most commodiously exhibited when Nature is in a Commotion; for, by this means, she the more easily produces the designed Effects. With respect to this, *Helmont*, in *Lib. de Febris*, *Cap. 9.* tells us, that, if on the Day of the Access, and at a proper time, Medicines are exhibited, Fevers are often removed by one Dose. The proper time is, about an Hour before the Paroxysm, on an empty Stomach, that thus the Medicine may be sufficiently actuated; for if the Medicine is exhibited on the Days of Intermission, or long after the Paroxysm is begun, it is used in vain, whilst it is not assisted by Nature, either in actuating, or expelling, the Matter, which is the occasional Cause of the Disorder. Besides, at such times, the Medicine

is rather hurtful than beneficial, because it proves a Stimulus to Nature, when she is inclined to Rest.

From what has been said, we, also, learn, that it is a bad Sign, when a violent Cause, or Obstruction, is present, if the Fever is slow or slight, or if the febrile Motion does not correspond to the Cause. Hence *Hippocrates*, in *Aphor.* 40. *Secl.* 4. justly affirms, that it is never a good Sign, when the Body is sometimes hot, and sometimes cold; for this is a Proof, that the Disorder will be long protracted. Hence, also, the Reason is obvious, why in weak Bodies, and those in which the Motions of the Humours towards the external Parts are not sufficiently free, there are no genuine Evacuations, but the Patient is afflicted with Translations and Abscesses, not to be cured without great Difficulty. We, also, observe in Practice, that those Fevers are far worse, and of a more malignant Nature, which do not discover themselves by Heat, a quick Pulse, and Thirst, than those which appear with these Symptoms, tho' excessive. I have, also, observed, that in slow Fevers, the Suppression of an hot Fever with Horror is an excellent Sign of Recovery.

From what has been said, we conclude with *Hippocrates*, in *Epidem. Lib. 2.* that 'tis sometimes the Business of a Physician to excite Fevers; for, says he, in *Epidem.* that which Nature does spontaneously, ought to be done by the Art of the Physician. But in *Aph.* 21. *Secl.* 5. he expressly advises the exciting of such a Fever; "For, says he, sometimes in a Tetanus without an Ulcer, in young and fleshy Persons, a pouring on of cold Water recalls the Heat, and that Heat resolves the Distemper." He, also, confirms this Method of Cure in *Lib. 3. de Morb.* in the following manner: "Pour a large Quantity of cold Water on the Patient; then cover him with warm and thin Cloths, but let Fire be removed; and this Method is to be used both in a Tetanus, and in an Emprosphotonus." For when cold Water is poured upon a young Body in the Middle of the Summer, the Pores and Fibres are seized with a Rigor and Horror, and the Blood is repelled to the internal Parts; and thus, stimulating the Muscles of the Heart, it excites violent Motions, which are highly beneficial in removing the Causes of chronical Disorders; for, as *Hippocrates* in *Lib. 2. de Morb. Secl.* 5. affirms, a greater or slighter Fever always succeeds a Rigor. Without finding Fault with this Method, we shall only observe, that it is far safer by powerful Medicines, which convey Motion to the Blood and Humours, to remove the Causes of chronical Disorders. Hence the Reason is obvious, why Decoctions of the Woods, mineral Waters, Mercurials, Sudorifics, and Diaphoretics, are of such singular Efficacy in removing obstinate chronical Disorders.

Besides, 'tis certain from Experience and Observation, that by violent Anger the most obstinate chronical Disorders have sometimes been removed; for which no other Reason can be assigned, than that in Anger, as well as in a Fever, the Blood and Humours are moved with a kind of preternatural Impetus, as is obvious from the Vehemence and Quickness of the Pulse, the Heat of the Body, and the quick Respiration. Thus *Variola*, in *Obs. Med. 4. Lib. 2.* informs us, that a certain Man was cured of a Quartan, which would yield to no Medicines, by being put into a violent Passion by his Friends. The same Author, also, informs us, that a Relation of his own, after being convulsed for about six Years, in such a manner; that he could not work, his Hams being contracted, was by a sudden Passion, whilst he endeavoured to beat a Servant, cured of his Misfortune, because, in that Attempt, his Body was so violently exagitated, that the Nerves of his Legs being relaxed, and his Hams softened, he was not only able to walk and stand straight, but, also, remain'd free from his Disorder during the Remainder of his Life. Besides, says the same Author, I knew a Man cured of a Palsy of one Side of the Body, which would yield to no Medicines, by the sole Influence of Dread and Anger exagitating the Body. And in *Paulin's Fascicul. Obs. ad Acad. Nat. Curios. Dec. 2. An. 6. annex.* we have an Instance of the total Cure of a Palsy produced by Anger alone. *Frederic Hoffman.*

PYRGITÆ, πυργίται, from πυργός, a Tower. Sparrows, thus called, because they usually build their Nests; and inhabit Towers.

PYRIA, πυρία, or πυρίν. Any kind of Heat applied to the Body by way of Fomentation; or, a Fomentation in general.

PYRIASTES. The same as **PROTOGALA**.

PYRIATERION, πυριατήριον. A Laconic Bath, Bagnio, or Sweating-room.

PYRIATOS. A heated Brick.

PYRICAUSTA, πυρίκαυστα. Burns, or Scalds.

PYRIEPHTHOS. The same as **PROTOGALA**.

PYRIFORMIS MUSCULUS. This is a small oblong Muscle, of the Figure of a flat Pear, or Pyramid, from whence it has its Name. It is situated almost transversely between the

Os Sacrum and Isthium, being covered and hid, by the first two *Glutæi*.

It is fixed to the inferior lateral Part of the Os Sacrum, by fleshy Fibres, and to the neighbouring Part of the anterior, or concave Side, of that Bone, by three Digitations lying between the anterior Holes. It is, likewise, fixed by a small Insertion to the *Ligamentum Sacro-sciaticum*, and Edge of the great Sinus of the Os Ilium.

From thence it runs transversely towards the Joint of the Hip, its Fibres contracting in Breadth, and end, in a small Tendon, which is inserted in the Middle of the internal Labium of the upper Edge of the great Trochanter, by two or three Branches. The upper Part of this Tendon receives several Fibres from the *Glutæus Medius*; and its lower Part is united to the *Gemellus Superior*, and Tendon of the *Obturator Internus*.

Sometimes there are two *Pyriformes* separated by the *Nervus Sciaticus*.

See the Uses of this Muscle under the Article **QUADRATUS**. *Winslow's Anat.*

PYRIMACHUS, or **PYROMACHUS**, πυρίμαχος. Antimony reduced to a stony Hardness, Copper fused with Sulphur, and thus rendered hard, is by some thus called.

PYRINE, πυρίν. The Name of a Plaster described by *P. Egineta*.

PYRIPHLEGES, πυρίπληγής. An Epithet for a Person labouring under an excessive febrile Heat.

PYRISTIRION. The same as **PYRETERION**.

PYRITES. *Offic. Boet.* 516. *Fabr.* 29. *Charlt. Foss.* 17. 52. *Aldrov. Mus. Metall.* 570. *Worm.* 39. 129. *Schw.* 388. *Lapis Pyrites.* *Math.* 1381. *Marchasita varia, seu Pyrites.* *Mer. Pin.* 212. *Marchasita.* *Moderni.* **FIRE-STONES.**

It is found in almost all Mines, being the most fruitful Matrix of almost all Metals, Salts, and Sulphurs; for it is not purely a Stone, but seems to be the most fertile of all Minerals. There are great Varieties of it, with respect to Colour, Figure, Mixture with Metals, Stones, and other Fossils; for it enters in various Proportions the Composition of Iron, Lead, Tin, Silver, Copper and Alum, and, also, that of black Flints, Pit-coal, Lime-stones, Chalk-stones, and others. *Dal.*

The *Pyrites* is a kind of Stone, of which Copper is made. The best Sort resembles Copper, and easily emits Sparks of Fire when struck. They burn it in the following manner: They wash it over with Honey, then put it into a gentle Fire of Charcoal, and continue to blow till it becomes red-hot. Others put the Stone, first well washed with Honey, into a great Fire of burning Charcoal; and, when it begins to be red-hot, take it out; and, blowing away the Ashes, wash it over with Honey; and burn it again, till it becomes equally friable in all Parts; for it frequently happens, that the Superficies only is burnt; when it is thus well burnt and dry'd, they lay it aside, to be used as Occasion offers. If it requires Washing, it must be washed in the same manner as *Cadmia*.

The *Pyrites*, whether crude or burnt, is of an heating and absterfivè Quality. It deterges such things as darken the Sight, and concocts and dissolves Hardnesses. Made into a Plaster with Rosin, it represses Excrecences of the Flesh, by somewhat of an heating join'd with an astringent Quality. Some call it, when burnt, as before described, *Diphryges*. *Dioscor.*

PYRIUS PULVIS. Gunpowder. This is made of Charcoal, Brimstone, and Saltpetre, intimately mixed together, in different Proportions, according as the Maker would have it more or less strong.

When a Spark of Fire drops upon this Mixture, it immediately catches the black Oil in the Charcoal, which, in this Case, may be considered as a kind of Tinder: This sets Fire to the Brimstone, and the Brimstone lays hold on the Acid of the Nitre or Saltpetre, which, expanding itself suddenly with great Violence, bursts through, or carries along with it, whatever opposes it.

The following Account is generally given of the Invention of Gunpowder: That it was first discovered by one *Constantine Anelzen*, a Monk of *Fribourg*, and a Chymist; who, having put a Mixture of Charcoal, Saltpetre, and Brimstone, in a Mortar, and covered it with a Stone, it happened to take Fire, and blew up the Stone; which Accident, occasioning him to make farther Reflections and Experiments, gave Rise to this surprising Invention. But others affirm *Bartholdus Schwartz* to be the Discoverer, and that it was first used by the *Venetians* about the Year 1380. during their Wars with the *Genoese*.

But this Account is contradicted by others, who tell us, that in the Year 1343. the *Moors*, being besieged by *Alphonfus*, the Eleventh of that Name, King of *Castile*, defended themselves by shooting off a kind of Iron Mortars, which made a Noise like Thunder: And that, in a Sea-fight between the King of *Tunis* and the *Moorish* King of *Seville*, above four hundred Years ago, those of *Tunis* made use of certain Iron Tuns or Barrels, where-

wherewith they threw Thunder-bolts of Fire. To which may be added what *Du Cange* asserts, that Gunpowder is expressly mentioned in the Register of the Chamber of Accounts in France, as early as the Year 1338.

However, this is certain, that *Roger Bacon*, one of our Countrymen, and a Frier of *Merton College* in *Oxford*, so famous among the Commonalty for the romantic Story of his Brazen-head, was well acquainted with the Nature and Composition of Gunpowder, at least an hundred and fifty Years before *Schwartz* was born; as appears from his Treatise *de Nullitate Magiæ*, published at *Oxford* in 1216. where Mention is made of both in the following exprefs Terms: "You may raise Thunder and Lightning at Pleasure, says that excellent Frier, by only taking Sulphur, Nitre, and Charcoal, which singly have no Effect; but, mixed together, and confined in a close Place, cause a Noise and Explosion, greater than that of a Clap of Thunder."

But there is Reason to believe, that the Force of Gunpowder was known long before, and discovered by some Nations in very early Ages of the World, though not brought to the great Perfection it is in at present: And it is probable, that these People kept it as a Secret, either for their own Defence, or, perhaps, out of a more generous and humane Principle; that is, for Fear of the Mischief it might do Mankind; or 'tis possible, that the Art may have been lost and recovered again at different Periods of Time.

The *Chinese* pretend to have had the Knowledge of Gunpowder long before the *Europeans*; and it seems very probable they had; for we have an Account in History, that *Bacchus* was drove from the Siege of a Town in *India* by Thunder and Lightning: And we farther read of something of the like Nature happening to *Alexander*, in his *Indian Expedition*. Now, if it be considered, that these two Conquerors penetrated at least as far as the Borders of *China*, it will not seem unlikely, that this Thunder and Lightning was the Effect of Gunpowder, and that the *Chinese* were acquainted with it before the Expedition of *Bacchus*; and this seems still more probable, because the *East-Indies* naturally afford vast Quantities of Nitre, or Saltpetre, without any artificial Preparation.

The Fable of *Salmeus* says, that he attempted to imitate the Thunder and Lightning of *Jupiter*; and that *Jupiter*, for his Insolence, killed him with real Lightning. The Conjecture does not seem far-fetched, if we should suppose *Salmeus* was acquainted with the exploding Property of Nitre, and to have play'd Tricks with it, in order to terrify his Subjects, and keep them in Awe; and the Circumstance of his being killed with real Lightning, seems to confirm this; for it is easy to suppose, that *Salmeus*, not thoroughly understanding the Danger of his artificial Lightning, might accidentally destroy himself therewith; and the People, ignorant of the Cause, might attribute it to *Jupiter*.

PYROLA.

The Characters are;

The Leaves are alternate; the Flower is rosaceous, pentapetalous, shaped like a Hat, with a recurvated Pistil, and disposed in a Spike; the Fruit is roundish, striated, umbilicated, quinquecapular, and full of small Seeds.

Boerhaave mentions two Species of *Pyrola*; which are,
1. *Pyrola*; rotundifolia; major. *C. B. P.* 191. *Tourn. Inft.* 256. *Boerb. Ind. A.* 278. *Pyrola*. *Offic.* *J. B.* 3. 94. *Raii Hist.* 2. 1223. *Synop.* 3. 363. *Ger.* 330. *Emac.* 408. *Pyrola nostras vulgaris*. *Park. Theat.* 508. WINTER GREEN.

The Leaves of Winter Green do somewhat resemble those of the Pear-tree, but are hardly so large; they grow on Foot-stalks, two or three Inches long, smooth, and of a firm Texture. The Stalks grow to be about a Foot high, bearing on their Tops several small five-leaved white Flowers, having a few Stamina in the Middle, growing one above another in a loose Spike, which are succeeded by cornered Seed-vessels full of very small Seed; the Root is small, slender, and fibrous. It grows in Woods, in divers Parts of *England*, both north and west, and flowers in *July*.

The Leaves, which are the only Part used, and that not often, are cooling and drying, and a good Vulnerary, both for inward and outward Wounds and Hæmorrhages, Ulcers in the Kidneys or Bladder, as, also, against making bloody Water, and the Excess of the Catamenia. *Miller's Bot. Off.*

2. *Pyrola*; rotundifolia; minor. *C. B. P.* 191. *Boerb. Ind. alt. Plant.*

Besides the foregoing Species of *Pyrola*, *Dale* mentions the following;

Pyrola altera. *Offic.* *Pyrola folio mucronato serrato*. *C. B. P.* 181. *Raii Synop.* 3. 363. *Tourn. Inft.* 256. *Pyrola folio*

* *Galen*, on this Place, supposes, that by *πυρρός*, here *Hippocrates* is to be understood of all the Colours between pale and yellow, which have any Mixture of White or Red; such as the *σφοδρὸν λευκόν*, or *ξανθὸν λευκόν*; since the Sands, or other Substances which subside in Urine, are varied, according to the Colour or Quality of the Blood.

serrato. *J. B.* 3. 536. *Raii Hist.* 2. 1233. *Pyrola tenerior*. *Park. Theat.* 509. *Pyrola secunda tenerior Clusii*. *Ger. Emac.* 408. SMALLER WINTER GREEN.

It is found in Woods, but it is somewhat scarce, and flowers in *June*. The Herb, which is of Use in Medicine, agrees in Virtues with the *Pyrola*; rotundifolia; major. *Dale*.

PYRONOMIA. The Art of regulating Fire in chymical Operations.

PYROPHAGUS. A Person who has the Art of swallowing Fire; a Trick very frequent among Mountebanks.

PYROPUS. A Ruby, or Carbuncle. It has some other Significations, which are foreign to Medicine.

PYROS, *πυρρός*. Wheat.

PYROSIS, *πύρωσις*, from *πῦρ*, Fire. An intense Redness and Heat in the Face, such as happens to Persons travelling in excessive hot Weather.

PYROTECHNIA, from *πῦρ*, Fire, and *τέχνη*, Art. Chymistry.

PYROTICOS, *πυροτικός*. Caustic.

PYRRHOCORAX, from *πυρρός*, red, and *κόραξ*, a Crow. The red Crow, a Bird of no Use in Medicine.

PYRRHOS; *πυρρός*, is, by all the Translators, render'd *rufus*, redish; yet it signifies, also, *fulvus*, fallow, or a yellow Colour inclining to white, the same which we call flaxen; and is so commonly observed in the Hair of Boys and Youth, before the Years of Manhood. Thus *Galen*, *Lib. 2. de Temp.* and *Aristot. Quest. Nat.* write, that the *Germans*, *Illyrians*, *Dalmatians*, *Scythians*, and those who inhabit cold and humid Countries, have *πυρρὰς τρίχας*, "yellowish or flaxen Hair." The Difference between the *πυρρὸν* and the *τὸ ξανθόν*,

the *fulvum* and the *flavum*, or the pale and bright yellow, which seem to come nearest their Signification in *English*, is thus stated by *Galen*, *Lib. 1. de Crif. ἑγγυτάτω τὴν φύσιν ἐστὶν τὸ πυρρὸν χρῶμα τῷ ξανθῷ*, &c. "The *Pyrrhos* (*fulvus*) comes very near the *Xanthos* (*flavus*); but they differ, in that the former is more inclining to Whiteness, and the other to Splendor; for bitter Bile sometimes appears *fulva* (*πυρρὰ*) of a palish Yellow; sometimes *flava* (*ξανθὴ*) of a bright Yellow; and frequently of a pale Colour (*ῥαχὰ*): For while it is whiter, and more turbid than ordinary, it is of the pale Yellow; but when it begins to brighten up, and be purified, it becomes of a splendid or bright Yellow; for whatever is of an igneous Quality, and sparkles in Bile, renders it of a brighter Yellow (*ξανθότερον*); and as much as the *πυρρὸν* (*fulvum*) is whiter than the *ξανθόν* (*flavum*), so much is the *ῥαχὸν* (the *pallidum*, or pale) whiter than the *πυρρὸν*. And, again, as much as the *ξανθόν* is less white than the *πυρρὸν*, so much is the *ἐρυθρὸν* (*erythron*, red) less white than the *ξανθόν*."

From hence we may infer, that the Colours signified by the Words *rufus* and *fulvus*, both comprehended under the *Greek* *πυρρὸς*, are a Mean between the *flavus*, *ξανθός*, and the *pallidus*, or pale, *ῥαχὸς*; as this last is a Mean between the *ξανθός*, *flavus*, and the *λευκός*, *albus*, the white. The Epithet of *fulvus* is variously applied by the *Latins*; as to Stars, Gold, (by *Virgil* called, also, *flavum*, as he uses, also, *fulvum* for *flavum*) a Lion, Sand; and by *Hippocrates*, as signified by *πυρρὸς*, to the Sand discharged in nephritic Affections*. *Πυρρὸν ἔσθ' ἐξ* *Progn.* is rendered by *Celsus*, *Cap. 6. Lib. 2. Urina rubra*; and *ὑποπυρρὸν*, spoken of the Stools, by *rufus*, *Lib. 2. Cap. 3.* And, to mention no more Particulars, *Hippocrates*, *Lib. 2. περὶ γυναικ.* calls the Yolk of an Egg *ὡς τὸ πυρρὸν*.

PYRRHULA. See RUBICILLA.

PYRUS.

The Characters are;

It is taller, and more erect, than the Apple-tree; the End of the Pedicle runs into an oblong Ovary, whose upper Margin becomes a Crown, which is expanded like a Calyx, after the manner of a Star, into five Segments, and is hollow in the Centre; the Flower growing on the Ovary has five Petals, expanded like a Rose, and arising from the Interstices of the Segments of the Crown; it is, also, furnished with twenty, or more, Stamina, which, too, arise from the Edge of the Calyx; from the Centre of the upper Part of the Ovary are produced five Tubes, which terminate in a scabrous, orbicular Apex; and the Ovary itself becomes an oblong, turbinated, quinquecapular, fleshy, and umbilicated Fruit.

Boerhaave mentions but one Sort of *Pyrus*; which is, *Pyrus*; fativa. *C. B. P.* 439. *Boerb. Ind. A.* 2. 247. *Tourn. Inft.* 628. *Park. Theat.* 1500. *Raii Synop.* 3. 452. *Pyrus*. *Offic.* *Raii Hist.* 2. 1450. *Ger.* 1267. *Emac.* 1455. *J. B.* 1. 35.

THE PEAR TREE.

This is a Tree very well known to every Body, and of which there are several Kinds and Varieties cultivated in Gardens.

The Fruit is generally cooling and refrigent; but as I know not of any medicinal Use they are put to, I shall forbear saying any more about them. *Miller's Bot. Off.*

PYTAHAIA. The Name of an Indian Tree, which grows in rocky Soils, bearing a red Fruit as large as an Orange, in Taste like a Pomegranate.

PYTHON. A Serpent celebrated for Sharpness of Sight, large Eyes, and a triple Row of Teeth.

PYULCUM, πυυλιν, from πύον, Pus, and ἔλω, to draw out. An Instrument for extracting Pus out of deep Sinuses; perhaps a *Canula*.

PYXACANTHA. A Name for the LYCIUM.

PYXINUM COLLYRIUM. The Name of a *Collyrium* described by *Celsus*, *Lib. 6. Cap. 6. Sect. 25.*

PYXIS. The Name of an *Acopon*, described by *Paulus Aegineta*, *Lib. 7. Cap. 19.*

PYXIS EMPLASTRUM. A Plaster described by *Aetius*, *Tetrabib. 4. Serm. 3. Cap. 14.*

PYXIS, in Anatomy, is the ACETABULUM. Or *Pyxidis* is the *Os Occipitis*. It is, also, a Surgeon's Box, divided into Compartments, for containing various Sorts of Salves, or Unguents.

Q.

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Q. For the Signification of this Letter in the Chymical Alphabet, see *Alphabetum Chymicum*. Q. or q. in Prescriptions, imports Quantity.

QUADRAGESIMUS DIES. The fortieth Day. The Antients fixed upon this Day as the last to which acute Distempers could extend; calling all those chronical, which continued longer. I have, however, seen an acute Disorder continue sixty Days.

QUADRANS. The fourth Part of a Pound, that is, three Ounces.

QUADRANTAL. The same as AMPHORA.

QUADRATUS imports plump. But *Quadratus* is the Name of several Muscles. Thus there is the *Quadratus Genæ*, see CAPUT. And the *Pronator Quadratus* of the *Ulna*, and *Radius*. See PRONATOR.

QUADRATUS FEMORIS. This is a small flat fleshy Muscle, of the Figure of an oblong Square, from whence it has its Name. It is situated transversely between the Tuberosity of the Ischium and the great Trochanter.

It is fixed by one Extremity along that obtuse Line which runs from under the Acetabulum toward the lower Part of the Tuberosity of the Ischium; from thence it runs directly toward the great Trochanter, and is inserted in almost all the lower Half of the oblong Eminence in that Apophysis, but principally in the small Riling, or Tuberosity, in the middle of that Eminence.

This Muscle, the *Pyriformis*, and *Gemelli*, called, also, by the common Name of *Quadrigeni*, are Congeneres in their Uses; and these have been confined by Anatomists to the Rotation of the *Os Femoris* about its Axis from before outwards: But this Use they cannot have, except when we stand, or lie at full Length: For, in sitting, or when the Thigh is bent in any other Posture, they carry the Thigh outward, or separate the two Thighs from each other, when bent.

All the four co-operate in these two Uses, of Rotation and Abduction; but they co-operate equally or unequally, according to the different Degrees of the Extension or Flexion of the Thigh. For Instance, when we stand strait up, they all perform the Rotation equally; but if the Thigh be then carried a little forward, the *Pyriformis* is more in Action than the *Quadratus*; and if the Thigh be carried backwards, the *Quadratus* acts most.

These Muscles, by means of their Adhesion to the orbicular Ligament of the Joint of the Hip, may, likewise, serve to hinder that Ligament from being squeezed between the Bones, in the different Motions of the Thigh.

QUADRATUS LUMBORUM, SIVE LUMBARIS EXTERNUS.

This is a small, oblong, flat Muscle, irregularly squared, narrower at its upper than at its lower Part, lying along the Sides of the Vertebrae Lumborum, between the last false Rib and the *Os Ilium*.

It is fixed below to the external Labium of almost all the posterior Half of the *Crista Ossis Ilium*, to the *Ligamentum Sacro-Iliacum*, and a little to the *Os Sacrum*, by a fleshy Plane, the Fibres whereof run obliquely backward.

From thence it runs up between the *Sacro-Lumbaris* and *Psoas*, by both which it is partly hid, and is inserted in the Extremities of all the transverse Apophyses of the Loins by oblique tendinous Digitations. It is, likewise, fixed by a broad Insertion, in the twelfth Rib, on the Inside of the Ligament

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that lies between it and the *Longissimus Dorsi*, by which that Rib is connected to the first Vertebra of the Loins.

I have observed, likewise, a small *Lumbaris Externus* adhering very closely to the back Side of the *Quadratus*, and fixed by tendinous Digitations to the Extremities of the second, third, and fourth transverse Apophyses of the Loins; from thence its fleshy Fibres run up obliquely over the *Quadratus*, and then mix with it at its Insertion in the last false Rib.

The *Quadratus Lumborum*, and *Psoas Parvus*, are of the same Use to the Vertebrae of the Loins, as the *Scaleni* to those of the Neck; when both *Quadrati* act, they keep the Lumbar Pillar strait, that is, so as not to incline to either Side; and then they may assist the *Recti* of the Abdomen in the Inflections forward, and the superior Portions of the *Obliqui* in lateral Inflections.

They may, likewise, serve to support the Haunches alternately in walking; and, in standing on one Foot, the *Quadratus* of the opposite Side may support the Haunch of that Side, in which Action they co-operate with the *Transverso-spinales*, and posterior Parts of the *Obliqui Abdominis*. *Winflow's Anatomy.*

QUADRIFOLIUM. A Name for the *Trifolium*; *quadrifolium*; *bortense album*.

QUADRIGEMINI MUSCULI. Four Muscles, which assist in moving the Thigh-bone, are thus call'd; the *Pyriformis*, *Gemellus superior*, *Gemellus inferior*, and *Quadratus*.

QUADRUPES. A Quadruped. That is, an Animal furnished with four Feet.

QUAUHYAC OCULENSIUM, *Nieremberg*. The Name of a very large Indian Tree, bearing Leaves resembling those of the Citron. The Bark is astringent, heating, drying, and of a strong Smell: It restrains a Diarrhoea, and excites a Sweat. The Juice, snuffed up the Nose, causes Sneezing, purges the Head, and thus removes Fevers, and Pains in the Head; for which Reasons, it is preserved in Families, as a popular Remedy. *Raii Hist. Plant.*

QUAMOCLIT.

The Characters are;

The Root is annual; the Stalk voluble, and scandent; the Flower monopetalous, funnel-shaped, and multifid; and the Fruit like that of the *Convolvulus*.

Boerhaave mentions two Sorts of *Quamoclit*; which are,

1. *Quamoclit*; foliis tenuiter incis & pennatis. T. 116. *Convolvulus*, pennatus, exoticus, varior, *Quamoclit*. Col. 1. *Observ. 72. Jasminum, Millefolii folio. C. B. P. 398.*

2. *Quamoclit*; Americana; folio Hederæ; flore coccineo. *Commel. Rar. 21. Boerh. Ind. alt. Plant.*

The *Hist. Plantarum*, ascribed to *Boerhaave*, informs us, that it is cathartic, like the *Convolvulus*.

QUANDROS. The Name of a white Gem, said to be found in the Brain of a Vultur. It is said to increase Milk in the Breasts; but the Virtues, and the Thing itself, seem to be equally fabulous.

QUANLI. Lead. *Rulandas*.

QUAQUILA. The COTURNIX.

QUARTANA FEBRIS. A Quartan, or Ague.

Among the Intermittent Fevers, a Tertian is, both with respect to Violence, and Obstinacy, surpassed by that which seizes every fourth Day, with two entire Days of Intermission, and is called a Quartan Fever.

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This Disorder generally, in the Afternoon, about Four or Five o' Clock, and sometimes sooner, or later, seizes the Patient with a considerable Languor of the Body, a Pandiculation, and a heavy Pain of the Head, Back, Loins, and Legs; then the Hands and Feet become cold, the whole Body pale, the Countenance and Nails livid; after which succeeds the Horror and Rigor familiar to this Species of Fever: The Tongue and Lips tremble, the Breathing is difficult, the Præcordia are uneasy, the Body is restless, and the Pulse contracted, hard, and sometimes unequal: All these Symptoms last generally for two or three Hours, during which time, most Patients are coſtſive; whereas, in ſome, there is a Stimulus to diſcharge the Fæces and Urine; and, in others, eſpecially old Perſons, there is an Effort to vomit, a real Vomiting, and a Diſcharge of the Excrements. In many Patients, alſo, eſpecially thoſe far advanced in Years, the Head is ſurpriſingly diſturbed, and ſuch an Alienation of Mind brought on, that the Perſon ſpeaks many incoherent Things; then ſucceeds, ſlowly, a Heat, which though not very intenſe, is, yet, troubleſome, on account of the Dryneſs of the Skin, with which it is accompanied: Then the Rigor is removed, and the Pulse becomes equal, quicker, and larger: There remains, however, an obſcure Pain of the Head, accompanied with a Vertigo; and, at laſt, the Skin becomes moderately moiſt, till, after four or ſix Hours, the Heat, and other Symptoms, diſappear, when the Paroxyſm of the Fever is removed. Though the Patient, on the two Days of Intermiſſion, generally gets out of Bed; yet he is afflicted with a certain Senſe of Pain in his Limbs and Feet, the Bones of which ſeem, as it were, to be bruised, or oppreſſed, with a great Weight. In moſt Patients there is, alſo, a Senſe of Weight in the Head, and a certain preternatural Uneaſineſs of Mind. The Urine, alſo, which, during the Paroxyſm, was thin and aqueous, is now thick, and depoſites a Sediment.

The Symptoms which appear under the Paroxyſm, ſufficiently evince, that, in a Quartan Fever, the whole nervous System is affected, and ſpaſmodically conſtricted; ſo that the proximate and immediate Cauſe of this Diſorder muſt, undoubtedly, conſiſt in an univerſal and violent ſpaſmodic Stricture of the nervous Parts; which, proceeding, principally, from the ſpinal Marrow, preternaturally affects not only the Coats of the Veſſels, but, alſo, the whole Nerves and Fibres; by which means, the Motion of the Solids and Fluids is greatly diſturbed.

The material Cauſe which throws the nervous Parts into ſuch exorbitant Commotions, was, by the Antients, thought to be an extravafated, putreſcent, melancholic Humour: But as in all Fevers, ſo, alſo, in a Quartan, there is an active Matter, poſſeſſed of a cauſtic Acrimony, ſtimulating the internal highly-ſenſible Parts to ſpaſmodic Contractions: Yet, becauſe this Matter is mixed with the pancreatic Juice, which has ſomewhat of an acido-viſcid Quality, it affords a conſiderable Reſpite, is not ſo ſoon collected, nor ſo quickly conveyed from the Primæ Viæ to the Membranes of the ſpinal Marrow: For when it is in a ſufficient Quantity collected in the Primæ Viæ, and ſucceſſively enters the Maſs of Blood, being, at certain ſtated Periods, conveyed to the Membranes of the Spine of the Back, it excites thoſe febrile Commotions ſpecified under the Article TERTIANA FEBRIS.

If we inveſtigate the Origin of this febrile Matter, we ſhall find, that it proceeds from a ſlow Circulation of the Blood through the depuratory and ſecretory Viſcera of the Abdomen, eſpecially the Liver, Spleen, and Pancreas, and a ſucceeding Inſarction and Obſtruction of theſe; for, by this means, the fermentative, gaſtric, lymphatic, and ſalival Humours loſe their temperate, ſubtil, and ſpirituous Quality, and aſſume a fixed and acid Nature; ſo that they become leſs fit for the intimate Diſſolution of the Aliments, and the Extraction of the Chyle, but produce a large Quantity of acid and viſcid Crudities; and theſe Crudities, in Proceſs of time, contracting a worſe Quality, and other external Cauſes, inducing Acrimony, concurring, a Quartan Fever is at laſt produced.

That the languid circulation of the Blood through the abdominal Veſſels, is the Cauſe of this Diſorder, is ſufficiently obvious, from this, that Quartan Fevers are moſt incident to Adults, and thoſe advanced in Years; to Perſons of melancholic Habits, and thoſe who have contracted not only a Redundance, but, alſo, a Spiſſitude, and Impurity of the Juices, in conſequence of a ſedentary Life, an Intermiſſion of uſual Venefection, coarſe unſalutary Food, an exceſſive Uſe of acid and ſpirituous Liquors, a Suppreſſion of uſual critical Evacuations of Blood, or immoderate Paſſions. That the peccant Matter is of a cauſtic Quality, is certain, from this, that Quartans generally appear in the Autumn, after the acrid Sordes are excluded from the Body by the Heat of the Summer; that they are ſometimes terminated by the Itch, or Purples; that they return when theſe are repelled; that they are removed upon the Eruption of the Small Pox; that they are generated by Tertians; that they terminate in Tertians; and that, like Ter-

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tians, they are very epidemic in marſhy Places; where the Air is impregnated with a large Quantity of acrid Recrements.

Quartan Fevers are of different Sorts, ſince ſome are of the ſimple, and others of the double Kind. The ſimple is that already deſcribed; but a Quartan is ſaid to be double, when, within four Days, two ſucceeding Paroxyſms happen, in ſuch a manner, that each preſerves its proper Type, and peculiar Time of Acceſſion, alternately correſponding to the preceding Paroxyſm, and the third Day, only, being totally free from the Fever. This frequently happens when a ſimple Quartan is prepoſterouſly cured, or when any Error in Regimen is committed.

Quartans are, alſo, either legitimate, or ſpurious. The former obſerves its Period of Return, which is the Afternoon; more exactly than any other Species of Fevers; but a ſpurious Quartan has not a certain Period for its Return, which, however, is generally in the Forenoon. The Heat, alſo, is greater, and afflicts the Patient more, than the cold Fit.

Sometimes every fourth Day the Paroxyſm returns; after previous Pandiculations and Horripilation, but does not very exactly obſerve its Period; nor, when the Paroxyſm abates, does it totally intermit, but is only milder on the intermediate Days, than on that in which the Paroxyſm happens: The Heat is, alſo, preternaturally intenſe, the Pulse increaſed, the Appetite languid, the Strength low, the Mouth dry, the Head giddy, the Sleep reſtleſs, the Urine red, thick, and with a high-coloured Sediment; for which Reaſon, it is, by Phyſicians, called a continual Quartan.

Quartan Fevers are generally epidemic, eſpecially after an exceſſively hot and dry Summer, in conſequence of which, a large Quantity of acrid and bilious Recrements are generated in the Body. An Inſtance of this is mentioned by *Sennerſtus*, in *Lib. 2. Cap. 20.* as happening in the Year 1606. *Bartholine*, in *Centr. Hiſt. Anat. 95.* mentions the ſame as happening in the Year 1652; and I can, from Experience, affirm, that the like happened in the Years 1684, 1719, 1726, and 1728. And becauſe, in conſequence of the exceſſive Heat, large Quantities of cold aceſcent Liquors are often drank, and the cold Night Air acts upon the Body, the Perſpiration of the acrid Sordes is obſtructed, and the Blood and Humours inſpiffated.

Quartan Fevers are epidemic in ſome Countries, and Parts of the World; ſuch as *Weſtphalia*, *Pomerania*, and other Northerly Climates, whoſe Inhabitants uſe heavy, coarſe, and crude Aliments; for, almoſt every Autumn, long-protracted Quartans rage very much in theſe Parts. The ſame thing happens in marſhy Countries, and Places whoſe Atmosphere is impregnated with noxious Exhalations; in which Tertians are very frequent in the Spring, and Quartans in the Autumn; and the Patients are often ſubject to Relapſes, in both Caſes.

Quartans are of different Kinds, according to the Diverſity of the Patients they ſeize; for when they happen to Perſons who, in Conſequence of a ſedentary Life, or the Uſe of coarſe and heavy Aliments, contain a large Quantity of thick Blood, to thoſe afflicted with the hypocondriacal Diſorder, or who have long indulged themſelves in Grief, they are generally obſtinate, and dangerous: For which Reaſon, great Care, with reſpect to Regimen, is requiſite in the Patient, and great Judgment in the Phyſician, with reſpect to Medicines. When Quartans happen in cacoſymical Conſtitutions, or in Perſons where the Matter of the Purples lies latent in the Blood, they are accompanied with more terrible Symptoms, and the Strength is more impaired; the Patient is, alſo, afflicted with Watching, Alienation of Mind, an Anxiety of the Præcordia, and, at laſt, the Purples appear; and when theſe are by any Cauſe, however ſlight, repelled, the febrile Paroxyſms are increaſed, and afflict the Patient more violently.

Quartans, in Patients whoſe Strength is exhausted by old Age, Indiſpoſition, a bad Regimen, or exorbitant Paſſions, eaſily degenerate into continual Fevers, which are known from a Languor of the Strength after the Paroxyſm, the Frequency of the Pulse, the ſlow Heat, and the Loſs of Appetite; which Symptoms place the Patient in conſiderable Danger. When Quartans, after hot Summers, ſeize young and vigorous Perſons, the Paroxyſms laſt long, the burning Heat terminates in a profuſe Sweat, and the Thirſt, and Languor of the Stomach, are greater than in other Patients. As Infants and Children with Reluctance take Medicines, do not obſerve the Rules of a proper Regimen, catch Cold by throwing the Bed-cloaths off them in the Night, and have not only a lax Habit of Body, fit for retarding Perſpiration, but, alſo, Stomachs fit for collecting Crudities, ſo they are long afflicted with Quartans, more frequently ſubject to Relapſes than others, or afterwards expoſed to the Attacks of other Diſeaſes.

Quartan Fevers are, however, generally pretty ſafe, and rarely prove mortal, except in old Perſons, thoſe whoſe Strength is exhausted, thoſe of tender Conſtitutions, or ſubject to epileptic Fits, or when the Fever has not only been excited, but augmented

augmented, by the Passions of the Mind; or when such a Fault is committed, either by the Patient or Physician, that the Quartan passes into a Quotidian, or some chronical and fatal Disorder.

The Safeness, however, of Quartan Fevers, scarcely atones for their Violence and Obstinacy; for they are generally long protracted, and often prove the Reproach of the Physician, because they elude the Force of his best-chosen Remedies. This principally happens in such Quartans as arise in the Autumn, and continue throughout the Winter; for these are rarely removed till the Vernal Solstice; at which Time, the Pores being opened, and the Juices attenuated, by the Serenity of the Air, they generally disappear spontaneously. Quartan Fevers are, also, highly obstinate, when the Disorder is deeply rooted in the Viscera, especially the Liver, Spleen, and Pancreas; or when the whole Mass of Humours is contaminated, and impure, or the nervous System excessively weak, and disposed not only to conceive; but, also, to cherish such anomalous Motions; and especially when the Patient, by his Voracity, continually collects and increases the Matter of the Fever.

When, on the contrary, a Quartan happens in the Spring, or Summer, it is more easily cured, since the Temperature and Serenity of the Air greatly contribute to its Removal: Quartans, also, arising from irregular Living, or Crudities collected in the *Primæ Viæ*, whilst, at the same Time, the Viscera are found, as, also, Quartans arising from a Suppression of Transpiration, are easily cured, and often happily removed, by one Vomit, or one Dose of some proper diaphoretic Medicine, exhibited before the Paroxysm: Those Quartans are, also, easily cured, unless through some Fault of the Patient, or Physician, which seize young and vigorous Persons; especially if they rather proceed from Bile, than from an acid and tenacious Humour, which principally happens in such epidemical Quartans as rage in the Summer.

Nor is an anomalous Quartan, which does not retain its Type, returns at uncertain Periods, or passes from the simple to the double Kind, so dangerous as it is commonly thought; for these Circumstances are Signs that the peccant Juices are not very tough, and deeply impacted in the Viscera; but that they are still disposed to Motion, and that Nature makes some Efforts for eliminating the Matter which produces the Disease: Besides, the due Return of the Paroxysms contributes greatly to dissolve the viscid, and disperse the stagnant Humours. So that the more frequently these Paroxysms recur, the sooner the Cause of the Fever is removed, and, by the Assistance of Nature, the Cure perfected by a few proper Medicines.

Though a Quartan has generally no critical Excretion, yet it is sometimes happily terminated, by an Eruption of Pustules, Spots, small Ulcers, and the Itch, all over the Body; as, also, by the hæmorrhoidal Discharge. In Children I have, also, seen Quartans terminate successfully in the Small Pox; and I have found, that pregnant Women, labouring under Quartans, have not got rid of them till after the Delivery; at which Time, the Infants have been affected with the same Disorder.

Quartan Fevers are sometimes highly beneficial, not only in preventing, but, also, in removing other Disorders, those especially of a chronical Kind: For the increased Motion of the Solids and Fluids, under the Paroxysm, attenuates the tough Juices, forces them from their Seats, and greatly contributes to remove those old Obstructions, which are deeply seated in the minute Vessels, Glands, and nervous Parts. Hence the most skilful of the antient Physicians, such as *Hippocrates*, *Asclepiades*, *Galen*, and *Celsus*, affirm, that they looked upon Quartan Fevers as Remedies for some other Disorders; and they are certainly of singular Efficacy in removing hypochondriac Symptoms. *Hippocrates*, in *Lib. 6. Epidem.* highly extols Quartans, as beneficial in Epilepsies and convulsive Motions. Practical Authors have furnished us with Instances, in which convulsive Asthmæ, the Stone, and Gout, have been happily removed by the Course of a Quartan Fever, duly and skilfully treated. *Aulus Gellius*, in his *Noct. Attic. Lib. 17. Cap. 12.* informs us, from *Plato*, that Quartan Fevers not only free the Patient from Disorders of the Viscera, but, after their Removal, leave the Body stronger, so that they are not, for the future, so subject to other Disorders, or Relapses into the same. I myself have, also, known many live to a great Age, after Quartan Fevers. Hence we cannot enough admire the Bounty of indulgent Heaven, which has given an incomparable medicinal Virtue to some Diseases seemingly the most destructive of Health.

But when Quartans are protracted too long, the Juices conceive a Dyscrasy; and, if the Humours are thin and bilious, the Purples appear, or the spirituous, rascid, and nutritive Parts, being dissipated, the remaining Fluids become tough, are corrupted, and bring on chronical Disorders. Quartans, ill treated, degenerate into violent and fatal Disorders; such as a Dropsy, an Anasarca, an Ascites, a scorbutic Cachexy, oedematous Tumors, slow and hectic Fevers of the continual

Kind, a dry Asthma, a Jaundice, a Chin-cough in old Persons, comatous Disorders and Hemiplegies; in young Persons, the hypochondriac Disorder; and, in Infants, violent Convulsions, which miserably distort the Spine of the Back, together with other Parts, both in the anterior and posterior Regions of the Body: And, in all these, after Death there is found some conspicuous Fault of the Viscera, especially of the Liver, Spleen, and Pancreas; together with an Infarction, Obstruction, and Corruption of the meseraic Glands.

They who are taken off by a Quartan Fever, die under the Rigor of the cold Fit, and an uncommon Perturbation of Mind. On this Occasion, as I have observed in two Adults, the Violence of the Spasms is so increased, that no Degree of Heat succeeds, whilst Symptoms, plainly resembling those produced by Poison, appear, and, at last, destroy the Patient: And, in Infants, the spasmodic Strictures manifestly degenerate into fatal convulsive Motions.

After a Recovery from a Quartan Fever, the Patient ought, for some Time, carefully to observe a due and proper Regimen; for this Species of Fever easily recurs, and, upon the slightest Occasion, resumes its former Tenor. Those who, having surmounted a Quartan, indulge themselves in Gluttony, and overload their extenuated Bodies with a large Quantity, especially of unsalutary Aliments, easily relapse, in Consequence of a fresh Collection of Crudities in the *Primæ Viæ*. The same Misfortune is incident to those who have their Perspiration obstructed, expose their Bodies to the cold and moist Air, or drink large Quantities of cold Liquors when they are excessively hot: Those, also, who have been long under the Influence of violent Passions, especially excessive Grief, easily relapse into Quartans. It, also, happens, though more rarely, that Quartans, which had ceased upon the Expulsion of the peccant Matter to the Surface of the Body, either under the Appearance of the Itch, Pustules, Ulcers, or Purples, forthwith return, when these are repel'd.

THE GENERAL METHOD OF CURE.

In the Cure of a Quartan, the following Intentions are to be pursued.

1. The viscid, acid, and bilious Crudities, gradually conveyed from the *Primæ Viæ* with the Lymph and Chyle to the Blood, and exciting febrile Commotions in the nervous System, are to be corrected, and evacuated, by proper Emunctories.

2. The Circulation of the Blood through the abdominal Viscera, especially those to which the *Vena Portæ* is distributed, is to be render'd free and uninterrupted, whilst the Congestion, Infarction, and Obstruction, are to be removed; or, at least, their Increase prevented.

3. The violent spasmodic Constriction of the nervous System, which is the Cause of the terrible Symptoms, is to be allayed, and mitigated. And,

4. The impaired Strength of the Viscera, Stomach, and nervous Parts, is to be restored; by which means, not only future Paroxysms, but, also, a Relapse, are prevented.

The first of these Intentions is answered by all those Remedies which obtund Acids, incise tough Juices, correct such as are acrid, and cleanse the *Primæ Viæ*. Of this Class, the most considerable are, alkaline Medicines, such as the Salts of Plants prepared by Incineration, especially the Salts of Wormwood, and *Carduus Benedictus*: Neutral Salts are, also, excellent, for answering this Intention, especially depurated Sal Ammoniac, the *Terra foliata Tartari*, and the digestive Salt of *Sylvius*; to which, in order the more effectually to correct the bilious Acrimony, we are to add gentle Absorbents, such as Crabs-eyes, Egg-shells, and Hartshorn, prepared without Fire. But if the Intention is to evacuate these Crudities, the Salts obtained from medicinal Springs, such as those of *Egra*, *Epsom*, and *Sedlitz*, exhibited in a large Dose, or the *Sedlitz Waters* by themselves, eliminate the thickest of them by Stool, whilst tartareous Medicines efficaciously carry off the more subtle salino-sulphureous Sordes by Urine. In Quartan Fevers, the *Magnesia Alba* is, also, possessed of a purgative Quality, since, by absorbing the Acid of the *Primæ Viæ*, it is converted into a bitter Salt, resembling that of *Epsom*.

The second Intention is excellently answered by bitter Substances, which, by their fixed balsamic Sulphur, restore the Balsam of the Bile, obtund acid and saline Humours, and procure a certain mild spirituous Quality to the Juices: Such are the bitter Extracts of Fumitory, Wormwood, *Carduus Benedictus*, red Gentian, Marsh Trefoil, and the lesser Centaury; the Essence or Extract of Rhubarb; and the *Pilulæ Balsamicæ*, prepared according to the Directions of *Becher*, of well-depurated Aloes, bitter Extracts, resinous, balsamic, and temperate Gums; which, besides their laxative, have, also, an attenuating Quality, especially if they are taken alternately with the above-mentioned Salts. This Intention is, also, answered by a due Use of hot and cold medicinal Waters, in Conjunction with

a proper Regimen: But if an inveterate Obstruction of the Viscera, especially of the Pancreas, which, in obstinate Quartans, is highly pernicious, cannot be removed by mild Medicines, more penetrating and active Preparations of the mineral Kind are to be used, such as *Mercurius Dulcis*, the *Diaphoreticus Solaris* prepared in the manner directed under *MERCURIUS*; and the *Antiquartanum* of *Riverius*, which is prepared of Mercury, Antimony, and Gold, by frequently abstracting from them Aqua Regia, and then kindling Spirits of Wine upon them; and, among antimonial Preparations, medicinal Regulus of Antimony; the *Panaceas* of *Glauber* and *Conerdingius*; as, also, my Sulphur of Antimony, corrected and prepared without a Precipitation with an Acid.

The third Intention, which is to allay the spasmodic Strictures of the nervous System, is answered, first, by antispasmodic nervous Liniments, consisting of human Fat, the Oils of Spike, Lavender, Rue, and Sage, together with *Peruvian* Balsam, applied, with brisk Frictions, to the spinal Marrow. Secondly, By Clysters prepared of nervous, carminative, and antispasmodic Herbs, with the Addition of a sufficient Quantity of demulcent Oils. Thirdly, By Baths of sweet Water, which were, by the Antients, principally used, before the Accession of the Paroxysm. And, fourthly, By Epithems and Liniments prepared of spirituous and aromatic Substances, and applied to the epigastric Region under the Horror and Rigor of the Fever.

The fourth and last Intention of Cure is excellently answered, by all bitter Substances, which are, at the same time, possessed of a certain balsamic and astrigent Quality: The most considerable of this Kind are, *Peruvian* Bark, the Barks of *Cascarilla*, *Capers*, *Tamarisks*, and *Cinnamon*; the Shavings of red Sanders, and the Essences extracted from bitter Plants; which, when quickened with some proper chalybeate Liquor, are highly efficacious. But my antifebrile Electuary, directed in the Article *Tertiana Febris*, is, of all others, the most effectual.

In Quartans, great Relief is, also, afforded, by applying to the Wrists some Plaisters; such as that to which *Strobelbergerus* gives the Name of *Emplastrum famigeratissimum*: These Plaisters may be prepared of such Substances as, by their aromatic and balsamic, as well as irritating Principle, add a certain Motion and Stimulus to the Fibres, so that they dislodge the Matter deeply impacted in the nervous Parts, and, on the Day of Intermission, render the Circulation of the Blood quicker.

Besides these Remedies against Quartans, I shall subjoin two others, which I formerly found of singular Efficacy in *Westphalia*: The one is a vinous Infusion, which answers all the Intentions of Cure, and of which a large Draught ought to be drank every Morning. It is prepared thus:

Take of the fibrous Roots of black Hellebore, of Polypody of the Oak, and of Sena-leaves, without the Stalks, each one Ounce; of Wormwood, the lesser Centaury, *Carduus Benedictus*, and Marsh Trefoil, each half a Handful; of the Shavings of Snake-wood, of *Peruvian* Bark, and recent Orange-peel, each three Drams; of the Filings of Steel, and the *Tartarus Tartarizatus*, each half an Ounce: Cut down and bruise all these together, sprinkle them with two Drams of the urinous Spirit of Sal Ammoniac: Mix and infuse in two Quarts of Wine.

The other is the following Powder:

Take of *Peruvian* Bark, three Drams; of medicinal Regulus of Antimony, two Drams; of *Mercurius Dulcis*, (which is not to be triturated with the Powder, on account of the Salts, but only mixed with the Point of a Knife) of the finest Crocus of *Mars*, and Arcanum Duplicatum, each one Dram; and of the Oil of Mint, four Drops: Make up into a Powder, of which half a Dram, or a Dram, may be reduced to the Form of an Electuary, with Rob of Elder, or Julap of Roses, and exhibited every Morning and Evening.

And, certainly, this Powder is of singular Efficacy in a Quartan deeply rooted in the Viscera; but it is only fit for robust Habits, and ought to be accompanied with a due Regimen: For though it sometimes excites a gentle Salivation, which proves uneasy, yet it succeeds so well, as to remove obstinate Quartans.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quartan Fevers are so obstinate, that they call for Patience in those who labour under them, and due Expectation in him who undertakes the Cure, especially when they happen in melancholic Constitutions, old Persons, those subject to hypochondriac Disorders, those in whom the Circulation of the Blood

through the meseraic Veins is slow, those whose Viscera are infarcted, or when they happen about the middle of the Autumn; for, in the Cure of these Fevers, the Physician is not to act hastily, or attempt the Relief of the Patient by violent and drastic Medicines, for fear of doing more Harm than Good.

In the Beginning of the Disease, if the Patient is robust, and vigorous, Medicines of a pretty powerful, resolvent; colliquating, and evacuating Quality, are to be used; but when the Disease is of long standing, the Patient tender, and of a delicate Constitution, and a large Quantity of bilious and acrid Recrements are in the Body, the Fever is surprisingly increased by such Medicines, and frequently passes from a simple to a double Quartan, or to a Quotidian: But temperate Substances, rather of the dietetic, than of the pharmaceutic Kind, are to be used in Conjunction with such Things as allay the Spasms of the nervous System.

Every Quartan, however, is not so obstinate as not to yield even to the gentlest Medicines; for I have known many happily cured of this Disorder, only by the Use of a temperate balsamic Elixir, prepared with an aqueous Lixivium of bitter Extracts and Rhubarb, with an Addition of a sufficient Quantity of *Hungarian* Wine: Others have been freed from Quartan Fevers by frequently taking Oil of Tartar per Deliquium, in some proper Liquor, drinking old Rhenish Wine, with or without Bitters, immediately before the Paroxysm, and afterwards using violent Exercise. Some have, also, been cured of Quartans by the daily Use of Baths of sweet Water, and using such a Degree of Exercise as to produce Sweat immediately before the Paroxysm.

But Quartans are most happily and easily cured, when the State of the Weather is favourable, or when the Air is pure, subtle, and rarefied, as it is in the Spring, and serene Summers; for, in such Seasons, long-standing Obstructions of the Viscera are more quickly removed, the Toughness of the Juices more speedily colliquated, and the acrid Sordes more expeditiously eliminated through the open cutaneous Pores, by an equable and constant Perspiration. I have known some who could not possibly be cured of Quartans, till they removed to a more healthy Part, or used another Regimen and Method of Life.

As in all chronical Disorders, so, also, in the Decline of quartan Paroxysms, 'tis expedient to change the Patient's Drink, and exhibit Decoctions prepared of the Roots of *Sarsaparilla* and *Succory*, the Herb *Carduus Benedictus*, Raisins, and Fennel-seeds; and such Decoctions are not only to be drank cold instead of Ale, but, also, warm instead of Tea. In Quartan Fevers 'tis, also, proper to use temperate mineral Waters, such as the *Selteran* Springs; for these, when drank with one half, or a third Part of Wine, produce an highly salutary Effect in diluting the thick Juices, and evacuating the impure Humours by Urine.

We are, also, to take due Care, that the acrid subtle Sordes be continually eliminated by Perspiration. This Effect is to be produced both before and after the Paroxysm, not by actual Sudorifics, but by such Medicines as, by increasing the Tone of the Solids, accelerate the Circulation of the Blood, and by that means promote Sweat. This Intention is excellently answered by violent Exercise, such as Riding, Leaping, or Walking a few Hours before the Paroxysm, by which means I have often known Quartan Fevers removed. Accordingly *Celsus*, in *Lib. 3. Cap. 15.* lays it down as a Maxim, "That, on the Day the Paroxysm is expected, the Patient ought to get out of Bed; use Exercise, and endeavour, if possible, to protract his Exercise till the very Access of the Paroxysm; for, by this means, the Fever is often removed." This Effect I have, also, from numberless Experiments, found to be happily produced by the following Mixture:

Take of the Water of *Carduus Benedictus*, four Ounces; of Treacle-water, half an Ounce; of the Salt of *Carduus Benedictus*, one Dram; of diaphoretic Antimony, half a Dram; of the Spirit of Vitriol, between twenty and thirty Drops; and of the Syrup of *Carduus Benedictus*, two Drams: Mix all together; and, if the *Prime Viæ* are previously cleansed, Half is to be exhibited three or four Hours before, and the other Half immediately after the Paroxysm.

When the Fever is in the Decline, and, the Heat wearing off, the Body becomes spontaneously moist, we are to take great Care, that the Sweat be not interrupted by external Refrigeration, or drinking cold Liquors. If these Measures are not taken, the Fever is not only longer protracted, but, also, Contractions, and cedematous Swellings, of the Feet generally succeed. But 'tis expedient to promote the Sweat by moderate external Heat, and warm diluting Drinks.

Though Venesection is not directly calculated for removing the Causes of Quartans, yet when there is a Suspicion, that the

the Fever is supported by an obstructed Circulation of the Blood through the abdominal Viscera, as in those subject to hysterical and hypochondriac Disorders, and those afflicted with the Hæmorrhoids, or who have a Disposition to that Discharge, a Vein may be opened in the Foot with so great Success, that by one Venesection I have often observed an obstinate Quartan totally removed. As most pregnant Women are generally plethoric, if they are seized with a Quartan, they not only bear, but, also, require Venesection, lest by the intense Motion of the Blood, excited by the febrile Spasms, the Uterus should be stimulated to an Exclusion of the Fœtus before the due time. We are, therefore, carefully to consider the various Stages of Quartans, the Habit and Strength of the Patient, together with the Disposition of the Solids and Fluids, lest, by unseasonable Venesection, the Cure should be render'd more difficult, and the febrile Spasms, during the Paroxysm, increased. It is observable, that the Blood taken from the Veins of Persons labouring under Quartan Fevers is remarkably peccant, and has its Surface covered with a tough, yellow Phlegm; and, according to *Schenckius*, there is, also, a white pituitous Crust of this Kind found in the Veins of Persons who are taken off by Quartans.

Nor in Quartans are Vomits to be used promiscuously, and without Distinction; for when there is a Propensity to vomit, arising from a Collection of crude and viscid Juices in the *Primæ Viæ*, in consequence of excessive Gluttony, it is highly proper, by an Emetic, to evacuate the peccant Matter by the nearest Way, before it enters the Mass of Blood, and affects the nervous System. But it is expedient not to exhibit a Vomit, unless the Viscera are sound, the Stomach and nervous System strong, and the Lungs free from every Disorder. Safe Vomits, and such as are appropriated to this Purpose, are, also, to be used: Of these the best is the Root of Ipecacuanha, which, besides its emetic, has, also, an aromatic and balsamic Quality. And, among Emetics calculated for this Purpose, we are to prefer those prepar'd of Copper, as *Cyprian* and white Vitriol, to antimonial Preparations, because the former, by constricting the bilious and glandular Ducts, not only prevents the farther Afflux of the febrile Matter, but, also, by contracting and stimulating the Fibres, renders them more capable of dislodging the peccant Matter, deeply impacted in the nervous Parts. But antimonial Preparations, and those of Copper, when duly mixed, and, as it were, reduced to a proper Temperament, afford an excellent Medicine, calculated both for cleansing the Stomach, and subduing the Fever.

Though the *Peruvian Bark*, skilfully used, is of singular Efficacy against Quartan Fevers, yet we are not to call in its Assistance, unless the *Primæ Viæ* are duly cleansed, the Plethora removed, and the Viscera sound, and free from Obstructions. It is, also, safer in those bilious Quartans which happen in the Summer, than in such as rage in the Autumn, and are supported by some Disorder of the Viscera, and a tenacious State of the Juices. In this last Case, it is more expedient to use a Decoction of the Bark with Wine, with an Addition of bitter aperient and diaphoretic Substances, such as the Tops of the Lesser Centaury, the Herb *Carduus Benedictus*, the Roots of red Gentian, and Burnet, together with Salt of Tartar.

In Quartan Fevers it is sometimes expedient to heighten the Virtues of the Bark by an Addition of highly subtle Crocus of *Mars*, and a volatile urinous Salt. This Medicine, however, never proves hurtful, when exhibited at proper Seasons, in just Quantities, and duly mixed with diaphoretic and resolvent Substances. See *QUINQUINA*.

In order to diminish, or totally put a Stop to the Paroxysms of Quartans, especially such as happen in the Autumn, are obstinate, seize Persons of languid Habits, or are accompanied with Drowsiness, I have found excellent Effects produced by applying to the Wrists Epithems prepared of acrid stimulating and gently vesicating Substances. The Vulgar use other Substances for this Purpose; but as their Smell is too ungrateful, so Epithems of this Kind are most commodiously prepared of Turpentine, Soot, Sal Ammoniac, bruised Spiders, Pepper, and *Venice Treacle*.

Mineral Waters, especially those of the cold and hot Kinds, in my Opinion, contribute not only to the Prevention, but, also, to the Cure of intermittent Fevers; but we are absolutely to abstain from them immediately before and during the Paroxysm, taking care before the Accession, to have the Water evacuated by proper Emetics, lest the febrile Motions should, by that means be increased. For Drink, temperate Liquors, as we have already observed, are always to be used.

If in a Quartan Fever the Patient is excessively costive, it is expedient to render his Body soluble, rather by Clysters than internal Medicines. The best Ingredients for Clysters of this Kind are, such Substances as, besides their emollient Quality, are, also, parégoric, and allay the Spasms; such as the Tops of Yarrow, the Flowers of common Chamomile, Elder-flowers, the Flowers of the Lime tree, Cumin-seeds, Broth prepared of Veal, the Yolks of Eggs, and a little Sal Gemmæ; some-

times, also, some antifebrile, bitter, nervous, and corroborating Substances, are commodiously mixed with such Clysters; for, in *France*, it has been customary, for some Years past, to cure Quartans by frequently injecting Decoctions of *Peruvian Bark* into the Anus. The same Effect is, also, produced by Clysters of other antifebrile Decoctions, such as those of *Carduus Benedictus*, the Lesser Centaury, Gentian-root, and the Herbs Marjoram, Rosemary, Southern-wood, and Sage. And certainly this Method is very useful in Infants, and such as have Stomachs either naturally weak, or easily subject to Nauseas; only we must observe, that the Body must be rendered soluble by an emollient and saline Clyster, before that of the nervous and corroborating Kind is injected.

The violent Fevers with which Quartans, especially in Persons advanced in Years, are accompanied, are not without great Difficulty mitigated. The principal Relief is, however, to be expected from such Medicines as render the Body soluble, as, also, from bathing the Feet; by which means, the Impetus of the Blood is derived from the Head to the inferior Parts. Among external things, the greatest Relief is afforded by Vinegar of Roses, or that of Rue mixed with Salt and Nitre, poured upon Bread, and applied to the Head.

In order to prevent a Relapse into a Quartan, *Celsus*, in *Lib. 3. Cap. 16.* gives us his Advice in the following manner: "If, says he, a Fever of this Kind is removed, the Patient is for a long time to remember the usual Day of its Accession, and on it carefully to guard against Cold, Heat, Crudities, and Laffitude; for it easily returns, unless the Patient is very careful of himself for some time after his Recovery." Hence, he ought, especially on the Day in which the Paroxysm used to return, to avoid Northerly Winds, a dense, cold, and moist Air, such as that of low-situated, marshy, and subterraneous Parts, taking care at the same time to preserve Perspiration free and uninterrupted. He is to have a peculiar Care of his Regimen, and guard against eating too much, especially of such Aliments as are of difficult Digestion. He is, also, if possible, to preserve a constant Tranquillity of Mind, and avoid Anger and Dread, by which I have frequently known a Quartan brought on.

Then the Stomach is to be corroborated, and the Digestion assisted by stomachic Elixirs, prepared of bitter and aromatic Substances, which are to be long and frequently used, though in small Quantities, lest the Body, already weakened, should be thrown into a preternatural Heat. But in a particular manner we are to take care, that the crude Juices afterwards generated be gently evacuated by Stool; for which Reason the Patient must frequently use the balsamic Pills, or the cinnabarine Pills, or the *Pilulæ de Ammoniaco* of *Quercetan*, with which, if the Fever has been suppressed by the Use of *Peruvian Bark*, we are to join the digestive Salt of *Sylvius*: By these measures, not only Relapses, but, also, other more terrible Disorders, and especially slow Fevers, are seasonably prevented. *Hoffman*.

QUARS. A Gall-stone. *Rulandus*.

QUARTARIUS. The fourth Part of a Sextary, containing nearly a quarter of a Pint.

QUARTATIO. A Separation of Gold from Silver, when mixed together, by means of acid Spirits.

QUARTURA. The same as QUARTATIO.

QUASSATIO. A Concussion.

QUATERNARIUS, or QUATERNIO. The Space of four Days.

QUATRIO. The ASTRAGALUS.

QUEBRICUM is, according to some, Arsenic; according to others, Sulphur.

QUELLEM. Original, or Elementary Earth. *Rulandus*.

QUELLES. An ELIXIR.

QUELMEISEL. The German Name for a Tent made of a Piece of Sponge, Gentian, or any other Root, so as to swell, when introduced into a Wound, or Ulcer, and dilate the Orifice.

QUERA - IBA *Brasiliensibus*. *Marcgrav. & Piso*. The Name of a Tree which grows in *Brasil*. The Bark contused and boiled, is effectual for curing Wounds or Ulcers in the Legs, or other Parts.

QUERCERA. See EPIALOS.

QUERCUS.

The Characters are;

The Leaves are sinuous, and, as it were, lacinated: The Flower is male, amentaceous, and consists of dense Clusters of male Apices, affixed to a thin long Capillament: The Fruit grows at a remote Distance from the Flower, on the same Tree, is furnished with three Tubes, and grows in a Calyx, consisting of small angular Leaves, and becoming at last squamous: This Fruit becomes an Acorn, whose lower Part is contained in the Calyx, and, under an entire coriaceous Shell, incloses a Kernel which cleaves in two.

Boerhaave mentions five Species of *Quercus*; which are;

1. *Quercus*; *latifolia*; *mas*; *quæ brevi pediculo est*. C. B. P. 419. *Platyphyllos, mas*. *Lugd.*

The sweet and honeyish Moisture with which its Leaves are often covered, and which the Bees gather with a great deal of Care, does not come from the Air, as People imagine; it is an extravasated Juice, which is poured out upon these Parts, not only of the Oak, but, also, of the Maple, where it makes a kind of Sugar; of the Ash, and of the Larch-tree, where it produces the Manna: In some Seasons the Leaves of the Lime-trees, in the great Alley of the King's Garden, are covered with it, in such a manner, that they look as if they were varnished: The Washings of these Leaves are sweetish, and loosen the Belly. *Martyn's Tournesfort.*

2. *Quercus*; *latifolia*; *fœmina*. C. B. P. 419. *Platyphyllos, fœmina*. *Lugd.* 2.

3. *Quercus*; *cum longo pediculo*. C. B. P. 420. *Tourn. Inst.* 583. *Boerb. Ind. alt.* 2. 177. *Quercus*. *Offic.* *Quercus vulgaris*. *Ger.* 1156. *Emac.* 1339. *Quercus latifolia*. *Park. Theat.* 1386. *Raii Synop.* 3. 440. *Quercus vulgaris longis Pediculis*. *J. B.* 1. 70. *Raii Hist.* 2. 1335. THE OAK.

This is a Tree which grows plentifully in England, being one of the largest and most common Trees we have, having smooth, shining, green Leaves, sinuated on both Sides. We have two Sorts, one of which, and the most common, bears its Leaves on short Foot-stalks, and its Fruit or Acorns on long; and, on the contrary, the other has the Fruit on short Foot-stalks, and the Leaves on long.

Of the Oak, the Bark, the Buds, the Acorns, and their Cups, are used; as, also, the Galls, which are Excrescences caused by Insects, on the Oaks of the Eastern Countries, of which there are divers Sorts, some perfectly round and smooth; some rougher, with several Protuberances; but all, generally, having a round Hole in them.

All the Parts of the Oak are styptic, binding, and useful in all kinds of Fluxes and Bleedings, either inward or outward: The Bark is frequently used in Gargarisms, for the Relaxation of the Uvula; and for sore Mouths and Throats: It is, also, used in restraining Clysters, and Injections against the Prolapsus Uteri, or Ani. The Acorns, beaten to Powder, are frequently taken, by the Vulgar, for Pains in the Side.

The only official Preparation is the *Aqua Germinum Quercus*. *Miller's Bot. Off.*

4. *Quercus*; *pedem vix superans*. C. B. P. 420. *Robur*. VII. *five Quercus*; *pumila*. *Clus. H.* 19. *Descript.* VI.

5. *Quercus*; *parva*; *five Phagus Græcorum, & Esculus* *Plinii*. C. B. P. 420. *Raii Hist.* 2. 1386. *Tourn. Inst.* 583. *Boerb. Ind. alt.* 2. 177. *Phagus Esculus*. *Offic.* *Phagus five Esculus*. *Park. Theat.* 1386. *Phagus vel Esculus*. *J. B.* 1. 2. 74. ESCULENT, or SWEET OAK.

It grows in Greece and Dalmatia, and the Bark, Leaves, Acorns, and their Cups or Calyces, are in Use, and agree in Virtues with those of the common Oak.

Besides the foregoing Species of *Quercus*, *Dale* mentions the two following; the first is the *Cerrus*, or *Holm Oak*. See *ÆGILOPS*.

The second is the,

- ROBUR*. *Offic.* *Robur tertia Clusii*. *J. B.* 1. 2. 76. *Raii Hist.* 2. 1386. *Robur cum Galla majore rugosa*. *Park. Theat.* 1386. *Quercus Gallam exiguae nucis magnitudine ferens*. C. B. P. 420. *Tourn. Inst.* 583. THE GALL-OAK.

It grows in Pannonia and Istria. The Galls are used in Medicine.

With respect to Galls, there are several Sorts: The first and best is termed the *Aleppo Nut*, or *Galla Spinosa*; the second is white; the third, smooth and round; the fourth, of an irregular Figure; and the fifth, has a kind of Crown. All these Galls are owing to Insects, which first prick the Oak-trees, and then lay their Eggs in the Wound: These Eggs swell with the Excrescence, and first turn to Worms; then to Flies, which, having perforated the Galls, make their Escape. And as some Eggs are unfruitful, and remain in the Gall, they are observed to yield a volatile Salt.

Galls are very astringent, and are by some given inwardly in Dysenteries: They have likewise been recommended in intermitting Fevers; but the Foundation of their febrifugous Quality depends on too few Instances to be relied on. *Geoffroy.*

QUERCUS MARINA. See *FUCUS*.

QUERQUEDULA. The Teal: A Species of wild Duck. It is esteemed good for the Wind Colic, when applied to the Belly. *Lemery des Drogues.*

QUERQUERA. The same as *QUERCERA*.

QUIES. Rest. The Effects of which are abundantly explained, under the Article *FIBRA*.

QUINGOMBO. The Portuguese Name for a Species of *Aleca*, which grows in Brasil. *Raii Hist. Plant.*

QUINQUEFOLIUM.

The Characters are;

The Root is fibrous and perennial: The Leaves grow by more than Threes, at the Top of the Pedicle, round one Centre: The Calyx is monophyllous, not caducous, and, as it were, octophyllous, or decaphyllous, expanded like a Star, and furnished with very numerous Stamina, proceeding from the Compass of the Base of the Ovary: The Flower is roseaceous; pentapetalous, and more rarely tetrapetalous, the Petals standing round the Base of the Ovary: The Ovary is a seminal Head, involved in a Calyx, hemispherical, and has several Eggs, furnished with a long erected Tube.

Boerhaave mentions eleven Sorts of *Quinquefolium*; which are,

1. *Quinquefolium*; *rectum*; *luteum*. C. B. P. 325. *Pentaphyllum, five potius Heptaphyllum, majus, luteum, montanum, flore majore*. M. H. 188.

2. *Quinquefolium*; *majus*; *repens*. C. B. P. 325. *Tourn. Inst.* 297. *Boerb. Ind. alt.* 40. *Pentaphyllum & Quinquefolium*. *Offic.* *Pentaphyllum vulgatissimum*. *Park. Theat.* 398. *Raii Hist.* 1. 611. *Synop.* 3. 255. *Pentaphyllum five Quinquefolium vulgare repens*. *J. B.* 1. 397. *Quinquefolium vulgare*. *Ger.* 836. (*figura transposita*) *Emac.* 987. CINQUEFOIL, or FIVE-FINGERS.

The common Cinquefoil, or five-leaved Grass, has a large spreading, thick, woody Root; covered with a dark-brown Bark; and full of small Fibres, sending forth many slender creeping Stalks, which lie on the Ground, emitting small fibrous Roots from the Joints, by which it easily propagates itself; at every Joint grow the Leaves, five set together upon one long Foot-stalk, which are narrow, veiny, serrated about the Edges, the two outermost being the shortest: Amongst these come forth the Flowers, consisting of five round yellow Leaves, with several Stamina in the Middle, set, also, on long Foot-stalks; and after them small, brown, naked Seed: It grows every-where by Hedges and Way-sides; flowering all Summer. The Leaves and Root are used.

They are restraining and drying, and serviceable against all kinds of Fluxes and Hæmorrhages: The Powder of the Root, given to the Quantity of a Dram, two or three times a Day, is said to cure Agues: The same is, also, accounted good against malignant Distempers, and is an Ingredient in *Venice Treacle*: It is frequently used in Gargles for sore Mouths and ulcerated Gums, and to fasten loose Teeth. *Miller's Bot. Off.*

3. *Quinquefolium*; *quod Pentaphyllum, seu potius Heptaphyllum*; *erectum caule rubro*; *hirsutus*. H. C.

4. *Quinquefolium*; *rectum*; *floribus sublateis*. C. B. P.

5. *Quinquefolium*; *minus*; *flore pallidæ luteo*. T. 297.

6. *Quinquefolium*; *folio argenteo*. C. B. P. 325. *Pentaphyllum rectum, foliis profunde sessilis, subtus argenteis, flore luteo*. J. B. 2. 398.

7. *Quinquefolium*; *minus*; *repens*; *luteum*. C. B. P. 325. *Pentaphyllum*; *parvum, hirsutum*. J. B. 2. 598.

8. *Quinquefolium*; *minus*; *repens*; *luteum*; *flore tetrapetalo*. *Boerb. Ind. alt.* 40. *Tormentilla*. *Offic.* *Ger.* 840. *Emac.* 992. *Raii Hist.* 1. 617. *Synop.* 3. 257. J. B. 2. 598. *Tormentilla vulgaris*. *Park. Theat.* 394. *Tormentilla sylvestris*. C. B. P. 326. *Tourn. Inst.* 298. TORMENTIL.

The Root of Tormentil is pretty thick and large, for the Bigness of the Plant, frequently crooked and knotty, of a reddish Colour in the Inside, with many small Fibres; the Stalks are long, and very slender, and hardly able to support themselves: It has frequently seven, though sometimes only five, long narrow Leaves growing at a Joint; less than Cinquefoil, and serrated only at the Ends: The Flowers are small and yellow, of four Leaves, with a few Stamina in the Middle: The Seed is small, growing naked on the Calyx. It grows in Woods, and in Commons, and flowers in June and July. The Roots are used.

They are very drying and binding; good for Diarrhæas and Dysenteries, especially attended with malignant Fevers; they being, also, accounted alexipharmic: They are serviceable in Hæmorrhages of the Nose, Mouth, or Womb: They fasten loose Teeth; and help the Relaxation of the Uvula. *Miller's Bot. Off.*

9. *Quinquefolium*; *album*; *majus*; *alterum*. C. B. P. 325. *Pentaphyllum album*. J. B. 2. 598.

10. *Quinquefolium*; *foliis ternis*; *præcedenti simile*. H. C.

11. *Quinquefolium*; *quæ Tormentilla*; *reptans*; *alata*; *foliis profundius ferratis*. D. Plot. *Raii Syn.* 142. *Boerb. Ind. alt. Plant. Vol.* 1.

QUINQUE FRAGMENTA PRETIOSA. The Fragments of the precious Stones.

These rare Compositions are hardly prepared any other Way than by Chymistry, which sometimes affords us an Opportunity of employing them in Medicine: But it is sufficient, that we have spoken of each of these Stones in its proper Place; to which we refer the Reader. *Lemery des Drogues.*

QUINQUE-NERVIA. See PLANTAGO.

QUINQUINA.

Cortex Peruvianus, Peruanus, China China, Quinquina.
Offic. China China, Cortex Peruvianus, Quinquina, Cortex
Cardinalis de Lugo, Gascarilla. Mont. Exot. 8. *Kina Kina,*
vel Cortex Peruvianus Officinarum. Ind. Med. 63. *Arbor fe-*
brifuga Peruviana, China China, & Quinquina, & Gamana
peride dicta. Raii Hist. 2. 1796. *Pulvis febrifugus Peru-*
vianus. Barthol. Hist. Med. Cent. 5. p. 107. *An Holqua-*
built, seu Arbor Chillii. Hern. 50. Cap. 10. THE JESUITS
 TREE.

It is an Opinion universally received, that every Disease has a Remedy peculiar to itself; and a sick Person can hardly complain to any Man, who will not recommend an infallible Medicine for his Disorder. This Error, which is the genuine Foundation of Quackery, should, if possible, be entirely eradicated out of the Minds of Men; for as the Powers and Effects of Bodies are not in their Natures absolute, so the Qualities of Food and Physic have a Relation to the human Body, on which they operate: Hence Experience teaches us, that the same Medicines may be both prejudicial and serviceable to different Persons labouring under the same Disorder, though administered in the same manner.

Hippocrates long ago inculcated this Doctrine in *Lib. de Art.* 56. "Every one, says he, is not a Judge, what is beneficial and what pernicious; and yet the whole Art of Medicine consists in this Distinction, for those Remedies, which are of Service, are so from the proper Use of them; and those which are of Disservice from the Abuse of them." This Author by no means ascribes to all Medicines, an absolute Power of procuring Health, but only in a certain respect; and that not because they are exhibited in any particular Disorder, but because they are duly and judiciously prescribed, after a thorough Examination into the Patient's Constitution, with the Cause and Nature of the Distemper, having, at the same time, a peculiar regard to the Time, Order, Dose, and Quantity; but when these Cautions are neglected, he declares them noxious. Since, therefore, Medicines are both serviceable and prejudicial, he justly terms Medicine an Art; and pronounces him only a good Physician, who makes this Distinction between the different Effects, and various Operations, of Remedies.

A due Regard to this Doctrine of *Hippocrates* would put an End to many opprobrious Controversies between Men of Learning; whilst some are surprisingly lavish in their Encomiums, and others equally profuse in their Disparagement, of the same Remedy, in the same Disease; whilst they very seldom agree in determining the Power, Effect, and Use, of any Medicine, in this or that Disease. No one can be a Stranger to the different Sentiments, which are entertained of those Medicines, called *heroic*; such as Mercurial Preparations, Antimonial Vomits, Chalybeates, Opiates, drastic purgative Narcotics, and, among surgical Remedies, Vesicatories, Fontanels, Setons, and Venesection: But what is still more surprising, they agree no better in their Opinions of the most simple and diætic Parts of Medicine, such as cold and hot Baths, and the various Cures performed by Milk and Abstinence.

The *Peruvian Bark*, brought into *Europe* about seventy Years ago from *America*, has met with the same Fate: It is wonderful, with what Applause it was at first received; and what Commendations were at first bestowed upon it; as an infallible Remedy against Intermittents: Nor are there wanting, at this Day, some who have it in the highest Esteem. Another Set of Physicians condemn it as unsafe, and even pernicious; and these have still their Followers; and both Parties, in their Writings, appealed to their own Practice: But, for my own Part, I esteem it a good, effectual, and safe Remedy, when properly used, according to the above-mentioned Rule of *Hippocrates*; but hurtful and dangerous, when imprudently or unskillfully given, without any regard to the Constitution of the Patient, the febrile Cause, the Stage of the Disease, and other Circumstances. I have, therefore, made choice of it for the Subject of my present Dissertation, in which I shall first produce the Arguments of the Advocates for the Bark, and then those of their Opponents; next from a rational Account of Fevers, and their Causes; and an Inquiry into the Principles of the Bark, and its manner of operating, I shall shew both its salutary and prejudicial Qualities; and, lastly, answer all Objections.

The *Peruvian Bark*, then, has a great Number of Advocates; for, at its first Appearance in *Europe*, it was known at *Rome*, and sold, by the Jesuits, at an extravagant Price, as a most infallible Febrifuge; and in a little Bill, with Directions for the Use of it, they declared, that this alone, with a preceding Purge, if necessary, would cure even Quartans. *Bartholine*, Cent. 5. Hist. 50. tells us, that Cardinal *de Lugo* had Testimonials of above a thousand Cures performed by this Medicine in the Year 1653, in which simple and double Quartans

greatly raged; and that *Fonseca* had, by Experience, found it not only innocent, but salutary. *Fr. Redi, de Experim. Nat.* a. 143. says, its Effects are miraculous. And *Tozzi, in Comment. in App.* 25. Sect. 2. asserts, that Quartans, which had hitherto been esteemed incurable, are now easily and safely cured by the *Peruvian Bark*.

From *Italy* it was conveyed into *France*, and there several times administered with such Success, that *Tagaultius* gave it, both to the King, and Dauphin, more than once, to good Purpose. About the same time it was received in *England*, with almost universal Applause. For *Willis, de Febr. Cap.* 6. expressly says, that of an hundred Patients, who had taken it, scarce one miscarried. To this one may add, the Testimony of *Mr. Boyle, in Tr. de Philos. Experim.* who assures us, that he had removed Quartans of a Year's Continuance, by a Dose or two of the Bark, to the Quantity of a Dram. But *Digby, in Tr. de Medic. Secret.* most solemnly affirms, that, out of thirty whom he had cured of Quartans, by the Bark, not two relapsed: Adding farther, that a Relapse was rather a Reproach to the Physician, than the Remedy. That great Practitioner *Sydenham, in Tract. de Febr.* has not been wanting in his Encomiums on the Bark, and is very particular in his Description of the proper Method of using it. And that it is still in great Repute in *England*, is certain, from the Writings of *Freind, Lister, and Moreton*, which last in *Tr. de Febr.* says, "The *Peruvian Bark* is, by the unanimous Consent of all modern Physicians, an universal Febrifuge, which entirely, speedily, safely, and successfully cures all intermitting Fevers, at any Season of the Year, at every Age, and in every Temperament; so that it is unnecessary for Physicians to rack their Inventions for the Discovery of any other."

By this Time it had gained great Reputation in most Parts of *Europe*. Among the *Swiss*, *Muraltus* greatly extolled it; and in *M. N. C. Dec.* 21. An. IX. Obs. 2. has given Instances of its Efficacy, both in Tertians and Quartans, upon Young and Old, and concludes with these remarkable Words, "It would require a large Volume, to recount the Cures performed by myself, and others, with the Powder of this Bark." The Writings of *Boerhaave* and *Decker* convince us, that it was, and still is, greatly esteemed in *Holland*. *Bohnius, in Diss. de minus suspecta Februm Fuga*, and *Bergerus, Diss. de Coriis Chinæ ab iniquis Judiciis vindicato*, have, by many solid Arguments, proved the Virtues of it; and that the *Germans* administered it in intermitting Fevers. Nor was it less esteemed by *Waldsemidtius, Dolæus, and Zappus*, who acquired both Fame and Wealth, by an antifebrile Electuary, whose Basis was the Bark: And his Son-in-law *Stroidel* still prescribes it with the same Success.

On the other hand, there have been, and still are, many learned and excellent Physicians, who do not scruple to reproach the Bark with the Title of an uncertain, dangerous, and even pernicious Medicine. Some, relying upon their own Experience, positively affirm, that it is not only attended with violent Relapses, but new and incurable Diseases, as a Cachexy, cedematous Tumors of the Feet, Dropsies, obstinate Costiveness, Oppression of the Præcordia, hypochondriacal and hysterical Affections, slow and hectic Fevers, accompanied with a Loss of Strength and Appetite, Consumptions, and sometimes Convulsions and Epilepsies in Children. Among its most considerable Antagonists is *Baglivi*, who, *Opp. Lib.* 2. says, that a Tertian will not admit of a Febrifuge, till the fifteenth Day, when it ceases spontaneously; that all Remedies before that Time are useless, if not prejudicial; and that those Physicians acted preposterously, who, by Febrifuges, endeavour, as it were, to check a Fever in its Infancy; for within a few Days it either returns more violently, or is succeeded by Asthmæ, Dropsies, slow Fevers, Consumptions, or some other dangerous Distempers.

Among the *Germans*, *Ettmüller, Opp. Tom.* 2. calls it a precarious Remedy, and elsewhere affirms, that it generally produces Costiveness, a Tumor and Hardness of the Abdomen, with tense Pains; and that when these gradually remit, or are irritated by Purgatives, or the Spirit of Sal Ammoniac, the like Fever returns with a more intense Cold. *Palladius*, also, in an Epistle to *Baglivi*, informs us, that the *French* give the Bark successfully in Fevers; but that this Practice would be very ridiculous in *Italy*; nor does he advise it till towards the End, for strengthening the Stomach. For more Instances of the noxious Quality of the Bark, see *Blegny, Zodiac. Gall. Med. Phys. An.* 4. *Mens. August.* Anno 5. *Mens. Januar.* and *M. N. C. Dec.* 3. An. 9. Obs. 109. and Cent. 3. And *Stablius* in *Theoria Med. and Opific. Physico-Med.* as, also, *Juncker, in Conspect. Medic. Theoret. Pract.* every-where oppose and condemn the Use of the Bark in Fevers. And I must confess, that an improper Use of the Bark is very pernicious, and too often attended with dangerous Relapses, or other severe Distempers; and particularly, that a Quartan is followed by

by the Dropsy; and a Tertian, by hypochondriac Affections, in consequence of the preposterous Use of the Bark.

I cannot, however, agree with those who pronounce the Bark absolutely, and always, prejudicial in Fevers; and, for that Reason, endeavour to discredit it, as ill adapted to their Cure; unfriendly to their happy Terminations; and opposite to the salutary Efforts of Nature: For these imagine, that a Fever is nothing but an exactly methodical Effort of Nature, which, by increasing the Motion of the Solids and Fluids, endeavours to discharge out of the Body, through the proper secretory and excretory Ducts, those Causes, which give Birth to the Disorder: For the Accomplishment of this, say they, the Humours must be put in Motion, and the Passages opened; but Astringents, among which is the Jesuit's Bark, incrassate the Fluids, contract and obstruct the small Canals of the excretory Ducts, and, consequently, retain the morbid Matter; which must necessarily produce Relapses, or other dangerous Distempers.

They further suppose, that Nature's principal Design in Intermittents, is, to diminish a Superfluity of Blood, pernicious to Life, by an Increase of internal Heat, resulting from an Acceleration of the Blood's Circulation, and certain Resolution of it into an excrementitious Serum; and at the same time, by a stronger Impulse, to free the Viscera from Disorders, and Obstructions: And, consequently, that these febrile Motions are, as is were, Remedies and Means, by which Diseases are cured, Pains expelled, and those things which threaten Death, eradicated; so that a Suppression of them must be very dangerous. Besides, that it is an hazardous Attempt to disturb and hinder this wise Intention of Nature, in expelling the noxious Humours through the secretory and excretory Ducts, by inducing a contrary Effect from Astringents; which Practice must be attended with Relapses, severe hypochondriacal and hysterical Affections, slow Fevers, Obstructions of the Viscera, Jaundice, Cachexy, Dropsy, Melancholy, and obstinate Costiveness.

But they rely principally upon this, that the Fomes of a Tertian is seated in the Primæ Viæ, or in the Stomach; and especially in the first small Intestines and adjacent Organs; such as the meseraic Vessels and Glands: But as this Fomes is generally a viscid and tenacious Humour, that it is an Instance of the Wisdom of Nature, that in the Beginning of the Disease, the porous and external Parts should be constricted, that, by this means, the Blood may be forced to the internal Parts, and detained there, till a sufficient Quantity of the serous lymphatic Humour transpires through the Coats and Glands of the Viscera into their Cavities, which serves afterwards partly to colliquate and mollify, and partly to discharge the febrile Matter: Hence they conclude, that all Medicines are pernicious which obstruct these salutary Motions, inspissate the viscid febrile Humour in the Primæ Viæ, and by constricting the excretory Ducts suppress all beneficial Secretions and Excretions, as well by Stool as Urine, and the Pores of the Skin. But the Bark is of this astringent Quality, and therefore to be rejected; and such Remedies are only to be used, as assist Nature, dissolve the febrile Matter; and, by decreasing the Redundancy of the Blood, and promoting Secretions of all kinds, free the Body from the peccant Humour; and not such as dangerously repress it, by a Suppression of the febrile Motions.

Thus the Adversaries of the Bark argue; and, at first Sight, they seem to have some Shew of Reason on their Side: But whether this should positively deter all Physicians from the Use of it, is next to be inquired into. Their whole Argument, then, is founded on the Supposition of some internal Agent, which, upon a previous Knowledge, and subsequent rational Intention, produces and directs the vital Motions, among which are the febrile, as well as the Effects of Remedies, to some certain End. But such a Principle is so far from being useful, either in the Theory or Practice of Physic, that it establishes Errors, or induces Confusion, both in explaining physical Subjects, and discovering or applying Remedies.

He who understands this, will soon determine what Judgment to pass upon the febrile Motions excited by this Principle: They esteem these Motions naturally salutary; whereas they are rather destructive; and accuse wise Nature of Imprudence and Madness. For every Smatterer in Physic knows, that this universal Commotion is attended with spasmodic and convulsive Agitations of the external and nervous Parts, and, consequently, of the whole nervous System; not without a violent Injury to the animal Functions, and Danger of Death: So that every one, who dies of an intermitting Fever, expires with these Symptoms. And indeed, if this Agent could at Pleasure direct the vital Motions, it would be more safe, easy, and rational, without this universal pernicious Spasm, and Stricture of the Body, to conduct this copious Motion of the Blood and Humours, gradually to the Seat of the Distemper. And though I own, that Fevers, especially of the intermitting Kind, in

Bodies full of thick and impure Juices, sometimes, by an extraordinary progressive Motion of the Humours, and an Increase of Heat, prove medicinal, and prevent eminent, chronic, and violent Disorders, arising from Obstructions of the Viscera, yet they are not always accompanied with a Redundance of Blood and Humours, Impurity, or an excessive Crassitude of the Blood and Juices, or an Infarction of the Viscera; much less are these the immediate Causes of Intermittents; and, consequently, this so impetuous Motion of the Solids and Fluids, with a Dissolution of the vital Humours, is quite unnecessary.

As to that Part of their Arguments; which is built upon Nature's Design for the Preservation of the Body, to diminish the Redundance of the Blood, by a dissolutive Resolution of it, by the intestine Motion; we absolutely deny a Redundance of Blood and Humours to be the Cause of the Distemper. For, if this was the Case, plethoric Persons would be most subject to Fevers; and all kinds of Fevers removed by seasonable Venesection. Whereas a Consumption of Blood, and its excrementitious Particles, is the Effect and necessary Consequence of the febrile Heat, which is rather an Enemy, than a Friend, to Nature, as it dissipates and destroys the Strength, upon which the Vigour of the vital Motions depends.

Of no greater Validity is that Way of reasoning, which attributes the Cause of Intermittents to the crude, viscid, tenacious Humours, proceeding principally from Indigestion in the Primæ Viæ, and adjacent Organs; for intermitting Fevers very seldom proceed from an irregular Diet, or bad Digestion: But we may rather deduce the Origin of Tertians from a Quantity of acrimonious bilious Humours in these Parts, especially since we find young, choleric, and passionate Persons, liable to them in very hot Seasons; and that their Vomits and Stools are bilious, and their Urine generally high-coloured, from a copious Mixture of sulphureous and bilious Particles. And though I do not approve of Astringents in all kinds of Fevers, yet I cannot allow, that the Bark, judiciously exhibited, has this Effect; but will rather venture to assert, that it promotes Excretions and Perspiration, as I shall shew more at large hereafter.

I shall now propose my own Theory of Intermittents, and their Generation; by which we shall be the better enabled to judge of the proper Methods of Cure, and the Remedies best adapted to remove them. But I must premise, that Experience convinces us, that neither an irregular Diet; nor bad Digestion, gives Rise to them in one or two Persons, but that they rage epidemically, and spring from a preceding, unusual, long-continued, hot, and dry State of the Air, when we carelessly expose ourselves; about Sun-set, to the North Wind; or cool, moist Breezes, from whence we feel a remarkable Cold and Shivering. For this Reason in low marshy Countries; which abound with Ponds, and stagnating Waters; we see the Inhabitants so frequently afflicted with Intermittents at all Seasons; that they seldom live to any great Age; for an Air which is cold, dense, moist, and replete with Insects; must stop Perspiration. Nor does any, especially an intermitting, catarrhus, arthritic, or rheumatic Fever, attack us, till cuticular Excretion has been lessened or suppressed; nor are we, before that, in Danger of a Relapse; and the Continuance and Violence of the Disorder is proportioned to the Interception and Suppression of this salutary Evacuation.

When there is, therefore, a large Collection of noxious Humours, either from the Temperature and preternatural State of the Air; an Irregularity in the Affections of the Mind, or coarse Diet, which ought to be conveyed through the Pores; and the Transpiration, which should rather be increased, for carrying off such a Quantity of active, vapourish, salino-sulphureous Particles, is, by a Stricture of the nervous and excretory Glands of the Skin, greatly impeded, it necessarily follows, that the Motion of the excrementitious Serum must be directed another Way, that is, to the internal Parts. As this, in catarrhus Fevers, happens to the glandulous Parts of the Nose, Fauces, and Bronchia; in those of the rheumatic and arthritic Kind, to the Membranes of the Muscles, and nerveo-glandulous Ligaments of the Limbs; in Diarrhoeas to the Coats of the Intestines; so, in Intermittents, the secretory and depuratory Viscera of the Abdomen, as the Liver, Pancreas, Glands, and glandular Coats of the Stomach and Intestines, are affected. But this malignant Humour here collected, vitiates, corrupts, and contaminates the fermentative, lymphatic, salival, and bilious Juices, destined to Digestion and Chylification; for these, whilst lodged in the Cavity of the Duodenum, by their mutual Fermentation, and Commixture with the Crudities of a bad Digestion, contract, by their Continuance, a worse Disposition, and become very prejudicial to the nervous Parts. These depraved Juices being successively conveyed to the Blood, as well through the Pores as Tubes, when they reach the nervous Membranes, encompassing the Brain

and Spinal Marrow, excite, by their noxious Quality, an universal Spasm in the Vessels and nervous System, which constitutes the Essence of a Fever.

For a Fever is nothing more, than a Disorder or Effect of a preternatural Affection of the nervous System: For all the subsequent Symptoms, as Pains in the Head and Back, particularly about the first Vertebra of the Loins, convulsive Pains of the Joints, Lassitude, Languor, Cold, Rigor, and Horror, sometimes productive of a Concession of the whole Body, Anxiety of the Præcordia, and Difficulty of Breathing, with Inquietude, a contracted, quick, small, unequal Pulse, Vomiting, or an Inclination to it, frequent Thirst in the cold Fit, a very great Costiveness, or even a Flux, in some a Stimulus to make Water, and, as I have often observed in old Men, assisted especially with a Quartan, a Deprivation of the Understanding and Senses, all plainly indicate a violent Disorder of the nervous System. Whilst, therefore, under these Symptoms, by the Stricture of the exterior Parts, the Blood is impelled to the larger Vessels, the Lungs, Head, and Heart, it by its Quantity excites a more violent Pulse, and quicker Systole, in the Muscle of the Heart: Hence the Blood circulates with more Celerity and Strength; the Motion of the Arteries becomes more violent and swift; the Spasms of the Nerves are relaxed by this Increase of Heat, and the Matter which produced them discharged: The Blood is then invited to the Surface of the Body; and the Pores of the Skin, upon this Remission of the Stricture, being opened, a Sweat succeeds.

This seems to me the Origin and Progress of an intermittent Fever; and I shall now endeavour to account for the Return of a Paroxysm, at a particular Distance of Time: This febrile Matter in the Duodenum, composed of vitiated, bilious, lymphatic, and salival Juices, with the Crudities of indigested Food, passes successively to the Blood and nervous System. Then what remains after this Fermentation, if I may so call it, receives fresh Nourishment from the impure Juices flowing out of the Liver, Pancreas, and Glands of the Duodenum: Then, by the extraordinary Increase of Motion in the Paroxysm, the Blood and Serum degenerate into mucid, saline, sulphureous Sordes, which, as they are not entirely dissipated on the intermediate Day, remain within, and increase the Corruption of the lymphatic salival Juices, and of the Bile itself. And give me Leave to make one Observation, which no one, I think, has yet made; which is, that upon the intercalary Day, the Weakness of the Pulse, and the Coldness, rather than Heat of the external Parts, and Skin, sufficiently prove the Transpiration to be incapable of discharging the febrile Matter. And, lastly, it is very probable, that the Tone, Vigour, and Function of this universal, nervous, fibrous, and tubular Emunctory of the Body, the Skin, are very much weakened by so many violent and opposite spasmodic Motions, followed by an excessive Remission; so that the salutary Business of insensible Transpiration, cannot be effectually performed through the whole Course of the Fever, and, of consequence, the Depuration of the Blood and Humours not carried on with proper Vigour: From these Considerations we may reasonably conclude, that the Fomes, which is continually receiving fresh Supplies, may, in a certain Space of Time, be collected into a Quantity sufficient to bring on another Fit.

That the Paroxysms return, sometimes daily; sometimes on the second, third, or fourth Day, and that at different Hours; and sometimes are double, may be attributed to the Difference of the Matter, either on account of its Quantity, and Activity or Inactivity, and the greater or less Afflux of it to the Primæ Viæ; and likewise the different State of the Viscera, especially the Liver, Spleen, and Pancreas. It is very manifest, that anomalous Quotidians, Tertians, and Quartans, were epidemical in Germany last Year, in consequence of the unusual Length of the Heat and Drought in the Summer and Autumn; and that these Fevers must proceed from the various Disposition of the Humours and Viscera, according to the Variety of the Temperaments and Foods of the Patients.

After this explicit Account of the Cause and Nature of intermitting Fevers, we shall inquire into the Preservatives against them: Amongst these the *Peruvian* Bark claims the Preference, whose Qualities, therefore, and Effects, whether beneficial or noxious, demand a most accurate Examination. First, then, it is an Astringent; for its Powder, either by itself, infused with Water, or mixed with highly rectified Spirit of Wine, constricts the Tongue: This is farther confirmed by a chymical Experiment, while a Solution of it with Vitriol, like all other Astringents, grows as black as Ink: Another of its Principles is a Bitter, of an opening Nature, which is universally allowed to be a proper Remedy for Fevers; since almost all Bitters, such as Wormwood, Carduus Benedictus, Fumitory, the lesser Centaury, red Gentian-root, and *Virginia* Snake-root, and Snake-wood, are allowed to be excellent Febrifuges.

The Bark is, also, a Balsamic, which is very agreeable to Nature; but this Quality shews itself, not so much by the Taste and Smell of the Powder, as by a Water drawn from it by Distillation, or when mixed with Spirit of Wine. Another of its Principles is, a fixed Earth, as appears after Solution and Extraction; and this Principle, though hitherto overlooked, is of great Efficacy in correcting, blunting, and involving the Acrimony of the febrile Matter; particularly of the bilious Kind, in the same manner as earthy Substances, Shells, Mother of Pearl, Sealed Earth, and Coral, operate in removing Fevers. This Simple, therefore, according to *Galen's* Manner of speaking, acts by the Whole of its Substance; and it has, besides, many other Advantages, which are seldom or never found in any other Medicine; for which Reason they are greatly mistaken, who confine the Power of this Remedy over Fevers to Astringency alone.

From this Theory and Pathology of Fevers, and these Qualities of the Remedy, we may soon learn the proper Use of the Bark, in intermitting Fevers, and how to give it to Advantage. We have already proved the material Cause of Intermittents to be, a large Collection of vitiated Bile, and salival Juices, mixt with indigested Aliments, and lodged in the Primæ Viæ, particularly in that winding Intestine the Duodenum; from whence successively passing, in certain Quantities, into the internal Parts, and nervous System, it occasions these spasmodic febrile Motions. Our Intention, therefore, in the Cure should be, to correct and blunt this peccant Matter, procure its Elimination, and prevent its further Discharge from the Glands, and biliary Ducts; and, in my Opinion, if the Bark does not entirely, it will yet, in a great measure, answer these Intentions.

We grant, indeed, that this Febrifuge is not so effectual, when the Primæ Viæ are overcharged with peccant Sordes, especially of the viscid and tenacious Kind; but rather does Harm, by inspissating and rendering them more immovable; and, at the same time, by its astringent Quality, rendering the Patient costive; by which means the febrile Matter is not only retained, but the tensile Pains and Anxieties about the Præcordia are increased, as we have often seen in those, who have been long afflicted with a Quartan, especially old Persons and Children, when they have taken great Quantities of the Bark. In this Case, therefore, it is safer and better to reject this Remedy, or at least, not to use it till such others have been exhibited, as conduce to attenuate, incide, and evacuate by Stool, the thick, viscid, and tenacious Humours. For these Intentions, among Salts, we give the Preference to depurated Sal Ammoniac, the digestive Salt of *Sylvius*, vitriolated Tartar, the Arcanum Duplicatum, *Glauber's* Salt, and *Epsom* Salt. Salts, also, drawn from medicinal Waters, are very efficacious in removing chronic Fevers, such as the *Sedlitz* and *Egran*; half an Ounce, or an Ounce of which, dissolved in a sufficient Quantity of Water, and exhibited as often as the Circumstances of the Patient require, will cleanse the Intestines from the peccant and viscid Sordes. The Power, also, of Bitters is very great, in inciding, deterging, and evacuating the mucid, tenacious, and acid Juices; among the best of these we may reckon the Extracts of the lesser Centaury, red Gentian, and Carduus Benedictus, Wormwood, Rhubarb, and Aloes previously corrected and qualified, which, dissolved in a lixivial aqueous Menstruum, and given in Wine or Brandy, on the intercalary Day, are very serviceable. After these, the Bark, with other Remedies assisting its Operation, not only greatly prevents an excessive Afflux of the peccant Humours to the Primæ Viæ, but, also, promotes and facilitates Perspiration.

In like manner, when the Crudities arising from indigested and corrupted Aliments, with the vitiated Bile and salival Juice, nourish a Fever, Reason and Experience convince us, that we ought to purge the Primæ Viæ of these acid, bilious, and corrupted Humours, before we use specific Febrifuges and Corroboratives. For this Purpose, gentle Emetics are proper, or such Medicines as evacuate both upwards and downwards; but we must avoid all strong drastic Purges, and violent Emetics; for these being injurious to the Stomach and nervous Parts, weaken the Patient, and rather increase than diminish the preternatural Commotions. For this Purpose I would recommend an Ounce or two of Manna, with a Grain or two of emetic Tartar, gently dissolved in a sufficient Quantity of Spring-water; which Medicine operates efficaciously enough, both upwards and downwards; and, as I am assured from long Experience, answers the End proposed. After these Measures are duly taken, the Bark may be exhibited with the greater Success.

On the contrary, there are many Species of Fevers, such as the bilious Summer Quartans and Tertians, those of the double and continual Kind, accompanied with severe and cruel Symptoms, which proceed from an imtemperate, sharp, hot, and volatile Bile, generally after a long-continued, hot, and dry Season.

Season. In these Cases, after a few Fits, the Bark, especially in Powder, mixed with absorbent and nitrous Medicines, will be of Service in fixing, correcting, and blunting this Matter, and preventing too copious an Afflux of it to the Intestines: Thus have I known great Advantages produced by plentiful bilious Stools, especially in bilious choleric Constitutions; for the Fever has soon after left them.

As what I have already said, is supported by Experience, so I can, upon the same Foundation, assert, that the Bark supports and promotes Perspiration; which, if not the principal, is certainly a very material Step towards the Cure of intermitting Fevers. For when this salutary Evacuation, as I before observed, is suppressed, and the Sordes, which should be discharged by it, are convey'd to the internal Parts, it gives the first Rise to these Fevers, which bear a Proportion to the Quantity of bilious Sordes retained in the Blood and Humours. Then these Sordes, on account of the inconsiderable Excretion upon the intervening Day, being collected in a greater Quantity, produce a Return of the Fit. Relapses, also, proceed from a Retention of the febrile Matter, which generally happens, when the Patient, too soon after Recovery, exposes himself to a cold humid Air, near stagnating Waters, in low Places, or in vaulted Churches, or to the North Winds. It must, likewise, be attributed to the greater Freedom of cuticular Excretion in the Summer, that Summer Tertians and Quartans are more easily cured, than those of the autumnal Kind; and that Quartans, which have continued all the Autumn, Winter, and Spring, go off spontaneously about the Summer Solstice, without any Medicines. And this will account for some Instances, produced by Authors of undoubted Credit, where obstinate Fevers have been cured by bare Exercise, as Running, Leaping, Riding, or by hot Baths, and drinking Wine till the Pores were opened.

So great is the Use and Necessity of Perspiration in the Cure of Fevers, that it is incumbent on us to shew, that the Bark is endued with a Power to promote it. For its astringent Quality seems adapted to produce a contrary Effect; and it is commonly thought, that it obstructs the Pores, and prevents Perspiration. But we do not ascribe an absolute and positive astringent Quality to the Bark, but rather esteem it a Corroborative, in consequence of its bitter and balsamic Principles.

For though aluminous and vitriolic Substances, Snake-root, and the Roots of Tormentil and Bistort, are very astringent, yet they prove efficacious in intermitting Fevers, if they are seasonably, and after a proper Regimen, exhibited, especially drinking a warm Decoction, or Infusion, after them, and using proper Exercise. But the Power, Nature, and Virtue of Corroboratives are far different; since these act not so much by their terrestrial and astringent, as by their balsamic and bitter Quality, upon the weakened Solids of the Body, by procuring to them Strength, Tone, Vigour, and a motive Faculty, that thus the Motion of all the vital Fluids, which principally depends upon that of the Solids, may be rendered quicker, and more expeditious, through the whole Habit; which always produces a greater Excretion of Matter, by insensible Transpiration; so that Corroboratives are much safer than Astringents. And, indeed, among the Simples of a corroborative and sub-astringent Quality, those are best and most efficacious in curing obstinate and inveterate Disorders, which have somewhat of a balsamic Virtue. Hence Decoctions of the vulnerary Herbs, such as Strawberries, Sanicle, Baum, Agrimony, Scabious, Horehound, Lung-wort, Liver-wort, Spleen-wort, Scolopendrum, Money-wort, Plantain, Yarrow, the Flowers of Daisies, and St. John's-wort, and Tree Lung-wort, have an universal and surprising Effect, not only in the Cure of Wounds, but, also, of inveterate and almost incurable Diseases, such as the Cachexy, Consumption, Scurvy, Jaundice, Spitting of Blood, and sometimes a Quartan, by depurating the Blood, opening the obstructed Viscera, and promoting the languid Excretions; they do not, however, act immediately upon the Fluids, by correcting their Disorders; but rather upon the Solids, by restoring their Tone and Vigour. Nor are we now unacquainted with the Power of Cascarella, which is hotter and less balsamic than the Peruvian Bark, in stopping excessive, and even dysenteric Fluxes; and, when properly applied, is of Service in intermitting, and, likewise, slow Fevers, which proceed from a Fault of the Stomach, or a Weakness of the Digestion.

The Peruvian Bark, then, is so remarkably salutary, that by strengthening the Tone of the Solids, it promotes the Circulation of the Blood; the various Excretions, and particularly, insensible Perspiration. Hence we learn from Experience, that by the Use of it the Strength is restored, Vigour of Body and Mind recovered, lost Appetite revived, with an absolute Cessation of the febrile Paroxysms. Other celebrated Physicians have observed the same remarkable Effects produced by it: Thus Lister, Bobmius, Sydenham, Decker, Bergerus, Jones, Merton, and D'Aquin, unanimously declare, that the Bark in an extraordinary manner corroborates the Stomach, quickens the

Appetite, increases the languid Heat of the Body, restores the Strength, and not only promotes Perspiration, but, likewise, Urine, and sometimes renders the Body soluble, especially if it be fresh. And, at last, they judiciously add, that all who have found this Effect from the Bark in Fevers, have continued free from the Disorder, and been afflicted with no Symptom or Inconvenience arising from it. But we must take notice, that these salutary Operations are not derived from the increased cuticular Excretion alone. For I have not only often observed, that, after a plentiful and continual Sweat on the intercalary Days, the Fit has nevertheless returned, without any Increase of Strength or Appetite; but am, likewise, convinced from Experience, that strong Sudorifics are not proper and conducive to stop febrile Paroxysms. For there is a great Difference between Sweat, which often proceeds from a Want of Strength, and decayed Tone of the Skin; and an augmented Perspiration resulting from a brisker and quicker Circulation of the Blood through the whole Body: This latter may be distinguished by the Vigour and Equality of the Pulse. And these Effects are not so much produced by Sudorifics, which excite an hot intestine Motion in the Blood, as by those Medicines which restore and corroborate the Tone of the Solids, Heart, and Vessels; among the Number of which Remedies, we may justly reckon the Peruvian Bark.

Nor am I of Opinion, that this Remedy alone does, at all Times and Seasons, by corroborating the Solids, increase the Circulation of the Blood, and Perspiration, in those who labour under Intermittents; but it is very necessary, that the Body should be duly predisposed, the Passages and Tubes of the Excretories open, and not obstructed by Spasms, the Humours thin and fluid, not thick, viscid, and immoveable, and the Virtues of the Remedy entire, and neither blunted nor weakened by the peccant Humours of the *Prima Via*. For the Effect of our Bark is the same as that of well-prepared Chalybeates, which, also, by corroborating the Tone of the Solids, and thus promoting an universal Circulation of the Blood and Humours, are of very great Efficacy in curing inveterate and obstinate Diseases: They do not, however, always produce these happy Effects, but only when the Fluids and Solids are duly disposed to promote the various Excretions. Since, therefore, Chalybeates, by strengthening the Solids, promote Perspiration, the Reason is evident, why chalybeated Flowers of Sal Ammoniac, as, also, those prepared with Blood-stone, duly exhibited either in Powder, or reduced to an Essence with Spirit of Wine, subtile Crocus Martis, and rusty Filings of Steel reduced to a Powder, and properly exhibited, have the same Effect as the Bark, in stopping and even removing febrile Motions; but on the contrary, prove highly prejudicial, when indiscriminately prescribed, without any regard to Time, or the Habit, Constitution, and peculiar Circumstances, of the Patient.

Hence it may possibly seem specious to urge, that, perhaps, it would be safer, and more reputable for a Physician, not only in the Cure of various Diseases, but, also, of Intermittents in particular, to abstain entirely from the Use of such Medicines, as require so exact a Circumspection, to prevent them from being mischievous; and rather commit the principal Business of the Cure to Nature, administering these only, which correct the Intemperance of the Humours, and render them sufficiently moveable and fluid. But this Practice is not always safe and beneficial to the Patient; for Experience teaches us, that Intermittents are sometimes so obstinate and stubborn, that tho' an exact Regimen has been observed, and safe and select Remedies used, which not only correct and dilute, but, also, gently evacuate, and after the Paroxysm excite a Diaphoresis, they yet continue for several Months, and sometimes a whole Year, and longer, emaciate the Body; and entirely exhaust the Strength. Besides, tho' the Violence of the Fever is in the mean time abated by these Medicines, yet on account of the great Weakness brought on by its long Continuance, and which, according to Celsus, happens in all Diseases, by any slight Error in Diet, or Regimen, gentle febrile inconsiderable Paroxysms easily return, or other Diseases, such as a Cachexy, and slow Fevers, are produced, especially if the Patient eats liberally; so that, even the Enemies of the Bark, and Baglivi himself, are forced to own, that in the End, when the Fever has for a long time preyed upon the Strength, the Bark may be used to strengthen the Stomach, and the whole Body. And certainly there are many, and those considerable Disorders, especially such as arise from a Redundance and Impurity of the Juices, which might be successfully cured without Physic, by Abstinence and Hunger alone; but as many are unwilling to undergo such a Degree of Mortification, recourse must be had to Venesection, which is far less safe than Abstinence. Care, must, therefore be taken to avoid dangerous and prejudicial Measures.

Another Argument brought by many learned Physicians against the Bark is, that its astringent and corroborating Qualities suspend the febrile Commotions and Paroxysms, but do

not remove the material Cause of the Fever, which afterwards induces Relapses, or other more terrible Diseases. But we have already proved, that the *Peruvian Bark* is of such a Nature, as, when exhibited duly, in a proper Order, and in Conjunction with other suitable Remedies, to remove the Cause of the Fever, by promoting Perspiration, and restoring the due Tone of the Solids. Besides, there are Cases, where it is expedient to check and remove, for a time, morbid, and even febrile Commotions, leaving the Cause to be afterwards subdued. For sometimes the Fits are so violent, for Instance, in a continual and double Tertian, that the Strength being consumed by Watching, and long-continued excessive Heat, the Patient becomes incapable of supporting the Disease any longer. Here then it is very serviceable, and indeed necessary to suspend these dangerous Commotions for a time, that Remedies (both of the correcting and evacuating Kind) may be afterwards more efficaciously used to remove the Cause of the Fever, because the Medicines would either do no Service, or be prejudicial, during such a violent Paroxysm of the Fever, and such a Perturbation of the Economy of the natural Motions and Functions.

But there is another Argument against the Use of the Bark, which seems to carry greater Weight with it, and which is, that many Persons, as Experience evinces, who have been afflicted with Fevers, have by this Medicine been hurried into dangerous and incurable Diseases, such as slow and hectic Fevers, Cachexies, an Ascites, and Tympanites; in Men, hypochondriac, and in Women, hysteric Disorders, and in Children, Convulsions, and Epilepsies. But, though it cannot be denied, that these dangerous Disorders frequently follow Intermittents, yet the Cause of this is not evident, and therefore deserves an accurate Examination. It must be observed then, that before the Fever the Humours and Viscera are generally disposed to those Diseases, which may, also, in some measure, be produced by an improper Regimen, Diet, and manner of living, great Perturbations of Mind, and perhaps, also, by an unseasonable and imprudent Administration of the Bark, either with regard to the Quantity, or the Time of its Exhibition; so that the Person who considers this State and Condition of things, cannot assert, that a proper Use of the Bark is the sole Cause of these bad Effects, nor even suspect it, as faithless and prejudicial.

Besides, it is sufficiently evident, that the most efficacious Remedies, such as Venesection, Emetics, Purgatives, Opiates, Mercurials, Chalybeates, Preparations of Gold and Antimony, the volatile Salts of Animals, Laconic Baths, and spirituous Medicines, if used without Judgment, are equally pernicious and fatal. But surely no one can hence infer, that they are of no Use in Medicine, and ought to be entirely rejected; but he must rather argue thus: These noble Remedies are capable of producing bad as well as good Effects; and, therefore, should be properly used. But this Reasoning is still more applicable to the Use of the Bark, which is not to be classed among the above-mentioned Medicines, which are of an highly active Nature, because they contain a certain Principle, a small Quantity of which, produces sudden and great Alterations in the Body; but the Bark acts otherwise, and whoever would see the Effects of it, must take successively a large Quantity, even some Ounces of it; and we may reasonably conclude, that the Bark is not unfriendly to Nature, because it may be very successfully given in Diseases, where the Strength is decayed, and the nervous System affected; and for this Reason it is very serviceable in strengthening the Tone of the Stomach, Intestines, and nervous Parts, not only in Fevers, but, also, as Experience evinces, in Fluxes, Vomiting, Dysenteries, hypochondriac, and hysteric Disorders, and gouty Pains.

'Tis almost universally allowed, that, when the Fever is almost overcome by the Assistance of Nature, the Bark may be successfully used to suppress habitual febrile Commotions; but that it may be safely administered in the Beginning, after the first or second Fit, is principally denied by those who think Nature prudently makes use of a Fever, as a Remedy to remove the Causes, which endanger Life, being persuaded, that the wise and salutary Design of Nature is, by this means, disturbed. But Experience, the best Master in the Medicinal Art, whose Sanction is superior to all Arguments, plainly evinces, that this Fear is unnecessary. I have known several Instances of Persons, who, being seized with an epidemic Tertian, attended with dangerous Symptoms, have been happily cured by the following Method: After the third or fourth Fit, having taken an efficacious Medicine, which purged both upwards and downwards, they took the following Day, an antifebrile Electuary of the Bark, in proper Quantities, Order, and Time. By this means, after two or three Paroxysms, they were never sensible of another Attack, but perfectly restored to Health, especially when, after the Bark, they used strengthening, stomachic Medicines, and Exercise, to promote Perspiration. And I can positively affirm from frequent Observation, that a Fever is op-

posed with more Difficulty, and requires greater Caution, when it has continued for several Weeks or Months, than when the Assault is recent; because, the longer the Continuance of the Fever, the greater Quantity of Sordes arises from the Dissolution of the Blood by the hot intestine Motion; and this larger Quantity of Sordes is, therefore, corrected and evacuated, with the greater Difficulty.

Of the same Opinion are several eminent Physicians, among whom we shall only mention *Bohnius*, who in a particular Dissertation *de Fuga Februm minus suspecta*, has confirmed this Doctrine by many important Reasons; and *Bergerus*, who, in his Dissertation *de Chinchina ab iniquis Judiciis Vindicata*, very justly speaks in the following manner: "I cannot approve of *Sydenham's* mistaken Caution in ordering, that the Bark should not be too soon given, before the Fever has in some Degree wasted itself by its own Force, lest the Patient's Life should be brought into Danger, if we should suddenly check the Motion of the Blood, cleansing itself by the utmost Efforts of a Fermentation." *Padus*, *Donzellius*, *Lifter*, *Morton*, *Jones*, and principally *Bohnius*, with more Reason teach us, "That after the Use of Evacuants, if necessary, and especially of Emetics, at the Beginning, and before the Fever has taken Root, and weakened the Juices, Viscera, and Strength of the Body, its Force is successfully lessened by the Use of the Bark. Here there is no Fear either of Relapses, or of more Disorders, which *Baglivius* ascribes to the Use of the Bark; whereas he ought rather to have ascribed these Disorders to a preposterous Cure of the Fever, and the Impurity of the Body, because both Reason convinces, and Experience demonstrates, that, by a proper Use of this salutary Medicine, both the Cause of those Disorders, and of the Fever itself, are removed; so that *Bohnius* declares, that in almost infinite Numbers, to whom he gave the Bark at the Beginning, and whom he cured, none were sensible of any ill Consequence from it.

Lastly, in order to establish and confirm the proper, secure, and efficacious Use of this Medicine in the Cure of Fevers, we shall subjoin some necessary Cautions and Admonition, the due Observation of which, will prevent any one from doing Mischief with the Bark.

The Bark, then, should not be given, till the *Prima Via* are cleansed from that Collection of peccant Humours, with which they abound; and this is best performed by detergent Salts, either alone in due Quantity, or mixed with a proper Laxative, or Emetic. Nor should the Bark be prescribed, especially in a considerable Quantity, if the Viscera of the Abdomen are obstructed or infarcted with Blood and Humours, before these Obstructions are opened, and the Infarction removed; which Intention is best answered by drinking mineral Waters, by neutral and bitter Salts, obtained from hot and cold medicinal Springs, by Preparations of Rhubarb mixed with Salt of Tartar, or the *Terra foliata Tartari*, by Broths boiled with aperient Roots and Herbs, and by proper Motion and Exercise of the Body.

Nor is the Cure of an Intermittent to be undertaken by the Bark in a manifestly plethoric, cacochymic, cachectic, and hypochondriac Patient, or when the critical Evacuations of Blood are suppressed; but it is far better by seasonable Venesections, by temperate balsamic Elixirs, by the *Pilula Balsamica Polychrestæ*, and the Interposition of bitter neutral Salts, to remove Obstructions, and employ the febrile Commotions, which ought never to be suddenly checked, as Medicines adapted to remove these Disorders.

Greater Caution is necessary, if the Patients to whom this Febrifuge is to be given, have their Strength and Blood exhausted; if they are obnoxious to exorbitant Passions; if they are old; and if the Fevers themselves approach to a continual hectic, or a slow Fever; if there is an excessive Costiveness; if the Urine is limpid, and without any Sediment; if the Hypochondria are tumid, and an autumnal, or winter Fever, has already been long protracted; for, in such Cases, it is more expedient to moderate the febrile Commotions, if there are any, by gently evacuating and corroborating Medicines, till at last, as it frequently happens, the Fits spontaneously cease, either by a Change of Place, a more exact Regimen, and Method of Living, or a wholesome, light, serene, and warm Air.

Since it is of great Importance to the proper and salutary Use of the Bark, in what Form, Dose, Season, and under what Regimen, it is exhibited; we must observe the following Cautions: 1. As to the Form, we ought above all to choose a pure, solid, well-tasted Bark, without any musty, vapid Smell. This, being reduced to a very fine Powder, is most commodiously given in Substance, without any Addition, in any proper Vehicle. But, if any one abhors the Powder, it may be made up into an Electuary with Water and Sugar, and then swallowed. I can positively affirm, that I have found the Bark, given in this plain Method, better, and more effectual, than when mixt with many

many other Ingredients, and reduced into a Variety of Forms. When there is a manifest Weakness of the Stomach, accompanied with a Loathing of the Powder, it may be infused either in Water or Wine, edulcorated at Pleasure, prepared with a little Cinnamon to render it palatable, and which may be drank either warm or cold. Besides, if the Fever is of the bilious Kind, attended with great Heat, it is better to give the Powder mixt with a fourth Part of purified Nitre. But when, from a Suspicion of an Obstruction and Infarction of the Viscera by viscid and crude Humours, its too strong Astringency is to be dreaded, whether it is given in a solid or a liquid Form, lixivial Salts must be added, especially those of the alkaline Kind, which powerfully correct and subdue the astringent Quality of the Bark. For answering this Intention, a most secure corroborating and antifebrile Liquor may be soon prepared, by boiling an Ounce of the Bark with two Drams of Salt of Tartar, in a Pint of Water diluted with Wine. I have, also, used the following Electuary with very great Success:

Take of the Rob of Elder, one Ounce; of *Peruvian Bark*, six Drams; of the Extract of common Chamomile-flowers, of depurated Nitre, and of diaphoretic Antimony, each one Dram and an half; and of the Julap of Roses, a sufficient Quantity.

2. As to the Dose of this Specific, it is never to be given in an excessive Quantity, such as a Dram or more at a time; but it will be more adviseable to give, at different times, one or two Scruples only on the intercalary Day, after the Fit, every three Hours, drinking after it a sufficient Quantity of Water, Decoction, Broth, or Beer. It may, also, be exhibited with the Aliments. But Motion and Exercise are very great Assistants to the Operation of this Medicine, as they promote Perspiration, which is very conducive to the removing a Fever, and preventing a dangerous Stricture of the Solids, or a Coagulation of the Humours.

3. As for the Time, we ought to persist in this Method of Cure, at least for a Week: Then the Fever being gone, and the Appetite returning, a Dose should be taken once every Day, and after that every other Day.

There are still further Cautions to be observed in the Use of the Bark in intermitting Fevers: For,

1. During the Use of this Medicine, if the Patient is costive, his Body must be rendered soluble, only by an emollient and gently stimulating Clyster; but not by Purgatives, for fear of a Relapse, because, by the Use of these, Perspiration is obstructed, and the Afflux of the excrementitious Humours recalled to the Intestines. But afterwards Manna with Cream of Tartar may be used, as, also, my balsamic Pills, or those of *Stahl*, or *Becher*, with some aperient Salt, given at proper Intervals, during the Intermission, and towards the End, of the Disorder, in such a manner, however, that after the Use of these Laxatives, a Dose of the Electuary may be again given.

2. When the Fever is gone, the Body should be kept in a free Perspiration; for which Reason, cold Air, North Winds, and all external Cold, together with moist and low Places, are to be avoided; and bitter stomachic and corroborating Elixirs, such as my balsamic Elixir, must be used; which being taken in the Morning, or at Noon, not only contribute greatly to strengthen the Stomach, but, also, to promote Perspiration.

I must now briefly mention the Fate this Dissertation has met with. There was published at *Frankfort upon the Oder*, a Dissertation, directly opposite to ours, wherein the well-known Author, out of a Spirit of Contradiction, very positively asserts, and supports the Assertion with idle trifling Arguments, that the *Peruvian Bark*, though used with the utmost Caution, is a faithless, dangerous, and noxious Medicine. I thought it not worth my while avowedly to oppose this Writer, because the Judicious and Skilful in the Healing Art will soon discover the Weakness of his Argumentation: For the sake, however, of young Physicians, who are easily confounded by a Diversity of Opinions; I have been induced to make some Remarks on that Performance.

The whole Weight of the Reasoning in this Dissertation is founded on the famous *Stahlian Hypothesis*, which is, that the rational Soul produces these febrile Commotions for a salutary End, in order to eradicate the Cause of the Fever out of the Body; and that they are, therefore, by no means to be suppressed, especially by Astringents; among which the Bark is certainly to be classed. But, as I had in this Dissertation previously overthrown this Opinion, I am the more surprised, that the Author should, upon a bare precarious Hypothesis, totally deny, and utterly reject, the Truth of Facts, vouched by the Authority of the most celebrated Physicians of all Nations in *Europe*, and which palpably evince, that the *Peruvian Bark* may be successfully and safely used in chronical Fevers,

which can be cured with no other Remedy. For it is a very unphilosophical Procedure, to judge of Experience, and measure the salutary Use of a Medicine, by imaginary Hypotheses, and the pageant Force of abstract Reasonings, since we should rather inquire first into the Truth of a Fact, and then examine the Reasons, and by these means establish the Hypothesis. Let this great Author, therefore, as it is incumbent on him, demonstrate, that the Bark, even cautiously and circumspectly given, has, without Distinction, and at all times, been detrimental in Fevers. As for my own Experience, in above fifty-five Years Practice in different Places, and particularly in *Westphalia*, where the Inhabitants are plethoric, I dare confidently affirm, that neither incurable Diseases, nor Relapses, have occurred to me, from giving the Bark prudently, and not in too great a Quantity, especially, if it was exhibited under a proper Regimen; so that I have rather observed the evident and secure Effects of it. I have myself been three times afflicted with a very obstinate intermitting Fever; and, after a fruitless Application of all other Remedies, was perfectly recovered by a proper Use of the Bark alone; whereas the Cures of intermitting Fevers, undertaken by other Physicians without the *Peruvian Bark*, or that of *Cascarilla*, have more than enough convinced me, that the Patients have not only been racked for a long time, but often hurried into violent chronical Distempers; and, what is very surprising, these very Contemners of the Bark have at last been obliged to have recourse to it, as their only remaining Refuge.

But, in order to shew from Reason, whether, as is falsely asserted, the Bark, even properly used, by its astringent Quality, depresses the febrile Commotions, without removing the Cause of the Fever, it will be necessary to examine very closely into the Manner of its operating. The Bark, then, contains fixed, terrestrial, astringent, and bitter Particles, by which it exerts its antifebrile Virtue. But who in his Senses does not perceive, that in these Principles of the Bark there is a natural Remedy, if properly used, to infringe the subtle caustic Acrimony of the Bile in the *Prima Via*, from whence epidemic Tertians principally arise, before it is convey'd to the Mass of Blood, or from thence to the Nerves, and throws the whole nervous System into violent spasmodic Contractions? Further, since every one allows a strengthening Principle in the Bark, which binds up the relaxed Parts, and corroborates those that have lost their Tone, it is not to be wonder'd at, that from the Increase of Perspiration, especially on the intercalary Day, the remaining Sordes, which afford Matter for a new Paroxysm, should be entirely evacuated, and the whole Impetus of the Fever, by this means, destroy'd.

Now we readily grant, that this Medicine will prove very detrimental, and even bring on worse Diseases, if improperly administered, without any regard to an accurate History of the Distemper, the Constitution of the internal Parts, the Cause of the Fever, and other morbid Dispositions and Circumstances, as the Time, Order, and Dose, in which the Medicine is exhibited. But, since it is unreasonable to argue in the manner I have already mentioned, it necessarily follows, that the Bark, when properly applied, is beneficial, and, when improperly, pernicious; for, if the Bark, given in large and too frequently repeated Doses, finds Obstructions of the small Vessels in the Viscera, and a Redundance of viscid Humours in a Body disordered through the dull and languid State of the moving Fibres, in this Case, by its astringent and incrassating Quality, it may increase the Distemper, and excite violent chronical Diseases.

Thus much I thought proper to say at present, to convince every one, that the Bark is not so dangerous and terrible a Remedy in Fevers, and other Distempers, as some imagine, but safe, efficacious, and innocent, especially in the Hands of one, who administers it with Judgment and Reason; and that the bad Effects of it do not proceed from the Medicine itself, but should be deservedly attributed to the improper Use of it, or the Errors of the Patient, or a Neglect of removing the peccant Reliques. However, I would advise those, who are not complete Masters of the Healing Art, to refrain wholly from all heroic Medicines, and even the Bark itself, lest they should do more Injury than Good. *Hoffman*.

Mr. *Rusworth*, a Surgeon, in *Northampton*, sent a printed Letter to the Master and Governors of the Surgeons Hall in *London*, dated *October 18. 1731*. in which he gives the following Account of his using the Bark in Mortifications.

In the Year 1715, I was sent for to a Man who had a Mortification on the Foot, from an internal Cause. The Fever was very high, attended with an irregular Pulse, as is usual in that Case. I made deep Incisions in the mortified Part to the Bone, and scarified all around as far as there was any Inflammation, and used the common Applications; upon which the Fever abated, the Pulse became not only calm, but, also, regular; and in a few Days I had a Digestion at the Edges: I was obliged to leave it

it to the Care of an Apothecary; but in a short time I was sent for again, the Fever being returned, and the Part mortified higher: I used the same Method as before, with the same Success; but all the former Symptoms returned the third time; but, upon repeating the same Method again, ceased. I thought it to no Purpose to take off the Leg, having too often found Returns after it, the Fault being in the Blood and Juices. But Providence now first directed me to order the Bark in this Case (while there was a Remission of the Fever); it answered beyond what I expected, the Fever no more returned; the Leg was taken off; and I saw the Person well and lusty many Years afterwards; and I have since several times had the Experience of the good Effects of it in the like Cases, which has been no small Satisfaction to me.

Mr. Rushworth reprinted this Letter, adding another to Serjeant Amyand, dated August 5. 1732. in which he says, I beg Leave just to mention, that leaving off the Bark too soon, a Patient of mine had a Return of the Mortification, in about five Days time; but, scarifying, and repeating it, I presently had the good Effects of it again, and she is now perfectly recovered; and though she had a very ill Habit of Body before, is now much better than she had been for several Years, and her Looks shew it to all that knew her before, though she is fifty Years of Age. In Page 35. of the same Pamphlet, he says, It is necessary, that I intimate to all Surgeons what I have mentioned to our Company, that I would not be misunderstood by my printed Letter, as if the Bark would answer in Mortifications from all internal Causes; for in some it is not proper, as Surgeons may easily suggest to themselves.

In the same Pamphlet is a Letter from Serjeant Amyand, dated July 29. 1732. giving Mr. Rushworth the following Account of his Success in exhibiting the Bark in Mortifications.

I am now to acknowledge yours of the 17th Instant, and to acquaint you, that from your Example, I have given the Bark in all Mortifications with such Success, as has encouraged the Gentlemen you mention, to administer it. I have now under my Cure a Gentleman of Seventy-eight, who owes his Life to that Medicine. His Case was at first a Gangrene after a Phlegmon; the usual Means seemed to have removed the Danger; but the Fever continuing without Remission or Intermission, a Sphacelus soon appeared, of which nothing stopped the Progress, till the Bark was used; and in twenty-four Hours, or less, the Separation began, with a laudable Pus. The same thing happened to a few, whose Sphacelus had got Ground for three Weeks, in spite of all Means, where several Surgeons were concerned.

I have now used it in seven Cases, the Circumstances in each being different; and yet, in all, the Bark has taken Effect; even within these few Days, to Mr. Delenor, who kept the Bagnio in St. James's-street, in whom a Mortification happened after several Punctures in dropsical Legs. The Bark stopped the Progress in less than twenty-four Hours, and the Sloughs began to separate; but the Patient having a Jaundice, and being spent with Evacuations, it revived, and came to the other Leg; of which though he died, yet the Power of the Bark was so plain, that from this and the other Cases, I think it is evident, that we may be as sure of getting the better of, or at least of stopping a Mortification from an internal Cause by the Bark, as conquering an Ague thereby. I am, &c. Claud Amyand.

Mr. Rushworth gave the Bark in the Remission of the Fever, Mr. Amyand, in the Height of a Fever, yet it had the same Effect; which shews the Difference between these Sorts of Fevers and Agues; in which last it is known to every body, that the Bark does Harm, if given in the Fit. Mr. Rushworth says, the Bark will not answer in all internal Mortifications: Serjeant Amyand asserts from Experience, that it will answer in all internal Mortifications. Mr. Rushworth discovered this extraordinary Effect of the Bark in the Year 1715. and communicated it, as he says, to several Physicians and Surgeons; yet we never heard any thing of it, till it was lately brought into Practice by Serjeant Amyand. Neither Serjeant Amyand, nor Mr. Rushworth, have given any Account of the Dose they gave of the Bark, how often they repeated it, or how long they continued it.

Mr. John Douglas gives the following Case, by way of Instance, of the Effects of the Peruvian Bark in Mortifications.

April 22. 1732. I was sent for about fifteen Miles out of Town, to visit a Gentleman a little turn'd of Fifty, where I met Dr. Newington, of Greenwich, and Mr. Wade, Surgeon and Apothecary, of Bromley. Upon Examination, I found the Back of his Right Foot mortified near the middle Toes, about the Breadth of a Shilling, the Small of the same Leg being pretty much tumefied, and pitted a little in some Places; his Pulse quick, and his Tongue dry. Upon Inquiry, whether he had received any Bruise, Wrench, or Wound, he answered,

Not, as he remembered; but some Persons about him talked of a strait Shoe, which he had complained of some time before, which there was no Stress to be laid on: Therefore, we were all of Opinion, that it proceeded from an internal Cause. The Dressings being prepared, I began to scarify on the mortify'd Part, and cut to the Bones without giving him any Pain. I then continued the Incisions through the Skin all over the Back of the Foot, which was a little tumefied, without his discovering the least Sense of Feeling; which did not a little surprize me, the Skin looking perfectly fair: I then went on all over the fore Part of the Small of his Leg, whence we had a considerable Discharge of a Sort of a bloody Water, but there was still no Sensation: Therefore, I proceeded as high as the Gartering below the Knee, when he began to complain a little, and pure Blood followed the Knife. His Limb was then well stuped with a strong Fomentation, and the Wounds dressed with Pledgets armed with Digestive, and dipped in hot Oil of Turpentine; over them was applied a Poultice made of Oatmeal, stale Beer, and London Treacle.

He was then carried to Bed, and the Doctor wrote thus:

Take of Raleigh's Confection, half a Dram; compound Powder of Crabs-claws, and the Root of Virginian Snake-weed, half a Scruple; the Confection of Alkermes, a sufficient Quantity to make the Whole into a Bolus; to be taken every fourth Hour, drinking after it four Spoonfuls of the following Julap.

Take of the Waters of Milk, black Cherries, and Treacle, each three Ounces; of the Syrup of Saffron, six Drams: Make them into a Julap.

Let him drink plentifully of Whey, and alterative Treacle-water.

As soon as we withdrew into another Room, the Company asked me, What I thought of the Gentleman's Case? I told them, I thought he was in very great Danger, not only as it proceeded from an internal Cause, but because it had spread so far in so little time.

April 23. Serjeant Dickens, and Mr. Cheselden, having been sent for, came down this Morning; and, after they had seen and examined the Patient, they told him, that every thing had been done for him which was proper; that the Progress of his Disease appeared to be stopped, and that he had nothing to do but to go on in the same Method.

The 24th, his Pulse was much the same as before, and the Mortification did not seem to spread.

Dr. Newington wrote as follows:

Take of Raleigh's Confection, and Lapis Contrayerva, each a Scruple; Syrup of Saffron, enough to make them into Bolus; to be taken every fifth Hour, drinking after it four Spoonfuls of the Julap above prescribed:

April 25. his Fever was high, his Tongue dry, and the Mortification began to spread a little. I scarified it deep, and dressed warm.

On the 26th, I could not perceive, that the Mortification had made any further Progress.

The Doctor wrote thus:

Take of the common Decoction for Clysters, eight Ounces; Oil of Chamomile, and Syrup of Violets, each two Ounces: Inject this Clyster in the Evening.

Take of the compound Powder of Crabs-claws, a Scruple; English Saffron, and Raleigh's Confection, each half a Scruple; Syrup of Cloves, enough to make them into a Bolus; to be taken every sixth Hour, drinking after it four Spoonfuls of the following Julap.

Take of alexiterial Milk-water, and Mint-water, each four Ounces; of Treacle-water, three Ounces. Syrup of Saffron, six Drams: Make them into a Julap.

The 27th, his Fever increased, and the Mortification spread across the Toes, towards the Ball of the Foot, which I scarified deep, and dressed as before.

On the 28th. the Mortification still got Ground; therefore I had recourse to the actual Cautery, with which I burned, where-ever it was corrupted.

Next Day I found no Benefit from the actual Cautery; for the Mortification increased; so that I told those about him, I had no Hopes of his Life. They immediately replied, What! Would not taking off his Limb save him? No, I said, I did not think it would; but advised to send for the two Gentlemen they had consulted before.

QUI

On the 30th, in the Morning, Dr. Newington, Serjeant *Dickins*, Mr. *Chefelden*, Mr. *Wade*, and myself, met in his Chamber; and found his Fever very high, and his Tongue excessively dry, his Visage wild, a great Drought upon him, very restless, the Mortification spread as far as the *Tendo Achillis*; and he complained, also, of an Hardness and Pain in one Side of his Belly. After withdrawing, we were all of Opinion, that taking off his Limb would be of no Use; and that, in all Probability, he could not live twenty-four Hours longer.

Upon this, Serjeant *Dickins* advised the Trial of the Bark, which he said had been highly recommended to him by Serjeant *Amyand*, in such Cases. Mr. *Chefelden* was of Opinion, that it would do no Harm; but added, that he had never heard of its being serviceable in such Complaints; nor did he believe that this, or any other Medicine, would succeed, in the present Case. Since it was the extreme Remedy, I was for having it given as soon as possible. That Evening it was given, in the following manner:

Take of the finest Powder of *Peruvian Bark*, half a Dram;
Confection of *Alkermes*, enough to make them into a Bolus: To be taken every fourth Hour.

May 1. I returned about Noon, and found a surprising Alteration to the better: His Pulse was calm, his Tongue moister, the Wildness of his Countenance gone, and he said he had rested much better than any other Night, from the Beginning of his Disorder. When I opened his Leg, I found the Mortification had made no further Progress; he had then taken but four or five Doses of the Bark.

Next Day he was still better, and we had a small Discharge from the Sore: He had five or six small Stools, but we stopped the Purging, by adding three Drops of liquid Laudanum to each Bolus of the Bark.

On the 3d I found two large Abscesses formed, one on each Ankle: The innermost being biggest, I opened it first, and had about four or five Ounces of good Pus; then I opened the other, and found near the same Quantity of Matter: I could now thrust my fore Finger, with Ease, through, from the internal to the external Wound, between the *Tendo Achillis*, and the Bones of the Tarsus, notwithstanding the outermost Tumor subsided but very little after opening the innermost.

Thus the Violence of the Fever being taken off by the Bark, Nature was enabled to form these Abscesses, which was an infallible Sign that the Progress of the Mortification was stopp'd. We then order'd the Bark should be given only every six Hours.

Next Day I found his Pulse higher, his Tongue a little dry, and the Discharge rather less than the Day before; therefore we ordered the Bark to be given every four Hours, and a Glas of Madera Wine after it.

On the 5th I found his Pulse regular, the Digestion plentiful and laudable, his Countenance serene, with other favourable Symptoms; but the next Day I found him very uneasy, and his Pulse quicker; and, upon Inquiry, I found this Alteration proceeded from his Mind being ruffled by his Lawyer, about his Will.

On the 7th I found the Symptoms favourable; on the 8th his four little Toes being entirely mortified, I cut them off; and, next Day, I cut off his great Toe, and desired him to eat and drink more freely.

On the 14th every Symptom continued favourable, the Discharge from the Wounds was plentiful and laudable, a total Separation was now made between the living and the dead Parts, and the Sloughs were hanging, like Tatters.

On the 18th he had two large Stools in the Morning, and a great Discharge from his Wounds, which I thought weakened him; therefore we ordered a Mixture, with *Confectio Fracastorii*, to be taken, in case he had any more Stools; and, also, to add liquid Laudanum to his Boluses of the Bark.

On the 20th I laid open a large Sinus above the inner Ankle. On the 24th Mr. *Wade* and I agreed to give him the Bark every six Hours only.

On the 28th they shewed me an oedematous Tumor on the Back of his other Foot, upon which, we ordered him to take no more Bark, and drink a little more freely of Wine. He had now taken the Bark every four Hours for twenty-three Days, and every six Hours for five Days, in all, about ten Ounces.

Next Day I ordered his Left Foot to be washed well with hot Water, Bran, and Soap, every Morning, to get off the Dirt, and scaly Foulness, which obstructed Perspiration: We, also, ordered him some bitter Draughts, to be taken three times a Day.

On the 30th I found the oedematous Swelling of the Left Foot lessened; and I designed to have purged him, but that he had two or three natural Stools: Next Day I found him hearty, and the Wound in good Order; therefore I took off the Bone of the *Metatarsus*.

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June 2. an old Gentleman, who came to visit him, took a great deal of Pains to prejudice him against our Proceedings. On the 3d I found an Impostumation about the fore and middle Part of his Leg; but I was obliged to bring Serjeant *Dickens*, next Day, to persuade him to suffer it to be opened, with which he did not comply without Reluctancy. I made an Incision about two Inches long, and had a Discharge of three or four Ounces of Matter. On the 5th I carried him some Spaw-water, to drink with his Wine.

On the 7th I cut off another of the metatarsal Bones; and, on the 9th, I cut into the Joint of one of the metatarsal Bones, to hasten its Separation. On the 15th I cut into the Sloughs in the Foot, and let out a great deal of viscid Matter; and then snipp'd off all the loose Rags of Sloughs; upon which, I discovered a large Fungus, which had thrust forth under the Sloughs, from the tarsal Bones.

On the 16th I cut off the Remainder of the metatarsal Bones, and sprinkled the Fungus with red Precipitate. On the 19th I perceived the Tibia bare about the middle; a large Sinus, and a considerable Discharge: The Sinus I laid open on the 21st, and on the 22d I laid open a small Sinus on the Back of his Foot. There was a large Discharge from his Wounds, which weakened him, and lessened his Appetite. The next Day the Discharge was very fetid, and in too large a Quantity; and, on the 24th, it seemed rather to increase, and his Strength to decrease: Nevertheless, I laid open two more Sinuses. On the 25th the Discharge still increased; however, I laid open one more Sinus.

The Ulcer now reach'd from the Origin of the Soleus, just below the Knee, all along the Inside of the Tibia, as far as the Heel, being in some Places very broad, and in others very deep; all the Bones of the Toes and Metatarsus were gone, and all those of the Tarsus carious. I now suspected that the Tibia was carious further than we perceived it, which might be the Cause of that great and constant Discharge; and I thought that he could not bear so large a Drain long, and that it was better to have his Limb off, before it was too late: But, on the 27th, I was much pleased, to find the Discharge considerably lessened, and could discover no more Sinuses: We, therefore, agreed to proceed as before, only to dress twice a Day, for some time.

On the 28th I found the Ulcer in good Order, and the Discharge lessened.

July 1. we ordered an Infusion of the Bark to be taken twice or thrice a Day. On the 8th he was carried out into his Garden, for the first time, in his three-wheel'd Coach, for the Benefit of the Air. On the 12th I took off the *Os Cuboides*, and the three small Bones of the Tarsus. On the 16th I separated the *Os Naviculare*, and left only the *Astragalus* and *Os Calcis*.

August 5. I cut off, with a Knife, that large Fungus which sprung from the *Os Calcis*, and had plagued him so long, and then applied the Actual Cautery to stop the Blood, and consume the Roots of the Fungus. Before this, I had tried red Precipitate, Roman Vitriol, Butter of Antimony, and even the Potential Cautery, several times, one after another, but could not destroy it.

On the 29th, Part of the *Os Calcis* came away.

Sept. 4. I took away the *Astragalus* whole, and the Remainder of the *Os Calcis*, as I thought: When these two Bones came out, they left a Hollow big enough to receive a Duck's Egg; the back Part was form'd by a horny sort of Excrecence, which seemed to spring from the *Tendo Achillis*, the fore Part of it, by the Remainder of the Flesh which made the Back of the Foot, and the upper Part by the hollow End of the Tibia: A good deal of Blood follow'd these Bones, therefore I cramm'd this Hollow full of Lint, and roll'd it up tight.

On the 6th I cut off this large horny Excrecence (which made a Half-Moon round the End of the Tibia) with a Knife; there was no Appearance of any Bone in it, yet my Knife stopp'd, when about half way through, which surpris'd me a little, because I concluded the *Os Calcis* was entirely gone, yet there was a pretty large Piece of it in the middle of the Fungus. I, therefore, cut a little higher towards the *Tendo Achillis*, and it separated, with Ease, all round. It bled very fresh, so I ty'd one Vessel, which spurted out, and stopp'd the rest with the Actual Cautery, which, at the same time, consumed the Roots of the Excrecence. It was very remarkable, that the End of the Tibia was not carious, notwithstanding these foul Bones had remained there so long.

On the 13th I found all the Sloughs separated, the End of the Tibia covered with a fine grainy Flesh, the Lips thin, and the Discharge moderate and laudable.

By Nov. 8. the long Ulcer, which reached from his Knee to his Heel, was perfectly cicatrized; and though all the Bones of his Foot were taken, yet the Ulcer, on the End of the Tibia, was not above the Breadth of a Shilling, and, otherwise, very favourable.

favourable. I then ordered a wooden Leg to be made for him, to clap his Knee on, and walk about for Exercise, until this little Ulcer should be cicatrized.

Mr. Samuel Lewis, aged Seventy-six Years, of a pale Complexion, and choleric Constitution, a lusty, and, seemingly, a very healthy Man, having but little Sickness from his Youth, shewed me an Inflammation of his Left Leg, extending from an Issue he had below his Knee, down to his Ankle, and all round his Leg, partaking of an Erysipelas and Oedema. I threw out the Pea from his Issue, and endeavoured, by discutient Fomentations, Embrocations, and Cataplasms, with Bleeding, and lenient Purges, to mitigate the Inflammation, but to no Purpose; for I found it tending, very fast, to a Gangrene: His Leg, from an intense red, turned livid black; Blisters arose, &c. I would have scarified it, but was not permitted.

On the thirteenth Day the Tumor was sunk, his Leg black and dry, his Pulse quick, with frequent Intermissions; his Countenance wild, his Tongue hard, parched, and dry: He would not permit the necessary Incisions to be made. With the Consent of Dr. Anthony Weaver, a Gentleman of great Charity, Humanity, and Learning, I prepared eight of the following Draughts:

Take of the Powder of the best *Peruvian Bark*, half a Dram; of the Water of Black Cherries, one Ounce and a half; and of the Syrup of Saffron, half an Ounce: Mix, for a Draught.

One of these Draughts I gave him about Noon, and order'd, that he should continue to take one every four Hours.

On the fourteenth Day, about Ten in the Morning, by which time he had taken three Drams of the Bark, I found his Tongue moist, his Countenance not so wild; and, examining his Leg, found it impostumated, from a little below the superior Tubercle of the Tibia, down to the Small of his Leg; a little above which I saw a small Aperture, with a little Matter oozing from it. I told him, he stood a very fair Chance for his Life, if he would submit to the suitable Means. With his Allowance, I immediately entered the Probe-point of my Scissars at the Aperture, and cut upwards, as far as it was hollow; then turned them, and cut downwards, as far as the Cavity ran, and discharged between three and four Ounces of a well-digested Pus; and, after fomenting very well with a Decoction of the warm Plants in a strong Lixivium of Wood-ashes, Sal Ammoniac, and camphorated Spirits of Wine (which I had used from the Time I suspected it would mortify), I dressed the Incision with equal Parts of Basilicon and *Linimentum Arcaei*, spread upon a Doffil dipped in hot Oil of Turpentine, with a Cataplasma of Oatmeal, Flowers of Centaury, and Chamomile, of each equal Parts, with the Fomentation and Oil of Chamomile over all. He found an agreeable Warmth about his Leg, after the Dressings were applied.

On the fifteenth, I found him very cheerful, and discovered a large Sinus betwixt the Soleus and *Gastrocnemius internus*; I laid it open, and discharged about the same Quantity of well-digested Matter as Yesterday: There was a very large Slough in the former Incision, which I cut off, and dressed as before.

The sixteenth he had been very restless all Night, his Pulse irregular, his Tongue rough and dry, with Flushings in his Cheeks. Inquiring if he had taken his Draughts regularly, I was told he had not, through the Attendant's Drowsiness: After reprimanding them for that Neglect, and cautioning him about it for the future, I opened his Leg, and found the Discharge large, a fungous Flesh rising in the first Incision, which I sprinkled with red Precipitate, and dressed as before; and, by reason he had not a Stool since the fourteenth, I ordered him a common Clyster, which brought away some harden'd Excrements: At Night, his Heat and Flushings were not so great, and his Tongue was moister.

The eighteenth, being wearied of his Draughts, I ordered thus:

Take of the Powder of the best *Peruvian Bark*, half an Ounce; and of the Confection of Alkermes, one Ounce: Mix together, and divide into eight Boluses; one of which is to be taken every fourth Hour, drinking after it three Spoonfuls of the following Julap:

Take of Milk-water, and Black Cherry-water, each four Ounces; of Rue-water, half an Ounce; of the epidemical Water, two Ounces; of the Tincture of Saffron, prepared with the Aqua Theriacalis, one Ounce; of the Confection of Alkermes, two Ounces; and of the Syrup of Cloves, two Ounces: Mix all together.

I observed Matter lodged in the *Gastrocnemius internus*, almost to the Back of the Leg; I opened it in the most depending Part, but had not the Discharge expected.

On the twenty-first Day, Compresses and Bandages were applied, to unite that Cavity, and prevent the Matter from lodging in it.

On the twenty-second, a Sinus, running towards the Small of his Leg, opened.

On the twenty-third, he complained of a Pain in his Side, and had a restless Night: I dressed the Ulcers only with dry Lint; the Cavity above-mentioned inclined to unite.

On the twenty-fourth he was very much dejected, but I could not apprehend the Reason of it; every thing appeared in good Order.

On the twenty-fifth he shew'd me a Swelling in his Groin, with great Hardness and Inflammation reaching down: the Inside of his Left Thigh, extending to a pretty large and insensible Tumor a little above his Knee, which he found gradually to increase since the fifteenth Instant, but did not speak of it before, lest he should (as he expressed it) be cut there. I applied an emollient Plaster over it, and was apprehensive he would have a very large Abscess, which would exhaust him: There was very little Discharge from his Leg.

Till the thirtieth Day his Fever increased, with an irregular Pulse, great Drought, and a Dryness of the Tongue, notwithstanding he continued the Use of the Draught or Bolus, as before; very little Discharge from his Leg, the Ulcer appearing livid. I fomented well, and applied the warm Digestive, as above. The Swelling in his Groin very much increased; the Inflammation decreasing, I felt Matter to fluctuate, but deep; the Tumor not very painful. Not having a Stool for several Days past, I gave him a lenient Purge, by which he had a very large Stool of black and very fetid Excrements.

On the thirty-first, the hard insensible Tumor above his Knee was of a livid Colour, and that in his Groin rising towards a Point near the Inguen, inclining to the Inside.

On the first and second of February, instead of Matter, there was a Discharge of clotted Blood from his Leg: I dressed with the warm Digestive.

On the third, the Pus was laudable, the Tumor in his Groin considerably raised; he took a lenient Purge, which gave him one Stool, not having had one since the thirtieth of last Month.

The eleventh; to this Day his Fever continued, but not in any Degree, and his Pulse was irregular; a white Pustule appeared on the most prominent Part of the large Tumor in the Inguen, which I cut, and then entering the Point of my Probe-scissars, cut about an Inch in Length near his Groin: Well-digested Matter gushed out, as from a Cock, and in as full a Stream, sometimes streak'd with Blood: I took from thence, at least, three Pounds. His Leg begins to cicatrize.

On the twelfth, a large Discharge about the Bed, from the last Incision, and a large Quantity of Matter that fell below the Orifice, yet in the Cavity on the Inside of the Thigh. I applied a Caustic on the lowest Part, and discharged from thence about half a Pound; I, also, open'd that Tumor near his Knee, and discharged an Ounce of well-digested Pus.

On the nineteenth I opened another Sinus on the Inside of his Leg, and discharged thence only several Clots of Blood. From this time the Discharge from his Thigh gradually lessen'd; that very large Sinus united, by means of Compress and Bandage; his Fever left him; and he did not use his Medicine since the Fourteenth Instant; in which Time, in Draughts and Boluses, he had taken between ten and twelve Ounces of the Bark, which, being continued so long, and regularly, I believe assisted Nature to expel her Enemy in that very large Abscess in his Thigh, which, otherwise, might, notwithstanding the Mortification was stopp'd in his Leg, have seiz'd it again, or have fallen upon some more noble Part, and occasioned his Death; after which, I made him a Decoction of the most agreeable Bitters, by which means, he recover'd a good Appetite, and, in a short time, was able, with a little Assistance, to walk down Stairs, and any-where else in the House, with a Staff only; and, on the twenty-fifth of March, he walked to my House to be dressed, which is near a Quarter of a Mile; and, about a Week afterwards, went to his Work as usual, (which is mending Shoes) his Leg giving him very little Disturbance. In the Day it swells considerably; but, when he rises, in the Morning, is of its natural Size; for which I order'd a laced Stocking. His Thigh is strong, and firmly cicatrized; as, also, is his Leg; and the Man enjoys good Health, and is every Way as fit for his Work as he was before his Illness.

A Surgeon of Glasgow, of a very bad scorbutic Habit of Body, about forty Years of Age, had a little Pimple on the middle of the Under-lip, which his Barber cut the Top from, in shaving him, on Saturday the ninth of February: the following Evening, upon going out to the cold Air, the Pimple swelled, and turned hard, with an Inflammation all round it, which increased the Monday following: He applied an antiphlogistic Fomentation, with Spirit of Wine camphorated. Notwithstanding the frequent Use of these for four or five Days following,

following, and his being twice blooded, the Inflammation, Hardness, and Swelling, increased considerably, extending itself to the Angles of his Mouth, and some way along the Cheeks, and all round the Chin, with great Pain, and with vast Disorder through his whole Body.

On Friday the fifteenth, at Eleven at Night, a small black Spot, about the Bigness of a Herring-scale, appeared (not where the Wound was, but) on the middle of the red Part of the Lip, which spread so fast, that, by Eleven next Forenoon, it cover'd near one half of his Lip, that then began to stand out much; when a Consultation, of almost all the Physicians and Surgeons in Town, was called, who advised the Continuation of the Fomentation and Spirits, as before, and a Decoction of the Woods. For two or three Hours the Mortification continued to spread, till it had covered almost his whole Lip, reaching inwards, and downwards, to the Gums, the Hardness and Swelling of the neighbouring Parts increasing. Upon this, he was advised to try the Powder of the *Cortex Peruvianus*, half a Dram for a Dose. He took the first Dose betwixt Three and Four o'Clock Afternoon, and his Lip was dressed at Ten at Night, when the Mortification did not appear to be increasing, at least the Increase was very inconsiderable: He then took another Dose of the Bark. Towards the Morning of the seventeenth his Lip was again fomented, and he took a third Dose of the Bark: At Ten of the Forenoon I dressed it, and found the Mortification had made no further Progress since last Night: At Night I dressed it again; and then, for the first time, observed something like an Appearance of Suppuration at the Place where the Wound, or, rather, Pimple, was; but none at all on the mortified Part. That Night he took another Dose of the Bark, and continued to take two Doses, one in the Morning, and another in the Evening, for two Weeks.

The Fomentation and Spirits being applied twice a Day, and a little Emulsion given him for Drink, without any other Medicine than the Bark, the Suppuration succeeded well in the mortified Parts on the third Day after he began to take that Medicine; upon which, proper Digestives, and other Dressings, were applied. The Sloughs cast off very well; the Hardness and Swelling went off; and, in twelve or fifteen Days, the Lip healed up, though with a considerable Contraction, by the great Loss of Substance.

In very cold Air he still feels a Pain in his Lip. This, I am apt to believe, does not so much proceed from the Callus, as from his Lip pressing upon the fore Teeth, which are very rough and loose; and which it does, more especially, when he attempts to speak, by the Lip being so much contracted.

I have read this Account to the Patient, and had his Approbation of my Relation of the Facts, which my Attendance on him all the Time of this Disorder gave me sufficient Opportunity to observe.

Mr. Monro, Professor of Anatomy in the University of Edinburgh, gives the following Remarks upon the *Peruvian Bark*.

After the good Effects of the Bark, in Gangrenes, were known, I had Occasion to use it several Times, in that Disease, with Success; and sometimes, by Necessity or Choice, gave it in an Injection by the Anus, rather than by the Mouth, as I had, also, formerly done in Agues: The Quantities given in Clysters were larger, but the Effects were the same. One Cure of a Gangrene, made, I think, by the Bark in Clysters, seems to me so remarkable, that I must tell the History of it.

A young Gentleman, very healthy, in Appearance, had strained his Left Hand, but had no Uneasiness in it for ten or twelve Days; at the End of which, he was suddenly seized with a very sharp Pain near the *Os Pifforme* of the Wrist; and, soon after, the Teguments on the anterior Part of the metacarpal Bone of the little Finger swell'd: He neglected to ask Advice for two Days; then some Student, who saw it, observing a Mortification begun, scarified the Skin, fomented the Part, and applied some digesting Ointment with Oil of Turpentine, which Dressings were continued, also, the third Day.

On the fourth Day, when I saw him first, the Teguments covering the short Muscles of the little Finger were all mortified, his Pulse was so low, that, with Difficulty, I could feel it, and it was so quick, that I could not number the Beats of it. He had a general Tremor over all his Body; the *Subsultus Tendinum* was very frequent; he had a constant Anxiety, Restlessness, and Delirium; his Tongue was parched and dry; and whatever Food or Drink he swallowed, was vomited before it almost got down to his Stomach. The gangrened Parts were again scarified and fomented, their Edges were dressed with warm Basilicon, to which a small Proportion of Oil of Turpentine was added, and a Poultice of *Venice Treacle* was put over all. Soon after, his great Guts were emptied by a laxative Clyster, and, as soon as the Operation of this was done, five Ounces of warm Milk, and a Dram of the Powder of the *Peruvian Bark*, were injected, which he retained: Four Hours

after, the Milk and Bark were repeated; and two more such Injections were given, in the Night-time.

Next Morning he had no Raving, Tremor, Subsultus, or Vomiting; and his Pulse was stronger and slower: The Hand was dressed, as the preceding Day, and the Injection with the Bark was repeated; in the Afternoon it was changed, at the Patient's Desire, for a Bolus of half a Dram of the Bark, which was repeated every four or five Hours. The Fever ceased, the gangrened Parts began to separate next Day, and, the Bark being continued several Days, the Cure went on without any further Accident, except that he was put to a good deal of Pain, one Day, by an Application of ill-prepared *Aqua Phagedenica*. This I mention, to have an Opportunity of warning the younger Surgeons not to make Use of that Medicine, unless when the Lime-water is strong enough to make the Solution of the corrosive Sublimate Mercury to turn turbid, and to precipitate in Form of a very fine red Powder: For if the Lime-water is effete, and remains clear after the Sublimate is mixed with it, instead of a very mild Medicine, they are to expect all the Effects of unaltered corrosive Mercury.

In all the Gangrenes where the Bark was given with Success, I observed, that it brought on a mild Suppuration, which I saw became worse when the Use of the Bark was interrupted, and then turned of a good Kind, when the Bark was again given: This made me join in Opinion with others, that it would, also, be of good Service in several Sores where the Suppuration was faulty: Experience proved we judged right; so that the Bark became a common, and a beneficial Medicine, in this Town, for such Sores.

This Effect of the Bark, in procuring a kindly mild Suppuration, led me to imagine, it might be serviceable in the Small-Pox of a bad Kind, where either a right Suppuration did not come into the Pustules, or the Petechiæ shewed a Disposition to a Gangrene; and I had the Pleasure to see the Effects I expected from it in several variolous Patients, to whom I gave the Bark: The empty Vesicles filled with Matter, watery Sanies changed into thick white Pus; Petechiæ became gradually more pale-coloured, and, at last, disappeared; the blackening of the Pox began sooner than was expected. I no sooner had the good Effects of the Bark in the Small Pox ascertained by Trials, than I spoke of it to other Gentlemen in Practice here, some of whom had reasoned in the same way I had done, and had been giving it to their Patients with Success; since which, I have had Thanks from some of my Friends in the Country, to whom I recommended this Practice.

I gave, at first, the Decoction, and then the Extract of the Bark; afterwards, I forsook those weaker Preparations for the fine Powder, which was mixed with some mild rich Syrup, and an aromatic distill'd Water, both which may be varied, as the Patient prefers one sort of Taste to another. In this Form, from ten to forty Grains were ordered to be swallowed every four or five Hours.

But as several Children could not be prevailed on to take it by the Mouth, in any Form I could contrive, and, through fear of having this Medicine given, would taste neither Food nor Drink, there was a Necessity of using the other Form of Clysters: Previous to giving the Bark this way, the great Guts were unloaded by a laxative Injection; and then from half a Dram to two Drams of the Jesuit's Powder was injected, with a small Quantity of warm Milk, to which some Diacordium, or Syrup of Poppies, was added, if the Clysters were retained too short a time: These Injections were repeated Morning and Evening, or oftener.

I have hitherto only given the Bark in the Small Pox, after the Eruption, and continued it till the Blackening was completed; but am persuaded, from the Effects I saw of it, in mitigating the Secondary Fever, that if it is given during the eruptive Fever, it might be of Use in determining the Small Pox to be of a favourable Kind.

I hope what I have said will not be understood as if I recommended the Bark as an infallible universal Remedy in those Diseases, and the only one that needs to be employed in them: So far from meaning any such thing, I assure you, I have seen it fail, more than once, in both Gangrenes and Small Pox; and, in general, I know no Medicine which is not capable of doing Hurt to Patients, under some particular Circumstances of the very Disease for which it is given with the most Success. Thus, in the Small Pox, when the Lungs are violently inflamed, I would not consent to give the Bark: I have seen Patients, in this Condition, almost suffocated, after a small Dose of it: They would, also, in my Opinion, do very ill, who would trust entirely to the Bark, neglecting the other Medicines which have been used, to Advantage, in the different Circumstances of this Disease. The Bark would not, surely, moderate a very high, full, hard Pulse, with high Breathing, and inflamed Brain, in either eruptive or secondary Fever of the Small Pox, as Blood-letting would do. The Bark could not clear

clear the Stomach and Bronchia of viscid Phlegm, as an Emetic would; it would not, singly, calm the general Spasm, or relax the Skin, to make way for the Eruption, as when assisted by a tepid Bath: Nor would it raise a sinking Pulse, or discharge a Load of viscid Humours, as the Stimulus of a Blister, and the Suppuration after it, will frequently do. In short, I pretend to recommend it no further than as an excellent Assistant to Nature in what the Antients called the Concoction and Maturation of the morbid Matter, the Effects of which appear in moderating the Fever, and bringing a kindly mild Suppuration; which are, indeed, grand Articles, in the Cure of Gangrenes, Ulcers, and Small Pox. *Medical Essays.*

Mr. Ranby, in a late Treatise, recommends the *Peruvian Bark*, in some Cases where its Use is not, I believe, commonly known, as follows:

The Method I have prescrib'd to myself, in penning this small Treatise, leads me in this Place to speak of the Bark; a Medicine which no human Eloquence can deck with Panegyric proportionable to its Virtues; of such incomparable Benefit it is to Mankind!

I have for a long time indulged myself in the frequent Use of this noble Drug, in respect of large Sores of every Kind; and have often experienced, that, in those painful Circumstances, it would procure Rest, if given in large Doses, when even Opium had been taken, without any manner of Effect.

Though I am aware, that a very ingenious Surgeon recommends the Bark (see *Philos. Transf.* N^o 426.) against Hæmorrhages, in external Wounds in general; yet the prescribing it in gun-shot Wounds, in the manner I introduced it last Campaign, is a Practice, as I conceive, no-where left us on Record; and this I did with extraordinary Success, of which I shall give some few of the many Examples that have occurred to me in Practice.

In all large Wounds, especially those made by a Cannon-ball, there is constantly a great Laceration of the Membranes, and Parts endued with an exquisite Sensation; and these are ever attended with an excruciating Pain, and a Discharge of a gleety Matter, which, if not restrain'd, proves often of the last Consequence. In this unhappy State, the Bark (given in Doses of a Drachm each, and repeated every three Hours, or oftener, if the Stomach will bear it) with surprising Efficacy repairs the Breach made in the Constitution by this terrible Havock. Elixir of Vitriol, taken three times a Day, in a Glass of Water, I find to be of singular Benefit, and to prove a very good Assistant to the Virtues of the Bark; and, if the Body be costive, to each Dose of the Bark I add four or five Grains of Rhubarb, till that Inconveniency is remedied. Should the Bark run off by more than four or five successive Stools, I take care to check this Effect of it, by ordering two or three Drops of Laudanum, or two Spoonfuls of a Diascordium Mixture, along with it, every time it is given.

Where the Sore discharges a considerable Quantity of gleety Matter, is flabby, looks pale, and glossy, (which Appearances are ever consequent to a Loss of Substance) the Bark continually relieves the Pain, that is predominant in this Case, thickens the Matter, lessens its Quantity, and quite changes the Complexion of the Wound. And though the Patient has a dry Tongue, great Heat, a quick, low Pulse, and a Head hardly clear; yet, even in this Situation, I have known it to do Miracles. Nor (I freely own, when the Necessity for it is evident from Symptoms) have I, in administering it, the least Attention to the Quickness of the Pulse; and in Wounds where, upon every Dressing, the Arteries have started, and, of course, subjected the Patient to no little Hazard, I have frequently remark'd the Bark to procure the most unaccountably good Effects.

However, I would not be understood to insinuate, that the Bark will stop the Bleeding of any considerable Artery; nevertheless, though this efficacious Property is not to be expected from it, the vitiated Texture and State of the Blood (which, from too great a Degree of Fluidity, forces thus its Way thro' the arterial Passages) will be alter'd more effectually from the Exhibition of it, than from any thing I know in the whole *Materia Medica*: From whence, I think, is plainly pointed out to us, the Basis we are to erect our future Superstructure upon. The Bark, on these Occasions, I constantly advise, together with Opiates, more or less, in proportion to the Urgency of the supervening Symptoms.

As to the Efficacy of the Bark in amputated Limbs, Mr. Ranby gives the following Case: It is very common, in scorbutic Constitutions, for a Sore, the first eight or ten Days after taking off the Limb, to promise all imaginable Success; from which time it frequently begins to gleet prodigiously, looks pale, glossy, and flabby; and this Gleet, if not check'd, in a little while runs the Patient out of the World. In Exigencies of this Kind, the Bark hardly ever fails to procure Relief,

and works an apparent Change in a very short Space of Time, sometimes in twelve Hours. This I can attest for absolute Truth, in regard of a very worthy Gentleman, about fifty Miles from London, who broke his Leg by a Fall from his Horse. I took it off the second Day from the Accident, and, after the first Dressing, resigned him to the Care of his neighbouring Surgeons, not, in the least, afterwards suspecting but that every thing was succeeding agreeably to our Wishes: But the Scene was soon reversed; for, about sixteen Days after, I receiv'd a Letter from the Gentleman who had the Management of him, intimating, that a small Artery, near the Skin, bled very freely, on their removing the Dressings. In Answer, I advis'd a Vein to be open'd in the Arm, and the Bark to be taken instantly. But, as the Symptom of the arterial Opening ceas'd, and the Patient was without any Sign of a Fever, the Advice of seeking Resource from the Bark was postpon'd. The Seven-and-twentieth Day, another Surgeon, eminent in the Profession, and myself, were hurried out of Town to his Assistance: On our Arrival, we found him very much emaciated, a great Gleet incessantly ousing from the Stump, which, on the Removal of the Dressings, bled, from every Pore, like Water press'd from a Sponge. We immediately gave him the Bark, and repeated it every two Hours. The next Morning, the Discharge was considerably lessen'd, nor did there appear the least Footsteps of Bleeding. If he accidentally, at any time, neglected taking it only for a Day, or even lessen'd the Doses, the Wound inevitably pointed out the Omission, by the Alteration of its Complexion. He persisted in the Method of taking the Bark every two or three Hours, till he came to Town, when it was thought proper to give him a larger Respite. He now enjoys a perfect State of Health, and has done so ever since the Stump was heal'd; but, ere this was accomplish'd, he took near nine Pounds of the Bark. *Ranby.*

This Bark is brought from Peru, and there are three Kinds of it. The first is of a bitter, resinous Taste, and not so red as the common sort; the second, less than the first, is cover'd with a Moss; the third is the finest, and imported in small Pieces.

The *Peruvian Bark* is uneven, and thick, its Colour resembling that of Cinnamon, Coffee, or Rust of Iron. It is of a bitter Taste, and has no Smell but what comes from the Wood. The Name *Kina* is taken from the Count of Cinchon, who was Viceroy of Peru when the Medicine was discover'd. The Tree, to which it belongs, is not, as yet, sufficiently known: It is said to have Leaves like the Plum-tree, and flowers like the Orange-tree. *Herman* says, it is a high large Tree, like the Lime-tree; and that it bears Berries. It grows in the inland Part of Peru, on the Mountains near Loxa, or Loja, in the Province of Quito. The Spaniards say, that the Use of its Bark was discover'd in the following Manner:

Near the Town of Loxa was a Lake surrounded by *Quinquina* Trees, before the Spaniards settled in that Country: These Trees being, by an Earthquake, or some other Accident, thrown into the Lake, communicated a bitter Taste to the Water; so that the Inhabitants, who used to drink it, were obliged to leave it off: However, an Indian, who had a violent Fever upon him, and, consequently, a great Drought, finding no other Water, was forced to drink of this, by which he was perfectly cur'd of his Fever. He related this Adventure to some of his Friends, who, having made the same Experiment, were likewise cur'd: Upon this, they set themselves to discover what had given this febrifugous Quality to the Water of the Lake, and found, in the first Place, that a great Number of Trees had fallen into it; and, Secondly, that, after a certain time, these Trees, being rotted in the Water, it lost its bitter Taste, and, at the same time, its Virtue: Whence they concluded, that this Virtue was owing to the Trees. Afterwards, they tried all the Parts of them infus'd in Water; and thus discover'd, that their whole Virtue resided in the Bark. The Spaniards having conquer'd their Country, this invaluable Medicine was kept a great Secret; and they oblig'd themselves, by Oath, never to discover it to their Conquerors; hoping, thereby, to see them all perish by the epidemical Fevers that then reign'd in the Country. The Secret was inviolably kept, till the Year 1640, when a Spanish Soldier, quarter'd in an Indian's House, who had got into the good Graces of his Landlord, was seiz'd with a severe Ague. The Indian, touch'd with Compassion, and fearing, perhaps, that he should have a worse Guest, if this Soldier happen'd to die, brought him the Bark, which having taken, he was soon perfectly cur'd. The Soldier, surpris'd at such an unexpected good Effect of an unknown Remedy, made use of all his Address to discover the Tree to which this Bark belong'd, and, at length, succeeded. For some time he contented himself with curing his Fellow-soldiers, but never told them by what means; but the Vicequeen, Wife of the Count de Cinchon, then Viceroy of Peru, being

being seiz'd with an intermitting Fever, which had so far baffled the Skill of her Physicians, that her Life was despair'd of, and this Report having reach'd as far as *Loxa*; the Soldier, who was Master of the Secret, told his commanding Officer, that if he would allow him to go to *Lima*, he would cure the Vice-queen. The Officer, having inform'd himself of the Cures he had perform'd in that Country, readily gave him not only Leave to go, but, also, Letters of Recommendation, and proper Certificates. Being arriv'd at *Lima*, he was admitted to make Trial of his Medicine, on this Condition, that he was to take as much himself as he gave to his Patient. This he easily agreed to; and, having succeeded, in a very little time he was amply rewarded, and then prevail'd on to discover the Secret, which the *Spaniards* made use of from that time forward, with so great Success, that the Physicians were astonish'd, and half-starv'd. In 1649. Father *de Lugo*, a Jesuit, then Procurator General of his Bark to *Rome*, and the Society began to bring it into Reputation in *Europe*, by which they got a great deal of Money, in a short time. They sold it for more than the Weight in Gold, and, to disguise it the better, never parted with it but in Powder. From that time it was call'd the *Jesuits Powder*, because these Fathers were the sole Masters of it, and had brought it into Use. Two Drams were at that time thought sufficient for the Cure of any intermitting Fever, because they never gave it till after many other Medicines had been made Trial of. The Physicians were divided in their Opinions about it, some looking on it as a divine Medicine, whilst others believ'd it dangerous, and even fatal, in many Cases. Many Treatises were written, some for it, others against it; but the *English* Physicians, having, at length, made several Experiments with it, that might be depended on, it came to be greatly in Vogue in *England*; and the famous *Morton* wrote his *Pyretologia* in its Defence. In 1679. a Person, nam'd *Tabor*, who, to make himself more considerable, changed his Name to *Talbot*, came into *France*; where, having cur'd the Dauphin of a stubborn quartan Ague, by this Medicine, it gain'd a great Reputation, and the King purchas'd his Secret, and made it public. It was then term'd the *English Remedy*, and consisted of an Infusion of the Bark in Wine. There was a little Treatise publish'd at that time, with this Title, *The English Remedy for Fevers*.

The Bark is an infallible Remedy for all intermitting Fevers, if the following Circumstances be observ'd:

1. The Patient ought to lose some Blood, and to be purg'd before he takes the Bark; and, if he is of a dry Habit of Body, he ought to be kept, for some time, to a liquid Diet; because, before the depuratory Fermentation is begun, the Fluids ought to be well diluted.

2. The Bark made use of ought to be compact, or solid, of a redish Colour, like Cinnamon, of a faint Smell, a little musty, bitter and astringent to the Taste, and not kept too long.

3. It ought to be given in large Doses: For Instance, a Dram of powder'd Bark may be taken at a Time, in a Glass of White-wine, or Water, and repeated every three Hours, till the Time of the Return, or Paroxysm, be over. It may, likewise, be given in Infusion, or Decoction; an Ounce boil'd in a Quart of Water, till reduced to a Pint, being drank, by large Draughts, in the Interval between two Fits.

4. It ought to be continued for a long time after the Fever has ceas'd; gradually diminishing the Dose, and the Frequency of repeating it. This is a sure way to prevent a Return.

This Remedy appears sometimes to fail, that is, the Fever returns, after a certain Quantity of it has been taken; but this is never owing to want of Efficacy in the Bark, but from Ignorance of the true Method of taking it. Thus, if the Body is not sufficiently prepar'd, it can't act as it ought, because of the Obstructions it meets with in the *Primæ Viæ*, and in the Blood-vessels. If the Bark be bad, nothing is to be expected from it; and if the Dose be too small, or not continu'd for a sufficient time, it only deadens the Fever for a time, but does not radically destroy it. It is, therefore, a groundless Prejudice, that the Bark fixes Agues, or that the Use of it is ever attended with bad Consequences, especially in the Stomach, as many pretend. The Patient is seldom thoroughly cur'd without some kind of Crisis, especially by Stool, or Urine: This latter is the best, and the Physician may be assur'd, that his Patient is safe, if he makes a greater Quantity of Urine than usual. The Bark has, likewise, been given in Clysters, with Success; but then the Quantity, usually taken by the Mouth, ought to be tripled.

This admirable Specific is, likewise, a good Alterative, and, consequently, proper in an infinite Number of Cases where there is no Fever; for it strengthens the Stomach, excites the Appetite, &c.

This Medicine is not hurtful to weak Lungs, as some imagine, Experience having often shewn the contrary; and it

has often prov'd very successful in Catarrhs, and other Kinds of Fluxions, even when accompanied with Spitting of Blood, as in the Case of the late *Maréchal Tallard*. But in these Cases other pectoral Medicines are to be join'd with the Bark.

Some join with the Bark, given in Fevers, dried Arum-root, Sal Ammoniac, Cinnamon, &c. Sal Ammoniac is the most proper Way of any, being mix'd in the Quantity of half a Dram to two Drams of Bark. *Geoffroy*.

QUINTA ESSENTIA. See ESSENTIA.

CHYMICAL LIQUID QUINTESSENCES.

Put any distill'd aromatic, or essential Oil, into a clean dry Glass, and pour to it twelve times its Quantity of pure Alcohol, distill'd from Alkali, so as to contain not the least Water: Shake them together, and the Oil will disappear, and intimately mix with the Alcohol, so as to form one simple and transparent Liquor; but no Water must be contained, otherwise the Experiment will fail.

Alcohol, therefore, and essential Oil, are of such a Nature, as intimately to mix and unite together, provided they are both perfectly freed from Water; for, if only the Glass were moist, or the Breath interposed, it would hinder the Effect: And, when the Solution is perfect, and the two Liquors are thoroughly mixed together, the Addition of Water turns them white, or opaque, while the Water unites with the Alcohol, and separates the Oil.

If the Alcohol, saturated with the Oil, be carefully distilled, in a close Vessel, with a gentle Fire, and several times cohobated, the Oil will thus gradually be made so volatile, as, in great measure, to rise along with the Alcohol: Whence Oils are rendered more moveable, and more subtle, and are exalted to the highest Degree of Penetrability, like that of Spirit, tho' still retaining their native Virtues. But if, with a Fire of only Ninety Degrees, a Mixture of Alcohol and these Oils be distill'd, the Alcohol will rise by itself, or only carry with it the presiding Spirit from the Oil, leaving the oily Part behind; and if, with great Care and Caution, the thinner Part be several times separated from the thicker, by repeated gentle Cohobations, the Alcohol will, at length, be so impregnated with these Spirits, as to appear almost pure Spirit itself, leaving a gross exhausted Oil behind.

REMARKS.

The antient Chymists conceived, that Fire, Air, Water, and Earth, contributed to the Composition of Bodies, with the Addition of a fifth thing, which, made of the four common Elements, enriched the Whole, by its own particular and inseparable Virtue, whereon the Colour, Odour, Taste, and Virtue, of each Body, principally depends: Therefore, they supposed, that each particular thing, consisting of four Essences, had a fifth Essence added to it, which was extremely small in Quantity, yet of very powerful Efficacy, so that, when separated, and added to another Substance, it animated the Spirits thereof: Upon which Subject *Isaac Hollandus*, and *Paracelsus*, ought to be read. There is scarce any known Method more proper than the present, for preparing Quintessences. Thus, if a single Drop of Quintessence, so made, with Oil of Cinnamon, be mixed, and drank with a Glass of *Spanish* Wine, it instantly gives a grateful Briskness to the flagging Spirits, and therefore proves an admirable Remedy in Faintings, Suffocation, and want of Spirits. Nor do we know, that the Art of Chymistry can go farther, in obtaining the Virtues of Vegetables. If a Drop of such a Mixture, of Alcohol and Oil, be let fall into the Water, it presently turns milky; which shews when Oils are adulterated with Alcohol. Hence, also, we understand the Power of Alcohol, which principally acts upon the Spirits and Oils of Plants, by mixing and fixing them intimately with itself, and thus making a Compound, which afterwards seems to act with an uniform Virtue. And though these Oils exist under very different Forms in Vegetables, yet they may still be united with Alcohol, provided there be no Water in either: And we find, that the native Spirit always adheres to this oily Matter, under whatever Form it appears. All these Preparations have a great Affinity with Fire; for such Quintessences, being taken, heat the Body, and, if the Quantity be large, scorch and burn it; when externally applied, they produce all the Effects of a sharp Inflammation, even up to a Gangrene itself.

DRY QUINTESSENCES.

Take Alcohol, wherein an aromatic Oil is dissolved; pour it upon ten times its Weight of dry Loaf Sugar, reduced to a fine Powder: Grind them together exactly, for a long time, in a glass Mortar, that they may unite; put the Mixture into a China Vessel, set it in a glass Body, kept on all Sides moderately warm, that thus the remaining Spirit, which moistens the Matter, may gently exhale, and, by means of a Still-head, be collected in the Form of a liquid Quintessence: And thus the

Sugar will remain dry in the China Vessel, yet impregnated with the Quintessence. Let it now immediately be put into a glass Vessel, close stopp'd, and preserv'd, under the Title of a dry Quintessence. By a Dram of the finest Wheat-flour, five Drams of Loaf-sugar, and grinding them dry in a glass Mortar, then adding a Dram of the liquid Quintessence, and proceeding as before, an elegant dry Quintessence will be obtain'd.

By taking a Dram of the liquid Quintessence, and half a Dram of the essential Extract of Saffron, and three Drams of fine Sugar, and as much fine Wheat-flour, and proceeding as before, nearly the same Kind of Preparation will be obtained, but more compounded.

As any of these Kinds of Oil may be dissolved in Alcohol, and so brought into an uniform Liquor, though consisting of various Sorts, and thus employed to the same Uses, it appears, that these noble Compositions may be made by various Mixtures, at the Discretion of the Artist. Hence there are infinite Ways of varying these Forms, each whereof may, for Excellence, vie with the rest.

REMARKS.

Here we see to what a Length Chymistry may reach, in affording Forms of Medicines, of great Efficacy, in little Compass: For if a Scruple of the dry Quintessence be mixed with an Ounce of *Spanish Wine*, we have, hence, a little Draught, containing the utmost Virtue that can be obtain'd from Aromatics. If, therefore, a prudent Physician shall justly know the Necessity and Use of such a Remedy, he may hence derive it from Chymistry for his Purpose. These Preparations have this Convenience, that they may long be preserved perfect for Use, and may be safely and commodiously carried in Voyages, Journeys, and Camps, where furnished Shops are not at hand. Here, again, we have the Bounds of chymical Perfection. *Boerhaave's Chymistry.*

QUINTANA. An Ague, the Paroxysm of which returns every fifth Day.

QUINTI ANTIDOTUM. The Name of an Antidote, describ'd by *Oribasius, Collect. Medicinal.*

QUINUA. See **AMARANTHUS.**

QUIRAPANGA. The Name of a small white Bird found in *Brasil*, remarkable for nothing but the Shrillness of its Voice, which may be heard half a League. *Lemery des Drogues.*

QUISQUILA. The COTURNIX.

QUISQUILIUM. A Grain of *Chermes.*

QUITY. See **ARBOR SAPONARIA.**

QUIYA. See **CAPSICUM.**

QUOCOLOS. The Name of a Stone found in *Tuscany*, as hard as a Flint, somewhat transparent, and, in some measure, resembling Marble. In the Fire it loses its Transparency, and becomes less ponderous, and white; and a strong Fire readily converts it into Glass. It has no medicinal Virtues, but is used at some Glass-houses.

QUOTIDIANA FEBRIS. A Quotidian Fever.

Among the intermittent Fevers, those of the quartan and tertian Kinds happen more frequently than the quotidian, which seizes and terminates every Day, with a subsequent Intermission, for the Space of some Hours.

The Accession of this Fever happens early in the Morning, about four or five a Clock; and is accompanied with Cold and Horror, though without any Rigor. During the Paroxysm, there is a Cardialgia, accompanied with a Nausea: Some are afflicted with Head-achs, others with Deliriums, and most with a Vomiting, or Purging, or both: This State is succeeded by a Heat rather slow than excessive, whilst the Thirst is less intense than before; the Pulse, also, though before irregular, and weak, becomes more frequent, and not so hard, but considerably softer: Nor is the Urine high-colour'd, but rather crude, turbid, and of a Citron-colour. Many Patients, labouring under Quotidians, have an unsurmountable Propensity to Sleep; at last, a gentle Sweat appears on the Body; and after ten, or, perhaps, more Hours, the Paroxysm is removed, leaves the Body languid and heavy, and returns next Day at a stated Hour.

This is generally the manner in which a genuine intermitting Quotidian seizes, and proceeds; but such Quotidians as do not preserve this Type, but have their Accession either about Noon, or about the Evening, or at uncertain Periods, are call'd spurious, erratic, or anomalous Quotidians.

This irregular Species of Quotidian is frequently observ'd to be epidemical, especially during a long-protracted, irregular, and insalutary Constitution of the Weather. After the long-continued Heat in the Years 1727 and 1728, I observ'd, that, according to the Diversity of Constitutions, not only Diarrhoeas and Dysenteries, but, also, intermittent Fevers of various Kinds, especially Quotidians, were produced.

But as we are treating of an intermittent Quotidian, we shall not confound it with that of the continual Kind, which,

also, has its Accession early in the Morning, with a cold Fit; but the Heat and Languor, the Quickness and Weakness of the Pulse, the want of Appetite, and, sometimes, a colliquative Sweat, remain all the rest of the time. If this Species of Quotidian is long protracted, it generally proves mortal; since the Patients, after their Strength is exhausted, die under the cold Fit.

Nor is a genuine intermittent Quotidian to be confounded with a catarrhus Quotidian; since the latter, when of a benign Nature, seizes the Patient, towards the Evening, with a Kind of gentle Refrigeration, goes off in the Morning, and is sufficiently distinguishable, by the catarrhus Defluxions with which it is accompanied. A catarrhus Quotidian, on the contrary, when of the malignant Kind, is easily known, from the remarkable Loss of Strength, and the Watching; nor does it totally intermit, but remit.

The genuine intermittent Quotidian, also, differs from other intermittent Fevers; for when a simple Tertian becomes double, the Paroxysm seizes every Day: But the Times of Accession do not alternately correspond to each other; neither are their Causes, and the Methods of Cure to be taken, the same.

If, from a Quartan, the Fit becomes quotidian, it is called a triple Quartan, and the Paroxysm does not every Day return at one stated Hour, but, every fourth Day, has the same stated Period of Accession: In these, also, the Methods of Cure are different, because they proceed from different Causes.

A genuine intermittent Quotidian, also, differs from a slow Fever, because the latter seizes after Meals, and towards the Evening, without Horror, but is accompanied with Heat in the Palms of the Hands, and Soles of the Feet: It is, also, more violent in the Night, than in the Day-time; is accompanied with Sweat, and remits in the Morning, though it does not totally intermit.

Now as the proximate Cause of every Fever is a Disorder of the nervous System, so it is certain, that the formal Cause of a Quotidian consists in a spasmodic Agitation of the nervous Parts, and the Vessels: But this preternatural febrile Commotion is brought on by a Matter quite foreign to the natural and mild Quality of the vital Humours conveyed to the Blood; though, at the same time, incapable of being mixed with it.

For the *Primæ Viæ*, the Stomach, *Duodenum*, and the largest Part of the *Jejunum*, which is furnished with Valves, are the Seats in which the peccant Matter, which, in some of its Qualities, resembles Leaven, is lodg'd; from thence it is convey'd through the lacteal Vessels to the Blood and Humours, whence, being carried to the delicate and sensible internal Parts, it agitates and stimulates them to a preternatural and extraordinary Motion: And that, during a quotidian Fever, the *Primæ Viæ* abound with various Kinds of peccant, corrupted, viscid, acid, and bilious Juices, is certain, from several Circumstances: For a Quotidian is generally accompanied with Eructations, a Nausea, a Desire of Vomiting, want of Appetite, a Cardialgia, and Inflation of the Thorax, an Uneasiness of the *Præcordia*, and Oppression of the Breast; and, sometimes, a tensive, pungent, and biting Pain, reaching to the Back: A disagreeable, fetid, and, sometimes, a bitterish, or a somewhat sweetish and nauseous, and sometimes a plainly noxious Taste, is perceiv'd in the Mouth; and, at last, the Fever is frequently terminated by a spontaneous Purging; but an artificial Cure is most happily effected by Emetics and Purgatives, in Conjunction with Stomachics.

But because this Fever is often protracted for many Months, it is justly to be suspected, that the Disorder is deeply rooted in the Recesses of the lower Belly; for the secretory Organs, the Glands, and glandular Coats of the Intestines, being too much relaxed, instead of a subtil, lymphatic, and salival Juice, discharge a large Quantity of an impure and serous Humour. The other Viscera, also, subservient to the Depuration of the Blood, such as the Liver, Spleen, and Pancreas, in consequence of their impaired Strength, and the languid Circulation of the Blood through them, send less pure, lymphatic, and bilious Juices, into the Organs of Digestion: Hence the Solution of the Aliments, and the Elaboration of the Chyle, are disturb'd, and many serous and corrupted Crudities generated and accumulated in the *Primæ Viæ*, which assuming a worse Quality, by their Continuance there, and being conveyed to the Blood, excite the febrile Commotion, as we have already observed.

The greater Frequency of the Paroxysms in Quotidians, than in other Intermittents, is, in my Opinion, owing to a greater Weakness of the *Primæ Viæ*; for such a remarkable Weakness greatly favours the Generation of Crudities, and is the Cause why they more quickly flow, and are collected there; as, also, why they are sooner conveyed to the Mass of Blood, and Membranes of the spinal Marrow.

Hence it is, that all Things which tend to bring on a Flaccidity of the Viscera, or generate crude and impure Juices, lay a Foundation for quotidian Fevers, which are principally incident

to those of languid Constitutions, those addicted to Idleness, those who use crude Aliments, live irregularly, drink too much Malt Liquors, indulge themselves in Grief and Care, and whose Stomachs are weakened by the Shocks of previous Diseases, or by Hemorrhages. It is more frequent in Winter, the Autumn, and cloudy Weather, than at other Seasons; old Persons are more subject to it than others, Women more than Men, Persons of pituitous, phlegmatic, and sanguineous Constitutions, more than those of bilious and melancholic Habits. A Quotidian is, also, quickly generated, by other Intermittents, especially when the Patient uses improper Aliments, is frequently ruffled by the Sallies of Passion, has the Strength of his Stomach impair'd by strong Purgatives and Emetics, uses anodyne, hot, and spirituous Substances, or, neglecting to have his *Primæ Viæ* cleansed, preposterously uses Astringents and Specifics.

An intense genuine Quotidian, arising from a want of due Tone in the Viscera, is generally long protracted, and creates a great deal of Trouble to the Physician; but erratic and epidemical Quotidians, which depend only on a peccant State of the Juices, are more easily cured.

Quotidians which have a total Intermission of the Paroxysm, are less dangerous than others; but those which incline to the Nature of the continual Kind, and which, after the Paroxysm, leave the Strength languid, the Pulse weak and frequent, and the Body, as it were, dissolved into Sweat, are protracted for some Months; these so weaken the Patient, that he is generally taken off by them.

Quotidians succeeding other Intermittents, especially of the quartan Kind, are highly obstinate, and dangerous. Thus *Celsus*, in *Lib. 3. Cap. 15.* tells us, that a *Quartan* seldom proves mortal; but, if it degenerates into a Quotidian, the Patient is in a bad Situation: For this Circumstance indicates, that there is a great Disorder of the Viscera; and, in this Case, the Fever generally bears an Affinity to those of the continual Kind.

When, in the Beginning of the Paroxysm, bilious and pituitous Vomiting and Stools are evacuated, it is a good Sign, unless the Strength is already unhappily exhausted, by the Length of the Disease: A gentle Eruption of Sweat, also, in the Decline of the Paroxysm, and a copious Discharge of Urine with a Sediment, after the Fit, diminish the Violence of the subsequent Paroxysms, and prognosticate a happy Termination of the Fever.

On the contrary, when there is no Excretion, the Fever is long protracted, and the Viscera acquire such a Disorder, as to bring on Cachexies, slow and hectic Fevers, Consumptions, and, in those disposed to it, a Phthisis.

The same Misfortunes, also, readily happen, when Astringents, and specific Febrifuges, are preposterously used; and if, by hot, sudorific, and spirituous alexipharmic Essences, the acrid Recrements are forced from the *Primæ Viæ* into the Blood, the Quotidian soon passes into a continual Fever, accompanied with a perpetual Sweat, and a Loss of Strength.

In Patients who die of Quotidians, the cold Fit is highly intense, lasting, and accompanied with a Rigor, a Loss of Strength, and a Perturbation of Mind: They generally have two Fits of this Kind, succeeded by Heat; but, under the third Fit, the Pulse is weak, and unequal, and the Cold terminates in a mortal Rigor.

THE GENERAL METHOD OF CURE.

Since the Causes of an intermittent Quotidian are a Collection of ferous and viscid Crudities in the *Primæ Viæ*, a flaccid State of the Viscera and Glands, and an obstructed Circulation of the Blood through the Vessels of the lower Belly; so the only Intentions of Cure must be,

1. To prepare, and, by proper Emunctories, evacuate the impure and peccant Juices from the *Primæ Viæ*.
2. To corroborate the Viscera, whose Tone is impaired; and, by that means, prevent the farther Generation of Crudities. And,
3. To restore the free Circulation of the Blood through the abdominal Viscera and Intestines, which are the Organs destin'd for the Digestion of the Aliments, and the Elaboration of the Chyle.

The first of these Intentions is excellently answered, by inciding and abstergent Substances, and neutral Salts; the most efficacious of which are depurated Sal Ammoniac, the digestive Salt of *Sylvius* prepared of the Caput Mortuum of urinous Spirit of Sal Ammoniac, vitriolated Tartar, the *Arcanum duplicatum*, Epsom Salt, *Sedlitz* Salt, and antimoniated Nitre: Such Substances, also, answer this End, as abound with an acrid aromatic Salt; such as the Roots of Cuckowpint, *Calamus aromaticus*, white Burnet, true Costus, and Zedoary; together with *Winter's* Bark, Ginger, and white Pepper; which, when reduced to a Powder, and mixed with the above-mentioned Salts, with the Addition of a Drop or two of some carminative Oil, make an excellent antifebrile Medicine.

For answering the first, as well as the second Intentions, that is, gently to evacuate the Sordes by Stool, and, at the same time, to corroborate the Tone of the Stomach and Intestines, and restore their disturbed Motion to a due State, the most efficacious Medicines are, the balsamic Pills of *Becher*, those of *Stahl*, and those directed by myself; as, also, the *Pilula Aloephangina*, the *Pilula de Succino Cratonis*, and the *Pilula Solanandri*, especially if exhibited in Conjunction with the above-mentioned Salts.

But, for restoring Strength to the abdominal Viscera, and to prevent an Afflux of impure Juices to the Organs of Digestion, the most efficacious Medicines are, bitter Elixirs, mixed with Chalybeates, such as my temperate balsamic Elixir, prepared without Spirit of Wine, with an alkaline Liquor, or Essence of *Cascarilla*, mixed with Essence of Ginger; or stomachic Elixirs, such as my Elixir, or that of *Michaeli*, with the Addition of a few Drops of a chalybeated Tincture, prepared of the chalybeated Flowers of *Sal Ammoniac*, with rectified Spirit of Orange-peel.

By these, also, the Circulation of the Blood through the abdominal Vessels, and the Organs of Digestion, is excellently promoted: However, if the Quotidian is obstinate, and supported by an irregular Regimen, the most efficacious Medicines are, medicinal Waters, especially those of the hot and cold Kinds; such as the *Caroline* and *Egran* Springs, drank warm; which, used with a proper Regimen, and an Intermixture of bitter, balsamic, and anticachectic Medicines, dilute the viscid Sordes, evacuate them by Stool and Urine, together with the ferous Recrements, remove Infarctions, and restore the free Circulation of the Blood.

But the particular Method of using these is to be varied, according to Temperaments, Ages, the Seasons of the Year, the Constitution of the Patient, the State of the *Primæ Viæ*, the Sex of the Patient, and the Cause of the Disease; to each of which Circumstances, both the Dose of the Medicines, and the manner of their Exhibition, are to be accommodated. It is, however, to be observed, in general, that, on the Hours free from the Paroxysm, saline Powders are to be exhibited, with inciding Liquors; and, on the third or fourth Day, the Body is to be rendered soluble, by proper Pills, but in such a manner, as that their Operation may be over before the Paroxysm begins; and the Sweat, about to make an Eruption in the Decline of the Paroxysm, is to be promoted, by Rest, and drinking warm Liquors; after which, we are to subjoin corroborative, bitter, chalybeate, and antifebrile Medicines.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quotidian intermittent Fevers are to be treated with great Circumspection, lest they should degenerate into other chronic and dangerous Diseases. The Patient is, in a particular manner, to abstain from astringent and paregoric Medicines, large Quantities of precipitating earthy Substances, and all drastic, purgative, sudorific, and emetic Medicines.

It, also, contributes greatly not only to promote the Cure, but, also, to prevent the Return of a quotidian Fever, to avoid all Commotions of Mind, especially Sorrow, and long-protracted Anxiety; and to guard against insalutary Aliments, the Use of Wine, and Refrigeration, especially of the Abdomen.

As Nature often happily terminates Quotidians by a critical Flux, so her Indications are to be followed; and the Physician is to act in Concert with her salutary Efforts: For which Reason, the Patient is not to be reduced to a sudorific Regimen, nor are Sweats to be forced by Medicines: But we ought, rather, to endeavour, that the peccant Matter, and the *Primæ Viæ*, should be prepared and disposed for a Flux; which End is excellently obtained, when, a few Hours before the Paroxysm, a gentle Laxative, such as the *Pulvis Cornachini*, or the *Pilula Balsamica*, is exhibited with some of the above-mention'd Salts.

Because Quotidians are accompanied with a Vomiting, which proves beneficial to the Patient, this should be promoted by proper Doses of well-chosen Medicines, exhibited seasonably. Hence it is sometimes absolutely proper, by means of Emetics, to excite a Vomiting before the Paroxysm. I remember, in legitimate Quotidians, which used to have their Accession about Five in the Morning, I have often, towards the Evening before the Crudities were conveyed from the Organs of Digestion to the Blood, exhibited a gentle Vomit, consisting of fifteen Grains of *Ipecacuanha*, and half that Quantity of the *Pulvis Cornachini*: By this means, a Vomiting was happily excited; and sometimes a Purgine, and the Fever, becoming considerably milder, was afterwards easily removed, by other Medicines.

If a Quotidian lasts for a Month, or longer, and seems, as it were, to degenerate into a slow Fever, we may commodiously exhibit one Grain of emetic Tartar, dissolved in some proper Liquor; by which means, I have known an incredible Quantity of stagnant bilious Juices thrown up, and the Patient greatly relieved.

When

When Quotidians are accompanied with a Loathing of Food, a pressory Pain, or Inflation of the Stomach, we are to apply to the epigastric Region small Bags, either dry, or boiled in Wine, consisting of the Herbs Mint, Wormwood, and Rosemary; the Flowers of Spike and Roman Chamomile, Cloves, and Nutmegs: These Bags, when applied after the Paroxysm, are highly beneficial, by effectually promoting Perspiration and Sweat.

In Quotidians of the legitimate Kind, we are to deal very cautiously with Febrifuges; but, in epidemic and erratic Quotidians, besides the above-mentioned Medicines, we may, also, safely exhibit antifebrile Specifics, and that Electuary, the Basis of which is *Peruvian Bark*, and that of *Cascarilla*; since, by this means, a Solubility of the Body, and copious Stools, have

been procured, without any Uneasiness to the Patient: But, in quotidian Fevers, the Bark of *Cascarilla* is justly preferable to the *Peruvian Bark*, because the former is more corroborative, and astringent, than the latter.

Venesection is rarely proper in Quotidians which are already accompanied with a Weakness, especially of the Stomach, and generally complicated with something of a cachectic Nature: But if there is a considerable Plethora, especially arising from a Suppression of the Menses, or Hæmorrhoids, and if the Urine is tinged, or the Patient accustomed to drink Wine, a Vein is to be opened in the very Beginning of the Disorder, lest the Fever should be increased, and, according to the Observation of Physicians, slow, hectic, and apoplectic Fevers brought on. *Hoffman.*

R.

R. For the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM CHYMICUM.
R. In Prescriptions, imports *Recipe*, Take.

RABDOIDES SUTURA. The Sagittal Suture.

RABEOIA. The Roots of the *Flammula Major*. *Rulandus*.

RABIEL, or ROHEL. Dragons Blood. *Rulandus*.

RABIES. See HYDROPHOBIA.

RABIRA. Tin. *Rulandus*.

RACEMUS. A Bunch of Grapes; or of Ivy-Berries; or of any other Fruit which grows in Clusters.

RACHAMMELCA. A new Term coined by *Doleus* from the Hebrew Word רחם *Rechm*, signifying the Uterus, and מלך *Melech*, a King. By this Word he intended to express what they call the active Principle, or the *Plastic Spirit of the Uterus*.

RACHI, or RACHO. Mercury. *Rulandus*.

RACHITÆ, or RACHLÆL. The Muscles belonging to the Back. *Blancard*.

RACHITIS.

This Disorder, generally known by the Name of *Rickets*, is a kind of partial Tabes, and consists in an unequal Nutrition, by which some Parts are deprived of their due Nourishment, and waste away, whilst others receiving more than enough, are preternaturally increased with an Incurvation of the Bones and Spine of the Back.

This is a new Species of Disorder; for it only made its first Appearance in England about the Middle of the Seventeenth Century; and was afterwards spread through all the Northern Parts of Europe. It principally discovers itself by these Signs: The Disorder appearing about the ninth Month of the Child's Age, or later, the Proportion of various Parts of the Body gradually becomes irregular; the Skin lax, the Abdomen large, and, as it were, turgid with Flatulences. The Muscles are consumed by an Atrophy, whilst the Joints of the Arms, Hands, Knees and Feet, become protuberant. The Bones are also render'd incapable of sustaining the Body, and the Spine of the Back is frequently enervated. Hence the Patient is hardly able to walk, and often intirely incapable of moving. Then the jugular and carotid Arteries become tumid, the Head large, and frequently nodding, in consequence of the weak and flaccid State of the Neck. The Genius is for the most part more acute than is usual at that Age. The Chest is narrow, and, as it were, compressed on the Sides; the Sternum acuminate, and the Extremities of the Ribs full of Knots. As the Disorder increases, it is accompanied with a slow Fever, a Cough, a Difficulty of Breathing, and other Symptoms which generally continue till the Patient dies. But 'tis carefully to be observed, that there are certain Degrees and Periods of Duration in the *Rickets*, which don't produce the same Symptoms in all Patients; but in some, those of a violent, and in others, those of a mild Kind.

In dissecting those who die of the *Rickets*, sometimes one, and sometimes another of the Viscera is found corrupted; for in some, the Liver is preternaturally large, scirrhus, and adhering to the Diaphragm, whilst the Mesentery and Pancreas are obstructed, and full of indurated Glands. In others, the Lungs adhere either to the Pleura or Back, and are either livid or full of Vomicas. In others, the Pericardium is full of Water. Most Authors, among whom are the celebrated *Glisson*, *Bonetus*, and *Heister*, unanimously agree, that in Patients who die of the *Rickets*, the Beginning of the Spinal Marrow is preternaturally hard and obstructed; the Space between the Dura and the Pia Mater full of Water; the Brain excessively large, and the carotid and jugular Veins smaller than their correspondent Arteries.

Induced by Experience and the Authority of these Authors, we shall, as the Cause of the *Rickets*, assign the intercepted Ingress of the nervous Fluid into the spinal Marrow, either in consequence of its Obstruction or Compression. Hence the Nutrition of those Parts which receive Nerves from the spinal Marrow, such as the Arms and Legs, must necessarily be destroyed; whilst, on the contrary, those are preternaturally nourished, whose Vessels are pervious, and receive too large a Quantity of nutritive Juice; as is observable in the Heads of *rickety* Patients, which, in consequence of the intercepted Influx of the nutritive Lymph into the spinal Marrow, receive too much Nourishment; which not only renders them preternaturally large, but also their Faces ruddy and well-coloured. Nor is the Brightness of their Genius to be otherwise accounted for, than from the Soundness of the Brain and Cerebellum, which duly discharge their respective Offices. For which reason, the Parts to which Nerves are distributed from the Brain, are generally in a good Condition.

'Tis also obvious why the Bones are incurvated and deformed with Knots about their Epiphyses; for because the Muscles and their Ligaments, by which the Bones are joined, are not in this Disorder duly nourished, whilst the Nourishment is copiously conveyed through the Arteries to the Bones, it generally happens that the Extremities of the Bones, which in Children are of a soft Texture, are, in consequence of the small Resistance, distended and elevated into Tubercles. And since during this Nutrition, the Bones perpetually increase, and the Muscles become smaller and shorter, the Elongation and Extension of them is easily retarded by the Muscles which adhere to them. Hence an Incurvation of the Bones happens; and so much the more easily, because at this Age they are highly soft and flexible. Nor is the Distortion of the Spine of the Back owing to any other Cause, than the Flaccidity and the Destruction of the natural Tone of the bony Processes, Cartilages, Ligaments, and Muscles, connecting the Vertebrae of the Back; and during this Flaccidity, these Parts, upon inclining the Body, recede too far from each other, and are too much distended to be again restored to their natural Situation.

The immediate Cause of the *Rickets* is a viscid Tenacity of the Juices, which being separated from the inspissated Blood, are deposited on the spinal Marrow; and, by compressing or obstructing its Pores, hinder the due Influx of the subtiler nervous Fluid into it; so that it cannot be farther distributed through the Nerves.

Among the remote Causes of the *Rickets* produced by an improper Regimen, we may reckon all those Circumstances which bring on an Atrophy; for 'tis certain, from Experience, that whatever disturbs Digestion, and generates a thick viscid Chyle, unfit for Nutrition, has a Tendency to bring on the *Rickets*.

But nothing more effectually contributes to the Production of this Disorder, than an Air which is cold, cloudy, and impregnated with various hurtful Exhalations; since such an Atmosphere, partly by debilitating the Tone of the Skin, retains the pituitous Sordes in the Body; and partly by relaxing the Lungs, hinders the intimate Mixture of the Blood in them, and prevents its due Distribution through the whole Body. A memorable Instance of this is found in London, which, in consequence of the prodigious Quantity of Exhalations, and the Particles of the Smoke, arising from fossile Coal, is found very fit, not only for producing, but also for supporting the *Rickets*. Nor is it surprising why, from the same Cause, this Disorder is most frequent in maritime and marshy Places, as also in the Spring and Autumn: And why in Towns situated by large Rivers, incommoded with a moist Atmosphere, clouded with saline effluvia, or the sulphureous Smoke of fossile Coal, so many Children are subject to the *Rickets*.

Nor shall I hesitate to affirm, that the Stagnation of the Humours in the spinal Marrow, is greatly promoted by the foolish Custom of Nurses, who, for whole Days, carry Children in their Arms, wrapt up in a Cloak; and not only, for a long time, keep the Spine of the Back in an incurvated Posture, but also bend the Legs unequally. Hence crooked Backs and Legs are not only produced, but a favourable Foundation laid for the *Rickets*. The like also happens, when Infants, by a Blow or Fall, have the Spine of their Back distorted; for which reason gibbous Children easily become subject to the *Rickets*.

Nor is it to be doubted, that previous Diseases dispose not only to a Consumption, but also to the *Rickets*. But among all Diseases, none so effectually contribute to the Production of this Disorder, as those which, by bringing on a Deposition of Humours on the spinal Marrow, suspend and prevent the free Ingress and Egress of the nervous Fluid to, and from it. Thus, in Practice, we often find the *Rickets* arising from this Cause, after an ill-managed Small-Pox; as also after the Repulsion of the Itch, the Crusta Lactea, or a scald Head.

As for the Prognostics of this Disease; if it is violent, and lasts till the fifth Year of the Patient's Age, or longer, it is not to be cured without Difficulty; generally renders the Body languid and deformed; and unless, as Youth advances, when the whole Body undergoes a great Change, it is totally removed, it becomes incurable during the whole of the Patient's Life. Nor is it to be cured with less Difficulty, when it is hereditary, or appears in the first Month after the Birth of the Infant. When the *Rickets* are succeeded by a Phthisis, accompanied with an hectic Fever; by a Dropsy, an Asthma, or a Diarrhæa; only faint Hopes of the Patient's Recovery are to be entertained. But the *Rickets* which arise from a Fault of the Regimen or Air, which are succeeded by the Small-Pox, Itch, or other Efflorescences of the Skin, and are not accompanied with a great Incurvation of the Bones, and an Inability to Motion, are more easily cured.

When viscid, tough and pituitous Humours deposited on the spinal Marrow, are the Cause of the *Rickets*, the first Intention of Cure is to resolve the Viscidity of the Juices, remove Obstructions, and by that means promote a free Circulation of the Humours through all the Body. For this purpose, in order to remove the Fountain of the Disorder lodged in the *Primæ Viæ*, we are, above all things, to use gentle Laxatives; not neglecting, if it is necessary, and the Constitution of the Child admits, the Use of mild Emetics, consisting of a few Grains of the Root of *Ipecacuanna*, exhibited with Sugar and Cinamon-Water, prepared without Wine, or reduced to the Form of an Electuary, with some proper Syrup; for by these means the viscid Sordes, collected in the Stomach and Intestines, are not only excellently eliminated, but also by the Stimulus of such Medicines, a due Resolution of the Humours, and an Opening of the obstructed Vessels, are successfully obtained: Only such stimulating Medicines are not to be exhibited to Patients whose Strength is exhausted, who labour under any Disorder of the Mesentery, or a violent Obstruction of the Viscera; since, in such Cases, it is more expedient to exhibit Medicines of the deobstruent kind.

To the Medicines already recommended, we may also, now and then, add those of a gently resolvent kind, as Diaphoretics generally are; such as the Tincture of Tartar, the acrid Tincture of Antimony, and Preparations of Cinnabar; which in the *Rickets* are preferable to Mercurials, and highly beneficial in eliminating the serous Impurities, partly by Perspiration, and partly by Urine; especially if they are exhibited in such Infusions as dilute and purify the Blood.

But in particular, for removing the Obstruction of the spinal Marrow, and restoring the Influx of the nervous Fluid into it, various Authors recommend Frictions of the Spine of the Back, Arms and Legs, with warm Linen-Cloths; as also Fumigations of Frankincense, Amber, Mastich, and Olibanum. But I can, from Experience, recommend as the most effectual Remedy, Baths of sweet Water, boiled with Nervous Herbs, such as Marjoram, Lavander, Mother of Thyme, Rosemary, Chamomile and Baum. In such Baths, the Patient is to be frequently immersed, and have the Spine of the Back and Joints rubbed and anointed with the following Nervous Ointment.

Take of human Fat, and expressed Oil of Nutmegs, each half an Ounce; of Peruvian Balsam one Dram; and of the Oils of Rue, Lavander and Cloves, each thirty Drops.

By these means I have often seen many Patients afflicted with the *Rickets*, not only surprisingly relieved, but also totally recovered.

But these Measures are carefully to be accompanied with a proper Regimen; for the Patient is by no means to use stultulent viscid Aliments, or such as are of difficult Digestion: But he may frequently use weak Broths, prepared of Fowls or Veal, with the aperient Roots of Asparagus, Fennel, Succory, Smallage, Celeri, Parsley, and River-Crabs bruised. Then, in order to corroborate his Stomach, temperate stomatic Elixirs, such as the Visceral Elixir, are to be mixed with his Aliments. His Drink is to be thin, and during the Time he is suckled, the Milk should be good and sufficiently thin; adding, at the same time, proper Exercise suited to his Age; such as Gestation, that his languid Body may be only gently exercised. If he is coisive, his Body is to be render'd soluble by a Laxative, or a Glyster. If the Disorder is either brought on, or supported by a bad State of Health in the Nurse, the same Medicines are to be exhibited in larger Doses to her.

For an Incurvation of the Spine, and Members variously distorted, we must also recommend Swathing, and the Use of proper Stays, provided due Care is taken to do no Injury by them; since often, by these means, the Infant is thrown into another more dangerous Disorder. *Frederic Hoffman.*

Children are never born with the *Rickets*; for this Disorder is rarely incident to them before they are nine Months old, and hardly ever seizes them after they are two Years of Age, but frequently happens in the intermediate Space between these two Periods.

This Disease is most incident and fatal to Children whose Parents are of a lax and weak Constitution; who are addicted to Idleness and Effeminacy; who live luxuriously, or use pinguious Aliments, Dishes prepared with Sugar, a small Quantity of Bread, sweet Wines, and large Quantities of warm Water; who are exhausted by chronical Disorders, Venery, Age, a Tabes, especially of the Venereal Kind, and repeated Gonorrhæas; for such Persons propagate a weak and languid Offspring.

When the Nurse labours under such Misfortunes, the *Rickets* are more quickly brought on, and increased in the Child.

Especially if the Disorder is treated with a cold and moist Regimen, and the Infant fed with aqueous and mucous Substances, crude Summer-Fruits, Fish, farinacious unleavened Bread; if the Infant has long laboured under an autumnal intermittent Fever, a chronical or acute Disorder; if he has had the Itch, an Herpes, or Ulcers, suppressed, or ill-cured; if he is enervated by Baths, Fomentations, Liniments, Ointments, or moist Vapours; if he remains constantly without Motion in a perforated Chair, with the inferior Parts of his Body naked.

This Disorder, when beginning, is known in those who cannot walk, first, from the Age; secondly, from the preceding Causes; thirdly, from the Brothers or Sisters of the Infant being seized with the like Disorders. Fourthly, from a flaccid Swelling of the Head and Face. Fifthly, from the lax State of the Skin. Sixthly, from the Swelling of the Abdomen. Seventhly, from the Leanness of the other Parts, especially of the Muscles. Eighthly, from the Protuberance of the Epiphyses at the Joints of the Radius, Ulna, Humerus, Knee, Tibia and Fibula. Ninthly, from the Largeness of the Jugular Arteries and Veins, whilst the others decrease.

But in Children who have begun to walk, the approaching *Rickets* are known, first, from the before-enumerated Signs; secondly, from a slow infirm Manner of Walking, a falling forwards, and an Instability which terminates in a perpetual Desire of Sitting, which soon degenerates into a State of constant Decubiture, and at last an Inability of moving any of the Joints; the Neck in the mean time becoming flexible, and the Head nodding: And, thirdly, from the preternatural Ripeness and Force of the Genius; the genuine Exercise of the Senses, the Appetite and Digestion remaining almost sound and uninjured.

When the *Rickets* are of a longer Standing, the Patient's Head is preternaturally large, and its Sutures gaping; the Thorax at the Sides is compressed to the Sternum, which rises in a kind of sharp Arch; the Extremities of the Ribs are full of Knots; the Abdomen protuberant, and the Teeth carious and black; which Symptoms gradually increasing, frequently thro' the whole of the Patient's Life, produce the like terrible Disorders, especially a Spina Ventosa, and a Caries of the Bones.

During the whole Course of the *Rickets*, a slow Fever preys upon the Body, till the Patient dies; and then in the Carcase all the Fibres, Membranes, Vessels and Viscera are found soft and flaccid, while the Humours are colliquated and mucous.

Hence the immediate Cause of the *Rickets* is, a languid, mucous Cold and vapid Cacoehymy, perhaps complicated with a latent Venereal Taint, and accompanied with a lax and flaccid State of the solid Parts.

The Cure of the *Rickets* is most effectually produced by light, easily-digested, dry, lean Aliments, season'd with mild Aromatics, and frequently exhibited, tho' in a small Quantity; by drinking a small Quantity of generous Liquors, especially of Ale, tho' not old, but long boil'd and thick; by a dry and somewhat hot Air; by wearing very dry, and warm Clothes, especially such as are made of Wool; by lying upon Couches prepared of aromatic, corroborating, and drying Herbs, laid upon Boards, in the upper Rooms of the House; by Gestation, Concussion, Oscillation, Riding in a Chariot in rough Roads; by much dry and warm Friction, especially of the Abdomen and Spine, performed with Clothes, impregnated with the Smoke of Aromatic Substances; sometimes by the repeated Application of Cantharides, by gentle Emetics, frequently tho' prudently repeated; by Purgatives, and then by corroborating Medicines, exhibited for some Days successively; and lastly, by the long-continued Use of corroborating, drying, antiscorbutic Medicines, and such as rouse the Spirits. Hence we understand the Uses of Immersion in cold Water, for the Cure of this Disorder, which, however, is not to be put into Practice, till the Viscera of the Abdomen are, in some measure, eased of the Load of Humours which oppress them. Hence, also, the proper Use of Liniments may be understood, which ought to be of the nervous Kind, and applied to the Abdomen, and Spine of the Back; but not to the prominent Parts of the affected Bones.

The best Aliments for Children labouring under the *Rickets* are:

1. Well fermented Bread and Biscuit, mixed with a small Quantity of Saffron, Nutmeg, Cardammons, Cinnamon, Seeds of Celeri; and other grateful and corroborating Aromatics.
2. Lean Pigeons, Fowls, Rabbits, Mutton, Kid and Veal, gently roasted, cut small and mixed with Biscuit, Salt, and a little Parsley, Thyme, and Nutmeg.
3. Millet and Barley, boil'd with Water and Raisins; and then seasoned with a little Wine and mild Aromatics.

The most proper Drinks for Persons labouring under the *Rickets* are,

Ripe, red and astringent French Wines, an Ounce of which is to be exhibited three or four Times a Day.

Half an Ounce of Hippocratic Wine, exhibited at the same Time.

Brunswick Mum, *British* Ale, and that Species of *Dutch* Ale, which is sold at twelve Florins.

With these Malt Liquors, in the Summer Time, may be mixed an equal Quantity of medicated Chalybeate Water, but rather of the Spaw Waters.

Take of the following recent Leaves dried in a Shade, *viz.* of the Male Fern, three Pounds; of Marjoram, Baum, and Mint, each two Handfuls: And of the following recent Flowers, also, dried in a Shade, *viz.* of Melilot, sweet Trefoil, Elder, and Roses, each two Ounces. Reduce to a fine Powder. Mix with double the Quantity of Barley-Chaff; and put all into Bags for Couches, on which the Patients are to lie; these are to be carefully preserved from Moisture, and frequently dried.

Take of Benzoin, Mastick, Olibanum, Amber and Frankincense, each one Ounce; reduce to a Powder; of which throw a little upon live Coals, and the Steam arising from it is to be received in Clothes, for rubbing the Parts.

Take of the Roots of Ipecacuana, one Scruple; of white French Wine, one Ounce; and of Sugar, two Drams; infuse for a whole Night; and when depurated, exhibit in the Morning. Let this be repeated every fourth Day for five Times.

Take of the best Rhubarb, half an Ounce; of Citrine Myrobalans, without the Kernels, three Drams; and of the Troches of Agaric, two Scruples. Infuse in four Pints of cold strong Beer, for twenty-four Hours; and let the Patient use this for common Drink for a Month: But if it should prove too purgative, it may be diluted with an equal, or, if necessary, a greater Quantity of other Ale.

The corroborative, drying, exciting and antiscorbutic Herbs proper for curing the *Rickets*, are, Agrimony, Betony, the Bark of Caper Roots, Spleen-wort, Succory, Dorder, Sanicle, Endive, Male Fern, Liver-wort, Harts Tongue, Baum, Myrobalans, Osmund Royal, Polypody of the Oak, the Leaves and Acorns of the Oak, Rhubarb, the Leaves and Root of the Bramble, white Maiden Hair, Scabious, the Bark, Flowers and Leaves of the Tamarisk, Trichomanes, and Male Speedwell.

Of these medicated Ales, Wines, and Infusions, may be prepared and exhibited with great Success; as also Conerves, and other Things of a like Nature, thus:

Take of Agrimony, Spleen-wort, Fern-Root, Harts Tongue, the Root of Polypody, and white Maiden Hair, each two Ounces. Having cut these small, mixed them, and put them in a Linnen Cloth, infuse them in twelve Pints of cold Ale, to be used for common Drink.

Or,

Take of the Leaves and Flowers of Betony, three Ounces; of the Barks of the Roots of Capers, Tamarisks, and wild Bramble, and of Trichomanes, each two Ounces; and of Filings of Steel, half an Ounce. Infuse in eight Pints of cold White Wine, of which one Ounce is to be exhibited thrice a Day.

Take of *Boyle's Ens Veneris*, two Grains; which are to be exhibited every Evening in Canary Wine for three Weeks.

Take of the Filings of Steel, one Ounce; of the strongest distill'd Vinegar, ten Ounces; and of Sugar, three Ounces. Boil all together gently for twenty-six Hours in a tall Phial; and let the Liquor, when filtrated, be kept in a close Vessel. Six Drops of it are to be exhibited every Morning and Evening in a little Spanish Wine.

Boerhaav. Aph. & Mat. Med.

RACRI, RAAN, or RANAC. Sal Ammoniac. *Rulandus.*

RADLEUS, or RADIALIS. *Winslow* takes Notice of three Muscles under this Name; the first is the *Radialis Internus*, otherwise called *Flexor Carpi Radialis*. See FLEXOR.

The second is the *Ulnaris Externus*, or *Extensor Carpi Radialis*. This Muscle *Winslow* divides into two. In many Subjects, says he, we find these two Muscles entirely distinct from one End to the other, and they may be named *Radialis Externus primus* & *Radialis Externus secundus*, regard being had to the Insertion of their Tendons. Sometimes the two fleshy Portions adhere closely together, appearing to make but one Body, but the Tendons are always distinct and separate.

The first is inserted above, in the *Christa* of the external Condyle of the *Os Humeri*, below the Insertion of the *Supinator Longus*. The second is inserted in the same Condyle,

below the Insertion of the first; and in the neighbouring articular Ligament. From thence the two fleshy Bodies run down very close together; and having reached the Middle of the Outside of the Radius, each of them terminates in a long Tendon.

The *Radialis Externus*, together with the *Radialis Internus*, turns the inner Edge of the Hand directly toward the *Styloide Apophysis* of the Radius.

With the *Ulnaris Externus* it inverts the Hand, turning the Convex Side of the Metacarpus toward the lower Extremity of the Bones of the Fore-arm. It likewise moves the second Row of the Carpus on the first, and thereby increases the transverse Fold on the Convex Side of the Carpus. This Motion also encreases the Angle, which the Back of the Hand naturally makes with the Outside of the Fore-arm; and therefore, according to the common Language, it would be more properly term'd a Flexion outward, than an Extension.

This Muscle acting alone, draws obliquely, and toward the external Angle of the Radius, that Portion of the Hand, which answers to the first Metacarpal Bone, and to the Index; but not without some Difficulty.

Each of the two *Radiales Externi* may act separately, and, consequently, have distinct Uses; since their Tendons having passed the Annular Ligament, are inserted at some Distance from each other; and thereby one of them seems to be fitted to co-operate with the *Radialis Internus*, the other with the *Ulnaris Externus*; and they both serve conjointly to keep the Hand in its true natural Situation. *Winslow.*

RADIATED FLOWERS. See FLOS RADIATUS, under the Article BOTANY.

RADICALIS. Radical. This, when join'd with *Humor*, seems to imply much the same as innate.

RADICISECA. A Servant of the ancient Physicians, employ'd in gathering, and cutting Roots and Herbs, and preparing them for Medicinal Uses.

RADICULA. A Name for the *Raphanus*: According to *Blancard*, the Romans call'd the *Lychnis*, *Sylvestris*, *quæ Saponaria*, *vulgo* by this Name.

RADIUS, in Anatomy, is the Name of a Bone in the Fore-Arm. See BRACHIUM.

RADIX ALBA, in *Hippocrates*, is the Root of the *Dracunculus*, as explained by *Galen*, in his *Exegesis*.

RADIX BEZOARDICA, a Name for the CONTRAYERVA.

RADIX CARLO SANCTO.

This Root is found in temperate Soils, in *Mechoacan*, a Province of *America*. Its Bark is easily separated from it, is of an aromatic Smell, and of a bitter and somewhat acrid Taste. The Root itself consists of very slender Fibrils, which are easily separated from each other. The Bark is accounted sudorific, and corroborates the Stomach and Gums. If chew'd it procures an agreeable Breath. It is good for Scurvies, Catarrhs, Epilepsies, hastening Deliveries, and removing Hernias, and the Small Pox, if taken either in Powder or in the Form of a Decoction. The *Spaniards* have called it by the Name of *St. Charles*, on account of its uncommon Virtues. *Lemery des Drogues.*

RADIX CAVA. A Name for the *Moschatellina Foliis Fumariæ bulbosæ*; *de qua Cordus.*

RADIX CHINA. See CHINA.

RADIX DULCIS. A Name for the *Glycyrrhiza*, *capite echinato.*

RADIX IDÆA. A Name for the *Ruscus*; *Angustifolius*; *Fructu folio imnascente.*

RADIX RINZANGO. *Sive Bengalensis.* Supplem. 396.

This came in Use but very lately, for I find no mention of it in any Pharmacopœa, or Catalogue of Plants. As to its Virtues, it is recommended by *Dr. Tancred Robinson*, as a very potent Cephalic.

RADIX SIMAROUBA, Offic. *Sima Ruba*, Geoff. Tract. 297. Ind. Med. 90.

This is the Root of a *West India* Plant, which produces the *Cayan* Wood, remarkable for being very light. The Root and Bark are said to be excellent Astringents, proper in all Sorts of Loosenesses, and especially in Dysenteries. The Dose of the Root is an Ounce cut in small Pieces; and of the Bark two Ounces; boil'd in three Pints of Water to a Pint. This Decoction the Patient uses for his common Drink, till he is cured. *Geoffrey.*

RADIX URSINA. A Name for the MEUM.

The five Opening Roots are, those of Apium, Asparagus, Fennel, Parsley, and Butchers Broom: These are by some Authors called the greater Opening Roots, to distinguish them from the lesser, which are those of Caper, Eryngo, Dogs Grass, Rest Harrow, and Maddar.

RADIX SANCTÆ HELENÆ. *Cyperus Americanus.* *Hernand.*

This is a pretty long Root, full of Knots, black without, white within, and of an aromatic Taste, almost like that of Galangals. It is brought dry from the Port of *St. Helena*;

in the Province of *Florida* in *America*, where it grows. This Root is good against Pains of the Stomach, and is of an highly aperient Nature. It is recommended against the Nephritic, Colic, and a Difficulty of discharging the Urine. It is, by some, bruised and applied to weak Parts, in order to strengthen them. *Lemery Traité des Drogues.*

RABULA. A Raspatory.

RAIA. Offic. Salv. de Aquat. 149. Schonef. Ichth. 57. Mer. Pin. 185. Bellon. de Aquat. 80. *Raia Clavata*, Aldrov. de Pisc. 450. Rondel. de Pisc. I. 353. Gefn. de Aquat. 795. Charlt. Pisc. 11. Raii Ichth. 74. Ejusd. Synop. Pisc. 26. **THE THORNBAC.**

This is a Sea-Fish, of which the Flesh, Liver, and Gall, are used in Medicine. The Flesh is analeptic, and is said to increase Venereal Vigour. The Gall is recommended against Dimness of Sight, and Exulcerations of the Eye; and is a Remedy for the Itch.

Pliny recommends the Gall for Disorders of the internal Ear, *Lib. 32. Cap. 7.* See **BATIS.**

The Thornback is a Sea-Fish well known, of which there are several Species. Some have their Backs almost all over diversified with white Points like Stars; others have none but on the Tail; another Kind taken at *Marseilles* is greatly esteemed.

This Fish is of a blackish Colour, multiplies fast, feeds upon small Fishes, and lives in muddy Places near the Shore. It affords nourishing, solid and durable Food; because the viscous Juices it contains adhere to the Vesicles of the Fibres, and make it hard of Digestion. It is subject to cause Wind, and produce heavy and gross Humours, especially if eaten before it is kept some Time. It contains much Oil and volatile Salt. It agrees at all Times with young, bilious and sanguine People, who have good Stomachs. In some Places it is dried and will keep long, but it does not thus yield good Food. *Lemery of Foods.*

RAIZ-D'EMPOSE. A Name for the *Mathonica Malabarorum.*

RALLUS. The Name of a River-Fowl, a Sort of Moor-Hen, frequent in *Italy*, and other Places. The Fat is esteem'd resolute, emollient, and Anodyne. *Lemery des Drogues.*

RAMAG. *Athes. Rulandus.*

RAMALIS VENA. The *Vena Portæ.* *Theophilus de exalta Retrimentorum Vescæ Cognitione. C. 2.*

RAMED. Rhubarb. *Rulandus.*

RAMENA-POU-MARAM. The Name of a very large and tall Tree, which grows in *Malabar*; to which I find no Medicinal Virtues ascribed.

RAMENTUM. A Strigment, or small Corpufcle, abraded or scrap'd from any Body.

RAMEX. The same as **HERNIA.**

RAMIGRI. Colophony. *Rulandus.*

RAMUS. The Branch of a Tree; or Ramification of a Vessel in the Body.

RANA. Offic. Mer. Pin. 169. Bellon. de Aquat. 54. Schonef. Ichth. 59. Rondel. de Aquat. 2. 218. Charlt. Exer. 27. Aldrov. de Quad. Ovip. 89. *Rana Aquatica* Schrod. 5. 331. Jonf. de Quad. 130. Schw. Rept. 155. Raii Synop. A. 247. *Rana aquatica & innoxia*, Gefn. de Quad. Ovip. 46. **THE COMMON FROG.**

Frogs are of different Sizes and Colours, according to the Places where they are bred. Sea-Frogs are monstrous, and not used for Food. Land-Frogs, called in *Latin* *Rana Sylvestres*, nearly resemble Water-frogs, only they are smaller, and not eat; but Water-frogs are much used.

The Water-Frog is an amphibious Animal; but keeps most in the Water, as in Rivers, Marshes, Ponds and Fountains. It feeds upon Flies, Worms, Leaches, Snails, Insects, and Herbs which grow in the Water; sometimes also they devour their own Species, for small Frogs are often found in the Mouths and Bellies of large ones. They swim fast, and instead of walking, leap along.

In some Places they are much used for Food; tho' *Galen* so little regarded them, that he does not once mention them. Those bred in Ponds and Marshes are not so wholesome as those bred in Rivers, which abound with Phlegm, volatile Salt, and oily and balsamic Principles, which are proper for allaying sharp Humours of the Breast, are a little nourishing, and of an opening and dissolving Nature. From their Viscosity, however, they are hard of Digestion, and breed gross Humours; and some Authors assure us, that the two frequent Use of them makes People look sickly, and causes a Fever.

They agree at all Times with those who are of young and bilious Constitutions, have good Stomachs, and are accustomed to Exercise; but old and phlegmatic Persons ought to abstain from them, or use them moderately.

Their Spawn is much used in Physic, is cooling and moisten-

ing, and proper for qualifying sharp Humours: The Water distilled from it has the same Virtues. This Spawn is a viscous Matter, transparent, cold, glewy, and full of small Eggs. *Lemery of Foods.*

Emplastrum de Spermate Ranarum.
Plaster of Frog-Spawn.

Take of Frogs-Spawn, Oil of Frogs-Spawn, and Cerufs, reduced to a fine Powder, each two Pounds; of white Vitriol and crude Alum, each an Ounce and an half; boil all together to the Consistence of a Plaster: Then add of white Wax three Ounces; of Mastich and Frankincense, each half an Ounce; and of Camphire three Drams. Make into a Plaster.

The Frogs-Spawn must be newly gathered, and mixed in a Balon with the Oil of Frogs-Spawn, the Cerufs, the Vitriol, and the Alum reduced to Powder. This Mixture must be boiled by a moderate Fire, to the Consistence of a Plaster; then the white Wax must be melted in it; and when it is almost cold, incorporate with it the Mastich and Incense reduced to a fine Powder; and last of all add the Camphire, dissolved in about half an Ounce in the Oil of Frogs-Spawn. This Plaster is to be made up in Lumps for its better Preservation.

It is proper for Wounds, accompanied with Inflammation; it deterges, corrects the Acrimony of the Humours, and dries. It is used in Wounds of the Eyes.

The Vitriol and Alum are not ordinarily mixed with this Plaster, till about the End of the Boiling: But as only the Phlegm can be extracted from these Mineral Salts by such a Boiling, it is no matter whether they are put in soon or late. *Lemery Pharmacop.*

RANA VIRIDIS. Offic. Aldrov. de Quad. Ovip. 622. *Rana nostra viridis*, Ind. Med. 96. *Rana aquatica viridis*, Schw. Rept. 158. *Ranunculus viridis*, Schrod. 5. 305. Jonf. Quad. 133. *Ranunculus viridis, sive Dryopetes*, Gefn. de Quad. Ovip. 60. *Agedula*, Isidor. **THE TREE-FROG.**

The whole Frog, and its Blood, are used in Medicine. The Animal agrees in Virtues with the common Frog, and its Ashes sprinkled on Wounds are said most effectually to restrain their Bleeding. The Blood is recommended as of peculiar Efficacy in a Piltre. *Dale from Schröder.*

RANCIDITAS. Rancidity; that sort of disagreeable Corruption which fat and oily Substances contract by Age and Heat.

RANCULA. An erratic Pain in a Wound, attended with Pain and Pulsation. *Johannes Anglicus.*

RANDIA.

The Characters are;

It hath a Flower consisting of one Leaf, whose lower Part is tubulous, but the upper Part is expanded, and for the most part divided into five Segments. The Flower is succeeded by an oval Fruit, having but one Cell, which is filled with flat cartilaginous Seeds surrounded by a Pulp.

Miller mentions but one Species of this Plant.

Randia frutescens, spinis bijugis, foliis subrotundis, floribus albis. *Houft.* Shrubby *Randia*, with Spines growing two at a Joint, roundish Leaves and white Flowers. This Plant is figured and described by Sir *Hans Sloan* in his History of *Jamaica*, under the Title of *Lycium forte, foliis subrotundis integris, spinis & foliis ex adverso sitis.* Vol. I. p. 40.

This Shrub grows plentifully about *La Vera Cruz*, whence the Seeds were sent by the late Dr. *William Houston*, who gave this Name to it in Honour of Mr. *Isaac Rand*, a curious Botanist.

This Shrub rises to the Height of ten or twelve Feet in the Country of its Growth, and divides into a great Number of Branches, which are always produced by Pairs opposite, as are also the Leaves and Spines. The Flowers are small, and of a white Colour, which are succeeded by hard oval-shaped Fruit, about the Size of a large *Spanish Nut*, which is full of flat Seeds, inclosed in a soft blackish Pulp. The Leaves continue green throughout the Year. *Miller's Dictionary.*

RANGIFER. Offic. Jonf. de Quad. 64. Charlt. Exer. 12. *Cervus Rangifer*, Raii Synop. A. 88. *Tarandus*, Aldrov. de Quad. Bisul. 859. *Tarandus, sive Rangifer*, Gefn. de Quad. 840. *Tarandus*, Agric. Eliot. **THE RAIN-DEER.**

It is an Inhabitant of *Lapland*, and its Horns and Hoofs are of use in spasmodic Affections.

RANINÆ VENÆ. The large Veins under the Tongue.

RANULA. A Disorder of the Tongue, or rather a Tumour under the Tongue. See **LINGUA.**

RANUNCULO AFFINIS. A Name for the *Hydrocotyle, Zeylanica, Asari folio.*

RANUNCULOIDES. A Name for the *Hepatica; trifolia; caerulea flore.*

RANUNCULUS.

The Characters are;

The Perianthium is generally pentaphyllous, sometimes hexaphyllous, and commonly caducous. The Flower is rosaceous, generally pentapetalous, or hexapetalous, and furnished with numerous Stamina. The Fruit is round or oblong, and contained in Capsules, each of which is furnished with an incurvated Tube, which varies according to the Species. The Plant, in other Respects, resembles the *Chelidonium Minus*.

Boerhaave mentions sixty-nine Species of *Ranunculus*, none of which have any particular medicinal Virtues ascribed to them at present, that I know of, except the 1st, 2d, 3d, 6th, 11th, 13th, 16th, 61st, 62d, 63d, and 68th.

1. *Ranunculus pratensis*; erectus; acris. *C. B. P.* 178. *Raii Hist.* 1. 583. *Synop.* 3. 248. *Boerh. Ind. A.* 30. *Tourn. Inst.* 289. *Ranunculus acris*, Offic. *Ranunculus rectus non repens*, flore simpliciter luteo, *J. B.* 3. 416. *Ranunculus pratensis*, erectus, acris, vulgaris, *Park. Theat.* 329. *Ranunculus sur-rectus cauliculis*, *Ger.* 804. *Emac.* 951. UPRIGHT MEADOW CROWFOOT.

It grows in Meadows and Pastures, and the Herb is used. This Species of *Ranunculus* is of a caustic Quality, and if the recent Herb bruised be applied to the Skin, it excites a Pain and Inflammation. The Roots are in Request among the Rustic Sort of People, and Soldiers, for the Cure of intermittent Fevers.

2. *Ranunculus*; pratensis; erectus; acris; in folii medio maculatus. *C. B. P.*

3. *Ranunculus*; pratensis; erectus; dulcis. *C. B. P. M.* H. 2. 439.

6. *Ranunculus*; pratensis; repens; hirsutus. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind. A.* 31. *Ranunculus*, Offic. *Ranunculus pratensis*, repens, *Park. Theat.* 329. *Raii Hist.* 1. 581. *Synop.* 3. 247. *Ranunculus pratensis etiamque hortensis*, *Ger.* 804. *Emac.* 951. *Ranunculus repens flore luteo simpliciter*, *J. B.* 3. 419. CROWFOOT.

This has a small creeping fibrous Root, from which arise several hairy Leaves, cut into three Segments, each of which is divided into as many more, and are frequently spotted with white Spots on their upper Side. The Stalks grow not so upright as those of the *Ranunculus Pratensis*, radice verticilli modo rotunda, having longer and narrower Leaves, and not so divided; bearing on their Tops, round, five-leav'd, shining, yellow Flowers, with several yellow Stamina in the Middle. When the Flowers are fallen, the Head enlarges into a round Cluster of sharp-corner'd flattish Seed. This Species sends out Flagellæ from the Roots, by which it propagates itself. It grows frequently in moist Meadows, and by River-sides, and flowers in May. *Miller's Bot. Off.*

This Species is quite harmless, and is often boiled with other Greens in the Month of April. *Dale.*

11. *Ranunculus*; montanus; aconiti folio; albus; flore minore. *C. B. P.* 182. *Aconitum Ranunculoides*, flore albo simpliciter. *M. H.* 2. 450.

13. *Ranunculus*; pratensis; radice verticilli modo rotunda. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind. A.* 31. *Ranunculus bulbosus*, Offic. *Ger.* 806. *Emac.* 953. *Park. Theat.* 329. *Raii Hist.* 1. 581. *Synop.* 3. 247. *Ranunculus tuberosus major*, *J. B.* 3. 417. BULBOSE CROWFOOT.

This is the most common, and with this our Fields about Town are covered in the Spring. It may be known from the rest by its round white tuberous Root, having several Fibres at the Bottom. Its Leaves grow on longer Foot-Stalks; but it is cut into three Sections, like the *Ranunculus pratensis*, repens, hirsutus. It grows more erect, and the Calyx of the Flower turns back, and remains till the Leaves drop; whereas, in the creeping Sort, the Calyces fall off as soon as the Flowers are opened. It flowers in May, and is too frequent in our Fields and Meadows, being by the Vulgar called Butter-Flowers; they believing that the Butter receives its yellow Colour from these Flowers; whereas the Cows will meddle with none of the Crow-feet when green, by reason of their hot caustic Taste. *Miller's Bot. Off.*

The Root of this Plant is so acrid, that it may be used for Caustics and Blisters, but principally upon the Joints of those Parts which are infested with the Gout. They bruise this *Ranunculus*, and apply it to the Corns of the Feet, after they have been well softened in warm Water, and cut to the Quick. *Martyn's Tournefort.*

The Root is of admirable Efficacy in eroding, consuming, and drying hard Tumours; but loses its Virtue when dried.

16. *Ranunculus*; palustris; Apii folio; lævis. *C. B. P.* 180. *Boerh. Ind. A.* 31. *Tourn. Inst.* 291. *Ranunculus palustris*, Offic. *Ger.* 814. *Raii Synop.* 3. 249. *Ranunculus palustris retundi folius*, *Ger.* *Emac.* 962. *Raii Hist.* 1. 585. *Ranunculus palustris sive minimo*, *J. B.* 3. 858. *Ranunculus*

palustris Sardonicus, *Lævis*. *Park. Theat.* 1215. ROUND-LEAV'D WATER CROWFOOT.

It delights in watery Places, and flowers in June and July.

This *Ranunculus*, *Dale* supposes the fourth Species of *Dioscorides*, who writes that the Leaves and tender Stalks being applied as a Cataplasm, are exulcerating and escharotic, not without Pain. Hence they cure scabrous Nails, remove the Psores, and obliterate the Marks of such as are stigmatized. The Application hereof cures also the Myrmeciae, Acrochordones, and Alopecia, and that in a short time. A Decoction of the same is good to foment Chilblains. The Root dried and triturated, excites Sneezing, when applied to the Nostrils, and worn as an Amulet, eases the Tooth-ach, but it breaks the Teeth. *Dioscorides*, *Lib. II. Cap.* 206.

61. *Ranunculus*; gramineo folio; flore caudato; feminibus in capitulum spicatum congestis. See MYOSUROS.

62. *Ranunculus*; longifolius; palustris major. *C. B. P.* 180. *Boerh. Ind. A.* 34. *Tourn. Inst.* 292. *Ranunculus flammæus*, Offic. *Ranunculus flammæus major*, *Ger.* 814. *Emac.* 961. *Raii Hist.* 1. 587. *Synop.* 3. 250. *Ranunculus palustris flammæus major*, *Park. Theat.* 1215. *Ranunculus folio longo maximus*, *Lingua Plinii*. *J. B.* 3. 365. GREAT SPEAR-WORT.

It grows in marshy Ditches, and flowers in June; its Virtues are the same with those of the *Ranunculus palustris*.

63. *Ranunculus*; longifolius; palustris; minor. *C. B. P.* 180. *Tourn. Inst.* 292. *Boerh. Ind. A.* 34. *Flammula*, Offic. *Ranunculus flammæus minor*, *Ger.* 814. *Emac.* 961. *Raii Hist.* 1. 587. *Synop.* 3. 250. *Ranunculus palustris flammæus minor sive angustifolius*, *Park. Theat.* 1214. *Ranunculus longifolius aliis flammula*, *J. B.* 3. 864. SPEAR-WORT.

It is found frequently growing in watery Meadows, and oozy Places, and flowers in June. The Herb, which is of Use in Medicine, agrees with the other Species in its caustic Quality. Its Leaves are sometimes even or entire, and sometimes serrated; in which latter Respect, it is called *Ranunculus flammæus serratus* by *Gerard* and *Parkinson*; and *Palustris serratus* by *C. Bauhine*.

68. *Ranunculus*; folio Cyclaminis; radice Asphodeli; major. *Tourn. Inst.* 285. *Boerh. Ind. A.* 35. *Thora*, Offic. *Thora Valdensis*, *Ger.* *Emac.* 966. *Raii Hist.* 1. 591. *Thora folio Cyclaminis*, *J. B.* 3. 650. *Aconitum Pardalianches alterum*, seu *Thora minor*, *C. B. P.* 184. *Aconitum Pardalianches*, seu *Thora minor*. *Park. Theat.* 317. *Thora montis Baldi*, sive *Sabaudica*, *Ger.* *Aconitum Pardalianches primum*, seu *Thora major*, *C. B. Pardalianches*, seu *Thora major*, *Park.* LEOPARD-BANE.

It grows on the Mountains of Switzerland, and the Herb is endued with a caustic Quality.

The Virtues of this Plant are either of the laudable and salutary, or of the hurtful and pernicious Kind. The first, second, sixth, thirteenth, and sixteenth Species are principally kept in the Shops. Its Roots and small Bulbs, bruised and applied to the Skin, excite Pain, Redness, Inflammation, a Gangrene, and an acrimonious State of the Humours: For this Reason they are of an escharotic, caustic Quality, and cure Diseases in which the nervous System is to be roused and shaken; such as Pains of the Bones, Epilepsies, Convulsions, Spasms, hysteric Passions, fixed Pains of the Periosteum, Gouts, old Ulcers, and ischiadic Pains. They exulcerate and burn into Crust the Skin and Panniculus adiposus; and if they are left in open Wounds, they excite Fistulas. It is also customary among Soldiers and common People, to gather, wash, and bruise the Roots of the first, second, and third Species; and apply them to the Soles of the Feet, or between the Fingers, by which Means they successfully cure intermitting Fevers; but if they are too acrid, they burn the Skin.

This Herb is, by many, called *Scelerata Herba*, because with its Roots and Bulbs the Beggars raise unseemly Ulcers on their Children, in order to excite the greater Compassion. The Herb put up the Nostrils excites a violent Sneezing. Warts are eradicated by rubbing them with this Plant; and the Ancients applied the Leaves of the *Ranunculus* for the Cure of a Leprosy. This Plant is poisonous when used internally, but externally it cures the Itch in Children.

It is by some called *Apium Risus*; hence *Giulandinus*, that skilful Botanist, thought that it was the *Apiastrum* of *Pliny*, which *Dioscorides* calls *Sardonis*. This is so acrimonious, that if it is applied to the Tongue, it immediately inflames it, and produces a Gangrene in it.

It is also called *Herba Strumea*, because it resolves and dissolves scrophulous and strumous Swellings; *Pes Corvini*, because the Leaves of some Species of it resemble Crows Feet; and *Ranunculus*, from *Rana*, because it grows in moist Places. *Hist. Plant. Ascript.* *Boerh.*

Besides the foregoing Species of *Ranunculus*, *Dale* mentions the following:

Ranunculus montanus, Offic. *Ranunculus montanus maximus albus*, Park. Theat. 334. *Ranunculus montanus Aconiti folio albus flore majore*, C. B. P. 182. Tourn. Inst. 290. *Ranunculus Aconiti folio*, Ger. Emac. 954. *Ranunculus flore albo Alpinus major*, J. B. 3. 861. Raii Hist. 1. 589. MOUNTAIN CROWFOOT WITH A WHITE FLOWER.

It grows on woody Hills, and flowers in May and June; and agrees in Virtues with the other Species of *Ranunculus*.

RAPA.

The Characters are;

The Pod ends in a fungous kind of Horn, and the Root is carnosous and tuberous.

Boerhaave mentions nine Species of *Rapa*, which are;

1. *Rapa*; *fativa*; *rotunda*; *radice candida*. C. B. P. 89. Raii Hist. 1. 800. Synop. 3. 294. Tourn. Inst. 228. *Boerb. Ind. A. 2. 12.* *Rapa*, Offic. *Rapum hortense*, Park. Parad. 508. *Rapum majus*, Ger. 177. Emac. 232. *Rapum sativum rotundum*, J. B. 2. 838. TURNEPS.

This is a Root so well known, that it would be needless to say more than that it is round, and somewhat flat, of a white Colour, but somewhat reddish on the Outside. The Leaves are large, rough, and very much cut in, being round and broad at the End, and lying on the Ground. In the Spring it sends forth branched Stalks, clothed with smaller, but smooth and undivided Leaves, and long Spikes of four-leaved bright yellow Flowers; which are succeeded by long, slender Pods, containing round black Seed. It is sown in the Fields and Gardens, and flowers in April.

Turneps are much eaten with all Sorts of Flesh, in the Winter Season especially, and are a wholesome and nourishing Root, tho' somewhat windy; and are more used in the Kitchen than in the Apothecaries Shops. Some commend a Syrup made with Slices of Turneps and brown Sugar-candy, Stratum super Stratum, baked in an Oven, as a good Pectoral, and helpful for Coughs and Consumptions. *Miller's Bot. Off.*

Turneps are sown in a moist Soil with Cabbage, and are much used for Food. They are of two Kinds, Male and Female, which differ little from one another; only the Male is usually round, about the Bigness of a Child's Head, and much extended in Breadth; the Female is oblong, and most esteemed. Such as are tender, plump, of a good Taste, and grow in a fat and moist Soil, are the best. They sometimes grow to a prodigious Bigness. *Pliny* and *Tragus* say, they had seen some of the Males that weighed forty Pounds; and *Amatus* reports that he had seen some that weighed above fifty and sixty Pounds. Some of the Females have been known to have weighed thirty.

They contain much Oil, and a little essential Salt; and are very nourishing, softening, and provoke Urine, having an oily balsamic Juice, proper to correct the sharp Salts of the Humours, and to recruit the solid Parts. The Decoction of them, strained and sweetened with Sugar, is used to allay the sharp Humours of the Breast, and remove Hoarseness, and must be taken just before going to Bed.

They are hard of Digestion, windy, and sometimes cause Obstructions; because their Substance being very compact and close, they continue a long Time in the Stomach before they are wasted, ferment there, and easily stop in the small Channels or Pipes through which they pass. They agree at all times with young bilious Persons, and those whose Humours are sharp and thin, provided, however, they have a good Stomach. The Seed is reckoned good against Poison, and to kill the Worms. *Lemery of Foods.*

2. *Rapa*; *fativa*; *rotunda*; *radice obsoletè nigricante*. C. B. P. 90.

3. *Rapa*; *fativa*; *rotunda*; *radice suprà Terram viridi*.

4. *Rapa*; *fativa*; *rotunda*; *radice foris & intus flavescente*. C. B. P. 90.

5. *Rapa*; *fativa*; *rotunda*; *radice foris & intus pallide lutescente*.

6. *Rapa*; *radice compressa, candida*.

7. *Rapa*; *radice oblonga*; seu *femina*. C. B. P. 90.

8. *Rapa*; *radice oblonga*; seu *femina*; *radice obsoletè nigra*.

9. *Rapa*; *radice oblonga*; seu *femina*; *major*. *Boerb. Ind. Alt. Plant.*

This Plant agrees in Virtues with the *Raphanus*; the Cortex, or Bark, of the Root has an acrimonious Taste; but the Juice of the interior medullary Substance has a Honey-like Savour. The Root boiled and decorticated is an excellent Antiscorbutic, and is thought to have a demulcent Virtue. The expressed Juice of the Root, taken in a good State of Maturity, and before it bears Seed, being boiled and clarified, with an Addition of Honey, making a third Part of the whole, is an incomparable Medicine for Ulcers in the Mouth, and to deterge Aphthæ; and being drank, is an excellent Remedy for an inveterate Cough. The Seed, heated and pressed, yields

an Oil of Use on all Occasions. The Bulb roasted under the Embers, is an Anodyne in Inflammations of the Ears. The same boiled in Butter, and made into a Cataplasm, is very good to mollify Tumors. *Nicander* writes, that the *Rapa* is a very proper Ingredient in alexipharmic and theriacal Compositions; it serves also for Food and Sauce. *Galen* says, that it is a very good Aliment, but flatulent: It loses, however, its Flatulency in boiling or roasting; but as it is always deprived of its Cortex, it must still retain some Flatulency. The following Remarks on *Rapa* are worth Observation: The lesser the Bulb, and the more sandy the Soil in which it grows, the more acrimonious is its Taste; the Rind of the Bulb is always bitter, which is a Proof that the Plant is antiscorbutic. The Juice is highly commended by modern Physicians. They press the whole Body of the Bulb into a Flour, and so express the Juice, which is acrimonious; then with an Addition of Honey they make of it a Gargarism, which is a good Remedy in the Quinsey, and a Peripneumony. The eighth Species becomes the more acrimonious for being pierced by Worms, because the aqueous Juice is evacuated by the Wounds. That there is a considerable Flatulency in crude Turneps, is demonstrated by Mr. Boyle, who found, that by putting them with their Rinds pared off in an exhausted Receiver, and suffering them to continue therein for four and twenty Hours, they had in that Space of Time generated five Atmospheres; that is, rendered the Air within the Receiver of five Times the Weight of that without it. The same Experiment will hold good of Radishes; whence it appears, that there is in these Plants an antiscorbutic and very deterfivè Quality. *Hist. Plant. Ascript. Boerhaave.*

Besides the foregoing Species of *Rapa*, Dale mentions the following:

Rapa Sylvestris, Offic. C. B. P. 90. Raii Hist. 1. 800. *Rapum Sylvestre*, Ger. 179. Emac. 233. *Rapum sylvestre non bulbosum*, Park. Theat. 861. *Rapum sylvestre Matthioli*, J. B. 2. 841. WILD TURNEP.

It grows in Fields, and flowers in the Summer. The Root, as *Dioscorides* says, is an Ingredient in *Smegmata*, or deterfivè Medicines, composed of the Flour of Lupines, Wheat, Darnel, or Vetches, for clearing the Skin of the Face, and of the Body. *Dioscorides*, L. 2. C. 135.

RAPAX. A Name for Amber.

RAPHANINUM OLEUM. Oil drawn from the Seeds of the Radish. *Dioscorides* recommends it for cutaneous Disorders. L. 1. C. 45.

RAPHANISTRUM.

The Characters are;

The Pod is full of Joints, like a fasciated or filleted Column, and full of roundish Seeds, inclosed in each Joint.

Boerhaave mentions three Species of *Raphanistrum*, which are;

1. *Raphanistrum*; *segetum*; *flore luteo, vel pallido*. T. 230. *Rapistrum, flore luteo, siliqua glabra articulata*. Raii Hist. 805.

2. *Raphanistrum*; *arvense*; *flore albo*. T. 230. *Rapistrum, flore albo Erucæ foliis*. Lob. Ic. 199. *Lampfana*. Cæsalp. 355.

3. *Raphanistrum*; *flore albo striato*; *siliquâ articulata, striata, minore*. See ARMORACIA. *Boerb. Ind. Alt. Plant.*

It is called *Raphanistrum* from *Raphanus*, because its Root resembles that of the *Raphanus minor*. Its Virtues are the same with those of the *Raphanus*. *Hist. Plant. Ascript. Boerhaave.*

Raphanistrum is also a Name for several Sorts of *Rapistrum*, which see.

Raphanistrum dispernum. A Name for the *Erucago*; *segetum*.

Raphanistrum, monospermum. A Name for the *Myagrum monospermum*; *latifolium*.

RAPHANUS.

The Characters are;

The Pod is like a Horn, thick, spongy, divided by a thin Membrane into two Capsules, or Cells, containing round Seeds.

Boerhaave mentions five Species of *Raphanus*, which are;

1. *Raphanus*; *major*; *orbicularis*; *vel rotundus*. C. B. P. 96.

2. *Raphanus*; *major*; *orbicularis*; *floribus candidis*. C. B. P. 96.

3. *Raphanus*; *niger*; *major*; *rotundus*. M. H. 3. 265.

4. *Raphanus*; *minor*; *oblongus*. C. B. P. 96. Tourn. Inst. 229. *Boerb. Ind. A. 2. 11.* *Raphanus hortensis, Radicula*, Offic. *Raphanus*, J. B. 2. 846. *Raphanus sativus*, Ger. 183. Emac. 287. Raii Hist. 804. Synop. 3. 296. *Raphanus vulgaris*, Park. Theat. 861. Parad. 507. RADISH.

This Root is very well known to every one, to be long, single, and white; and covered with a thin reddish Skin on the

the upper Part; the Leaves are large, rough and hairy, pretty much cut in on the Edges; the Stalks grow to three or four Foot high, much branched, having several four-leaved white Flowers, with a reddish Spot on each Leaf; which are succeeded by pretty large, light, spongy Seed-vessels, including oval, reddish, brown Seed, as big again as Rape Seed. It is planted in Gardens, and flowers in May.

Radishes are opening, attenuating, and antiscorbutic, and are much eaten in the Spring; but afford little Nourishment, and are very windy. They provoke Urine, and are good for the Stone and Gravel. They are but seldom used in the Shops. *Miller's Bot. Off.*

The Parts useful in Medicine are the Root and Seed, which are principally employed in wasting and expelling the Stone; in provoking Urine and the Menfes; and in opening Obstructions of the Liver and Spleen. *Dale.*

The *Raphanus* has the Virtues of the *Cochlearia*; the Root is efculent, expels Phlegm from the Intestines, and is a Carminative. The Flowers, Leaves, Seeds and Roots are antiscorbutic; for which Reason they are much in request, and are proper for phlegmatic Constitutions. The expressed Juice of the Roots and Seeds, taken in the Morning with Honey, is a very wholesome Medicine, especially if a Draught of Whey be taken afterwards; for it cleanses the Stomach, Kidneys, and Lungs, and is good against an inveterate Cough and Hoarseness, proceeding from Phlegm; but it is not proper in a Cough proceeding from an Inflammation, nor for those who spit Blood. The Leaves are used among other Greens. The Root contains much of an aqueous and acrimonious Substance; and the drier it is, the more acrid it becomes; but its Acrimony is lost in boiling. Its Aquosity renders it flatulent, on which Account it is said not to be good in hypochondriacal Disorders: The daily Use of the Root, however, is of sufficient Efficacy to cure a great Dropsy in the Beginning; and it is of excellent Service in the Scurvy. It is also aperitive, inciding, and good for the Stone, the nephritic Colic, a Retention of Urine and the Menfes, and in the Jaundice. The Seeds are opening; but taken inwardly by themselves, they excite a Nausea. *Hist. Plant. Ascript. Boerhaave.*

5. *Raphanus*; major; oblongus. *Boerb. Ind. Alt. Plant.*
Raphanus aquaticus. A Name for the *Sisymbrium*; *aquaticum*; *Raphani folio*; *siliqua brevior*; and for the *Sisymbrium*; *aquaticum*; *foliis in profundas laciniis divisis*; *siliqua breviori*.

Raphanus rusticus. A Name for the *Cochlearia*; *folio cubitali*.

RAPHE. A Suture.

RAPISTRUM.

The Characters are;

The Shell is almost globular, and consists of one Capsule, which generally contains no more than one Seed.

Boerhaave mentions six Species of *Rapistrum*, which are;

1. *Rapistrum*; *Oriente*; *Acanthi folio*. *T. Cor. 14.*
2. *Rapistrum*; *monospermum*. *T. 210. C. B. P. 45. Prodr. 37. J. B. 845. Raphanistrum, monospermum, capsulis striatis, tenuibus, oblongiusculis*. *M. H. 2. 267.*
3. *Rapistrum*; *maximum*; *rotundifolium*; *monospermum*. *Corn. 147. Raphanistrum monospermum, maximum, rotundifolium; capsula rotunda, glabra*. *M. H. 2. 265.*
4. *Rapistrum*; *arvense*; *folio auriculato, acuto*. *T. 211. Myagro similis, siliqua rotunda*. *C. B. P. 109. Prodr. 52. Raphanistrum, siliqua minore, rotunda, rugosa, aspera*. *M. H. 2. 267.*
5. *Rapistrum*; *Oriente*; *folio Raphani*; *capsulis rugosis*. *Nissle.*
6. *Rapistrum*; *Oriente*; *Dentis Leonis folio*; *flore albo*. *T. Cor. 14. Boerb. Ind. Alt. Plant.*

It is called *Rapistrum* from *Rapa*, because its Leaves resemble those of the *Rapa*. All the Species are antiscorbutic, and have an acrimonious Taste, mix'd with a Savour of Garlick, whence they contain something of a heating Quality; however, they are not much commended, and are but of little Use in Medicine. *Hist. Plant. Ascript. Boerb.*

Rapistrum, is also a Name for the *Sinapi*; *arvense*; *præcox*; *semine nigro*. And for the *Sinapi*; *arvense*; *præcox*; *semine nigro*; *foliis integris*.

Rapistrum flore albo. A Name for the *Raphanistrum*; *arvense*; *flore albo*.

Rapistrum flore luteo. A Name for the *Raphanistrum*; *setum*; *flore luteo, vel pallido*.

Rapistrum Italicum. A Name for the *Erysimum*; *angusti folium*; *majus*.

RAPUM. See RAPA.

RAPUNCULUS.

The Characters are;

It has all the Appearance of the *Campanula*, except in that the Flower is monopetalous, quinquefid, stellated, and furnished with a corniculated Pistil.

Boerhaave mentions two Species of *Rapunculus*; the first of which has its Flowers collected into a Head, and is known by the Name,

Rapunculus; *Scabiosæ capitulo*. *C. B. P. 92. Scabiosa, globularis; quam ovinam vocant*. *J. B. 3. 25. 12. Rapuntium montanum, capitatum, leptophyllum*. *Col. 1. 227.*

The second Species, which is distinguished by having its Flowers disposed in the Figure of an Umbella, is called,

Rapunculus; *valerianoides*; *cæruleus*; *umbellatus*. *Flor. 2. 113. Cervicaria, valerianoides, cærulea*. *C. B. P. 95. Trachelium, umbelliferum, cæruleum*. *Ponæ. Valerianthemum*. *Hoffman. Delic. Boerb. Ind. Alt. Plant.*

It is called *Rapunculus*, because its Root resembles that of the *Rapum*. But I find no Virtues ascribed to it.

Rapunculus is also a Name for several Sorts of *CAMPANULA*.

RAPUNTIIUM.

The Characters are;

In Leaves, Fruit, and outward Appearance, it resembles the *Campanula*. The Flower is monopetalous, divided into Parts, shaped like a Tongue, and inclosed in a Sheath.

Boerhaave mentions four Species of *Rapuntium*, which are;

1. *Rapuntium*; *maximum*; *coccineus*; *spicato flore*. *Col. in Rech.*
2. *Rapuntium*; *Americanum*; *flore dilute cæruleo*. *A. R. P. 105. Rapunculus, Galeatus, Virginianus, flore violaceo, majore*. *M. H. 2. 466.*
3. *Rapuntium*; *Americanum*; *Virgæ aureæ foliis*; *parvo flore cæruleo*. *T. 163.*
4. *Rapuntium*; *Africanum*; *minus*; *angustifolium*; *flore violaceo*. *T. 163. Campanula, minor, Africana, erini facie, flore violaceo, cauliculis procumbentibus*. *H. L. Boerb. Ind. Alt. Plant.*

This Plant is not received in Medicine. The first Species serves to feed Sheep, and bears a very beautiful Flower, which, for Colour and Lustre, surpasses all others; for which reason it is called *Flos cardinalis*, the Cardinal Flower. *Hist. Plant. ascript. Boerhaave.*

RAREFACIENTIA. Medicines which rarify the Blood.

RASA. The same as RESINA.

RASA, or RASTIS. Tin.

RASAKETI, RUSATAGI, or RUSANGI. Burnt Copper. *Rulandus.*

RASCATIO. Excreation, or Hawking.

RASCETA, or RASETTA. The Wrist; or Ankle. The Word is Arabick.

RASILIS ÆRUGO. See ÆRUGO.

RASORIUM. A Raspatory, or Lenticular. See Table 28. Fig. 3, 4, and 5.

RASPATORIUM. The same as RASORIUM.

RASTETA. The same as RASCETA. *Paracelsus.*

RASTOL, or RASOES. Copper. *Rulandus.*

RASTUL. Salt. *Rulandus.*

RASURA. A Shaving; or Rasping. It is also used to express a kind of Corrosion by acrid Humours. *Rasura*; are Shavings, or Rasplings.

RATIONIS OS. The OS SINCIPITIS. *Blancard.*
RATIS. *Marcellus Empiricus* informs us, that this is the French Name for the *Filicula*, (Polypody) which frequently grows on the Beech.

RAUCEDO. Hoarseness.

RAVED. Rhubarb.

RAXACH. Gum Ammoniac.

REALGAR. *Realgar*, or *Lisagallum*, of the Shops; *Σαδάραχ* of the Greeks; *Realgar*, *Lesgal*; and *Zarnich Abmer*, of the Arabians; called by us Red Orpiment; is an arsenical Juice of the same Nature with Orpiment, differing from it only in Colour. It is of two Kinds, native and factitious: The native *Realgar* is dug out of the same Mines with Orpiment, resembling Cinnabar in Colour, and smelling like Sulphur and Garlick when burnt, and made up in solid brittle Glebes. The factitious Kind is made of Orpiment, melted and boiled for some time in subliming Vessels, by which the yellow Flowers are raised to the upper Part of the Vessels, and the Mass remaining at the Bottom, being condensed by Cold, becomes of a red Colour, like Cinnabar, and is called *Realgar*; which, if it be exposed to the free Air for a long Time, becomes covered with a saline Efflorescence. This *Realgar* is not to be confounded with the factitious red Arsenic.

Realgar is brought from China, in different Figures; some of which resemble the Figures of little Men, called Pagods; and I am of opinion that it is not cut into these Figures, but cast in Moulds.

Realgar is no less poisonous than Orpiment. According to *Dioscorides*, *Sandaracha* has a septic and corroding Virtue; but it is wonderful that he should recommend the Use of it, not only in Fumigations for Coughs of long standing, but also

also taken inwardly, mixed with Resin for Asthmas; with Honey for a Hoarseness, or a spitting up of a purulent Matter. Even *Hippocrates*, in a Suffocation of the Uterus, accompanied with a Cough, orders the Weight of an Obolus, or about twelve Grains of Sandarach, mixed with the same Quantity of unprepared Sulphur, and three or four blanch'd Almonds, to be taken in sweet or perfumed Wine. The *Indians* commonly drink Wine or Water out of arsenical Cups, for various Diseases, as a sovereign Remedy; though among us, this Practice has been found to be attended with very bad Consequences. It must be owned, therefore, that the Bodies of Men in hot Countries are different from ours. As insensible Perspiration is there more copious, their solid Fibres are drier, and more unfit for Motion; and, for that reason, require more strongly irritating and stimulating Medicines, to make these Fibres contract as they ought. Likewise, as the Fluids in their Bodies are thicker and more viscid than in ours, by the Evaporation of the more fluid Parts of them, they cannot be attenuated but by strong and very acid Medicines; and therefore what is a certain Poison to us, is to them an efficacious Remedy; as the cathartic Medicines which we use, have hardly any Effect on them, except they be given in three times the common Quantity, as has been often observed by Physicians. In our Climate, therefore, we ought to abstain from the inward Use of these Medicines, however prepared, corrected or mitigated; because they still retain some Part of their deleterious Qualities, and prove fatal to Persons whose Viscera are tender. Neither is the external Use of them altogether safe; for *Fernelius* relates, that by applying a large Quantity of Arsenic to a cancer'd Breast, the Patient was carried off in six Days. About three Hours after the Medicine was applied, she was seized with a Shivering, Vomiting, Pain in her Head, and frequent Fainting. Her Pulse was weak, and as the Symptoms increased by Degrees, she began to be cold in the Extremities of her Body, and then her Face and other Parts swelling beyond Measure, she soon died. From this Observation, *Fernelius* takes occasion to caution Physicians against the external Use of arsenical Medicines, except in small Quantities, and to Parts at a great Distance from the Heart and Brain; though, in the Opinion of many very great Physicians, they are thought to be very powerful and efficacious Remedies in cachectic, phagedænic, and carcinomatous Ulcers.

The Correction of *Realgar*, first proposed by *Helmont*, and afterwards published by *Dallicot*, first Physician to the Duke of *Lorraine*, which has been found successful in many Cases, is this:

Put any Quantity of *Realgar*, finely powdered, into a Glass Matrafs, and pour upon it as much of a strong Lixivium of Tartar and Nitre, as will swim four Fingers Breadth above the *Realgar*. Digest them in a Sand-heat for twenty-four Hours, shaking the Matrafs very often. Then pouring off, and preserving the Tincture, pour new Lixivium upon the Powder, and repeat the whole Operation, till almost all the *Realgar* is dissolved, some indissoluble metallic Parts only remaining. Afterwards mix all the Tinctures together, pass them through Cap-Paper, and pour, at several times, as much Vinegar of Lead to the strained Liquor, as will precipitate all that can be separated from it. Then pouring off the clear Liquor from the precipitate by Inclination, let the Powder be washed with warm Water till it become almost insipid; and when it is well dried, burn a sufficient Quantity of rectified Spirit of Wine upon it; and then calcine it with the Tincture of Opium extracted with Spirit of Wine. This Powder, so prepared, is a gentle Escharotic, of great Service in cancerous Swellings. *Geoffroy*.

REBIS. A Word in *Paracelsus*, importing the Excrements of the Belly. It is also a Name for his celebrated Medicine, called *Azoth*.

REBISOLA. A secret Medicine prepared of Urine, for the Jaundice. *Rulandus*.

REBOLEA. Mummy. *Rulandus*.

REBONA. Burnt Dung. Mummy. *Rulandus*.

REBUS. The ultimate Matter of all Things.

RECEPTACULUM. A Receptacle. In Chymistry, a Receiver. In Anatomy, the *Receptaculum Chyli*, or Receptacle of the Chyle, is the Part to which the Lacteals convey the Chyle, in order to be transmitted to the Blood.

RECEPTARIUM MEDICUM. Physicians who collect or write vast Loads of Prescriptions, to the great Detriment of their Patients, are thus called by way of Reproach.

RECEPTUM. A barbarous Word, importing a Prescription.

RECESSUS. This Word is sometimes used to express an Abscess, or Apostemation.

RECHA. Marble. *Rulandus*.

RECIDIVA. A Relapse. After a Disease is once cured, the Patient often suffers a Relapse; a Disposition to which may

be known by the following Signs: If, after the Disease has left the Patient, a Weakness still remains; if there be no Appetite, nor Digestion, but much Nauseating, accompanied with stidorous or acid Eructations: With equal Certainty is a Relapse portended, if the forementioned Indications be attended with a fetid Breath, a vehement Thirst, and much Watching; if the Præcordia, and Parts adjacent, are tumified; and if the Face be inflated, especially towards the upper Eye-lid. All these forementioned Symptoms indicate a Return of the Disorder with the greater Certainty, in proportion as they appear more evidently at those Times, in which there is usually an Exacerbation of the Disease.

The Kind, or Nature of the Distemper will also furnish something material for predicting a Relapse. Those Fevers which are attended with an Inflammation, are very subject to return upon the Patient; for though the Fever goes off, it leaves behind it something of a Heat and Aëstuation in the Viscera. Of the same Disposition are the Epilepsy, Dimness, the Hernicrania, an obstinate Pain of the Head, a Catarrh, Asthma, Pains in the Kidneys, the Colic, Gout, and other Disorders of that Nature. The Season most favourable to Relapses is the Autumn; and every Relapse is the less dangerous for being occasioned only by bad Diet, and not from some corrupt Reliques of the former Disease. The sooner a Disorder returns, and the more impaired the Strength of the Patient, the worse is the Relapse; and whatever Disease ceases all on a sudden, and for no manifest Reason, seldom fails to return. *Lonnius, Med. Obs.*

RECIPE. A Word always used in the Beginning of Prescriptions, importing, Take. It is generally wrote R, or ʒ.

RECIPIENS. In Chymistry is a Receiver. In Pathology, *Recipiens* is the Recipient, or Subject which receives a Disease.

RECIPROCATIO. The same as ANTAPODOSIS.

RECLUSIO. The same as ANASTOMOSIS.

RECOCTA. A Sort of Cheese made of Whey or Butter-milk. *Castellus*.

RECOLATIO. A repeated Percolation, or Straining.

RECORDATIO. The same as ANAMNESIS.

RECORPORATIO. See METASYNCRISIS.

RECREATIO. The same as ANALEPSIS.

RECREMENTUM. A Recrement. It is much the same as Excrement; except that with respect to Metals, their *Scoriæ* are called Recrements.

RECRUESCENTIA. This is used by some Authors to express a Relapse.

RECTIFICATIO. Rectification; that is, a Depuration, or Exaltation of the Substances produced by Distillations, by repeating the Distillation a sufficient Number of Times.

RECTUM INTESTINUM. See COELIA.

RECTUS. This is a Name for several Muscles. Thus there is the *Rectus Abdominis*. See ABDOMEN. There are several Muscles which assist in moving the Head, that are called *Recti*.

RECTUS MAJOR.

This is a small, flat, short Muscle, broad at the upper Part, and narrow at the lower; and though it is called *Rectus*, it is situated obliquely between the Occiput and second Vertebra of the Neck.

It is fixed below to one Branch of the bifurcated Spine of the second Vertebra of the Neck, at a Tuberosity, which is often found at the upper Part of that Branch. Thence it ascends a little obliquely outward, and is inserted in the posterior Part of the inferior transverse Line of the Os Occipitis, at a small Distance from the Christa, being a little covered by the Obliquus superior.

RECTUS MINOR.

This Muscle is like the former, and it has also a small Insertion below, in the posterior Eminence of the first Vertebra. From thence it ascends laterally, and is inserted immediately under the posterior Part of the inferior transverse Line of the Os Occipitis, in a superficial Fossula, on one Side of the Crista Occipitalis.

The *Recti majores* and *minores postici*, and *Obliqui Superiores*, turn the Head a little Backward, on the first Vertebra of the Neck; and they can neither act otherwise nor separately; the *Recti Majores* contribute most to this Motion; and the *Minores* seem likewise to hinder the articular Membranes from being pinched between the Bones in great Motions.

RECTUS ANTICUS LONGUS.

This Muscle is in some Measure of a pyramidal Figure, lying along the anterior and lateral Parts of the Vertebrae of the Neck, all the Way up to the Basis Cranii.

It is fixed to the anterior Parts of the transverse Apophyses of the third, fourth, fifth and sixth Vertebrae in a digitated Manner. From thence it runs up obliquely inward towards the

the lateral Parts of the Bodies of the Vertebrae, passes on the Foreside of the first and second, without being inserted in them; and approaching gradually towards the same Muscle on the other Side, it is inserted near it, in the Forepart of the lower Side of the Apophysis Basilaris, or great Apophysis of the Os Occipitis.

RECTUS ANTICUS BREVIS.

This is a small flat Muscle, about the Breadth of one Finger, situated laterally on the anterior Part of the Body of the first Vertebra. It is fixed below to the Basis or Root of the transverse Apophysis of that Vertebra, near the anterior Eminence.

From thence it runs obliquely upward and inward to a transverse Impression in the lower Side of the Apophysis Basilaris of the Occipital Bone, immediately before the Condyle on the same Side, being covered by the *Rectus Anticus Longus*.

The *Recti Majores* and *Minores Antici*, and the two *Transversales Antici* move the Head forward on the first Vertebra; and the *Recti Minores* and *Transversales Breves*, likewise defend the Capsular Ligaments. *Winslow's Anatomy*.

RECURSIO. The same as **PALINDROMIA**. Or the Return of a Paroxysm, or Fit.

RECUTITI. The same as **APELLÆ**.

REDIVIVUS. Reviv'd. This, in Chemistry, is frequently apply'd to Metals, which, after having been disguised, and concealed in a Form foreign to their respective Natures, are reviv'd, and restor'd to that which is natural to them.

REDUC. or **REDUX.** A Flux, or Powder, by which calcin'd Metals, or Minerals, are reduced to a Reguline Form. *Rulandus*.

METHODS OF PREPARING FLUXES.

We took four Ounces of red Lead, an Ounce of white Sand in Powder; and two Ounces of dry decrepitated Salt, and mixed them all well together in a Mortar; then putting the Mixture into a clean Hessian Crucible, fitted with a Cover, we fused the Matter in a Wind Furnace for a Quarter of an Hour; when taking it out, and letting it cool, we afterwards broke the Crucible, and found the Salt at Top, and a pure Glass of Lead at the Bottom. This Glass we carefully separated, and kept a-part as a powerful Flux.

The Salt is of no other Use in this Operation, than to serve as a Flux to the Sand, and make it more readily unite with the Red-Lead; so as to form a Glass without any great Violence of Fire, or the Necessity of being long detained therein. So that by this Means a Glass of Lead may be readily prepared for the Purpose of artificial Gems, or other Uses.

This Glass of Lead is a Flux extremely useful in the Business of Assaying; and when kept long in Fusion, passes thro' the Pores of any common Crucible, almost like Water thro' a Sieve; so as, upon the Test, readily to vitrify, or carry off all Sorts of Metalline and Mineral Matter, except Gold and Silver: On which Property, therefore, the Art of Cupelling depends.

Fluxes seem reducible to two general Kinds; the Vitreous and the Saline. By the Vitreous we understand all those which either have of themselves, or readily assume a glassy Form in the Fire; among the Principle whereof we reckon the Glass of Lead, the Glass of Antimony, and Borax.

By the Saline Kind of Fluxes, we understand all those that are composed of Salts, whether Tartar, Nitre, fixed Alkali, or the like. Among the principal of this Kind, we reckon the black Flux, Sandiver, Kelp and the like. The vitreous Kind seem more immediately destined to act upon the stony or vitrescible Matter, wherewith stubborn Ores are frequently mixed; and the Saline Kind, to act more immediately upon the Ore itself, for the due Exclusion or Separation of the Metal.

The more kindly Ores require no Flux to make them run thin, or to afford all the Metal they contain. And sometimes Ores are so kindly as to contain their own Fluxes within themselves. Thus we have met with Copper Ores, which being barely ground to Powder, and melted, without any Addition, in a common Wind-furnace, have yielded as much, or even more pure Metal at the first Operation, than we could obtain from them by Means of the usual Fluxes. Whence we see that artificial Fluxes are not always necessary; or that the principal Use of them is for the stubborn and less tractable Ores. These are sometimes so exceedingly hard to fuse, and reduce to a metalline Form, that it requires the utmost Power of Art to treat them advantageously in the larger Way of Business, where no considerable Expence can usually be allowed for Fluxes. On this Account it is, that many Mines remain unwrought, as being intractable, without great Charges. Whence the Improvement of the Business of Fluxes, so as to render them cheap and effectual, might greatly contribute to the Improvement of Metallurgy.

We would, therefore, recommend to farther Enquiry what Matter it is, in the more soft and tractable Ores, which renders them so fusible, and easy to part from their Metal. Certain

Experiments we have made with this View seem to shew, that in Copper Ores it is a Kind of bituminous Substance, capable of melting by a strong Heat into a soft black Kind of Glass.

Some of the most powerful and cheap simple Fluxes hitherto known, are dried Wine-Lees, dried Cow-dung and Horse-dung, dried River-mud, Fuller's Earth, Iron Filings, common Salt Glass, Kelp, or Pot-ash, Sandiver and the like, which may be used in the larger Works; as Nitre, Tartar, Borax, Sal-ammoniac, Mercury-sublimate, and the like, may in the smaller, or for the making of Assays.

As for compound Fluxes, they are numerous, almost every Operator having his favourite Flux. And certainly some Fluxes are better adapted than others to certain Ores. But perhaps a few general Ones might be fixed upon, which should serve instead of all those hitherto commonly known and used. We will here recommend three, which are powerful, almost general, and not expensive.

1. Take of Nitre, prepared by long boiling it in Lime-Water, of Sea Salt, melted in the Fire, Sandiver and dry Wine-Lees, each one Part; Glass of Lead three Parts; and powder'd Glass, eight Parts; mix them all well together. This Flux added in an equal Weight, will fuse a very stubborn Ore.

2. For a still stronger, Take equal Parts of white Tartar, common Salt and Nitre, prepared as above; calcine them to a white Powder, and mix therewith its own Weight of Glass of Lead; and of this Flux add two Parts to one of the stubbornest Ore.

3. For a powerful Saline Flux, Take of the strongest Soap-boilers Lees four Pounds, white Tartar and common Salt, melted in the Fire, each one Pound; boil them together with five Gallons of human Urine, to a dry Salt. This Flux is particularly proper where Sulphur and Cobalt abound, and render the Ore very refractory.

But the great Secret in making and adapting of Fluxes, is not only to separate the Metal already ripened in the Ore, but even to mature and ripen the crude immature Part of the Ore in the Fire. Something of this Kind we apprehend may be effected; as having Reason to believe, that certain Fluxes will obtain a larger Yield of Metal from certain Ores, than other Fluxes in common Use, though esteemed of the best, and though they are perhaps of the dearest Kind. Thus clean Iron Filings will often do more than Borax. But as the Scales and Crocus, or Rust of Iron, have been commonly used, instead of pure and perfect Iron itself, for a Flux, few Operators appear acquainted with the Excellence of perfect Iron, employed for this Purpose: And many Advantages are now commonly reaped by a prudent mixing of one Ore with another of the same Denomination, and with the Slags or Recrements of Metals, in the Way of a Flux. *Shaw's Chemical Lectures*.

REDUCTIO, Reduction, in Chymistry, or Resuscitation; is the Restoration of a Metal, previously disguised under the Form of a Calx, or Powder, or dissolved in a Fluid, to the Form of a Metal.

REDUPLICATION. The same as **ANADIPLOSIS**.

REDUVIA. A Whitlow; or a painful Crack at the Root of the Nails.

REFE. A Thread doubled and twisted. It is the same as **ACIA**.

REFECTIO. The same as **ANALEPSIS**. *Fabricius ab Aquapendente*.

REFICIENTIA. The same as **ANALEPTICA**.

REFINATIO. Refination; that is, Depuration; a Term used with respect to Metals, and Sugar.

REFRIGERATIO. The same as **CATAPSYXIS**.

REFRIGERATORIUM. A Refrigeratory. This is a Vessel filled with Water, thro' which the Worm passes in Distillations. The Use is to condense the Vapours, as they pass thro' the Worm. *Vigani* takes Notice of another Sort of Refrigeratory, *Medull. Chym.* Tab. 2. Fig. 5. f. which consists of a Vessel filled with common Salt.

REGENERATIO. The same as **PALINGENESIA**.

REGIMEN. The Regulation of Diet; with a View of preserving, or restoring Health. See **DIÆTA**. *Regimen* in Chymistry, is the Regulation of Fires.

REGINA. The same as **BASILIS**.

REGINA PRATI. A Name for the **ULMARIA**, Meadow-Sweet.

REGIO. A Region. In Anatomy this is applied to many Parts of the Body. Thus the Parts adjacent to the Navel are denominated the Umbilical Region; and the Parts about the *Hypochondria*, the Region of the Hypochondria, or Hypochondriacal Region.

REGIONALIS MORBUS. An Endemial Disease.

REGISTRES. Registers, in Chymical Furnaces, are Air Vents, by opening or closing of which the Operator regulates the Fire at Pleasure: For when they are opened, the Heat of the Fire increases; when closed, it abates.

REGIUS MORBUS. This Name is, by different Authors, apply'd to several Distempers; but *Ceius*, the Standard for Medicinal *Latin*, means by this the Jaundice. Other Authors call the King's Evil, and others the Epilepsy, by this Name.

In Chymistry the *Aqua Regia* is a corrosive Water, which dissolves Gold. See *AQUA*. And in Pharmacy *Regius* is a pompous Epithet, apply'd to many Medicines.

REGNUM. A Kingdom. The *Materia Medica* is divided into three Kingdoms; the Animal, Vegetable and Mineral.

REGULUS. The Metalline Part of Minerals, which remains in the Bottom of a Crucible, after the Separation of the *Scoriae*, is called *Regulus*, or *Rex*.

REGULUS, is the Wren.

REJECTIO. A Casting up of any Thing preternaturally by the Mouth, either by way of Expectoration or Vomit.

REL, or **REBUS.** Sour Milk. *Rulandus*.

RELAXANTIA. Relaxing Medicines.

RELAXATIO. Relaxation. See *FIBRA*.

RELOLLÆUM. A Term used by *Paracelsus*, and his Followers, which it is not easy to affix any Meaning to. *Hellmont*, in his Treatise intitled *Natura contrariorum nescia*, defines it an efficient Quality, not proceeding from the Ferments and Seeds of Things. *Rebilla*, says he, are of two Sorts; one in *Corpore proprio*, the other in *alieno*. Amongst the *Relollæa propria* some are separable, as Cold from Water and Air; others inseparable, as Heat from the Light of the Sun, a Candle, or Fire. The *Relollæum alienum* perishes, if not supported; and is, therefore, called transient; of this Sort is Heat in Water.

REMINISCENTIA. The same as *ANAMNESIS*.

REMISSIO. A Remission of a Distemper is, when it is mitigated considerably, but does not entirely cease; for when it does, it is then called an Intermission.

REMORA. Offic. Aldrov. de Pisc. 335. Bellon. de Aquat. 405. Charlt. de Pisc. 6. Jonst. de Pisc. 7. Raii Synop. Pisc. 71. *Iperuquiba* & *Piraquiba Brasiliensibus*, Marcg. 180. Raii Ichth. 119. *Echenei seu Remora*, Imperat. 684. **THE SUCKING-FISH.**

It is taken in the main Sea. As to its Virtues, it restrains Venery, prevents Abortion, and retains the Fetus till Maturity.

RENALE EMPLASTRUM. The Name of a Plaster described by *Ætius*, Tetrabib. 3. Sermon. 3. C. 3.

RENCHUS. The Name of a Fish found in *Bavaria*, celebrated for being a delicious and good Aliment.

RENES. The Kidneys. These are by *Oribasius*, *Ætius*, and *Paulus Aegineta*, represented to be of difficult Digestion.

The Kidneys are two pretty solid, glandular Bodies, situated in the posterior Part of the Cavity of the Abdomen; on each Side of the Lumbar Vertebrae, between the last false Ribs, and *Ossa Ilium*. The Right Kidney lies under the great Lobe of the Liver, and is consequently lower than the Left, which lies under the Spleen.

The Figure of the Kidneys resembles that of a large Bean; their Circumference being convex on one Side, and concave on the other. The concave Side is turned to the Vertebrae, and the convex Side the opposite Way. Their Length answers to the Distance between the last false Rib and *Ossa Ilium*; they are about half as broad as long, and half as thick as broad.

In each Kidney we observe a Fore and Back-side; an upper and lower Extremity; a great and small Curvature, and a Convexity and Concavity.

The Back-side is broader than the Fore-side, and the upper Extremity is a little broader and more incurvated than the lower. The Depression in the small Curvature is oblong and uneven, resembling a Sinus, surrounded by several Tubercles; and as it is turned a little toward the Fore-side, this Side is something narrower than the other.

The narrowing Aorta and inferior Vena Cava, lie between the Kidneys, pretty close to the Bodies of the Vertebrae, and to each other; the Artery being on the Left Hand, and the Vein on the Right. Each of these large Vessels sends out transversely towards each Side, commonly one capital Branch, which goes to the Kidney, and enters the Sinus and Depression thereof, by several Ramifications.

These Vessels were by the Ancients termed the emulgent Arteries and Veins, but I chuse rather to call them the Renal Veins and Arteries. Sometimes there are more than one of each Kind, which is oftenest found in the Arteries; sometimes on one Side only, and sometimes on both.

The Artery and Vein are not of an equal Length, and the Difference depends on the Situation of the Aorta and Vena Cava; for the Left Renal Artery is shorter than the Right, because the Aorta lies nearest the Left Kidney; and the Left Renal Vein is longer than the Right, because the Vena Cava lies furthest from the Left Kidney.

These Vessels are likewise disposed in such a manner, as that the Veins lie more anteriorly than the Arteries; because the Aorta lies close to the Spina Dorsi; whereas the Vena Cava, which perforates the Diaphragm at some Distance from the Vertebrae, does not join them, till after it has given off the Renal Veins.

Each Renal Artery is surrounded by a nervous Net-work, called *Plexus Renalis*, which furnishes a great Number of Filaments to the Kidneys, that come partly from the semilunar Ganglions of the two great sympathetic Nerves, and partly from the *Plexus Hepaticus* and *Splenicus*. This Renal Plexus sends likewise some Filaments round the Renal Veins.

The Kidneys are surrounded by a very loose, membranous and cellular Covering, called *Membrana Adiposa*, because in fat Persons the Cells of this Substance are filled with Fat. This was for a long time mistaken for a Duplication of the Peritonæum, the true membranous Lamina of which covers only the Fore-side of the Kidneys; and consequently they lie without the Peritonæum; because the Portion of that Membrane that covers them cannot be looked upon as an entire Coat; so that the only common Coat they have, is the cellular Substance, which likewise invests the Renal Arteries and Veins in Form of a Vagina.

The proper Coat or Membrane of the Kidneys is composed of two Laminæ; between which there is likewise a very fine cellular Substance, which may be made sensible by blowing through a Pipe between the two Laminæ.

The external Lamina is very thin, and adheres closely to the internal Lamina, by means of the cellular Substance. The internal Lamina penetrates every where by numerous Elongations, into the Substance of the Kidney, from which it cannot be separated without Tearing.

The Surface of the external Lamina is very smooth, polished, and shining, and it renders the whole Surface of the Kidney very even and uniform in Adults. In Children, this convex Surface is in a manner divided into several Lobes or Tubercles, almost as in Oxen and Calves; and in grown Persons we sometimes observe the same Inequalities.

The Blood-Vessels having entered the Kidneys, are ramified every way; and these Ramifications send out other capillary Branches, which go all the Way to the Surface, where they appear like irregular Stars, and furnish the proper Membrane of the Kidneys. Sometimes these two Ramifications penetrate to the *Membrana Adiposa*, and communicate there with the Adipose Veins and Arteries.

The proper Membrane having surrounded the Kidney, all the way to the Sinus, joins the Vessels at that Place, and accompanies all their Ramifications through the Body of the Kidney, in form of a Vagina or Capula; and likewise contributes, in part, to form the Pelvis and Calyces, or Infundibula.

We sometimes observe a considerable Vessel to go in or come out from the convex Surface of the Kidney; but this is not common; and in that Case, there is a Depression by which the proper Membrane enters, and communicates with that Portion which goes in by the Sinus.

The Tunica Adiposa, or common Coat, which likewise invests the great Vessels to their Entry into the Kidneys, does not seem to accompany them any farther; but terminates at the Sinus, in the Interstices between the Ramifications.

We may distinguish three Kinds of Substances in the Kidney; an exterior Substance, which is thick, granulated, and in a manner cortical; a middle Substance, which is medullary and radiated, called *Striata*, *Sulcata*, or *Tubularis*, because it seems to be made up of radiated Tubes; and an inner Substance, which is only a Continuation of the second, and terminates on the Inside by Papillæ; for which reason I have given it the Name of *Papillaris*.

These three Substances may be seen distinctly in a Kidney cut into two equal Parts through the great Curvature. The cortical Substance may be observed round the whole Circumference; and by the Microscope we perceive it to be of a spongy, granulated, and waving Texture; all its Parts adhering together in a radiated Manner. Its Colour is a bright whitish Grey.

By fine anatomical Injections and in Inflammations, we discover an Infinity of small capillary Vessels, which run in various Directions, between and round the different Portions of this Substance; and by the Help of a Microscope, we likewise see great Numbers of small red Corpuscles more or less round, and disposed almost like Bunches of Currants. These small Corpuscles are, perhaps, only the Extremities of the cut Vessels, filled either with Blood, or with a coloured Injection.

The other two Substances, that is, the medullary or striated and papillary, are really but one and the same Mass, of a more reddish Colour, the convex Side of which rises at several Places into narrow Tubercles, lodged in the same Number of Cavities or Depressions. The radiated Striae are afterwards continued to the

the papillary Portion; and the Papillæ form, in some measure, so many Centers of these Radii, opposite to the Tubercles.

The medullary Substance is likewise distinguished from the cortical, by the arterial and venal Arches, which send capillary Ramifications on all Hands; and its Colour is more or less red.

The Papillæ, which are only a Continuation of the medullary Substance, as has been said, are often a little paler than that Substance. They are ten or twelve in Number, very distinct from each other, resembling the same Number of Cones, with very broad Bases and obtuse Apices.

At the Point of each Papilla we see, even without a Microscope, in a small Depression, several very small Holes, through which little Drops may be perceived to run when the Papillæ are compressed. These are little Drops of Urine, which being filtered, partly in the cortical, and partly in the medullary or tubular Substance, do afterwards pass through the Substance of the Papillæ, and are discharged by these Orifices.

Each Papilla lies in a kind of membranous Calyx or Infundibulum, which opens into a common Cavity, called the Pelvis. This Pelvis is membranous, being of the same Structure with the Calyces of which it is a Continuation; and its Cavity in Man is not uniform, but distinguished into three Portions, each of which contains a certain Number of Infundibula, or Calyces, together with the Papillæ which lie therein; and sometimes we find two or three Papillæ in the same Infundibulum.

At the Place where these Infundibula surround the Bases of the Papillæ, they send Productions into the medullary or radiated Substance of the Kidney, which accompany the Blood Vessels, and serve for Capsules or Vaginae to all the vascular Arches, both arterial and venal, and to their different Ramifications, quite through the cortical Substance; and as far as the Surface of the Kidney.

URETERS. After the Infundibula have contracted in a conical Form round the Apices of the Papillæ, each of them forms a small short Tube or Gullet, which uniting at different Distances along the Bottom of the Sinus of the Kidney, form three large Tubes, which go out from the Sinus, in an oblique Direction from above downwards, and immediately afterwards unite into one Trunk.

This Trunk becomes a very long Canal, called the Ureter. In Men the three Tubes supply the Place of what is called the Pelvis in Brutes, and might more properly be called the Roots and Branches of the Ureters than the Pelvis; which Name would agree best to the Trunk, as being larger than the rest of the Ureter. The Ureters are commonly two in Number, one for each Kidney; but sometimes there are more than two.

The Situation of the Trunk, and of the Roots and Branches of each Ureter, with respect to the renal Artery and Vein, is in the following Manner; the Artery is in the upper Part of the Sinus, and partly before the Vein. The Vein is about the Middle, and between the Artery and Ureter. The Ureter is in the lower Part, a little behind the Vein, and it is partly surrounded by one Branch of the Artery.

This Disposition appears plainer near the anterior than near the posterior Side of the Kidney, because this last is broader than the former; and we likewise see there the three Branches of the Ureter, of which the uppermost is the longest, and the lowest is the shortest, because of their oblique Direction downward.

From this Description we see that in the human Kidney there is no other common or uniform Pelvis, but the Trunk or Head of the Ureter, and the three great Branches. To have a true Idea of their Disposition, we must imagine, that the Ureter enters the Kidney by the lower Part of the oblong Sinus; that it increases gradually in Breadth as it advances, and that it is divided into three Branches, before it enters the Substance of the Kidney.

One of these Branches may be reckoned a direct Continuation of the Ureter, and it is longer than the rest; being extended from the lower to the upper Part of the Sinus, and it may be found without much Preparation. The other two Branches are shorter, and cannot be well discovered without an artificial Separation. The Angles between these Branches at their Bases, or at the Head of the Ureter, are not pointed as those of other Ramifications; but formed by a round Incurvation, which is generally surrounded by Fat.

These first Branches of the Ureters produce other small Branches at the Bottom of the Sinus, which are disposed in Pairs. These small collateral Branches extend in Breadth, and form the Infundibula or Calyces, in which the Papillæ are lodged; the great Circumference of which produces, in the Substance of the Kidney, the different Vaginae of the vascular Arches, and of their Ramifications. The internal Lamina of the Kidney is continued round these Vaginae; and the exter-

nal Lamina is expanded round the first Branches, round the Trunk, and round all the rest of the Ureter.

If the Trunk of the Ureter be split on that Side which is next the Vertebrae, and this Section be continued to the Extremity of the superior Branch; we may observe, immediately above the Trunk, two Holes lying near each other, which are the Orifices of the small collateral Branches, and Gullets of the Infundibula. A little above these Holes, there are other two very much like them; and so on all the Way to the Extremity of the superior Branch, which terminates likewise by these Gullets of the Infundibula. And in each of these Gullets we may observe, at least, the Apex of one Papilla.

A Section begun on the Convex Surface of the Kidney, and carried from thence to the Trunk of the Ureter, discovers the Extent of the Papillæ very plainly, and likewise the Infundibula, their Gullets, &c.

The Ureters run down obliquely, and with a very small Degree of Inflexion, from the Kidneys on the lateral Parts of the inner or anterior Side of the Os sacrum, and passing between the Rectum and Bladder, they terminate in the last of these Viscera.

They are composed of three proper Coats; the first of which, that surrounds the rest, is of a whitish Colour, and of a very compact filamentary Texture, being stretched with Difficulty, and appearing like a filamentary Substance degenerated. The next Coat is of a reddish Colour, stronger than the first, and made up of different Strata of Fibres, which intersect each other; but it is very hard to determine whether they are muscular or simply membranous.

The innermost Coat is in some Measure Ligamentary, and lined by a very fine Membrane, which covers a very delicate reticular Texture of Vessels. It is slightly granulated like shorn Velvet; and moistened all over by a mucilaginous Liquor. It has several longitudinal Rugæ, which are intersected by a great Number of small transverse Rugæ.

Besides these proper Coats, the Ureters are invested by the cellular Substance of the Peritonæum, the membranous Lamina of which covers likewise about two thirds of their Circumference, sometimes more sometimes less, but never surrounds them entirely. So that when they are examined in their natural Situation, they appear like Ropes lying behind the Peritonæum, and jutting out more or less towards the Cavity of the Abdomen, together with that Portion of the Peritonæum, which covers them.

All that has been said about the Structure of the Ureters, Pelvis, Arches, Striæ, Fossilæ, and Holes at the Apex of the Papillæ, appears most distinctly, when these Parts are examined in clear Water.

GLANDULÆ RENALES, VULGO CAPSULÆ ATRABILIARIÆ. Immediately above each Kidney lies a glandular Body, called by the Ancients *Capsula Atrabiliaris*; by others *Capsula Renalis*; *Renes Succenturiati*, and *Glandulæ Renales*; and they might be properly enough termed *Glandulæ supra Renales*. They are situated on the upper Extremity of each Kidney, a little obliquely; that is, more toward the inner Edge and Sinus of the Kidney, than toward the outer convex Edge.

Each Gland is an oblong Body with three Sides, three Edges and two Points, like an irregular Crescent with its great or Convex Edge, sharp, and the small concave Edge, broad. Its Length is about two Thirds of the greatest Breadth of the Kidney; and the Breadth of its middle Portion is about one third of its Extent between the two Extremities, sometimes more sometimes less. Its Colour is a dark yellow.

It has one anterior, one posterior, and one lower Side, which last may be termed the Basis; and it has one upper, and two lower Edges, whereof one is anterior, the other posterior. The upper Edge may be called the Crista, and the two lower Edges, the Labia. One of its Extremities is internal, or turned inward toward the Sinus of the Kidney; the other is external, or turned outward toward the gibbous Part of the Kidney. The Figure of this glandular Body may also be compared to that of a single Cock's Comb, or to the Top of an Helmet.

The Surface of these Glands is uneven; the Foreside is the broadest, and the lowest Side or Basis the narrowest. Along the Middle of the anterior Side, a Ridge runs from the Edge of the inner Extremity, a little above the Basis, to the Joint of the other Extremity, and divides this Side into two equal Parts, like the Middle Rib of the Leaf of a Tree, and on the lower Side under the Basis, there is a kind of Raphe or Suture.

The Blood-Vessels of these Glands come from the Renal and Diaphragmatical Veins and Arteries, and also from the Aorta and Vena Cava, and from the Celiac Artery. These Vessels are termed the Capsular Arteries and Veins; and as they enter the Glands, they seem to be invested by a Vagina. They are not always derived from the same Sources, neither is their Number the same in all Subjects; and there is commonly a pretty large Vein, which runs along the Ridge. The Nerves

on each Side are furnished by the neighbouring femilunar Ganglion, and by the Renal Plexus, which depends on it.

In the Inside of these Capsulæ, there is a narrow triangular Cavity, the Surface of which is full of short strong Villi of a yellowish Colour; but in Children it is reddish, and of a dark brown in aged People. The Sides of this Cavity are connected by a great Number of Filaments; and they appear to be wholly glandular, that is, to be filled with very fine small folliculous Corpuscles. Along the Top of the Gland, these Sides touch each other immediately.

In Opening this Cavity, we find a granulated or follicular Substance, which fills it almost entirely; and the Blood-Vessels are distributed on this Substance, as well as on the Sides of the Cavity. If the Section be begun at the great Extremity of the Capsula, and be continued through the upper Edge; and if the lateral Portions be afterwards separated, the glandular Body appears like a kind of Crista, raised from the Middle of the Bottom of the Cavity.

This glandular Body or Nucleus, adheres more closely to the Bottom or Basis of the Cavity, than to the two Sides, especially near the great Extremity; but yet it may be separated both from the Basis and Sides, being connected to them by a great Number of small Filaments. It adheres least to the Basis near the small Extremity.

The Capsular Vein, which comes ordinarily from the Renal Vein, is much larger than the Arteries; and it communicates with the Inside of the Capsula, much in the same manner as the Splenic Vein with the Cells of the Spleen; for it may be inflated by blowing into any Part of the Capsular Cavity, and the Air also passes into the Renal Vein.

This Cavity contains an unctuous viscid Liquor, of a yellowish red Colour, which, with Age, changes gradually into a yellowish purple, a dark yellow, and a black yellow; and sometimes it is perfectly black; but even then, if it be spread thin on a large Surface, it appears yellow. I have sometimes found it not only reddish, but mixed with real Blood.

The Uses of these Renal Glands have not as yet been discovered; and all that we know about the Liquor contained in them, is, that it resembles the Bile. They are very large in the Fœtus, and diminish in Adults. These two Phænomena deserve our Attention.

They lie sometimes directly on the Top of the Kidneys, but I never found them on the gibbous Part. The Gland on the Right-Side is partly connected to the Diaphragm, under and very near the Adhesion of the great Lobe of the Liver to that Muscle. That on the Left-Side adheres to the Diaphragm below the Spleen; and both these Connexions are confined to the contiguous Portions of the inferior Muscle of the Diaphragm. They are involved together with the Kidneys, in the Membrana Adiposa; of which a very thin Portion insinuates itself between the Kidneys and Glands, and also between them and the Diaphragm; so that they adhere to both by the Intervention of the cellular Substance, which, in some Subjects, contains a Stratum of Fat.

The Venal Ridge already mentioned, sinks so deep into the Fore-side in some Subjects, that the upper Part of this Side appears to be separated from the lower; but this is seen most distinctly when the Capsula is examined in clear Water.

When the Capsular Vein is opened lengthwise with the Point of a Lancet, we discover in it a great many small Holes, many of which are only the Orifices of the Branches of the Vein; others are simple Holes; and it is, perhaps, through these that the Air passes into the Gland, as already mentioned.

On the outer Surface of these Capsulæ, we observe a very thin distinct Coat, separate from the cellular Substance that surrounds them. Sometimes this Coat is raised by an uneven Stratum of Fat, which makes it appear granulated; and for the same reason, the Capsulæ are of a pale Colour, like a *Corpus Adiposum*.

The Liquor contained in them appears sometimes in the Fœtus, and, in young Children, of a bluish Colour, inclined to red.

To be able to discover the Uses of these Capsulæ, we must not only attend to the two Circumstances already mentioned, but also to their external Conformation, which is commonly more regular in the Fœtus, and in Children, than in Adults and in old People. We must also consider the Consistence and Solidity of their Substance, which is greater before Birth, and in Childhood, than in an advanced, or Old-Age; in which they are often very flaccid, and very much decayed: And this, perhaps, may be the Reason why the Figures given of these Glands, taken out of their Membrana Adiposa, are so very irregular and different from what I have demonstrated for above twenty Years past.

Valsalva endeavours to prove, the *Renes Succenturiati*, or *Glandule Renales*, to be Organs of Generation, or assistant to them; and gives the following Reasons for his Opinion: He observes the seminary Vessels of several Fowls to come from

these Capsulæ, before they are sent from the Testicles. In the Viper and Water Tortoise, he remarks such membranous Connexions between the *Renes Succenturiati* and the Testicles, as make it probable that some Excretions are sent through the Capsulæ to the Testicles. He affirms his having seen Vessels that were neither nervous, sanguiferous nor lymphatic, going from the human Capsulæ to the Testes. His Observations are much the same as to Females. To these he subjoins the Consent and Sympathy observed by Physicians between the Loins and the natural or genital Parts. To confirm all, he relates the following Experiment: He cut away one Testicle, and extirpated the Kidney of the opposite Side of a Whelp. The Wounds healed, but the Creature was of a very lax Habit, and was so far from attempting Coition with Bitches, that he did not seem fond of them when they were proud.

Valsalva had endeavoured to secure the Honour of this Discovery to himself, by entering a publick Protest, that no other should claim it: Mr. *Ranby* suspected that the Duct, which the *Italian Literary Journals* mentioned as the principal Part of this Discovery, was no other than an Artery sent off from that of the Capsula on each Side, to the Testicles of Men, and Ovaria of Women. *Edinburgh Medical Essays*, Vol. II. p. 372.

THE URINARY BLADDER.

The Bladder is a kind of membranous and fleshy Pouch or Bottle, capable of Dilatation and Contraction, situated in the lower Part of the Abdomen, immediately behind the Symphysis of the Ossa Pubis, and opposite to the Beginning of the Intestinum Rectum. The Figure of it is nearly that of a short Oval. It is broader on the Fore and Back-sides, than on the lateral Parts; rounder above than below, when empty, and broader below than above, when full.

It is divided into the Body, Neck and Bottom, into an anterior, posterior, and two lateral Parts. The upper Part is termed the Fundus or Bottom, and the Neck is a Portion of the lower Part, which is contracted like the Gullet of some Vessels.

The Bladder is made up of several Coats, almost like the Stomach. That Part of the external Coat which covers the upper, posterior and lateral Sides of the Bladder, is the true Lamina or Membrane of the Peritoneum; and the rest of it is surrounded by a cellular Substance, by the Intervention of which, the Peritonæum is connected to the Muscular Coat.

The proper Coats are three in Number, one muscular, one nervous, and one villous, which is the innermost. The Muscular Coat is composed of several Strata of fleshy Fibres; the outermost of which are mostly longitudinal; the next to these are more inclined toward each hand; and the innermost, more and more oblique; and they become at length almost transverse. All these Fibres intersect each other in various manners, and they are connected together by a fine cellular Substance, and may be separated by inflating that Substance.

The nervous Coat is nearly of the same Structure with the Nervous Coat of the Stomach.

The internal Coat is something granulated and glandular, and a mucilaginous Serum is continually discharged through it, which moistens the inner Surface of the Bladder, and defends it against the Acrimony of the Urine. It appears sometimes altogether uneven on the Inner-side, being full of Eminences and irregular Rugæ when empty, and in its natural State of Contraction. These Inequalities disappear when the Bladder is full, or when it is artificially distended by Air, or by injecting any Liquid.

At the Top of the Bladder, above the Symphysis of the Ossa Pubis, we observe a ligamentary Rope, which runs up between the Peritonæum and the Linea Alba of the Abdomen, all the Way to the Navel, diminishing gradually in Thickness, as it ascends. This Rope had a particular Use in the Fœtus. It is sufficient to add, that it is in part originally a Production of the inner Coats of the Bladder, which Production is termed *Urachus*.

This Rope is composed also of two other ligamentary Elongations, which are the Extremities of the umbilical Arteries. These Arteries come from the Hypogastricæ, run up by the Sides of the Bladder, and remain hollow and filled with Blood, even in Adults, as high as the Middle of the Bladder, through all which Space they also send off Ramifications. Afterwards they lose their Cavity, and become ligamentary as they ascend. At the upper Part of the Bladder, they approach each other, and, joining the *Urachus*, form that Rope, which may be termed the superior Ligament of the Bladder.

The external Fibres of the muscular Coat are more numerous than the internal; and the most longitudinal anterior Fibres form a kind of Incurvation round the *Urachus*, at the Top of the Bladder, much like that of one of the fleshy Portions, which surround the superior Orifice of the Stomach, and lower Extremity of the Oesophagus. This Incurvation passes behind the *Urachus*.

The Portion of the Peritonæum, which covers the posterior

rior Convex Side of the Bladder, forms a very prominent transverse Fold, when the Bladder is contracted, which disappears when the Bladder is extended. This Fold furrounds the posterior Half of the Bladder, and its two Extremities are elongated toward each Side; by which Elongations a kind of lateral Ligaments of the Body of the Bladder is formed, which are more considerable in Children than in Adults.

The lower Part of the Bladder, which deserves the Name of Fundus much better than the upper Part, is perforated by three Openings, one anterior and two posterior. The anterior Opening is formed by an Elongation of all the proper Coats, in Form of a Gullet, turned much in the same Manner with the inner Orifice of the Rostrum of the Head of an Alembic. This Elongation is called the Neck of the Bladder.

The other two Openings, in the true Bottom of the Bladder, are formed by the Ureters, which, in their Course downward, run behind the Spermatic Vessels, and then behind the lower Part of the Bladder, approaching each other. Each Ureter lies between the umbilical Artery and Vas Deferens of the same Side, the Artery lying on the Outside of the Ureter, and the Vas Deferens on the Inside.

Afterwards they get between the Vasa Deferentia, and the Bladder, crossing these Canals; and then at about a Finger's Breadth from each other, they begin to pierce the Coats of the Bladder. They run a little Way between the muscular and nervous Coats, and open into the Bladder obliquely, something nearer each other, than when they first entered its Coats.

The Orifices of the Ureters in the Bladder are something oval, and narrower than the Cavity of the Ureters immediately above them. The Edge of these Orifices is very thin, and seems to be formed merely by the Union of the internal Coat of the Bladder, with that of the Ureters.

The Arteries of the Bladder are furnished by the *Hypogastrica* or *Iliaca interna*, being Branches of the *Arteria Sciatica*, *Epigastrica* and *Umbilicalis* on each Side. The Veins come from those of the same Names with the Arteries.

The Nerves of the Bladder come from the *Crurales*, and also from the *Sympathetici Maximi*, by Means of their Communication with the *Crurales*. It has also some Nerves from the *Plexus Mesentericus inferior*.

Besides the Ligaments already mentioned, there are also two small ones, by which the anterior Part of the true Bottom of the Bladder is connected to the *Ossa Pubis*. *Winslow's Anatomy*.

As the Kidneys, especially that on the Right Side, are by their Situation and Connection capable of being greatly assisted in their Excretory Office, by the Motion of the adjacent Parts; and as they are defended by the Membrane of the circumambient Peritonæum, and wrapt up in a kind of dry Fat; so they almost constantly receive the superincumbent Glands into their superior Part, which inclines somewhat to a Concave, and which is hardly ever of the same Form and Bulk in different Men. Then receiving one or more considerable Ramifications from the Aorta Descendens; acquiring, also, another Membrane, and four or five large Ramifications, they from these receive many other smaller Ramifications, from which winding Vessels, so small as to escape the Sight, are distributed through all the Parts of the Kidneys. The small Ramifications of these minute Arteries, in their vermicular Course, being mutually united in some Parts, and again separated, form as it were Conglomerations, from which seem to arise not only the small returning Veins, but also the minute lateral Ducts, which are almost pellucid, and which receive the Urine separated from the small Arteries, convey it from them; and when, after uniting, they have formed many polygonous pyramidal Bodies, they at last generally terminate in twelve membranaceous Bodies, called *Papillæ*, in which many Orifices of the renal Ducts open obliquely every where, both externally and internally.

There are also found in the Substance of the Kidneys, small round hollow Bodies, every where covered with minute Vessels, furnished with Veins and Nerves, and reaching to the urinary Ducts. This is confirmed by the Kidneys of Hedgehogs, Tortoises, and Diseases in the Kidneys, as also the Sight of the Kidneys in a Fœtus. For this Reason the Urine seems here to be secreted, by a double Apparatus, a curious and laborious one of the glandular Kind, and one more simple, which receives its Name from *Ruych*, a Circumstance by no means repugnant to the usual Methods of Nature in other Parts; as in the Liver for Instance. But *Ruych*, after the most strict and exact Scrutiny, thinks that these were not really Glands, but only Intorions of small Arteries.

The other Part of the renal Artery is necessarily employed in supplying Life and Heat to the Substance of the Kidneys; and from the Blood, conveyed by this Part of the Artery, seems to arise that large Quantity of Lymph, which returning from the Kidneys, and being of the laudable and not of

the excrementitious kind, mixes with the Chyle, circulates with the Blood, and does not taste like Urine. Hence, also, there will, without Doubt, arise proper corresponding Veins.

For the small Veins arising from the minute Roots of the renal Arteries being collected, become larger, are united like Arteries in their Division; and at last join Trunks whose Number is uncertain. These convey in various Manners to the Vena Cava the remaining Blood.

The Renal Papillæ drop out the Urine convey'd into the urinary Ducts into the large Cavity, form'd by the expanded Membrane of the Pelvis, which is furnished with a soft Fat. Hence being collected, retarded and mix'd, it is forced into the Ureters, which are formed by an Angustulation of the Pelvis, and which convey it to the Bladder.

For from the Circumference of the Papillæ arise about eleven or twelve Canals, which receive, and convey the Liquor discharged from them into three large Ramifications, which, when collected into one, form a large Pelvis, which terminates in one membranous, thick and strong Duct, furnish'd with Arteries, Veins, Nerves, lymphatic Vessels, moving Fibres, and mucilaginous Lacunæ, fit for lubricating its Sides. This Duct is called the Ureter, which running first strait downwards, and soon after bending all along under the Lamina of the Peritonæum; and being in various Places of an unequal Breadth, is at last inserted in the posterior Part of the Bladder, about two Finger Breadths from its inferior Neck, and about the same Distance from each other. Then perforating the exterior Coat, and running, about a Fingers Breadth, between it and the anterior Coat; and running down obliquely, it penetrates into the Cavity of the Bladder. Then its Fibres being lengthened, and running downwards, it forms a round and long Body, by which the Bladder, when full, is hindered from returning the Urine to the Ureters; which, when the Bladder is expanded, are drawn downwards, and clos'd up by this Body, and convey the renal Urine safe to the Bladder: And this Structure hinders the Urine from rising again into the Ureters, however the Bladder should be compressed.

All these Observations are confirm'd by microscopical Discoveries, Injections, Ligatures, and comparative Anatomy, in Hedge-Hogs, Dormice, Tortoises, Bears, Oxen, Birds, human Fœtuses, the Dissection of Patients subject to Disorders of the Reins, and monstrous and preternatural Kidneys.

Hence we may understand, that the mechanical Secretion of the Urine is made by the Force of the Heart and stronger Arteries, by which the aqueous Part of the Blood is forced into numberless Flexures, Gyration, Resistences, opposite Motions, Concussions, and Commixtions; and at last its more fluid Part is secreted, propell'd, collected and expell'd through Ducts, only somewhat narrower than these Blood-Vessels.

There is, therefore, no Occasion for accounting for the Secretion of the Urine by Attraction, Emulsion, or other Powers of a like Nature.

Neither is there any Necessity for a Fermentation, in order to account for this; since, in this Affair, neither the Place, the Cause, the Time, the Matter, the Mixture, nor the Effects of a Fermentation are to be observed.

Nor for the same Reasons are we to suppose a fusing and precipitating Power in the Parts subservient to this Secretion.

'Tis sufficiently obvious, that all the Humours, which are less thick than the Urine, will be discharged this Way, provided they are only applied to these Vessels. Hence we understand, that there is a Cause which hinders them from flowing here; or if they do that, sudden and great Weakness must be produced. The Renes Succenturiati always lying on the superior Parts of the Kidneys; but being separated from them by the interposed Fat, contiguous to the Diaphragm, united by Blood-Vessels, pressed between the Diaphragm and the Kidneys, furnished with Arteries, wanting peculiar Emisfaries, in Fabric resembling the Spleen, and subject to the same Things, and pouring almost all their Blood through their Veins into the emulgent Veins, perhaps here performs this Office, the venous renal Blood being, by a saline Solvent, depriv'd of its most liquid Part, after the Secretion of the Urine, as the splenic Blood does to the Blood of the Vena Portæ; or perhaps these are subservient to other Uses. But this Theory is in all Probability just.

So that a continual and uninterrupted Secretion of the Urine is the primary Cause of the Soundness of the Kidneys and Ureters, as also the Cause why they are neither obstructed nor concreted by their own Collapsion or Pressure. *Barb. Institut.*

PROCESSES UPON URINE.

Urine is neither acid, nor alkaline, but fetid.

Take the Urine of a Man in Health, made twelve Hours after Eating or Drinking, which must therefore have remained

so long in the Body, and have circulated almost the same time therein, and have been mixed with nearly all the Juices in all the Vessels, by means of the vital Powers. It is therefore an aqueous Lixivium, that has washed away, and brought off with it, whatever would dissolve in Water, and run thro' the fine urinary Vessels of the Kidneys; particularly it contains the spirituous, saline, and saponaceous Matters of the Blood; and when thus long retained and digested, it acquires the true Nature of the Body, as being wrought upon by the vital Powers for twelve Hours successively; at which time the Milk has lost its own Nature in the Body, and now begins to be converted into the Serum of the Blood. And for this Reason, such Urine should be chose as is well concocted, and discharged at twelve Hours Distance from Feeding, the thinner and more crude being come away before. Such Urine, therefore, may always be collected without the Body, and yet retain and perfectly exhibit the Nature of the animal Juices, and their Principles. This Urine is not acid, because it neither tastes nor smells sour, nor gives a red Colour by mixing with these Juices, that turn red with Acid: And, lastly, because, if heated and mixed with Oil of Tartar per Deliquium, it affords not the least Sign of Effervescence. And if another Part thereof be heated and mixed with the alkaline Spirit of Sal Ammoniac, it manifests no Sign of Effervescence; besides, what seems stranger, the Urine of a Man who drank a large Quantity of Rhenish Wine, which is considerably four, and also of four Beer, used much Vinegar in his Sauce, and eat largely of Fruit, did not afford the least Signs of Acid, upon any Experiment, twelve Hours after Eating. So likewise the Urine discharged by young Female Persons of weak Constitutions, that use little more than acid Vegetables for their Meat and Milk for their Drink, manifests no Acid twelve Hours after Meals; the natural Powers, therefore, have in this time conquered that Tendency which the Vegetables had to Acidity, or else the Acid that was in them. *Helmont*, therefore, justly said, that Acids were Enemies to the Veins; but his Followers hence unjustly forbid the Use of Acids in Diet and Medicine, as if they were poisonous; supposing them prejudicial to the first Passages. These Experiments will be allowed by Chymists; but it may, perhaps, move them to hear, that there is no manner of Alkali contained in this Urine, and yet the thing is certain; for if, to separate Particles of this heated Urine, there be successively poured Vinegar, Lemon-Juice, Spirit of Nitre, Spirit of Salt, and Oil of Vitriol, no Effervescence ensues; but these Acids, mixed with warm Urine, discharged at the Distance of twelve Hours after Eating, unite therewith, as Water unites with Water, without Bubbles and without Hissing. Such Urine, also, does not turn the Juices of Herbs to a green Colour, as alkaline Salts do.

R E M A R K S.

Hence we may collect, that the Powers of the Body change Acids, so that they remain no longer the same, and prevent Things disposed to Acidity from becoming acid; and that, in Health, alkaline Salts are never produced, but only such as are neutral. This I have observed in the Urine of Persons in high Fevers, and inflammatory Diseases, where the vital Actions being increased, rendered the Urine flame-colour'd, fetid, sharp, and little in Quantity; for even such Urine, examined by the Methods above-mentioned, gave new Signs of its being alkaline; whence I was led to consider, whether, in a perfect Stoppage of Urine, where this Liquor is long detained, heated and agitated in the Body, it would not become alkaline. And it happened, that an eminent Person in Years, falling into this Distemper, which proved fatal to him, had no Discharge of Urine for five Days, but, on the sixth, suddenly made a few Ounces, which was red, turbid, and fetid; but he had hence no Relief, and made not a Drop afterwards; but died. This Urine I directly carried home with me, and presently examined by the known chymical Methods, none of which shew'd it to be alkaline; whence I understood, that Urine could not become alkaline in the Space of a hundred and twenty Hours, tho' agitated by the Heat of the Body, and the Action of Circulation. For in the Patient above-mentioned, the Bladder contained no Urine; and I have never found any of the Humours in Health to be alkaline, though they may become so from other Causes. Nor did I ever find them alkaline in the most putrid Diseases, whether acute or chronic. I remember once, an aged Corn-Merchant had a large Stone in his Bladder, but being not a fit Subject to be cut for it, his Urine would often, when he was in exquisite Torture, smell alkaline; and as he had frequent Stoppages, a skilful Surgeon was obliged often to put back the Stone from the Neck of the Bladder, with a Catheter, towards the Bottom; but being once absent, the Patient continued in Pain, without making Water for several Hours; but the Operator returning, and performing his usual Office, the Urine came out so sharp, alkaline and putrified, and with such a peculiar

Stench of digested Urine, that the Surgeon inadvertently drawing the Vapour thereof into his Lungs, was thereby disordered for some Days. Whence I conceive, not having any Opportunity of examining this Urine, because it was spilt, that, being attracted into the Pores of the Spongy Stone, and lodging therein, it was thus digested by the Heat, and so, perhaps, acquired a true alkaline Acrimony. However this be, it is certain, that the Urine contains no native alkaline Salt, and, consequently, no other Humour of the Body; because the Urine contains more Salts than any other animal Liquor; and because the Salts of the Urine are more acrimonious, and easier rendered alkaline, than of any other Liquor in the Body. Whence those Artists are greatly deceived, who so loudly cry out against the natural, volatile, oily, alkaline Salts in the Body. This is an Error introduced into Medicine by an imprudent Cultivation of Chemistry, which the more prudent Cultivation thereof must correct. The fetid Smell of Urine in Health is, therefore, entirely owing to the attenuating, putrid, and volatilized Oil, which is inseparable from it; and not to a volatile, alkaline Salt. Its bitter, nauseous, and saline Taste, proceeds from the compound Salt of the Urine, and from the Oil; as also, from the Sea-Salt which Urine generally contains.

FRESH URINE, DISTILLED IN A VERY CLOSE VESSEL, AFFORDS A FETID, NAUSEOUS WATER, NEITHER ALCALINE, ACID, SALINE, NOR VINOUS.

Take well-concocted human Urine, discharged in Health, and distil it in a Glass-Body, with a gentle Fire of a hundred and fifty Degrees, uniformly kept up, till only a twentieth Part remains behind. There will come over a limpid Water; the Urine in the mean time gradually changes from its natural Straw-Colour to Red; and the more of this pellucid Water comes over, the deeper that red Colour appears; and at length the Remainder becomes almost of black Red, very thick, turbid, opaque, frothy, and tenacious. The first limpid Part has a particular nauseous Smell, but not that of a volatile Alkali; but what seems strange, though it be often distilled over again, yet it always retains this nauseous Odour, and even though it should long stand in the open Air. This corrupt Odour, therefore, is inseparable, and intimately mixed with the Liquor, so as not to be destroyed even by the Addition of an Acid. It seems to resemble nothing more than that disagreeable Exhalation, which arises from Wounds in the Abdomen, or the Carcass of a Man fresh opened after a violent Death. The nauseous Taste of that Water, though somewhat putrid, is not alkaline, or any way saline, howsoever it be distilled. Again, in Distillation thereof, there appear no Veins upon the Glass Still-head, as in the Distillation of vinous Spirits; and if the Water that first comes over, be a second time distilled, neither thus will the least Quantity of any such Spirit appear; and though ever so carefully rectified, it has, so often as I have examined it, never took Flame, but always quenched Fire. Even the Urine of such Men as are great Drinkers of strong Liquors, such as Wines and distilled Spirits, never affords any thing inflammable. When this first distilled Liquor of the Urine is mixed with Acids, it never gives any Signs of Effervescence, nor changes Juices green, as Alkalies always do; nor considerably precipitates the Solutions made with Acids; and by no manner of Rectification will it afford a manifest Salt, nor ever change Acids into a compound neutral Salt. Consequently it is no alkaline Liquor; nor does it manifest the least Signs of Acidity upon any kind of Experiments; as the Addition of fixed and volatile Alkalies, the various Juices that turn red with Acids, and the like. Whence we seem to have proved our Point.

R E M A R K S.

We may learn many momentous Particulars in Medicine, from this slight Experiment. Thus, 1. We see the lightest, thinnest, and most volatile Part of the healthy Juices is nearly elementary Water, excepting that there is inseparably joined therewith that other equally light, thin, volatile, fetid and seemingly corrupted Matter, not proceeding from a saline Principle, but rather from an oily one, and yet no ways vinous or inflammable. 2. Hence there is no Fermentation in the Juices, nor no Production of inflammable Spirit, which is easily separated from Water; whereas this fetid Part can by no Means be separated from its Water. 3. Consequently, there is no inflammable Spirit in the vital Juices of the Body. 4. Oil, by the vital Powers of the Body, is rendered much more volatile, than any Salt in the Body, contrary to what is generally believed. This peculiar, fetid, oily Matter is scarce otherwise found, than in the Matter of Perspiration, the Sweat, and the Vapour which naturally resides in the Cavities of the Body. Vinous Spirits, when drank, do not go to the urinary

urinary Passages; and may, therefore, rise to the Head, disturb the Brain, the common Sensory, and the Origin of the Nerves; and hence (perhaps) they so wonderfully affect the Actions of the Cerebrum and Cerebellum. Hence (perhaps) it is, that they so easily exhale from the Body, possibly at the Surface of the Skin. Our present Process also shews, that there is no volatile Salt in the Body, capable of rising with this Degree of Heat, whatever Chymists or Physicians may think to the contrary; and that there is no volatile Alkali, whether simple or oily, nor any volatile Acid in the Body; so that the modern Physic must be greatly corrected in these Particulars. The fetid Smell of the Urine always increases and decreases, as the vital Powers increase and decrease, in an healthy Body; and the more the Body is exercised by Labour and Motion, the more this fetid Smell is always increased, and *vice versa*. If any Thing in the animal Juices is to be called Spirit, on Account of its Acrimony, Volatility, Lightness and penetrating Virtue, it is neither vinous nor saline, but really arises from an Oil corrupted, or turned to such a Putrefaction as the Putrefaction of Vegetables.

THE REMAINS OF THE RECENT URINE, AFTER THE PRECEDING PROCESS, ARE NEITHER ACID, NOR ALKALINE, NOR TRULY SAPONACEOUS, BUT SALINE AND FETID.

If the gross Remainder, after the preceding Distillation, be mix'd with any kind of Acid or Alkali, it affords no Sign of Effervescence, so as to appear either acid or alkaline; nor can it be manifested by any other Experiment. It is indeed highly sharp, of a very saline Taste, and a little bitterish, but not alkaline; nor has it an alkaline Odour, but smells fetid almost as before. If used by Fullers and Wool-Scourers, it neither cleanses nor deterges, and therefore has no saponaceous Virtue, which it excellently acquires by putrefying. In this whole Inspissation there appears no Signs either of Chyle or Milk. Nor have I, with the utmost Attention, ever discovered the least of that Coagulation, which the Lymph and Serum of the Blood always run into by Heat. However treated, it manifests nothing of a cheesy Nature; but constantly the more it is inspissated by the Fire, the sharper and deeper-coloured it becomes; and thus, by various Degrees, it increases and changes in Colour, Thickness and Acrimony, the longer the Inspissation is continued, so as to run through all that Diversity usually observed in the Urine, under acute and chronical Distempers, as a *Bellini* has excellently observed. In acute Diseases, the hotter the Fever, and the more it dissipates the moist Parts, the redder, the sharper, and the thicker the Urine becomes.

REMARKS.

There is therefore naturally no fixed or volatile Alkali in an healthy Body, nor any fixed or volatile Acid in the natural Juices, whilst they remain sound; but this Salt is of a particular Nature, which we shall hereafter examine; and much less volatile than Water, as not rising even with a boiling Heat. It is surprising that no nutrimental Matter should ever be contained in this Urine; for there is no Chyle, Milk, Curd, Serum, or Lymph therein, which coagulate by Fire; but Physicians justly acknowledge these as the original Matter of Nutrition. Nothing nutrimental, therefore, is discharged from the Body along with the Urine. Thus all the Parts of the Chyle, Milk, Blood, or the Humours thence prepared, that become sharp, corrupted, subtle, unfit for Nutrition, and hurtful to the Body, having performed their Office, are at length separated by the Vital Powers, and, by means of the Kidneys, discharged from the Body. Urine, therefore, exhibits the Humours highly changed by the Powers of the Body, even so far as never afterwards to prove healthful thereto; and therefore the small Quantity, the Sharpness, Colour and Thickness of the Urine, afford many just Informations to the Physician, as indicating the Necessity of Water, demonstrating the Condition and State of the Humours, the Remedies required in Diseases, and what Things are principally destructive to the Body, by dissolving the Texture of the Blood, and how pernicious a great Fluidity is.

RECENT URINE, INSPISSATED TO A FORTIETH PART, AND DISTILLED WITH SAND, AFFORDS AN ALKALINE SPIRIT, AN ALKALINE, VOLATILE SALT, A VERY FETID OIL, AND SALINE FÆCES.

If the Distillation of the Urine be continued, till of forty Pounds there remains but one; or if the like recent Urine be suffered to exhale in a low, capacious, cylindrical open Vessel, with an almost boiling Heat, till only a fortieth Part remains, there will be found at the Bottom a gross, thick, blackish, sharp Matter, which being mixed with thrice its Weight of clean Sand, and then distilled in a Retort, in a Sand-heat, by gentle Degrees at first, and often examining the Liquors that come over, by removing the Receiver, a lim-

pid Water will first rise, as in the preceding Process; and when the Matter begins to be almost dry, another limpid Liquor will come over, of a sharp, fiery alkaline Nature. Continue the Operation so long as this rises, and keep it separate, then closely lute on a Receiver, and urge the Matter by Degrees of Fire, upon which white Clouds will long continue to rise, and unctuous Veins appear, whilst a somewhat oily, yellow Liquor, together with a white, solid and alkaline Salt will rise. At last, with the utmost Violence of Fire, there comes over a yellow or gold-coloured Oil, and when this ceases, a saline, feculent Matter remains at the Bottom. The first Water is scarce alkaline, sharp, saline, or any Way oily, but like the Water of the preceding Process; the second Liquor has a sharp and manifest saline Odour, it proves pungent and fiery upon the Tongue, and has a perfect alkaline Taste; it makes a violent Effervescence with all Acids, and when saturated with any Acid, concretes therewith into a compound, neutral, half volatile Salt, like Sal Ammoniac, but of a determinate Nature, according to that of the Acid. This Salt therefore is truly alkaline and volatile, like that produced from the Putrefaction of Vegetables. All this appears more in the third unctuous Liquor, which is much more intensely alkaline, tho' oily; and hence is usually called alkaline Spirit, as consisting of Water, Salt and Oil, mixed together. The whole Salt is always alkaline, but rendered very ungrateful by the fetid Oil adhering thereto. The Oil which comes over at the same time, and afterwards is highly fetid, and infects every Thing with its Odour, so as to be intolerable, and not only retains the Smell of Urine, but is somewhat stercoraceous. The remaining Fæces being calcined in an open Fire, and elixated with Water, afford a true Sea-salt, if the Person has used that Salt in his Food.

REMARKS.

Hence it appears that the Salt of Urine, tho' not alkaline of itself, may be rendered so by a certain Degree of Heat, and that this urinous Salt is not ammoniacal, because Sal Ammoniac, tho' volatile with a certain Degree of Heat, yet when sublimed thereby, never becomes alkaline, but remains compounded, how often soever it is sublimed; whereas the Salt of Urine, tho' likewise of a half fixed Nature, and becoming volatile with a certain Degree of Heat, at the same time also becomes alkaline, and no longer retains the Nature of a compound Salt. It therefore approaches to the Nature of alkaline Salt, and Sal Ammoniac, tho' itself be neither of them. Hence also we see that the Salt, saline Spirit, and first Oil, are almost equally volatile in a sound State; and that this unctuous Spirit consists of Water, Oil, and Salt, into which it may be commodiously resolved. And hence also we understand, how by the natural Powers, the mild, white, indolent, inodorous, and unctuous Matter of the Aliment, Chyle, Milk, Fat, and Marrow, may turn into another that is sharp, yellow, inflammatory, thin and fetid; whence also the fetid Smell of the Urine usually proceeds. Again, we hence learn, that there is no fixed Alkali in the animal Juices; for I never could find a Grain thereof in the largest Quantity of the Urine thus treated. And lastly, that Sea-Salt may enter the Blood, mix therewith, thence pass into the urinary Vessels, and yet remain unchanged, so as to act through most of the Vessels of the Body, without suffering an Alteration by their Re-action. All which Particulars being considered, our present Experiment, which is owing to *Hellmont*, will be found of infinite Use in Medicine.

RECENT INSPISSATED URINE, DISTILLED WITH FIXED ALKALI.

Fresh Urine being inspissated as before, pour thereon an equal Quantity of the Oil of Tartar *per deliquium*, or the Solution of Pot-ashes, and there will instantly arise a sharp, alkaline, volatile Vapour, such as usually proceeds from well-putrefied Urine, when it grows warm. If the Mixture be now immediately distilled in a Glass Alembic, with a gentle Fire, there comes over a limpid Liquor, running in Veins, which proves sharp, highly alkaline, and more volatile than Water, and in every respect resembling true and strong Alkali. And when instead of the Oil of Tartar, the dry Salt of Tartar is used, a dry alkaline Salt often rises first in this Distillation. And when the former alkaline Liquor is again distilled in a tall Body, with a gentle Fire, the Part that first rises is saline, white and alkaline; the Oil remains at the Bottom, along with the fixed Alkali added, as if it was more fixed thereby. Lastly, when all is become dry, if the Fire be strongly kept up, there likewise comes over a fetid, yellow Oil after the Salt.

REMARKS.

This Experiment shews the Nature of the animal urinous Salts to be such, that a fixed alkaline Salt can instantly change them, like the violent Action of the Fire in the preceding Process. And hence we learn that fixed alkaline Salts being mixed

mixed with the Juices of the Body, will presently render them sharp, alkaline, extremely moveable, and more volatile than the Water and Spirit of the Body, communicate a fiery corrosive Nature to the Spirits, and immediately give them a Tendency to Putrefaction. If the Salt and Saline Spirit thus produced be several times distilled over again with a gentle Fire, they at length become as purely alkaline as those prepared from Hartshorn, or other costly Substances: When mixed with Acids, they make a violent Effervescence, especially if shaken together, and by this Means, are so mortified and changed as to lose their Sharpness, and all their alkaline or fiery Nature, being thus also so fixed, as not to prove volatile with the Heat of an healthy Body. They lose the proper Virtue of acting like volatile Alkalies, especially that of almost mortally dissolving and attenuating the Juices of the Body. And what is more to our Purpose, Physicians may hence understand the surprizingly changeable Nature of the Salts of the Body; how variously they may alter from their native Disposition; and the proper Effects of each Alteration; and also learn the Remedies and Degree of Correction which each requires: All which were known to the Ancients from Experience. Thus in Fevers, attended with an increased Heat and Motion, *Hippocrates* allowed only of Things tending to an acid Nature, or actually acid, to be used as Food, Drink, or Medicines; and hence we see, that fixed Alkalies are destructive in the Body, as often as attended with Heat, Motion, a fetid Smell, a Flame-Colour, or small Quantity of the Urine, or the Juices are too much dissolved; so that in such Cases to exhibit these Salts is highly dangerous, especially in the Plague.

RECENT URINE, ESPECIALLY WHEN INSPISSATED, AFFORDS A FIERY SPIRIT THAT IS NOT ALCALINE, UPON THE ADDITION OF QUICK-LIME.

If Quick-Lime be thrown into recent Urine, there instantly exhales a spontaneous Vapour, which strikes the Nostrils with an extremely pungent and fiery Sensation; and if it be now directly and gently distilled in very close Vessels, it affords a limpid Water, of an intolerable fiery Odour, like the former, but much more sharp and volatile. And if, when the Urine is first inspissated to a fourth Part, an equal Quantity of Quick-Lime be mixed with the Remainder, the Odour is much stronger, and the Spirit obtained by Distillation, not to be equalled by any other for its sharp, fiery, subtle, and volatile Nature. After all this Spirit is separated by Distillation, and the remaining Mass afterwards treated by the same Operation, it will never afford a solid Salt, as in the preceding Process; but always a very fluid saline Liquor; and whatever Acid is mixed therewith, it causes no Effervescence, tho' the fiery Virtue and Volatility are greatly diminished thereby. There is Caution required in this Process; for as soon as the Quick-Lime touches the Urine, or the inspissated Matter thereof, it excites a great Ebullition, and a violent Heat, and at the same Instant the most sharp and volatile Spirit hitherto known arises; and, being agitated with the violent Heat, it is put into a furious Motion, so that being inadvertently received into the Lungs, it may instantly prove highly dangerous, and occasion an instantaneous Inflammation in the tender Vessels of the Lungs, and directly communicate it to the Blood circulating through them. For if this Spirit be held to the external warm Skin, it immediately makes the Part gangrenate and mortify; but perhaps the whole Thickness, between the circulating Blood in the Lungs, and the Air contained in the Vesicles thereof, is not the thousandth Part of an Inch; but this urinous Spirit, prepared with Quick-Lime, suddenly exhales its sharp Part in the open Air, and leaves a Water behind.

REMARKS.

Hence we may learn the Action of Quick-Lime upon the saline urinous Juices of the Body; for when assisted by Heat, and the vital Motion, it presently generates these fiery Spirits, that prove destructive to the tender pappy Mass of the Brain and Nerves; and the hotter, or the more agitated the Body, or the more it is affected with inflammatory Disorders, the more destructive the Use hereof. But when the Body abounds with Acid, Water or Phlegm, the prudent Application thereof may be sometimes of Service. We must also consider, that the Lixivium of Quick-Lime has a great Force in correcting, and extricating the muriatic, fixed Salts in the Blood, and fitting them to be easily discharged; whence it becomes an extraordinary Remedy in that Kind of Scurvy, which principally proceeds from the above-mentioned Causes; but in that Kind which proceeds from Putrefaction, and consists in a sharp Oil and Salt, it proves highly prejudicial. Whence, perhaps, we may, in some Measure reconcile the Experiments of some eminent Physicians in *France*, which shew the Lixi-

vium of Quick-Lime to be pernicious in that Country; whereas in *Germany* it appears a very advantageous Medicine. But all this holds truer of the Quick-Lime prepared from Stone than of that from Shells. The Particulars hence arising seem to be these. 1. The violent Corrosion which happens in a live Body, upon the Application of Quick-Lime, proceeds more from those fiery saline Spirits, which the Lime produces from the Salt, than from the sharpness of the Lime itself. 2. Hence it may be of Use in Diseases proceeding from acid, aqueous, austere, viscid, mucous, and phlegmy Causes, where Motion and Stimulation are wanting. 3. On the contrary, it proves hurtful in acute Distempers, proceeding from alkaline, bilious, saline, putrid, acrimonious, and heating Causes, where the Body is dry and strongly agitated by Motion. 4. The mild Salts of the Body may instantaneously become extremely sharp and poisonous, by the bare Admixture of a Thing not sharp itself. 5. That an exceeding sharp Matter may be produced from healthy Juices, which is neither a Salt, Spirit, nor Oil; for this Liquor cannot, by any Art that I know of, be made to appear in the solid Form of a Salt, and can be only obtained invisible by Means of Water. 6. These Spirits therefore that do not appear to be alkaline, by any Experiments made with Acids, are much sharper than any Alkali; so that there is not any known Thing that yields a sharper and more odorous Vapour. Whence also it appears, how suddenly a very different Taste and Smell may arise from the Salt of the Body, which is almost inodorous.

THE NATIVE SALT OF URINE.

Take very fresh Urine, discharged twelve Hours after eating by a Man in Health, and immediately, by a gentle Fire of two hundred Degrees, evaporate it in a clean Vessel, till it acquires the Consistence of Cream. Then strain the Liquor hot through a Flannel Bag, that the viscid Oils may be somewhat kept back and separated, which the more exactly it is done, the better. Set a large Quantity of this inspissated Liquor, in a tall, cylindrical, glass Vessel, tied over with Paper in a cool Place, for a Year; during which Time, a saline, solid, hard, brown, and somewhat transparent Mass will concrete to the Bottom thereof; and a thick, black, unctuous Liquor float above it, as separated and excluded from the Salt. Pour off the Liquor, and putting the saline Mass into another Vessel, add very cold Water thereto, and shake it a little therein, to cleanse it from its oily Foulness, which is easily done, because the Matter does not readily dissolve in cold Water. Let this saline Mass be preserved under the Title of the native Salt of Urine. If this Salt be dissolved in Water, and several Times strained, till the Solution becomes limpid, and then exhaled to a Pellicle in a clean Glass, and set to rest in a cool Place, it shoots into saline Glebes, of its own peculiar Kind, very different from any other Salt, tho' somewhat resembling the Crystals of Sugar, in Figure and Hardness. They are not fetid or alkaline, but extremely volatile; and this is the purified Salt of Urine.

REMARKS.

This Experiment excellently shews Physicians the Nature of those Salts, which in an healthy Body are very sharp, and greatly inclining to an alkaline Nature, yet not really alkaline; and therefore require to be quickly discharged by the vital Powers, to which they however owe their Origin. And hence Physicians may know, that the other Salts contained in the other Juices, are much less sharp or alkaline. These Salts are generated in the human Body alone, from the Meat, Drink, and Sea-Salt taken in and changed. There is Sea-Salt contained herein, but not alone. It is a saponaceous Salt, but not very unctuous. It is highly diuretic, if drank diluted with Water, and sudorific with a proper Regimen. It has such extraordinary Effects upon Metals, that some have thence promised themselves Wonders. All the fat Matter, which remains upon straining, and cleansing the inspissated Urine, is, when dried by a gentle Fire, excellent for the producing of Phosphorus; for which End it may be preserved. The Experiment also shews, that the Salt remaining in the Urine, thus inspissated, will not putrify or grow alkaline, so as to become volatile and easily fly off, tho' they are otherwise so easily changed. It should be considered what Share this Salt has in producing the Stone of the Bladder or Kidneys.

URINE, BY DIGESTION, TURNS ALCALINE, AND CHANGES ITS COLOUR, TASTE, ODOUR, AND VIRTUES.

If such Urine as was described in the first Process, be kept in an open Vessel of Glass, Earth, Wood, or Metal, in an Air of thirty three Degrees of Warmth, it begins to smell fetid, putrefy, and change its Straw Colour for a dusky brown,

brown, depositing gross Fæces, and thus in a few Days acquiring an alkaline lixivious Nature, and at the same time striking a stony Crust on all the Sides of the Vessel. The hotter the Air is, the stronger, and quicker the Change of the Urine is made; whence in the Summer-time, especially when the Weather is hot, all this happens in a greater Degree. To discover how far this changeable Nature would reach, I filled a Bottle with natural recent Urine, and corking it close, set it in a moderately warm Place; and after three Months, I found it changed in this close Vessel, as is described in the preceding Case. And herein the Change principally consists; the recent Urine of a Man in Health is of a straw Colour, it daily proceeds through successive Changes, till at length it ends in a deep brown; and the more it is putrified, the darker the Colour. And the same Thing is observable in the Urine of Persons under a Fever; the State of the Juices being learnt from the Colour of the Water. Recent Urine smells ungrateful, though not alkaline; but digested Urine has a manifestly fetid, volatile, alkaline Odour, very different from the other. Recent Urine is of a bitter, saline Taste; but digested Urine putrid, sharp, alkaline, and perfectly lixivious. Recent Urine affords no Signs of containing an Alkali; but digested Urine makes an Ebullition, and a violent Effervescence, upon mixing with any Acid, and in every other Trial, manifests a true alkaline Nature. Recent Urine has no saponaceous scouring Virtue; but digested putrified Urine is used by Scourers and Dyers, as a sharp Lie, that cleanses foul Wool, Silk, and the like, after the manner of fix'd Alkalies: And as these Changes happen, with a small Degree of Heat in a close Vessel, which every one may be easily satisfied of by Trial, it is in vain for Chemists to deny this Property in Urine.

REMARKS.

We are here to consider, that there is separated from the Body, by the urinary Passages, a Water containing Salts and Oils, approaching to a State of Putrefaction; nor do we find in all the Body, another Fluid that is so easily changed by such a Digestion in close Vessels. Urine, therefore, which is destin'd for Excretion, cleanses the Blood from these noxious, putrid Substances; and, therefore, if retain'd through any Distemper, it produces mortal Effects, as being soon rendered sharper by the Heat of the Body, and thence presently intolerable to the finer Vessels, and dissolving to the Humours by a pernicious Relaxation. And as it thus easily and suddenly acquires these new Properties in a close Vessel, with a moderate Heat, we are shewn that the Body neither produces Vinegar, nor inflammable Spirit from what it takes in, and consequently does not act by Fermentation, but introduces the true Change of a putrified Substance, and therefore in its Effect, approaches nearer to the Nature of the Putrefaction of Vegetables; for if bare Stagnation can occasion this Change of the Urine, how greatly must it be disposed to a true Putrefaction? And hence we see how great Necessity there is of Water, Acids, and saline Matters in those Persons who live in hot Climates, and accustom themselves to daily Labour and Exercise; for by Meats, Drinks, and Sauces of this Kind, too great a Tendency to Putrefaction is prevented. Hence also the daily Necessity of a mild, somewhat acid, and a new Chyle, for sheathing the Acrimony produced in the Blood. Hence also it appears, that in twenty-four Hours the necessary Utility and Service of this new Chyle vanishes; and that fresh Assistance is likewise required from the same Means. In burning Fevers, therefore, tart, acid, and mild Aliments, like Chyle, are extremely necessary; great Abstinence being in these Cases highly prejudicial. Hence it is that Barley Pofians, with Vinegar and Honey, are here so serviceable, as *Hippocrates* prudently inculcates, in his incomparable Book concerning the Diet in acute Diseases. The Physician also, upon examining the Urine, by means of these Experiments, may learn many useful Particulars, with regard to the Change of the Oil and Salt thereof; and perceive that a true Stone may be generated from the Urine of a Man in Health, even by Rest, and while the Urine putrifies, or grows alkaline; and therefore that Attenuation, Alkalies and Putrefaction, do not prevent the Origin of the Stone, since it may be generated and not dissolved even in putrified Urine. Hence, therefore, as Tartar is generated in the best Wine, so is the Stone generated, and not dissolved, in the Urine elaborated by the vital Powers: Therefore, volatile alkaline Salts are in vain given to prevent the Generation of the Stone. The following Experiment I have seen with Horror. Upon filling a clean Glass Bottle with the recent Urine of a healthy Person, and setting it by for some time, then pouring out the putrified Liquor for Distillation, there was a stony Crust all round the Inside of the Glass. Without washing this off, I filled it with fresh Urine, set it by as before, and afterwards emptied it. And by repeating this several Times, I at length found the whole

Surface of the Glass crufted over with the Matter of the Stone. This Production of a stony Matter seems very destructive, though necessary to the Body. It may perhaps seem strange, why the Body should not therefore putrify by its own vital Heat and Motion, since it so soon putrifies the wholesomest Juices; and since dead Carcases, exposed in Air heated to eighty Degrees, in a few Hours putrify, resolve away, and fly into Air, leaving only the Bones behind: But Chemistry supplies us with this Answer, that such a Putrefaction is prevented by the Meat, Drink, Sauces, Air, and sometimes the Medicines used, which resist Putrefaction; otherwise, in burning Fevers, the whole Structure of the Body would presently be dissolved by Putrefaction.

DIGESTED URINE AFFORDS BY DISTILLATION AN ALCALINE SPIRIT, A FETID OIL, A VOLATILE, ALCALINE SALT, PHOSPHORUS AND SEA-SALTS.

Take Urine digested according to the foregoing Process, distil it, with a gentle Fire, in a low Glass Body; there first arise Veins of Liquor running in the Form of unctuous Spirits. The Receiver being changed, and the Fire a little encreased, there follow dewy Drops, resembling Water; and this Water may be accurately separated till the Matter remains almost dry, which again being urged by Degrees, and at length by a strong Fire, will afford a yellow and very fetid Oil, along with something saline; black Fæces will remain behind, which, when burnt in an open Fire, become a white Calx, that with Water resolves into Sea-salt, and a fixed, insipid, subtile Earth. The first Water is fetid, sharp, fiery, perfectly alkaline, and makes a violent Effervescence with Acids. If this be distilled in a tall Vessel, by a gentle Fire, it affords a white, solid, truly alkaline Salt; and leaves a Water of an ungrateful Smell and Taste behind. When the Water that came over second is long distilled in a tall Vessel, with a gentle Fire, it affords somewhat of the former Spirit; which being carefully separated, and the remaining Water distilled in a clean Vessel, it affords a Liquor which *Helmont* recommends, in his Treatise on the Stone, for an admirable Lithontriptic. There here appears no fixed Alkaline Salt, but a true Sea-salt, if the Person used much thereof; but when I desire to obtain a large Quantity of the Salt, I usually proceed thus.

I put a hundred Weight of Urine into a large low Vessel that widens upwards, and inspissate by boiling, with Care to prevent the unctuous Matter from boiling over; and being left, till the whole acquires the Consistence of Honey, I put a large Quantity of this into an open cylindrical Glass, and expose it for some Months in a warm Room, so that it may be well putrefied. I afterwards put the Glass into an Iron Pot, to the Mouth whereof a large earthen Still-head may be commodiously fitted, and closely luted; the Head has a long Pipe, to which I apply a capacious Receiver, then raise the Fire by Degrees, upon which an incredible Quantity of a white alkaline Salt arises, next a yellow Oil that fouls the former Salt, and with it another Salt somewhat more fixed. I urge the Fire till the Pot begins to grow red hot, at which Time the Oil and the last Salt come over. Then suffering the Iron Pot to cool a little, while the fixed Matter continues sufficiently hot, I take away the Receiver, and put up all that was raised into Glass Bottles, and stop them close. This afterwards resolves into Spirit, Salt, and Oil, as the former. If what now remains at the Bottom be mixed with twice or thrice its Weight of Wood-Coal, and then put into little coated Retorts, and urged with the utmost Violence of Fire for sixteen Hours, into Receivers filled with Water, and so placed as to bury the Necks of the Retorts under Water, little blue Masses of Matter will at length come over, and fall to the Bottom of the Receivers, whence they are collected, so as to be gathered together under Water, in a small Vessel; which being set over the Fire, so as to be very hot, the Matter of the Phosphorus melts without dissolving in the hot Water, and runs into one Mass, like melted Wax; and may be afterwards preserved for twenty Years, or more, under Water, without losing its Virtue. But if another Part be taken of the Mass, as it remains in the Pot, and calcined in an open Fire to a white Calx, this Calx, when put into Water, communicates a saline Matter thereto; and which, when reduced, proves to be true Sea-salt, that remained thus unchanged through all the Digestions of the Body, and even after such a long continued Putrefaction and Distillation. That it is a true Sea-salt, appears manifest from the Taste, but more particularly, because, when mixed with *Aqua fortis*, it dissolves Gold; so that there is no fixed alkaline Salt found even in this Urine; but whatever it contains of saline, is either of the volatile Kind, or Sea-salt.

R E M A R K S.

This is the true Analysis of Urine after Putrefaction, where it affords all the same Matters as that which is distilled fresh, though with a less Heat and in an inverted Order. Putrefaction renders the Salts more volatile than Water, and makes those alkaline which were not alkaline before; it renders the Oil sharper, more fetid, and more volatile, yet produces no inflammable Spirit, no fix'd or volatile Acid, nor any fix'd Alkali. Yet these two Salts appear differently volatile; the first whereof easily rises and separates almost pure; the other with more Difficulty, slower, and mixed with a copious Oil, not easily to be separated from it, and requires a large, and in part the strongest Fire to raise it. I once urged the prepared Fæces of Urine, with the most violent Fire for the making of Phosphorus, and was surprized to find how long this saline Matter continued to come over, after having so long suffered the Violence of a former Fire; but this Salt was strangely dense, yellow, fetid, and fix'd to the Sides of the Retort. All Acids, therefore, are here changed into a neutral, saline Substance, by the vital Powers; yet this neutral Salt becomes truly alkaline by Putrefaction, and more volatile than any hitherto known, even than Alcohol itself. This Putrefaction volatilizes all the saline Matters of Animals and Vegetables, but can neither convert Sea-salt into an Alkali, or render it volatile. Some eminent Chemists have said, that an Acid might, by the Force of Fire, be drawn from the Fæces of Urine, remaining after its Distillation: And I have found this true, where common Salt was largely used by the Person, and not changed, as was above observed, but remaining plentifully in the Fæces: For being thus mixed in a large Proportion of Earth, the extreme Violence of the Fire drives over the Acid of the Salt, which has thus been hastily taken for the Acid of the natural Juices: Yet it must be acknowledg'd that Phosphorus spontaneously resolves into an Acid by the Air, not greatly differing from the Oil, or acid Spirits of Vitriol or Sulphur; whence it makes a kind of Compound Body with Quicksilver. But whence this Acid should proceed I am at a Loss to know, as also of what Nature it is. Certainly it suits neither with Animals or Vegetables; perhaps, Alum might be added in the Preparation; for thus it may be obtained to Advantage; and the acid Spirit of Alum is very like that of Vitriol. On the other hand, it has appeared by Experiments, that Fowls feeding upon Vegetables inclined to Acidity, and drinking nothing but Water, while they were cooped up, and being afterwards calcined with an open Fire, together with all their Excrement, afforded Fæces that contained nothing either of acid, or of an alkaline Nature. If a Spirit highly saturated with volatile, alkaline Salt be highly rectified, it becomes limpid; but if afterwards long kept, it changes brown, and generally deposits something terrestrial to the Bottom and Sides of the Vessel. Let it be examin'd whether this is not that volatile Earth, which rises with the first Spirit of putrefied Urine, that tarnishes the Glass so as not to be got off again but by the other subsequent Spirit, which, though scarcely saline, spontaneously dissolves it; of which *Helmont* treats so largely in his noble Book of the Stone. This deserves to be thought of and tried, as being an easy Thing that has its Use. Certainly Alkalies rather generate the Stone; but if the second Liquor, which is not alkaline, dissolves the Stone, then Urine will contain both the Matter of the Stone and its Solvent. Sea-salt, therefore, does not generate the Stone, but rather resolves it, as hindering by its Saltiness, the Tendency of the Humours to an alkaline Nature and Putrefaction. Whence *Helmont* conceives, that Vinegar, Sea salt, and Sulphur, were the great antipeffential Remedies of *Hippocrates*, being used along with fumigated Wine; whence the Adepts declare, that Nature has lodged absolute Perfection in Salt. It does not however commodiously dissolve the Stone formed in the Urine, or the Concretions of the Gout.

Dr. *Langrish*, in his modern Theory and Practice of Physic, says, That the Kidneys are Organs designed by Nature to through out of the Body a recrementitious Liquor, which in Health is straw-coloured, or of a pale Yellow, and contains little or no Sediment, or feculent Matter; being in effect a Lixivium, in which a Portion of the animal Salts and Oil is dissolved and washed away. If, therefore, (as we have Reason to believe) the secretory Ducts of the Kidneys are more than ordinarily contracted, in an acute Fever, either by the sharp, acrid Salts and Oil stimulating them as they pass along, or else by the general Tension of the Vessels at that Time; or if the Union or Attraction between the serous and globular Parts of the Blood is so strong as not to be separated in the Renal Tubuli, we have a manifest Reason for the small Quantity of Urine.

Another Cause, indeed, may be the Velocity of the Fluids; for a strong and swift Circulation is an Hindrance to all Secretions, by reason they are perform'd by lateral Branches going off at or near Right Angles; and consequently a swift Circulation along or parallel to the Axis, carries along with it what should be laterally secreted.

As to the Colour of the Urine, that depends upon the Quantity of oily and sulphureous Particles wherewith it is impregnated; it being well known, that Oil or Sulphur is the Cause of all Colours in Liquors; since neither pure Salt, pure Water, nor pure Earth, can communicate any Colour at all. Add to this, that Oil gives the deeper Colour, the more it is attenuated and exalted by Heat and Motion. And again, when the increased Heat of the Body hath exalted the most fluid, aqueous Particles of the Blood, the Urine may become higher coloured, or intensely red, by the Proximity of the sulphureous Particles.

Hence we sometimes meet with Urine, so saturated with oily, saline, and terrene Particles, as to be a perfect Lixivium; and at other times, the Salts and Oil are not determined to the Bladder along with the Urine; that is, when the Fibres of the Kidneys are over and above contracted, or the Salts and Oil are not attenuated and divided enough, to suit the Orifices of the secretory Ducts, the Urine is as limpid and clear as common Water. The former of these argues an inflammatory Disposition of some of the inner Viscera; and the latter threatens Deliria, and Convulsions.

The rank fetid Smell, which often attends the Urine of Persons in ardent Fevers, proceeds from the Salts being volatilized and rendered alkaline, and the Oil tending towards Putrefaction; all which is repugnant to the natural State of the Fluids.

Towards the Crises of Fevers, when the saline, sulphureous, and terrene Particles, are attenuated and ground fine enough to pass through the Renal Tubuli, the Urine is loaded with Contents, and lets fall a thick Hypostasis, or turbid Sediment, after it has stood for some time. Since, therefore, the Urine, by its several Contents and Appearances, furnishes us with Signs as well diagnostic as prognostic, it ought to be inspected every Day, in order to deduce our curative Indications, or to make our medicinal Prediction with greater Certainty; either from the Cloud at the Top, the Eneoræma suspended as it were the Middle, or the Hypostasis or Sedimentum subsided to the Bottom: The last of which is the best Indication of a kindly and regular Concoction.

Thus by daily inspecting the Urine, we are taught the State and Progress of the Disease; and thereby enabled not only to make our Prediction, but we are, also, greatly directed thereby in our medicinal Practice. *Hippocrates* laid great Stress upon his Observations on the Urine. And our Countryman *Willis* is so sanguine as to tell us, that the Acidulæ or Spaw Waters do not more certainly shew the Nature of the hidden Mine, through which they are strained, than Urines give Testification of the divers Sorts of Dyscrasies of our Bodies and their Habitudes.

If, therefore, a bare Inspection of Urine is of such Advantage towards investigating the Nature, State, Progress, and Cure of Diseases; most certainly the natural History of it, or a more curious Search into the Contents of the Urine, in every Period of the Disease, will be of more moment in discovering the several Dyscrasies of the Blood, and in indicating the Method of Cure, than what we can meet with in the Urinal only. For this Reason, I thought it worth while to make the following Experiments, that by an exact Analysis we might see the different Contents of the Urine, and the various Proportions of its Principles.

A CHYMICAL ANALYSIS OF THE URINE, BOTH IN HEALTH AND IN ACUTE FEVERS.

EXPERIMENT I.

I took all the Urine that was made in the Space of twenty-four Hours, by a Man, thirty-five Years of Age, in perfect Health, and of a regular Life. I weighed out two Pound, and distilled it; by which means I gained

	Ounc.	Dr.	Gr.
1. Lymph	30	7	2
2. Volatile Salt		2	18
3. Oil			32
4. Cap. Mort. before Calcination		3	17
5. Cap. Mort. after Calcination		1	43
6. Fixed Salt			32

The greatest Part of the Lymph was pellucid, insipid, and inodorous, and exhibited no Signs of an Acid or an Alkali; but the latter Part was very strong and offensive, and fermented violently with Oil of Vitriol, made a white Precipitate with

with Solution of Sublimate, and turned Syrup of Violets green.

When the volatile Salt first began to rise, it shot all over the Glas-head and Recipient into most beautiful Crystals; some of which resembled fine Boughs or Feathers; while others radiating from a Point or Centre, formed Stars or Roses of various Sizes.

When the volatile Salt was mixed with an acid, a stinking Vapour arose, which smelt like a nasty Corner where People have made Water for a long time.

I repeated this Experiment three Times, but as there was no material Alteration either in the Quantity or Quality of any of the Principles, it would be encroaching on the Patience of the Reader to insert those Processes.

EXPERIMENT II.

A young Lad, ten Years old, being seized with an acute Fever, attended with a Phrenzy, Subultuses, and many other dangerous Symptoms, it continued till the eighth Day; on which moderate Sweats broke forth, and the Urine let fall a vast Hypostasis.

All the Urine which was made on the eighth and ninth Days, being saved by my Order, it amounted exactly to two Pounds; which being committed to the Still, it afforded,

	Ounc.	Dr.	Gr.
1. Lymph	30	2	
2. Volatile Salt		5	46
3. Oil		1	23
4. Cap. Mort. before Calcination		5	4
5. Cap. Mort. after Calcination		1	56
6. Fixed Salt			44

Hence we may not only observe a great Difference between the Contents of healthy Urine, and that made at the Crisis of a Fever; but we plainly see the Reason of the vast Advantages which generally accrue when the Urine is loaded with Contents, and lets fall a thick and turbid Sediment. For we have good Reason to believe, from this Experiment, that the greatest Part of the Hypostasis consisted of saline and sulphureous Particles, which, while in the Blood, irritated the Vessels, and increased the Fever.

The Lymph also seemed to be much stronger in this than in the former Experiment; and as it contained more volatile Salt and Oil, it fermented more violently, and smelt stronger when mixed with Oil of Vitriol.

EXPERIMENT III.

A young Woman, seventeen Years of Age, lay ill of an ardent Fever, and from the tenth to the fifteenth Day, the Urine came away involuntary; so that none could be saved, except about a Spoonful of limpid clear Water on the twelfth Day, at which time she was raving, gather'd up the Bed-Clothes, caught at imaginary Flies, and the like. On the thirteenth and fourteenth she lay comatose. The fifteenth she raved again, had strong Subultuses, and a black parched Tongue. On this and the next Day, we saved eight Ounces of Urine, which was something deeper coloured than a Citron, smelt strong, and had a very thin bright Cloud swimming in the middle. This Urine being distilled, we procured,

	Ounc.	Dr.	Gr.
1. Lymph	7	5	
2. Volatile Salt			40
3. Oil			32
4. Cap. Mort. before Calcination		1	6
5. Cap. Mort. after Calcination			21
6. Fixed Salt			4

EXPERIMENT IV.

The dreadful Symptoms which attended this poor young Woman on the fifteenth and sixteenth Days, were something alleviated on the seventeenth, by a gentle breathing Sweat; but the Remission was very short, a Rigor succeeded, and the Fever seemed to return with greater Violence than ever. All that Night she raved much. The next Day, the eighteenth, I found her delirious, with frequent Catchings of the Tendons, and her Pulse so extremely quick as scarce to be counted.

Nine Ounces of Urine being saved on the seventeenth and eighteenth Days, I distilled eight Ounces of it, and obtained,

	Ounc.	Dr.	Gr.
1. Lymph	7	4	45
2. Volatile Salt			48
3. Oil			34
4. Caput Mort. before Calcination		1	10
5. Caput Mort. after Calcination			23
6. Fixed Salt			3

It may be proper to observe, that about four Ounces of this Urine, which was made during the little Remission of the Fever, was highly red at first; afterwards it grew thick and cloudy, and the next Morning it had a laudable Hypostasis subsided to the Bottom. The other Part was much the same with that of the former Process.

Having one Ounce of Urine to spare, and it smelling exceedingly rancid and strong, though the Glasses were very clean in which it was contained, I thought it worth while to try if I could possibly discover any alkaline Property in this Urine, before the Fire had any share in it; and accordingly I divided it into four Parts; to the first I let fall some Solution of Sublimate, which made no Alteration in it; to the second I dropt in some Solution of Alum, which also lay very quiet; to the third I added Oil of Vitriol, which manifestly gathered together, and collected the grosser, thicker Contents of the Urine (which, by shaking the Bottle before we weighed out what was distilled, were equally scattered all over, so as to render it of an even turbid Colour) into little Rags, and left the Interstices clear. With the fourth I mixed Oil of Tartar, which immediately dispersed the Thickness or Muddiness, and rendered it clear, and almost of a Straw-colour.

Hence it is evident, that though the Urine was not alkaline enough to raise a visible Fermentation with Acids; yet as the saline and oleaginous Particles were undoubtedly attracted and collected together by Oil of Vitriol, and repelled and dispersed by Oil of Tartar, we may reasonably conclude, that the prodigious Heat of the Body had exalted the Animal Salts and Oil to an alcalic State. For this was the most intense Fever I ever met with; and as the Heat had been continued many Days, I am persuaded it might be the Cause of these Phenomena.

EXPERIMENT V.

On the 19th Day of this young Woman's Illness, we had a Remission for four Hours; during which Time she came to her Senses, drank plentifully; her Tendons were quiet, her Pulse regular, in comparison to what they had been; and by the Assistance of a Clyster we procured two Stools. In the Evening the Rigor returned, though not with so much Vehemence as on the 17th. The Fever, Delirium, Subultus Tendinum, &c. soon succeeded; so that the Night was passed with great Inquietude. On the 20th in the Morning, she had two Hours Sleep, which greatly refreshed her, and slackened the Pulse both in its Hardness and Velocity. She now began to spit a good deal of frothy Matter; her Skin felt smoother and softer than it had done before; and the Urine on both these Days was loaded with Contents, and let fall a very thick Hypostasis. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph	7	3	32
2. Volatile Salt		1	38
3. Oil			53
4. Cap. Mort. before Calcination		1	12
5. Cap. Mort. after Calcination			26
6. Fixed Salt			5 ¹ / ₂

Having mentioned in the former Experiment, that Oil of Vitriol plainly collected, and Oil of Tartar as manifestly dispersed the turbid Parts of the Urine, I was induced to try it again with some of this Urine before Distillation; because it seemed to be more impregnated with volatile Salts and Oil; and consequently it might exhibit the Phenomena more plainly. Accordingly I dropt a few Drops of Oil of Vitriol into an Ounce of it; from whence a fine white Froth arose to the Top of the Mixture, while the grosser Contents run together, and after some time subsided to the Bottom. The Ferment, indeed, was but weak; however, it was enough to discover, to any unprejudiced Person, an alkaline Matter in the Urine. I must confess, indeed, I have repeated this Experiment a great many times on the Urine of other Persons in ardent Fevers, and never could observe the same Appearances; but, as I said before, since all the Vessels which received this Urine were very clean, and since the Heat was most extreme, as well as of very long Continuance, I am positively sure the Phenomena proceeded from an alkaline Disposition in the Urine.

EXPERIMENT VI.

On the twentieth Night this young Woman slept well. The next Morning I found her greatly refreshed, though not free from the Fever. All that Day, and the next, she continued mending; she spit much, had little breathing Sweats, and a Multitude of Contents in the Urine. All the Urine she made on the 21st and 22d Days, being mixed together, and shook, in order to disperse the Contents equally, I distilled eight Ounces, and obtained,

1. Lymph

	Ounc.	Dr.	Gr.
1. Lymph	—	—	—
2. Volatile Salt	—	—	—
3. Oil	—	—	—
4. Cap. Mort. before Calcination	—	—	—
5. Cap. Mort. after Calcination	—	—	—
6. Fixed Salt	—	—	—

The critical Evacuations by Sweat, Urine, and Spit, continuing on the 23d and 24th Days, my Patient was past all Danger; she slept quietly, and only complained of great Lassitude and Faintness: But as the Urine on these two Days continued to be very turbid and thick, I was invited to pursue my Enquiry, and from eight Ounces procured,

	Ounc.	Dr.	Gr.
1. Lymph	—	—	—
2. Volatile Salt	—	—	—
3. Oil	—	—	—
4. Cap. Mort. before Calcination	—	—	—
5. Cap. Mort. after Calcination	—	—	—
6. Fixed Salt	—	—	—

The Oil and latter Part of the Phlegm, or Spirit, which came over in this Process, being left in the Recipient all Night, I found next Morning several large and beautiful Crystals shot from them, some of which were as large, and much resembled the Crystal Stones used for Mourning Rings.

From these five last Experiments we may plainly observe, that the Urine became more and more impregnated with saline and sulphureous Parts, in Proportion to the Abatement of the bad Symptoms; till at the Crisis it contained more than double the Quantity it did at first. Hence the several Organs of the Body were vastly relieved, their Tension was abated, the Blood grew polite and smooth, and the Cohesion between the several Orders of Blood Globules became less and less, by a constant Diminution of the Quantity of strongly attracting, acrid, irritating, saline and sulphureous Particles.

EXPERIMENT VIII.

A young Man on the sixth Day of an acute Fever, made exceeding limpid, clear, and pale Urine, which was soon followed with a Phrenzy, Subsultus Tendinum, and other dangerous Symptoms. From eight Ounces of this Urine I obtained

	Ounc.	Dr.	Gr.
1. Lymph	—	—	—
2. Volatile Salt	—	—	—
3. Oil	—	—	—
4. Cap. Mort. before Calcination	—	—	—
5. Cap. Mort. after Calcination	—	—	—
6. Fixed Salt	—	—	—

It is an old Observation, founded on Experience, that if the Urine changes suddenly from a deeper Colour to a crude Paleness, without a Sediment, towards the Height of a Fever, it is the Fore-runner of some fatal Metastasis, as of Deliria, Convulsions, and the like. And here, in this Experiment, we have plain Demonstration of the Cause of it; because the animal Salts or Oils are not determined to the Bladder, along with the Urine, but are accumulated in the Blood and Lymph, and generate Obstructions.

EXPERIMENT IX.

On the tenth Day the Urine of this young Man grew exceedingly turbid, with an even white Hypostasis at the Bottom, and all the bad Symptoms vanished. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph	—	—	—
2. Volatile Salt	—	—	—
3. Oil	—	—	—
4. Cap. Mort. before Calcination	—	—	—
5. Cap. Mort. after Calcination	—	—	—
6. Fixed Salt	—	—	—

Here again we have manifest Proof of what vast Advantage it is to the animal Oeconomy, to have the Salts and Oils properly attenuated, diluted, and drained off from the Blood, by the secreting Tubuli of the Kidneys.

Thus, in the most natural Way of analysing the Urine, without Fermentation or Putrefaction, or without the Addition of any suspicious Analyser, we have separated the several constitutive Parts of Urine; whereby we have evidently demonstrated, that the Urine in Fevers abounds more with saline and sulphureous Particles than it does in Health; and especially towards the Crisis, when the Salts and Oils are sufficiently attenuated, ground, and comminuted, it is loaded with a Multitude of Contents, which gives great Relief to

the Sick: But when it is pellucid, pale and clear, and continues so for some Time, it is a very dangerous Phenomenon, and requires the utmost Skill and Diligence to remove it. I shall only add, that the fixed Salt in all these Experiments, appeared, by the strictest Trials with Oil of Vitriol, and a Solution of Silver, to be Sea-Salt.

RENOVATIO. Renovation, in Chemistry, is defined, the Restoration of a mineral Body to a perfect State, from one which is imperfect. It is also used, with respect to the Body, in the same Sense.

RENUANS MUSCULUS. A Name for the *Rectus Anticus Brevis*.

RENUNCIATIO. Renunciation; that is the Report of a Physician or Surgeon to a Magistrate upon an Inquest, with respect to the Event of a Wound, or Poison, or relative to contagious Distempers.

REPANDATIO. The same as **LORDOSIS**.

REPELLENTIA. Repellent Medicines. See **INFLAMMATIO**.

REPERCUTIENTIA. The same as **REPELLENTIA**.

REPLETIO. Repletion, Satiety, or a *Plethora*.

REPOSITIO. The Reduction of a luxated, or fractured Limb.

REPRIMENTIA. Remedies which repel by their Astringency.

REPULSORIA. The same as **REPELLENTIA**.

REPURGATIO. The same as **ANACATHARSIS**.

RES NATURALES. The Naturals.

In every Person, says *Boerhaave*, however disordered, Life, the Cause of Life, and its Effects, remain in some Degree. These, says he, are called the Naturals, or Things according to Nature, and sometimes simply Nature.

RES NON NATURALES. See **CAUSA**.

RES PRÆTER NATURAM. Diseases, their Causes, and Symptoms, or Effects, are thus called by the Writers of Institutes.

RESEDA.

The Characters are;

The Leaves are pinnated; it hath a polypetalous anomalous Flower, composed of several dissimilar Petals, out of whose Cup arises the Pointal, which afterwards becomes a membranaceous Fruit, for the most Part three or four corner'd, oblong, and as it were cylindraceous, pregnant with roundish Seeds.

Boerhaave mentions six Species of this Plant; which are;

1. *Reseda*; maxima. *C. B. P.* 100.

2. *Reseda*; alba. *J. B.* 3. 467.

3. *Reseda*; vulgaris. *C. B. P.* 100. *Raii Hist.* 2. 1053. *Synop.* 3. 366. *Tourn. Inst.* 423. *Boerb. Ind. A.* 251. *Reseda*, *Offic. Reseda Plinii*, *Ger.* 226. *Emac.* 277. *Reseda lutea*, *J. B.* 3. 467. *Reseda minor seu vulgaris*, *Park. Theat.* 823. **BASE ROCKET.**

It grows in chalky Soils, and flowers in June and July. The Herb is said to mitigate Pains, and discuss Inflammations.

4. *Reseda*; minor; vulgaris. *Tourn. Inst.* 423. *Boerb. Ind. A.* 251. *Phyteuma*, *Offic. J. B.* 3. 386. *Raii Hist.* 2. 1054. *Reseda affinis Phyteuma dista*, *C. B. P.* 100. *Reseda affinis Phyteuma Monspeliensium dista*, *Park. Theat.* 822. *Valeriana septima*, *Ger.* 918. *Emac.* 1076. **SMALL BASE ROCKET.**

This grows about Montpellier, and flowers in the Summer. The Herb is said to increase Venereal Inclinations.

5. *Reseda*; minor; alba; foliis dentatis. *Barr. Ic.* 588.

6. *Reseda*; minor; folio inferiori parum, superiori magis inciso; perennis. *Boerb. Ind. Alt. Plant. Vol. I.*

RESINA. Resin. See **CATHARTICA**.

Resins consist of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either solid or liquid, but these differ from one another only in the Proportion of Earth that enters their Composition. *Geoffroy*.

METHOD OF PREPARING RESINS.

Let the Tinctures prepared with Alcohol from fat resinous Vegetables, be first well clarified by standing, then distilled in a Glass Body, with a gentle Fire, till only one Fourth remains behind: The Alcohol thus drawn off, is to be kept for the same Use again. Then pour the thickened Tincture into a low Glass, with the Mouth wide enough to admit the Hand; and let this Vessel contain twelve Times the Quantity of fair Water, in Proportion to the thickened Tincture. The Mixture thus will instantly grow thick, white, and soon exhibit yellow Curds, which, fallen to the Bottom, constitute a gross viscous, unctuous, and somewhat transparent Matter; then set the Glass in a Sand Furnace, and draw off the remaining Alcohol by means of an Alembic, continuing the Operation

Operations so long as the Veins in the Head shew any Spirit to rise, and add this Spirit to the former. At the Bottom there will remain the Water, with the abovemention'd Matter below it. This Matter liquifies in hot Weather, but grows hard in the Cold. The Water being thrown away, tho' it still retains some Odour or Taste, tho' but little Virtue, let the resinous Matter collect and unite into a Mass at the Bottom. It will first be flexible, soft, and, when touch'd, stick incommodiously to the Fingers; but when washed for some Time in several Waters, it begins to cool and harden, and when dried, appears a hard, brittle, transparent Body, that will run with Heat, dissolve in Oil and Alcohol, but not in Water, and burn in the Fire like Oil. This Matter is called by the Chymists Rosin; and requires to be kept in a cool dry Place, and in a close dry Vessel.

This Rosin may be thus prepared from almost any oily, ponderous, dry and resinous Parts of Vegetables. Nature often produces the like from Vegetables, but no where more perfect than in the Camphire Tree, which yields a pure, white, transparent, highly odorous, volatile Rosin, tho' hard to grind: And next to this is Benjamin, which is also a pure volatile Rosin, copiously afforded by the Tree. But when pure Alcohol acts upon resinous Plants, whilst yet green and juicy, the Water abounding in these Juices mixes with the Alcohol, and dilutes it; whence it acts like common rectified Spirit, or rectified Spirit of Wine, in Proportion as the Plant contained more or less Water; and thus its Action becomes different.

R E M A R K S.

This Experiment, which is considerably general, shews the Nature of Rosin, which in the Plant seems to be a pure thin Oil. And hence Chymists are taught under what various physical Forms Oils may subsist, in respect of Heat and Cold; for the Rosin, which in a certain Degree of Cold is hard and brittle, soon resolves by Heat into a pure fluid Oil. Some have supposed that Rosins are generated, whenever any strong Acid is mixed with a clear Oil, upon observing that the strong and fiery Spirits of Nitre and Vitriol turn with Oils into a pitchy Mass, which, when farther perfected by the Fire, becomes a true Rosin; and therefore that the Sulphur thus produced is a true Rosin of the Earth. But there is Room to doubt whether the Coagulation of the Oil proceeds from the Acid, because by the natural Conversion of Balsams into Rosins, the Acid is always more separated from the Balsam, the more the Balsam, which was first liquid, grows thick and hard; and at last there is less Acid found in the Rosin, than in the more fluid Mass; and even the Rosins, which are thus said to be produced by a Mixture of Acid and Oil, yet always differ from those prepared by Nature, or by the Means of Alcohol. These Rosins soon dissolve in Alcohol, but Sulphur never.

The Rosins, thus prepared, manifest their oily Nature by being totally inflammable, and seem to contain their former prefiging Spirit; for the Smell, Taste, and particular Virtue of the Subject are always found in the Rosin, though this is to be understood only so far as they remained in the oily Part of the Plant. Hence these Virtues are long retained and preserved for Years, in the viscous Substance of the Rosin; whereas they would otherwise be soon lost in the Plant itself. And hence it often happens, that the Rosins taken in the Body pass through it undivided, by reason of their Tenacity, and without having their Spirits extricated to perform their proper Actions, as not meeting with the Bile, or other saponaceous Fluid, to dissolve and open them; and this is frequently regretted by Physicians, while they direct these Rosins in Form of Pills, which may pass the Body without being dissolved, and without producing the desired Effect. These Rosins, also, generally have a manifest, sharp, caustic, inflammatory, violent Virtue; so that if they stick to the Tongue, or the Jaws, they prove very troublesome by their Acrimony; and this Effect they often have upon the Stomach and Intestines, and thus they may prove mischievous, by stimulating and inflaming. And thus the Rosins of Coloquintida, Euphorbium, Hellebore, Jalap, Scammony, and the like, sometimes occasion violent and dangerous Purgings, that cannot easily be stopt. In order to prevent both these ill Effects, it has been found proper to grind them in a Glass Mortar, for a considerable Time, with an equal Quantity of dry Sugar; so as thus to prepare a fine Powder, which being afterwards mixed and taken in any Syrup, never passes the Stomach undissolved, nor sticks in the Folds of the Intestines, but proves an excellent and expeditious Kind of Purgative. So likewise, if mixed with a little Yolk of Egg, this will dissolve their Tenacity, and promote and increase their Efficacy; and when thus treated, these Rosins will also prove purgative, which are obtained from Simples not purgative themselves, as we see in the Rosin of Guaiacum.

Some of the greatest Artists have observed, that the proper distilled aromatic Oils, abounding with their own Spirits, grow resinous, as often as they are deprived thereof. And this is certainly found in some Oils; for if pure Oil of Cinnamon be dissolved in Alcohol, and the Alcohol be with a gentle Fire drawn over from it by Distillation, it carries over the Spirit with it, and leaves the Oil behind deprived thereof and resinous. But as the purging Virtues of certain Plants partly reside in that resinous Matter, which Alcohol extracts, and partly in another active Part of the Plant, which dissolves in Water, as appears in Jalap; the Remainder of such a Plant, after the pure Alcohol has extracted all the Resin, will afford another Part by being boiled in Water. And if this Decoction be strained, inspissated with a gentle Fire to the Consistence of an Extract, and afterwards mixed along with the Resin dissolved in the Yolk of an Egg, there will thus be obtained an excellent Composition, containing almost the whole medicinal Virtue in a little Compass.

RESINA JALAPIL. See JALAPA.

RESINA SCAMMONIL. See SCAMMONIUM.

RESINATUM VINUM. Wine impregnated with Resin of the Pitch-Tree. It is mentioned by Celsus, L. 2. C. 24. as good for the Stomach. Dioscorides, L. 2. C. 43. informs us it was generally made in Galatia, where the Wines were subject to grow sower, without this Precaution, because the Climate was too cold to ripen the Grapes.

RESINOCERUM. A Mixture of Resin and Wax.

RESOLVENTIA. Resolvent Medicines. See FIBRA and INFLAMMATIO.

RESOLUTIO. Resolution. See FIBRA and INFLAMMATIO.

RESOLUTIVUS. Resolutive, a modern Epithet for that Species of Fermentation, which tends to the Resolution of Bodies. *Castellus* from *Stabl*.

RESONITUS. A Contraffiture. See CAPUT.

RESORBENTIA. The same as ABSORBENTIA.

RESPIRATIO. Respiration. See PULMONES.

What Respiration is, and why it is uninterruptedly carried on without the Concurrence of the Mind, will appear from what follows. Tho' no Action seems to be more frequent than Respiration, yet it is not to be understood without considerable Difficulty, not only because it is partly vital and partly voluntary; but also because an incredible Number of Organs are subservient to it; for which Reason its Nature is carefully to be investigated, which is most commodiously done by considering the Phenomena with which it is accompanied, and the Organs employed in carrying it on.

The Lungs suspended in the Air, which every where acts upon them, and equally presses them, always collapse, contract themselves into a smaller Space, and become much less than when they remained in the entire Thorax, as is sufficiently evinced by Anatomy: This is principally perform'd by the contractile Force of the muscular Fibres, which connect the squamous Segments of the Bronchia.

If the Lungs thus contracted are filled with Air, forcibly blown through the Glottis, they are so distended as in Bulk not only to equal that which they had in the entire Thorax, but even much to exceed it, as is sufficiently certain from Experience.

The same Thing happens, if when an Access for the Air thro' the Glottis, is left to the Lungs, the Air externally acting on the Lungs is either removed, or its Pressure diminish'd. This may be demonstrated by Experiments made in the Air-Pump.

Hence 'tis obvious, that the Lungs by their proper Force have always a Tendency to become less in all their Parts, than they are when placed in the entire Thorax. For this reason 'tis certain, that they are in a continual State of Distraction, so long as a Person is alive, so that they must collapse, and be diminished, whilst the whole of the Animal remains in a Vacuum, obtain'd by an Exhaustion of the Air in an Air-Pump.

For there is nothing similar to a circumambient Air between the external Membrane of the Lungs, and all the internal Surface of the Pleura, in a sound Person; nothing therefore externally compresses the Lungs, except the Diaphragm. There is, however, always an internal Air contained in them, and freely conveyed to them through the Glottis. Hence the Lungs are always somewhat more distended by the internal Air, than they are compress'd by the external Air, the Access of which is hindered by the Diaphragm, which is so connected with the Ribs and Vertebrae, that the Air cannot enter the Thorax in such a manner as would be requisite for an Equilibrium.

The Truth of this Doctrine, which in accounting for Respiration is of the last Importance, is evidently demonstrated by Anatomy; by the Production and Growth not only of the Fœtus in the Uterus, but also of Infants brought into the World;

World; by the Inflation of the Lungs, by Wounds penetrating into the Cavity of the Thorax, occasioning a Collapse of the Lungs, hindering their Dilatation, and inflicted sometimes on one and sometimes on another Side of the Thorax; but most of all by the celebrated Experiment of Mr. *Hook* upon live Dogs.

Since, therefore, in Inspiration, a greater Quantity of Air enters the Lungs through the Glottis, it will extend the Lungs more, and overcome their natural Force; so that in this Action the Lungs are passive, but how far they are active is only to be discover'd from certain Phenomena.

In vital Inspiration then, especially considered in a sleeping Person, first, the Ribs, especially the nine superior ones, articulated at the Vertebrae, and by Cartilages join'd to the Sternum, with their arched Part rise so to the Clavicles, that this Motion is principally observ'd in the Middle of the Arch. Whilst three or, perhaps, four of the inferior Ribs are turned downwards, backwards, and obliquely outwards; but in such a Manner that the seventh, eighth, ninth and tenth Ribs are by their cartilaginous Segments, as it were, drawn inwards. Secondly, the whole Abdomen, to the very End of Inspiration, is gradually rendered more tumid, and press'd outwards. Thirdly, at the same Time the Cavity of the Thorax is enlarged, as is obvious by measuring with a Cord, by viewing it with the Eye, and especially by a mechanical Consideration of the Figure, Situation, Connection, and Articulation of the Ribs here placed, according to the Rules of most perfect and consummate Art, as *Borelli* has excellently demonstrated.

But during this Action the Diaphragm is drawn downwards from the convex and sinuous Situation it was in before, and assumes a plainer Figure, as is obvious from dissecting live Animals, and from large abdominal Wounds inflicted on Man. But that this Change of Figure in the Diaphragm depends upon the Contraction of its muscular Fabric, is sufficiently obvious from an anatomical Consideration of it.

Since, therefore, in Inspiration no other Things happen, its Cause must be determined by these; namely, the above-describ'd Motions of the Ribs and Diaphragm: For which Reason, we must enquire into the Causes which produce these Motions.

The ten superior Ribs, being bonny, arched, incurvated, and more depressed and flat in the Middle than in their rising Extremities, are by two Apophyses fortified with a Cartilage, articulated, first, into the cartilaginous Pit of the Vertebrae, imprinted laterally and backwards on the united Bodies, or only in the Body of the first Vertebra; secondly, in the cartilaginous Sinus imprinted on the transverse Process of the Vertebrae. The seven superior Ribs are join'd to the Sternum, by the Interposition of an arch'd, cartilaginous, and pretty elastic Segment; which in the first Rib forms an acute Angle upwards, in the second Rib an Angle almost right; and in the other five Ribs an obtuse Angle with the Sternum. So that the Angle here form'd by the Cartilages of the Ribs, with the Sternum, is the more obtuse the more inferior the Rib is; or that Segment ascending enters the lateral Cavities of the Sternum so that the more superior the Rib is, the smaller the Angle of this Insertion is from the Concourse of the superior Part of the Sternum. But the sixth, seventh and eighth Ribs join their cartilaginous Arches, not only in their uniting Extremities, which reach to the lowest Part of the Sternum, but they also coalesce by mixing broad cartilaginous Processes with each other. The two and sometimes the three inferior Ribs being only furnish'd with one posterior Apophysis, are only articulated to one Sinus in the Body of its own particular Vertebra; and their Cartilages being almost only tendinous, they do not touch the Sternum, but are inserted in the Diaphragm and Cartilages of the next Ribs. So that they seem to be subservient to directing, equally sustaining, and performing the Motions of the Diaphragm, backwards and downwards.

The external intercostal Muscles, arising from the inferior Margin of the superior Rib, descend obliquely forward, and are inserted in the superior Margin of the Rib next to it below, through all the bonny Circumference, between all the Ribs both true and spurious. But the internal intercostal Muscles, arising from the inferior Margin of the superior Rib at a Distance from the Sides of the Spine of the Thorax, and descending obliquely backwards, intersect the former, and are inserted in the superior Margin of the next Rib below, thro' all the bonny Circumference.

But the subclavian Muscle arises fleshy from half the inferior Part of the Clavicle, where the Spine is joined to the Scapula, and going on in a forward Direction, is inserted in the superior Margin of the first Rib near the Sternum.

If, therefore, all these Muscles are contracted at once, then the first Rib is sufficiently fixed by its own Articulation, whilst, by the Force of the Subclavian, the nine following Ribs are elevated and turn'd outwards, especially in the Middles of

their Arches, yet so as to remain in an equable Parallellism, and depress the cartilaginous Segments. Thus the Cavity of the Thorax is remarkably increased.

The Diaphragm already described, when contracted, becomes plain, greatly dilates the Thorax, contracts the Abdomen, draws the anterior Cartilages of the spurious Ribs inwards towards the Vertebrae, draws the two inferior spurious Ribs downwards, and distends and overcomes the Force of the abdominal Muscles.

And these Muscles alone seem to perform vital Inspiration; the intercostal Muscles receiving Nerves from the dorsal Nerves, and the Diaphragm from the vertebral, diaphragmatic, and intercostal Nerves.

When, therefore, the Cavity of the Thorax is increased between the Pleura and Surface of the Lungs, nothing presses the Lungs; so that the Air which enters them through the Glottis, inflates them till they again are, or rather remain, contiguous to the Pleura and Diaphragm; and by this means produces all the Effects already mentioned.

Whilst the Parts remain in this Situation, the Air acts upon the Lungs with a Force equal to that with which the Thorax resists; so that the Lungs will remain in a State of Rest. Hence less Blood will pass through them, and a smaller Quantity of it be forc'd into the Left Ventricle of the Heart, and consequently less Blood will be convey'd to the Cerebellum and its Nerves. The arterial Blood will also act less on the intercostal Muscles and Diaphragm; so that the Causes dilating the Thorax are weaken'd. Hence the Elasticity of the cartilaginous Segments again depresses the Ribs, in which Work they are also assisted by the muscular Fibres, arising from the Side of the Sternum within the Thorax, and inserted into the bonny Extremities and Cartilages of the true Ribs. At the same Time the distracted Fibres of the Peritonaeum and abdominal Muscles restore themselves. Hence the compressed Viscera thrust the relaxed Diaphragm upwards into the Thorax, which is by this Means contracted, and the Air expelled from the Lungs. By this Means Expiration and the Actions already mentioned are perform'd. But in a particular manner, by these two Actions the Blood is not only carried through the Lungs, but its Motion accelerated.

At the same Time the Blood being again accelerated, begins to flow more strongly and copiously to the Cerebellum and Muscles, so that the Causes contracting the intercostal Muscles and Diaphragm are renew'd, Inspiration is restor'd, and thus the genuine, present, and effectual Cause of this alternate vital Motion is assign'd.

But besides these Causes of Respiration, there are also others subservient to the Will, and applied to the Ribs for the violent Dilatation of the Breast, and its Contraction. Tho' the former are subservient to the other Functions, yet they also concur to this, since they are naturally form'd for it; for first, the first Scalenus arising fleshy from the anterior Part of the transverse Process of the second, third and fourth Vertebrae of the Neck, and descending obliquely forwards, is by its Tendon inserted in the first Rib. Then the other Scalenus, arising fleshy from the lateral Part of the transverse Process of the second, third and fourth Vertebrae of the Neck, and descending tendinous above the first, is inserted in the second or third Rib. Then the third Scalenus arising fleshy from the anterior lateral Part of the transverse Process of the second, third, fourth, fifth and sixth Vertebrae of the Neck, is inserted for the most Part into the first Rib; for by means of these Muscles the three superior Ribs are elevated, sustained and supported, left the Action of the intercostal and other Muscles should be determin'd downwards in strong Inspiration. Nor is it any Objection, that by their Action the Neck is bended or turn'd about; because if they act at the same Time, and if the Neck is fixed by its erecting Muscles, which are the Spinalis Colli, the Transversalis Colli, the Interspinalis Colli, the Longissimus Dorsi, and the Semispinatus, acting at the same Time, and fixing the Neck; the Action of the Scalenus necessarily elevates the Ribs. But in very violent Respiration, 'tis certain that many such Things concur. Fourthly, the Serratus Anticus Minor arising fleshy from the Caracoid Process, descending obliquely forwards, becoming larger, and then smaller, is inserted fleshy in the anterior bonny Parts of the second, third, fourth, and fifth Ribs. Fifthly, the Serratus Anticus Major arising fleshy, large, and thick from the Basis of the Scapula, and descending obliquely forwards, is, as it were, by notch'd fleshy Portions, inserted into the eight superior Ribs; the two, three, four, or five inferior of which are indented with similar Portions of the Obliquus Exterior Abdominalis. For if the Muscles of the Scapula, the Trapezius, the Rhomboides, and the Levator, fix the Scapula immoveable upwards and backwards; then the Action of both the Serrati strongly elevates the Ribs from the second to the eighth, which we observe to happen in the strongest Inspiration. Sixthly, in the posterior Part, the Serratus Posterior

Superior, arising tendinous from the Spines of the two inferior Vertebrae of the Neck, and the three Superior of the Thorax, is by fleshy Denticulations inserted into the Curvature of the second, third and fourth Ribs, which it raises upwards. Seventhly, Respiration is also assisted by the Serratus Pecticus Inferior, which arising from the Spines of the lumbar Vertebrae, and sometimes from some of the thoracic Vertebrae, is with digitated Fibres inserted almost in the Middle Arch of the ninth, tenth, eleventh, and the Extremity of the twelfth Rib; for this Muscle, by the Descent of its Fibres, almost from the horizontal ascendant Muscle, and by drawing these last Ribs outwards, downwards and backwards, enlarges the Thorax, and prevents its Contraction by an Approach of these Ribs, in consequence of the Contraction of the Fibres of the Diaphragm.

But if the Action of the Musculus Obliquus exterior, and of the Musculus Rectus acting in Concert, depressing the Ribs, contracting the Thorax, and resisting the Serratus Inferior Anticus, as is obvious from their Connection, concurs with the Action of the Sacro-lumbaris, which is a highly compound Muscle, hardly capable of being distinctly describ'd. It consists of a Series of muscular fleshy Fibres, arising from the transverse Processes of the Lumbar Vertebrae, and their Spines, and such as ascend upwards, and are there join'd to the fleshy Musculi accessorii, which proceed from the Ribs: This Action, I say, strongly assists a violent Expiration, the Abdomen being at the same Time contracted by Means of the Musculus Transversus.

In Women the Sternum is more compress'd, the Clavicles more straight, the Thorax narrower, and its anterior Part flatter, and the Superior cartilaginous Segments sooner become bony, than the inferior. Hence in Inspiration their Sternum is turn'd upwards and obliquely outwards, and the whole Thorax as it were rises. Hence also they respire most freely whilst their Abdomen is tumid.

'Tis certain that those Muscles which are subservient to Respiration, and at the same Time under the Influence of the Will, are far larger and stronger than those which necessarily perform vital Respiration. Hence it is, that the Force of the former is capable of augmenting, diminishing, and of totally stopping both Inspiration and Expiration.

Hence we may conceive, that there are not two Moments in the Life of Man immediately succeeding each other, in which the Pulmonary Vessels retain the same Figure, Largeness and Action.

As also, that here some Muscles have what we may call an Antagonism without an Antagonist Muscle.

Hence also we understand the Antagonism between the Action of the Fluid which moves the Muscles, and the Resistance of the simple Elasticity in the Solids.

That in order to alternate Motions in Parts to act reciprocally, it is not necessary to suppose alternate Actions of the Humours, since it is sufficient that they act in either.

The Will is capable of stopping the Force and Cause of Respiration, tho' not of directly stopping the Force of the Heart; so that the Cause of Motion in the Heart, is stronger and more constant, and its Action more frequent: There is, however, a kind of Consent between the Pulsations of the Heart, and the Number of Respirations; tho' it is hard to account for such a Consent.

Hence we perceive the Necessity of reiterated Pulsations of the Heart, in order to the Repetition of Respiration. But how long these may stop, without destroying Life, is hard to determine.

Hence also we understand, why in an asthmatic Paroxysm, a Peripneumony, a Difficulty of Breathing, and in the Agonies of Death, Respiration is performed by the vital Muscles, whilst those under the Direction of the Will greatly contribute to it: So that the Neck, Scapulæ, Breast, inferior Ribs and Back, are evidently moved.

Why in perfect Health, when the Body is at Rest, and the Person awake, Respiration is so slow and still, that it is hardly perceptible, and at the same time the Circulation of the Humours brisk.

Why in Coughing and Sighing, the Respiration being accelerated, the Motion of the Blood through all the Vessels is increased.

Why the first Action of Respiration is Inspiration, and the last Expiration.

Why when in Diseases the Respiration ceases long, the venous Sinuses, the Auricles, and the Heart itself, palpitate.

And why it is, that an Air which is highly heavy, light, moist, dry, hot, or cold, compressed or rarified; as also that which being pent up in a small Space, is not soon renewed, is absolutely unfit for performing Respiration, and continuing Life. *Boerhaave Institus.*

OF PROGNOSTICS FROM A GOOD AND BAD RESPIRATION.

That a free and regular Respiration, according to Nature, is always of great Moment towards predicting the Recovery of the Patient, is, I believe, universally acknowledged. *Hippocrates*, in his Book of *Prognostics*, tells us, "That a Facility of Respiration has a great Influence towards a Recovery in all acute Diseases, which come to a Crisis in forty Days." And he had very good Grounds for so pronouncing, when, as *Galen* says in his Commentary on the Place, "A good Respiration shews that the Thorax, Heart, Lungs, Diaphragm, Pleura, and, in short, all the Parts contributing to Respiration, are in a sound State; for it is impossible for any of the Organs subservient to Respiration to be injured, and the Patient at the same time to breathe in a free and natural manner." And therefore the same Author, *Lib. I. de Cris.* among other Signs, justly reckons a good Respiration. But that we may with Certainty prognosticate a good Event, there are two other Signs to be also regarded, which are, a strong Pulse, and a right Disposition of the Sick, with respect to such Things as are offered for his Sustenance; for these three Signs observed at the same time, that is to say, a just and natural Respiration, a right Disposition of the Patient with regard to Meat and Drink, and a Pulse sufficiently strong, are Indications of great Importance toward prognosticating a good Issue to the Disease, as *Galen* in 3 *Epid.* observes; and they have frequently proved salutary Indications in those who have been regarded as dying Persons. A due Respiration, therefore, in all acute Diseases, is good, and the contrary bad, as it indicates an Indisposition of some Organ belonging to Respiration. This last Sign, however, is of itself no sufficient Indication of a fatal Event, but only in Conjunction with other mortal Prognostics; in which Circumstance, it is a most fatal Indication, when attended with an Abhorrence of Food, a very dry and parched Tongue, and yet no Thirst, Excrements of the worst kind, and a very weak and low Pulse; and the Physician may, in such a Case, confidently predict the Death of the Patient. A bad Respiration then is always a bad Sign, though it be not always mortal in acute Diseases; but it is always very bad, when attended with another very bad Sign, and much more so, if attended with many such Signs. Of such a Respiration *Hippocrates* speaks, 11 *Aphor.* 50. where he says, "In a Fever not intermittent, a Dyspnoea, attended with a Delirium, is mortal."

If it be asked, what are these bad Respirations? we answer, they are the great rare Respiration, and the small frequent one, which, in dying Persons, *Hippocrates* usually calls *Βραχυπνοια*, *Brachypnoia*, [See BRACHYPNOEA.] a small, slender, weak, diminished Breathing. Those Respirations are also very bad, which are performed with a Sound of the Thorax, like that of Persons on the Point of Suffocation by Drowning, being obscure, stertorous, and interrupted. Of such we find *Hippocrates* speaking, 11 *Aphor.* 67. "In Fevers, says he, the Breath striking with a Noise in its Passage [*τὸ πνεῦμα ἀκούσθαι*, See PNEUMA] is bad; for it indicates a Convulsion." By this striking or impinging Breath, *Galen*, in his Comment on that *Aphorism*, understands one which is interrupted in the Middle, and stops. A sobbing kind of Respiration [*κλαυθώδης πνεύματι*] is also very bad, as we are taught by *Hippocrates*, 6 *Aphor.* 54. But the worst of all Respiration, and such as is observed in dying Persons, are the cold, as when the Breath is expired cold from the Mouth and Nostrils. Next to these, are those we find mentioned, *Coac.* 260. with the Epithets, *extended*, *urgent*, and *obscure*, [*ἐκτετατόν, καὶ κατενέμον, καὶ ἀφανές*] where they are pronounced very bad, and Signs of approaching Death. By the first of these, we are to understand the same with the *sublime* or *apparent*, [See PNEUMA.] in which the Breast, and sometimes the Scapulæ, are distended, and the Lobes, or Pinnæ, of the Nostrils, are moved; but what is inspired, is so little as to be scarce perceptible to Sense, and yet the Inspiration is very quick and frequent, on account of the extreme Urgency of the Heat, which gives Occasion for the two other Epithets of *obscure*, and *urgent*, or *hasty*. These then are the several Kinds of bad Respiration; and we shall now treat of the Prognostics, which may be drawn from them separately.

A great and quick Respiration, tho' it indicates a Redundance of fuliginous Excrements in the Body, according to *Galen*, *de Difficult. Resp.* *Lib. I. Cap.* 20. yet it shews us, he says, the Soundness and Integrity of the Faculty; and that none of the Organs serving to Respiration is injured; for their Greatness, or Fullness, and Quickness of Respiration, is occasioned by the Necessities of Nature, when there is a Promptitude of the Organs, and an entire Soundness of the Faculty. A great or full Respiration, and at the same time slow; or 22 long

long Intervals, shews a Delirium; and a small and quick Respiration indicates a Collection of fuliginous Excrement, or a Pain in some Part which is moved by Respiration, or, as *Hippocrates* says, in his *Prognostics*, an Inflammation of the Parts above the Diaphragm. A small and slow Respiration, as *Galen* observes, in his *Comment* on the *Cafe of Pythion*, 3 *Epid. Sect. 3. Aeg. 3.* where there is no Collection of fuliginous Excrement, indicates a Pain of some Organ subservient to Respiration, or else an Inflammation of some neighbouring Part. These two last Differences of Respiration, with bad Signs, are more to be dreaded than the two former, as they indicate a great Weakness or Decay of the Faculty, or at least a Pain in some Part which moves the Thorax. Upon the whole then, a great and quick Respiration is a Sign of much Heat, and a Redundance of fuliginous Excrement, but attended with a Soundness and Strength of the Faculty. A great, and at the same time a slow Respiration, is better than the former, as it approaches nearer to a sound and healthy State, and is an Indication of the Soundness of the Faculty without much Heat, and without fumous Excrements. All these are to be regarded by the Physician, in Conjunction with other Signs and Prognostics, to be formed from them altogether. But we proceed to speak of Respirations which are both great and dense, and, on the contrary, of great and rare Respirations, the Knowledge of which will afford us many Prognostics, for predicting the Fate of the Patient.

A great, and at the same time dense Respiration, is, when Inspiration is great and full, and Expiration hot and fervent through the Mouth and Nostrils. And this happens, as we read in the *Prognostics*, from a Pain or Inflammation affecting some Organ subservient to Respiration, or a Part of the Thorax; for Instance, the Heart, Diaphragm, Lungs, Pleura, or Muscles of the Thorax; for if these Parts be pained or inflamed for Want of a due Dilatation, a Dense ness of Respiration must of necessity be the Consequence: Such a Symptom, however, indicates a Strength of the Faculty, which gives great Hopes of a Recovery. A great and rare [*αἰσίων*, as when the Breath is long in drawing, in opposition to *dense*, *πυκνόν*] Respiration in acute Fevers, indicates a Delirium, according to the *Prognostics*. But what are we to understand by a great Respiration? Is it where there is a great Dilatation of the Thorax? By no means; for in those who are affected with a Tumor, or a Straitness of the Organs of Respiration, without any flammeous Heat, there is a very great Dilatation of the Thorax, but Inspiration is but small; we say, therefore, that a great Respiration is so called on account of the great Quantity of inspired Air, and expired fuliginous Particles; and this seems to be expressly the Sense of *Hippocrates*, in those Words, *μύστα δ' ἀναπνεύμενον [πυκνόν]* which must be understood of the great Quantity of Breath in Respiration, and not of the Dilatation of the Thorax. To this it may be added, by way of Confirmation, that among the Differences of Respiration, what they call the sublime and apparent one, tho' attended with a very remarkable Dilatation of the Thorax, is yet but small and slender, as appears from *Galen*.

But why is a great and rare Spirit an Indication of a Delirium? *Galen*, *Lib. 2. de Difficult. Resp.* has demonstrated the Truth of this Observation at large; but then it does not follow, that all delirious Persons should breathe after this manner; for a Delirium may be attended with a Straitness of the Breast, or a Pain, or a Decay of Strength; all which occasion a small and rare Respiration. All, however, who labour under this Symptom of great and rare Respiration, are certainly delirious, as was particularly observed by *Hippocrates* of *Philiscus*, *Silenus*, the Wife of *Dromeades*, and others. As to Prognostics, from this kind of Respiration, they are always of Importance, because a Delirium is always bad, though not mortal, except when it is attended with other bad and mortal Signs, as it was in the Cases of *Philiscus*, *Silenus*, the Wife of *Dromeades*, and the phrenetic young Man of *Melibæa*. Of *Philiscus*, 1 *Epid. Aeg. 1.* it is said that his Breath was constantly *ἀσπάζον ἀναπνεύμενον, ἀσπάζον, μύστα*, “as if it were” “revoked inwards, rare, great, [See PNEUMA] his Spleen” “was elevated into a round Tumor; he was always in a cold” “Sweat, and he had Exacerbations on even Days.” In this Sense, cold Sweats were one fatal concomitant Sign. *Silenus*, *Aeg. 2.* “had, from the Beginning to the End, a great and” “rare Respiration, accompanied with a continual Palpitation” “of the Hypochondrium,” which at length proved mortal; for in the Beginning he made black Urine, which deposited a black Sediment, was delirious, and had pinguious Stools. On the sixth Day he sweated a little above his Heart, and his extreme Parts were cold and livid, with other Symptoms, which in Conjunction with his great and rare Respiration, were more than sufficient Indications, not so much of a Delirium, as of the Fatality of the Disease. Of the Wife of *Dromeades*, *Aeg. 11.* we read, “That on the sixth Day in the Morning,

“she was seized with a Rigor, which was soon succeeded by” “an universal Heat, then by a Sweat all over, and a Cold-” “ness of the Extremities, a Delirium, and a great and rare” “Respiration; and a little after she was seized with Convul-” “sions, which began at the Head, and carried her off on a sud-” “den.” The young Man of *Melibæa*, 3 *Epid. Aeg. ult.* “had a rare and great Respiration, and at long Intervals,” “with a softish Tension of the Hypochondrium, of an oblong” “Figure, was continually molested with a Palpitation of the” “Heart, and made Urine like Oil.”

A small Respiration is what *Galen*, *Com. 3. in 3 Epid.* after *Hippocrates*, calls *slender* and *diminished*, [*λεπτὴ καὶ μειωμένη*] and also *obscure*, because the Patient can hardly be perceived to breathe. Such a Respiration is always bad, as proceeding from Weakness, and a Decay of the natural Heat; and if this small Respiration be also frequent, it is an Indication, according to *Galen*, of a Pain or Inflammation in some Part above the Diaphragm. But the Author of the *Coac.* 260. says, that a frequent and small Respiration indicates a Pain or Inflammation in the principal Parts. Such a Respiration is very much to be dreaded in acute Diseases; and the more, if it be consequent upon a great Respiration; for it is an Indication either that Nature is very much sunk, as was before observed, or that some principal Part suffers under a Pain or Inflammation, or both together; nothing, however, can, with Certainty, be predicted from this Respiration alone, unless it be confirmed by other Signs; for many under acute Diseases, whose Respiration has been small and frequent, have recover'd. But when it is accompanied with other bad Signs, we have the greatest Reason to be apprehensive of the Event, and most when from frequent it becomes small, as is observed in the last Stage of a Consumption. A frequent, then, or quick, and at the same time a small Respiration, with bad Signs, is mortal, as it was in the Case of the Sister of *Temeneus*, 4 *Epid. T. 28.* who, on the sixteenth Day, was observed to have such a Respiration, and died soon after.

A small, and at the same time rare, or an unfrequent Respiration, is perhaps the worst of all, as it indicates that Nature is oppressed and exhausted to such a Degree, that it must of necessity sink under the Disease; for which Reason it is by Physicians justly called a cold Respiration, as being a Sign of an extreme Degree of Cold, or an Extinction of the natural Heat, agreeably to that of *Galen*, *Com. 3. in 3 Epid.* where he says there is a kind of small and rare or unfrequent Respiration, which, when cold, shews that the vital Faculty is extinguished. This is confirm'd by *Hippocrates* in his *Prognostics*, where a cold Expiration from the Nostrils is pronounced mortal in a high Degree, as it was for Instance, in dying *Pythion*, 3 *Epid. Sect. 3. Aeg. 3.* and others observed by the same Author.

Having made these Remarks on Respirations, and what is indicated and portended by them, we shall proceed to examine in particular those Respirations which are observ'd in dying Persons, of which Nature are the cold, the sublime or apparent, the stertorous, or what is attended with Noise, and sometimes the sobbing and interrupted. Of a cold Respiration, which is the most mortal of all, and never observ'd but in those who are very near Death, *Hippocrates*, 6 *Epid. Sect. 4. Aph. 27.* thus speaks; “Among deadly Signs is to be reckon-” “ed a hot Vapour exhaling through the Skin and the Nostrils,” “when a cold Expiration through the Nostrils has preceded” “it.” This is better express'd by *Galen* in the following Words: “One of the most mortal Signs is a hot Vapour” “proceeding from the Skin, after a cold Breath discharg'd” “by Expiration; but the Exhalation of a hot Vapour thro’” “the Skin and Nostrils, is not always a sufficient Warrant” “for predicting Death; for, as he says a little after, such a” “Symptom only happens to those who die of a very hot Fe-” “ver, which having torrefy'd the very Substance of the” “Heart, ends at last in a Refrigeration of the same; the” “vital Faculty then ceasing to act as the Heart dies. Some-” “times there is an Eruption of Sweat, as when the Body is” “full of Humours; but when it has been before exhausted and” “dried by the Heat of a violent Fever, a hot Vapour instead of” “Sweat seems to exhale, and offer itself in a sensible manner” “to the Touch.” Hence in *Coac.* 160. “A febrile and fuligi-” “nous Respiration is pronounced mortal, tho' in a less De-” “gree than the cold.” Physicians, therefore, usually call these three Signs deadly, which are, a Burning Fever, a cold and rare Respiration, and a hot Vapour from the Skin, which we may sometimes call Sweat, or Moisture, and which in Fevers is a Forerunner of Death.

An obscure Respiration, also, as when the Patient can hardly be known to breathe, is no less mortal than a cold Respiration. An *obscure* Respiration is when hardly any Breath is discharg'd by the Mouth and Nostrils. In this Sense a Respiration may possibly be very obscure, and yet appear very manifest to all, as when the Thorax, Scapulae, and Lobes of the Nostrils

Nostrils are moved, which kind of Respiration Physicians properly call the *sublime* and *apparent*, tho' a very small Quantity of Breath be expired, on which Account it may be very obscure. Of such a Respiration we read, *Coac.* 260. where it is said, "The worst of all Respiration, and what shews Death to be very near, is the extended, urgent, and obscure."

We come next to treat of a stertorous Respiration, or such as is perform'd with a Sound or Noise. A stertorous Respiration is when, in Breathing, there is perceived in the Throat a kind of Ebullition, or Noise, which we call a *Stertor*, or such as Persons make in Snoring. This Word is express'd in *Latin* by the Words *Streptus*, *Senus*, and *Ebullitio*; and in *Hippocrates* by *ῥῆγξος* (*Rhencos*), *ῥῆγξος* (*Rhencis*), and sometimes by *ῥῆγξος* (*Cerchnos*). In those who die of acute Distempers this Fervor or rattling Noise in the Throat is generally heard for a little more than a Day before their Decease, and indicates an Extinction of the Faculty, which is become too weak to expel the excrementitious Particles from the Fauces. In others, who labour under Diseases of the Thorax, as a Pleurisy or Peripneumony, this Stertor is occasioned by a Straitness, or a Retention of the Spit, attended with a small Respiration, and oftentimes with an Orthopnoea, the most difficult of Respirations. In almost all dying Persons this Fervor, or Stertor, is perceived a little before their End; but most of all in those who die of Pleurisies, Peripneumonies and Suppurations of the Lungs, who are every one affected with it, for which reason we must pronounce it a mortal Sign. But we are carefully to distinguish here with respect to the Time when this Stertor first comes upon the Patient, as whether it be in the Beginning, or Increase of the Disease; for if it is to be fatal, it never comes but after some other mortal Signs, as it did in the Case of the pleuretic Son of *Antiphanes*, 7 *Epid.* 28. and of *Menon*, another pleuretic Patient, 47. of whom *Hippocrates* says: "On the sixteenth Day his Respiration was stertorous; he had a Sweat about his Neck and Forehead, but seldom about his Breast; his Forehead and extreme Parts were perpetually cold in a moderate Degree. He had a continual Palpitation of the Veins about the Temples; and for some Time before his Death, was affected with a Coma, which held him Night and Day." A stertorous Respiration, therefore, in acute Diseases, is generally pernicious; and when preceded by, or attended with other bad Signs, the most fatal of all Symptoms, as it proved in the Case of *Menon* before-mention'd, who, among other bad Signs, had a Sweat about his Neck and Forehead, which *Hippocrates* in his *Prognostics* pronounces mortal in acute Diseases, and a Coldness of the extreme Parts, one of the worst of Symptoms. But in a Pleurisy, or Peripneumony, and that they call a catarrhus Fever, because consequent or attendant upon a Catarrh, a Stertor is sometimes occasion'd by the Plenty of excrementitious Particles, or a Redundance of the Matter of the Catarrh falling down upon the Breast and Fauces, and is no more a mortal Sign, than it is in an Asthma or Orthopnoea, where the Patients are frequently relieved by an Excretion or Resolution of the Humour. But a mortal Stertor is distinguished from another, in that it not only begins, but increases more and more with the Disease, and is still more and more sensible; for such a Stertor is mortal in the highest Degree, and is attended with all the mortal Signs: Whereas a Stertor, which begins with the Distemper, and in a little Time after, as the Disease increases, either through a plentiful Excretion of Humours by Means of a Cough, or the Consumption of it by the igneous Heat of the Fever, leaves the Patient, is not so much to be dreaded, as occasioned only by a Redundance of Humours, especially if it ceases for some obvious Reason. But a Stertor, which tho' it be occasion'd in the Beginning of a Disease by a copious Catarrh, yet every Day increases, must of Necessity be pernicious, because it is a sure Sign that Nature is so far burden'd and oppress'd with the Multitude of Humours, as to be rendered incapable of making the necessary Excretions, whence a Suffocation is to be apprehended. Thus it was with the Wife of *Polemarchus*, 5 *Epid.* 62. of whom it is said, "That about the fifth Day she had a painful Tumor of the Left Knee, and something seem'd to be gather'd about the Region of the Heart, and her Respiration was like that of one on the Point of Suffocation by Submersion, with a rattling Noise in the Breast. On the seventh Day she died." The Son of *Antiphanes* also, 7 *Epid.* T. 28. who was affected with an Empyema, died with a Stertor upon him. To this we may add, that *Hippocrates*, 1 *Prorrh.* 25. tells us, "That under an Aphony, or Loss of Voice, a conspicuous [*ῥῆγξος*. See *PNEUMA*.] Respiration like that of Persons suffocated, is pernicious." And so much for a stertorous Respiration, called also by some *Regmos* and *Cerchnos*.

We come now to consider the sublime or elevated, and apparent Respiration, which also is never observ'd but in dying Persons. Some call this kind of Respiration *sublime*, some

apparent, some conspicuous, [*ῥῆγξος*, *promptum*, readily offering itself to View] and some erroneously a *great* Respiration, because they observe the Thorax very much moved and dilated under it. Persons under this Circumstance, as *Galen Com.* in 1 *Prorrh.* says, may very properly be said to be strangled, because they want Air. And it is customary with the same Author to call this kind of Respiration *φανέρωτος* (*Phanomenon*) "apparent." The Patient in this Case seems in drawing his Breath, to move his whole Scapulæ; so that their Motion appears conspicuously through his Cloths, and the upper Parts of the Thorax seem to labour in the Work. For this reason *Galen* calls it, also, *μετέωρος* (*meteoron*) "sublime," because the Patient in such a Case seems to move the higher and more elevated Parts of the Thorax. He gives us also the Causes of this kind of Respiration in what follows. "Such a Respiration, he says, may be owing to a Straitness of the Organs, or to some Disorder in the Origin of the Nerves, which latter *Hippocrates* justly thought might be the Cause of a great Respiration, he had more properly said not a great Respiration, but a great Dilatation of the Thorax, by which some being deceived, have erroneously called it a great Respiration, tho' Expiration in this Case be but small." We may add that *Galen* and *Hippocrates* bestow the Epithet of *sublime*, not only on this kind of Respiration just describ'd, but on that also under which the Lobes of the Nostrils and the Muscles about the Scapulæ are visibly moved, which latter Respiration happens in acute Diseases from an extreme Weakness. *Galen, Com.* in 3 *Epid.* 24. speaking on this Subject, says, "By those who are said to fetch their Breath by the Extremity of the Nose, [*ἀπὸ τῆς ῥίνας*] are meant those I suppose, who in Respiration move the Lobes of their Nostrils, for we have seen many sick Persons breathe in such a manner as to contract those Parts in Expiration, and dilate them in Inspiration." This is a usual Symptom with those who are suffocated by a Quinsy, Peripneumony, or Suppurations of the Lungs, as well as those who are extremely weak and exhausted, and proceeds from an Obstruction of the Passage for the Breath by an Inflammation of the Aspera Arteria, whence the Patient is under a Necessity of fetching his Breath short, and with all his Thorax, and often strives to raise himself up when just suffocated, and attracts the external Air with all the Remainder of his Strength, and with his whole Thorax; and perhaps this Sort of Respiration was by *Hippocrates* called *sublime*, or elevated (*μετέωρος*) because the Patients in such a Circumstance strive to raise themselves. This *sublime* Respiration, then, is usual in Persons labouring under a Quinsy, Peripneumony and Empyema, and for the Reasons assigned.

In other acute Diseases, under which the Patients are not suffocated by the Straitness of the Organs, this Respiration by the Extremity of the Nose has another Cause, of which *Galen, de Diffic. Resp. Lib.* 1. *Cap.* 23. gives the following Account. "If any one would have the proper Signs of a Disorder in the Faculty of Respiration, or of any Animal Faculty in general, and especially when under a Perfrigeration, he will have for those Signs the Motion of the Lobes of the Nostrils, the Action of all the Muscles about the Scapulæ, and the precipitate Collapsion of the Thorax; for when the Faculty by which Respiration is perform'd, moves with less Vigour than it ought, it is assisted in Inspiration by the Lobes of the Nostrils, which also help towards attracting the external Air, after the same manner as when we would draw in any Thing by the Mouth, we contract the Lips; and thus again in Expiration there is a precipitate Collapsion, and not a gradual Demission of the Thorax." In short, then we may conclude from what has been said, that what we call a *sublime Respiration*, however occasioned, is always mortal, as indicating an extreme Straitness of the Organs of Respiration, by which Nature is in imminent Danger of Suffocation; or else an utter Decay of Strength, and Extinction of the natural Faculties, for which Reason it is never observ'd but in dying Persons. It is, also, never without some other precedent, attendant, or subsequent mortal Symptoms, for this kind of Respiration never appears without some other deadly Sign; whence it is said by the Author of the *Coac.* 260. that "The worst Kind of Respiration, and what shews Death to be just at hand, is the extended, urgent and obscure." We observed that tho' this Sign alone was a sure Prognostic of Death, yet it was always attended with other deadly Signs; as it was, for instance, in the Wife of *Olympiades*, 7 *Epid.* 49. of whom it is said, "That her Eyes were cast down, and that she drew her Breath in the sublime Manner through her Nostrils; that she was ill-coloured; and just before she died, had a Sweat about her Feet and Legs." Such, also, was the Case of dying *Aristocrates*, 52. of whom *Hippocrates* says, "That towards Night his Respiration was sublime, that he had a small Sweat about his Forehead, his lower Parts were cold, and he was restless."

To the other mortal Kinds of Respiration, we add the sobbing, [*σπασμωδία*] but small and rare Respiration, agreeably to the Judgment of *Hippocrates*, 6 *Aph.* 54. "In acute Diseases attended with a Fever, a sobbing Respiration is bad." An interrupted Respiration is no less pernicious, but this perhaps is the same with the former, which Opinion seems to be favour'd by *Galen* in his *Comment* on the before-cited *Aphorism*, where he says that "Children when they cry seem to draw in their Breath for a-while, then to have their Inspiration interrupted, their Thorax standing the mean time unmov'd, and afterwards to draw in a fresh Supply of Breath to what was wanting;—this is occasioned sometimes from a Weariness of the Faculty, sometimes from a Hardness of the Organs, and sometimes from both Causes in Conjunction. It may proceed, also, from a convulsive Disposition of the Muscles of the Breast." But whatever be the Cause, this sobbing and interrupted Respiration in acute Diseases is bad; and if the Strength of the Patient happens at the same time to be very much exhausted, pernicious in the highest Degree. Such a Respiration is also but small and slender, and in acute burning Fevers indicates a Hardness and convulsive Disposition, and is always bad, as well as Convulsions from the same Cause, which is a Dryness of the nervous Parts. Of this Kind of Respiration it is, also, that *Hippocrates* speaks, *Aph.* 67. where he says, "That an impinging or colliding, [*σπασμωδία*, which *Galen* explains by "interrupted"] Respiration is bad; for it indicates Convulsions." And Convulsions excited by Dryness in very hot Diseases are incurable, and consequently in acute Disorders mortal. But that we may rightly form our Prognostics concerning the Event of a Disease, from such Convulsions, we are to consider the Signs which precede, accompany or succeed them; and if none of these Signs are bad, we are to suspend our Judgment of the Fate of the Patient. *Prosper Alpinus de Præfag. Vit. et Mort.* p. 252.

RESSELLA. An obscure Term in *Paracelsus*, which he explains no farther than by telling us, that *Resella* is what removes Heat, and *Assa* what promotes it.

RESTA BOVIS. Rest-Harrow. See **ANONIS**.

RESTINCTION. *Rulandus* defines Chymical Restinction, A Gradation by which Substances heated red hot, are extinguished in an exalting Liqueur, and thus brought to their greatest Perfection.

RESTITUTIO, Restitution, in Surgery, is the Reduction of a luxated or fractur'd Limb.

RESTORATIO. The same as **ANALEPSIS**.

RESUMPTIVA. Restoratives.

RESUSCITATIO. Resuscitation, in Chemistry, is the Restoration of any disguised Body to its original Form.

RETE MIRABILE. A Congeries of Blood Vessels in the Brain is thus called. See **CEREBRUM**.

RETENTA. Things retain'd in the Body; or which ought to be retain'd in a State of Health.

RETEPORA. A Name for the *Eschara Rondeletii*.

RETICULARIS, or **RETIFORMIS.** Reticular, or like a Net.

RETICULUM. The second Ventricle of a ruminating Animal.

RETINA. The Expansion of the Optic Nerves on the internal Surface of the Eye, is thus called. See **OCULUS**.

The *Retina* is liable to two Sorts of Diseases; the first is a Separation of some Parts of this Membrane from the Choroides. At the Place where this Separation is made, there follows an Elevation or Fold, which stops the Light, and hinders its Passage to that Part of the Choroides, which is cover'd by this Fold; this occasions a sort of a Shade, which the Patients see in the Air. The second Disease of the *Retina* is an Atrophy or Wasting of that Membrane.

The Cause of the first Disease may, with a great Shew of Reason, be thus accounted for, that the Blood Vessels of the *Retina* become varicous; for it is easily conceived, that the Dilatation of these Vessels may separate the *Retina* from the Choroides, in that Part which answers the dilated Vessels. I have always observed this Disease to proceed from a Cold in the Head, after some violent Exercise, or whatever else may have put the Blood into a violent Motion. Hence I infer, that the external Cold, by obstructing the Pores of the Skin, has stop't the Perspiration of some Part of the Humours rarefied in the Blood Vessels, on the Surface of the *Retina*, which, from the Fineness of its Texture, is damaged by this Infarction, after the above-mention'd manner. I call this Disease a Separation of the *Retina* from the Choroides. As this Membrane fills a considerable Space in the Eye, this Separation is often made in several Places; so that the Signs of this Disease answer to the Number of the Parts separated.

Its Signs are certain Appearances in the Air, more or less distant from the Patient's Eyes. They are a kind of Shadows

of different Figures, modified according to the Size and Form of the Parts of the *Retina*, which is separated.

As to the Prognostic, there is no Danger of losing the Sight in this Disease; it is only troublesome to the Patient. As this Disease begins with the same Signs as a Cataract, one Disorder may be taken for the other; but to prevent the like Mistake, we shall propose the Difference. In a Cataract the Sight shortens and decreases daily; whereas, in the present Disease, the Sight continues the same both in Quickness and Extent.

Though Remedies do not perfectly cure this Disease, and that the Persons once attack'd with it see some of these Shades all their Life their Number and Compass, in Breadth may be still be lessened. The following Remedies are of Service; such are Broths made of Crabs, repeated Purges, Eye-Bright Tea drunk in the Morning, Powder of Vipers, Wood-Lice, and Eye-Bright mixed together.

In an Atrophy of the *Retina*, as the Rays of Light are not sufficiently modified in that Membrane, they make too vivid an Impression on the Choroides, which is very detrimental to it. Hence ensues a confused Vision; so that the Patients, at the first Look, can see very well; but if they continue to read any time, or to look at any shining Object, they feel a sudden Weariness in their Head, and a Dimness in their Sight, which obliges them to close their Eyes; then opening them a Moment after they see, as at the first Look, but for a short Time.

Embroiderers, Stocking-Weavers and Shoemakers are subject to this Disease; the first because the Brightness of the Gold, Silver, and other Colours, damages the Sight by the lively Impression it makes on the Eye; and the Shoemakers, in order to find the Hole made by their Awl, to run the End through it, by this continual Attention fatigue and weaken their Sight so much that they are obliged to quit their Trade. These People can work but a few Days in the Week.

There are some People, though they do not work as these Handicrafts, cannot, however, make use of their Sight a Quarter of an Hour, but their Head is disordered; of those I chiefly treat.

No Remedies cure this Disease. Nothing avails, but rest and little Exercise of the Sight. All those Persons who are employed at fine or shining Work, if they have a mind to continue, must make use of green Spectacles.

RETINACULUM. A Chirurgical Instrument, used in Castration, and the Operation for a *Hernia*, in order to prevent the Intestines from falling into the *Scrotum*.

RETORTA. A Retort; a chymical Vessel with a large Belly, and crooked Neck, resembling a Horn; for which reason the French call it *Cornue*.

RETRACTIO. The same as **ANTIPASIS**.

RETRAHENS AURICULAM. The Name of a Muscle called also *Triceps Auris*, because it has sometimes three Beginnings. *M. Du Verney* says it is composed of five or six fleshy Fibres, which have their Origination from the superior and Fore-part of the *Apophysis Mastoidea*, and descend obliquely to their Insertion in the Middle of the *Concha Auriculae*. *Cowper*.

RETRANSMUTATIO. When a Substance originally in a fluid, but afterwards in a solid State, is again reduced to a Fluid, this is called, by *Paracelsus*, a Retransmutation.

RETRIMENTUM. An Excrement, or Recriment of Metals, or any other Substance.

RETROCESSIO. The same as **EPANACLESIS**.

REVERBERATIO. The Calcination of a Body in a Reverberatory Heat.

REVERBERATORIUM, or **REVERBERIUM.** A Reverberatory. See **IGNIS**.

REVERSIO. A Relapse.

REVIVIFICATIO. Revivification. The same in Chemistry as **RESUSCITATIO**.

REVIVISCENTIA. The same as **REVIVIFICATIO**.

REVOCATIO. The same as **EPANACLESIS**.

REVULSIO. Revulsion. See **INFLAMMATIO**, and **PHLEBOTOMIA**.

REX. A King. The Invention of several Branches of Physic is ascribed to Kings and Heroes, some of which in ancient Times were very skilful in this Science. I don't know that this Word relates farther to Medicine, unless the Royal Touch could be thought medicinal; in which there is nothing so wonderful, as that a Man of the celebrated *Wise man's* Understanding, should treat it as a Reality.

RHA. See **CENTAURIUM**.

RHABBARBARUM. *Offic.* J. B. 11, 989, 1075. *Ger.* 316. *Ogilb. Chin.* 1. 212. *Rhabarbarum Officinatum*, C. B. P. 116. *Rhabarbarum genuinum Officinatum*, Park. *Theat.* 156. *Rhabarbarum ficcatum*, *Ger. Emac.* 393. *Rhabarbarum lanuginosum, sive Lapathum Chinense longifolium*, Munt. *Herb. Brit.* 196. *Raii Hist.* 1077. *Rhabarbarum, sive Rheum Officinatum*, *Geoff. Tract.* 296. **TRUE RHUBARB.**

We do not certainly know the Plant of which Rhubarb is the Root; it is probably a Species of *Lapathum*, called by *Herman*, *Lapathum Sinenfe*. It is brought from *China*, but *Muntingius* pretends that he cultivated it in *Holland*, in his Book *De Vera Herba Britannica*.

It is one of the best and mildest Catharticks in the whole *Materia Medica*; it operates very well on the Bile, and on all the Viscera of the Abdomen, and at the same time strengthens the nervous Fibres. On these Accounts, it is proper in weak Stomachs and Intestines. It is given in Substance from twelve Grains to half a Dram; and in Infusion, from half a Dram to a Dram and a half; and in a small Dose, it becomes an excellent Alterative. It purges the Bile very effectually, and has a greater Force than any other Purgative, in opening Obstructions of the Liver. It is found by certain Experience, to evacuate the Bile, preferably to any other Fluid. On this account, it is the Panacea of Children; and also because it strengthens the Stomach, and carries off all sorts of Matter that stagnate therein. It is a very good Remedy for Worms, and is given to Children subject to chronic Diseases, in a Pisan, called Rhubarb-Water. The Use of Rhubarb is, however, dangerous, when the Kidneys or Bladder are suspected to be inflamed, because it heats considerably; and for this Reason it is improper in Hæmorrhages. It is very good in a Looseness, because it purges and strengthens at the same time. In Cachexies, it ought to be given in small Quantities for a considerable time. *Geoffroy*.

There are two Sorts of *Rhabarbarum* sold; an Oriental, imported from *China*; and this is ponderous, distinguished by gold-coloured and red Veins, bitterish and astringent, sweet-scented, rather of a yellow Colour; and being moistened, stains the Hand with a Colour like that of Saffron; and is much esteemed for its Virtues. The other Sort comes from *Russia*, and is ponderous, and of a darker Yellow, and less valued than the other.

Rhubarb is a mild and gentle Purger of yellow Bile, and viscous and tartareous Phlegm from the Stomach and first Region. It is a Specific for the Liver cures a Jaundice, and for its astringent Quality is commended beyond other Medicines, for all Disorders proceeding from Relaxation, as a Diarrhæa, Dysentery, and the like.

This Root was unknown to *Dioscorides* and *Galen*; and therefore some are very erroneous, in confounding the *Rha*, or *Rheum*, of the Ancients, with our Rhubarb; for the *Rheum* of *Dioscorides* has less of a cathartic Quality, and wants the Characters of the true Rhubarb, which is a compact Substance, ponderous and dry, of a bitter Taste and acrid Smell, of a reddish Colour on the Outside, and of a light Red inclining to Yellow within, with some Veins of a deeper Colour, and being macerated or chew'd, dyes of a Saffron-Colour. *Rapontic*, on the contrary, is not of a close but thin Substance, and not ponderous but light, and wants the sweet Scent of Rhubarb. *Dale*, from *Le Brun*.

A Decoction of the Leaves very gently evacuates the Belly, resists the Scurvy, and strengthens the solid Parts. Some old Persons say, that the Root of this Plant is the only Cathartic which ought to be given in Diseases; and one of eighty Years in particular tells us, that he was deceived in all other Medicines but Rhubarb. Some assert it to be effectual for correcting a vitiated Bile, and for removing chronic Disorders which owe their Rise thereto. The Root consists of subtle Parts, whence it penetrates through the thinner Parts of the Blood, and tinges the Blood with the Colour of Saffron; for if you take ten Grains of it in the Morning, it will communicate its Saffron-like Colour and Smell to the Urine, which proves it to be of very tenacious Parts with respect to Colour. Hence it becomes effectual for depurating the Blood from thinner Impurities, for cleansing the Kidneys from Sand and Gravel, and for resolving lubricous, grumous, and pituitous Matter. It is an excellent Remedy in all Extravasations and Stagnations of Blood; and it is said to be of extraordinary Efficacy in the Stone, Jaundice, Dropsy, and other Affections of the Liver, proceeding from a vitiated Bile. It is commended also against Inflammations, Weakness of the Stomach, and all Pains incident to it; for Convulsions, for Disorders of the Spleen, Liver and Kidneys; for racking Pains of the Bladder, and Disorders of the Thorax; for Distensions of the Hypochondria, Affections of the Uterus, and the Sciatica; for spitting of Blood, attended with Difficulty; for the Hiccups, Dysentery, Cæliac Passion; to prevent the Return of the Fits in Fevers, and for the Bites of venomous Animals; outwardly applied with Vinegar, it removes the livid Marks of Blows, and the Impetigo. The Root is a very good Remedy in Contusions; cleanses the first Passages, strengthens the Intestines after purging, and is an admirable Cathartic for Infants whose Fibres are too lax. It deserves all the high Commendations bestowed on it for the Dysentery, Diarrhæa, and all Diseases proceeding from a schirrous and cancerous Matter, being exhibited to the

Quantity of two Scruples. Ten Grains given every Morning, so as to be just enough to purge, is the best of Deobstruents in inveterate, hypochondriacal and scorbutic Diseases, and restores the Strength of the Viscera, and the obstructed Fibres. The Virtue of the Root consists in the Mixture of a subtle and acrimonious Salt, with mucilaginous and earthy Particles; those saline and acrimonious Particles, in proportion as they are more or less disengaged from the Mixture of mucilaginous and earthy Particles, in which they stuck and were intangled, the more or less they exert of their stimulating Force. Sometimes they excite so great a Commotion, as to press upon the Liver itself, and especially the Gall-Bladder, whence may follow a double Excretion of Bile; which proves the Root of extraordinary Efficacy in the Jaundice, as was before observed. Its cathartic Virtue consists in its Salt, and not at all in its Resin or oleous Particles, as appears from its Tincture, which is extracted with Water. Now it is clearly demonstrated from Chymistry, that Water can never resolve resinous nor oleous Substances; and besides, the Tincture extracted by Spirit of Wine is not so potent a Cathartic as what is extracted with Water; nay the Water itself, after Mixture, does not become milky, as it happens in all other Tinctures, which are extracted from oily and resinous Substances; and it is further to be observed, that these saline Particles may be so dissipated or dissolved by the Quantity of Liquids, as to be incapable of exerting their Force. The Root when dried up with Age, loses its Acrimony, and all its cathartic Virtue; as it does, also, in Boiling. The Smell of it in some provokes to Stool. It is of Service in a Gonorrhæa, by allaying the Heat of Urine, expelling the Malignity, and stopping the Flux. It is usually prescribed in Substance from half a Dram to two Drams; the Dose of the Extract is two Drams, of the Tincture one Dram. The Root roasted or dried is astringent, and as effectual in a Dysentery as Terra Sigillata; and being mixed with Nutmeg and Laudanum, proves an excellent Remedy for an immoderate Flux of the Belly, its astringent Virtue diffusing itself into all Parts. *Pechlius* employed it for Hæmorrhages of the Nose, and such like Cases. The Root is sometimes hurtful in a Vertigo; it destroys Worms, and is an Ingredient in many official Compositions. *Hist. Plant. ascript. Boerhaave*.

Alexander Trallianus, in the Opinion of *Dr. Friend*, was the first Physician that mentioned Rhubarb, who recommends it in a Weakness of the Liver, and a Dysentery, tho' *Mr. le Clerc* tells us, that the *Arabians*, indeed, in translating *Dioscorides* and the *Greek Physicians*, confound this Root with the *Rhaponticum*, and ascribe the Virtues, which the Ancients have observed in this latter, to what is properly the *Rhabarbarum*; as may be evident to any who will look into the Description, which *Rhazes* gives of it. And I believe *Alexander* himself, tho' 'tis plain Rhubarb was known in his Time, was in the same Mistake; for he mentions it only as an Astringent, as the elder *Greeks* describe the *Rhaponticum*, without the least Hint of its purging Virtue. *Paulus* seems to be the first who takes any Notice of the purging Faculty in the *Rheum*, (he calls it simply so) and tells us, how we may make some laxative Medicines stronger, by the Addition of this. And *P. Alpinus* says, that some have observed, that even the *Rhaponticum* would sometimes purge, tho' in a less Degree than Rhubarb. The modern *Greeks* gave this Root the Name of *Barbaricum*, not from the Place of its Growth, but from the Place it was imported to; for the Country in the *Upper Ethiopia* was called *Barbaria*, as *Salmasius* well observes, from its lying upon the *Sinus Barbaricus*, in which were many great Emporiums, particularly *Rhapta*, the Metropolis of this Region. This Gulf, upon the East, joins with the *Indian Ocean*; and therefore *Actuarius*, and after him *Myrepsus*, calls this Plant *Pice Indica*. No doubt, in those times it was imported this way to *Alexandria*, and so might be known to these latter *Greek Physicians*. However, I must observe, that *Salmasius* does not take notice of *Alexander's* mentioning Rhubarb; but quotes *Paulus* for it, who does not mention it, but only in general speaks of, and describes the *Rha*. *Garcias ab Horta*, Physician to the *Spanish Viceroy*, tells us, he had learnt in *India*, that all the Rhubarb which was imported thither, and into *Persia*, grew in *China*; that it was brought thither by Sea and Land; but that the latter way of bringing it over *Tartary* to *Ormuz*, was much the best; for by Sea-Carriage, 'twas more subject to rot. *Freind's History of Physic*.

RHABDOIDES. Ραβδοειδής. A Name for the Sagittal Suture.

RHACHIA, or RECHIA. Ραχία, or Ραχία. An Overflowing or Redundance of Humours. *Galen. Exegesf.*

RHACHIS. Ραχίς. The Spine of the Back.

RHACHISAGRA, from Ραχίς. The Spine of the Back, and ἄγρᾱ, a Prey. A Species of Gout fixed upon the Spine of the Back.

RHACHITÆ, or RHACHILÆI. Ραχίται, or Ραχίαι. The Muscles belonging to the Spine of the Back.

RHACOS.

RHACOS. *ῥακος*, from *ῥακω*, to break or tear. A Rag used by Surgeons in dressing Wounds.

RHACOSIS, *ῥακοςίς*, is a Relaxation of the Skin of the Scrotum without that of the contained Bodies, being an Affection very indecent to the Sight.

The Method of Cure used by *Leonides*, was to lay the Patient upon his Back, and to cut off the superfluous Skin against a Board, or a Piece of hard Leather, after which he sewed up the Wound. But *Antyllus* used to take up the superfluous Skin with three or four Stitches of a Needle, and then with a Knife or sharp Pair of Scissars, cut off what was without the Stitches; then securing the Place with a Suture, he cured it as he did other bleeding Wounds. *P. Æginet. Lib. 6. Cap. 67.*

RHÆBOS. RHÆBOIDES. *ῥαῖβος, ῥαῖβουδής*. Incurvated, or intorted. *Hippocrates.*

RHAGADES. Fissures, or Chaps.

RHAGADIÆ. Apostemations of the *Pudenda*. *Rulandus.* Or Abscesses of the Knees. *Paracelsus.*

RHAGADIOLUS.

The Characters are;

The Calyx consists of narrow-channel'd Leaves, which, after the Flower is fallen off, become membranaceous Vaginæ or Sheaths, each containing a single Seed.

Boerhaave mentions two Sorts of *Rhagadiolus*, which are,

1. *Rhagadiolus*; alter. *Casalp.* 511. *Hieracium Stellatum*. *J. B.* 2. 1014. *Raii Meth.* 31. *Intybus*, *sive Endivia lutea*; *humilis, stellato semine.* *M. H.* 3. 53.

2. *Rhagadiolus*; *Lampfanæ foliis.* *T. C.* 36. *Boerb. Ind. Alt. Plant.* Vol. I. p. 92.

It has its Name, perhaps, from the *Rhagades* or Fissures of the Anus, Uterus, and Hands, which it is said to cure. *C. Baubine* gives it the Name of *Hieracium Foliatum Siliquosa*. *Hist. Plant. ascript. Boerhaave.*

RHAGADIOLUS, is also a Name for the *Hedynopsis*; *Annua.*

RHAGE. *ῥαγή*. A Fissure, or Chap.

RHAGES. *ῥαγές*. The Stones of Grapes; but the Extremities, or Pulp of the Fingers, are called by this Name. *Castellus.*

RHAGIUM. The Name of a venomous Insect, mentioned by *Ætius*, *Tetrabib.* 4. *Serm.* 1. *C.* 18.

RHAGOIDES. An Epithet for the *Tunica Uveæ* of the Eye.

RHAMMA. *ῥάμμα*. The same as *ACIA*.

RHAMNOIDES.

The Characters are;

It has the prickly or thorny Appearance of the *Rhamnus*; the Flower, which grows only on the Male Plant, is male, apetalous, and consists of a few Stamina, which arise from a bifolious Calyx. The Fruit on the Female Plant consists of a monospermous Berry, containing a roundish Seed.

Boerhaave mentions three Sorts of *Rhamnoides*; which are,

1. *Rhamnoides*; *florifera*; *falidis foliis.* *T. Cor.* 53. *mas.*
2. *Rhamnoides*; *fructifera*; *falidis foliis*; *baccis aureis*; *T. Cor.* 53. *fœmina.*

3. *Rhamnoides*; *fructifera*; *falidis foliis*; *baccis leviter flavescens.* *Tourn. Coroll.* 53. *Boerb. Ind. A.* 2. 174. *Raii Synop.* 3. 445. *Oleaster Germanicus*, *Offic. Rhamnus secundus Clusii*, *Ger. Emac.* 1334. *Rhamnus primus Dioscoridis Lobelio*, *sive littoralis*, *Park. Theat.* 1006. *Rhamnus falidis folio angusto, fructu florescente*, *C. B. P.* 477. *Raii Hist.* 2. 1592. *Rhamnus*, *sive Oleaster Germanicus*, *J. B.* 1. 33. **SALLOW-THORN.**

It grows in sandy maritime Places, flowers in *June*, and the Fruit is ripe in *September*. An acid Rob is prepared of the Berries, which is recommended for the *Dysentery*. *Dale.*

RHAMNUS.

The Characters are;

The Flower is monopetalous, Funnel-shaped, and tetrapetaloid or pentapetaloid. The Pistil, or Pointal, becomes a soft Berry, full of Juice, and full of four callous Seeds, which are gibbous on one Side, and flat on the other.

Boerhaave mentions eleven Sorts of *Rhamnus*, which are,

1. *Rhamnus*; *Catharticus.* *J. B.* 1. 55. *C. B. P.* 478. *Raii Hist.* 2. 1625. *Synop.* 466. *Tourn. Inst.* 593. *Boerb. Ind. A.* 2. 212. *Rhamnus Catharticus*, *Spina Cervina*, *Offic. Rhamnus solutivus*, *sive Spina insectoria vulgaris*, *Park. Theat.* 243. *Spina Cervina Gesneri & Officinatum*, *Volck. Flor. Nor.* 368. *Cervi Spina*, *Rapp. Flor. Jen.* 74. **BUCK-THORN.**

This is a Hedge-tree or Bush, whose Branches are full of long stiff Thorns, and yellowish green Leaves, about as big as the Sloe-tree, more neatly serrated about the Edges. The Flowers grow several together, being small, four-leaved and yellow, which are succeeded by little round Black-berries when ripe, yielding a purplish bitter Juice, and having three or four

angular Seed. It grows in Woods and Hedges, and flowers in *June*, the Berries being ripe about the latter End of *September*.

The Juice of the Berries purges serous, watery Humours pretty briskly, and is good against the Dropsy, Gout, Jaundice, and Scurvy, and very serviceable against the Itch, and all manner of Eruptions on the Skin.

The only Official Preparation is the *Syrupus à Spina Cervina*, Syrup of Buck-thorn. *Miller's Bot. Offic.*

By the Chymical Analysis, the Berries yield a great deal of acid Phlegm and Oil, a little fixed Salt and Earth: They are purgative, and very good to remove serous Humours in chronic Diseases; by which it relieves those who have the Gout, Palsy, Cachexy, Sciatica, and Rheumatism. Take a Dram, or a Drachm and a half of its Berries, powdered and mixed with a little Conserve of Orange-Flowers. They boil fifteen or twenty Berries in common Broth, adding half a Dram of Cream of Tartar; strain it through a Cloth, and give it the Patient to drink; some mix with it two Drams of Tincture of Steel, or boil half an Ounce of Iron-Rust in a Rag tied up in a Knot, for the Green-Sickness. The most common Use of these Berries is to make a Syrup of them. The Dose is from one Ounce to two, and even to three, when necessary; but it is proper to eat some Pottage after taking it. *Martyn's Tournefort.*

The Berries of this Shrub appear under three Colours; in the first Place, being gathered in the Time of Harvest, then dried, bruised, and macerated in Water and Alum, they appear of a yellow, or rather a Saffron-like Colour. Secondly, in Autumn, when through Maturity they have acquired a Blackness, being gathered, bruised, and kept in a Glass-Vessel, they represent a beautiful green Colour, which they call a SAP-GREEN. And, lastly, if they be gathered about the Feast of St. Martin, at which Time they still adhere to the Tree, they appear, according to *Tragus*, of a Scarlet-Colour. *Raii Hist.*

SYRUPUS DE SPINA CERVI

Syrup of Buck-Thorn.

The College-Dispensatory orders it to be thus made.

Take of the Juice of ripe and fresh Buck-Thorn Berries, gathered in the Month of *September*, two Pints: Let the Fæces subside, and to the clear Liquor add of Cinnamon and Nutmeg, each three Drachms; and let them stand in Maceration for the Space of a whole Day; then strongly press it out, and put to it one Pound and an half of white Sugar, to be boiled up to the Consistence of a Syrup in a Bath-heat.

This has not, till lately, been received by the College into their Dispensatories. The Spices are commonly tied closely in a thin Bag, and suspended in the Syrup while boiling to a Consistence.

The *Edinburgh Dispensatory* directs it in the following manner.

Take of the clarified Juice of ripe Buck-Thorn Berries, three Quarts; brown Sugar, four Pounds; and with a gentle Fire boil them to a Syrup; and while it is yet warm, mix therewith a Dram of the distilled Oil of Cloves, received upon a little Sugar.

To add the Corrector here in the Form of a chymical Oil, saves the Trouble of steeping the Spices ordered for that purpose in the *London Dispensatory*, and answers the End more certainly.

Sydenham observes, that Syrup of Buck-Thorn alone evacuates Water plentifully and little else, without disturbing the Blood, or rendering the Urine high-coloured, as other Purgatives generally do, and has only one bad Quality, as occasioning great Thirst during the Operation. But if it be given, even in the largest Dose, to such as are difficult to purge, it will neither give many Motions, nor carry off enough of Water.

I remember well, adds the same celebrated Author, for it was my first dropical Patient, that I was called about twenty seven Years ago to Mrs. *Saltmarsh* in *Westminster*, who had the Dropsy in the greatest Degree I have yet seen, her Belly being swelled to an incredible Size. I gave her an Ounce of Syrup of Buckthorn before Dinner, according to the Custom of that Time, and it brought away an almost inconceivable Quantity of Water, without causing any Disturbance or Faintness. Encouraged by this Success, I gave it every Day, interposing only a Day or two occasionally, when she seemed weaker than ordinary. And the Water being by these Means car-

carried off by Degrees, the Swelling of the Belly diminished daily, and she recovered.

And now being young and unexperienced, I could not help thinking that I was possessed of a Medicine effectual for the Cure of any kind of Dropsy; but in a few Weeks I discovered my Error. For being called afterwards to another Woman, afflicted with the Dropsy, which succeeded an inveterate Quartan, I gave this Syrup, and repeated it frequently, increasing the Dose by Degrees; but having ineffectually attempted to evacuate the Water, inasmuch as the Medicine did not operate, the Swelling of the Belly increased, and she dismissed me; and if my Memory does not fail me, recovered by the Assistance of another Physician, who administered more efficacious Remedies.

The usual Dose is an Ounce, or an Ounce and an half.

2. *Rhamnus*; spinis oblongis; Cortice albo Monspelienfium, *J. B. 1. 6. 31.*

3. *Rhamni primi*; altera Species. *Clus. H. 109.*

4. *Rhamnus*; spinis oblongis; flore candicante, *C. B. P. 477. Boerb. Ind. A. 2. 212. Raii Hist. 2. 1592. Rhamnus albus*, Offic. *Rhamnus primus Clusii*, Ger. Emac. 1334. *Rhamnus secundus Monspelienfium sive Primus Clusii*, Park. Theat. 1005. *Rhamnus Cortice albo Monspelienfis*, *J. B. 1. 31. RAM-THORN WITH WHITE FLOWERS.*

This is a thorny Shrub, with a smaller Fruit, consisting of a humid Pulp, inclosing a single Seed.

It is a Native of Spain, Portugal, and other southern Countries, flowers in May, and the Fruit is ripe in Autumn. A Catapasm of the Leaves, as *Dioscorides* says, is good for an Erysipelas, and spreading Ulcers.

5. *Rhamnus*; Hispanicus; folio Buxi; minor, *T. 593. Lycium, Hispanicum, folio Buxi*, *C. B. P. 478.*

6. *Rhamnus*; Afer; folio Pruni sylvestris leviter serrato; spinis brevioribus.

7. *Rhamnus*; Americanus; folio Buxi rotundo; spinis alternis.

8. *Rhamnus*; Afer; spinis longis; cortice albo; fructu caeruleo. *Ind. 246.*

9. *Rhamnus*; Afer; folio Pruni longiori, subrotundo; flore candicante; spinis longissimis. *Lycium Pruni folio subrotundo, flore candicante*, *Ind. 246.*

10. *Rhamnus*; Hispanicus; folio Buxi ampliori. *T. 593.*

11. *Rhamno similis*; Africana; fructu triloculari; folio Pyracanthæ. *Lycium Ethiopicum, Pyracantha folio*, *H. A. 1. 163. Boerb. Ind. Alt. Plant. Vol. 2.*

The Berries of the first Species are gathered in the End of September, or Beginning of October, and their Juice expressed while they are fresh, and boiled up with Sugar, makes what they call Syrup of Buckthorn, which is an excellent Cathartic, and a Specific against a Dropsy, but excites a great Thirst. It is commended by *Hippocrates* for its purgative Quality, but is of no Virtue, as he says, on other Accounts. The Berries purge Bile and Phlegm, but principally serous Humours, whence it is of good Service in a Cachexy, Rheumatism, Arthritis, and Palsy. The Decretion of the Berries, with an Addition of aperient Tincture of Steel, is a very good Medicine for the Chlorosis. *Hist. Plant. Ascrip. Boerhaave.*

RHAMNUS is also a Name for the *Paliurus*, and also for the *Rhamnoides*; fructifera Salicis foliis; baccis leviter flavescens.

Rhamnus tertius, Dioscorides, a Name for the *Mespilus*; spinosa; Pyrifolio.

Besides the foregoing Species of *Rhamnus*, Dale mentions the following:

Rhamnus niger, Offic. *Rhamnus niger Theophrasti*, Park. Theat. 1007. *Raii Hist. 2. 1593. Rhamnus tertius Clusii*, Ger. 1152. Emac. 1334. *J. B. 1. 34. Rhamnus tertius, flore herbaceo, baccis nigris*, *C. B. P. 477. Tourn. Inst. 593. BLACK RAM-THORN.*

It is sometimes found in our Gardens, and flowers in May. The Decoctum of the Fruit is good in Relaxations and Weaknesses of the Limbs, and for the Pains of the Gout. Dale.

RHANTERES. ῥαντηρες. The internal Angles of the Eyes.

RAPHANEDON. ῥαφανεδον. The same as CAULEDON.

RAPHANELCEON. Oil of Radish-Seeds.

RAPHANUS. See RAPHANUS.

RAPHHE. ῥαφη. A Suture.

RAPHIS. ῥαφίς. A Needle for Chirurgical Uses.

RHAPONTICUM.

Rhaponticum Offic. Alpin. Exot. 187. *Rhaponticum Thracicum*, Bocc. Mus. 127. *Rhaponticum folio Lapathi majoris glabro, Rha & Rheum Dioscoridis*, *C. B. P. 116. Rha verum Antiquorum*, Ger. Emac. 393. *Raii Hist. 1. 170. Rhabarbarum Officinarum*, Elem. Bot. 75. *Rhabarbarum fortè Dioscoridis & antiquorum*, Tourn. Inst. 89. *Rhabarbarum rotundi folium verum sive Lapathum sativum rotundi folium amplissimum flore albo, vel Rheum antiquorum*, Munt. Herb. Brit. 192.

Rhabarbarum Muscoviticum, Mont. Plant. Gen. p. 6. *Rhabarbarum Witsoniaram*, Ogilb. Chin. 2. 680. quoad. Fig. *Lapathum præstantissimum*; *Rhabarbarum officinarum dictum*. Boerb. Ind. A. 2. 84. *Lapathum exoticum, folio amplissimo inslar foliorum Brassicæ*, Rupp. Flor. Jen. 44. *Hippolapathum maximum rotundi folium exoticum, sive Rhaponticum Thracicum, sed verius Rhabarbarum verum*, Park. Theat. 154. TRUE RHAPONTIC.

This has a large thick Root, at the Head, and divided into many Branches, of a dark Brown on the Outside, and a deep yellow Colour within, of a bitterish Taste. From this Root arise several large, somewhat crumpled green Leaves, roundish but pointed at the End, of a sourish Taste, growing on reddish Foot-stalks. From among these arises a thick Stalk, three or four Foot high, having small Leaves, and a numerous Company of white, staminous, six-leaved Flowers, succeeded by large, shining, triangular, brown Seed. It is planted in Gardens. The Root of this Plant, if carefully dried, pretty much resembles the finest Turkish Rhubarb, especially the Heads, having the same reddish Veins, and may deceive those who are not very well acquainted with the Difference. This is what ought to be used in the Shops, as being the true Rhapontic; what the Druggists use formerly to sell for it, being the Root of the *Rhaponticum Folio Helenii insano* C. B. which is a Species of the great Centaury, and of far less Virtue than this.

Rhapontic, as to its purgative Quality, is much weaker than Rhubarb; but is accounted more restraining, and good for Fluxes and Weakness of the Stomach, spitting of Blood, and making bloody Urine. It is likewise good against the Bites of venomous Creatures. It is an Ingredient in the *Theriaca Andromachi*. Miller's Bot. Off.

This Root is very like Rhubarb, but may be distinguished from it by its leaving a mucous Taste in the Mouth, its Mucilage being diluted by the Saliva; and because when it is cut it appears regularly marbled, of a red, white or yellow Colour; and these Colours are disposed in a radiated manner. It is less purgative than Rhubarb, requiring a double Quantity to produce the same Effect. It is also a little astringent. Geoffrey.

It is common enough in the Gardens of Botanists, and flowers in May. There is scarce any Difference between this and true Rhubarb, only this is more acrimonious, less solid, and more of a Saffron Colour. Rhapontic is less purgative, and more astringent than Rhubarb. It is vulnerary and anodyne, and is of Use in Diarrhoeas, Dysenteries, Convulsions, Ruptures, the Orthopnoea, periodical Fevers, and venomous Bites. The Dose in Powder is two Drams, in Infusion six Drams.

It is much controverted among Botanists, as Mr. Ray observes, whether the Rhapontic of the Ancients, and the Rhubarb of the Moderns, are one and the same Plant; some affirming, others denying it; and some among the rest are inconsistent with themselves, sometimes making them to be the same, at other times different. The various Opinions and Reasons for them may be found in *J. Baubine's* Appendix to his *History of Plants*; we shall only observe with *Prosper Alpinus*, that our Rhapontic is the true Rhapontic of *Dioscorides*, but quite different from the Rhubarb of the Shops. Dale.

RHASPE. ῥασπη. A Species of Wine mentioned by *Nicolaus Myrepsus*, Sect. 1. C. 500. It is not known what Sort he means.

RHASTONE. ῥαστων, from ῥαδιν, ῥαδων, easy, in *Hippocrates*, 3 *Epid.* signifies a Remission or Alleviation of a Pain or Disease. The Word in *Plutarch, de Precept. Sal.* means a Sort of Indolence, or middle State between Pleasure and Pain. It occurs also in *Hippocr. de Artic.* where it imports an easy and gentle Method of Curing, in opposition to a violent Way of Management, and is there recommended to Practice.

RHASUT ET RUMIGI Maurorum Rauwolff. Lugd. Append. *Aristolochia orientalis Foliis lanceolatis*, Pit. Tournes.

A Species of exotic *Aristolochia*, growing principally among the Moors and about Aleppo; its Root may be used in Medicine instead of those of the other Species of *Aristolochia*. It contains Plenty of Oil and Salt, and is vulnerary, deterfive, drying and resolvent, being outwardly apply'd. Lemery des Drogues.

RHECHIA, ῥηχία, Jon. for ῥαχία. See RACHIA.

RHEGMA, ῥήγμα, of ῥήγναι, to break, a Rupture, is a Species of Solution of Continuity in a softer Part, made by a violent Blow, or Fall, without Section or Punction, and proceeding from an immoderate Distension. Galen, de M. M. Lib. 3. et Lib. de Constit. Art. Med. And the same Author, Com. ad 6 Aph. 22. says that a Rhegma, or Rupture, happens when the carnosus Part of a Muscle is broken or torn asunder. ῥήγματις, in a peculiar Sense, is a Name, as *Hippocrates* says, Lib. 1. de Morb. given by some to those slight Spasms which

which affect the fleshy Parts without a Suppuration. In *Epid.* near the Beginning, those little ulcerated Fissures which affect the Lips and Gums, are called *ῥήγματα τῶν ὀστέων*, "Ruptures of Ulcers," where *Rhegmata* signifies no more than *Rhagades*, or Fissures; and *Lib. 3. de Morb.* Abscesses breaking internally are called *ῥήγματα*, *Rhegmata*.

RHEGMATIAS, *ῥηγματίας ἢ ῥηγματικός* from the preceding Word, *Lib. 1. et 2. de Morb.* is one who labours under the inward Rupture of an Abscess. *Rhegmatis*, *ῥηγματίας*, *Lib. de Aere, Aqu. et Loc.* are Persons affected with a Rupture of some internal Vessels.

RHEGMOCHASMOS, *ῥηγμοχασμός*, from *ῥήγμα*, a Rupture, and *χάσμα*, a gaping Orifice; a Rupture with a subsequent Hiatus, is one of the three Causes of an *Hæmoptoe*, assigned by *Celsus*, *Lib. 4. Cap. 4.* the other two being *ANASTIMOSIS* and *DIABROSIS*. See these Words.

RHEMBE, *ῥήμβη*, from *ῥήμβω*, to wander, is the same as *Plane*, *πλάνη*, an Error or Aberration, *Galen in Exegesi*, where he seems to have an Eye to that Passage, *7 Epid. α. καὶ αὐτὸς ῥήμβηται*, "He stumbled in his Speech," (mistook, and spoke one Thing for another.) Here *Galen*, for *ῥήμβηται*, reads *ῥήμβηται*. Hence *ῥημβήδης* *πυλὸς* in *Artæus de Caus. et Sign. acut. Morb. Lib. 2. Cap. 2.* are erratic, or rather delutory, Fevers in Opposition to *συνίχης*, continual Ones.

RHENANUM VINUM. Rhenish Wine. See **VINUM**.

RHENCHOS, *ῥήγχος*, from *ῥήγχο*, to snore. Snoring. This Affection is otherwise called *Stertor*, which is a Sound like that of the *Cerchnon*, but greater and more manifest. Many confound those Affections, and make them to differ only in Place and Magnitude, calling by the Name of *Stertor* that Sound or Noise which is heard or supposed to be made in the Passage between the Palate and the Nostrils, as in those who sleep; that boiling or bubbling Noise which in Respiration proceeds from the Larynx, or Head, or Orifice, of the Aspera Arteria, they call *Cerchnon*; but if the Sound comes from the Aspera Arteria itself, they will have it called *Cerchnos*, that is, as some understand it, a rattling, or as others, a stridulous, or wheezing Roughness of the Aspera Arteria. In dying Persons this Affection is called by the *Greeks* *ῥήγχος*, *Rhenchos*, which is a Snoring or rattling kind of Noise, proceeding, as it were, from a Conflict between the Breath and the Humours in the Aspera Arteria.

This and such like Affections are owing to a Weakness of Nature, as when the Lungs are full of Pus, or Humors; to which purpose we read in the *Prognostics* of *Hippocrates*: "It is a bad Sign when there is no Expectoration, and no Discharge from the Lungs; but a Noise, as from an Ebullition, is heard in the Aspera Arteria, from a Plenitude of Humors." Expectoration is suppressed either by the Viscidity of the Humor, which requires to be discharged, and which adhering to the Aspera Arteria, and being there agitated by the Breath, excites that bubbling Noise, or *Stertor*; or by an Obstruction of the Bronchia; or, lastly, by a Compression of the Aspera Arteria, and Throat; whence the Passage is straitened, in which the Humours being agitated, excite such a kind of Noise as before described. Hence *Galen* calls those who are strait-breasted *stertorous*. That Author assigns but two Causes of this Symptom, which are either the Straitness of the Passage of Respiration, or the Redundance of Humours, or both together; but it is necessary to add a third, which is the Weakness of the Faculty, which is the Cause of the *Rhenchos* in dying Persons, where Nature is too weak to make Discharges.

From what has been said, we conclude that this Symptom, or this Sort of Fervor, or Ebullition in the Throat, is not always mortal; but only when Nature is oppressed with the Redundance of Humor in such a manner, that the Lungs cannot discharge themselves by spitting; or the Passage appointed for the Breath, being the Aspera Arteria, is very much obstructed, upon which account many dying Persons labour under a *Stertor* with their Mouths gaping. An Instance of this you have in *Menon. 7 Epid. 47.* of whom it is said, "That he had a Wheezing in his Throat, or Aspera Arteria, with a *Stertor*;" and in the Wife of *Theodorus*, 27. where we read, "That she was affected with a stridulous kind of Hoarseness of the Breast and Aspera Arteria, with a bubbling kind of Noise, and Fluctuation of Pus." Again, *Text. 9.* it is said of the Wife of *Polycrates*, that "she was affected with a Wheezing about the internal Parts of the Aspera Arteria and Fauces, and a *Cerchnon*, that is, as *Valesius* renders the Word, *Asperitas rancida*," a harsh kind of Rattling or Snoring. And *Hermippus*, *Text. 16.* afflicted with a *Peripneumony*, on the seventh Day spit a pale kind of Matter, and fell into a *Stertor*. The Woman, also, *Text. 20.* who laboured under a *Quinsey*, dy'd at last in Convulsions with a *Stertor*. And, to name no more, the Son of *Amphibrades*, who lay sick of a *Pleurisy*, was much molested with a Wheezing or *Cerchnon* about the Fauces. In all

these Instances this Symptom must be ascribed partly to the Weakness of Nature, and partly to the Redundance and Viscidity of the Pus or Humor. It is indeed always a bad Sign, and much to be dreaded; but is highly pernicious in the Progress of a Distemper, when the Strength is very much exhausted, as it plainly indicates that Nature is no longer capable of making Excretions, and is on the Point of Suffocation; and this Symptom, in such a Case, is necessarily attended with some other mortal Sign. But in the Beginning of a Disease there frequently happens a kind of Ebullition, or Fervor, in the Throat, from the Redundance of Humour, or its Viscidity, which disposes it to adhere to the Aspera Arteria; but when this Humour comes afterwards to be concocted, and discharged by Spitting, the *Cerchnos*, or Ebullition ceases. And such a favourable Event may be predicted from the Appearance of other good Signs, at the same time, without the Attendance of any bad Sign, as it happen'd in the Case of *Pisistratus*, *7 Epid. Text. 56.* "who had a *Stertor* in the Fauces, but supported himself under the Distemper very well, and had the Use of his Reason. His Fever remitted, he had the Benefit of due Excretion, the *Stertor* ceased, and he recover'd his Health." *Prosper Alpinus de Præfag. Vit. et Mort. Ægrot.*

RHEON. A Name given by Authors both to the true Rhubarb and Rhapontic.

RHETINE, *ῥητίνη*. Resin.

RHEUM. The same as **RHEON**.

RHEUMA, *ῥέυμα*. A Flux, or Fluxion, from *ῥέω*, to flow.

RHEUMATISMUS. A Rheumatism.

The Ancients called all kinds of Pains affecting the external Parts, or the Joints, by the common Name of Arthritis, whilst the Word *Rheumatismus* was not so much as known among them. Thus *Areteus*, in *Lib. 2. Chron. Cap. 12. de Arthritide*, uses the following Words. "This Disorder in some Patients wanders over the whole Body, and is at last convey'd to the Muscles of the Back and Thorax. 'Tis hardly credible how far this Misfortune spreads and diffuses itself; the Vertebrae of the Back and Neck become painful, as also the Top of the Os Sacrum; and soon after this Pain is communicated to the Kidneys and Bladder." But in the last Century some celebrated French Physicians, such as *Carolus Piso*, *Riverius*, *Ballonius* and *Chefneau*, have called the Pains afflicting the intermediate Spaces between the Joints, and Muscles of the Neck, or of either Arm, or of the anterior or posterior Part of the Thorax, the Shoulders, Scapulæ, Thighs, the Hands, by the Name *Rheumatism*. Whilst they called those Pains Arthritic, which afflicted only the Joints and Articulations; tho' these Pains received different Denominations according to the different Parts they affected; thus when they appeared in the Feet, they were called *Podagra*; in the Hands, *Chiragra*; in the Elbows, *Onagra*; in the Teeth, *Dentagra*; in the Vertebrae of the Back, *Lumbago*; and in the Articulations of the Os Ischium, *Dolor Ischiadicus*, or the Sciatic Pain: And even at this Day, 'tis customary to call a Beginning and easily-remov'd *Arthritis*, *Chiragra* or *Podagra*, by the Name of *Rheumatism*.

But as rheumatic and arthritic Pains differ very considerably with respect to the Parts affected, the Causes, Symptoms, and Method of Cure; so the more sagacious Physicians have considered them as distinct and separate: Nor is the Difference between a beginning and inveterate Arthritis of small Importance in the Practice of Medicine.

In a Rheumatism the Muscles, with their common Membrane, and their Tendons, where they are inserted in the Bones, are in various Limbs, and other Parts of the Body, affected with violent Pains and Spasms; whereas, in an Arthritis, the tendinous and nervous Ligaments, by which the Bones are articulated, in consequence of their Cohesion with the Periostium, are violently afflicted. But as in a beginning Arthritis and *Podagra* the Pain is rather lodg'd in the Surface of the Ligaments, so in an inveterate Disorder of this Kind the peccant Humor, which is the Cause of the Pain, is seated deeper, and rather possesses the Space between the Cavities of the Articulations. A true Arthritis and a Rheumatism, also, differ in this, that the former frequently recurs, miserably torments the Patient, continues long, and is not to be cured without Difficulty; whereas a Rheumatism sometimes attacks the Patient but once or twice in his Life, does not continue so long, is more easily removed, and capable of a more expeditious Cure. The Pain in these two Disorders is, also, frequently of a different Kind; for in a Rheumatism it is accompanied with Tension, Oppression, a Sense of Weight and Coldness, without any conspicuous Tumor or Redness; whereas, in an Arthritis, the Pain is more lancinating, distending, pungent, and, as it were, threatening a Rupture, with a considerable Tumor and Redness.

As the Cause of every uneasy Sensation is either a Redundance or peccant Quality of the Juices, stagnating and con-

gested in the minute Vessels of the Coats and Membranes, by which they are violently distended, vellicated and corroded, so 'tis not to be doubted but these Causes concur to the Production of rheumatic and arthritic Pains.

'Tis certain, from Experience, that not only Persons who are young, of sanguineo-serous Constitutions, and of spongy Habits, by the Admission of Cold, or a northerly Wind impetuously rushing in upon any Part; but also that plethoric Patients, Women, and Men otherwise of a robust Habit, by neglecting Venesection or Scarification, especially after an obstructed Perspiration, feel rheumatic Pains in the Neck, Scapulæ, Shoulders, Back, Sternum and Thorax, or are even afflicted with gentle Degrees of an Arthritis. Whereas those who are naturally of lax and less fibrous Habits, who are descended from arthritic and gouty Parents, or whose Strength and the Tone of whose Parts are highly weakened by the immoderate Use of Venery, Wine, Luxury, or violent Fatigue and Commotions of Mind, are afflicted with a true, a deeper and more obstinate Arthritis, especially in the Feet.

Those labouring under a violent Arthritis, especially of the inveterate kind, when this ceases, are easily afflicted with an Inflammation of the Kidneys from the Stone; and when this ceases, they relapse alternately into an Arthritis. Besides, 'tis certain, from daily Experience, that arthritic Patients, especially those afflicted with the Gout in the Feet, generally labour under some Fault of the Digestion, and have their Primæ Viæ turgid with Eructations, Flatulences, Spasms, and a Load of peccant Humours; whilst, at the same time, their Bodies are not sufficiently soluble. Besides, we observe, that many Persons afflicted with the Gout, are also subject to the hemorrhoidal Discharge, tho' without any Relief, violent Pains seizing the Os Sacrum, and the Veins of the Anus sometimes becoming tumid.

As the Nature and Condition of the Humours, which generate and support rheumatic and arthritic Pains, are not always the same, so these Disorders often differ widely with respect to their Degrees, Genius and Symptoms; for where there is only a Redundance of Blood, as yet not much contaminated by impure Particles, the Pains are generally mild and slight, which happens in a simple Rheumatism, and the beginning Arthritis of plethoric Patients. But the Pains are far more violent, when they are sustained and supported by a Collection of impure and excrementitious Serum; for I have often observed, that as in all Pains, so also in those which violently afflict the external and nervous Parts, it rarely happens that a Redundance of temperate and pure Blood alone produces the Effect, since it is generally mixed with an excrementitious Serum; for 'tis either too thin, serous, and impregnated with a small Quantity of red Globules, or contaminated by a viscid, glutinous and tenacious Serum. The excrementitious and impure Salts in the Mass of Blood also differs much with respect to their volatile, fixed, saline and tartarous Acrimony, and consequently produce different Symptoms. So that, according as the Nature and Genius of these Causes differ, the Rheumatism may properly be distinguished, by Physicians, into the sanguineous, cacochymic, scorbutic, fix'd, and wandering.

Hence it happens, that in different kinds of Pains, Blood taken from the Veins differs both with respect to Colour and Consistence: For sometimes, when it is received in warm Water, it is observed to abound with a large Quantity of viscid Mucus, consisting of Fibres variously interwoven. Sometimes the Serum, which floats above it, is immediately form'd into a Concretion resembling Glew or Leather, just as it happens in those afflicted with a violent Peripneumony. At other Times the Serum is very thin, and the Blood of a florid red Colour, which frequently happens in a Rheumatism and wandering Gout, and is a certain Sign, that a Salt of a somewhat alkaline and volatile Nature is mix'd with it. *Carolus Piso*, in *Libr. de Morb. ex Colluv. Serof. oriund. Sect. 5. Cap. 3.* in Pains of the external Parts, tells us, That he has observ'd the Blood so full of serous Sordes, that when it was set by in a Basin, hardly a twentieth Part which had the Colour and Consistence of Blood subsided to the Bottom, whilst the remaining Part, which floated above, was entirely aqueous, but cover'd with a viscid white Pellicle. *Ballonius*, in *Libr. de Rheumatismo*, tells us, that he frequently found the Blood, which he had taken in a large Quantity from the Arm, impure and resolv'd into a putrid Serum. And I myself have often observ'd, that tho' in the Beginning of these Pains the Blood was of a laudable Consistence, yet in Process of Time, or when the Disorders were deeply rooted, it was highly serous, corrupted, and covered with a tough Pellicle. For a Redundance of Blood is the first Cause and Origin of these Pains; but in the Course of the Disease, it is, by the hot intestine Motion, and the continual Agitation, converted into a peccant Serum; for which Reason *Carolus Piso* classes all the Species of the Arthritis and Rheumatism among the Diseases

arising from a serous Sordes; which seems to be confirmed by the thin and copious, as also the slimy and turbid Urine, together with the profuse and fetid Sweats which generally accompany these Disorders.

It is a Question of no small Importance in the Theory of Medicine, how and in what manner, since the Blood is in a perpetual Motion through the Vessels, the peccant Serum is separated from it, becomes stagnant, and is deposited in the external nervous Parts. And tho' the Theory of the Ancients was entirely destitute of the Succours of natural Philosophy and Anatomy, in investigating the Causes and Generation of Disorders, yet *Hippocrates*, in *Lib. de Flatib.* has, as it were, from the Principles of natural Philosophy and Mechanics, made a beautiful Attempt to explain the Causes of these painful Defluxions, and the Method of their Generation; for he tells us, that Blood naturally hot, when forcibly convey'd through a narrow Passage, cannot, in consequence of Obstacles and Obstructions, pass quickly through it: So that the thinnest Part of the Blood is not received into the Veins, but being accumulated, flows through other Vessels, and when it stagnates, produces Fluxions and Pains in particular Parts.

But that we may have a more adequate Idea of the Generation of these Disorders, we must first consider the occasional and accidental Causes, and then the manner in which these Pains generally attack the Patient. Now, 'tis certain, from Experience, that rheumatic Pains of the Limbs are most incident to those Persons, who, after intense Labour, Motion, and Exercise, the Use of the warm Bath, or an intensely hot Atmosphere, suddenly expose themselves to a cold Air, or a northerly Wind. Soon after which they are seiz'd with a certain Horripilation and Weariness, and then with a heavy, oppressive, and contractory kind of Pain in various Parts; such as the Neck, the Scapulæ, the Shoulders, the Back, the Loins, or in that particular Side into which the Cold and northerly Wind has penetrated, and sometimes all over the Body: And the Disorder is the more violent, the more turgid the Body is with Blood: I have, also, frequently observed Persons, after liberal Venesection, Women after copious menstrual Discharges, or Fluxes of Blood, from the Uterus produc'd by Abortion; Patients after violent Fluxes, whether spontaneous or induced by strong and drastic Purgatives, when they have too long exposed their Bodies to a cold northerly Wind, or to a moist and cold Night-Air, afflicted with violent rheumatic Pains; for no other Reason, than that by the Violence of the Cold penetrating the Pores, the small lymphatic Veins and Arteries, which contain and convey the Blood for the Nutrition of the Parts, are compressed, contracted, and clos'd up. Hence it happens, that the Serum being no longer capable of being contain'd in and convey'd thro' its Vessels, overflows like a River, and is deposited sometimes in one Part and sometimes in another, or is placed without the Vessels and the Laws of the Circulation. But since all extravasated Humours, in Process of Time, lose their mild and natural Crasis, assume a foreign Nature, and become partly glutinous and tenacious, and partly acrid and saline; hence it happens, that by the Tension, Compression, Lancination, and violent Stricture of the fibrous and nervous Parts, intense Pains, frequently accompanied with a Sense of chilly Cold, are produc'd. Sometimes it also happens, that the extravasated Serum, like the White of an Egg, degenerates into a thin and corrupted Sordes, which cannot be again coagulated by a strong Heat, and passes from one Part to another; especially from the superior to the inferior Parts, through the fleshy and porous Substance of the Parts. For nothing more frequently recurs in Practice, than to observe a Rheumatism changing its Place, and falling from the Head to the Neck, the Scapulæ, the Shoulders, and Breast, especially in young Persons, whereas in Adults it falls down to the Back, the Parts about the Coccyx, and the Thighs.

'Tis also certain, from Experience, that about the Spring, and in the Month of *October*, when there are remarkable Changes of Weather, from hot to cold, and from cold to hot, or when contrary Winds suddenly succeed each other, arthritic and rheumatic Disorders most frequently attack Persons who abound with an impure Blood and Serum, prey upon the Body, and afflict it with a kind of febrile Commotion. These Disorders are preceded by a spontaneous Lassitude, and Heaviness of the Limbs, accompanied with a Refrigeration of the Extremities, a Horripilation, and a certain Sense of Cold. This State is succeeded by an uneasy internal Heat, especially about the Præcordia, a quick and contracted Pulse, Restlessness, Thirst, Loss of Appetite, Costiveness, and sometimes a Difficulty of Breathing. Afterwards a violent and acute, or an oppressive Pain, accompanied with Tension, seizes sometimes one and sometimes another Part, and is increased in the Night-time, just as it usually happens in catarrhal Fevers. And tho' this febrile Commotion is in some mild, and in others violent, and

is easily remov'd, yet a Pain remains in the Part affected, and often continues for a long time to rack them. But since every febrile Commotion is of such a Nature, as spasmodically to affect the external and nervous Parts, and by contracting and compressing the minute Roots and Extremities of the Vessels, accumulates the Blood and Humours in the large interior Vessels, and produces a quicker Systole in the Heart and Arteries, it can hardly happen otherwise, but that the Blood being convey'd with a great Impetus into the lateral Ramifications of the small Arteries, which do not contain red Blood, should at last deposit its ferous Portion without the Vessels; and this is the Origin of the Pain. But 'tis to be observ'd, that these painful spasmodic Strictures of the sensible Parts are not produced by a thin Serum entering into them, since this Species of Serum is in a great measure dissipated; but rather by its more viscid Parts, and its saline-pointed Spiculae intimately insinuating themselves into their Pores. Hence these Disorders do not quickly and easily yield to Medicines, because the peccant Matter is deeply impacted in the Parts.

From what has been said it is sufficiently obvious, that an Obstruction of the Circulation of the Blood, and of its Regress through the minute Vessels, constitutes the immediate and evident Cause of these rheumatic Pains; which may be more clearly demonstrated from this, that, as I have often observ'd, when a tight Bandage, after Venesection in the Feet for some severe Wound, is left applied for twenty-four Hours, an uneasy Pain, like that of the Gout, and which lasts for many Days, seizes the Articulations of the Foot, and especially of the great Toe. An Accident of this Nature lately happened to a celebrated Physician, who for certain Reasons had a Vein opened in the Calf of his Leg, but was obliged to use a tight Ligature, because the Vein lay low. Next Morning a violent Pain and Tumour had seized not only the Calf of his Leg, but also the Articulations of his Foot; so that there was a Necessity for a careful Discussion of the Tumor, by internal and external Medicines, lest it should degenerate into a greater Misfortune. From what has been said, we, also, see that there is a great Affinity betwixt a Rheumatism and an Arthritis, since the former sometimes so effectually counterfeits the latter, as by some to be called an universal and wandering Arthritis, which sometimes suddenly seizes several Articulations, violently afflicts the Vertebrae of the Spine, and the Joints of the Bones. Nor is it strange to observe, in Practice, that fix'd and wandering Rheumatisms, in those who are frequently subject to them, especially if they have besides contracted a Weakness, are at last transform'd into a true Arthritis. And since an Hemiplegia, a Pleurisy, a spurious Hepatitis, and a Tooth-ache, are Species of Rheumatisms, 'tis not to be doubted, but they are generated by the same Causes, and in the same manner.

'Tis certain, from Experience, that the Rheumatism spares neither that Age nor Sex, which Hippocrates, in Sect. 6. Aph. 29, & 30. in some Circumstances, pronounces free from the Arthritis. But 'tis in a particular manner observable, that those who in their Youth have been subject to frequent Hemorrhages of the Nose, which have afterwards ceased, are subject to Rheumatic Pains; which is also observ'd by Hippocrates, in *Prorrh. Lib. 2.* where he informs us, that those who have Pains and Tumors about the Joints, have large Viscera provided in their Childhood and Youth, the Blood has ceased to flow from their Nostrils; for which reason he orders us carefully to enquire, with respect to the Eruption of the Blood, whether it happen'd in the Patient's Youth, as also whether there are pruriginous Prickings, as it were, with a Nettle, either in the Breast or Back, since these are sufficient Proofs of the Impurity of the Serum. But what Hippocrates affirms, with respect to Hemorrhages of the Nose, may, in my Opinion, be asserted concerning all other salutary Excretions of the Blood: For nothing more frequently occurs in practice, than that Women, especially of a sanguineous Complexion, after the fiftieth Year of their Age, when their Menfes totally cease, are afflicted with wandering Pains here and there, unless such a Misfortune is prevented by seasonable Venesections. 'Tis also sufficiently known to Practitioners, that an usual Discharge from the hæmorrhoidal Veins, proceeding duly and at proper Seasons, may render Persons free both from arthritic and rheumatic Pains; to which they become subject, when that Discharge ceases or is suppress'd: Tho', at the same time, I have known Instances of weak and cachectic Patients, in whom neither the arthritic nor nephretic Pains ceased, even under a due hæmorrhoidal Discharge.

As for the Generation of these Disorders, 'tis to be observ'd, that Persons who have strong Exercise, live sparingly, and drink Water, are free from them; whereas those who indulge themselves in Idleness, drink Wines and spirituous Liquors, live luxuriously, and are addicted to immoderate Venery, especially when young, are frequently afflicted with violent arthritic and rheumatic Pains.

'Tis also to be observ'd, that a remarkable Disposition to these Disorders is produced by other previous and long-protracted Diseases, particularly intermittent Fevers, especially when ill-manag'd. Thus Ballonius, in *Lib. de Rheumatismo*, informs us, that he has observ'd many, towards the End of chronical quartan Fevers, afflicted with violent Pains of all the Joints. I have, also, known long-continued Colics, and Pains of the Abdomen, succeeded by wandering severe Pains of the Joints recurring at stated Periods.

There is also a scorbutic Rheumatism, in which the whole Mass of Lymph and Serum is contaminated with impure, excrementitious, salino-sulphureous and acrid Particles, which now and then discover themselves by Efflorescences, Spots, and a Purple Fever; and this Species of Rheumatism draws its Origin from an improper, heavy, and saline Diet; an idle and sedentary Life; a continual Living in a foggy and vapid Air; and long-protracted Sorrow: For which Reason it is very frequently incident to the Inhabitants of Maritime Countries.

But a venereal Rheumatism is of a more terrible kind, and in the Night-time, especially, afflicts certain nervous Parts in those who by impure Coition, have contaminated their whole Mass of Lymph and Blood, with a virulent and putrid Miasmata. But all the Causes hitherto enumerated, seem to have a Tendency to increase the Serum, render it impure and intemperate, and impair the Strength of the solid Parts, by diminishing the salutary Excretions; by which means Stagnations and Defluxions of the Serum, together with intense Pains, are produced.

Hence the reason is obvious, why rheumatic and arthritic Pains are happily terminated by copious Discharges of Urine, spontaneous Sweats, and natural Hemorrhages; and why the Patients receive great Relief from various Efflorescences of the Skin. Thus Hippocrates, in *Aph. 74. Sect. 4.* tells us, "That where there is a Probability of an Abscess about the Joints, the Patient is reliev'd by discharging a large Quantity of thick white Urine, like that which in some Patients begins to be discharg'd on the fourth Day in Fevers accompanied with Weariness. But if an Hemorrhage of the Nose happens, the Disorder is soon terminated." By Fevers accompanied with Weariness, we may justly understand those of the rheumatic Kind, which seize with a Sense of Pain and Weariness all over the Body. I have, also, frequently observ'd, that arthritic Pains have ceased upon the spontaneous Appearance of Ulcers in the Legs; and again seized the Patient when these were artificially consolidated. I have also known violent arthritic Pains totally removed by the Appearance of a Psoe, or an Itch, resembling a white Leprosy; for as a Translocation of the peccant Matter from the internal to the external Parts is highly salutary, so, on the contrary, a Translocation of it from the external to the internal Parts and Viscera, is highly prejudicial.

So long as rheumatic Pains and beginning Gouts remain in the external Parts, and the peccant Humour is not preposterously drawn inwards to those of a more noble Kind, they are free from Danger, and do not readily prove fatal to the Patient: For as in the first Years of Life, and in Youth, these troublesome catarrhus Defluxions in the Head, and those of a rheumatic Kind in the muscular Parts, accompanied with frequent Hemorrhages of the Nose, denote a remarkable Weakness of Nature, or a diminish'd Tone and Strength of the Solids; so, in Youth and Manhood, they prognosticate various chronical Disorders, which in their Causes and Genus have a near Affinity with these, especially when the Patients are descended from morbid and hypocondriac Parents.

THE CURE.

From what has been said, 'tis sufficiently obvious, that the whole Intention and Method of Cure consists in duly considering the particular Habit of the Patient, and the different Causes of the Disorder; whether it is recent, and proceeds from a Redundance of Blood; or, from a Collection of impure Serum, and is of long-standing and deep-rooted; then in forming proper curative Intentions from these Circumstances; and, last of all, in prescribing Medicines proper for answering these Intentions.

When, therefore, the Patient is evidently plethoric, and an universal Rheumatism, accompanied with a febrile Commotion, has seized all his Limbs, and is therefore, as the Ancients called it, of the sanguineous Kind; the most effectual and expeditious Means of Relief consists in Venesection, used in the Beginning of the Disorder, as is justly observ'd by the most skilful Physicians. Thus Alexander Trallian, in *Lib. 11.* speaks in the following manner: "When you suspect that the Humour collected about the Joints is of the sanguineous Kind, you are, if nothing contra-indicates, to use Venesection."

“ section: For by this means I have known many either totally cured, or rarely afflicted with Defluxions; because, in the very Beginning of the Disorder, they had Blood taken from them, both for the Purposes of Evacuation and Preservation.” This Doctrine is confirm’d by my own Experience, for I have known many plethoric Patients, who, by external Causes, having Perspiration totally obstructed, have been seized with intense Pains of the whole Body, accompanied with a Stupor and Immobility of the Parts; but were totally recovered by seasonable Venesection in the Beginning, which may, if Necessity requires, be safely and boldly repeated about the fourth Day. I have, also, known Persons of a middle Age, and of sanguineo-choleric or melancholic Constitutions, seized with a mild Gout in the Hands or Feet; but have had these Misfortunes prevented, or entirely removed, by Venesection about the Equinoxes, or sometimes about the Summer Solstice.

And as the sanguineous Rheumatism is in no Country more frequent than in France, on account of the sanguineous Complexion of the Inhabitants, and the Tendency of their Aliments to generate a large Quantity of Blood; so ’tis not surprising, that the French Physicians, who first wrote well on a Rheumatism, should greatly recommend Venesection for its Cure. Thus *Ballonius*, in *Lib. de Rheumatismo*, speaks thus: “ I recommend Phlebotomy in a Rheumatism, and affirm it to be a salutary Remedy.” *Carolus Piso* also affirms, that repeated Venesection is of great Importance, both in preventing and curing a Rheumatism, and furnishes us with many memorable Instances of it. *Riverius*, in *Cant. 3. Obs. 42. and Cent. 4. Obs. 42.* mentions an obstinate Rheumatism, removed in two young Men, by Venesection seven times repeated. *Leon. Botallus*, the first Author of Venesection in France, in *Lib. de Curat. per Sang. Mission. Cap. 12.* evinces, by many Reasons and Instances, how useful repeated Venesection is in rheumatic Pains, and how speedy a Relief is afforded by it. *Sydenham* also affirms, that the Cure of this Disorder is to be expected from nothing but Phlebotomy, which is to be repeated in a few Days. In *M. N. C. Dec. 4. An. 9. Obs. 120.* there is a memorable Instance of an universal Rheumatism cured both happily and expeditiously by repeated Venesection alone. But Venesection is still more necessary both for the Prevention and Cure of a Rheumatism in Women, whose Menstrues are either defective or totally suppressed; and in Men who have an usual hemorrhoidal Discharge suppressed.

Supported both by Reason and Experience, I assert, that besides Venesection, in a hot Arthritis and Rheumatism, when beginning and accompanied with a febrile Heat, a present and speedy Relief is afforded by mild Diaphoretics, moderately mixed with nitrous Substances, and exhibited in small but reiterated Doses, persisted in for a considerable Time; since by their Means the intense Heat, Fervour and Orgasm of the Blood, is not only allayed, but also the peccant Humour gently, successively, and equally dissolved. The most proper Sudorifics for this purpose, are the Powder of Crabbs Eyes, fossil Unicorn, burnt or unburnt Hartshorn, diaphoretic Antimony, or its Cerufs, Amber, prepared Shells, and Cinnabar, with the Addition of a sufficient Quantity of purified, or rather artificial Nitre, which are to be exhibited in pectoral and gently anodyne Waters; such as those prepared of the Flowers of Elder, the Egyptian Thorn, Meadow-sweet, and the Lime-Tree; of black Cherries, *Carduus Benedictus*, Ladies Thistle, and Scabious. Nor is it improper, in order the better to check the febrile and erratic Heats, to add to these a due Quantity of Citron-Juice; or to render the Medicine more grateful, of the Syrup of Citron-Juice. For common Drink, we recommend Whey, acidulated with Cream of Tartar, or impregnated with Tamarinds; or Water boiled with the Shavings of Hartshorn, the Roots of Vipers-Grass, Succory, Liquorice and Grass, together with the Seeds of Fennel.

But when Rheumatic Pains arise not so much from a Redundance of pure and well-conditioned Blood, as from a Plenitude of Blood of the impure and serous kind, especially in weak Persons of serous and phlegmatic Constitutions, than Venesection, especially in the Cure, is not to be used without the greatest Caution. Hence *Galen*, in *Lib. 6. Aphor. 47.* justly observes, “ That Patients afflicted with a Plethora, are to be relieved by Venesection; but that to such as abound with corrupted Juices, we are to exhibit Purgatives.” And by these Evacuations, he affirms; that he not only cured many who for a long time before had been every Year afflicted with Diseases, but also removed and warded off a beginning Gout and Arthritis for many Years. But those who have been often harassed with Defluxions of this kind, receive more Injury than Benefit from Venesection, especially if they are old or of weak Constitutions.

Hence ’tis obvious that the Ancients were of opinion, that the Differences of Pains, especially of the arthritic kind, with respect to their Causes, were to be carefully observed in the Cure; for there is one Method of curing a Rheumatism, or

a beginning. Arthritis, tho’ universal, in a plethoric Habit, which is produced by a Redundance of Blood, in consequence of an obstructed Perspiration: But the Method of Cure is quite different, where an intense Pain is obstinately fixed in one Part, accompanied with a violent Sense of Cold, and excited by Cold imprudently admitted to that Part in serous Bodies. But still different Measures are to be taken, when a plethoric Patient, under a long Course of the Disease, or by means of a preposterous and unskilful Cure, degenerates into a cachectic or cacochymic State, and little laudable Blood of a due Consistence, but a great deal of serous and excrementitious Sordes, is contained in the Vessels; for in Cases of this kind, those Remedies are principally indicated as proper, which gently, tho’ effectually, eliminate the peccant Serum through proper Emunctories, that is, by Stool, Urine and Perspiration.

With respect to the Use of Evacuants, Violence is in this Case by no means to be used; but the bilious, viscid, and serous Sordes, are to be gently and gradually eliminated by mild and temperative Laxatives. This Intention I have from Experience found excellently answered by Infusions prepared of Water, mixed with half the Quantity of Wine, and gently boiled with the Roots of Succory, Burnet, and Polypody, Rhubarb, Senna Leaves without the Stalks, *Carduus Benedictus*, the Tops of the lesser Centaury, Agarick, Orange and Citron Peel, the Bark of Sassafras Wood, Raisins, and *Tartarus Tartarifatus*. It is also beneficial to chew about two Scruples or a Dram of Rhubarb, with fat Raisins or Currans; for I can from Experience affirm, that Rhubarb taken in Substance evacuates twice as much as if it was exhibited in Decoctions or Infusions; and at the same time it remarkably corroborates the Tone of the Intestines and Viscera. But it is expedient to exhibit such an evacuating Medicine thrice, or at least twice a Week, that the Sordes left in the *Primæ Viæ* by a bad Digestion may be eliminated; since otherwise they greatly contribute to cherish the Disorder, and augment its Force. And I have learned from repeated Experience, that alterative and evacuating Medicines of this kind are of singular Service in such Pains as recur periodically and at stated Hours.

When the *Primæ Viæ* are thus cleansed, ’tis not only expedient but necessary to eliminate the peccant Serum, by such Decoctions as gently promote Transpiration and Sweat; such as those prepared of China-Roots, the Roots of Sarsaparilla, Succory, Liquorice, and Vipers-Grass; the Wood and Bark of Sassafras, the Wood of yellow Sanders and Guajacum, together with Figs and Currans. When the Disorder is deep-seated and inveterate, I have often found from Experience, that great Relief is afforded by crude Antimony, mixed with double the Quantity of the bezoardic and diaphoretic Powder, above described, and exhibited at proper Seasons, and in due Doses. Instantaneous Relief is also afforded by a celebrated diuretic and diaphoretic Liquor, which restores the Tone of the Parts, and is prepared of the Tincture of Tartar, the acrid Tincture of Antimony, the anodyne mineral Liquor mixed in due Proportions, and exhibited in proper Doses.

When a Rheumatism either of a fixed or wandering kind, seizes a scorbutic Habit, and discovers itself by evident Signs and Symptoms, the Cure is pretty long before it is perfected; for it is neither an expeditious nor an easy Task to restore the whole Mass of Lymph and Serum, when become intemperate, corrupted and impregnated with saline and excrementitious Parts, to its native Sweetness and Consistence. In this Case, the most efficacious Medicines are those of a diluting and demulcent kind, pretty copiously used and persisted in. The most considerable of this sort are sweet Whey, either impregnated with Manna, acidulated with Tamarinds, or mixed with the Juices of antiscorbutic Herbs; as also the temperate mineral Waters, such as those of *Selteran*, *Wildungen*, and *Tounsteinen*; or in robust Constitutions, those of *Pyrmont* and *Egra*, mixed with half the Quantity of Asses or Cows Milk, and used with a proper Regimen, almost answer all the Intentions of Cure.

If a Rheumatism draws its Origin, as it frequently does, from the Remains of a Lues Venerea contained in the Mass of Blood, more powerful and drastic Medicines become necessary; for unless sudorific Decoctions of the Woods, heightened by an Addition of crude Antimony, or even of *Mercurius Dulcis*, are prudently used, the Cure is rarely brought about.

As for Topics for the gentle and successive Discussion of the Humour lodged in any particular Part, great Caution is necessary in the Choice and Exhibition of them, lest they should do more harm than good. If the Rheumatism is of the sanguineous kind, it is most proper totally to abstain from them, and only to cherish the Parts affected with a moderate Heat of the Bed and other Coverings. Since by this means the peccant Matter is more mildly and happily exhaled, than it can be by the Assistance of various Topics. But if a thick, immoveable, and cold Humour is deeply and obstinately seated in any

Part, and accompanied with a Sense of Cold, and a Constriction of the Pores, then Frictions with rough-warm Cloaths powerfully remove the tenacious Humour from its fixed Seat; and after these Frictions, Cupping-Glasses, either with or without Scarification, are to be applied; but 'tis to be observed, that Cupping-Glasses, with Scarification, applied to such painful Parts, even tho' the Incisions are pretty deep, procure an Evacuation of but very little Blood: A satisfactory Proof that the Ramifications of the Blood-Vessels are so contracted and compressed by the spasmodic Stricture, as to obstruct the Circulation of the Blood: So that 'tis highly probable that these Pains are not so much excited by a Redundance of Blood congested in these Parts, as by a viscid and acrid Humour stagnating in them.

When therefore the Humour is deep-seated, and produces violent Pains of the Limbs, we can hardly be entirely without external Remedies. But tho' for this purpose various Medicines are by different Authors highly extolled, yet I have found none more effectual than my nervous Liniment, which is prepared in the following Manner:

Take of *Anhalt* Water two Ounces, of *Peruvian* Balsam two Drams, and of old *Theriaca* one Dram; Infuse and extract by Digestion: To the strain'd Liquor add of the Essences of Saffron, Castor and Nutmegs, each two Drams, and of Camphire one Dram; make into a Liniment, with which the pained Limbs are to be often anointed.

But if after a long protracted Pain, a Rigidity and Immobility, accompanied with a Stupor, remain, which Disorder is called a Paresis, the following Liniment used in the same manner, I have often found to produce admirable Effects.

Take of human Fat two Ounces, and of *Peruvian* Balsam and Oil of Cloves, each two Drams, mix up into a Liniment according to Art.

Baths also, whether natural or artificial, are of singular Use in the Cure of these Disorders, when cautiously used: But they ought never to be used in the Beginning or in the Height of the Disease, but rather in its Decline, both to draw the Remains of the Disorder from their remote Seats, by moderate Sweats, and to soften the rigid Members, and corroborate such as are weakened by the painful spasmodic Strictures and Agitations. But I can from Experience assert, that I have found better Effects produced by none, than by a Bath prepared of the Waters of *Lauchstad* in *Meissen*, which contain a delicate *Crocus Mortis*, and ate of a highly subtile and light Nature.

Tho' in Pains of the external Parts arising from a Redundance of thick Blood, and a Suppression of the salutary Excretions, copious Venesection, especially in the Beginning, is a powerful and divine Remedy; yet when a long-protracted Pain has so destroyed Digestion, a laudable Chylification and Strength, that the Body rather abounds with Serum than with Blood, or is already weaken'd by Age, Venesection is not to be used without the greatest Caution. Neither is Phlebotomy to be used when under the Paroxysm, accompanied with a febrile Commotion; Nature attempts Translations of the peccant Matter to the external Parts; at which time, just as in an Erysipelas, it is by no means expedient to disturb and counteract the salutary Work of Nature for the Patient's Relief.

I have often observed, that Venesection properly instituted before the *Æquinoxes*, excellently preserves Persons of constricted Habits, as also those of sanguineo-melancholic and sanguineo-choleric Constitutions, not only from catarrhus Defluxions, but also from rheumatic and arthritic Pains, to which they were before frequently subject; so that there is not a more powerful Remedy for preventing these Disorders, than Venesection, especially if the Patient uses due Exercise, and abstains from spirituous Liquors and a rich Flesh-Diet.

Tho' a Milk Diet is of singular Service in wandering arthritic Pains, and where the Disorder is produced by a subtile and bilious Acrimony, yet 'tis expedient to abstain from it, when the Vessels are too full, either of a stagnant or too serous Blood, and the Tone of the Stomach and Intestines is destroyed; lest by its Means Infarctions of the Viscera should be produced, and the Way pav'd for a succeeding Cachexy.

When a Suppression of the hemorrhoidal Discharge is the Cause of rheumatic or arthritic Pains, this Evacuation is with all Expedition to be recalled, tho' for this Purpose we are by no Means to use Venesection in the superior Parts, but in the Feet. Then we are to exhibit those Medicines which gently promote this Discharge, such as the *Pilula Avicennae*, the *Pilula Beberiana*, and others of a like Nature, interposing, at proper Intervals, the temperate and nitrous Powders, which allay the internal Heat, that greatly contributes to the Suppres-

sion of the Hemorrhoids. If these Measures should not prove effectual, but Gripes and Vomings should accompany the external Pains, we are without Hesitation to apply Leeches to the Veins of the Anus, a Remedy which sometimes proves surprisingly efficacious.

Those who are subject to catarrhus, rheumatic, or arthritic Disorders, as also those who are disposed to spasmodic Commotions, or Congestions of the Blood and Humours, ought carefully to abstain from all strong, hot, diuretic and diaphoretic Medicines, from acrid Purgatives, from all spirituous balsamic Substances, which throw the Blood into a preternatural Orgasm, from rich spirituous Liquors, after which the Urine is red and deeply tinged; and from all Malt Liquors, except of the medicinal Kind, such as that which does not oppress the Head, is freely discharged by Urine, and assists Digestion: But they ought for common Drink to use either pure Spring Water, temperate mineral Waters, or some grateful Decoction, which creates no loathing. And these Measures are still more carefully to be observed by those whose Juices are contaminated by scorbutic Purples, a very common Disorder in our Age.

When a violent and obstinate Pain for a long Time afflicts the inferior Parts of the Body, such as the Os Isthium, and the Os Coccygis, and the Patient is of a robust and vigorous Habit of Body, more powerful chymical Medicines, such as *Mercurius Dulcis*, Solar Precipitate well prepared, and medicinal Regulus of Antimony, which may also be added to sudorific Decoctions, are of singular Efficacy in removing the thick, tough, tartarous and vellicating Humour, from its deepest and most remote Seats.

When the Pains are so violent, which happens in delicate Constitutions, as to deprive the Patient of his Appetite and Sleep; and when neither Venesection, the nitrous and temperate Powders, nor any anodyne Liquor prove effectual to allay them, it is expedient gradually to pass from gentle Anodynes, such as the Emulsion and Syrup of white Poppy Seeds, to those of a more powerful Nature, such as the *Pilula Wildeganii*, the *Pilula Storckii*, the *Pilula de Stryace*, or even a Grain or two of Laudanum Opiatum, with an Addition of a small Quantity of the Extract of Saffron. But in other Cases, Opiates are not to be rashly used, since it has been often observed, that they render these Disorders so obstinate, as hardly to yield to the most efficacious Remedies, but create a great deal of Trouble both to the Patient and Physician.

In a beginning Rheumatism of the Scapulae, nothing is more efficacious than the Application of a Vesicatory between them; but if this Misfortune should happen in plethoric Habits, as I have often observed in Women about fifty Years of Age, when their Menses cease, great Relief is afforded by applying Cupping-glasses with Scarification, to the inferior Parts every Month.

As Persons naturally disposed to anomalous Motions of the Solids and Fluids, and to Translations or Congestions of the latter, are of a tender Habit, of a delicate Turn of Mind, and easily injured by the exorbitant Workings of Passions, which lay a Foundation for the Generation of these Disorders; so Tranquillity of Mind, sufficient Exercise, and an Abstinence from every Thing which has a Tendency to ruffle and discompose the Mind, are of great Use in the Cure of these Disorders. *Frederic Hoffman*.

The Rheumatism, a very frequent Disorder, bears a very near Affinity to the Arthritis, the Gout, and the Scurvy.

The preceding Causes of this Disorder are, a sanguineous Habit, accompanied with an acrimony of the Juices, a mature Age, luxurious Living, a sudden Admission of the Cold to the Body, when over-heated, the Influence of the Weather in the Autumn, an Obstruction of Perspiration, and a tough inflammatory State of the Fluids, to be discovered by a pleuritic Blood. It begins with a continual Fever, and creates a violent dilacerating Pain, which is greatly increased upon the smallest Motion, is long fixed in one Place, seizes the Joints of any of the Limbs, and is particularly incident to the Knees, the Loins, and the Coxendix. It also sometimes affects the Brain, Lungs, and Viscera, is accompanied with a Tumour and Redness of the Part, and comes and goes periodically.

If it remains for a considerable Time, and is increased, it often, after the most violent Pains, deprives the Limb of Motion, and produces an Anchylosis, which will hardly yield to any Medicine.

The immediate Cause of a Rheumatism seems to be so mild an Inflammation as not to degenerate into a Suppuration, in the lymphatic Arteries of the Membranes contiguous to the Ligaments of the Joints. It is cured by Venesection; repeated antiphlogistic Purgatives, every Evening after which a proper Narcotic is to be exhibited; by mild tepid Baths, and antiphlogistic Fomentations applied to the Parts affected; by drastic Vesicatories and Cauteries; by highly diluting and emolli-

ent Medicines; by attenuating Food; by Rest and the Warmth of the Bed; and towards the End of the Cure by Frictions with warm dry Cloths, together with the Use of Antiscorbutic Medicines.

A Lumbago or Rheumatism seizing the Loins, and sciatic Pains, are cured in the same Manner, tho' with somewhat greater Difficulty.

Hence appear the Reasons why this Disorder is so frequent, and its Appearances so various; why 'tis highly dangerous, when it seizes the Brain or Lungs; why in these Parts it is not discovered without the greatest Difficulty; and why the Use of hot Substances, or the too speedy Exhibition of Narcotics, must be dangerous in it. *Boerhaave Aphor.*

This Disease happens at any Time, but especially in Autumn, and principally affects such as are in the Vigour of Life. 'Tis generally occasioned by exposing the Body to the cold Air, immediately after having heated it by violent Exercise, or some other Way. It begins with a Chills and Shivering, which are soon succeeded by Heat, Restlessness, Thirst, and the other Concomitants of a Fever. In a Day or two, and sometimes sooner, there arises an acute Pain in some one or other of the Limbs, especially in the Wrists, Shoulders and Knees, which, shifting between whiles, affects these Parts alternately, leaving a Redness and Swelling in the Part last affected. In the Beginning of the Illness the Fever, and the abovemention'd Symptoms, sometimes come together; but the Fever goes off gradually, whilst the Pain continues, and sometimes increases, occasion'd by the Derivation of the febrile Matter to the Limbs; which the frequent Return of the Fever, from the Repulsion of the morbid Matter by external Remedies, sufficiently shews.

This Disease, when unattended with a Fever, is frequently taken for the Gout, though it differs essentially therefrom, as will easily appear to those who are thoroughly acquainted with both Diseases; and hence it is, perhaps, that physical Authors have not mentioned it; unless we should esteem it a new Disease. But however this be, it is at present very frequent, and though, when the Fever is gone off, it seldom proves fatal, yet the Violence of the Pain, and its long Continuance, render it no contemptible Disease. For in case of wrong Management, it frequently remains not only several Months, but some Years, and even during Life; though in this Case it is not equally painful, but has its periodical Returns, like the Gout; and the Pain may possibly go off spontaneously after it has been of very long standing. But in the mean time, the Patient is depriv'd of the Motion of his Limbs during Life, the Joints of the Fingers being contracted inwards, with stony Concretions as in the Gout, which rather appear in the internal Parts of the Fingers than the external, while the Appetite may be very good, and the general Health not amiss.

There is another Species of this Disease, though it is not generally esteemed of this kind, which may properly be called a rheumatic Lumbago. It is a violent fix'd Pain of the Loins, reaching sometimes to the Os Sacrum, and resembling a nephritic Paroxysm; only the Patient does not Vomit. For, besides the intolerable Pain near the Kidneys, the whole Conduit of the Ureters, even to the Bladder, is sometimes affected with the same, though in a less Degree. I have been formerly led into an Error hereby, as imagining it to arise from some Gravel lodged in these Parts; whereas, in reality, it proceeds from the peccant and inflamed Matter of the Rheumatism, which affects only those Parts, leaving the rest of the Body free. Unless this acute Pain be removed in the same Manner as the former Species, it continues as long, and proves equally violent; so that the Patient cannot lie in Bed, but is forced either to leave it, or sit upright therein, and be perpetually moving his Body backwards and forwards.

Since both the Kinds of this Disease seem to arise from Inflammation, as appears from their Concomitants just mentioned, and especially by the Colour of the Blood taken away, which exactly resembles that of Persons in a Pleurisy, which is universally allowed to be an inflammatory Disease; so I judge that the Cure ought to be attempted only by Bleeding, the Heat of the Blood being in the mean time abated by cooling and incrasiating Medicines, along with a proper Regimen.

Accordingly, as soon as I am called, I direct ten Ounces of Blood to be immediately taken away from the Arm of the Side affected, and prescribe a cooling and incrasiating Julap, nearly after the following Manner.

Take of the distilled Waters of Lettice, Purslain, and Water-Lilly, each four Ounces; Syrup of Lemons, an Ounce and Half; Syrup of Violets, an Ounce; mix them together for a Julap, of which let the Patient drink at Pleasure; or of the following Emulsion.

Take seven blanched sweet Almonds; of the Seeds of Melons and Pumpions, each Half an Ounce; the Seeds of white Poppies, two Drams; beat them together in a Marble Mortar, then pour on, by Degrees, a Pint and Half of Barley-Water; mix them well, and when strained, add two Drams of Rose-Water, and Half an Ounce of white Sugar.

To ease the Pain, I order a Cataplasm, prepared of the Crumbs of white Bread and Milk, impregnated with Saffron; or a Cabbage-Leaf to be applied to the Part affected, and frequently renewed. With respect to Diet, I enjoin a total Abstinence from Flesh, and even the thinnest Flesh-Broths, substituting in their Place Barley-Broth, Water-Gruel, Panada, and the like. I allow only small Beer for Drink, or which is more proper, a Ptisan prepared of Pearl-Barley, Liquorice, Sorrel Roots, and the like, boiled in a sufficient Quantity of Water. I, also, advise the Patient to sit up some Hours every Day, because the Heat which proceeds from always lying in Bed, promotes and augments the Disease.

The next Day I repeat the Bleeding in the same Quantity; and in a Day or two after, as the Strength will permit, I bleed again; then interposing three or four Days, as the Strength, Age, Constitution of the Patient, and other Circumstances indicate, I bleed a fourth Time, which is generally the last, unless too hot a Regimen has preceded, or heating Remedies have been exhibited without Necessity. But the Use of Opiates requires more frequent Bleeding; and therefore, though the Pain be ever so violent, during the whole Course of the Disease, yet when I intend to effect the Cure solely by Bleeding, I judge it highly necessary to refrain from Opiates, because the Disease is fixed thereby, and does not yield so readily to Bleeding; so that where such Medicines are given too frequently, Bleeding must in consequence be oftner repeated than is otherwise necessary. Besides, in the Height of the Disease they do not answer the Expectations we have conceived of them.

While the abovementioned Remedies and Regimen are carefully continued, I inject Clysters made of Milk and Sugar, between times on the intermediate Days of Bleeding; earnestly recommending the exact Observance of these Directions, for at least eight Days after the last Bleeding; and then I prescribe a gentle purging Potion to be taken in the Morning, and in the Evening a large Dose of Syrup of white Poppies in Cowslip Flower Water; whereby a Check is put to the tumultuary Motion of the Blood, which might otherwise endanger a Relapse. This being done, I allow the Patient to return by Degrees to his customary way of Living, with respect to Diet, Exercise, and Air; but at the same time caution him to refrain, for a considerable time, from Wine, and all spirituous Liquors, salt or high-season'd Flesh, and in general from all Food of difficult Digestion.

After having repeated Bleeding, as above specified, the Pain is greatly abated, though it does not go quite off; but as soon as the Strength returns, which Bleeding had greatly impair'd, the Symptoms will vanish, and the Patient recover perfectly; especially upon the Approach of the following Season of the Year, which will be more conducive to recruit the Strength, than that wherein he was first attacked with the Disease.

But though this, or a similar Method, seasonably used in the Beginning of the Disease, generally proves successful; yet it frequently happens, when the Cure is attempted by a contrary Procedure, that the Patient is severely afflicted during Life with flying Pains, which are sometimes violent, and at others more gentle; whereby the Unskilful are easily deceived, and they are commonly reckoned Symptoms of the Scurvy.

But it is here to be observed, that when the Rheumatism hath taken deep Root by a Continuance of some Years, it is improper to repeat Bleeding at such short Intervals as in the Beginning of the Disease; and better to interpose some Weeks between the Operations. By these Means the morbid Matter will either be quite exhausted, or at least in so great a Degree, that the Remains of it may be carried off entirely, by an Issue made in one of the Legs, and exhibiting a proper Quantity of some volatile Spirit, every Morning and Evening, in Canary.

But though there is a remarkable Difference between the true Rheumatism and the Scurvy, it must nevertheless be own'd, that there is another Species of the Rheumatism, which is near a-kin to the Scurvy: For it resembles it in its capital Symptoms, and requires nearly the same Method of Cure; and therefore I call it a scorbutic Rheumatism. The Pain sometimes affects one and sometimes another Part, but it rarely occasions a Swelling, as in the other Species, neither is it attended with a Fever. It is, also, a less fixed Pain, and accompanied with irregular Symptoms; sometimes it affects one Limb, and sometimes another; sometimes it only attacks the internal Parts, and causes Sickness, which goes off again upon the

the Return of the Pain of the external Parts. In this manner the Patient is alternately afflicted, and the Disease proves of long Duration, like those Distempers which are esteemed most chronic. It principally attacks the Female Sex, and Men of weak Constitutions; so that I should have concluded it ought to be referred to the Tribe of hysteric Disorders, had not repeated Experience taught me, that it would not yield at all to hysteric Remedies.

Such, likewise, as have gone through a long Course of the Peruvian Bark, are subject to this Disease, which, by the way, is the only ill Effect I have ever observed from the Use of this Medicine. But however it be, this Disease, whether it proceeds from this or any other Cause, is easily conquered by the Use of the following Remedies, which I should have conceal'd, had I not preferred the Good of Mankind to any private Interest.

Take of the Conserve of Garden Scurvy-Grass, 2 Ounces; Conserve of Wood-Sorrel, an Ounce; compound Powder of *Arum*, six Drams; Syrup of Oranges, enough to make the whole into an Electuary; two Drams of which is to be taken three Times a Day, for a Month, drinking after it three Ounces of the following distilled Water.

Take of Garden Scurvy-Grass, eight Handfuls; of Water-Cresses, Brook-Lime, Sage, and Mint, each four Handfuls; the Peel of six Oranges; Nutmegs bruised, Half an Ounce; infuse them in six Quarts of Mum, and draw off only three Quarts for Use, in a common Still.

A CONSUMPTION FROM A RHEUMATISM.

In a Gout and Rheumatism, especially those of the legitimate and humoral Kind, which draw their Origins from an acrid Ferment supply'd by the Nerves, there is so manifest a Colliquation of the whole Mass of Blood, that we have no Reason to wonder if a Phthisis should arise from these Disorders, especially when they are obstinate, chronic, or subject to recur frequently. Hence we may observe, that Rheumatic Pains, arising from a contracted Cold, seldom or never invade the Joints, without being accompany'd with a pulmonary Cough. And as I observ'd that the illustrious Mr. *Orlando Bridgman*, Mr. *Philips*, Mr. *Tibs*, and a great many others, have at last died either of a Phthisis or Asthma, after long-continued arthritic and rheumatic Paroxysms; so I have, also, sometimes remark'd, that an acute and fatal Phthisis succeeded the very first Paroxysm of the Rheumatism.

It sometimes happens that a Phthisis succeeding the first Access of the Rheumatism is of the acute Kind, since it draws its Origin from the Colliquation of Humours in the acute Paroxysm of the humoral Rheumatism. As it, therefore, partakes of the Nature of a common Phthisis, its Cure ought to be attempted in the same manner; that is, by lubricating and incrassating Substances, Opiates and other pulmonary Medicines. And even in Cases where there is neither a troublesome Cough, nor a Difficulty of Breathing, I use, and that with great Success, in all Paroxysms of the Rheumatism, to prescribe large Quantities of *Apozems* and *Eclegmas*, of a pectoral, lubricating and incrassating Nature, not only with a View to give a proper *Crafsis* and Softness to the Blood; but, also, in order to guard against a *Phthisis*, which frequently acknowledges a Rheumatism for its Cause.

When a Phthisis arises either from a Gout, or an inveterate and often recurring Rheumatism, it is plainly of the chronic Kind, and may happen for a long Tract of Years gradually to injure the Lungs and other Parts, destin'd for the several Purposes of Respiration. And, indeed, a Phthisis of this Kind partakes of the Nature of an Asthma; since, by reason of the Viscidity of the Phlegm, it is more frequently accompany'd with a Difficulty of Breathing than an obstinate Cough, and seems rather to arise from a *Stupor* of the nervous System, than a Colliquation of the Humours.

But this asthmatic Phthisis has, in my Opinion, something singular in its Nature, since the Choice of Air has not the least Influence upon it; for I have observ'd, that Patients labouring under this Species of Phthisis, even though they were asthmatic, breath'd as free and easy in an Air that was damp, and impregnated with the Smoke of Coals, as in that which was pure and serene. Hence it happens, that lubricating and expectorating Medicines are, at least, of no Service in this Case; whilst, at the same time, Opiates and incrassating Substances produce the most fatal Effects. Greater Relief is justly to be expected from frequent and copious Exhibitions of the Spirit of Harts-horn, Sal-Ammoniac, chymical Oil of Juniper, and such other Medicines as rouse the Spirits and comfort the Nerves, than from any Opiates or pectoral Medicines whatever.

The rheumatic Pains and Swellings are generally lessened in proportion as this Asthmatic Phthisis advances and gains Ground. And indeed a true and legitimate humoral Rheumatism degenerates into a nervous one, accompanied with fitting Pains, without any apparent Swelling, long before it proves mortal.

A rheumatic Phthisis, arising from a chronic Rheumatism, and invading old People, is, for ought I know, altogether incurable, since 'tis a sure Sign that weakened Nature is now no longer able to maintain the laborious Struggle, and grapple with so formidable an Enemy as the Rheumatism.

Gentle Vomits, repeated at proper Intervals, especially if they happen to work easily, and are not called in too late, contribute very much to the Cure of this Species of Phthisis, since they prove Deobstruents to the Brain and Nerves, allay the rheumatic Pains, and lessen the Stupor and Rigidity of the nervous System in general; by which Means the procatactic Cause, or Fomes of this kind of Phthisis is in a great Measure removed, or at least diminished.

Venesection, in the Beginning of this Disorder, before the Strength of the Patient is too much exhausted, is also of singular Service, not only by lessening the hectic Heat, and the rheumatic Pains, but also by proving a grateful Relief to the Difficulty of Breathing.

But when the Disease is considerably advanced, and the Patient labours under an universal and preternatural Languor, I have often observed, that Venesection not only gives an additional Shock to Nature, already too much weakened, but also increases the Difficulty of breathing. And indeed I have not the least Reason to doubt, but this asthmatic Phthisis frequently proceeds from profuse and often repeated Venesections, under the Paroxysms of a Rheumatism; since by that Means, as well as by other immoderate Hemorrhages, the due *Crafsis* of the Blood is destroyed, and its whole Mass impoverished.

I have also had many Proofs of the singular Efficacy of the Peruvian Bark in extinguishing the hectic and colliquating Heat, excited and left in the Mass of Blood, by the Force and Violence of the Rheumatism; and indeed if this Heat is not removed and carried off, either by the Efforts of Nature, or the Assistance of Art, it paves a direct Way, and lays a sure Foundation for a pulmonary Phthisis.

I have also observed, that for this very Reason, chalybeate Medicines, and especially chalybeate mineral Waters, provided they were drunk betimes, and pass'd off freely and copiously by Urine, were of singular Use in the first Stages of this Distemper, for procuring a Respite, at least, if not for perfecting the Cure.

Hot Baths, and artificial Baths, used before the Patient's Strength is too much exhausted, have generally a lucky Influence upon this Species of Phthisis in its first Stages, by removing the Obstructions of the Fibres.

In the Beginning of this Distemper, a Milk Diet is also of singular Service, by diminishing the Heat, and allaying the preternatural Acrimony of the Blood. But I must own it is not so proper when the Disease is advanced, and a Difficulty of breathing already brought on; because, in that case, it generally renders the Phlegm impacted in the *Bronchia* more glutinous than it was before. Nor perhaps is it a groundless Conjecture, that the too plentiful Use of Milk in Rheumatisms, very much disposes the Patient to an asthmatic Phthisis.

CASE I.

One Mrs. Laurence, about thirty five Years of Age, happening, when big with Child, to be seized with an universal Rheumatism, was so unfortunate as to commit the Care of her Health to a certain Apothecary for some Months, till at last considering her Complication of Symptoms, her Cough, her Difficulty of breathing, her hectic Fever, her Languor, and other Symptoms of a like Nature, it became uncertain whether she was to fall a miserable Sacrifice to a Rheumatism or a Phthisis, since her Rheumatism, which was formerly of the legitimate Kind, had by this Time degenerated into a nervous one, accompanied with a certain Rigidity and fitting Pain of the Joints, but without any Tumour or Swelling. When the Patient was in this deplorable State, I was called on the 25th of *October* 1686; and in order to allay the rheumatic and hectic Heat of the Blood and Spirits, together with the hysteric Indisposition arising from them, I prescribed her the following Electuary and Julep.

Take of the old Conserve of red Roses and of Hipps, strained through a Sieve, of each an Ounce, Lavender Flowers powder'd, Magistery of Coral; of each a Dram, of Syrup of Corals a sufficient Quantity, mix them, and make an Electuary, of which let her take the Quantity of 2 Nutmeg every six Hours.

Take the Waters of Rue, and black Cherries, of each four Ounces; of Barley-Cinnamon Water three Ounces, the compound Waters of Piony, and of Briony, of each an Ounce and half; of prepared Pearl a Dram and half; of fine Sugar a sufficient Quantity to sweeten them; mix them, and make a Julap, of which let her take four or five Spoonfuls after every Dose of the Electuary, and likewise at other Times when she has a Mind to it.

To help the Pains and Stiffness of her Joints, I ordered that same Night blistering Plaisters to be applied to the Inside of her Arms, near the Arm-Pits; and I tried a gentle Evacuation by Stool, with two Ounces of Tinctura Sacra, which she bore well. I ordered the following Paregoric Draught to be taken when she was to go to Rest.

Take of red Poppy Water three Ounces, Barley-Cinnamon Water an Ounce, of compound Piony Water two Drams, Salt of Wormwood six Grains, Syrup of Meconium six Drams, mix them, and make a Draught.

October 28. I gave her the following Vomit.

Take of the Infusion of *Crocus Metallorum* an Ounce, Syrup of Violets two Drams; mix them, and let them be given for a Vomit about five o'Clock in the Afternoon, with due Care and Management; and (if it be necessary) let her take between her Vomiting a Scruple of Salt of Vitriol, twice or thrice in a Draught of warm, Posset Ale.

I ordered also the following Paregoric Draught to be taken when the Vomit had done working.

Take of Mint-Water half an Ounce, Dr. Stephen's Water three Drams, Barley-Cinnamon Water, Alexiterial Milk Water, of each an Ounce, of Diacodium six Drams; mix them, and make a Draught.

From the Vomit she found an universal Relief, and that not only from the Symptoms of her Consumption, but also of her Rheumatism. And therefore, after three Days, I ordered the Repetition of the Vomit; and then I endeavoured to extinguish the hectic Flame, which had been kindled in the Blood by the Rheumatism, and thereby to take Care of her Lungs, which had been injured by it, in the Manner following.

Take a sufficient Quantity of the Ingredients of the pectoral Decoction, of the Peruvian Bark an Ounce, Balsam of Tolu a Dram; boil them in a sufficient Quantity of spring Water, to a Pint and half; to the Liquor, when it is strained, add distilled Treacle Water, the Balsamic Syrup, of each an Ounce and half; mix them, and make an Apozem, of which let her take four Ounces three Times a Day for six Days together, taking always in the Night-Draught fifteen Drops of Helmont's liquid Laudanum, if any Gripes, or Looseness, or want of Rest should trouble her.

When she had done using the Apozem, I ordered the emetic Potion to be repeated, and afterwards, Novemb. 13. I prescribed the following Pills.

Take of the Peruvian Bark, finely powdered, an Ounce, Mucilage of Gum Tragacanth, a sufficient Quantity. Mix them, and make them into Pills of a middle Size, to be gilt; of which let her take six Morning and Evening, every Day.

With the Use of these she grew perfectly well, being evidently freed not only from the Pains and Stiffness of her Limbs, but likewise from her Cough, Difficulty of Breathing, Oppression, Fever, and all the other Symptoms of a pulmonary Consumption. Her Appetite also returned, and at length she likewise recovered her Strength, and her Flesh, and still enjoys very good Health, without any Return of her Rheumatism or Consumption. *Morton.*

RHEXIS, *ῥῆξις*, from *ῥήγνμι*, to break, a Rupture, in *Hippocrates*, 5 *Aph.* 15. signifies the breaking of an Abscess; and also 6 *Epid. Sect.* 6. *Aph.* 24. In other Places it is applied to a Rupture of some Blood-Vessel, whence an Hæmorrhage is occasioned.

RHICNOSIS, *ῥηκνῶσις*, from *ῥηκνός*, rugous or wrinkled, is a Congruation of the Skin, attended with an Extenuation of the Body, and opposed to *Ectasis*, *ἔκτασις*, a Distention of the Skin from Repletion.

RHIGOS, *ῥῆγις*, Lat. *Rigor*, a Rigor, is defined by *Galen*, *Lib. de Trem. & Palp. &c.* a Perfrigeration, with an Uneasiness,

and irregular Agitation and Concussion of the whole Body; This is the Definition of a morbose *Rigor*, *ῥῆγις morbos*, or *ἀνίστασις*, as he calls it, *Com. 3. in 1 Epid.* or *ῥῆγις νευρῆσις*, as it is called by *Hippocrates*, *Lib. 4. de Morb.* when the Disorder arises, or has its Original in the internal Parts, and proceeds from no external violent Cause, but invades and comes upon the Body, as it were spontaneously; for *Rigor* in a more universal Sense, or as it signifies any uneasy Perfrigeration, may be incident to Persons in Health. That a *Rigor* is not a Sense of Perfrigeration, with a Trembling, is largely proved by *Galen* in the Book above cited, where he gives the distinguishing Characters of a *Rigor*, and a *Tremor*, or Trembling; and at last concludes, that a *Rigor* is a strong and urgent Sense of a Refrigeration of the natural Heat. *Hippocrates*, also, *Lib. 1. de Morb.* says, that a *Rigor* proceeds from a Refrigeration of the whole Body, occasioned by a Refrigeration of the Blood; and *Lib. 4.* he makes a *Rigor* to take its Rise from a violent Irruption of acrimonious Humours into some Part, and a vehement Conflict of the jarring Humours, attended with a Concussion of the whole Body; and such a *Rigor* as this was always accounted by the Ancients an Attendant upon a Fever, as appears from *Hippocrates*, *Lib. 1. & 4. de Morbis*; for a *ῥῆγις ἀνδραγαθῆσις*, or a *Rigor* not succeeded by an intemperate or feverish Heat, was, as *Galen* says, *Lib. 5. de Symp. Caus.* unknown to the ancient Physicians, on account of their extremely frugal Way of Living, being no more than a Sensation of a kind of Horror, and having very little of the true *Rigor* in it. This owes its Original to a vitreous Phlegm, and cold and crude Juices, Intemperance in Diet, a lazy and idle Life, and to the frequent Use of Bathing; and is very familiar to the Female Sex, as *Galen* in many Places assures us. *Hippocrates*, *Lib. 1. de Morb.* makes a *Horror* to be a weak kind of *Rigor*; and *Celsus*, *Lib. 8. Cap. 2.* uses the Word *Horror* for *Rigor*, from 4 *Aph.* 58. where he says, "That a burning Feve, which the *Greeks* call *καυσώδης*, *Causodes*, meets with a "Solution from the sudden Coming of a *Horror*." The *Latins* also call those Shiverings and Shakings, which affect the Patient under the Fits of Fevers, indifferently by the Name of *Horrores* or *Rigores*.

Rigor is also taken in another and quite different Sense, for an inflexible Hardness and Tension of the Nerves and Muscles, which seems more properly expressed by *Rigiditas*.

RHINARION, *ῥιναριον*, the Name of a smectic or detensive Collyrium, described by *Paulus*, *Lib. 7. Cap. 16.*

RHINE. The same as **SQUATINA**, which see.

RHINEMA, **RHINISMA**, *ῥινημα*, *ῥινησμος*, Scrapings, Shavings, Filings, and the like. *Hippocrates*, *Lib. 1. πρὸς γυναικας*, and *Galen*, *Lib. 3. κατὰ τὸν*.

RHINENCHYSIS, *ῥινηγχυσις*, from *ῥίς*, the Nose, and *ἐγχύω*, to infuse; an Infusion into the Nostrils, which is performed by an Instrument called

RHINENCHYTES, *ῥινηγχυτής*, a Syringe for the Nostrils, mentioned by *Cælius Aurelianus*, *de Morb. Chron. Lib. 2. Cap. 4.* and *Lib. 3. Cap. 2.* where the vulgar Reading is *Rinenchy-tos*; but *Rhodius*, *ad Scrib. Larg.* reads *Rhinenchytes*.

RHINION, *ῥῆγιον*, the Name of a Collyrium in *Galen de C. M. S. L. Lib. 4. Cap. 7.* and of another described by *Celsus*, *Lib. 6. Cap. 6.* for a dry Ophthalmy, and scabrous Eyes. *Castellus*.

RHINOCEROS, *Offic. Schrod. 5. 305. Raii Synop. A. 122. Mont. Exot. 5. Aldrov. de Quad. Biful. 878. Charlt. Exer. 12. Gefn. de Quad. 842. Jonf. de Quad. 66. Abada sine Rhinoceros, Bont.* THE RHINOCEROS.

The Part in Use is the black, fissile, pyramidal Horn, a Cubit in Length, of the Figure of a Buffalo's Horn, and perfectly solid, or without Cavity.

This Horn is commended against contagious Poisons, and other Distempers which require Sudorifics, and therefore in such Cases may supply the Want of the Unicorn's Horn. *Schroder. Monti* writes that the Horn is alexipharmic, cardiac, stomachic, diaphoretic, and a Sweetener.

Though there are various Kinds of Quadrupeds with one Horn, described by Authors, I take them all, says *Dale*, to be fictitious, except the *Rhinoceros*, which is the only Unicorn, or one-horn'd Quadruped, and perhaps the very same with that of the Ancients, whose Horn *Ælian* affirms to be black. And *Schroder*, as well as others, ascribe the Virtues said to be in the Horn of the Unicorn, to the Horn of the *Rhinoceros*.

RHINOPTES, *ῥινοπτης*, from *ῥίς*, or *ῥῆγις*, the Nostrils, and *ὀπταίω*, to see, is a Person who from a Disease in the great Canthus of the Eye, which has laid open the Passages to the Nose, is enabled to see through the Nostrils; an Instance of which we have in *Rungius de Visus Symp.*

RHINOS, *ῥῆγις*, in *Erotian*, is expounded by *ῥῆγις*, the Skin.

RHIPIDION, *ῥῆπιδιον*. A Fan. *Moschion.*

RHIPTASMOS, *ῥιπτασμός*, from *ῥίπτω*, to toss or cast. A Tossing and Restlessness, a Symptom very frequent in Fevers. See **ALYSMOS**.

RHIZA, *ῥίζα*. A Root.

RHIZAGRA. The Name of a Chirurgical Instrument, for extracting the Roots or Stumps of Teeth.

RHIZIAS, *ῥιζίας*. A Liquor collected from Roots by Incisions made therein. *Silphium* is particularly thus called.

RHIZOPHORA. The Name of a Vegetable, of which *Boerhaave* mentions two Species; the first of which is the *Rhizophora*; *Indica*; *Bryonia nigra similis*; ad foliorum ortum verrucosa. *Plukn. Phyf. T. 220. F. 50.*

The second is the

Rhizophora; *Americana*.

RHIZOTOMUS, *ῥιζοτόμος*. The same as **RADICI-SECA**.

RHOA, *ῥοά*. The Pomegranate.

RHODAPSINTHATON, *ῥοδάψινθατον*. A Preparation of Roses. *Ætius* describes several of these, *Tetrabib. 4. Sermon. 4. C. 117.*

RHODELÆUM. Oil of Roses.

RHODIA RADIX, *Offic. Ger. 426. Emac. 532. Raii Hist. 1. 690. Park. Theat. 729. C. B. P. 286. J. B. 3. 683. Telephium luteum minus, radice Rosam redolente, Hist. Oxon. 3. 468. Anacampteros radice Rosam spirante major, Tourn. Inst. 264. Boerh. Ind. A. 269. Raii Synop. 3. 269. ROSE-WORT.*

It grows on hilly Places, and flowers in the Spring. The Part in Use is the tuberous and brittle Root, which is of a dark-brown Colour on the Outside, and whitish within, and of a rosy Smell and Taste. This Root is heating and drying, and cephalic; its principal Use is in Pains of the Head. *Dale.*

RHODIACON, *ῥοδάκιον*. The Name of a Plaster described by *Galen* from *Asclepiades*. *L. 2. de Comp. Medic. p. G. Cap. 17.*

RHODIDES, *ῥοδάδες*. Troches of Roses, described by *Dioscorides*. *L. 1. C. 131.*

RHODINON, *ῥοδινον*. Oil of Roses. Or Vinegar of Roses.

RHODITES VINUM. Wine impregnated with Roses; the Manner of preparing it is described by *Dioscorides*. *L. 5. C. 35.*

RHODIUM LIGNUM. See **ASPHALTHUS**.

RHODODAPHNE. The same as **RHODODENDRON**.

RHODODENDRON. The Oleander, or Rose-Bay. See **NERIUM**.

RHODOMELI. Honey of Roses.

RHODOMELON, *ῥοδόμηλον*. A Confection of Roses, Quinces and Honey.

RHODON, *ῥόδον*. A Rose. Sometimes it imports the Oil of Roses.

RHODOSACCHARUM. Sugar of Roses.

RHODOSTACTON, *ῥοδόστακτον*. Honey of Roses. *Paulus Ægineta. L. 7. C. 17.*

RHODOSTAGMA, *ῥοδόσταγμα*, from *ῥόδον*, a Rose, and *στάλην*, to distil. Dr. *Freind* remarks, that *Æturius* is the first Greek Author who makes mention of distilled Liquors, as the *Rhodostagma*, and *Intyboflagma*, which the Translator calls *Stillatitius Liquor Rosarum*, & *Aqua quam Intybus stillavit*; and which are by the Author used as Ingredients in a Julap. *Gesner* indeed contends, that these Liquors here specified, are not prepared by any chymical Process, and are nothing more than Syrups of those Plants, just like the *Rhodostacton* described in *Paulus*. *M. le Clerc*, following the Opinion of *Langius*, thinks otherwise; and has shewn very plainly, that the stillatitious Liquor of Roses mentioned by *Æturius*, is very different from the *Rhodostacton* of *Paulus*, which is only made with the Juice of Roses and Honey boiled up together. His Judgment seems to be very right in this Matter; and as a further Proof of it, give me leave to observe a Passage or two in *Nicolaus Myrepsus*, one of the last of the Greeks, and who often copies from our Author. He describes the *Rhodostacton* of *Paulus*, only with this Difference, that he says it may be made with Sugar, as well as with Honey: Then he describes the *Hydrosactum*, as it is delivered down to us by *Ætius* and *Paulus*, a Medicine much like the former, with this Variation alone, that Water is added to the Roses: And after that, he proceeds to give this very Julap in *Æturius*, which proves, at least, that he thought it a Preparation very distinct from the other two. And it must appear very evident to any one who considers the Composition itself, that it is a very absurd one, unless the distilled Rose-Water be meant; for otherwise it is just a double Trouble, and making the Medicine twice over, with the very same Ingredients, to little purpose.

RHOE. The same as **RHUS**.

RHOEAS, *ῥοείας*, or *ῥοείας*; from *ῥέω*, to flow, or *ῥύω*, to draw, is a Flux of the Eyes, occasioned by a Diminution of the Flesh

in the greater Canthus, or Angle of the Eye. *Galen, Com. 2. in 6 Epid.* makes four Kinds of it, according to the different Causes; for either it is occasioned, he says, by the Closure or Obstruction of the Passage at the great Canthus, or by a Collection of so much Excrement in the Eye, that this Passage, by reason of its natural Straintness, is incapable of receiving it; and therefore discharges it. Or thirdly, it may proceed from the Stopping of the Passage by a Cicatrix growing therein, as it happens after a Section of the *Encanthides*. [See **ENCANTHIS**.] Or lastly, from any other Ulceration of the Part. The Author of the *Definitiones Medicæ*, defines a *Rhoeas* to be a Consumption of the Flesh in the Angles of the Eye, occasioning a Flux of the Tears. And in the *Isagoge* ascribed to *Galen*, we read that the Eye is affected with a *Rhoeas*, when either the *Canthus*, by some unknown Cause, is perverted, or by a chirurgical Operation so raised, as to be incapable of containing the Tears, or preventing their Efflux.

According to *Ætius*, in *Tetr. 2. Sermon. 3. Cap. 88.* the Disorder by the Greeks called *Rhoeas*, which is a Diminution or Decrease of the Flesh in the large Angle of the Eye, happens when by an Exulceration, or the Removal of a Pterygium, or the natural Flesh, the Angle of the Eye is removed, falls down on the Cheek, and becomes incapable of retaining the Tears. This Disorder also sometimes happens from an ill-cured *Ægilops*. Those Persons are, also, called *Rhoeades*, who in Consequence of continual Defluxions of the Eyes, perpetually discharge Tears. Those, the Angle of whose Eye is totally removed, are to be cured by Medicines of a corroborating and consolidating Quality. But if a Callus is induced, the Parts must be stimulated by some more acrid Medicines. But manual Operation is also necessary for the Cure of this Disorder; for a Ligature is to be applied about the Neck, and some Blood-Vessel about the Nose, are to be marked out and afterwards opened with a two-edged Knife. Then a Sponge being applied to the Eye, a triangular Cautey is to be applied to the Part, tho' not so deep as the Bone, but only so as to affect the Skin and Wound. Afterwards a Lentil with Honey is to be applied. When the Ulcers are sufficiently clean, the Eye is to be kept open till the Angle is filled with laudable Flesh, for fear of a Concretion. In the Cure of this Disorder, Allum and Turpentine are of singular Service.

RHOGE, *ῥογή*. A Rupture, Fracture, or Fissure.

RHOGMOS, *ῥογμός*. A Snoring.

RHOICOS, *ῥοικός*. Fluid. An Epithet for Bodies abounding with Humidity.

RHOIDARIUM, *ῥοιδάριον*. The Name of a Medicine described by *Ætius*, *Tetrabib. 1. Sermon. 2. C. 68.*

RHOITES, *ῥοίτης*. A Sort of Rob of the Juice of Pomegranates, described by *Dioscorides*, *L. 5. C. 34.* But a Confection made of three Sextaries of the Juice of Pomegranates, and one of Honey, boiled to the Consumption of one Third, is thus called by *Paulus Ægineta*. *L. 7. C. 15.*

RHOMBOIDES MUSCULUS.

This Muscle is a thin, broad and obliquely square fleshy Plan, situated between the Basis of the Scapula and the Spina Dorsi; and it is from its Figure that it has been termed *Rhomboides*.

It may be divided into two Portions, one superior, the other inferior, which sometimes appear separate. The superior Portion, which seems in some Subjects to be made up of two, is fixed by an Insertion wholly fleshy in the two or three lowest spinal Apophyses of the Neck, and partly in the posterior cervical Ligament. The inferior Portion is fixed by a tendinous Plane in the three or four uppermost spinal Apophyses of the Back.

These two Portions, of which the inferior is by much the broadest, being united, are inserted in the Edge of the Basis Scapulæ from the small triangular Space to the inferior Angle, the superior Portion covering a small Part of the Insertion of the *Angularis*.

This whole Muscle is covered by the *Trapezius*, and covers immediately the *Serratus Posticus Superior*, being joined to each of these Muscles by a filamentary or cellulous Substance.

According to the Insertions and Direction of the *Rhomboides*, its general Use must be to draw backward and upward the subspinal Portion of the Basis Scapulæ.

It is also a Moderator to the *Trapezius* and *Serratus Major*, when they raise the Shoulder or carry the *Acromium* upward; and it brings the Scapula back to its natural Situation, when the Action of these Muscles ceases.

It may draw the Scapula directly backward, if the inferior Portion of the *Trapezius* acts at the same time. For as this Portion draws obliquely downward and toward the Spina Dorsi, and the *Rhomboides* obliquely upward and toward the same Spine; the joint Action of both must produce a Motion directly backward, as it happens when we pull back both Shoulders equally, in order to disengage them.

It may also, together with the radiated Portion of the *Serratus Major*, draw the Basis of the Scapulae directly backwards. This, however, is but an inconsiderable Motion, and not so easy as the rest; for the *Serratus Major* contributes to it only in proportion to the Action of the *Rhomboides*, which is but very small; and in this Case the *Acromium* can rise but a very little Way. *Winslow's Anatomy*.

RHOMBOS, ῥόμβος. A Species of Bandage mentioned by *Galen*, thus called from its Figure.

RHOMBUS. A Fish called a Turbot.

There are several Sorts of Turbot, of different Sizes; some have Prickles on their Head, and towards the Tail, and others none. They have a delicious Taste, and are best while they are fresh, firm, white, tender and juicy. Some call it *Phasianus Aquaticus*, the Water-Pheasant, because its Taste resembles that of a Pheasant. It contains a just Proportion of oily and volatile saline Principles, and has but few viscous and gross Juices. It is, therefore, nourishing and easy of Digestion; is reckoned good against the Distempers of the Spleen, when applied thereto, and produces no ill Effects, unless immoderately used. It agrees at all times with any Age and Constitution.

There are very large Turbots in the Ocean and Mediterranean. *Rondeletius* says, he had seen some which were five Foot long, four in Breadth, and a Foot thick. This Fish sometimes lives about the fat Soils, and near the Shores, but generally at the Mouths of Rivers, where it watches the small Fishes, on which it feeds, especially the Cray-Fish. *Lemery on Foods*.

RHOMMA, ῥόμμα. The same as **ROPHEMA**.

RHONCHOS, ῥήγχος. Snoring or Snorting; from ῥήγχο, to snore.

RHOPALOSIS, ῥοπαλῶσις. A Disorder of the Hair, which should seem to resemble the *Plica Polonica*, as it consists in a Matting or Concretion of the Hairs together. *Galen Defin*.

RHOPE, ῥοπή, from ῥέπω, to verge, or incline. A violent Tendency of the Humours to any particular Part.

RHOPHEMA, ῥόφημα, from ῥέφω, to sup. This Word is frequently used by *Hippocrates*. *Caelius Aurelianus* translates it, *Sorbilis Cibus*. It is the Cremor of Pisan, that is the Pulp of Barley decorticated and boiled.

RHOX, ῥῶξ. The *Tunica Uvea* of the Eye. Or the Pupil of the Eye, in *Moschion de Morbis Mulierum*.

RHUS.

The Characters are;

The Leaves are pinnated, or triphyllous; the Calyx is quinquefid, small and dentated. The Flowers are rosaceous, pentapetalous, and disposed in Bunches. The Ovary in the Bottom of the Calyx becomes a roundish Capsule, pregnant with a single and almost globular Seed.

Boerhaave mentions twelve Sorts of *Rhus*, which are;

1. *Rhus*; folio Ulmi. *C. B. P.* 414. *Tourn. Inst.* 611. *Boer. Ind. A. 2.* 299. *Rhus Obsoniorum*, Sumach. Offic. *Rhus Coriaria*; Ger. 1291. *Emac.* 1474. *Rhus*, sive Sumach. *J. B. I.* 555. *Raii Hist.* 2. 1590. Sumach, sive *Rhus Obsoniorum* & *Coriarium*, *Park. Theat.* 1450. COMMON SUMACH.

This *Rhus* grows not to be a Tree of any great Magnitude, having its Branches clothed with long pinnated Leaves, whose single-Pinnæ resemble the Leaves of the Elm-Tree, but are somewhat longer; the Flowers grow in large white Clusters, which are succeeded by small, flat, round, hairy Seed, of a refringent earthy Taste. It grows in *Italy*, *Spain* and *Turkey*. The Leaves and Seed are used.

They are both very refringent and stiptic, good for all Kinds of Fluxes and Hæmorrhages, both used inwardly and outwardly. They resist Putrefactions and Gangrenes, and Mortifications. It is an Ingredient in the *Syrupus Myrtinus*.

The *Unguentum Sumach* takes its Name from the Seed. *Miller. Bot. Off.*

It is refrigerating, drying and astringent, and is principally used in Fluxes of the Belly, Uterus and Menfes. It restrains the Hæmorrhoids, and corrects Bile. We think fit to observe, that the *Rhus Obsoniorum*, *Coriariorum*, and *Rubeum* (the *Rhus* of the Cooks, of the Tanners, and the red *Rhus*) of *Galen*, are not different Species of Trees; but the *Rhus Obsoniorum* is no other than the Fruit; the *Rhus Coriariorum*, the Leaves and small Branches; and the *Rubeum* the Seed of the same Tree. This is the Opinion of that very learned Botanist, Mr. *J. Ray*, with whom we agree in our Sentiments on this Head. *Dale*.

2. *Rhus Virginianum*. *C. B. P.* App. 417. *Raii Hist.* 2. 1591. *Tourn. Inst.* 611. *Boerh. Ind. A. 2.* 229. *Park. Theat.* 1450. Sumach sive *Rhus*, *Ind. Med.* 114. VIRGINIAN SUMACH.

It is a Native of *Virginia*, but cultivated with us in the Gardens of the Curious, and is esteemed to have the same Virtues as the common Sumach.

3. *Rhus*; *Americanum*, *Rachi*, cui adnascuntur folia, rubra; folio lato, utrimque glabro, non serrato, *Pistachia* simili.

4. *Rhus*; *Americanum*; *Rachi*, cui folia adnascuntur, rubra; foliis præcedenti angustioribus.

5. *Rhus*; *Americanum*; *Rachi*, cui folia adnascuntur, rubra, alata; foliis molle Clusii brevioribus.

6. *Rhus*; *Africanum*; trifoliatum; majus; folio subrotundo, integro, molle & incano. *Plukn. Phyt.* 219. 8.

7. *Rhus*; *Africanum*; trifoliatum; majus; foliis obtusis & incisis, hirsutiè pubescentibus. *Plukn. Phyt.* 219. 7.

8. *Rhus*; *Africanum*; trifoliatum; majus; foliis acutioribus, incisis, supra viridibus, glabris, infra argenteis, glabris. *H. R. D.*

9. *Rhus*; *Africanum*; trifoliatum; majus; foliis acutioribus, arguticis denticulatis, glabris, subtus argenteis. *H. R. D.*

10. *Rhus*; *Africanum*; trifoliatum; majus; foliis subtus argenteis, acutis, & margine incisis. *Plukn. Phyt.* 219. 6.

11. *Rhus*; *Africanum*; trifoliatum; minus; glabrum; splendente folio, subrotundo, integro. *Plukn. Phyt.* 219. 9.

12. *Rhus*; *Africanum*; trifoliatum; majus; glabrum, splendente utrimque folio, subrotundo, medio quandoque crenato. *H. R. D. Boerh. Ind. Alt. Plant. Vol. 2.*

It is called *Rhus*, ῥῆς, from ῥέω, *rheo*, to flow, because it stops Fluxes. The Fruit, which is disposed as it were in Clusters, and is of a red Colour, and an acid and grateful Taste, is of excellent Service in a *Diarrhæa* and *Dysentery*, especially when it is boiled with the Rinds of Pomegranates in Water. It is no less useful in an immoderate Flux of the Menfes, in the *Diabætes*, *Hæmorrhoids*, and *Gonorrhæa*. The Seeds of the Sumach are only the dry'd Grains, taken out of the Clusters, and are not of so much Virtue, on account of their Dryness; and therefore the recent Berry is to be chosen, being excellent, particularly in resisting Putrefaction, and a Gangrene in a *Paronychia*. The Gum put in a Tooth eases the Tooth-ach. The tender Buds, and green Fruits before they are rendered succulent by Maturity, are of Service in a kind of hectic Fever, attended with profuse Sweats, on account of the too great Tenderness, Flaccidity and Humidity of the Fibres. *Hist. Plant. ascript. Boerhaave*.

Dioscorides tells us, that the Herb *Phoenix*, φοῖνῆξ (which is a kind of *Lolium* distinguished among the Latins by the *Epithet Murinum*) is called by some ῥῆς, and by others *Anchinops*, ἀγχίνωψ; but the ῥῆς ἰσχυρὸς, Red *Rhus*, of the Greeks, is the Seed of the *Frutex coriarius*, or Sumach. As to this last Plant, there is no small Controversy among the Learned, whether there be several Species thereof, or only one, because there are several mentioned, and those under distinct Names, in the Writings of the ancient Physicians. One they call ῥῆς μαργαρίτης (*Rhus Obsoniorum*), another ῥῆς βορσολειῶν (*Rhus Coriariorum*) and a third ῥῆς Συριακὸς (*Syrian Rhus*). Some perhaps will say that these are but different Names for the same Thing; but when all these three are mentioned in order one after another, it can scarce be supposed that they are meant of the same Thing. Now these three before named are mentioned one after another, as so many several Ingredients, in Hundreds of Compositions of *Myrepsus*, for Example, in his third *Plaister*, where we read, καυαίονα, σιδῖον, ῥῆ μαργαρίτης, ῥῆ βορσολειῶν, ῥῆ Συριακὸς, “*Cinamon, Malicorium, Rhus Obsoniorum, Rhus Syriacum, and Rhus Coriariorum*.” Upon this Consideration *Fuchsius* concluded, and not without Reason, that there were as many Species as distinct Names of *Rhus*. But against his Opinion we have a strong Argument from *Dioscorides*, who affirms that the *Rhus Obsoniorum*, which some call *Erythrus* (red) is the Seed of the *Rhus Coriariorum*, where you may also observe a Difference in the Gender, for the Shrub is called ἡ ῥῆς; (*hæc Rhus*), but the Seed ὁ ῥῆς; (*hic Rhus*). When therefore we read ῥῆς μαργαρίτης in Authors, we must understand it of the Seed, which was applied to culinary Uses, but when we meet with ῥῆς βορσολειῶν, or *βορσολειῶν*, it is meant of the Shrub, whose Leaves were used in dressing of Leather. The *Rhus Obsoniorum*, or Seed, was also called absolutely ῥῆς; *Rhus*, as we find in *Galen's Evegefis*, and had also the Addition of ἰσχυρὸς, Red, because when mature it turn'd red.

But the chief Difficulty lies in determining the *Rhus Syriacum*, which *Myrepsus* separates both from the *Rhus Obsoniorum*, and *Coriariorum*. *Theophrastus* says, that the Shrub *Rhus* grows every where; he therefore described the *Rhus* which grew in *Greece*. But *Pliny* accommodates the Description of *Theophrastus* to the *Syrian Rhus*, and reckons the *Rhus* among the Number of exotic Plants which were peculiar to *Syria*, tho' *Theophrastus* makes it to grow every where. Where we read in *Pliny*, quod vocatur *Rhus*, in a certain Manuscript is expressed quod vocatur *Ros*; and agreeably to this we find in *Celsus Ros Syriacus*, which *Brodeaus* and *Crinitus* interpret of Manna, as if he had spoken of the *Syrian Ros*, or Dew, and not of the *Syrian Rhus*, or *Rhus*. *Pliny, Lib. 24. Cap. 11.* reckons two Kinds of *Rhus*, as distinct from the *Rhus Syriacum*, where

where he says, *Nec Rhus Latinum habet*, &c. "Not have we a Name in Latin for *Rhus*, tho' it be useful on many Accounts." He goes on to describe three Kinds of *Rhus*, or *Rhus*; one an Herb with Leaves like the Myrtle, another which is the *Frutex coriarius*, and the third under the Name of *Rhus erythros*, which is the Seed of the second. As to the Herb *Rhus*, some take it for what some call *Rhus Montispefulanorum*, which is a Shrub with the Leaves of the *Oxmyrsine*; but the *Frutex coriarius* there mentioned, is the very same with that, *Lib. 13*, under the Name of the *Rhus Syriacum*. Many called the Seed *ῥῆς ἰσχυρῆς*, to distinguish it from the Shrub. The Medicinal Lexicons of the modern Greeks take the *ῥῆς μαυρίνης*, *ἰσχυρῆς* and *Συριακῆς* for the same Thing, and expound them all three by *σμάκων*, *Sumacin*, or *σμάκων*, *Sumacion*, and it is certain that the Shrub which the Greeks called *ῥῆς*, *Rhus*, is the same with what the Arabians now call *Sumac*, but as for the *ῥῆς Συριακῆς*, *Rhus Syriacum*, I imagine there is no Difference between it and the common *Rhus*, in Genus or Species, but only in Goodness, and perhaps the Seed was brought out of Syria, as being the best and most proper for seasoning of Meat, in which it was employed, as *Pliny* says, instead of Salt, and with an Addition of *Silphium*, was thought to render all Flesh-meat more savoury and grateful to the Palate, *Salmasius de Homonymi Hyl. Jatr. Cap. 58*.

RHYAS. *ῥῡας*. The same as **RHOEAS**.

RHYEMA. *ῥῡμα*. A Sort of Cake made of Honey and fine Flower.

RHYMA. *ῥῡμα*. A Remedy. *Castellus, Gorraus*.

RHYME. *ῥῡμη*. The same as **RHOPE**.

RHYMMA. *ῥῡμμα*. From *ῥῡναι*, to absterge. An Abstergent Medicine.

RHYNDACE, *ῥυνδάκνη*. A Sort of Bird about the Size of a Dove. *Hesychius*.

RHYPODES, *ῥυπόδες*. An Epithet for Medicines of a strigentitious Consistence; from *ῥυπος*, *Sordes*. *Galen, de Comp. M. P. G. L. 2. C. 1*.

RHYPOS, *ῥυπος*, *Sordes*; Filth, in the Galenical Stile, is an Excrement of the third Concoction, and collected on the Superficies of our Bodies. For as each of the two Concoctions, both that which is performed in the Stomach, and that which is afterwards made in the Liver, leaves two Kinds of Excrement, one moist, and the other dry; so from the third Concoction arise, also, two Kinds of Excrement in every Particle of an Animal, being produced from the very Juices with which they are nourished. One of these Excrements is Sweat, which was before a Vehicle for transmitting Aliment, and is a thin serous Humour, like Urine; the other consists of half-concocted Reliques, which could not be assimilated to the Part in order to its Nourishment. This also is of a thin Substance, as being the same which is evacuated through the Pores of the Skin by insensible Transpiration; but it is mixed also with some grosser excrementitious Parts, whence it very frequently stops and stays at the Skin; and hence have the Hairs their Original, and, also, those *Sordes* which are still accumulated and diffused over the Skin. These *Sordes* were not unknown to the Ancients, who very carefully absterged them from human Bodies, for various Uses, giving them the Name of *Strigmenta*, *Strigments*, as well as *Sordes*; the Greeks called them not only *ῥυπος*, *Rhypos*; but *γλοιός*, *Gloias*. They have the Virtue of moderately heating and discussing, which they acquire not so much from the Nature of our Bodies, as from the Mixture of Oil and Dust. For those *Sordes* which were absterged with the Strigil in Baths, were a Mixture of Oil and Sweat; but those which were procured from the *Palæstra*, or Common-Place of Exercises, had, besides, an Addition of Dust, both that which was sprinkled on the Combatants after they were anointed with Oil, and also what was raised by stirring in the Heat of the Conflict: That kind of Sweat which was thus excited, was called by a peculiar Name *πᾶλος*, *Patus*. Those *Sordes* then which had a greater Mixture of Oil, must be acknowledged to have more of an emollient Virtue; but those which had more of Dust in them, were more drying, discutient and digestive, especially if the Dust had more of Asperity and Acrimony than ordinary. For that Dust which is of a finer and more pinguious Substance than usual, and is what *Galen, Lib. 5. de Sanit. Tuend.* calls *χρῆς λιπαρῆς*, "fat or greasy Dust," is of a more emplastic Nature, and prevents a Diffuence and Refolution of the Particles of the Body on which it is sprinkled. But of all *Sordes*, or *Strigments*, those are most discutient, as well as moderately drying and emollient, which were scraped off, by the Ancients, from Statues and Vessels of Brass or Copper, in which Oil was reserved for the Uses of the *Palæstra*, as having contracted somewhat of an *Ærugo* from the Metal, as *Paulus, Lib. 7.* observes. *Gorraus*.

RHYPTICOS. *ῥυπτικός*, from *ῥῡναι*, to absterge. Abstergent.

RHYSIS. *ῥῡσις*. A Flux, a Term much used by the Physicians of the Methodic Sect. See the PREFACE. In o-

ther Medicinal Writers, it imports a Hæmorrhage, a *Diarrhæa*, a Gonorrhæa, or a Falling of the Hair.

RHYSSEMATA. *ῥῡσσηματα*. The Wrinkles and Sordes which appear upon the Skins of old People. *Castellus, Gorraus*.

RHYTHMOS. *ῥῡθμός*. The Cadence or Harmony of the Pulse; or the due Proportion betwixt one Pulsation, and those which are subsequent. See **ARYTHMOS**.

RHYTIDOSIS. *ῥυτίδωσις*. A Wasting, and Corrugation of the Eye. *Galen*.

RIAL ARMENIGOS. *ῥιὰ ἀρμένικος*. A barbarous Name for an Antidote in *Nicolaus Myrepsus, Sect. 1. C. 510*.

RIBES.

The Characters are;

It is a Shrub without Prickles, with large Leaves; the Pedicle ends in an Ovary, crowned with a large Calyx, divided into five great Segments; the Flower is pentapetalous, five small Petals arising from the Interstices of the Segments, and is furnished with five Stamina; the Ovary emitting a long Tube from the Centre of the Apex, becomes a round Fruit, which is umbilicated, produc'd in Clusters, and full of small Stones.

Boerhaave mentions six Species of *Ribes*, which are; 1. *Ribes*; vulgaris, acidus; ruber. *J. B. 2. 97. Boerh. Ind. A. 2. 54. Ribes, Ribesia*, Offic. *Ribes*, *Grossularia*, Ind. Med. 56. *Ribes vulgaris fructu rubro*, Ger. Emac. 1593. Ind. Raii Hist. 2. 1485. Synop. 3. 456. *Ribes fructu rubro*, Park. Theat. 1561. *Ribes rubra*, Parad. 558. *Grossularia multiplici acino, sive non spinosa hortensis, rubra sive Ribes Officinarum*, C. B. P. 455. Tourn. Inst. 639. **RED CURRANTS.**

The Currant-tree is well known to be a somewhat taller Tree than the Goose-berry, with larger Leaves and Thorns without. The Fruit grows in small Bunches of a red Colour, and of a sharp sweetish Taste; it is usually planted in Gardens, but is said to grow wild in the North of England. It flowers in April, and the Fruit is ripe in June. They are cooling and grateful to the Stomach, quench Thirst, and are somewhat restraining; a Jelly made with the Juice and Sugar, is cooling and grateful in Fevers. Currants are very rarely used in the Shops. *Miller's Bot. Off.*

The Jelly of Currants is saponaceous and resolvent, and an excellent Medicine, as well in Fevers, as chronical Obstructions, if taken for a long Time together, diluted with Water.

Currants are of two Sorts, red and white, which have nearly the same sharpish Taste, which proceeds from the acid Salts plentifully contained in them, which are dissolved in a sufficient Quantity of Phlegm. These acid Salts render them cooling, and proper for allaying the Heat of the Bile, and other Humours. They contract the Stomach a little, and resist Poison. The frequent eating of Currants sometimes occasion little Prickings in the Stomach; but the over-sharpness may be qualified by mixing a little Sugar with them. Good Sweet-meats are made of Currants, and also a Liqueur, with Water and Sugar called Currant-wine, used in the Heat of Summer to cool and moisten the Body. A cooling moistening Jelly is, also, made of them, which is used in Physic, and in Food, being very agreeable to the Taste; this mixed with Water is given feverish Patients to drink. Currant Leaves are astringent. *Lemery on Foods*.

2. *Ribes*; flore rubente. *J. B. 3. 98. Grossularia, hortensis, majore fructu rubro*. C. B. P. 455.

3. *Ribes*; quæ *Grossulariæ*; hortensis; majore fructu albo. *H. R. Par.*

4. *Ribes*; vulgaris; acidus; albas baccas ferens. *J. B. 2. 98. Grossularia, Hortensis, fructu Margaritis simili*. C. B. P. 455.

5. *Ribes*; alpinus; dulcis, *J. B. 2. 98. Grossularia, vulgaris, fructu dulci*. C. B. P. 455.

6. *Ribes*; nigrum vulgo dictum; folio olente. *J. B. 2. 98. Raii Hist. 2. 1486. Synop. 3. 456. Boerh. Ind. A. 2. 254. Ribes nigra*, Offic. Park. Parad. 558. *Ribes fructu nigro*, Theat. 1562. Ger. Emac. 1593. *Grossularia non spinosa, fructu nigro*, C. B. P. 455. **THE BLACK CURRANT.**

It flowers in June. The Fruit is recommended in a Quinsy, whence they are called Squinancy Berries. *Raii Hist. Plant.*

RIBESIA, a Name for the **RIBES**.

RICINOIDES.

The Characters are;

The Male Flowers consist of several Leaves, which are placed in a circular Order, and expand in Form of a Rose; these are barren. At remote Distances from these Flowers, upon the same Plant, are produced the Embryo's, which are wrapt up in the Flower-Cup, and afterwards become tri-capsular Fruit, containing one oblong Seed in each Cell.

Boerhaave mentions two Species of *Ricinoides*, which are; 1. *Ricinoides*; Americana; folio Gossypii. *Tourn. Inst. 656. Boerh. Ind. A. 253. Nuxes à Barbadoes*, Offic. *Ricinus Americanus*, Ger. 339. Emac. 496. Park. 183. *Raii Hist. 1.*

166. *Ricinus Americanus major semine nigro*, C. B. P. 432. *Ricinus major Americanus Curcas dictus*, & *Faba Purgatrix Indiae Occiduae*, J. B. 3. 643. *Ricinoides*, seu *Pincus purgans*, vel *Pinbones Indici*, Cod. Med. 97. *Munduy-Guacu*, seu *Nux Cathartica Americana*, Pil. 169. *Mundubi-Guacu Brasiliensis*, *Pinbones Lusitanis*, mihi *Nux Cathartica*, Marcz. 96. *Quauhay-shuatli* 1. *Avellana Cathartica*, Hern. 87. BARBADOES NUTS.

This grows in Barbadoes, and other Parts of the West-Indies. The Fruit is oblong, oval, of the Size of a small Bean, having one Side convex, the other depressed, including under a hard Pellicle a white Hemel. It agrees with the *Ricinus* in Virtues.

2. *Ricinoides*; Arbor; Americana; folio multifido. Tourn. Inst. 566. Boerb. Ind. A. 253. *Palma Christi*, Tourn. Mat. Med. 75. *Ricinus Americanus tenuiter diviso folio*, Raii Hist. 1. 167. *Avellana purgatrix*, C. B. P. 418. Raii Hist. 2. 1386. *Avellana purgatrix Novi Orbis*, J. B. 1. 322. *Avellana purgatrix*, Park. Theat. 1621. *Nuces purgantes*, Ger. 1362. Emac. 1546. PURGING NUTS.

This is an American Plant. The Nuts are of a whitish Colour, and are excessively cathartic. It is said, that a single Nut both vomits and purges for several Days, but that if the Pellicle is taken off, and it is divided into smaller Doses, it purges gently. Hist. Plant. Boerb. ascript.

RICINOKARPOS.

The Characters are;

The Male Flowers, which are dispos'd in a Spike, are produced in the following Manner: At the End of a little Tender, hairy Pedicle, grows a naked, tripetalous, herbaceous, Floscule, the Petals, which are acute, being expanded in the Form of a Star. From the Center of this Floscule, which is raised in the Form of a Cone, are produced nine Stamina, each furnished with one Fertilus.

Almost in the same Place of the Plant arise the Ovaries, furnished with shorter Pedicles, round, hairy, triangular, tri-anguliferous, and trilocular, like the *Ricinus*. The Place whence the Flower and Ovary have their common Origin, is surrounded with a Sort of common Calyx, from which the Ecdicles of the Flowers are produced.

Boerhaave mentions two Sorts of *Ricinokarpus*, which are;

1. *Ricinokarpus*; Afra. *Mercurialis procumbens, dicoccus, Africana, folio violae tricoloris*. Par. Bat. App. P. 10.

2. *Ricinokarpus*; Americana; flore albo spicato, foliis Circæ acutiori. Boerb. Ind. Alt. Plant. Vol. 1.

RICINUS.

The Characters are;

The Root is fibrous; the Leaves are alternate, large, and ragged; the Flowers are some Male, some Female, on the same Spike of the same Plant. The Male Flower consists of a monophyllous quinquefid Calyx, expanded like a Star, from whose Center arise Multitudes of fertile, Male Stamina, which appear, while they are beheld united, like a brachiated Thyrsus.

The Female Flower, or Ovary, consists of three Cells growing to one Axis, and so resembling a triangular Fruit, whose Apex is adorned with many Pinnule, from the Middle of which arise three Tubes, each of which has a rough, bifid Apex. Each Cell contains a single Seed, in Shape and Bigness resembling a Pine Kernel.

Boerhaave mentions five Sorts of *Ricinus*, which are;

1. *Ricinus*; vulgaris. C. B. P. 432. J. B. 3. 642. Raii Hist. 1. 166. Tourn. Inst. 532. Boerb. Ind. A. 2. 253. *Cataputia major*, *Ricinus*, Offic. *Granadilla Peruviana* Pharmacop. *Ricinus*, Ger. 399. Emac. 496. *Palma Christi*, Cod. Med. 88. *Ricinus* seu *Cataputia major vulgarior*, Park. Theat. 182. *Nhambu-Guacu* seu *Ricinus Americanus*, Pil. 180. MEXICO SEEDS.

This Plant grows to be as tall as a little Tree, with a smooth jointed hollow Stalk, a Finger thick or more, covered with a glaucous Meallines. The Leaves are large, roundish in Circumscription, but cut into five, seven, or sometimes nine sharp pointed, and serrated Divisions; the Foot Stalks are long, centring in the Middle of the back Part of the Leaves. The Flowers are small and staminate, growing on the Top of the Stalks, but lower down, and upon the Body of the Plant grow Bunches of rough triangular Husks, each including three white Seeds less than Horse Beans, which, in their brittle Shells, contain spotted Kernels, of a sweetish oily Taste.

These Kernels, which are the only Part used, are given by some Persons to purge watery Humours, which they do both upwards and downwards with great Violence; but considering we have much better and safer Purges to answer all Intentions, they are but seldom used. The Oil expressed from the Seeds, is good to kill Lice in Children's Heads. Miller's Bot. Off.

2. *Ricinus*; Americanus; major; caule virecente, H. R. P. 156.

3. *Ricinus*; Africanus; maximus; caule geniculato, rutilante. H. R. P.

4. *Ricinus*; Americanus; perennis.

5. *Ricinus*; vulgaris; minor. C. B. P. 432. *Erawai*, *Ricini pusillum genus*. Clus. Exot. 48. *Ricinus minor*. H. Eyft. Hist. o. 8. F. 11. F. 1. Boerhaave Ind. Alt. Plant. Vol. I.

It is called *Ricinus*, because the Seed resembles the Animal of that Name, which so greatly infects Dogs and Black-Cattle; it is also called *Palma Christi*, because the Leaves are said to resemble the Palm of a Hand; and some believe it is the Tree which shaded Jonas after he was discharged from the Whale.

The fifth is called the *Purging-Bean*; of this is prepared the Oil of *Kerva*, the *Oleum Cicinum*, called the *Oleum Ficus Infernalis*; so much celebrated in the Indies as a Lenitive, tho' this be the most acrimonious of all the Species. If it be stripped of its Pellicle, it purges upwards and downwards to such a degree, as to be prescribed by Hippocrates in the room of the *Grana Cnidia*, or *Cervus Cnidius*. But being taken with this Pellicle, it purges so violently as to cause an Inflammation of the Stomach and Intestines, whence it may pass for Poison. But tho' the Seeds are highly acrimonious, the Oil is very lenient, and excellent for a Rigor or Stiffness of the Limbs, and also for the Itch, Ulcers, and to destroy Worms. The fourth and fifth Species taken inwardly, work violently both by Stool and Vomit, whence they are prescribed in Apoplexies, Lethargies, and as Hydragogues in Dropsies. Hist. Plant. ascript. Boerhaave.

RICINUS is also a Name for an Insect, which is thus distinguished.

Ricinus, Offic. Schrod. 5. 345. Aldrov. de Insect. 559. Jonst. de Insect. 91. Charlt. Exer. 52. *Ricinus Olapae*, Raii Hist. Insect. 10. THE TICK.

It is a nasty little Animal, of a livid Colour, with a blunt and roundish Tail, and full of Blood, and very much infects Cows, Swine, Goats, Sheep and Dogs.

The Blood of those Ticks which live about Dogs, as Pliny says, is a *Psilothrum*, or Medicine to take off Hair, and mitigate an Erysipelas; and we are told by Amatus, that it is an admirable Remedy for an obstinate and malignant Impetigo. Dale.

RIGOR.

Before we treat of the Prognostics which may be drawn from *Rigors*, with respect to the Death or Recovery of the Patient, it will be necessary, first to settle the Notion of a *Rigor*; for if this be omitted, no certain Judgment in Diseases can be formed from such a Symptom. A *Rigor* then is a sudden and violent, or as Galen, Lib. de Trem. Palp. Convuls. & Rigore, says, "A dolorific Perfriction or Refrigeration of the natural Heat, with an unequal Concussion and Agitation of the whole Body, proceeding from the expulsive Faculty of the sensible Part, endeavouring to expel the noxious Humours." It is distinguished from a *Tremor*, in that a *Tremor* is only a Vibration of one Member, but a *Rigor* of the whole Body. But of this we shall speak more accurately a little below. A *Rigor* sometimes happens without a Fever, but generally attends it. That a *Rigor* may be excited without a Fever, we are taught by Galen in the Book abovementioned, Cap. 7. and de Caus. Symptom. Sect. 2. Cap. 5. and in his Book de Inæqual. Temper. Cap. 8. where he has demonstrated, against the Ancients, that *Rigors* may happen without a Fever. And he himself observed at Alexandria, a young Man who was seized with a *Rigor*, after eating unripe Dates, from the gross Humour obstructing the Veins. That a *Rigor* could be without a Fever was unknown to the Ancients, except Hippocrates, who, 1 Epid. Sect. 3. Aeg. 5. says of the Wife of Epicrates, that "when the Time of her Labour approached, she was seized with a *Rigor*, but had no Increase of Heat, as was said; the next Day, the same Symptom continued, and the third Day she was delivered of a Daughter." There may be therefore a *Rigor* without a Fever, which Galen and the Greeks call *ῥίγος ἀνέξηκτης*, "a *Rigor* without Heat;" but the *Rigor* which admits of Heat, as being succeeded by a Fever, is a violent, convulsive and morbid Affection.

But how are we to distinguish a *Rigor* from a Coldness and a Horror? Since we are told by Galen, de Trem. &c. before cited, Cap. 6. "For a sick Person to be under a *Rigor*, is certainly not the same as to be under a *Horror* or *Coldness*." And it is usual to say, that the Approach of the Fit is attended in one Patient with a *Rigor*, in another with a *Horror*, and in another perhaps only with a *Coldness*; and this is the common Language and Use of Words in the Writings of Physicians. Thus when a Person becomes vehemently cold, without any Concussion or Agitation of the Body, he is not affected with a *Rigor*; for to deserve that Name, it must be attended with an unequal and involuntary Motion. If this Coldness be

accompanied only with a gentle and unequal Commotion of the Skin, it is called a *Perfriction*; but if this Commotion of the Skin be very considerable, and attacks the Patient by Fits, without attacking the whole Body, it is called a *Horror*; so that a *Horror* is such an Affection of the Skin alone, as a *Rigor* is of the whole Body.

The Causes of a *Rigor* are, first, immoderate Heat or Cold: That these produce sudden and great Alterations in the Body, and induce *Horrors* and *Rigors*, is very well known to such as enter an immoderately cold or hot Bath, and is demonstrated by *Galen, de Caus. Symptom. Lib. 2. Cap. 5.* Justly therefore it is said by *Hippocrates*, that "Cold irritates Ulcers, hardens the Skin, causes intolerable Pains and seizes the *Rigors*." Some are seized with a *Horror* from an Excess of Fear, as others are with a Tremor from Ulcers and Abscesses under a Suppuration; and that *Rigors* are sometimes induced by Section and Inflation, we are told by *Galen, in 6 Epid. Com. 3.* where he says, that "such Operations induce a *Rigor*, as from something acrimonious affecting the sensible Flesh."

Agreeably to this Notion, the same Author rightly pronounces the principal Causes of a *Rigor* to be bilious and acrimonious Humours; for these, by vellicating the sensible Parts, provoke the natural Heat, which, in striving with great Force to expel them, excites that unequal and convulsive Motion of the whole Body, as he expresses it, *de Caus. Sympt. Lib. 2. Cap. 5.* These *Rigors* are very apparent in bilious Fevers, especially of the intermittent Kind. In these Cases, the thin, bilious, and highly acrimonious Humours being expelled without the Veins, are under continual Impulses from all the sensible Corpuscles, and forced from one Place to another, till they take their Course either towards the Skin, and there discharge themselves through its Pores in Sweat, or are thrown upon the Stomach, and discharged in vomiting, or forced downwards into the Intestines, and evacuated by Stool. Hence *Rigors* are usually succeeded by bilious Evacuations, as *Galen, Com. 2. in 6 Epid.* observes, where he says, "In our Discourse of a *Rigor* we have shewn, that Excretions of bitter Bile, which hurries through the sensible Bodies in order to be discharged, are the Consequence of that Disorder. This then is the Origin of a *Rigor*: The noxious and acrimonious Humours are, by the expulsive Faculty of the Veins, forced without those Vessels upon the other Parts, from which, since they as much infest and irritate them by their Acrimony, and excite their expulsive Faculty, as in the other, they are equally expelled and forced upon others; and thus successively, till they make their Retreat to the Skin, Stomach or Belly; where they find a Vent, as has been said. Now the injured and irritated Parts, in striving to expel the noxious Humour, call in the natural Heat to their Assistance, whence the extreme Parts are refrigerated, being destitute of that Heat. But when the Expulsion of the Humours is finished, which is when they have made their Way to the Skin, or some other Place, whence they may be excreted, the Heat is recalled, and the extreme Parts recover their Heat, and the sooner and more effectually, if the natural Heat be vigorous; but if this be very weak, those Parts are very slowly and insufficiently heated, or hardly return to their usual Warmth. Under this Expulsion of the Humours happens that unequal or irregular Concussion and Vibration of the whole Body, which we call a *Rigor*; during which the extreme Parts are refrigerated, the natural Heat retiring inwards; for which reason the Body is always cold under a *Rigor*."

This Affection, which we call a *Rigor*, is not only excited by acrimonious Humours, but sometimes by a gross Humour obstructing the Veins. Of this Nature was the *Rigor* of the young Man of *Alexandria*, observed by *Galen* as above-mentioned; for which he accounts in the following Manner: "In this Case a *Rigor* is occasioned by an Obstruction of the Motion of the natural Heat by Force. For this Heat, being entire and unimpaired, both in Substance and Strength, strives to expand itself, and to be distributed into all Parts of the Body; but being forcibly restrained, and repelled to the more inward Parts, it retreats to its own Original; but being incapable of making any Stay there (for to a Substance of a moveable Nature, Consistence in Place is Death) collecting, and, as it were, concentrating itself, it recurs not with an equable and free Motion, but rushing forth with an Impetus, and as it were a Horse starting from the Barrier, it directs its full Force against what obstructed its Passage, endeavouring to propel the same, and clear the Way; but being repelled, and its Violence check'd in the Midst, the whole Body is shock'd at the Encounter. For besides other Effects, it is rendered vaporous by dashing against those Obstacles, and recoils inwards, as tho' from Repercussion, and retreats again to its Principle or Original; thence again breaking forth, it falls on with more Violence, and being again repulsed, renews its Attacks till

"it has removed the Nuisance." A *Rigor* begins at the Back and Loins; to which Subject relates that of *Hippocrates, 5 Aph. 69.* where he says, "A *Rigor* in Women begins principally at the Loins, and proceeds by the Back to the Head: In Men, they begin in the anterior rather than the posterior Parts of the Body, as in the Cubits and Thighs. In Men also the Skin is of a rare Texture, as appears by the Hairs."

But let this suffice for illustrating the Notion of a *Rigor*; we are now to examine what may be predicted from it; and here we shall treat first of such *Rigors* as are of good Prognostication. Among *Rigors* observed in Fevers, those are good which are periodic, and the proper Symptoms of Fevers. Periodic *Rigors* which happen every Day, or every second or third Day, and precede intermittent Fevers, are all salutary, and by *Hippocrates, 4 Aph. 43.* pronounced void of Danger; and the more so in proportion to the Greatness of the Intermittion, and the Shortness of the Fit. *Hippocrates, 4 Aph. 63.* tells us, that "quotidian *Rigors* are solved by quotidian Fevers;" for, as *Galen* says in his Comment on the Place, since *Rigors* happen with Commotion, through the whole Habitat of the Body, succeeded by an Expurgation and Evacuation of the Humours, the Intermittion of such Fevers may be rationally expected to terminate at last in an utter Cessation of the Disorder. What he (*Hippocrates*) says of quotidian *Rigors*, that they are solved by quotidian Fevers, is as true of tertian and quartan *Rigors*, as appears from Observations on Tertian and Quartan Fevers, whose Returns are always preceded by a *Rigor*.

But the most salutary of all *Rigors* are critical ones; such are those which attend a Fever upon some critical Day, with Signs of Concoction, and are succeeded by copious and kindly Sweats, or Vomiting, or Stools, or an Hæmorrhage from the Nostrils, which are followed by a perfect Removal, or at least a remarkable Abatement of the Fever. Of such *Hippocrates* speaks, *4 Aph. 58.* where we are told "if one under a burning Fever be seized with a *Rigor*, he becomes freed from the Disease." There seem to be two Properties belonging to a good *Rigor*; the first is, that it be succeeded by a remarkable Heat, of which *Galen, Lib. de Trem. &c. Cap. 6.* assigns three Causes; first, that the natural Heat being repressed from the Superficies, is collected in the internal Parts, in order to assist in expelling the noxious Humours; after which being cherished and increased by the Humour which resides within, it breaks forth all at once, and expands itself with more Vehemence. Secondly, that in its violent Recourse, its Motion being much accelerated, it kindles in striking upon the external Parts, and is increased after the same manner as Stones and Iron acquire a considerable Heat by Motion and mutual Attrition. And lastly, that the Heat, in its Return to the Superficies, brings along with it some hot Humour, which must have its Effect in heating the external Parts; and the more vigorous the State of the natural Heat, the hotter is the Body after a *Rigor*, and the weaker this Heat, the less Warmth will accrue to the Body. Hence it is a good Sign for Bodies to be well heated after a *Rigor*, since it indicates a Firmness and Strength of Nature, as on the contrary, which will appear hereafter, for a Patient, after a *Rigor*, to acquire little or no Heat, shews him to be in a very bad State, and that Nature is very weak and low. For the Body therefore to acquire an extraordinary Degree of Heat after a *Rigor*, by what Cause soever procured, is a very good Sign.

The other Property of a beneficial *Rigor* is, that it be succeeded by very beneficial Evacuations or Purgations; to which we may add, that it wholly removes, or at least diminishes, the Fever. Such were the *Rigors* observed by *Hippocrates* in many of his Patients, particularly the Wife of *Epicrates*, *Charion*, the Virgin of *Larissa*, the Woman which lay ill at the House of *Timeneus*, and *Philistis*. Of the Wife of *Epicrates*, *1 Epid. Sect. 3. Ægr. 5.* he says, "On the fourteenth Day (of her Illness) she was seized with a new *Rigor*, succeeded by a high Fever; on the fifteenth she vomited at several times bilious yellow Matter, sweated, and was free from a Fever; towards Night was highly feverish, and her Urine was thick, with a white Sediment." And of *Charion*, *3 Epid. Sect. 2. Ægr. 5.* we are told, that "on the seventh Day he was seized with a new *Rigor*, had a high Fever, sweated all over his Body, and had a Crisis." In the same manner when he relapsed on the seventeenth Day, "he was taken with a new *Rigor*, succeeded by a high Fever, sweated, had a Crisis, and was freed from his Fever." In his Account of the Virgin of *Larissa*, *3 Epid. Sect. 3. Ægr. 12.* he tells us, "On the sixth Day she had a copious Hæmorrhage from the Nose, and was seized with a *Horror*, succeeded by a copious and hot Sweat all over the Body, had a Crisis, and was freed from her Fever." The Woman also at the House of *Timeneus*, *4 Epid. T. 25.* had a *Rigor* succeeded by a happy Crisis. The same was the Case of *Philistis* the Wife

Wife of *Heracles*, 7 *Epid.* 136. Sometimes a *Rigor* is a good Sign in an *Hæmorrhage*, as we find it pronounced, 1 *Prorrh.* 150. where it is said, that "they who in the Beginning are molested with a copious *Hæmorrhage*, have the Course of it stopped by a supervening *Rigor*;" and not without Reason, since, under an immoderate Evacuation, the Heat, together with the Blood, sometimes retire to the inward Parts. A *Rigor*, however, in Diseases of this Kind, portends their long Continuance; for as *Galen* says, in his Comment on the Place, "If an Eruption of Blood does not mitigate the Disorder, but is succeeded by a *Rigor*, both this and the Disease are rendered of long Duration, because the Body is difficult to be heated." Sometimes *Rigors* portend a Crisis upon the Coming on of a *Tremor*, according to *Coac.* 27.

We have treated enough of such *Rigors* as are esteemed of good Prognostication in Diseases, and are now to say something of the contrary Kind, or those which portend nothing but the Destruction of the Patient. Of this Nature, in the first Place, is a *Rigor* succeeded by little or no Heat; for this is an Indication of great Weakness of Nature, agreeably to 1 *Prorrh.* 65. where we read, that "Refrigerations from a *Rigor* not succeeded by Heat, are bad." And the Reason is, as *Galen* observes, because it indicates an Extinction of the Heat, as it did in the Case of the Woman who lay ill in *Mendacium Foro*, 3 *Epid.* Sect. 2. *Ægr.* 12.

Those *Rigors* are also pernicious which are succeeded by none, or a bad Evacuation, and are properly reckoned among those bad or imperfect critical Signs which determine nothing. *Galen*, in 1 *Prorrh.* discoursing on this Subject, says, "They who understood this of a *Rigor* in general, should have always remember'd, that if it happened on the third or fourth Day, it was a peculiar Symptom of such Fevers; but if it appeared after that Time, and was not attended with a Crisis, it was of very bad Signification."

Rigors are of a very bad kind, when they are attended with some bad Excretion, because they are of the Number of undetermining critical Signs, which *Galen* affirms to be either mortal, or of difficult Crisis [that shew the Disease will have a fatal, or at least a very hard and dangerous Turn.]. On the same Point we read, 1 *Prorrh.* 66. "If Heat returns not upon a Perfriction, or extreme Perfrigeration, attended with Sweating, it is a bad Sign; and if to those there be an Accession of a burning Heat and Pain of the Sides, with frequent Attacks of a *Rigor*, the Patient is in a dangerous State." Now all cold Sweats are dangerous, especially such as affect the upper Parts, and those which, tho' copious and profuse, remove not the Fever. We find an Instance to this purpose, 1 *Epid.* Sect. 3. *Ægr.* 11. in the Wife of *Dromedus*; in the Account of whose Case it is said, "that on the third Day about Noon she had the Return of a *Rigor*, with a high Fever, Urine as before, a Pain of the Hypochondrium, had a Loathing and Nausea, a troublesome Night, without Sleep, with a cold Sweat diffused over all her Body." She died on the sixth Day. The Woman also who lay sick in *Foro Mendacium*, had several Fits of a *Rigor*, attended with a cold Sweat before her Death. A copious Sweat also, tho' not cold, in a crude State of the Disease, which neither removes the Fever nor its Symptoms, is mortal; and especially if it appears on the sixth or eighth Day. Such was that observed by *Hippocrates*, 1 *Epid.* Sect. 3. *Ægr.* 12. in the Person who was taken ill of a Fever after Supper, of whom he says: "On the eighth Day he was seized with a *Rigor*, had a high Fever, sweated much, seemed to be without a Fever, slept little, and was cold after Sleep." On the eleventh Day he died. And we read, *Coac.* "that repeated Fits of a *Rigor*, with Sweating, are mortal." All *Rigors* therefore, succeeded by a bad Evacuation, or none at all, are bad.

With Respect to a Fever, *Rigors* which neither remove nor alleviate the Disorder, are of a very bad Kind. Thus has *Hippocrates* determined, 4 *Aph.* 56. "A *Rigor*, he says, coming upon a Fever, if the Disease is not mitigated, is a bad Sign." [In that Aphorism it is a Sweat, and not a *Rigor*; but the Aphorism which would pretty well answer the Purpose, is 4 *Aph.* 46. which is, "that a *Rigor* coming upon a Fever, and the Disease not intermitting, if the Patient be weak before, is mortal."] But the Case is worst of all, when a *Rigor* of this Nature is succeeded by a copious Evacuation, as *Galen* rightly observes in his Comment on 4 *Aph.* 46. "For if, he says, an Evacuation follows a *Rigor*, and the Fever be not alleviated thereby, the Patient must probably sink under them in Conjunction; both because the weak Condition of his Body cannot bear the Agitation of the *Rigor*, and also because the Evacuation is sufficient to cause his Dissolution." But if the Strength of the Patient be very much exhausted by the Disease, a *Rigor* will prove mortal, according to 4 *Aph.* 46. before quoted; for all *Rigors*, of what kind soever, which happen under a great Decay of Strength, are pernicious, as indicating an Extinction

of the natural Heat. And to this purpose are we to understand the Author of 1 *Prorrh.* 65. where he says, that "a Refrigeration from a *Rigor*, where the Heat returns not again, is a bad Sign." And *Coac.* 221. "a *Rigor* coming upon a severe Fever, with a Distortion of the Eyes, proves mortal." Perhaps also what *Hippocrates* says, 7 *Aph.* 7. "A *Rigor* and Delirium after a Debauch, are bad," may be applied to these Kinds of *Rigors*; for such a *Rigor* is occasioned, as *Galen* on the Place observes, from an Extinction of the Heat by an Oppression, in the same manner as a Fire is extinguished by heaping too much Wood upon it, or a Lamp by pouring on too much Oil.

The pernicious Signification of *Rigors* is also known from other preceding, concomitant or subsequent bad Signs. In a continual Fever, a *Rigor*, attended with bad Signs, is always to be dreaded. This will appear from what *Hippocrates* says of them, 1 *Epid.* "When burning Fevers, he says, began (to be epidemic) they afforded Signs by which one might judge when they were like to prove mortal; the Patients were first seized with a high Fever succeeded by a *Rigor*, were incapable of Sleeping, were extremely restless, thirsty, and loathed every thing." In Phrensies also accompanied with white Stools, or white Urine, the Accession of a *Rigor*, is a bad Sign, as we are told, 1 *Prorrh.* 13. and T. 64. it is said, "that for a Person under a *Rigor* not to know his familiar Acquaintance, and to be forgetful of what is past, is a bad Sign;" as it indicates, as *Galen* says in his Comment, that the natural Heat is overcome by the extraordinary Refrigeration. And a little after, 1 *Prorrh.* 67. "Burning *Rigors* [*καυκώδεις ῥίγες*] are not without Danger; and when accompanied with a fiery Redness [*ῥοδόχρομα*] of the Face, and a Sweat, are bad Signs." This is repeated, *Coac.* 7. And again, T. 89. speaking of these Kinds of *Rigors*, he says, "For a Person labouring under a Fever, and a Lassitude, with a Distortion of the Eyes, to be seized with a *Rigor*, is of pernicious Signification; and a comatous Disposition in such Cases is bad." Again, *Coac.* 14. "Severe *Rigors*, inducing a *Torpor*, are malignant," as indicating an Extinction of the natural Heat. And, T. 22. "Rigors accompanied with Head-ach and Faintings, are mortal;" because they indicate a considerable Inflammation of the Brain. Our Judgment, therefore, of the bad Event of a *Rigor*, is justified by the Concomitance of other bad Signs. This is further illustrated, *Coac.* 20. or more clearly, 1 *Prorrh.* 101. where it is said, that "such as labour under repeated Fits of a *Rigor*, which is exasperated towards Night, with Watchings or Agitations of the Veins [*φλεβοδυνμία*, see the Article PHLEBODONODES] in Sleep, and involuntary Discharges of Urine, fall at last into a Coma and Convulsions." *Rigors*, therefore, in an acute Fever, in Conjunction with other bad Signs, render the fatal Event more easily to be prognosticated.

Continual and frequent *Rigors* are also of a bad kind, as we find them pronounced, *Coac.* 9, 10. since they indicate either a Suppuration of some one of the Viscera, or vain Efforts towards a Crisis, or else an Extinction of the natural Heat. We have an Instance to this purpose, in the Woman who lay ill in *Foro Mendacium*, before quoted; and whose History will greatly serve to illustrate what has been said of mortal *Rigors*; for she was often seized in the Progress of the Disease with *Rigors*, which were always attended with pernicious Signs. The Case is as follows, 3 *Epid.* Sect. 2. *Ægr.* 12. "A Woman who lodged in the *Forum Mendacium*, after hard Labour with a male Child, was taken ill of a violent Fever, attended at first with a Thirst, Loathing, and Cardialgia; her Tongue was dry, her Stools were thin, and little in Quantity, and voided after much Pain and Gripings, and she had no Sleep. The next Day she felt somewhat of a *Rigor*, succeeded by a high Fever, and something of a cold Sweat about the Head. On the third Day, the Stools were crude, thin, much in Quantity, and voided with Pain. On the fourth she had a new Fit of a *Rigor*, all the Symptoms were exasperated, and she could take no Sleep. On the fifth she was very ill; and on the sixth continued in the same State, and voided Plenty of liquid Matter by Stool. On the seventh Day she was seized with another Fit of a *Rigor*, succeeded by a high Fever, a great Thirst, and continual Tossing, and towards Night, with a cold Sweat all over the Body, with a Coldness of the extreme Parts, into which the Heat could not be recalled. At Night she had another Fit of a *Rigor*, and her extreme Parts recovered no Warmth; she had no Sleep, was a little delirious, but soon came to herself again. On the eighth, about Noon, she recovered Heat, had a Thirst, with a Coma, and a Nausea, and vomited up some bilious yellowish Matter, tho' but little in Quantity; she had a bad Night, passed it without Sleep, and great Plenty of Urine came from her involuntarily. On the ninth, all the Symptoms were remitted,

"remitted, and she was inclined to a Cerna; in the Evening she had something of a Riger, and vomited a little bilious Matter. On the tenth she had a new Fit of a Riger, the Fever was exasperated, and she had no Sleep; in the Morning she made great Plenty of Water, which had no Hypostasis, and her extreme Parts recovered Heat. On the eleventh she vomited virulent, bilious Matter, and soon after was again seized with a Riger, and a Refrigeration of the extreme Parts; towards Evening she fell into a Sweat with a Riger, vomited much, and had a very bad Night. On the twelfth she vomited up much black, fetid Matter, and was much molested with the Hiccup, and a Thirst. On the thirteenth she was seized with a Riger, and vomitings of much black Matter, which had a very ill Smell; about Noon she lost her Voice. On the fourteenth Blood came from her Nose, and she died. The whole Course of the Disease was a Looseness and a Horror. The Woman was about seventeen Years of Age." *Prosper Alpinus de Presag. Vit. & Mort. Aegrot.*

RIGOR. A Stiffness or Inflexibility.

RIGOR NERVORUM, is the same as Tetanus.

RILLUS, is defined by *Rulandus*, a chemical Utensil, into which melted Metals are poured, in order to impart to them an oblong Form.

REMA. A Fissure, or Chap. In Anatomy it imports, the Fissure of the Female Pudenda.

RIMULA. The Aperture of the Glottis.

RINÆUS MUSCULUS. The Name of a Muscle of the Nose mentioned by *Douglas*, which he, also, calls *Nasalis*, and says it arises fleshy from the Extremity of the Os Nasi, and adjacent Part of the Os Maxillare.

It is inserted into all the Cartilages of the Ala.

Its Use is to open and dilate the Nostril, by pulling that Part outwards.

RINAR. *Rulandus* explains this, *Limatura*.

RIPARIUS. An Epithet of Animals which frequent the Banks of Rivers, or the Sea-shore.

RISIGALLUM. The same as AURIPIGMENTUM.

RISTORUM. A kind of nourishing Aliment prepar'd of the Yolks of Eggs. It seems to be a Sort of Egg Caudle.

RISUS. Laughter. See RESPIRATIO. See SARDONIUS.

RITRO, Offic. *Echinopus minor*, J. B. 3. 72. Tourn. Inf. 463. *Carduus globosus minor*, Ger. 990. Emac. 1151. Park. Parad. 332. *Carduus Sphærocephalus cæruleus minor*, C. B. 381. Raii Hist. 1. 383. *Scabiosa Cardui folio Sphærocephala humilior*, Herm. Cat. 539. LITTLE GLOBE THISTLE.

It is cultivated in Gardens, and flowers in June. The Root is used, and possesses the same Virtues as that of the *ECHINOPUS MAJOR*.

RIWAND, and RIWANDTZINI, are Arabic Words, importing Rhubarb.

ROADES, in *Paracelsus*, is an unskilful, simple Physician.

ROB. See DECOCTIO.

ROBERTIANUM. See GERANIUM.

ROBES. Vinegar. *Rulandus*.

ROBIGO. The same as RUBIGO.

ROBORANTIA. Strengthening Medicines. See ANALEPTICA.

ROBUR. The Oak. See QUERCUS.

ROBYS. An Epithet for the best Sort of Wheaten Bread. *Castellus from Langius*.

ROCELLA. See FUCUS.

ROCHETTA. *Antonio Neri* informs us, that *Polverine* or *Rochetta*, which comes from the Levant and Syria, is the Ashes of a certain Herb growing there in Abundance: There is no doubt but that it makes a much whiter Salt than *Barillia* of Spain, and therefore when you would make a Crystal very perfect, make it of Sut extracted from *Polverine* or *Rochetta* of the Levant. For tho' *Barillia* yields more Salt, yet Crystal made of it inclines to a Blueness, and has not the Whiteness and Fairness of that made of *Polverine*.

Upon this *Merret* remarks, that *Polverine* and *Rochetta* are the same Thing, and are nothing more than Ashes extracted from the same Plant, but differing in Goodness. The Name of the latter is wholly unknown to our Glass-Houses, and has now no Distinction at *Moran* itself. The Name of *Polverine* is still kept, and 'tis given to all Ashes which come from the Levant to make Glasses with. The Reason then of their different Names seems to be, that the *Polverine* was that which was brought in small Powder, and the other in hard Pieces or Stones, and therefore named *Rochetta*. And indeed the Workmen observe, that the harder and bigger Lumps yield a whiter and stronger Salt than that which comes over in small Pieces or Powder. And whether this proceeds from the Seasons of their Growth, Gathering and Burning, or from some Sophistication from other fixed Salts mixed with it, or from Sea-Salt or other Moisture with which they are

damaged, I determine not. But certain it is, that to make the strongest Salt, and such as will come into hard and stony Lumps, they make a Lee of their first burnt Ashes, and therewith water the Herbs to be next burnt, and so water the Herbs with new Lees at every Burning, and this will make a most strong Pot-ash for Soap-boylers and Dyers: Tho' I cannot affirm that this Method has been practised in making *Rochetta*, and that it is now omitted.

ROCHUM ALUMEN. Rock Alum.

RODODENDION. See NERIUM, and ÆGOLETHRON.

ROGGA. A Name for the *Secale*; *Hybernum*, vel *majus*.

ROHOB. The same as ROB.

ROMANA ADRIANA ANTIDOTUS. The Name of an Antidote described by *Nicolaus Myrepsus*. Sect. 1. C. 5.

RONAS. A Root used much by the Persians, for dying a red Colour. I don't know that it is used in Medicine.

RONDELETIA.

The Characters are;

It hath a Salver shaped Flower, consisting of one Leaf, which is tubulous, and rests on the Empalement; which Empalement afterwards becomes a roundish coronated Fruit, divided into two Cells, containing many small Seeds.

Miller mentions but one Sort of this Plant, which is, *Rondeletia arborescens, tini facie*, Plum. Nou. Gen.

This Plant was discovered by Father *Plumier*, in America, who gave it this Name in Honour to *Gulielmus Rondeletius*, a famous Physician of *Montpelier*.

The Seeds of this Plant were sent to England by Mr. *Robert Millar* Surgeon, who collected them on the North-side of the Island of Jamaica, where the Trees grow plentifully, as also in several Parts of the Spanish West Indies. *Miller's Dictionary*, Vol. II.

RONDESSA. A Sort of American Cat, which is said to take her Young into her Belly, and bring them out again at Pleasure. *Castellus* from Eph. N. C.

RORELLA. A Name for the *Ros Solis*.

RORIFERUS. Roriferous. An Epithet applied by some Anatomists, to the lacteal and lymphatic Vessels.

ROS. Dew.

If in a long continued Summer's Drought, the Surface of the Earth comes to be greatly parched with the Heat of the Sun, not only Water, but, also, other less volatile Substances, of an unctuous and saline Nature, will thus be raised to some Height into the Atmosphere, tho' invisibly, so long as such Exhalations are agitated by the Sun's Heat, which coming to lessen towards the Evening, the Air soon grows cooler; while at the same time, the Earth retaining the Heat much longer than the Air, still continues to breath out hot Exhalations, whence arises a white, dense, visible Vapour, hotter below than above; this Vapour appears, therefore, first in low watery Places, thence gradually diffuses itself, so as in the Night to cover the Surface of the Earth with a Mist, which is dissipated by the Rising Sun. This Moisture, called by the Name of Dew, is a very compound Substance; nor can we assert any Thing that will hold universally true of its peculiar Nature. It must needs be a Chaos, as it is a Collection of all Sorts of volatile Particles, promiscuously jumbled together by the Heat of the Sun, acting upon the Earth; it must, also, be different in different Parts of the Earth, according as different Kinds of Particles lodge therein. Thus in large Tracts of gravelly or Heath Ground, which lie dry and high, it will be small in Quantity, and almost totally aqueous; as in fat bituminous Earths, near Marshes, and standing Waters, it is far different in Quantity and Quality, and prejudicial to Health; whence it is no Wonder that Chymists, in their analysing of Dew, should find such different Results, that scarcely any two are agreed about them. Certainly they who seek for the Spirit of Life, the universal Solvent, the Mercury of Life, the Nitre and Steel of *Sendivogius*, in Dew, seem not to understand them right; it is better to say, that Dew is of a subtle saponaceous Nature, capable of supporting Vegetables. Some Dew that had been collected in a certain Part of the Earth, has afforded a Liquor, by Distillation, which struck the Colours of the Rain-bow upon Glass, so strong as not to be effaced by Friction, alkaline Lixiviums, or *Aqua Regia*; it, also, burnt like Spirit of Wine. Again, some distilled Dew having been digested with gentle Heat, for eight Days, and then rectified six Times over, till it was exceedingly subtle, is reported to have broke three Glass Vessels successively, tho' it still remained perfectly insipid. Again, some Dew is described to be like a yellowish Butter, that melts by being rubbed upon the Hand, yet grows hard and dry with a moderate Heat, being of a fetid Odour, and to be found in pretty large Lumps in the Night, especially in the Spring and Winter. The Nature of Dew, also, differs surprisingly with the different Seasons of the Year, and the various Successions of Meteors; hence exceedingly small Seeds of Vegetables, and invisible Eggs

Eggs of minute Animals, with numerous other Things coming to be digested, fermented or putrefied therein, it must afford many very different Productions by Distillation; whence Chemists have formed very odd Opinions about it. We can only say that the greatest Part of it is Water; and that the other Parts cannot be ascertained on Account of their infinite Variety. *Boerhaave's Chemistry.*

ROSA.

The Characters are;

It is a Shrub generally covered with a prickly or thorny Bark; the Leaves are pinnated, and end in an odd Lobe. The Extremity of the Pedicle forms an Ovary almost spherical, and surrounded on the Top with a Crown deeply cut into five Parts, radiated, and with its five long-laciniated Segments resembling a Calyx. The Flower is pentapetalous, the Petals arising from the internal Margin of the Calyx; whence also are produced very numerous Stamina. The Ovary produces from the Center of the Apex a small Head, adorned with a Multitude of fimbriated Tubes, and becomes an unicapular Fruit, full of vast Numbers of angular hairy Seeds, and furnished with a foliaceous Apex.

Boerhaave mentions thirty-nine, and *Miller* forty-nine Species of Roses; but those principally used in Medicine are the seven following:

1. ROSA CANINA. *The Common Briar or Dogs-Rose.* See CYNOSBATOS.

2. ROSA DAMASCENA, *pallida*, Offic. *Rosa Provincialis*, *sive Damascena*, Ger. 1079. Emac. 1261. *Rosa Damascena*, Park. Theat. 1017. Parad. 413. Raii Hist. 2. 1468. *Rosa Purpurea*, C. B. P. 481. Tourn. Inst. 637. *Rosa Damascena, flore pleno*, Boerh. Ind. A. 2. 152. *Rosa rubella, flore majore, multiplicato, sive pleno, incarnata vulgo*, J. B. 2. 36. *An Rosa incarnata vulgaris*, Mont. Ind. 51. THE DAMASK-ROSE.

The Damask-Rose grows not so tall, nor so large as the white Rose, but yet taller and fuller of Prickles than the red, especially about the Stalk. The Leaves are whiter and more hairy. The Flowers are less double than the *Provence* Rose, and the Beards prickly; they are of a pale red Colour, and of a most pleasant Scent.

The Flowers are of a gentle cathartic Nature, purging cholic and ferous Humours, being given to Children and weakly Persons, and mixed frequently with stronger Cathartics.

Official Preparations of Damask-Roses, are the *Syrupus à Succo Rosarum*, *Syrupus Rosaceus solutivus*, the *Aqua Rosarum Damascenarum*, and the *Electuarium à Succo Rosarum*. *Miller's Bot. Off.*

AQUA ROSARUM DAMASCENARUM. WATER OF DAMASK-ROSES. See AQUA.

ELECTUARIUM E SUCCO ROSARUM. ELECTUARY OF THE JUICE OF ROSES. See ELECTUARIUM.

SYRUPUS E SUCCO ROSARUM.

Syrup of the Juice of Roses.

This is prepared without any Infusion, from the expressed Juice of the Flowers, with the same Proportions of Sugar to the Quantity of Juice as directed in the *Syrupus Rosaceus Solutivus*.

SYRUPUS ROSACEUS SOLUTIVUS.

Solutive Syrup of Roses.

Take of boiling Water, four Pound; stir into it as much fresh Damask-Rose Leaves as it will contain; let them stand together in a warm Infusion for twelve Hours, and then press it out strongly. Let this again be heated, and new Flowers stirred in, and steeped as before; and proceed to a third Repetition of the same, every Time increasing the Quantity of the Flowers put in, in proportion to the Liquor, which every time will increase almost one Third. When this is all finished, to fix Parts of the Liquor put four Parts of white Sugar, and boil into a Syrup with a Bath-Heat, according to Art.

This is the same as in the former Dispensatory of the College, but at first was ordered to be repeated nine times in the Infusion; but the Shops have been hitherto most accustomed to make it from the clarified Juice of the Roses, or from their Residuum after Distillation.

3. ROSA PALLIDA, Offic. Ind. Med. 98. Chomel. 12. *Rosa rubra pallidior*, C. B. P. 481. *Rosa heloserica*, Lob. Icon. 2. 207. *Rosa sativa*, IV. Dod. Pempt. 187. *Dale* makes a Doubt whether this be not of the same Species with the Damask-Rose.

4. ROSA PALLIDA, Offic. *Rosa maxima multiplex*, C. B. P. 481. Tourn. Inst. 637. *Rosa Hollandica, sive Batava*, Ger. 1081. Emac. 1262. *Rosa Provincialis, sive Hollandica Damascena*, Park. Parad. 413. Raii Hist. 2. 1469. *Rosa Hollandica rubella plena quibusdam, centifolia, spinosa frutice*, J. B. 2. 37. THE DAMASK PROVINCE ROSE.

It is common in Gardens, and flowers in July; the Virtues are the same with those of the common Damask-Rose.

5. ROSA RUBRA, Offic. Ger. 1079. Emac. 1261. Raii Hist. 2. 1468. *Rosa rubra multiplex*, C. B. P. 481. Tourn. Inst. 636. *Rosa rubra Anglica*, Park. Parad. 412. *Rosa rubra valde plena*, J. B. 2. 34. THE RED-ROSE.

This Rose generally grows in lower Bushes than the White Damask Roses; the Flowers have very few Prickles on the Stalks, and the Calyx or Beards are shorter and smoother; they are less double than either the White or Damask, having a great many yellow Anthera in the Middle.

The Red-Rose is more binding and restraining than the Damask and White, and good against all Kinds of Fluxes; they strengthen the Stomach, prevent Vomiting, and stop tickling Coughs, by preventing the Defluxion of Rheum, and are of great Service in Consumptions. The Antheræ or Apices are accounted Cordial, though they are but seldom used.

Official Preparations are, a *Simple Rose-Water*, *Conserva Rosarum*, *Saccharum Rosarum*, *Syrupus à Rosis siccis*, *Mel Rosarum*, *Oleum Rosarum*, *Unguentum Rosarum*, *Tinctura Rosarum*, & *Species Aromaticum Rosatum*. *Miller's Bot. Off.*

The Parts in Use are the Flowers and the Antheræ, which are yellow Floscules, which adhere to the Capillaments in the Middle of the Flowers.

The Flowers are of principal Use in Fluxes, Fevers, Thirst, and Loss of Appetite. Outwardly they are of Service in Vomiting, Head-ach, want of Sleep, Pains of the Ears and Gums, and of the Anus; in Ulcers of the Mouth, Fauces and Eyes. The Antheræ dried, are used in Dentifrices for Astringency of the Gums. *Dale.*

Roses are of singular Service in Medicine, since the Water distilled from them in Consequence of its fragrant Oil, is highly friendly to Nature; and whether internally exhibited, or externally applied, excellently calculated for recruiting the Strength, and alleviating Pains and Inflammations in all hot Diseases. Conserve of Roses, by means of its cordial and astringent Virtues, is peculiarly adapted and appropriated to pithical and hectic Patients. Vinegar of Roses, mixed with the Spirit and Water of Roses, adding Nitre and a little Camphire, makes an Epithem, which, when applied to the Head, I have, from repeated Experience, found to be of incomparable Efficacy in removing Head-achs, preventing Deliriums, and stopping immoderate Hæmorrhages from the Nose. *Hoffman de Præst. Remed. Domest.*

CONSERVA ROSARUM. See CONSERVA.

MEL ROSARUM. Honey of ROSES. See MEL.

OLEUM ROSARUM. See OLEUM.

SACCHARUM ROSATUM TABULATUM.

Lozenge-Sugar with Roses.

Take of Red-Rose Leaves without the white Heels, and hastily dried in the Sun, one Ounce; of the whitest Sugar, one Pound. Melt the Sugar over the Fire in Rose-Water, and the Juice of the same, each two Ounces; and after due Evaporation, mix with it the Roses in fine Powder, and pour it upon a Marble, so as to make it into Lozenges.

SPECIES AROMATICUM ROSATUM. See AROMATICA.

SYRUPUS E ROSIS SICCIS.

Syrup of dried Roses.

Take two Quarts of hot Spring-Water, and in it infuse half a Pound of Rose-Leaves, hastily dried in the Sun; the next Day press out the Liquor, and with two Pounds of Sugar boil it up to a Syrup.

TINCTURA ROSARUM RUBRARUM.

Tincture of Red Roses.

Take half an Ounce of Red-Rose Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them in a glazed earthen Vessel two Pints and an half of boiling Spring-Water, and let them stand close covered for three Hours; then strain off the Liquor, and put to it three Ounces of fine Sugar-Candy.

UNGUENTUM ROSATUM.

Ointment of Roses.

Take of Hogs-Lard, cleared from all its Membranes, and well washed, one Pound; and add to it one Pound of fresh Red-Roses; which suffer to stand together for seven Days; then boil them over a gentle Fire, and press out the Lard; then macerate again with fresh Roses the same Space of Time, and boil and strain as before. Lastly, put to it six Ounces of the Juice of Red-Roses; of Oil of sweet Almonds two Ounces, and boil over a slow Fire, to a Consumption of all the Juice; then strain it again, that it may become an Ointment.

6. ROSA ALBA, Offic. Ger. 1079. Emac. 1260. Raii Hist. 2. 1473. *Rosa Anglica alba*, Park. Parad. 412. *Rosa alba vulgaris major*, C. B. P. 482. Tourn. Inst. 637. *Rosa alba, flore pleno*, Boerh. Ind. A. 2. 251. *Rosa candida plena*, J. B. 2. 44. THE WHITE-ROSE.

The White-Rose Tree grows taller than most other Kinds of Roses, having fewer Prickles on the Branches, and those pretty large; the Leaves are of a dark green Colour; the Flowers are white, and more double, or fuller of Leaves than the Damask or Red, having a less fragrant Scent than either of them.

The Flowers only are used, being drying, binding and cooling, and the Water distilled from them, is much used in Collyriums for sore inflamed Eyes, being the only official Preparation from them. *Miller's Bot. Off.*

7. ROSA MOSCHATA, simpliciflora. C. B. P. 482. Tourn. Inst. 637. *Rosa Moschata minor, flore simpliciflora*, J. B. 2. 45. Raii Hist. 2. 1474. *Rosa Moschata simplex*, Park. Parad. 417. THE MUSK-ROSE.

It grows in warm Places, but was never used among us; it purges violently.

ROSA HIERICHUNTICA. A Name for the *Myagrum*; ex *Sumatra*, & *Syria*; *semine spinoso, simili Capiti Avicula*.

ROSALIA. A Name for the Measles; or for a Distemper resembling the Measles, consisting in Petechial Eruptions, or Asperities of the Skin. *Castellus* from *Martianus*.

ROSBOTH. A soft Excrescence of a hard Part. *Castellus* from *Avicenna*.

ROSCA. An *Erysipelas*. *Rulandus*.

ROSCOLÆ. The Measles.

ROSIO. Corrosion.

ROSMADIAN. Mercury of the Philosophers.

ROSMARINUS.

The Characters are;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose upper Lip or Crest is cut into two Parts, and turns up backwards, with crooked Stamina, or Chives; but the under Lip, or Beard, is divided into three Parts, the middle Segment being hollow, like a Spoon; out of the two or three teeth'd Flower-Cup rises the Pointal, attended as it were by four Embryos, which afterwards turn to so many Seeds, that are roundish, and are inclosed in the Flower-Cup.

Boerhaave mentions six Species of *Rosmarinus*, which are;

1. *Rosmarinus*; *hortensis*; *angustiore folio*. C. B. P. 217. Tourn. Inst. 195. Boerh. Ind. A. 179. *Rosmarinus*, Offic. *Rosmarinum coronarium*, Ger. 1109. Emac. 1292. *Libanotis coronaria, sive Rosmarinum vulgare*, Park. Theat. 71. ROSEMARY.

This is a Plant very well known, growing almost in every Garden. It grows larger and more woody in England than in many other Countries, having woody tough Branches, with long narrow thick Leaves, that are hoary and somewhat hollow underneath, and green above; among these grow the Flowers several together in Clusters, of a pale purple Colour, each having a large Galea, and is set in a thick, hoary, five-corner'd Calyx, at the Bottom of which lie four round Seeds. It grows wild in Spain, and the Southern Parts of France; but with us is planted in Gardens, and flowers in April. The Leaves and Flowers are used.

Rosemary is a Plant of great Service in Affections of the Head and Nerves, helping the Apoplexy, Palsy, and all Kinds of Convulsions, Pains, and Dizziness of the Head. It strengthens the Sight and Memory, and opens Obstructions of the Liver and Spleen. The dried Herb burnt is good to sweeten the Air, and correct noxious filthy Smells.

Official Preparations are the *Conserve Anthos*, *Aqua Regina Hungaria*, and the Chymical Oil and fixed Salt. *Miller's Bot. Off.*

Rosemary, with respect to its Virtues, bears a great Affinity to Spike and Lavender; and as it abounds with a penetrating balsamic Oil, its Spirit proves equally efficacious in Disorders of the Head, with Spirit of Lavender. An Infusion

of Rosemary in Water or Wine, is highly beneficial in the *Fluor albus*, and Sterility proceeding from it, in Hoarseness, in Asthma's and a disagreeable Breath. *Arnaldus de Villa Nova* affirms, that he has often seen Cancers, Gangrenes, and Fistulas dried up and perfectly cured, tho' they would yield to no other Medicines, by frequently washing them with an Infusion of Rosemary in Spirit of Wine. *Hoffman de Præst. Remed. Domest.*

AQUA HUNGARICA.

Hungary, or the Queen of Hungary's Water.

Take of Flowers of Rosemary, twenty Ounces; rectified Spirit of Wine, thirty Ounces; let them infuse for some Days, then draw off as much as there was Spirit put in.

This is most conveniently made by the Copper Alembic, taking Care that the Receiver is closed with a Bladder to the end of the Worm. And this Way common Spirit may be as well used as the rectified, observing not to draw it so low as to be cloudy; for after a certain Standard, the oily Part of the Flowers, which is considerable, will turn it milky. What runs afterwards, as a great deal will, which yet smells and tastes strong of the Flowers, may either be kept to throw into the Still again, when the same is to be made, or used in the Shop for a small Spirit of Rosemary; and the last Runnings of all may pass for a good simple Water, under the same Title. The College have rejected this out of their new Dispensatory; and indeed what is imported from France, and Countries where the Rosemary most abounds, is so good and cheap that it is hardly worth any Body's while to make it here, unless the Wholesale Dealers: For these Gentlemen can in an Instant brew the largest Quantity, at a very small Expence. Their Way is, to impregnate rectified Spirit of Wine with chymical Oil of Rosemary and that of Lavender, and this, with a French Title, they palm upon the Nation for right French Hungary Water.

CONSERVA ANTHOS. *Conserve of Rosemary. Flowers.* See CONSERVA.

For the chemical Oil of Rosemary, see OLEUM.

For the fixed Salt, see SAL.

2. *Rosmarinus*; *striatus*; *five aureus*. Park. Theat. 74.

3. *Rosmarinus*; *hortensis*; *angustiore folio*; *argenteus*. H. R. Par. 158.

4. *Rosmarinus*; *spontaneus*, *folio eleganter variegato*. H. R. D.

5. *Rosmarinus*; *spontaneus*; *five latifolius*. C. B. P. 217.

6. *Rosmarinus*; *spontaneus*; *five latifolius*, *folio Apice inhamum curvato*. Boerh. Ind. Alt. Plant. Vol. 1.

Rosemary Leaves are antihysterical, uterine, emmenagogue and cephalic; when used in Fomentations and Cataplasms, they are of an alleviating and detergent Nature. Rosemary, in consequence of its heating and dissipating Quality, is an excellent Remedy in a *Fluor albus* arising from Languor. The Leaves bruised, made up in Form of a Paste, and swallowed, powerfully strengthen the Stomach and rouse the Spirits. This Plant is an excellent Medicine in Disorders of the Head and Nerves, such as a Vertigo, a Carus, an Epilepsy, a Palsy, a Cholic, hysterical Fits, and Weakness of Memory. Its Leaves, when put in a Bath, are excellent against Barrenness, render the Sight clear, remove a disagreeable Breath and Difficulty of Breathing, and resolve Obstructions of the Liver and Spleen, for which Reason they are highly beneficial in the Jaundice; externally they contribute to strengthen the Nerves, prevent Gangrenes, and resolve cold Humours. In Catarrhs, and the Disorders arising from it, the Smell of this Plant is beneficial; Rosemary is produced in England, Spain, and some Parts of France. Its Leaves smell like Camphire; and from its Flowers are obtained a Spirit, an Oil, and a Quintessence. The Water distilled from its Flowers is, *The Queen of Hungary's Water*, so called because a certain Hermit taught its Composition to that Queen. This Water is excellent in *Deliquiums*, and what we call a Sinking of the Spirits. Melancholic and hysterical Patients are greatly relieved and exhilarated by the grateful Smell of this Water, which is, also, excellent for those who faint upon seeing the Blood spring from an opened Vein; for it excellently revives the Spirits, when applied to the Nose, an Organ of all others the most easily affected. In the same Case, it is taken internally in Rain or Spring Water, and externally the Temples, Nostrils, and nervous or muscular Parts, are to be rubb'd with this Water. In Contusions, Wounds, Tooth-achs, Gangrenes, and Congestions of cold Humours, this Water is used with great Success. Of Rosemary Flowers, gathered in the Middle of the Day, bruised with Sugar, and afterwards preserved from the Air in a Galley-pot, is made the celebrated English Conserve, known in the Shops by the Name of *Conserve Florum Anthos*. This Conserve is an excellent Remedy in Vertigos, arising

arising from a cold Cause, as also in cold Distempers. Hence 'tis an excellent Stomachic, and proper in that Disorder of the Eyes called *Lema Lippea*, when not proceeding from an Inflammation. The Leaves of Rosemary, boiled in Wine, strengthen the Nerves. A Conserve is also made of its Leaves for the Use of the Poor. The Oil obtained from the Flowers and Leaves of this Plant is cephalic, anti-scorbutic, emmenagogue, and in Virtues greatly approaches to the Savin. It is an excellent Medicine in Epilepsies, cures the various Symptoms of the hysterical Passion, and promotes a Discharge of the Lochia and Menes; for when the Foetus or Menes are retained, 'tis customary among the Women to exhibit some Drops of this Oil in Wine. *Hist. Plant. Ascript. Boerhaav.*

ROSMARUS. The Sea-Cow. See MANATI.

ROSANIA or ROSALIA. The same as ROSEOLÆ.

ROS SOLIS.

The Characters are;

The Leaves are thick set with bristly Hairs distilling Drops. The End of the Pedicle becomes an oblong tubulated Calyx, divided into five acute Segments, within which is seated a roseaceous pentapetalous Flower, furnished with five Stamina. The Ovary from the Center of the Calyx, within the Flower, is of a conic, acuminate Figure, gaping when mature, and full of a Multitude of Seeds.

Boerhaave mentions two Sorts of *Ros Solis*, which are;

1. *Ros Solis*; folio subrotundo. C. B. P. 357. *Raii Hist.* 2. 1100. *Synop.* 3. 356. *Tourn. Inst.* 245. *Boerb. Ind. A.* 216. *Ger. Emac.* 1556. *Ros Solis*, Offic. J. B. 3. 761. *Ros Solis major*, *Ger.* 1366. *Ros Solis sive Rorella vel Rosa Solis*, *Park. Theat.* 1052. *Ros Solis*, *Rosa Solis*, *Sponsa Solis*, *Rorida* & *Rorella etiam dicta*. *Chab.* 559. ROSA SOLIS.

This is a small low Plant, having a little fibrous Root, from which spring small round hollowish Leaves, on Footstalks of about an Inch in Length, covered and fringed with short red Hairs or Bristles, which make the whole Leaf appear red; from among these arise naked Stalks three or four Inches high, having several small five-leav'd Flowers on the Top, standing one Way, which are succeeded by little longish Seed Vessels, containing very small Seed; it grows in boggy Grounds, and flowers in June and July.

Rosa Solis is commended by some as a great Cordial, and good for Consumptions, Convulsions, and the Plague. Formerly a cordial Water, in which this Herb, with several Spices, was a principal Ingredient, was in great Repute, under the Name of *Rosa Solis*, tho' now almost out of Date. *Miller's Bot. Off.*

Some Authors affirm it is a Caustic, and improper for internal Use.

2. *Ros Solis*; folio oblongo. C. B. P. 357. *Boerb. Ind. Alt. Plant. Vol. I.*

ROS SYRIACUS. The same as ELÆOMELI; which see.

ROSTRIFORMIS. The same as CORACOIDES.

ROSTRUM. The Beak of a Bird. Hence several Chirurgical Instruments are, from their Similitude, called by this Name. Thus there is the *Rostrum Corvi*, the Crows Bill Forceps; the *Rostrum Gruis*, Crane's Bill; the *Rostrum Psittacini*, Parrot's Bill; and the *Rostrum Vulturis*, Vulture's Bill. *Rostrum Leporinum*, is a Hare Lip.

ROTANG. The Name of a Species of Reed mentioned by *Piso*.

ROTATOIRES. The Trochanters. See TROCHANTERES. The Alchymists are called *Rotatores* by Way of Derision.

ROTLA, in *Paracelsus*, is the same as RUBRICA.

ROTULA. The Patella, or Cap of the Knee. In Pharmacy, *Rotula* is a Troche.

ROTUMHA. A Vessel like a Cucurbit. *Rulandus*.

ROTUNDUS MAJOR. The Name of a Muscle of the Shoulder. See TERES MAJOR.

ROTUNDUS MINOR. See TERES MINOR.

ROUCOU. See ACHIOTL.

RUB, in *Rulandus*, is the same as ROB.

RUBEA ICTERITIA, in *Paracelsus*, is an Erysipelas.

RUBECULA. Offic. *Jonf. de Avib.* 87. *Mer.* 178. *Bellon. des Oyse.* 349. *Gesn. de Avib.* 681. *Charlt. Exer.* 97. *Erithacus sive Rubecula*, *Aldrov. Ornith.* 2. 742. *Rubecula sive Erithacus*, *Raii Ornith.* 219. *Ejusd. Synop. A.* 78. THE ROBIN-RED-BREAST, or RUDDOCK.

This Bird, when eaten, is by some esteemed to excite Venereal Inclinations.

RUBEFACIENTIA. Topics which excite a Redness of the Skin; the same as PHENIGMI.

RUBELLA. This is defined by *Dornæus*, a spiritual Essence, extracting a Tincture from Bodies by its resolute Power.

RUBELLIANÆ. The Berries of the white Bryony. *Rhadius in Scriben. Larg. N°.* 249.

RUBELLIO. The Sea-Roach.

This Fish has two sharp Fins on the Back, and feeds upon small Crabs and other little Fishes; it is more esteemed in Winter than in Summer; and this may be occasioned by its different Way of feeding in these two Seasons; for in Winter it keeps in the open Sea, but in Summer it draws near the Shore; or, according to some Authors, the Difference may arise from its spawning in the Summer.

This Roach is easy of Digestion, because 'tis tender, delicate, not very compact in its Parts, and has but little gross Juice. It is nourishing, restorative, and promotes the Semen, by Reason of the balsamic, oily Parts, and volatile Salts with which it abounds. It is, also, reckoned good for stopping a Looseness; operating on this Occasion, by calming and suppressing the sharp and pungent Humours, which cause this Inconvenience, by its oily Principles. It agrees, especially in Winter, with any Age and Constitution. *Lemery on Foods.*

RUBEOLA.

The Characters are;

The Leaves grow four, or more together; the Flower is monopetalous, Funnel shap'd, and quadrifid, resting upon one, or a double Ovary; the Ovary becomes a Fruit containing two Seeds.

Boerhaave mentions two Species of *Rubeola*, which are;

1. *Rubeola*; latiore folio. T. 130. *Rubia, latifolia, spicata*. C. B. P. 334. *Pseudo-Rubia, latifolia, spicata*, M. H. 3. 333.
2. *Rubeola*; angustiore folio. T. 130. *Pseudo-Rubia, spicata, angustifolia*. M. H. 3. 333. *Boerb. Ind. Alt. Plant. Vol. I.*

This Plant is recommended in a *Quinsy*. *Hist. Plant. Boerb. Ascript.*

RUBETA. The Toad. See BUFO.

RUBIA.

The Characters are;

The Leaves are rough; the Fruit consists of two succulent Berries, which contain each an umbilicated Seed.

Boerhaave mentions four Sorts of *Rubia*, which are;

1. *Rubia*; Tinctorum; sativa, C. B. P. 333. *Boerb. Ind. A.* 147. *Tourn. Inst.* 114. *Rubia Tinctorum*, Offic. *Ger.* 957. *Emac.* 1118. *Raii Hist.* 1. 480. *Synop.* 3. 223. *Rubia sativa*, J. B. 3. 714. *Rubia major sive hortensis*, *Park. Theat.* 274. Madder.

The Roots of Madder are about as thick as a large Goose-Quill, round and much branched, of a reddish Colour, clear, and somewhat transparent, having a small, slender, hard, tough String in the Middle, of a sweetish Taste, with a little Bitterness; from these spring many square, rough, weak Stalks, full of Joints, about which are set five or six long sharp-pointed Leaves, that are broadest in the Middle, and narrow at both Ends, rough almost to Prickliness. The Flowers grow in long Spikes, coming forth at the Joints with the Leaves, small and yellow, of one Leaf cut into four Segments, each succeeded by two small, moist, blackish Berries, containing two round umbilicated Seeds. It is planted in Fields and Gardens, and flowers in May.

The Roots of Madder are opening and attenuating, good for Obstructions of the Liver, help the Jaundice and Dropsy, and cleanse the Kidneys of tough and slimy Humours, and are of Use against the Stone and Strangury. They are accounted good to dissolve congealed Blood, and to be serviceable in Wounds and Contusions. A great Quantity of the dried Roots are used by the Dyers to dye a red Colour. *Miller's Bot. Off.*

2. *Rubia*; sylvestris; aspera; quæ Sylvestris Dioscoridi. C. B. P. 333. *Raii Hist.* 1. 480. *Synop.* 3. 223. *Boerb. Ind. A.* 147. *Rubia sylvestris* & *Rubeola*, Offic. *Rubia sylvestris*, *Park. Theat.* 274. WILD Madder.

It grows wild in Hedges. The Root agrees in Virtues with the *Rubia Tinctorum Sativa*.

3. *Rubia*; sylvestris; Monspeffulana; major. J. B. 3. 715.
4. *Rubia*; quadrifolia; asperrima; lucida; peregrina. *Boerb. Ind. Alt. Plant. Vol. I.*

RUBIA SYNANCHICA, Offic. *Rubia Cynanchica*, C. B. P. 333. J. B. 3. 723. *Raii Hist.* 1. 485. *Rubeola vulgaris quadrifolia, levis, floribus purpurascens*, *Tourn. Inst.* 130. *Raii Synop.* 3. 225. *Synanchica Lugdunensis*, *Ger. Emac.* 1120. *Asperula repens Gesneri, seu saxifraga altera Casalpini*, *Park. Theat.* 453. SQUINANCY-WORT.

It has a black, thick, woody Root, which runs to a great Depth in the Earth, and is furnished with very numerous fine capillary Fibrils, divided into a Multitude of Heads, and shoots up many smooth, slender angulous Stalks, a Span in Length or more, clothed at the Joints, which are frequent near the Head of the Root, with four Leaves, very short and broad, so as that the Length is scarce the third Part of the

the Breadth. About the Middle of the Stalk the Joints are frequent, and the Leaves longer, narrower, sharper, and grow also by Fours. The Flowers on the Tops of the Stalks and Branches, form a kind of Umbellas, as in the *Valeriana*, and are expanded from an oblong Tube into four Segments, of a beautiful red Colour, and a pleasant Smell; sometimes they are white like those of the *Jasminum*, which they resemble in Colour and Smell, but are of the Size of the *Rha* of *Dioscorides*.

These are succeeded by a Coacervation of Seeds, which grow two together, and are rugous or rough, oblong, and bear like those of the *Phaseolus*, double the Size of those of the common *Gallium*, and when dry of a yellowish Colour.

It abounds in barren Places, and chalky and sunny Hills, as on *Gogmagog Hills*, *Suffex Downs*, and the like Situations.

It is supposed to be of extraordinary Efficacy in the *Squintancy*, (whence its Name) a Quinsy, whether inwardly or outwardly used. *Dale*.

RUBICILLA Offic. Mer. Pin. 176. Schw. A. 346. *Rubicilla*, *Pyrrhula*, Charlt. Exer. 17. *Rubicilla seu Pyrrhula*, Gesn. de Avib. 664. Will. Omith. 180. Raii Omith. 247. Ejusd. Synop. A. 86. *Pyrrhula seu Rubicilla*, Aldrov. Ornith. 2. 744. Ions. de Avib. 87. *Rubecula*, Bellon. des Oyse. 349. *Byrriola*, Scaliger. THE BULL-FINCH, ALP, or NOPE.

The Flesh of this Bird is recommended against the Cholice.

RUBIFICANTIA. The same as **RUBEFIACIENTIA**.

RUBIGO. The Rust of Metals, or Mildew; or Smut of Corn.

RUBINUS. See **CARBUNCULUS**.

RUBRICA FABRILIS. Offic. Mer. Pin. 218. Matth. 1359. Calc. Mus. 134. Dougl. Ind. 80. *Rubrica*, Charlt. Foss. 2. Worm. 4. Aldrov. Mus. Metall. 257. *Rubrica Fabrilis Mollis*, Kentm. 8. **RED OKER**, **RUDDLE**, **MARKING STONE**.

This is an earthy, ponderous, and intensely red Substance, found in many Parts of *England*, and is used in vulnerary and drying Plaisters.

RUBRICA SINOPICA. Offic. Matth. 1354. *Rubrica Sinapis Agricol*. 583. *Terra Sinopiana*. Tourn. Voy. Ed. Lond. 2. 159. **EARTH OF SINOPE**.

This ought to be thick, heavy, and all of one Colour, resembling Liver; and when diluted with Water, it ought to diffuse itself therein.

It is dug out of the Earth in *Cappadocia*, is esteemed drying, and is said to restrain a *Diarrhæa*.

RUBUS.

The Characters are;

The Calyx is quinquifid; the Flower is rosaceous, pentapetalous, and furnished with a great Number of Stamina; the Placenta is in the Centre of the Calyx, to which it grows; the Fruit is round, and compos'd of a great Number of succulent *Acini*, fixed to the Placenta, and furnished with oblong Seeds, each being furnished with a long Tube.

Boerhaave mentions seven Species of *Rubus*, which are;

1. *Rubus vulgaris*; five *Rubus fructu nigro*. C. B. P. 479. Tourn. Inst. 614. Boerb. Ind. A. 2. 60. *Rubus vulgaris*, Offic. *Rubus*, Ger. 1089. Emac. 1272. *Rubus vulgaris major*, Park. Theat. 1013. *Rubus major fructu nigro*, J. B. 2. 57. Raii Hist. 2. 1639. Synop. 3. 467. **THE BRAMBLE OR BLACK BERRY BUSH**.

The Bramble has many long, creeping, angular, tough Branches, beset with a Multitude of very sharp crooked Thorns. The Leaves grow on the younger Twigs, usually five on one Foot Stalk in the lower Parts, and three on the upper Part next the Flowers, which grow in Clusters at the End of the Branches, consisting of five Leaves a-piece, in some Plants white, in others of a pale Red; with several Stamina in the Middle. The Fruit is a Cluster of *Acini*, green at first, then red, and when ripe, of a black Colour, and of a pleasant sweet Taste. It grows every where in the Hedges, flowering in *June* and *July*, and the Fruit is ripe at the latter End of *August* and in *September*. The Leaves and Fruit are used.

The Leaves are accounted Restringent, and are frequently prescribed in Gargarisms for sore Mouths and Throats; the unripe Fruit is very binding and restringent, useful for all Kinds of Fluxes and Bleeding; for Thrushes and sore Mouths. The Juice of the ripe Fruit made into Syrup, is accounted good against Heat of Urine. *Miller's Bot. Off.*

The Leaves of the Bramble are styptic, and of an earthy Taste; they stain the blue Paper with a deep red; the Fruit gives it a much deeper, and almost as deep as Alum; this Fruit is vinous, and of a very good Smell upon some Brambles, and insipid and disagreeable upon others. It is very probable that the acid Part of the natural Salt of the Earth, which in the Leaves is very little disengaged from the other Principles, is almost entirely freed from them in the Fruits, and produces there, with the terrestrial Parts, a Salt which resembles

Alum; so that the Antients had a great deal of Reason to use the Fruit of this Plant to bind. The Bramble is astringent, deterfive and absorbent; the Decoction of its Branches, as *Dioscorides* affirms, stops a Looseness and the Fluor albus. Its Leaves, chew'd, clear the Ulcers of the Gums and Mouth; bruisd and applied to the Tetters they kill them, and cure the Piles. The Juice of the young Shoots thickened in the Sun, acts more powerfully. *Galen* was of the same Opinion; he made Use of the Leaves for Wounds; of the Flower and Fruit for spitting Blood, and of the Root for the Stone. *Pliny* has stolen out of *Dioscorides* what he has said of the Bramble; but he adds to the Virtues of this Plant that of being diuretic. This Plant is now used to cleanse and bind, taken either outwardly or inwardly. The Decoction of it is used for the Wounds of the Legs. *Tabernæmontanus* says, that a Bolster dipped in the Juice of the Bramble, and put into the Fundament, will stop the Flux of the Piles. Mr. *Ray* relates, that Dr. *Needham* set a great Value upon the Syrup of Black-berries for the Heat of Urine. A simple *Diamaron* may be prepared of it for the Diseases of the Throat. The Juice of the Bramble is an Ingredient in the *Diamaron Nilai usitatum*. The Gun-powder made of the Coals of this Plant is quicker and stronger than the common Sort. *Martyn's Tournefort*.

2. *Rubus*; repens fructu cæcio. C. B. P. 479. Tourn. Inst. 614. Boerb. Ind. A. 2. 60. Ger. Emac. 1271. *Chamaebatos* Offic. *Rubus minor Chamaerubus sive Humirubus*, Park. Theat. 1013. *Chamaerubus spinosus fructu cæruleo*. Jonst. Dendr. 272. *Rubus minor fructu cæruleo*, J. B. 2. 59. Raii Hist. 2. 1640. Synop. 3. 467. **THE DEW BERRY**.

It is found amongst the Corn. It flowers in *May*. The Fruit becomes ripe in *Autumn*. The Fruit is in Use. It agrees in Virtues with the *Rubus vulgaris*, or the Bramble or Black-berry Bush. *Dale*.

3. *Rubus*; *Idæus*; spinosus; fructu albo. C. B. P. 479. J. B. 2. 59.

4. *Rubus*; *Idæus*; spinosus; fructu rubro. J. B. 2. 59. Raii Hist. 2. 1640. Synop. 3. 467. Boerb. Ind. A. 2. 69. *Rubus Idæus*, Offic. Ger. 1089. Emac. 1272. Park. Theat. 557. *Rubus Idæus spinosus*, C. B. P. 479. Tourn. Inst. 614. **THE RASPBERRY-BUSH**.

The Raspberry-Bush has slender brittle Stalks, covered with an ash-colour'd Bark, beset with small weak Prickles; it has five high-vein'd, oblong, sharp-pointed Leaves, growing upon one Foot-stalk, white underneath and green-above, indented about the Edges. The Flowers consist of five Leaves, of a white Colour, with a Cast of Red; each of which is succeeded by a roundish Fruit made of a Cluster of *Acini*, for the most part red, but in some Plants they are of a white Colour. It grows wild in some Parts of *Wales*, and the North of *England*; and flowers in *May*, and the Fruit is ripe in *June*.

The Fruit, which is the only Part used, has a pleasant grateful Smell and Taste, is cordial, and strengthens the Stomach, stays Vomiting, is somewhat restringent, and accounted good to prevent Miscarriage.

The only Official Preparation is the *Syrupus de Rubo Idæo*. *Miller's Bot. Off.*

They make a Wine, a Syrup, a Ratafia, and a Vinegar, of the Fruits of this Plant. Spirituous Water is also drawn from them. These Preparations are strengthening, and good in malignant Fevers and the Small-Pox. Nitre dissolved, and chrystallized with the Juice of Raspberries, is very agreeable. *Martyn's Tournefort*.

The red Raspberry is more common than the white; such as are large, full of sweet and vinous Juice, and pleasant to the Taste and Smell, are the best.

They are of a moistening and cooling Nature, cordial, and fortify the Stomach; they sweeten the Breath, purify the Blood, and are reckoned to be antiscorbutic and antinephritic.

Their refreshing Taste and Smell proceed from their essential Salt, intermixed with some oily Parts a little refined, which lightly pricking the Nerves of the Taste and Smell, excite an agreeable Sensation in them. They have nearly the same Principles, and consequently the same Effects as Strawberries; but they are moister and more phlegmatic, and not so compact in their Parts; for which reason they easily corrupt in the Stomach, if they continue there too long. The Flowers are used against the St. *Anthony's* Fire and Inflammations of the Eyes.

Raspberries are proper in warm Weather, and suit young bilious People, and those whose Humours are too sharp, and over-much agitated. *Lemery on Foods*.

5. *Rubus*; odoratus. *Cornuti*, 158.

6. *Rubus*; flore albo, pleno. *H. R. Monsp.*

7. *Rubus*; *Alpinus*; humilis. J. B. 2. 61. Tourn. Inst.

615. *Boerb. Ind. A. 2. 60. Chamaerubus, Offic. Chamaerubus Saxatilis, C. B. Pin. 479. Raii Hist. 1. 654. Synop. 3. 261. Rubus Saxatilis, Ger. 1090. Emac. 1273. Rubus Alpinus Saxatilis, Park. Theat. 1014. STONE-BRAMBLE.*

It grows on high Mountains, flowers in June, and the Berries have the same Virtues with Raspberries.

All these Species of the *Rubus* are received in Medicine; the Roots of the first, second, third and fourth Species, digged up in February or March, about the Full Moon, and boiled in Honey, are a very good aperient Medicine, whence it is proper for a Dropsy. The Fruit boiled in Red Wine, was accounted by the Ancients a sovereign Remedy, where the Case required Strengthening, and for the Hemorrhages, and Fluxes of the Belly. The ripe Berries are full of a nitrous and aromatic Juice, which is highly aperitive, resolves dry and harden'd Coagulations, and expels them by Urine, and is on that account very serviceable in Diseases, which require laxative and lenient Remedies, and such as are endowed with a saponaceous Quality. The Leaves, which way soever prepared, are corroborative and astringent; the Fruit is laxative and aperient, and the expressed Juice of the Leaves is of Use in all acute Diseases. Hence the *Syrupus de Rubis*, or *de Rubo Ideo*, is very good in all Disorders proceeding from Bile, and Inflammations. A few Berries of the fourth and fifth Species, put into Wine, communicate to it a fine Colour and Fragrance, and greatly exhilarate the Heart. They call this Wine *Ruboides*. Of the same they prepare a Jelly, which is commended for hot Distempers. The Leaves and Fruit are commended in a Diarrhæa, Fluor Albus, Vomiting, and immoderate Fluxes of the Uterus and Nostrils; they cure Ulcers of the Gums, and are an excellent Remedy for the Aphthæ and Ulcerations of the Mouth. The bruised Leaves extirpate Warts, cure Wounds and Ulcers, and remove the Itch. *Hist. Plant. ascript. Boerhaave.*

RUCMA, or LUCMA. *De Laet.* An American Fruit, somewhat like an Orange with respect to Size and Shape. It is not esteemed a good Food, nor is it used in Medicine.

RUCTUS, or RUCTATIO. An Eructation, or discharging of Wind upwards.

RUELLIA.

The Characters are;

It hath a funnel-shaped Flower, consisting of one Leaf, which is cut into several Parts at the Brim, from whose Emplacement arises the Pointal, which is fixed like a Nail in the Bottom of the Flower, and afterwards becomes a membranaceous Pod, which opens into several Parts, and is filled with small Seeds.

Miller mentions three Species, which are;

1. *Ruellia; Americana; humilis; Asphodeli Radice.* Plum. Nov. Gen.

2. *Ruellia; Carolinana; foliis oblongis angustis, flore purpureo.* Houft.

3. *Ruellia; Americana; humilis, parvo flore cæruleo, capsulis teretibus.* Houft.

The first Sort was discovered by Father Plumier in America, who gave this Name to the Genus in Honour of Dr. Ruellius, a Person learned in Natural History, who flourished in the Sixteenth Century. The second Sort grows plentifully in South-Carolina, from whence it was brought into the English Gardens. This Sort grows much taller than the other two. The third Sort was discovered by the late Dr. William Houston in Jamaica, who sent the Seeds into England. The Flowers of this Kind are much smaller than those of the other Sorts, and are of short Duration, seldom continuing above one Day. *Miller's Dictionary.*

RUFUS EPHESIUS, or RUFFUS EPHESIUS. This ancient Physician lived under the Emperor Trajan, and was esteemed by Galen one of the most skilful of his Profession. The same Author tells us, that Rufus wrote of the *Materia Medica* in Verse; he also wrote a Treatise of the *Atra Bilis*, and some others cited by Suidas; but now lost; and we have nothing left of his Works, but a small Treatise of the Greek Names of the different Parts of the Body, and another of the Diseases of the Kidneys and Bladder, with a Fragment of a Treatise of Cathartic Medicines. His principal Scope in the first of these Works, was to give a general Idea of Anatomy, and in particular to prevent the Mistakes of his Contemporaries, who studied Medicine in reading ancient Authors, some of whom had distinguished certain Parts of the Body by Names different from those given them by others. Besides this, we may infer from what Rufus says in this Book, that Anatomic Operations, in his Time, were only exercised upon Beasts. "Chuse, says he, an Animal the most like Man that can be, you will not find all the Parts in every Respect resembling those of the Human Body; but they will, however, have at least some Relation one to another. Formerly, he adds, Anatomical Demonstrations were made upon human Bo-

"dies." We learn also from the same Book, that the Nerves, which were afterwards called *recurrent*, were then newly discovered. "The Ancients, says Rufus, called the Arteries of the Neck *Carotides*, or *Carotics*, as much as to say, *soporific*, because they believed, that by a strong Compression of these Arteries the Animal was laid asleep, and lost his Voice; but it has been discovered in the present Age that such an Accident proceeds not from a Compression of those Arteries, but from that of the Nerves contiguous to them." This Physician seems also to have seen certain Vessels of the Matrix, of which Anatomists before him had made no mention. "Herophilus, says he, believed that Women had nothing of varicose Parastatæ, but we have found, by examining the Matrix of a Brute, certain Vessels which arise from the Testicles, and being reflexed on both Sides in the Form of Varices, proceed to terminate in the Cavity of the Matrix. They also yield a glutinous Humour when pressed, and it is undoubtedly believed that they are seminal Vessels of that Kind which they call *varicose*." Rufus had before observed, that there are four spermatic Vessels in Man, two varicose, and two glandulous; and that the Extremity of the first, which joins to the Testicles, went by the Name of *Parastatæ*. The little Treatise of the Diseases of the Kidneys and Bladder contains nothing particular. Rufus also wrote some Commentaries upon Hippocrates.

The Three Books of *Rufus Ephesus*, of the Names of the Parts of the Human Body, were published in Greek by Jac. Goupylus, at Paris, 1554, in Octavo, Typis Regiis, ex Officina A. Turnebi. They had been translated, together with *Aretæus*, into Latin, by Junius Paulus Crassus, and printed at Venice, 1552, in Quarto, and were revised by the same Goupylus, and reprinted at Paris, 1554, in a smaller Size; and again, among the *Medici Principes* of Hen. Stephanus, 1567, in Folio. They were also revised a second time by Crassus, and reprinted at Venice, 1555, and at Basil, 1581, in Quarto.

His Book of the *Diseases of the Kidneys and Bladder*, with his Fragment of *Cathartic Medicines*, were published in Greek with the other three Books of Rufus abovementioned, and *Soranus de Utero & Muliebri Pudendo*, by the same Goupylus, at Paris, ex Officina Turnebi, 1554, in Octavo, and printed the same Year in Latin in a lesser Size; and were afterwards reprinted in Latin among the *Medicæ Artis Principes* of Hen. Stephanus, 1567, Folio.

A new Edition of Rufus in Greek and Latin, revised and compared with the Bern Manuscript, was designed by Martinus Bogdanus, as we are told by Bartholinus, Cent. 4. Medic. Epist.

Labbeus, *Bibl. nov. Manuscript.* mentions *Rufus de Veneris, & de Offibus*; and Rhasis ascribes to Rufus the Books *περί υγιείας*, "Of Health," which are found among the Writings of Galen.

Works of Rufus which are lost, are five Books, *περί διαίτης*, "Of Diet," mentioned by Suidas, and the second of them quoted by Oribasius. Four Books, *περί βλάστης*, "Of Herbs," in Hexameter Verses, mentioned by Galen, *Præf. Lib. 6. de Simp. Med.* who seems also to quote some of them. Galen in the Place just mentioned, quotes also the *Συνομιλία Βιβλία*, "Books of Therapeutics;" whence most of the Fragments of Rufus, which we find in *Ætius*, seem to be taken. Galen also commends a Treatise of Rufus concerning Melancholy, or *Atra Bilis*.

Besides these Works of Rufus mentioned by Galen, Suidas takes notice of his Treatise of the *Diet of Corpulent Persons*; of another on *Vulnerary Medicines*; and a Treatise of *Ficous Tumors or Excrescences*; another of *Ancient Medicine*; and a Treatise of *Milk, Wine, and Honey*. There was another *Rufus*, called *Menius Rufus*, mentioned by Galen, *Lib. 7. Le C. M. P. G. Fabricii Biblioth. T. G. p. 102.*

RUGA. A Wrinkle. The following Prescription is an approved Cosmétique in Wrinkles of the Face. Boil Hartshorn, not old, in Water, till it yield a Sort of Juice. Then strain the Water, and with the same knead Bean-Meal, which afterwards reduce into Troches, and dry them in the Shade. When Occasion requires, dissolve a sufficient Quantity of these Troches in Water, till it becomes of the Thickness of a liquid Cerate, with which anoint the Face, and when it is agglutinated, wash it off with warm Water. *Ætius, Tetrab. 2. Serm. 4. Cap. 4.*

RUGITUS. A Murmuring of the Intestines; the same as **BORBORYGMOS**.

RUMA. The Gula, or the external Part of the Throat.

RUMEX. The same as **ACETOSA**.

RUMINANTIA ANIMALIA. Ruminating Animals, that is, those who chew the Cud.

RUMPHAL. A Species of *Indian Arum*, called also **IGNOME**. The Juice is poisonous; but the Roots are recommended as an excellent Application to the recent Bites of Serpents;

pents; but if the Wounds are not fresh, cut them open, and then apply the Roots. It is, farther, esteemed an excellent Topic for Parts affected with the Venereal Disease.

RUPICAPRA. See **CAPRA ALPINA**.

RUPTORIUM. A Caustic used in Surgery for breaking or opening Abscesses.

RUSCUS.

The Characters are;

The Calyx is monophyllous, and multified, from the Middle of which proceed monopetalous, campaniform, and globous Flowers; the Ovary becomes a globous soft Fruit, filled with one or two Seeds, which are generally hard.

Boerhaave mentions four Sorts of *Ruscus*, which are;

1. *Ruscus*; angustifolius, fructu folio innascente. See **BISLINGUA**.

2. *Ruscus*; latifolius; fructu folio insidente. *Tourn. Inst.* 79. *Boerb. Ind. A.* 2. 63. *C. B. P.* 305. *Laurus Alexandrina*, Offic. *J. B.* 1. 574. *Raii Hist.* 1. 663. *Alexandrina genuina*, *Park. Theat.* 700. *Hippoglossum Matthioli*, *Ger.* 761. *Emac.* 909. **LAUREL OF ALEXANDRIA.**

The Root of this Bay is hard and knotty at the Head, sending out several long Strings and small Fibres; the Stalks are tough and limber, growing not to any great Height, having the Leaves set alternately upon them, which are hard, firm, and full of straight Nerves, of an oval Shape, but sharp-pointed at the End, about two Inches long; on the Middle of the Back-Part of each grows a small mossy green Flower, which is succeeded by a red Berry about as big as a Juniper-Berry. This Plant grows in the mountainous Parts of *Italy* and *Hungary*.

It is commended by *Dioscorides* and *Galen* to open Obstructions of the Kidneys and the Womb; to provoke Urine and the Menses, and as helpful in long and hard Labour. It is also accounted a good vulnerary Plant, and useful to dry up old Ulcers and Sores; but is rarely used in our Days. *Miller's Bot. Off.*

3. *Ruscus*; angustifolius; fructu summis ramulis innascente. *T. 79.* *Laurus Alexandrina*, fructu longis pediculis caulibus aligato. *M. H. Bloef.*

4. *Ruscus*; myrtifolius; aculeatus. See **BRUSCUS**. *Boerb. Ind. Alt. Plant. Vol. 2.*

RUSMA. A Preparation of Honey which the *Turks* and *Tartars* use by way of *Dropan* or *Pislothrūm*. It is made by boiling Honey to the Consistence of a Rob or Sapa.

RUSTICULA. The same as **GALLINAGO**. The Woodcock.

RUTA.

The Characters are;

The Leaves are divided into Segments; the Calyx is monophyllous, quadrifid, quinquesid, and stellated; the Flowers are resaceous, tetrapetalous, and pentapetalous, furnished with eight or ten Stamina, four or five of which arise from the Unguis of the Petals, and four or five from the Interstices of the Petals; the Ovary seated in the Bottom of the Calyx, becomes a roundish, quadrangular, or pentangular Fruit, consisting of as many Capsules, in which are contained kidney-shaped or angular Seeds.

Boerhaave mentions ten Species of *Ruta*, which are;

1. *Ruta*; major; hortensis; latifolia. *Boerb. Ind. A.* 260. *Ruta*, Offic. *Ruta hortensis*, *Ger.* 1070. *Emac.* 1255. *Ruta hortensis major*, *Park. Theat.* 132. *Ruta hortensis latifolia*, *C. B. P.* 336. *Tourn. Inst.* 257. *Ruta sativa*, vel *hortensis*, *J. B.* 3. 197. *Raii Hist.* 1. 874. **GARDEN-RUE.**

Rue is a shrubby Plant, whose elder Branches are tough and woody, having smooth blueish green Leaves, divided into an uncertain Number of small oval Sections, which are somewhat thick and fat, and round-pointed at the End, abiding all Winter. The Flowers grow on the Top of the younger Shoots, consisting usually of four yellow, hollow, scoop-like Leaves, torn in about the Edges, and having eight yellow Stamina, encompassing a roundish green Head, cut as it were into four Parts, growing large, and seemingly punched full of Holes, containing small black rough Seed. The Root is woody, having many Fibres. *Rue* is planted in Gardens; the Leaves and Seeds are used; the whole Plant has a very strong Scent.

Rue is a Plant of many Virtues, being alexipharmic, and good against infectious pestilential Diseases, and the Plague itself, and all Kinds of Fevers. It helps Disorders of the Head, Nerves, and Womb, Convulsions and hysteric Fits, the Colic and Weakness of the Stomach and Bowels; it resists Poison, and cures the Bites of venomous Creatures, and mad Dogs. It is an Ingredient in the Compound-Water of *Briony*, and in *Treacle-Water*.

Official Preparations are a simple Water, and a Conserve of the Leaves, and an Oil by Decoction. *Miller's Bot. Off.*

That *Rue* was greatly esteemed by the Ancients, is sufficiently certain; since it was the principal Basis of the Antidote of King *Mithridates*. *Rue* abounds with a highly acrid and penetrating Oil, capable of stimulating the languid Fibres to a brisker Motion, and consequently imparting an additional Strength to them. The Leaves of *Rue* mixed with recent Butter, and eaten in the Morning with *Rye-Bread*, are beneficial to those who abound in Phlegm, and an excellent Preservative against the noxious Influences of a moist and vapid Atmosphere, and the contagious Miasmata of epidemical Disorders. The Leaves bruised with Pepper, common Salt, and strong Vinegar, and applied to the Arteries of the Carpus, provided the morbid Matter is before duly managed, excellently check the febrile Impetus, and are often used with more Efficacy and less Danger, in stopping obstinate Quartan Fevers, than internal Astringents, and the so much celebrated *Peruvian Bark*. Strong Wine-Vinegar, richly impregnated with the Juice of *Rue*, when applied to the Mouth and Nostrils, is not only an excellent Preservative against the Contagion of epidemical Disorders, but also more effectual in preventing Deliquiums, than all the cephalic, rich, balsamic and apoplectic Spirits. *Hoffman. de Præstant. Remed. Domest.*

Rue is an Herb very much commended as an Alexipharmic, and is esteemed one of the best Simples for Hysterics, Epilepsy, Apoplexy, Convulsions, Pestilence, Inflammations and Gangrenes; in which last Case, the Herb bruised and applied with Wine and Salt, quickens the dead Part, prevents a Suppuration, and effects a Cure. *Nicander* commends it against the Bites of all venomous Creatures. There is no better Herb in the Pestilence; it has something of an aromatic, acidish, fragrant and oily Quality, and is heating in a high Degree, with a kind of Acidity. The Smell revives Women under a Syncope, and raises them under hysteric or epileptic Fits. It is of mighty Efficacy against Phlegm, and is very good, externally applied, for cold and pituitous Tumors; and it is highly celebrated for clearing and sharpening the Sight. It has a very acrid but not burning Taste, and abounds with a Salt, Oil, and a very penetrating Spirit, and is on that Account of singular Service in moving and stimulating the Nerves, and in attenuating gross Humors, and expelling them by insensible Perspiration and Sweat. It is an excellent Plant, as *Pliny* assures us, against all Sorts of Poison, and for all hysteric Melancholy, and hypochondriac Disorders, and for Faintings. It provokes the Menses, and expels the Lochia, Foetus, and Secundines; and drank in the Morning instead of Tea, and the Vapour received into the Eye, sharpens the Sight. The Seed is much commended for the Worms, and the Gonorrhæa, and consumes the Semen by its excessive Heat and Dryness. The Herb is of Service in the Small-Pox and Measles, the Epilepsy, lethargic Disorders, and the stultulent Colic. *Rue* externally used is good for cold, humid and watry Tumors. A Cataplasm is prepared of *Rue* bruised and boiled with Wine, which resists an Inflammation. *Rue* may be given inwardly in the most acute Diseases. *Hist. Plant. ascript. Boerhaave.*

2. *Ruta*; hortensis; latifolia; arbuseulæ similis, *C. B. P.*

3. *Ruta*; Africana; maxima, *Catal. Schwerin.*

4. *Ruta*; Chalepensis; tenuifolia; florum petalis villis scetentibus, *M. H.* 2. 508.

5. *Ruta*; Chalepensis; latifolia.

6. *Ruta*; hortensis; minor; tenuifolia, *M. H.* 2. 507.

7. *Ruta*; hortensis; minor; tenuifolia; foliis variegatis argenteis.

8. *Ruta*; sylvestris; minor, *C. B. P.* 336. *J. B.* 3. 200. *Peganium Narbonensium*, *Lob.*

9. *Ruta*; sylvestris; major, *J. B.* 3. 200. *C. B. P.* 336. *Park. Theat.* 133. *Raii Hist.* 1. 874. *Tourn. Inst.* 257. *Boerb. Ind. A.* 260. *Ruta Montana*, Offic. *Ger.* 1071. *Emac.* 1255. **WILD RUE.**

It grows on Mountains, and flowers in July, and is supposed to have the same Virtues as the Garden-Rue, but is more acrimonious.

10. *Ruta*; sylvestris; linifolia; Hispanica, *Bocc. Mus. Part. 2.* 82. *Tab.* 73. *Boerb. Ind. Alt. Plant. Vol. 1.*

RUTA is also a Name for the **HARMALA**; which see.

RUTA CANINA. A Name for the *Scrophularia*; *Ruta Canina dicta vulgaris.*

RUTA CAPRARIA. Goats Rue. See **GALEGA**.

RUTA HYPERICOIDES. A Name for the *Hypericum*; *foetidum*; *frutescens.*

RUTA MURARIA. See **ADIANTHUM ALBUM**.

RUTA PRATENSIS. A Name for the *Thalictrum*; *pratense*; *angustifolium.*

RUTACEUM. Vinegar of Rue. See **ACETUM**.

RUTETA. The same as **TARANTULA**; which see.

RUTICILLA. A Bird called the Red-Tail, or Red-Start. The same as **PHOENICURUS**.

RUTILUS. Offic. Schonf. Ichth. 63. *Rutilus, fœve Rubellus fluviatilis*, Gefn. de Aquat. 821. *Rutilus fluviatilis*, Jonf. de Pisc. 99. *Rutilus, fœve Rubellus fluviatilis* Gesneri, Aldrov. de Pisc. 732. 621. Raii Ichth. 262. Ejusd. Synop. Pisc. 122. *Rutilus, fœve Rubellus*, Mex. Pin. 190. **THE ROCHE.**

The Flesh of this Fish, which is very common in Rivers, is said to promote Venereal Inclinations.

RUYSCH. A celebrated Anatomist of Holland. See a farther Account of him under the Article **ANATOME**.

RUYSCHIANA.

The Characters are;

The Root is perennial, and the Leaves are not so thick as those of Rosemary; the Galea is hollow, bifid and trifid, the Beard trifid, the middle Segment hanging forward, bifid, and spirally convolved. The Flowers are beautiful, generally set at first by Sixes in thin Whorles, but afterwards collected into a Spike.

Boerhaave mentions but one Sort of this Plant, which is, *Ruyschiana*; flore cœruleo, magno. *Hyssopus Austriaca*, magno flore, folio Chamæpitidis. H. L. *Chamæpitys, cœrulea, Austriaca*, C. B. P. 250. *Prunella, Hyssopi folio viridi, ample flore cœruleo*, M. H. 3. 364. *Boerb. Ind. Alt. Plant. Vol. 1.*

S.

S. For the Signification of this Letter in the Chymical Alphabet, see **ALPHABETUM CHYMICUM**.

S. f. or fs. immediately following any Character importing Quantity, signifies *Semis*, Half.

SAAMOUNA. A Name for the **PAVIA**.

SABDARIFFA. A Name in *Boerhaave* for the *Ketmia*; *Indica*; *vitis folio*; *ampliore*.

SABINA.

The Characters are;

The Leaves resemble those of the Cypress, but are more compact; the Berries are verrucose; it has a very strong and singular Smell.

Boerhaave mentions two Sorts of *Sabina*, which are;

1. *Sabina*; folio Tamarisci; Dioscoridis. C. B. P. 487. *Boerb. Ind. A. 2. 207. Sabina*, Offic. Park. Parad. 607. *Sabina vulgaris*, Theat. 1027. Raii Hist. 2. 1415. *Sabina sterilis*, Ger. 1193. Emac. 1376. J. B. 288. **SAVINE.**

Savine is an ever-green shrubby Tree, that seldom grows very tall, having the Branches set close together, clothed with narrow, short, somewhat prickly Leaves, pretty much resembling Cypress, of a very strong Smell; among these, after the Tree is old, and has stood long in a Place, grow small mossy greenish Flowers, which are succeeded by small flatish Berries, less than those of Juniper, of the same blackish, blue Colour. It is planted in Gardens, where it seldom produces Fruit, and has therefore generally been reputed barren.

Savine is hot and dry, opening and attenuating, and a powerful Provoker of the Catamenia, causing Abortion, and expelling the Birth. It is very good to destroy Worms in Children. Mr. Ray recommends the Juice of it, mixed with Milk, and sweetened with Sugar, as an excellent Medicine for that Purpose; beaten into a Cataplasm, with Hog's Lard, it cures Children's scabby Heads.

Official Preparations are, the *Oleum Sabinae per infusionem decoctionem*, and the *Oleum Sabinae chymicum*. *Miller's Bot. Off.*

Boerhaave, in his Chymistry, asserts, that a Water prepared from *Savine*, by repeated Cohobations, is a most excellent Ecbotic, Emmenagogue, and Promoter of the Hæmorrhoids; that it is heating, and a most excellent Medicine, if used discreetly. He farther informs us, that the chymical Oil of *Savine* is a most powerful Promoter of the Menfes, when their Retention proceeds from a Languor and Debility only.

A Cataplasm, made of the Seeds of *Savine*, bruised with Sal Gem and Oil, is said to be good for an Anchylosis; and a Cataplasm of the same Leaves, mixed with Honey, is frequently applied to the umbilical Region, in order to destroy Worms in the Belly.

2. *Sabina*; folio Cypressi. C. B. P. 487. *Boerb. Ind. A. 2. 207. Sabina* Offic. *Sabina baccifera*, J. B. 1. 288. Ger. 1193. Emac. 1376. *Sabina baccifera major*, Park. Theat. 1026. *Cedrus baccifera fructu minore cæruleo*, Raii Hist. 2. 1415. *Juniperus alpina Sabinae referens*, Pluk. Almag. 201. **BERRIED SAVINE.**

This Plant is cultivated in Gardens, and is said to be attenuating, and inciding; powerfully to provoke the Menfes, to promote the Expulsion of the Secundines, and to destroy Worms in the Intestines.

SABON, or SABENA. Soap, or a Lixivium from whence Soap is made.

SACCELLUM. The same as **SACculus**.

SACCHAR, or SACCHARUM. *σάκχαρ, or σάκχαρον*. Sugar.

With respect to the Sugar, or *σάκχαρον, Saccharum*, of the Antients, which is said to be the same with *μέλι κακάμυος*, "Honey of Reeds," of *Theophrastus*, and which others called *σάλας Ἰνδικῆς*, "Indian Salt," *Salmasius* says, that it was gathered from some Reeds or Canes, as tall and big as Trees, and that it is the same as they now call *Sacar Mambu*. The *Arabians* gave it the Name of *Tabaxir*, which is still in Use in *Turkey* and *Persia*, to signify that Kind of Sugar. But as neither the *Arabians*, any more than the *Greeks*, had ever seen in their own Country the Reed which produced it, and spoke of it only by Hearsay, they entertain us with nothing but mere Fables on that Subject. *Avicenna* tells us, that it is supposed that the Canes of the *Tabaxir* being agitated by the Wind, shock and bruise one another in such a Manner as to take Fire, and kindle into a Flame, and that the Ashes which are collected after this Combustion, at the Bottom of the Canes, is the *Tabaxir*. He confesses indeed, that this is a vulgar Story, to which he gives no Credit; but he believes, however, that the *Tabaxir* is the Ashes of *Indian Reeds*, or of their Roots, which are burnt on Purpose; and *Averroes* says, that it is the Charcoal made of the Joints of the same Reeds.

Salmasius observes, that this Error of the *Arabians*, in supposing their *Tabaxir* was a Kind of Ashes, because it was in the Form of a greyish Powder, gave Occasion to the modern *Greeks*, who translated those *Arabians*, to render the Word *Tabaxir* by *Spodium*, which comes from *σποδός, Spodos*, Ashes. And this has been the Cause of great Confusion in Medicine; for the antient *Greeks* gave the Name of *Spodium* to what we now call Tutty, [*Dale* says the *Spodium Græcorum* was Putty] but the modern *Greeks*, and all the Physicians and Apothecaries after them, have called burnt Ivory by that Name; so that there are three very different Things, a Kind of Sugar, the Ashes or Soot of a Mineral, and the Ashes of Ivory, all under one Denomination.

To return to the *Spodium*, which is the *Tabaxir*, it is further to be observed, that the *Arabians* distinguished it from the Sugar of the Ancients, tho' it was, as we said, the very same Thing, because they believed that their *Tabaxir* was a Kind of Ashes, whereas the Sugar of the Antients was described as a Dew which fell upon the Canes, or as a sweet and fat Juice which flowed from the Cane itself, when it was burnt. On the other hand, they believed that our Sugar was the same which they found in the Writings of the *Greeks* under the Name of *σάκχαρον, Saccharon*, and upon that Account they called it *Suchar*, or *Zuchar*, tho' there be really a good deal of Difference between those two Sugars. The first, or that of the Antients, besides, that it proceeded from a very large Reed, as we before observed, flow'd from it naturally and spontaneously, like a Kind of Manna, whereas our Sugar is the Juice of a much smaller Cane, which must be ground and pressed in order to extract its Juice; and this Juice must afterwards be boiled and purified, to acquire the Consistence it has.

Salmasius shews, that the Sugar which we now use was absolutely unknown to the Antients. *Seneca*, says he, tells us, "It is reported that Honey is found among the *Indians* in the Leaves of Reeds, which is generated either by the Dew of that Climate, or the sweet and fat Humour of the Reed itself." You see by this how little known and used the *Tabaxir* was by the Antients, since *Seneca* speaks of it only by Hearsay. The *Arabian* Authors who reckon several Kinds of Sugar, omit this which was the only kind known to the Antients by that Name; and the Reason was, as we hinted before, they did not take it for a Sugar, but a *Spodium*. Thus

Salmasius,

Salmafius, who believes, however, that the Antients, tho' utterly unacquainted with our modern factitious Sugar, might have heard speak of the Cane which produces it, and of its Juice; but that the *Indians* themselves of those Times knew not how to make the Sugar, and only used the expressed Liquor of the Cane, which is sweet, for a Drink. As a Proof that the Antients had some Knowledge of the Sugar-Cane, he quotes those Verses of *Varro Atacinus*:

*Indica non magna nimis Arbore crescit Arundo,
Illius è lentis premitur radicibus humer,
Dulcia cui nequeant succo contendere Mella.*

"In *India* there grows a Cane of a moderate Bigness, from whose viscid Roots is expressed a Liquor with which Honey itself cannot be compared for Sweetness." *Salmafius* however intends not to prove that the Invention of Sugar, or the Way of preparing it as we now have it, is very new; but acknowledges that it was discovered above eight hundred Years ago, and that it was grown very common in the Time of *Avicenna*.

The Cane which produces the common Sugar is thus distinguished.

Arundo Saccharina, J. B. 2. 531, Ger. 35. Emac. 38. Raii Hist. 2. 1278. *Arundo Saccharifera*. C. B. Pin. 18. Theat. 193. Boerh. Ind. A. 2. 162. *Harundo Saccharifera*, Park. Theat. 1210. *Canna Saccharifera*, Ogilb. Chin. 1. 228. *Arundo Viba Brasiliensis* dicta, Pis. (1648.) *Tacomaree* sive *Arundo Saccharifera*, Ejusd. (1658.) *Vuba* & *Tacomaree Brasiliensis*, Marcg. 82. THE SUGAR CANE.

This Species of Cane is produced in large Quantities in the *East* and *West Indies*, and the Islands most contiguous and adjacent to them. Its Stalk and Leaves resemble those of the common Cane, only its Stalk or Trunk is not so high as that of the other, since it is only six or seven Feet in Length. The Stalk of this Species is of a Colour like that formed by a Mixture of yellow and green. 'Tis more than an Inch in Circumference, furnished with Knots or Joints, and full of a spongy, white and sweet Pith. Its Root is not unlike that of the common Cane, but is not so woody, tho' it abounds with a sweet Juice. *Lobelius* in *Adversar.* informs us, that its Root dried and reduced to a Powder, is a Meal used by many of the *Indians* for making a Species of Bread of a very agreeable Taste. The best Cane is produced in the *Canary* and *Madera* Islands. That growing at *Java* and *Madagascar* is also excellent. This Species of Cane yields the Sugar by Latin Writers called *Saccharum*, *Zuccharum*, *Zuccorum* and *Sucharum*. The *Arabians* call it *Zuchar*, *Zucara*, *Sucbar*, *Zozar*, and *Sutter*, and the *Greeks*, *Σάκχαρον*, *Σάκχαρ*, *Σάκχαρι*, and *Σάκχαριον*. Many call it *Mel Arundinaceum*, after it is boiled, evaporated, and put in wooden Vessels for Exportation.

There are in the Shops various Species of Sugar, which receive their Appellations either from the Parts in which they are produced, or from their Goodness and Fineness. Thus we have *Canary Sugar*, *Valentian Sugar*, *Malta Sugar*, *Powder Sugar*, *Refined*, and *Double Refined Sugars*, *Thomasian Sugar*, from an Island of the *Indies* bearing the Name of *St. Thomas*, *Sugar Candy* and *Penidian Sugar*, and *Coarse Red Sugar*, most generally used in Clysters, on Account of its abstergent and resolvent Quality. *Barley Sugar* is also a factitious Sugar, and is accounted good for the Breast and Throat. The best of it is white, spongy, large, and easily broken. For Coughs in Children it is exhibited with Oil of sweet Almonds, or Syrup of Violets. The Diapenidion of the Shops cures Disorders of the Breast, alleviates Coughs, is good against pleuritic Pains, a Difficulty of Breathing, Consumptions, Disorders of the Lungs, and Spittings of Blood. Liquid Sugar remains always in the Consistence of Honey or Syrup, and is no more than the Froth gathered in refining the other Sugars. As for the Nature and Qualities of Sugar in general, it is temperate, heating, emollient, resolvent, purgative, and calculated to resist Putrefaction. If it is properly used, it nourishes the Body; for according to *Claud. Diodat. Panth. Hygiast.* L. 1. Cap. 21. nothing nourishes which is entirely free from Sweetness. It is good for the Stomach, Lungs and Breast, cures Coughs, and all Diseases of the Thorax, promotes Expectoration, softens internal Tumors, cleanses Ulcers of the Kidneys, Bladder, and Intestines, hinders all corrosive Substances from so easily corroding the internal Parts, makes agreeable Sweet-meats, and renders ungrateful Medicines agreeable. But the more white and pure Sugar is, the less sweet it, also, is, as we are informed by *Pis. 1. 4. de Facultat. Simpl. cap. 1.* and *Erasm. Francis*; for if coarse brown Sugar is dissolved in a Lixivium of Lime Water, refined and separated from its grosser and more impure Parts, it assumes an acid Taste, different from what it had

before, and overheats the Blood; for which Reason, Persons of hot and bilious Constitutions ought to be very cautious in using it, except in Medicines, since it will soon be converted into Bile: For according to *Ettmuller*, by its volatile Acidity it disturbs the Bile, and excites a preternatural Orgasm in it. And according to *Henricus ab Heer, Obs. Med.* 5. it is principally injurious to scorbutic, hypochondriac, cachectic, and feverish Patients, if they use a considerable Quantity of it; because, being easily converted into Bile, it augments the Fever and all its Symptoms. It is also injurious to Women who labour under a Suffocation and Strangulation of the Uterus, relaxes the Mouth of the Stomach, and, according to *Ettmuller*, on account of its easily fermentable Quality, soon becomes ascetic in the Stomach, and *Primæ Viæ*. It weakens Digestion, and produces Flatulences, and sudden Heats, impairs the Appetite, generates a corrosive Blood, produces Pains of the Belly and Dysenteries. According to *Joh. Cbr. Fromman. Tr. de Hemorrhoid. Part. 1. Probl. 33.* it lays a Foundation for the Hemorrhoids. This Opinion is also confirmed by *Melch. Sebix. L. 2. de Facult. Aliment.* and *Val. Henr. Volger. Diætet. Comment. cap. 9.* *Simon Pauli in Quadripart. Botan.* informs us, that in England an excessive Use of Sugar produces Consumptions; and *Ehrenfr. Hagendorn, in Hist. Med. Phys. 23. Cent. 3.* tells us, that Sugar produces an irregular Gout. Not only Women, but, also, several Physicians are of Opinion, that Sugar and Honey generate Worms in Children; but if we reflect on the Generation of these Animals, we shall easily perceive that it is hindered by nothing more than by Sugar and Honey. In *Act. Med. Leips. An. 1700.* Sugar copiously used is recommended against Worms. This Piece of Practice is also authorized by *Levinus Lemnius, L. 1. de occult. Nat. Mir. Cap. 21.* *J. Heurn. de Peste, Cap. 21.* *J. Varand. de Morb. Intestinar. Cap. 2.* *Laur. Strauff. Palæstr. Med. L. 3.* And *A. Vincent de Petrone*, in his *Consilium de Vermiculis quibusdam in Corvorum & Aprorum Hepate inventis*; for 'tis certain that Worms are generated either by a coarse, crude, and verminous Matter, subject to Putrefaction, or by the Eggs of Insects taken in with the Aliments. But Sugar and Honey never putrefy, as we are told by *Galen, in Lib. 3. de Simpl. Med. Facultat. cap. 15.* On the contrary, Sugar and Honey, by means of their balsamic Quality, which resists Putrefaction, are very proper for preserving Substances for a long Time. For this Reason in the Shops, Conserves, Syrups, Electuaries, Linctures, and Confections, cannot be made without Sugar: Neither can Roots, and various other Things be preserved without it; for it not only assumes the Smell, Taste, and Colour of all the Ingredients, but also preserves their Virtues and Qualities for many Years. For this Reason also the Antients embalmed their Dead with Honey. Confirmations of this may be found in various practical Authors. *Ant. Mizald. in Cent. 5. Aph. 27.* informs us, that not only Butter, but also sweet Substances and Raisins kill Worms. And *Sanctor. in Lib. 5. Meth. Vitand. Error. Cap. 11.* tells us, that Honey and Sugar are possessed of a certain intense Acrimony and Heat, by which they are greatly defended against Putrefaction. Externally Sugar cures recent Wounds, purifies Ulcers, removes white Spots and Films from the Eyes, according to *Marc. Gatinar. in Prax. Med. cap. 21.* The Turks, in order to cure their Wounds, wash them twice a Day in Wine, and afterwards put Sugar in them. *Joh. Haricis, in his Thesaurus aureus, Part. 2.* informs us, that Sugar sprinkled on the Crown of the Head, removes Head-achs. In *Riedlin. Lin. Med. An. 2.* we are told that Sugar, mixed with Oil of Marjorum or Cloves, and taken up the Nostrils, removes a Coryza. According to *Joh. Beguinus in Tyrocin. Chym. L. 2. cap. 6.* Oil of Sugar relieves Pains of the Breast, Coughs, Asthma's and Hoarseness, in some Measure stops Catarrhs, and promotes Digestion. The same Author also informs us, that Tincture of Sugar, exhibited in Cinnamon or Rose Water, is excellent in Syncope and Deliquiums.

Sugar is the essential Salt of the *Arundo Saccharifera*, or Sugar-Cane, the different Kinds of which are these:

Muscovado, the first Sugar got from the Juice of the Canes. *Cassonada*, Sugar refined from the former by the Whites of Eggs, Lime-Water, &c. which being more oily than the more refined Sorts, is to be preferred for all inward Uses. It is also most proper for Confectioners, because it does not candy so easily.

Loaf-Sugar; *Cassonada*, still further refined, and clarified in different Degrees. It has the same Qualities with the former, but in a less Degree for inward Use. They both cut Phlegm, promote Expectoration, and animate the Blood; but they excite Vapours and the Tooth-ach. They who use much Sugar, are liable to Fevers and to rotten Teeth. In *Brazil*, the Skimmings of Sugar are given to the Hogs, by which they are soon fattened, and their Flesh becomes very delicate.

Sugar Candy, or Crystals of Sugar is of three Kinds, white, yellow, and red; which are only the three former Sorts boiled to a due Consistence. White Sugar Candy comes from the *Leaf Sugar*; yellow from the *Cassanada*, and red from the *Muscovado*. Sugar Candy is most proper in Colds, because it melts slowly, and thereby gives Time to the Saliva to mix with it, and thus to blunt the Acrimony of the Phlegm.

Red Sugar. This was used very much formerly in Loosenesses; but at present Oil of Sweet Almonds, and other Things of that Kind are substituted for it.

Syrup of Sugar, or *Molasses*, is the glutinous Part which drains from Sugar, and was formerly used for the red Preserves or Sweet Meats; but it gave them a disagreeable burnt Taste. In the *West Indies* they ferment and distill it; but the Brandy or Spirit which it yields is unpleasant and very intoxicating. A much better Spirit might be made of refined Sugar.

To these we may add the *Saccharum Acerum*, Maple Sugar; which is the Product of *Canada* and *New England*, in which Countries the Natives collect the Juice that runs from a kind of Maple Tree by Incision, and then evaporate that Juice to the Consistence of Sugar, which, while it remains unctuous, is better for internal Use than any other Kind; and the famous Syrup of Maiden-Hair of *Canada* is made with it. As it is brought to us, it is of a greyish Colour, and tastes like other Sugar. With this Sugar the Inhabitants of these Countries prepare also a Sort of Liquor, which is their common Drink; and also make Brandy and Vinegar from it. *Geoffroy*.

As Sugar is a temperate Salt, friendly to Nature, and capable of producing an intimate Union of oleous and pinguious Parts with Water, hence appears the Reason why some both among the Ancients and Moderns, used to mix Honey, Sugar, Figs, and dried Grapes, with the Food intended to fatten old Animals; for the pinguious Parts of the Aliments, which, when intimately incorporated with the aqueous Parts, constitute the Milk and Chyle, are by this Means more quickly dissolved, united with the aqueous Parts, and form a large Quantity of Chyle, which is conveyed with the Blood to all the Parts of the Body.

Hence also appears the Reason why either Honey or Sugar, mixed with Milk, prevents its Elaboration into Butter; for the Sugar more firmly unites with the Phlegm the numerous oleous Particles in the Cream; whereas, in order to the Churning of Butter, or its Collection into one Mass, these ought rather to be separated and disjoined from each other.

Hence we may also learn, that Sugar is not so unfriendly to the Mixture of the vital Fluids, as is commonly believed, since it neither induces any Change on the Blood, Milk or Serum, when mixed with them, but rather by stimulating the intestinal Fibres, facilitates the Excretion of the Fæces by Stool. And as it greatly promotes the Union of the oleous with the aqueous Parts of the Aliments, hence 'tis probable that it greatly contributes to the Generation of a large Quantity of Chyle. This accounts for the usual Method of fattening Capons and Geese, by mixing a little Honey, Sugar, or Salt with Wheaten or Barley-Meal for their Food. *Hoffman, Observat. Chym. L. 1. Obs. 7.*

I have had Reason to give a great Character of Sugar, on account of some extraordinary Effects it seemed to have on my Grandfather forty Years since. He made it his daily Practice to take or lick up as much Sugar as his Butter spread upon Bread would receive, for his constant Breakfast, unless he happened to exchange it for Honey sometimes. He frequently sweetened his Ale and Beer with Sugar: He had Sugar put to all the Sauces he used with his Meat: He had all his Teeth in his Mouth at eighty Years, strong and firm; never had any Pain or Soreness in his Gums or Teeth; never refused the hardest Crust. In his eighty second Year one of his Teeth drop'd out, and soon after that a second, which he put into my Hand, and was one of the Fore-teeth: He bid me feel the Cavity, where I struck my Nail upon a Bone. In short, all his Teeth came out in two or three Years, and young ones filled up their Room: He had a new Set quite round. His Hair, from a very candid white, became much darker. He continued in good Health and Strength without any Disease, and died in his 99th or 100th Year, of a Plethora, as I guess, for want of Bleeding. He was a *Bedfordshire* Gentleman of an old *English* Family, and the Case well known. This reconcil'd me much to vindicate Sugar, which I have formerly done before the Royal Society; and have shewn the unjust Calumny of the famous *Willis* against Sugar, who charges it with a corrosive Liquor, as bad as *Aqua Fortis*; he calls it *Aqua Stygia*. I examined it, and found the Charge unjust; that Sugar contained no worse Substance in it, than Milk and Honey, and Manna, nay even Bread itself. The Experiments were approved of, and are in your Journals. *By Dr. Stare, in the Philosophical Transactions abridged, Vol. 5. p. 311.*

Mr. Sarrazin, a Physician of *Quebeck*, and Correspondent of the Royal Academy, found in *North America* four Species of Mapple-Trees, which he sent as a Present to the Royal Garden, after having given a Name to each. The fourth of these Species, which he calls *Acer Canadense Sacchariferum, fructu mirori*, *D. Sarrazin*, is a Tree about sixty or eighty Feet high, whose Sap, which ascends from the first of *April* to the Middle of *May*, is pretty often richly impregnated with Sugar, as the Natives of that Country and the *French* have found. For obtaining this Sap they make an Incision in the Tree, from which it flows into a Vessel. This Juice, when evaporated, leaves about a twentieth Part of its primitive Weight, which is true Sugar, and proper to be used in making Confections, Syrups, and other Things, in which Sugar is generally employed. One of these Trees, which is three or four Feet in Circumference, will in one Spring yield sixty or eighty Pints of Juice, without losing any Thing of its Vigour. But if more was drawn from it, it is obvious that the Tree would be weakened, and a proportionable Decay brought on. This Juice, in order to be impregnated with Sugar, requires very singular Circumstances, which one would not easily conjecture, but which *Mr. Sarrazin* has carefully adverted to; for, first, at the Time the Juice is drawing, the Root of the Tree must be covered with Snow, which must be brought for that Purpose, if it is not there already: Secondly, this Snow must be melted by the Sun, and not by a warm Air: And, thirdly, it must have been a Frost the Night before. This Method used by Nature in forming the Sugar of the Mapple-Tree, resembles some delicate chymical Operations, where the Chymist does Things apparently opposite, and where those Things which appear the most similar do not produce the same Effects.

Another curious Remark of *Mr. Sarrazin's* is, that the Juice of this Species of Mapple-Tree, which is not good for making Sugar, will become so half an Hour, or an Hour at most, after the Snow with which the Root of the Tree is covered, begins to be melted. This Snow must therefore enter the small Filaments of the Mapple-Tree, and operate in them with great Expedition.

Mr. Sarrazin also informs us, that the *Apocynum Majus Syriacum rectum*, furnishes a Juice of which they make Sugar in *Canada*; for this Purpose they also gather the Dew found in the Bottom of its Flowers. *Hist. de l'Acad. Royal des Sciences, An. 1730.*

SACCHARUM HORDEATUM. Barley Sugar.

It is made from Sugar boiled over a slow Heat, in a Decoction of Barley, briskly beat up with the Whites of Eggs, and frequently scummed whilst upon the Fire. It is then to be strained through a Flannel, and again set upon the Fire, where it must boil slowly till it rises in large Bubbles, and upon Trial is found not to stick to the Teeth. It is to be poured upon a Marble-Stone rubbed over with Oil of sweet Almonds, as soon as the Bubbles subside, and its Extremities, as it runs out, turn back again, till it grows of the Consistence of a thick Turpentine, when it must be fastened to something, and nimbly drawn out by Hands rubbed over with Starch, into thin or thick, long or short Threads at Pleasure, and laid upon a Plate provided on Purpose, till it hardens into Lozenges.

SACCHARUM NITRATUM. Sugar with Nitre.

Take Crystal Mineral, one Dram, fine Loaf Sugar three Drams, mix together.

This is cooling and diuretic, and also serviceable in the scalding of Urine in a Gonorrhœa; but it is principally good to cool the Inflammation of the Uvula, and ease a sore Throat, by letting it melt gently in the Mouth.

SACCHARUM ROSATUM. See ROSA.

SACCHARUM SATURNI. See PLUMBUM.

SACCHARUM SCORBUTICUM. An Antiscorbutic Sugar.

Take any Quantity of the Juice of Scurvy-Grass, keep it in a Glas Bottle close stopped up till the Fæces are precipitated; then decant the clear, put a good Quantity of Sugar in a Marble Mortar, and work it well together, then gently dry it. Afterwards put more Juice to the same Sugar, dry it again, and repeat this Operation several Times, and keep it close stoppt for Use.

SACCHARUM TABULATUM SIMPLEX ET PERLATUM. Simple and Pearl Lozenge Sugar.

The first is made by pouring Sugar, which hath been sufficiently boiled with half its Quantity of Damask Rose-Water upon a Marble: And the latter by adding to every Pound of the former, towards the End of its boiling, half an Ounce of prepared and levigated Pearl, with eight or ten Leaves of Gold.

SACCHARUM TABULATUM COMPOSITUM.

Compound Lozenge Sugar.

Take of fine Rhubarb four Scruples, of the Troches of Agaric, of Coralline, burnt Hartshorn, of the Leaves of Cretan Dittany, of Worm-seed, of the Seeds of Purslain and Sorrel, of each one Scruple; of Cinamon, Zedoary, Cloves, and Saffron, of each half a Scruple; of the finest Sugar powdered one Pound. Let the Sugar be dissolved in five Ounces of simple Wormwood Water, and one Spoonful of strong Cinnamon Water; and the forementioned Species mixed with it, so as to make it into Tablets.

SACCITONIUM. Wine strained through a Bag. *Castellus* from *Codronchius*.

SACCULI ADIPOSI. The Cells of the Cellular Membrane filled with Fat.

SACCULI MEDICINALES. Medicinal Bags; that is, Bags filled with Medicinal Ingredients.

SACCULUS CHYLIFERUS. The Receptacle of the Chyle.

SACCULUS CORDIS. The *Pericardium*.

SACCUS. The *Intestinum Cæcum*.

SACCUS LACTEUS. The *Receptaculum Chyli*.

SACER. Sacred or holy. But it is used in a very different Signification, that is, to express *dreadful, horrid, or execrable*. Thus *Virgil* calls the Love of Gold, *Auri sacra fames*. In both these Significations it is used by Medicinal Writers. Thus,

SACRA FISTULA, is the Spinal Marrow, according to *Blancard*.

SACER IGNIS, is a malignant Species of *ERYSIPELAS*.

SACER MORBUS, is the Epilepsy.

SACER MUSCULUS, is the Name of a Muscle, called by *Winslow Transverso Spinalis Lumborum*.

This Muscle is composed of several oblique converging or transverso-spinal Muscles in the same Manner as in the Back and Neck; and it lies between the spinal and oblique Apophyses of the Loins, reaching to the *Os Sacrum*.

The lowest of these Muscles are fixed to the superior lateral Parts of the *Os Sacrum*, to the *Ligamentum Sacro-Iliacum*, and to the posterior superior Spine of the *Os Ilium*. The rest are fixed to the three lowest transverse Apophyses, and to the four lowest oblique Apophyses of the Loins, and to their lateral Tuberosities. From thence they run up to all the spinal Apophyses of these Vertebrae, the external, or those that appear first, being longer than the internal, which lie immediately on the Vertebrae, especially toward the lower Part. *Winslow's Anatomy*.

SACRUM OS.

The *Os Sacrum* is situated in the posterior and lower Part of the Trunk, as the Basis by which the whole Spine is supported, and from hence it has by some been termed *Os Basilare*.

Its Figure comes near that of a long Triangle, with the Basis upward, and the Apex downward. It may be divided into the upper Part or Basis; the lower Part or Apex; two Sides, the anterior or concave; and the posterior or convex; and two lateral Parts or Edges. We here consider it as one Bone only, as it is in an adult Subject.

In young Subjects it is made up of several distinct Pieces, termed false Vertebrae, united together by Cartilages, which in time diminish, grow hard, and disappear, leaving no Marks behind them, but little Ridges or Lines more or less prominent. These Pieces are five in Number, and sometimes six, all of them resembling the Vertebrae in something. The first is much larger than any of the true Vertebrae; but their Size diminishes by very great Degrees as they descend, so that the lowest, which makes the Point of the *Os Sacrum*, has scarcely the Appearance of a Vertebra.

In the anterior or concave Side, we commonly see four Pair of large Holes, and sometimes more (according to the Number of false Vertebrae) disposed in two longitudinal Rows, and appearing to be formed by the Notches in the original Pieces meeting each other. Between these two Rows of Holes, through the whole Length of the Middle of this Side, we observe the Bodies of five or six false Vertebrae cemented together, of which the uppermost or first comes nearer to the Structure of a true Vertebra than the rest. The last is very small, and below the Holes it has a Notch on each Side, and sometimes a Production in the Shape of a little Horn.

The posterior or convex Side is very uneven. The same Number of Holes appear here, as in the fore-side, and disposed in the same Order, but they are not so large. Between the two Rows of Holes, is a Sort of spinal Apophysis more or less imperfect, especially toward the upper Part. In these Apophyses we often find Openings, sometimes in the superior, sometimes in the inferior, and thus perpendicular Fissures are formed of different Breadths. Sometimes a transverse Open-

ing is left between the several Spines; but in all that has been here said, great Varieties are observable. On the Outside of each Row of Holes are Tuberosities which appear like transverse and articular Apophyses confounded together. At the Basis or upper Part of the *Os Sacrum* are two articular Apophyses, answering to the inferior ones of the last Vertebra of the Loins. Below each of these Apophyses, laterally, is a large Notch; and between them, we see distinctly enough the upper Side of the Body of the first false Vertebra, which is like that of the Lumbar Vertebrae; being very much inclined backward: so that the Body of this false Vertebra, as well as of the last true one, is longer, before than behind. From this Obliquity it happens, that the *Os Sacrum* and last Lumbar Vertebra, form, at their Connexion, a very considerable Angle.

Behind the Body of this first Vertebra of the *Os Sacrum*, between the articular Apophyses lies the Orifice of a large Canal, triangular and flat, which runs down in the Middle Substance of the Bones between the two Sides, and between the four Rows of Holes, behind the Bodies of all the false Vertebrae. It contracts as it descends, and communicates with all the large Holes, being the Continuation of the great Canal of the Spine. It is often broke into by the Fissures already mentioned, on the Back-side.

The lateral Parts are broad toward the Top, forming on each Hand, a large, uneven, irregular, cartilaginous Surface, in the Figure of a great S, and sometimes of a Bird's Head. By these two Sides the *Os Sacrum* is connected with the *Os Innominata*, by a cartilaginous Symphysis. Between each of these lateral Sides, and the nearest posterior Holes, there is a large rough Depression, and under that, another not so large. These Depressions are often pierced by several Holes, which lose themselves in the inner Substance of the Bone. *Winslow's Anatomy*.

SACRA TINCTURA. See **HIERA**.

In *Paulus Aegineta*, L. 7. C. 8. there are several *Hieras* described, which imports the same as *Sacra*. Thus there is the *Hiera Archigenis*, *Hiera Antiochi*, *Hiera Jusii*, *Hiera Galeni*, and *Hiera Ruffi*.

SACRA VASA. The Vessels which belong to the *Os Sacrum*, and Parts adjacent.

SACRANUS COLOR. A Purple Colour. *Johnson*.

SACRES. Pigs about ten Days old. *Castellus* from *Langius*.

SACRO-LUMBARIS MUSCULUS. This is a long complex Muscle, narrow and thin at the upper Part, broad and thick at the lower, representing a kind of flat Pyramid. It lies between the Spine and posterior Part of all the Ribs, and along the back Part of the *Regio-Lumbaris*, all the Way to the *Os Sacrum*.

Through all this Space it is closely accompanied by the *Longissimus Dorsi*, which lies between it and the Spinal Apophyses of the Vertebrae, a narrow, pinguious, or cellular Line running between them. The Name of *Lumbo-Costalis* would better express the Situation of this Muscle than that of the *Sacro-Lumbaris*. It might be termed *Medius Dorsi*, to distinguish it from the *Latissimus* and *Longissimus Dorsi*, between which it is placed.

It is fixed below by a broad thin tendinous Aponeurosis to the superior Spines of the *Os Sacrum*, and to the neighbouring lateral Parts of that Bone; and lastly, to the external Labium of the posterior Part of the *Crista Ossis Ilium*, all the Way to the great Tuberosity. The Aponeurosis covers and adheres very closely to the lower Part of the *Longissimus Dorsi*, and where it is fixed to the *Os Sacrum*, it is a little covered by some Insertions of the *Gluteus Maximus*.

From thence this Muscle runs upward, and a little laterally, over all the *Regio-Lumbaris*, the Aponeurosis sending off from its Inside a Mass of fleshy Fibres, which are divided from below upwards, into several large Fasciculi inserted in all the transverse Apophyses of the Loins.

Afterwards it runs up obliquely over all the Ribs, sometimes as high as the two or three lowest Vertebrae of the Neck, sometimes higher, and sometimes it ends at the first Vertebra of the Back.

Through all this Extent the Side of the Muscle next the *Longissimus Dorsi*, or Vertebrae, is very even; but that next the Ribs is divided into several Portions, in an oblique Disposition from below upwards, resembling in some measure the Branch of a Palm-Tree. These Portions or Digitations are fixed in the transverse Apophyses of the Neck, in the Tuberosity of the first Rib, in the lower Part of the angular Impressions of the ten following Ribs, and near the Extremity of the last Rib.

This Digitation belonging to the last Rib is broad, and more fleshy than tendinous. Those of the other Ribs are tendinous, flat and narrow, and those of the Neck are something fleshy, but very slender. The most superior Portions are longer and narrower than those below them, they growing gradually shorter and broader as they descend.

In dissecting this Muscle with Care, between these Portions and

and the Ribs, we meet with several long thin muscular Fasciculi, which crossing the Portions, and adhering to them, are afterwards fixed in the Ribs above and behind the Insertions of the several Portions.

These muscular Fasciculi begin at the transverse Apophyses of the same Vertebrae of the Neck, from whence they run down and are fixed in the eight or nine following Ribs. Sometimes they pass over several Ribs without being inserted in them; but this varies in different Subjects, and sometimes in the two Sides of the same Subject.

In this manner these Fasciculi form a particular Plane, which some take for the internal Portion of the *Sacro-Lumbaris*; others, after *Siens*, call it *Musculus Accessorius Sacro-Lumbaris*. Some take it for a distinct Muscle, calling it the *Cervicalis Descendens* of *Diemerbroeck*.

The two *Sacro-Lumbares* maintain the Back and the *Regio-Lumbaris* in their natural Situation when we stand or sit; and by the Relaxation of their Fibres more or less, the Trunk is proportionably bent forward by the Weight of the Head and Breast. They also extend the Back and Loins in all Postures, keep them steady and fixed under the Weight of Burdens, and bend the Loins backward.

One of them acting alone, may have the same Uses of bending forward, extending, resisting, and bending backward, but with less Strength, and in an oblique Direction, as when the Body is inclined obliquely forward, and to one Side at the same time, or extended from that Posture. They also serve to counter-balance the oblique Muscles of the Abdomen, in turning the Thorax upon the Pelvis.

These Muscles may in some respects be compared with the *Splenii*; that is, their superior Insertions with the Mastoide Insertions of the *Splenii*, and their inferior Insertions with the vertebral Insertions of these Muscles. The Mastoide-Portion of the *Splenius* is longer, more distant from the Articulation, and more disposed to perform large Motions, and to resist great Efforts than the vertebral Portion. In like manner, the Costal Portion of the *Sacro-Lumbaris*, by the Length of the tendinous Series, by their graduated Insertions in the Ribs, and by their Obliquity, is better disposed for the Uses already mentioned than the vertebral Portion.

The small muscular Fasciculi which cross these tendinous Portions, called *Musculus Sacro-Lumbaris Accessorius*, seem to counterbalance and moderate the Depression of the Ribs in the great Efforts of the *Sacro-Lumbaris*.

The Use of these Muscles in progressive Motion, is not sufficiently demonstrated. It is supposed that while we lift one Leg to make a Step, the *Sacro-Lumbaris* of the other Side sustains the Vertebrae of the Loins and Back, to prevent their yielding to the *Psoas* which lifts the Leg, and puts it in Motion; but the Direction of the greatest Part of the Fibres of the *Sacro-Lumbaris* is very improper for such an Use.

The Use of the *Sacro-Lumbaris* in Respiration is also attended with Difficulties; for when the Body is very much inclined forward, and even much loaded, the Ribs continue still to be raised with the same Ease as they are depressed, tho' the *Sacro-Lumbaris* is principally employed in this Case; but it is to be remembered that I speak here only of bending and loading the Back, not of loading the Shoulders. In the first Case, the Ribs move easily; but not in the second. *Winflow's Anatomy*.

SACTIM. Vitriol. *Rulandus*.

SADIR. The same as SCORIA. *Rulandus*.

SÆPÆ. Large eroding Pustules. *Castellus*, from *Foefius*.

SAFFATUM, is, according to *Johnson*, a Species of Salt, but he does not explain what.

SAGADENON. *σαγαδηνον*. A Name for the best Species of Opobalsamum, which *Galen*, de *Antidot.* L. 1. C. 4. says, was produced in *Palestine*.

SAGAPENUM. Offic. C. B. P. 494. *Raii Hist.* 1. 1844. *Schrod.* 214. *Park. Theat.* 1544. *Ger.* 898. *Emac.* 1056. *Mill. Bot. Offic.* 384. *Sagapenum Veterum.* J. B. 3. 156.

This is a Gum flowing, as is supposed, from a Species of *Ferula*, which grows, according to *Dioscorides*, in the Country of *Media*, though it comes to us from *Alexandria*. It is of a reddish-brown Colour, made up of Drops usually clung and clotted together, of a somewhat clear horny Colour in the Inside, a little like *Asa Fœtida*, but harder, with somewhat of the Garlick Smell. We sometimes see it in small Drops not clotted together, of a light yellowish brown Colour; but this is not often to be met with.

Sagapenum is opening and attenuating, cleansing the Breast of tough Phlegm, helping the Asthma and Difficulty of Breathing. It is likewise good for the Dropsy, promotes the menstrual Evacuation, and prevents hysteric Disorders. Outwardly applied, it helps hard Tumors and Swellings. *Miller's*

Bot. Off. See FERULA MAJOR, seu FÆMINA PLINII.

This Gum is imported from *Alexandria*. That is most esteemed which is pure, pellucid, on the Outside of a fallow, or brownish Colour externally, but within whitish; of an acrid Taste, and strong Smell like Garlick. It is attenuating and opening, and purges off viscid and serous Humours, lodged in the Stomach, Intestines, Uterus, Kidneys, Brain, Nerves, the Joints and Breast. Hence it is serviceable in a Dropsy, inveterate Cough, Asthma, Head-Ach, Convulsions, Epilepsy, Palsy, Tremors of the Limbs, Obstructions and Tumors of the Spleen, and Cholic. It provokes the Menfes, and excites Urine; but destroys the Fœtus. *Schroder*.

SAGDA. The Name of a Gem mentioned by *Pliny*, L. 37. Cap. 10. of a green Colour, which he informs us, the *Chaldaans* find adhering to Ships. In *Samo-Thracia*, he farther tells us, a light black Gem is found, resembling Wood, which bears the same Name.

SAGIMEN VITRI. Alkaline Salt. *Rulandus*.

SAGITTA.

The Characters are;

The Root is fibrous, thick, fungous and creeping. The Leaves at first resemble those of Plantain, but afterwards the bearded Head of an Arrow; the Stalk is just as usual in umbelliferous Plants; the Flower is tripetalous, like that of the *Plantago Aquatica*; and the Fruit consists of a Collection of Seeds like a Strawberry.

Boerhaave mentions four Sorts of *Sagitta*, which are;

1. *Sagitta*; aquatica; major. C. B. 194. *Ranunculus, palustris, folio sagittato, maximo.* T. 292.

2. *Sagitta*; aquatica; minor; latifolia. C. B. P. 194.

Boerb. Ind. A. 46. *Sagitta*, Offic. J. B. 3. 789. *Raii Synop.*

3. 258. *Sagitta minor*, *Ejulf. Hist.* 1. 619. *Sagittaria minor latifolia*, *Park. Theat.* 1247. *Ranunculus, palustris, folio sagittato minori*, *Tourn. Inst.* 292. ARROW-HEAD.

It grows in Brooks and Waters, flowers in May and June, and the Parts in Use are the Herb and Seed. It is, says *Matthiolum*, of a cold and moist Temperament, and has the same Virtues as the *Plantago Aquatica*.

3. *Sagitta*; aquatica; minor; angustifolia. C. B. P. 194. *Ranunculus, palustris, folio sagittato, angustiori*, T. 292.

4. *Sagitta*; aquatica; major; folio angustiore.

It has the Virtues of the *Plantago Aquatica*, but the Smell and Taste shew it to be of a heating Quality. *Hist. Plant. ascript.* *Boerhaave*.

SAGITTALIS SUTURA. The Sagittal Suture of the Cranium. See CAPUT.

SAGITTARIA. The same as SAGITTA.

SAGITTARIA ALEXIPHARMICA. Offic. *Canna Indica, radice alba, Alexipharmica.* *Raii Hist.* 3. 573. *Arundo Indica, angustifolia, flore rutilo, pediculis donata*, *Hist. Oxon.* 3. 250. *Agutiguepoobi Brasiliensibus*, *Raii Hist.* 2. 1203. *Radix quædam in Malaca, quæ adversus vulnera Sagittis toxico illitis facta, præsentaneum remedium est Garzias*, C. B. P. 301. *Radix Malaca quædam toxicis Sagittis resistens*, J. B. 2. 173. ARROW-ROOT, DART-WORT.

This Plant has a Root two or three Inches in Length, geniculated, of the Thickness of a Man's Thumb, white, and of a conic Figure, every Interode or Space between the Joints being half an Inch in Length, and every Joint sending forth several Fibres two or three Inches long, for attracting Nourishment. From the Root arise various Leaves on Pedicles three Inches in Length, and of a good Breadth, embracing one another, or the outer ones wrapping themselves about the inner, and surrounded with a white Ring at the Place of Apposition. The Leaves are four Inches long, and two Inches broad near the round Base where they are broadest, and are thin, fibrous, and grassy, and of a greenish-yellow Colour. In other Respects it is like the *Canna Indica*.

Sir Hans Sloane observed this Plant in the Gardens of *Jamaica* and the *Charibbee* Islands. It was transplanted to *Jamaica* from the Island of *Dominica*, and is highly valued on account of its alexipharmic Virtue, and its Efficacy against Wounds inflicted by poisoned Darts and Arrows; for which purpose it is frequently used by the *Indians*, who bruise the Herb, and apply it to the injur'd Place. *Raii Hist. Plant.*

SAGMINALIS HERBA. Vervain. See VERBENA.

SAGOU. See Palma, Japonica; spinosis pediculis; Poly-podii folio.

SAGZENE. A Name for two Medicines described by *Avicenna*, the greater and the less, which are recommended against cold Disorders of the Stomach, Intestines, and Uterus.

SAHAFATUM, or SAHAFATI. The same as ACHOR.

SAHARA. The same as PERVIGILIUM.

SAIC. Quicksilver.

SAIRE. The same as ESSERE.

SAKMUNIA. The Arabic Name for Scammony.

SAL. Salt. For an Account of Salt, considered as a Chymical Principal. See **PRINCIPIA**, and **ACIDULÆ**.

A Salt is, by *Geoffrey*, defined to be a solid, friable, pellucid and sapid Mineral Body, dissoluble in Water, fusible by Fire, and easily concretescible in Form of Crystals. This Definition agrees to alimentary Salt, Nitre, Vitriol, Alum, Sal-Ammoniac, and Borax.

OF ALIMENTARY SALT.

Alimentary Salt, or that which is used in Food, is distinguishable from all other saline Bodies by the cubical Figure of its Crystals, which it retains even in the least Particles, which are the Objects of Sense. It is of two Kinds, being either dug out of the Earth, from whence it is called Fossile Salt, or Sal Gem; or prepared by evaporating the Sea-Water, being from thence termed Sea-Salt; or by evaporating the Water of Salt-Springs.

OF FOSSILE SALT OR SAL-GEM.

There are several Kinds of this fossile alimentary Salt, differing from each other only in their Colour, which is white, grey, of a yellowish red, or pellucid like Crystal; which last, most properly called Sal-Gem, is preferred to all the rest, as being judged most pure. It is of an octagonal or cubical Figure, and salt Taste, pellucid like a Gem, and often resembles Crystal, both in Colour and Brightness. In the Mountains of *Catalonia*, near the City of *Cardona*, and also in deep Mines in *Poland* near *Cracow*, huge Rocks of this Salt are found, and they beat them to pieces with proper Instruments of Iron.

The Virtues of Sal-Gem are the same as those of Sea-Salt. This Salt is used as a Stimulus in Clysters and Suppositories given to soften and evacuate the indurated Fæces, in this or the like Manner:

Take of despumated Honey two Ounces; Sal Gem, a Dram and a half; boil them to a due Consistence for a Suppository. Or, take of Honey, boiled to a due Consistence, one Ounce; Sal Gem, and Species of Hiera, of each half a Dram, Diagridium, fourteen Grains; mix and make them into a Suppository.

Take of the Root of *Spanish* Pillitory half an Ounce; Leaves of Marjoram and Rue, of each one Handful; Leaves of Senna, Agaric, and the Pulp of Coloquintida, of each two Drams, boil in a sufficient Quantity of common Water to twelve Ounces, of strained Liquor, in which dissolve of Sal Gem two Drams, and add of Emetic or Antimonial Wine, three Ounces, for a Clyster in Apoplexies, and other sleepy Diseases.

In these Affections even the strongest and most stimulating Clysters are sometimes of no Effect, because the Intestines are become paralytic; and they are never to be used in an Inflammation of the Intestines. The Chymical Preparations of Sal Gem are the same as those of Sea-Salt. *Geoffrey*.

Fossile Salt is dug out of very deep Mines in *Transylvania*, *Hungary*, *Russia*, *Siberia*, *Tartary*, and many Places in *Germany*. But the most remarkable Salt Mines are those of *Bochna* and *Viliske*, not far from *Cracow* in *Poland*.

The Salt Mines near the small Town of *Viliske*, which (the Church excepted) is altogether dug hollow under Ground, have four Descents; of which the two principal being in the Town itself, are those through which the Salt is drawn up; the other two serve for letting down Timber and other Necessaries. These Descents or Holes are four or five Foot square, lined all the Way downwards with Timber. Above is a great Wheel, with a strong Rope of the Thickness of a lusty Arm, drawn about by a Horse, like as in a Horse-mill.

He that will descend, must cover himself with a Frock, and have another Man that fastens another Rope to the aforesaid big Rope, and having so tied it about himself as to sit in it, he takes him in his Lap, and holds him fast about; whereupon the big Rope being somewhat let down, another fastens likewise a Piece of Rope to the other thick Rope, and does like the former, seating himself in it, and taking and clasping another Man in his Lap, and being also let down a little Way, gives Place to others to do the like; in which manner, thirty, forty, and more Persons, may be let down all at once; of whom the first having touched the Ground, steps out and goes aside, the rest following him, and doing the like; and thus they descend to the Depth of a hundred Fathoms. But then they take a Lamp, and lead People about by strange Passages and Meanders, still more and more descending, till they come to certain Ladders, by which they go down an hundred Fathoms deeper, where there are double Passages and Holes,

one above another, in Abundance; for the Mine-men dig on still, and cut out every where, and on all Sides, as long as the Salt Vein lasts. The great Holes, to secure both the Town above, and the Work below from falling in, are carefully supported by strong and well-compacted Timber.

These Mines were first discovered in 1251. Within them is found a kind of subterraneous Republic, which has its Polity, Laws and Families, and even public Roads, Carriages, and Horses for drawing the Salt to the Mouth of the Quarry, where it is taken up by Engines. These Horses, when once they are down, never see the Light again; but the Men take frequent Occasions of breathing the Village Air. When a Traveller is arrived at the Bottom of this strange Abyss, where so many People are interred alive, and where so many are even born, and have never stirred out, he is surprized with a long Series of lofty Vaults, sustained by huge Pillasters cut with the Chissel, and which, being themselves Rock-Salt, appear, by the Light of Flambeaux, which are incessantly burning, as so many Crystals or precious Stones, of various Colours, shedding a Lustre almost intolerable to the Eye.

The Rocks of Salt are hewn in the Form of huge Cylinders; the Workmen using Hammers, Pick-axes, and Chissels, much as in our Stone-Quarries, to separate the several Banks of Stone. As soon as the massive Pieces are got out of the Quarry, they break them into Fragments, fit to be thrown into the Mill, where they are ground and reduced to a coarse Farina or Flower, which serves all the Uses of Sea-Salt.

In these Mines there are three Kinds of Sal Gemmæ, one is common, coarse and black; the second somewhat finer and whiter; the third very white, hard and transparent, which last is the Sal Gemmæ of the Druggists and Dyers. It cuts like Crystal, and is frequently used for Toys, Chaplets, little Vases, and the like; the other Sorts are less compact, and only fit for Kitchen Uses. The coarse and black Salt is cut out in great Pieces, roundish, and three *Polonian* Ells long, and one Ell thick, which are sold from fifty to seventy *Polonian* Florins.

The greatest Pieces lie before their Doors, where they are lick'd by the Cattle as they pass. The Colour of these Salt-Stones is darkish grey, with some Mixture of yellow.

But the principal Wonder of the Place is, that through these Mountains of Salt, and along the Middle of the Mine, there runs a Rivulet of Fresh-water, sufficient to supply the Inhabitants.

The Imperial Salt-works at *Sooswar*, near *Eper* in *Upper Hungary*, are also remarkable for many curious Particulars; of which *Dr. Bruckman* gives the following Account. They are at least an hundred and forty Fathoms deep. In the Cuts of them, one sometimes finds Alleys of Rock-Salt, of the most delicate blue and yellow Colours. He observed, that the first Colour being exposed to the Sun for some Days, lost entirely that beautiful Ultra-marine, and became white as the other Rock-Salt, which did not happen to the yellow, which preserved its Colour; but when you pound them together, the Salt was neither blue nor yellow, but extremely white.

Melissantes, in his Geography, speaking of Salt-works which the *Spaniards* have in *Catalonia*, says, that there is Rock-Salt, the Colour of which is so diversified, that it comes near the Rain-bow, in having green, red, yellow, and blue Colours; but that, by first preparing, and then grinding it, it became white. The same happens also to the red Rock-Salt of *Salzburg*, which being pounded becomes white.

But one Thing very remarkable, in the Mines of *Sooswar*, is a Chapel, which can easily contain a hundred People, cut in the Rock-Salt, with an Altar, a Pulpit, a Sacristy, Chairs and Forms cut in the same Rock. They celebrate once every Year, the Week after *Epiphany*, divine Service in this Chapel, and the Sermon is always preached by a Jesuit of *Eper*. This Service was founded for the Officers of the Excise and the Miners.

But that which is most curious in these subterraneous Fosses, are the Flowers of Salt, which grow as the Beard of a Goat, with this Difference only, that these are much whiter and finer. One cannot enough admire these Effervescences, which seem to vegetate, yet one cannot find them in all the Cuts, nor at all Times, but they appear and grow according to the Temperature of the Seasons, which in those Parts is very wholesome. These Sort of Plumes of Salt are very brittle, they melt also in moist Places, and dissolve into an Oil; but are nevertheless the most pure Salt, the finest, the most acid, the whitest and most beautiful; so that it is not without Reason they have given it the Name of the Flower of Salt.

At *Neufel*, there is a Statue of Rock-Salt, as large as the Life, which serves as the Barometer of the Town; for when it begins to sweat or grow moist, it presages Rain or wet Weather; but when it is dry you may certainly promise yourself settled Fair.

There are also several Salt-mines in *England*, about the *Wyches* in *Cheshire*.

OF SEA-SALT.

ANALYSIS OF SALT.

The artificial Sea-Salt is obtained by the Heat of the Sun, or by Coction from Sea-Water, or Salt Springs or Wells. In *Britany* in *France*, the Manner of making Sea-Salt is, to dig shallow broad Trenches, which are lined with Clay. These being filled with Sea-Water by the Tide, the Heat of the Sun evaporates the Water, and a large Proportion of Salt remains behind. In *Normandy* they make small Heaps of Sand upon the Shore, which imbibe the Sea-Water, and the insipid Humidity being afterwards evaporated by the Heat of the Sun, the Salt remains among the Sand. To separate it, they first boil it in fresh Water, and then having strained off the Lixivium, containing now only a Solution of Salt in fresh Water, they boil it again with a gentle Heat in leaden Cauldrons, to a certain Degree of Thickness; then putting out the Fire, the Salt chrySTALLIZES.

Salt is made from Salt Fountains likewise, by boiling the Water till the Humidity exhales; and whilst it is boiling, they mix with it either Gall or Bullocks Blood, which makes the Salt form itself more easily into larger Lumps; for the Parts of the Gall or Blood inviscate or entangle the bituminous or earthy Parts, which hinder the Concretion of the Salt, and are altogether thrown up as a Scum, or at least remain in the Strainers. Sea-Salt, prepared by the Heat of the Sun, is preferable both for culinary and officinal Uses. The Taste of it is well known; the Colour is greyish, because of the Particles of Earth mixed with it; but if it be dissolved and chrySTALLIZED by a gentle Heat, it is formed into very white cubical Grains. Salt made by boiling is white, but the Grains thereof are not exactly cubical, because of some Mixture of different Salts.

Before Sea-Salt has felt the Fire, it changes neither the Syrup of Violets, nor Tincture of Heliotropium, it makes no Effervescence with the Oil of Tartar per Deliquium, but discovers, however, some small Signs of Acidity. It lessens the Transparency of the urinous Spirit of Sal-Ammoniac, and darkens the Colour of the Infusion of Gall. By other Trials it seems likewise to discover an alkaline Nature; for it turns a Solution of corrosive Sublimate white, and makes an hot Effervescence with Oil of Vitriol. A Solution of Salt in Water being evaporated to a Pellicle, and then set in a cool Place, the greatest Part of it will be formed into cubical ChrySTALS; but the Remainder cannot be brought to concrete without Heat; and even then it is formed into no regular Figure, and soon runs per Deliquium in the moist Air. Hence it is evident, that Sea-Salt is made of an Acid of a peculiar Kind, and of a mineral Alkali, and that the acid Portion is so far entangled and involved in the other, as hardly to be able to exert its proper Virtues in a concrete Form.

From Sea-Salt, by Distillation in a Retort, we obtain an acid Spirit, which turns the blue Tincture of Heliotropium into a purple Colour, and ferments vehemently with Oil of Tartar, but without any sensible Heat; but does not raise any Effervescence with Lime-Water. This acid Spirit is the only Dissolvent of Gold and Tin, but cannot dissolve Silver or Lead; and it communicates this Quality to Spirit of Nitre and of Vitriol; which, by being mixed with it, becomes *Aqua Regia*. If this Spirit, when very pure, be saturated with the alkaline Salt of Tartar, it concretes into a *Sal Salsus*, resembling Sea-Salt in Taste, and in the cubical Figure of its Crystals; whence it appears that Sea-Salt is an Acid perfectly saturated with an alkaline Salt. The ChrySTALS of Sea-Salt crackle and crepitate in the Fire.

Its Virtues are, to check too great Fermentation, and prevent Putrefaction; and for that Reason, it is used by Chymists for macerating Plants, to keep them from rotting; and what it does to Plants in macerating, is not different from its Effects on the Aliment in the Stomach; where it both checks too great Fermentation, and prevents Putrefaction. It likewise calms the too great Ebullition of the other Fluids of the Body; and, as it readily joins with volatile urinous Salts, and changes them into a Sal-Ammoniac, it is fitted to soften the Acrimony of the Fluids, and promote the Depuration thereof by Urine. By its little Points it likewise stimulates gently the solid Parts, and thereby increases their oscillatory Motion, by which Means all the Functions of the Body are better performed. On these Foundations are built all the Virtues ascribed to Sea-Salt, of drying, heating, deterging, digesting, opening, attenuating, increasing the Appetite, exciting to Veneriness, and of resisting Poisons and Putrefaction.

It is ordered in an *Apepsia*, or want of Digestion, in want of Appetite, in Costiveness, and Obstructions of Urine, and is an Ingredient in the *Unguentum Emulatum*. It is much esteemed by the Chymists, as being the only Menstruum for Gold. *Geoffroy*.

Take any Quantity of Salt, procured either from the Rock, Sea-water, or briny Springs, and as pure as possible; dissolve it in a sufficient Quantity of Water, and digest it for a long Time, in a Vessel so closely stop'd, that none of the Water may evaporate; and, by these Means, an insipid Earth will fall to the Bottom, which cannot again be dissolved in Water. Pour off the clear Liquor, and let it evaporate in a Place free from Dust, till a Pellicle or Scum like a thin Skin appears on the Top; and then set it in a cool Place, and the Salt will shoot into transparent ChrySTALS of the Figure of a Cube or Dye. Pour off the clear Water from the Crystals, and evaporate again to a Pellicle, and set it in a cool Place, as before, and more ChrySTALS will be formed, but less pure and transparent than the former. Repeat this Evaporation and chrySTALLIZATION so long as any ChrySTALS will shoot, and then an oily, saline Liquor will remain, which is not rendered dry without a good deal of Difficulty, and a considerable Heat long continued. After this has been evaporated to Dryness, it will attract the Moisture of the Air, and run into an Oil per Deliquium, more readily than any other Substance whatever, and then lets fall a small Quantity of insipid Earth not dissolvable by Water; dry the remaining Oil and calcine it, then expose it to the Air till it runs again into an Oil, which will let fall more insipid Earth. If these Calcinations and Solutions are repeated a sufficient Number of Times, nothing will be left at last but pure insipid Earth, of which there will be a pretty large Quantity, if all that is left after each Solution be collected together. All the other Parts being rendered volatile fly off into the Air.

By the Analysis of Salt it appears that common Salt consists of a pure insipid Earth, an acid Spirit extremely volatile, and Water; and it is highly probable that this Earth, before it was united to the acid-volatile Spirit, was of an alkaline Nature, and perhaps exactly the same with the *Natron* of the Ancients. What makes this the more likely is, that if any fixed alkaline Salt is impregnated with the acid Spirit of common Salt, a Salt will be formed very nearly the same with common Salt, which the Chymists call regenerated Salt.

Common Salt has many very extraordinary Properties.

1. The smallest ChrySTALS of common Salt are always of a cubic Figure, that is the Figure of a Dye.

2. Upon the Application of Fire to it, it crackles. This Decrementation or Crackling of Salt, seems to proceed from the Air contained in its Pores, which being rarified by the Fire, breaks its Prison and makes its Escape.

3. Spirit of Salt is the only Thing in Nature that will dissolve Gold; but not without being joined with the Spirit of Nitre.

4. Salt preserves all vegetable and animal Substances from Putrefaction, as also Water, and is itself incorruptible. This Property it entirely owes to the Acid it contains.

5. A greater Quantity of common Salt will be dissolved in a given Quantity of Water, than of any other Salt whatever; for six Ounces of common Salt may be dissolved in sixteen of Water; but it must be observed, that warm Water will dissolve more Salt than cold, and that in Proportion to the Heat of the Water. Thus Water in that Degree of Heat which makes it boil, dissolves more Salt than in any less Degree of Heat, inasmuch, that as it grows cool, it will every Moment let fall more and more of the Salt which was dissolved in it, which will appear at the Bottom of the containing Vessel undissolved; and when the Water is so cold as to freeze, it will expel almost all the Salt, which will stick to the Bottom of the Ice in a solid Form.

6. Salt dissolved in Water of a Heat equal to that of the Atmosphere, renders the Water considerably colder. And yet,

7. Notwithstanding this Increase of Coldness, the Salt will keep the Water from freezing, inasmuch that Water, wherein Salt is dissolved, shall not freeze near so soon as pure Water: And hence we may observe, that Salt, when interposed between the small Particles of Water, has the Power of preventing their Association, that is, their Concretion into Ice; otherwise Salt, by increasing Cold, would promote Freezing.

8. If Spirit of Salt is poured upon Ice reduced to Powder, it will increase the Coldness thereof to a surprizing Degree; to a Degree much greater than ever was produced naturally, and in which every Animal must die.

9. Salt thrown upon burning Coals greatly increases their Heat. This proceeds from the Air, Water and Acid contained in the Body of the Salt; for the Air being forced out of the Salt by Heat, acts upon the Fuel like a Pair of Bellows; and that this will increase the Heat of Fire is known to all Smiths, who, when they would make their Fires intensely hot, frequently sprinkle Water upon the burning Coals.

10. Salt made extremely dry, attracts the Moisture of the Air considerably, even in the dryest Seasons, insomuch that it is a common Thing for People who deal in Salt, to buy it at the *Wyches* very dry, and to sell it a great many Miles distant, for less per Hundred than it cost them; yet are they considerable Gainers, because the same Quantity of Salt that weighs a Hundred at the *Wyches*, will be much heavier, after having imbibed the Moisture of the Air.

With respect to these Properties of Salts, it may be remarked, that as Putrefaction is, always, in Proportion to Heat, that vast Body of Water, which we call the Sea, would putrefy and stink, (as we find, in effect, fresh and stagnating Waters do) especially in hot Climates and calm Weather. Now this Putrefaction would be fatal not only to all the Animals contained in the Sea, but also to those Land Animals that came within the Influence of the Vapours arising from this vast Body of putrefying Waters, which probably would be all Animals upon the Face of the Earth.

Now we find, by the fourth Property of Salt, that it preserves all vegetable and animal Substances from Putrefaction, as also Water; and that there is a great Quantity of this Salt in the Sea, is a Proposition unnecessary to be proved.

By Property the fifth, we find, that a greater Quantity of Salt will be dissolved in warm Water than in cold; and by this it should seem, that more Salt should be dissolved in hot Climates, and in hot Weather, where there is more Occasion for it to guard against Putrefaction, than in cold Climates and cold Weather, where there is less Occasion for it; accordingly we find, by repeated Experience, that in the *Mediterranean Sea*, where the Climate is hot, one Pint of Water contains an Ounce of Salt; but in the *Baltick*, where the Climate is cold, the same Quantity of Water contains only half an Ounce. 'Tis as certain, that under the Equator, the Sea-Water contains still a greater Proportion of Salt, and those Seas that lie more Northward than the *Baltick*, a less.

Agreeable to this is an Observation made by a Friend of Mr. Boyle, at his Desire, who found, by a Glass Instrument made on Purpose, that the Sea-Water increased in Weight, and consequently in Saltiness, the nearer he approached the Line.

The same Author farther informs us, that at *Manar*, near the great Cape of *Comori*, where the famous Pearl-Fishing is carried on, and the Climate is very warm, the Ocean is so salt as to deposit a good Quantity at the Bottom in hard Lumps.

We learn farther, from Property the sixth, that Salt renders Water, wherein it is dissolved, colder than it would otherwise be. Now, as Putrefaction is in Proportion to Heat, this Property must also guard against Putrefaction in hot Climates, and in hot Seasons.

Dr. Halley, in the Philosophical Transactions, has a Dissertation, to shew, that as Salt is perpetually conveyed to the Sea by Rivers, the Sea must daily acquire a greater Degree of Saltiness; insomuch, that if we had any authentic Observations relative to the Degree of Saltiness of the Sea, made at distant Periods of Time, we might from these calculate the Age of the World.

But if there is any Truth in these Observations I have made above with respect to the Saltiness of the Sea, as there undoubtedly is, Dr. Halley's System, however pretty and ingenious, must entirely fall to the ground; as the Reader will easily perceive, if he considers, that the Sea was, in all probability, as salt a Fortnight after the Fall of *Adam* as at this time, since the Necessity and Convenience of it were as great then as now: And it is very unlikely that the Almighty should create his Works imperfect, and leave them to be brought to Perfection by a long Series of Time.

I must add, that although Salt is incorruptible, yet it is capable of being so far destroyed, as to remain no longer in the Form of Salt; as appears by its Analysis. Now, though what the Doctor says be true, that Salt is perpetually brought into the Ocean by Rivers, and that the Exhalations of Water from the Sea are perfectly fresh, yet the Consequence which he thence draws, that the Sea grows every Age more salt, may not be true; for it is highly probable that Salt, by the alternate Actions of other Bodies upon it, may undergo such a Sort of Transmutation, as we have above described in its Analysis; and then the volatile Parts, which constitute the specific Nature thereof, and render the fixed Part, or Earth, dissolvable in Water, being disunited from the fixing Earth, may very likely fly off, and mix with the Air; and then the fixing Earth, now no longer dissolvable in Water, will sink by its own Gravity to the Bottom. And if we consider (as Sir Isaac Newton observes) that Nature delights in Transmutations, it will appear more probable, that there is a perpetual Generation and Dissolution of Salt carrying on in the World.

Before Sea-Salt is distilled, some Preparations are necessary, and especially Calcination or Decrepitation; for since the

Grains of Salt fly and crackle in the Fire, they would burst all the Vessels used in the Distillation, except the watery Fluid, with which they abound, was first carried off by Calcination. This Decrepitation arises from the watery Fluid contained and inclosed between the Particles of the Salt, which being dissolved by the Heat, burst the Prison wherein they were detained, separating the Particles that surround them with a kind of Explosion. The Decrepitation or Calcination of Salt is performed in this Manner:

The Salt is set on lighted Charcoal, in an open earthen Vessel, and stirred constantly with an Iron Spatula. As soon as the Salt begins to be thoroughly heated, it makes a crackling Noise, which increases for some time, and then ceases altogether. When all the Noise is over, the Salt is decrepitated, calcined, dried and burnt, and remains in the Vessel in Form of a Powder. This decrepitated Salt serves for cementing Minerals or Metals, for the Distillation of Spirit of Salt, and for many other chymical Operations.

THE DEPURATION AND CRYSTALLIZATION OF SEA-SALT.

Dissolve common Sea-Salt in six times its Quantity of Rain-Water, strain the Solution hot through a close Linen-Bag, so often as to render it perfectly limpid; then exhale away in a Glass-Vessel one sixth Part of the Water; set the Remainder in a quiet cool Place for three Days, in a Vessel covered to keep out the Dust; if it deposits any Fæces, pour off the Liquor from them by gently inclining the Vessel; if it deposits none, the Liquor is perfect, and may now be evaporated to a Pellicle: Again set it in a cool quiet Place for twenty four Hours, during which time it will shoot into cubical Crystals. Carefully pour off the Liquor remaining after Crystallization, dry the Salt with a gentle Heat, and keep it separate. This is the Salt that I commonly employ for chymical Uses. Let the remaining Solution be again evaporated to a Pellicle, and set to shoot as before. By thus continuing to repeat the Operation, the Liquor will at last become thick, unctuous, austere, and hard to dry, and scarce afford any Crystals. If the Salt thus purified be decrepitated in the Fire, and afterwards fused with a strong Heat, then poured out upon a dry Marble, it resolves in the Air, and deposits earthy Fæces; from which the Liquor being carefully separated, then inspissated, calcined, poured out, and suffered to run in the Air; the Operation being thus repeated, the Salt at length vanishes into the Air, as a very ancient chymical Writer has truly observed.

REMARKS.

Crystallization is the only Method of procuring Salts pure and simple, when their innate Virtue, whilst the Salts are diluted with a certain Proportion of Water, unites the similar Parts together, and separates the dissimilar; and the Water, being attracted more by one Salt than another, one Salt sooner extricates itself than the other. And unless Salts be thus previously depurated, it is in vain to expect they should afford pure Spirits, which are necessary to certain Operations. If any Sea-Salt were in Nitre, the Nitre, upon Distillation, would afford not an Aqua-fortis, but an Aqua-Regia; and the same holds true of Sea-Salt, if any Nitre be mixed among it. The Salt thus obtained is such a Dissolvent of Gold, that, without its Addition, Gold can no otherwise be dissolved, except by fusing with Metals. This Salt is a wonderful Preservative, by means whereof all the Parts of Animals and Vegetables are preserv'd from Putrefaction.

GLAUBER'S SPIRIT OF SEA-SALT.

1. To three Parts of Sea-Salt, prepared as above, and put into a Glass-Retort, pour one Part of the strongest Oil of Vitriol, at the Instant they mix, a volatile white Vapour rises, which is to be carefully avoided, as being suffocating, and capable, if but once drawn in with the Breath, to stop the Action of the Lungs irremediably. Directly apply a large and cold Glass-Receiver, lute the Juncture, apply a very small Quantity of Fire at first, for a furious Spirit will long continue to come over so as to blow through the Luting, or break the Vessel; so that the Fire must be kept gentle for three or four Hours: Then increase it a little, and a less volatile Liquor will come over. After eight Hours have been employed upon the Operation, urge the Fire till the Iron-Pot becomes ignited, and no more Liquor rises; then let all cool, and when the Neck of the Retort is no longer hot, take off the Receiver; the Liquor will fume; and beware of receiving the Fume in with the Breath. Pour it into a Glass well-fitted with a Glass-Stopper, and set it in a cold Place; otherwise

wife the Glas often bursts, by means of the Motion of the Vapour. If thus kept for Years, a white suffocating Vapour immediately breaks out upon opening the Vessel; but if the Spirit thus produced be carefully distilled in a Glas-Body, under a Chimney, into a Receiver, the volatile Spirit will come over, while there remains at the Bottom a more fixed Liquor, of a Colour betwixt a yellow and a green. This Liquor remains quiet without exhaling, but that which comes over into the Receiver has a violent suffocating Volatility, and may be kept apart as a pure volatile Spirit of Salt in a close Vessel.

2. To three Parts of purified and dry Sea-Salt, put into a Retort, add two Parts of clean Rain-Water, and one Part of the strongest Oil of Vitriol. Let the Oil of Vitriol fall in by slow Drops, to prevent the Bursting of the Vessel, by the sudden Heat that would rise from mixing in the whole at once. The Mixture will grow hot, place the Retort in a Sand-Furnace, and apply a capacious Receiver; distil gently for the first four Hours, while the Water comes over slowly; otherwise, if made to rise briskly, it always cracks the Receiver. After this, increase the Fire gradually; the Spirit of Sea-Salt will come over, which is then known to rise, when the Liquor runs in spiral Veins. Now raise the Fire, and gradually urge it, till at length the Iron-Pot grows of a red Heat, and no more Liquor comes over; at which time the Spirit will not fume. Then suffering all to cool, pour out the Spirit, which is now neither suffocating nor smoaking. If this be distilled again with a gentle Fire, in a Glas-Body, there will come over a limpid ungratefully acid Water, of excellent internal Use, being mixed with Juleps, in such Distempers as require it; an excellent fat Spirit will remain in the Bottom, of a Colour betwixt green and yellow.

3. In both Cases there will be left behind a very white and fixed Salt, that can only be fused with a violent Fire.

R E M A R K S.

It seems surprising that Oil of Vitriol should raise so volatile a Spirit, by being barely poured upon so fixed a Salt as Sea-Salt; which Spirit is again fixed by adding fair Water to it, and is not generated when the Oil of Vitriol is mixed with a strong Solution of Sea-Salt for Distillation; or again when the Oil of Vitriol is diluted with Water, and added to the Sea-Salt; in which three Ways this surprising and suffocating Volatility is fixed, and render'd unhurtful; but when the Spirit, thus fixed and render'd wholesome, is urged with the Heat of a hundred Degrees, it lets go its Water, and remains rich, very fat, thick, gratefully acid, fragrant, and of a greenish Colour, and as perfect as can be any way obtained. But here again are certain Limits, for only one Part of the Salt is thus converted into acid Spirit, while the others remain fixed with the Oil of Vitriol. I could scarce gain more than a third Part of pure Spirit, separable from the Water, in proportion to the Salt. This Spirit has some Properties in common with other Acids, and some particular. It is particularly grateful to the Stomach, excites the Appetite, attenuates mucous Humours, resists Putrefaction, and corrects the Bile, when either too acrimonious, large in Quantity, or corrupted. It is of excellent Use in curing Gangrenes of the Gums, Mouth, or Tongue, it prevents the Generation of the Stone, and, according to *Helmont*, helps to dissolve it. It is serviceable in the Strangury attending Old-Age. If the strongest Spirit of Salt be mixed with thrice its Weight of Alcohol, and the two be thoroughly united together, by two or three Distillations, they make a volatile, oily, acid, fragrant, and balsamic Spirit of great Virtue. This acid Spirit dissolves Gold when very strong, or render'd more noble by being several times drawn over from Sea-Salt. In short, this Liquor exceeds all that can be said of it; and this is a highly useful Experiment, which we owe to the Industry of *Glauber*.

SPIRIT OF SEA-SALT WITH BOLE.

1. Take six Pounds of pure dry Sea-Salt, put it into two earthen long Necks, each of them containing three Pounds of Salt; put the long Necks into the Fire, and cover them with Tiles to prevent any thing falling in. Let the Fire be placed around them at some Distance first, and afterwards gradually nearer, and at length up to their Sides. The Salt will for a long time continue to crackle strongly; but this Decrepitation at length ceases, when both the long Necks are thoroughly ignited. When the Fire is burnt down, the Salt is found white, pulverized, and will not crackle, when thrown into the Fire. It loses always one Fourth in the Decrepitation, but seems otherwise unchanged, though it would easily grow moist in the Air. It is now fit for Distillation; wherein had it been employed without Decrepitation, the Action of the Fire would have made it leap into the Receiver, so as to disturb the Operation, and sometimes to burst the Vessels; but its

wild crackling Spirit being drawn out by Calcination, it will afterwards calmly endure the Fire.

2. Take three Pounds of this Salt, as soon as it is decrepitated; grind it in a large hot Mortar, and presently mix therewith ten Pounds of common red Bole; divide the Mixture into two Parts, and charge two Long-Necks therewith, so that the Matter may not come into the Mouths of the Vessels, as they lie horizontally in the Furnace. Then fit them into the Reverberatory, building up the open Side of the Furnace with Bricks and Mortar, so as to leave the Necks of the Vessels to come through the Wall. Apply Adaptors and large Receivers, and also a gentle Fire, increased by Degrees for twenty-four Hours, that all may become thoroughly hot and dry. Then light up a strong Fire in the Morning; a copious white Vapour will come over, like white Clouds, into the Receivers, and dewy Drops appear in the internal Surface thereof. Keep the Fire thus for two or three Hours; then increase it, upon which the Receivers usually become clearer, and the Spirit runs in unctuous Veins. And now the Fire may be increased to the utmost Degree, and continued thus for six or eight Hours, that the Vessels may be thoroughly ignited. When no more Spirit comes over, leave off; let all cool; carefully take away the Receivers, and empty the pure Liquor. It will be acid, gratefully fragrant, of a green Colour, and in the Quantity of about six Ounces from a Pound. The Bole remains saline. I have boiled it in Water, filter'd, and inspissated the Lixivium, and thereby procured a large Quantity of a yellow, saline, styptic Salt, that was not alkaline, but appeared a new Kind of Salt. And this has generally been my Success; whence I wonder *Beguinus*, and others, should write, that they could convert the whole Quantity of Salt into excellent Spirit of Salt. For my own part, I never could, with the utmost Care and Caution, in the most exact manner, and with the strongest Fire, long continued, obtain above half the Quantity, unless there had chanced to be any Moisture adhering to the Salt, or the Bole. This Distillation of Sea-Salt requires a stronger Fire than that of Nitre.

R E M A R K S.

This Spirit shews that a certain Part, but not the whole of the Salt, is here converted into Acid, by means of the Fire and Bole. In this Distillation, towards the End, a yellowish Matter, inclining to white, always fixes to the upper Part of the Receiver, and has a sweetish, styptic, saline Taste; and I have found this in great Plenty, when the Operation was performed with Brick-Dust instead of Bole; it seems to proceed from the Salt and fat Earth mixed together. The Salt obtained from the Caput Mortuum is highly commended by *Helmont* for the Preparation of *Butler's Stone*; and the Spirit is recommended for the same Purposes as that of the preceding Process, where the Particulars relating to this are already considered.

GLAUBER'S SAL MIRABILE.

Take the white, saline, fixed Salt remaining at the Bottom of the Retort, in the Preparation of *Glauber's Spirit of Sea-Salt*, to be got out by breaking the Glas; bruise it, melt it in a Crucible at the Fire, with Care to prevent any Coals falling in, and afterwards dilute it with common Water. Or else dissolve the Salt, as it remains in the Retort, by pouring hot Water to it; strain the Lixivium hot, evaporate it to a Pellicule, and set it in a quiet cold Place; it usually coagulates into a Mass like Ice, or if it remains somewhat fluid, it turns solid upon being poured into another Vessel. If the Salt be dissolved in six times its Quantity of hot Water, then thickened again, and set by in a large Glas, it shoots into beautiful Crystals, of a particular Figure, considerably large, that remain solid, and do not run in the Air.

R E M A R K S.

The famous Inventer of this Salt justly called by the Name of *Wonderful*, not only on account of its being new, but of the surprising Effects it produces. I know some Chymists who are fond of Systems, pretend that no more than a true *Tartarum Vitriolatum*, is here produced, which was long known before the Time of *Glauber*. But *Tartarum Vitriolatum* has not the Properties which are found in this Salt, either with respect to Figure, Taste, or any Thing else; for if this Salt be properly prepared, reduced to Powder, and mixed with thrice its Weight of Vinegar, Beer, Wine, or Water, and set apart, it freezes them. When melted in a Crucible, if a fourth Part of Antimony be thrown to it, by a Piece at a Time, it wonderfully resolves it, and has many other Effects, as to which *Glauber*, *Boyle*, *Becher* and *Stall* deserve to be consulted; all of them Men of the utmost Penetration,

tration, in giving Light to the more abstruse Parts of Chymistry; to whom we must also add the great *Hamberg*. In Surgery this Salt is of excellent Use against Putrefactions and Gangrenes; it is also of Use, when internally taken, by gently stimulating, resolving, purging, and promoting of Urine.

SEA-SALT REGENERATED.

Dilute four Ounces of Oil of Tartar per Deliquium, with thrice its Weight of fair Water; put them into a tall and large Glas Body, with a narrow Mouth, and heat the Liquor strongly: Then, by Means of a Funnel let fall into it, by a Drop at a Time, *Glauber's* Spirit of Salt, or that prepared with Bole, a great Effervescence will be excited. When this is over, shake the Glas, and mix all well together; then drop in more Spirit, and mix as before, till the Alkali be perfectly saturated with the Acid. Now let the Liquor rest, and gently pour it from the Fæces into a Filter; evaporate to a Pellicule, set it in a cold quiet Place, and perfect Crystals of Sea-Salt will be obtained. Treat the remaining Liquor in the same Manner, after the first Crystallization is over, and this will afford the same Salt, which will be fixed in the Fire, and have all the other Properties of native Sea-Salt.

REMARKS.

The vegetable Alkali, which indifferently receives any Acid, is here determined by the Acid of Sea-Salt; and being saturated therewith, assumes the Nature of that Salt.

OF THE SUBTILTY AND SPECIFIC VIRTUES OF THE SPIRIT OF SALT.

Common Salt is of the neutral Kind, and consists of an Acid and Alkali as is sufficiently evident from its artificial Composition, from Spirit of Salt, and Salt of Tartar mixed in a due Proportion to the Point of Saturation. But this Acid cannot be more commodiously disengaged from the common Salt, than by an Addition of Oil of Vitriol, which, when mixed in equal Quantity with it, not only excites a violent Ebullition, because the Acid of the Vitriol acts powerfully upon the alkaline Principle of the Salt, but also a thick, white, and highly penetrating Smoke ascends, which, when concentrated, affords an highly acid fuming Spirit, which must be kept in Glasses well closed with Glas Stoppers. If this Spirit is very strong, it becomes hot on the Affusion of Water, almost in the same Manner with Oil of Vitriol.

The Distillation of this Spirit with Oil of Vitriol, is most commodiously made from a Glas Cucurbit by an Alembic; for by Reason of the violent Effervescence and Froth, the Distillation cannot be commodiously made from a Retort, because 'tis to be apprehended that the Froth may pass over. A proper Quantity of common Water is to be added, which assists the Ingress of the Acid of the Vitriol into the interior Parts of the common Salt, by which Means a larger Quantity of Spirit is obtained.

The Rectification may be made from the Retort; thus a Spirit of a yellowish Green, which is its genuine Colour, is yielded, and the grosser Parts of the Acid of the Vitriol remain in the Bottom. This Spirit tinges the Skin with a Colour resembling that of Roses.

The highly penetrating and subtle Nature of this Acid is obvious from this, that in a gentle Heat, or even in *Balneo Maria*, it passes over the Helm of the Alembic, and when lodged in open Glasses, so exhales as soon to fill the whole Room; and that the penetrating Nature of this acid Salt surpasses that of Nitre, I am induced to believe, because the acid of Salt has a freer Access into the Pores of Gold than that of Nitre, which dissolves all other Metals; for without an Addition of common Salt, the firm Compages of Gold cannot be dissolved.

So great is the Subtily of the Acid of common Salt, that when taken internally, it diffuses its Operation and Efficacy to remote Parts, especially those of the membranous Kind. But it in a particular Manner exerts its Influence on the nervous and sensible Membranes of the Lungs, by stimulating and agitating which, it excites a gentle Cough; for which Reason, the Acid of common Salt ought to be very cautiously used, without losing its Texture; it, also, by its powerful Stimulus, penetrates to the urinary Passages; for there is hardly a more efficacious Medicine for exciting a Discharge of Urine, than Spirit of common Salt.

Those who have Fontanels in their Bodies, and frequently use Spirit of Salt in Broths prepared with Flesh, perceive pungent Pains in their Fontanels. The great Subtily also of this Spirit, is the Reason, why by acting on the nervous Coat of the Stomach, it excites the Appetite far better than all other acid and mineral Spirits.

Strongly concentrated Spirit of common Salt has this peculiar to it, that it does not, like other corrosive and highly concentrated Acids, such as Oil of Vitriol, and my fuming Spirit, by the Addition of a sufficient Quantity of highly rectified Spirit of Wine, lose its acid Taste, and assume a sweet Taste and Smell. The strong Acid of common Salt remains entire in the Bottom of the Cucurbit; for 'tis sufficiently known to Chymists, that Oil of Vitriol, after the Addition of a sufficient Quantity of highly rectified Spirit of Wine, at different Times, may, by Distillation, be converted into a very penetrating Spirit, of a grateful Taste and Smell.

Thus also my fuming Spirit, upon an Admixture of twelve Parts of highly rectified Spirit of Wine, becomes sweet, and assumes a grateful Taste and Smell, because by the oleous and sulphureous Parts of the Spirit of Wine, the acid Spicula are so corrected and sheathed up, as to assume a quite different Nature, Texture and Efficacy. But this is not found to happen in the Spirit of Salt, which rejects this Union of the oleous and phlogistic Spirit; for it retains its Acidity entire, except that its thinner sulphureous Part being united with the inflammable Spirit, in some Measure changes its Smell, and renders it more grateful.

'Tis also peculiar to Spirit of Salt above that of Vitriol and Nitre, that it does not so quickly dissolve Filings of Steel, but leaves the *Lapis hæmatitis*, and the most subtle *Crocus martis* entirely untouched; whereas common Salt, or which is still better, Sal-ammoniac, acts more quickly and powerfully on chalybeate Minerals, the *Lapis hæmatites*, and Filings of Steel, and by dissolving them, converts them into a highly astringent Vitriol, provided they are intimately mixed in a Crucible, and kept on the Fire for a considerable Time, which neither happens with Vitriol nor Nitre.

No Acid so soon extracts the Sulphur, with which Iron is richly impregnated, as the Acid of common Salt; for whether a Solution of Steel, with Spirit of Salt, is inspissated, or whether Sal-ammoniac, with Filings of Steel, is treated by a close Fire, a Vitriol is obtained of a yellowish Colour, an astringent Taste, a grateful Smell, and which is not capable of Crystallization, but melts away in the open Air; and if duly dephlegmated Spirit of Wine is poured upon it, the sulphureous Part of the Steel, and the thinner Portion of Salt immediately enter it, and by this Means is prepared a Tincture of Steel, which is of a yellow Colour, a fragrant Smell, a subastringent Taste, and highly efficacious in restoring the Tone of the Parts; for by this Means the sulphureous Substance of Steel, which is of great Use in Medicine, may be most commodiously separated.

'Tis, also, to be observed, that highly concentrated Spirit of Salt, when mixed with Oil of Vitriol, produces a greater Effervescence, than any other acid Spirit. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 17.*

OF THE SOLUTION OF SALTS.

It has hitherto been received as an incontestable Maxim among Chymists, that phlogistic or inflammable Spirits are the most commodious Menstruums for oleous, resinous, and sulphureous Bodies, but not at all for Salts, whose Solution is obtained by aqueous Menstruums. This Doctrine seems to be confirmed by Experience, which convinces us, that Spirit of Wine highly rectified, or deprived of all its Phlegm, neither dissolves and imbibes neutral Salts, nor those of the fixed alkaline Kind, when poured upon them, but leaves them untouched. We shall therefore shew, that this Maxim is not so universal as it is generally thought, but that it has many Exceptions, in which it may be demonstrated to the Eye, that highly rectified Spirit of Wine does not reject Salts of all Kinds, but readily dissolves them, and is incorporated with them; for as for fixed alkaline Salts, we observe, that in the Abstraction of highly rectified Spirit of Wine from Salt of Tartar, especially when frequently repeated, a large Quantity of this Salt is dissolved in the Spirit, which by this very Means becomes highly acrid, alkaline, and proper for the Dissolution of Oils; for when I took ten Ounces of the Salt of Tartar, well calcin'd, and by a gentle Heat drew off two Quarts of highly rectified Spirit of Wine from them, I obtained a Spirit richly impregnated with the Salt of Tartar. But as the Salt of Tartar always separates a great deal of Humidity from the rectified Spirit of Wine, hence it assumes a liquid Form in the Bottom of the Cucurbit. This Humidity I abstracted by a proper Evaporation, and afterwards calcined the Salt in a Crucible, and upon examining the Weight, found that it had lost three Ounces; because only seven Ounces remained. I repeated this Experiment, and poured the same Spirit on the Salt of Tartar, to be abstracted by a gentle Heat, but had only half the Quantity drawn off; and in the Cucurbit there remained two Liquors, one of which floating above the Liquor of the Salt of Tartar, was of a yellow Colour,

four, of a highly acrid Taste, and full of an alkaline Salt. This is by Chymists called the Tincture of Tartar. The other, which was below it, was only a Solution of the Spirit of the Salt of Tartar, by Means of the Phlegm left. This, when dried and calcined, had its Weight considerably decreased.

From this Process 'tis sufficiently obvious, that tho' the Salt of Tartar sustains the Force of the Fire and Air, so as to have no Part of it exhaled, yet it may, by frequent Abstraction, by an inflammable Spirit, become not only volatile, but also capable of being resolved by such a Spirit.

'Tis, also, to be observed, that Salt of Tartar, however strongly calcined, always separates, by Digestion, and Abstraction, from the highest rectified Spirit of Wine, a Portion of Phlegm, in which it dissolves; a certain Proof that the phlogistic or vinous Spirit is nothing but the Oil of those Things which have undergone a Fermentation, resolved into Phlegm, by the intestine fermentative Motion. This I shall afterwards evince by other Experiments.

The yellow Colour of the Tincture of Tartar is owing to no other Cause, than that the Oil of the Spirit of Wine, intimately mixed with the Salt of Tartar, is capable of tinging it with that Colour, which may be confirmed by many Experiments, especially in the Elaboration of the acrid Tincture of Antimony.

Not only fixed alkaline Salts may be rendered soluble, in highly rectified Spirit of Wine, but I can also prove, from various Experiments, that there are neutral Salts, which are more expeditiously dissolved in highly rectified Spirit of Wine, than any fixed alkaline Salt; so that six Parts of the Spirit are capable of receiving and retaining in their Pores one Part of the Salt.

These are two artificial Salts; the one is prepared thus: We take any given Quantity of pure and dry volatile Salt of Sal-Ammoniac in a Glass, into which we gently drop Aqua Fortis, or Spirit of Nitre, till the Point of Saturation is found, by which Means the neutral Nature of this Salt ought to be accurately investigated. This Liquor, which is of a nitrous and acrid Taste, we evaporate in a warm Furnace, by which Means we obtain a highly white and dry Salt, of a nitrous and acrid Taste, which, when thrown upon the Coals, flames, and leaves only very few terrestrial Parts. The other of these Salts is prepared thus: We take volatile and dry Salt of Sal-Ammoniac; this we saturate with Spirit of Salt instead of Aqua Fortis, by which Means there is produced a third Salt, exactly like Sal-Ammoniac, and which is quickly united with rectified Spirit of Wine.

But when this same volatile Salt is converted into one of a third Kind, like Sal-Ammoniac, with Spirit, or Oil of Vitriol, it is by no Means susceptible of an Union with the Spirit of Wine, but flies its Embraces. For which Reason, if rectified Spirit of Wine is poured upon a Solution of this Salt made with common Water, the volatile Salt forthwith subsides, which does not at all happen, if this Spirit is poured upon the before-mentioned Salts when dissolved; for the Solutions of these are capable of an intimate Union with Alcohol of Wine.

The Reason of this Difference seems to be, that the Spirit of Vitriol is a highly fixed Acid, whereas the Spirit distilled from Nitre and common Salt is of a highly volatile and subtle Nature, for which Reason, there is a close Union between these Spirits and this volatile Salt; but its Union is less with a more fixed Acid. For the same Reason, if the Salt prepared of the Oil of Vitriol and the volatile Salt of Sal-Ammoniac is by a brisk Fire urged in a Glass Cucurbit, the volatile Salt flies off, and the Acid of the Vitriol is left; which, however, does not happen with the two forementioned Salts, which, when treated with a brisk Fire, fly totally off in the Air, and leave no Marks of themselves.

These neutral Salts, capable of a Solution in Alcohol of Wine, are of singular Efficacy, both in Medicine and Chymistry; for Nitre thus dissolved in my Bezoardic Spirit, my anodyne or camphorated Liquor, is an excellent Medicine for preventing and discussing internal Inflammations, and for duly expelling exanthematous Disorders.

'Tis also well known, that Nitre is excellent for discussing erysipelaceous Inflammations of the Skin, when mixed with camphorated Spirit of Wine, which is by itself too hot and burning. But as common Nitre is incapable of such an Union, hence the End may be most commodiously obtained by my volatile artificial Nitre.

As for the other Ammoniacal Salt dissolved in Spirit of Wine, it may be rendered a Stomachic Medicine of singular Efficacy, when 'tis invigorated by the Addition of a proper Quantity of the Spirit of Salt; for twenty or thirty Drops of it thus prepared, and exhibited in a proper Vehicle, are excellent for restoring a languid Appetite, resolving those Crudities which are the Causes of various Disorders, and may be properly used as a Succedaneum to the aperitive Tincture of *Meibius*, whose Virtues it in some Measure surpasses;

for 'tis sufficiently known that this Physician got a great deal of Money Means of his aperitive Tincture, which he prepared of rectified Spirit of Salt, somewhat corrected by the Addition of a proper Quantity of Salt of Tartar; for which Reason, its Virtues are derived partly from the subtle Spirit of the acid Salt, and partly from the neutral Salt produced from the Spirit of Salt and the Salt of Tartar. But since we, instead of Salt of Tartar, take the volatile Salt of Sal-Ammoniac, and since the Virtues of this Salt are far more efficacious in correcting the Disorders of the Stomach than those of common Salt, hence it follows that the Tincture prepared from it must be also more efficacious. But *Meibius*, in my Opinion, gave the Name of Tincture to this Liquor, because he tinged it with the Flowers of Daisies or Roses, in order the better to conceal the Secret.

That there are in Nature Salts of very different Kinds, is sufficiently known, since some are natural, and others artificial, some acid, and others alkaline, whilst others are of the neutral Kind. 'Tis also known, that the Effects of these are very different, and that they are all capable of being dissolved in Water, which is, as it were, their specific Menstruum; but at the same time, 'tis to be doubted whether many know that their Solution is very far from being equal; but widely different, since some are sooner and more quickly dissolved, and enter the Interstices of Water in a much larger Quantity, whilst others are dissolved slowly and with Difficulty, and are received into Water in smaller Quantities. Concerning this I made the following Experiments:

One medicinal Pint of Water quickly dissolves four Ounces and an half of common Salt, and one Pint common Measure dissolves six Ounces of it.

A medicinal Pint of Water, by sufficient Agitation, receives six Drams of Nitre, and the same Quantity of Vitriol is dissolved by the like Quantity of River Water.

Only two Ounces of Alum can be dissolved in one Medicinal Pint of Water, and, which is more surprizing, the same Quantity of the *Arcanum Duplicatum* can only be dissolved in the like Quantity of Water.

Among the Salts which are most easily dissolved, and with which the whole Water is, as it were, saturated, the most considerable is the artificial purgative *Epsom* Salt, which is quickly dissolved by an equal Quantity of Water; so that one medicinal Pint of River Water commodiously receives twelve Ounces of this Salt.

The Salt of Tartar, which is alkaline, is also easily dissolved, since one Pint of Water is capable of receiving almost nine Ounces of it. Tho' these Experiments may at first Sight appear trifling, yet they are of singular Importance in Chymistry, since from them we learn,

1^{mo}, How much Water is requisite to resolve and depurate these impure Salts.

2^{do}, From a Solution of common Salt, we learn, that there can be no saline Waters; sixteen Ounces of which can possibly contain more than six Ounces of Salt.

3^{io}, These Experiments, in a great Measure account for the Separation of Salts, when mixed with Waters of various Kinds. Thus, for Instance, if Alum is added to a Solution of Salt, by previous Boiling and Inspissation; the Alum is first separated in the Form of Crystals in the aqueous Menstruum, but the common Salt is left, which by continuing the Inspissation, may also at last be obtained in the Form of Crystals. The Reason of this is, because the Alum requires a greater Space in order to be contained in the Water than the common Salt. Hence this Space being lessened, it is forced to a Separation, and quits the Pores of the Water. Besides, 'tis known that common Salt almost always adheres to Nitre; but this Salt ought carefully to be separated from it, because it not only hinders its Inflammability, but resists the Separation of a laudable and good Aqua Fortis; for when a large Quantity of Salt adheres to the Nitre, an Aqua Regia is rather obtained, which dissolves Gold and not Silver. The Method of Separation is this. The Nitre is dissolved in a due Quantity of Water, and after gentle Boiling, the Vessel exposed to a moderately cold Air, by which Means the Nitre descends in form of pyramidal Crystals, whilst none of the Salt is precipitated. Afterwards, upon Inspissation and Crystallization, the Nitre is separated, and the common Salt remains in the rest of the Liquor. The Reason of this is to be deduced from the more easy Solution and Retention of the common Salt in the Water than of the Nitre.

'Tis sufficiently known that the *Arcanum Duplicatum* is prepared of Nitre and Vitriol, if these two Salts are duly calcined; nor do they however at all Times so closely unite with each other, as to form the *Sal Duplicatum*; but the vitriolic and nitrous Parts often remain separate. If therefore we would separate from these two Salts the *Arcanum Duplicatum*, which is a neutral Salt, the Lixivium duly boiled, must be subjected to Crystallization, by which Means the *Arcanum Duplicatum* is precipitated, whilst the

Vitriol and Nitre remain in the Lixivium; for from what has already been said, 'tis obvious that one medicinal Pint of Water can hardly contain an Ounce of this Salt.

410, If we intend to separate Salts of different Kinds from each other, this must be obtained by a Solution with Water: For those Salts which are copiously conveyed into the Pores of the Water are most speedily dissolved, whereas those which with Difficulty enter the Pores of the Water, require a longer Time for their Solution. Thus, for Instance, if we intend to separate the Arcanum Duplicatum, from another neutral Salt, such as Nitre or Vitriol; or Sal Ammoniac from common Salt or Nitre, we must pour common Water upon them, which imbibes the common Salt or Nitre, and leaves the Arcanum Duplicatum in the Bottom. In like manner, if we intend to separate the Arcanum Duplicatum, or vitriolated Tartar, from an alkaline Salt or Pot-ash, this End must be obtained by an Effusion of Water, which quickly dissolves the alkaline Salt, and leaves the Neutral. Thus also Alum is separated from Vitriol; for the latter is more quickly dissolved than the former.

510, Since there is no Phenomenon in Nature without its adequate Cause, the Reason why some Salts are more easily dissolved than others seems to be placed in the Water itself. The Salts which are most easily dissolved, seem to consist of highly subtle, much divided, and small Particles, whereas those which are with Difficulty dissolved consist of gross, coarse, firmly cohering, and consequently fixed terrestrial Parts; for the highly subtle and minute Particles are capable of entering the minute Pores and Interstices of the Water, from which the grosser Particles are excluded. From what has been said 'tis obvious that *Epsom* Salt is of a highly subtle Nature, because an Ounce of it is received by an Ounce of Water, which is very surprising, and seems hitherto to have been adverted to by none. Hence it also happens, that highly rectified Spirit of Wine, when poured upon a saturated Solution of this Kind, forthwith coagulates it into a firm and stable Mass, like Ice, because the rectified Spirit of Wine has an easy Access into the Water. Hence 'tis necessary that the solid Particles of the Salt, which, when joined together, form such a firm Mass, should be suddenly forced from the Pores of the Water. This Subtlety of *Epsom* Salt is owing to this; that there is a small Quantity of fixed Earth in it; for 'tis remarkable that this Salt, when mixed with Powder of Charcoal, and exposed to the Fire in a Crucible, is totally evaporated, and fills the Room with a sulphureous Smoke. This Salt also, in consequence of its Subtlety, is preferable to others for purging, because it insinuates itself more deeply into the intestinal Coats than any other Salt, such as the *Arcanum Duplicatum*, Nitre, or common Salt. And because common Salt is more subtle than Nitre, it is also more purgative. But a Solution of Alum is not to be procured without great Difficulty; for which Reason, on account of the large Quantity of Earth it contains, it braces up the Pores, and is of a more astringent Quality than Vitriol, because it contains a greater Quantity of Earth, as is obvious from Calcination, in which the Alum affords a greater Quantity of *Caput mortuum* than the Vitriol. Common Salt is, besides its Salubrity, excellently calculated for preserving Fleshes, and preventing Putrefaction, because it enters the Pores of the Fleish to be preserved, and extracts its Humidity, which cannot be so speedily done by other Salts: And on account of the Subtlety and easy Solution of *Epsom* Salt, I am apt to think that Bodies might be better preserved by it than by any other Salts. *Hoffman. Observat. Phys. Chym. Lib. 2. Obs. 5. & 6.*

OF THE CAUSTIC QUALITIES OF SALTS.

That the caustic and virulent Quality of Salts consists in the great Subtlety of their Parts, may at first appear a Paradox, tho' the Truth of the Observation is sufficiently evinced from the following Considerations. 'Tis an important Circumstance, both in Natural Philosophy and Chymistry, to know the various and surprising Natures of the Mixtures of Bodies, since from these arise the various Phenomena and different Operations of these Bodies. Thus, for Instance, tho' the *Pymont* Mineral Waters far exceed all others, in their penetrating and saline Taste, yet in twenty four Hours, if they are exposed to the free Air in a large Vessel, they lose all their Taste and Efficacy, and only resemble common Water, since all the saline, spirituous, and medicinal Parts are evaporated in the Air. 'Tis also to be observed, that if *Pymont* Water is subjected to Distillation in a close Vessel, the Vapour and Water distilled retain no Taste, nor is any Thing of a saline or vitriolic Nature to be found either in the *Caput Mortuum* or in the Water itself.

It may seem surprising, that so efficacious a Salt should thus vanish, and be evaporated. But our Surprise will cease, when we know from Chymistry and Natural Philosophy, that the

most acrid Salts, and even mild alkaline, and fixed acid Salts, when treated in the like Manner, are found to consist of a subtle, volatile and insipid Vapour. Thus quick Lime, by an Affusion of Water, acquires a highly acrid Taste, but by Boiling loses all its acrid Taste and Efficacy. This same quick Lime, with an Addition of Pot-ash, when dissolved and boiled in Water, and then inspissated, affords a Caustic so powerful, as by single Contact to corrode Leather, Paper, Cloths, and other Substances, and convert them into a kind of Mucilage. Notwithstanding this, if a few Ounces of this Salt, dissolved in Water, are boiled and, inspissated, and after the Addition of fresh Water, the Boiling and Inspissation frequently repeated, there at last remains a fourth Part of insipid Earth. The same happens to all fixed alkaline Salts, and to common Salt, which, if they are dissolved, boiled, coagulated, calcined, and afterwards dissolved and coagulated several Times, afford nothing but an insipid Earth.

But the Curious are not equally apprised of another Thing, which happens with respect to the Boiling of Salts, which is, if the Water, which is a Vehicle for the Elements and Seeds of the Salt, is not boiled by a gentle and gradually decreasing, but by a violent Fire, a fourth Part of the Salt is lost, and a great Part of it dissipated in the Air. Nor is it to be doubted but the like happens to vitriolated Tartar, and the *Arcanum Duplicatum*, if they are boiled by too strong a Fire.

'Tis also observable, that an acid Corrosive, if duly managed, degenerates into a similar insipid Matter. Thus Oil of Vitriol, which is a highly fixed and powerful Caustic, degenerates into a black and insipid Earth, and a somewhat acid Phlegm, of a sulphureous Smell. Now that the Oil of Vitriol is a highly concentrated and fixed Acid, is a Thing too well known to stand in need of a Demonstration; yet if this Oil is drawn from sulphureous Substances, whether of the vegetable or animal Kind, such as Opium, Orpiment and Antimony, this highly fixed and strong Acid is converted into an evaporable Smoke, of a highly volatile Nature, almost without any Degree of Acidity, and only leaves an inconsiderable Remainder of Acid in the *Caput Mortuum*. From these Experiments 'tis obvious, that this fixed Acid is compounded of very active and subtle Parts, which active and subtle Nature they immediately assume upon the Admixture of a small Quantity of any pinguous and sulphureous Body.

My Spirit, which, when poured into distilled Oils, produces a Flame, is so highly corrosive, as in a short Time to attack, corrode, and dissolve the most solid Metals, yet it is totally evaporated in the Air, and resolved into Smoke, which can hardly be contained in the closest Vessels; a sure Proof that it consists of highly subtle Parts.

Hence we can easily account for Glauber's Experiment, which is, that common Salt, by an Admixture of a due Quantity of Oil of Vitriol, is dissolved into a highly subtle Vapour, which fills the whole Room. But if this Smoke is concentrated and collected, it is an highly acid and corrosive Spirit.

If we consider Vegetables, we find large Numbers of them composed of highly subtle Parts, closely cohering with each other, whilst at the same Time they are possessed of singular Efficacy. This is sufficiently obvious from drastic Purgatives and Emetics, which exert their Efficacy by a highly subtle, acrid, and caustic Salt, such as White Hellebore and Asarabacca, which are possessed of a very drastic, purgative and emetic Quality, yet these, when infused in Water, and boiled for a considerable Time, lose all their drastic Quality. Tobacco is also a drastic Purgative and Emetic, and works in a very virulent Manner on the human Body; yet if it is boiled in a sufficient Quantity of Water, its drastic Quality is lost, and an Extract obtained from it, highly extol'd by some Physicians for its Efficacy in resolving viscid Humours, which so far injure Expectoration, as to threaten a Suffocation. Aloes, tho' not ranked among the Class of drastic Purgatives, yet purges so strong, and throws the Mass of Blood into so violent Commotions, that a few Grains of it are sufficient for a Dose; but if it is dissolved in River Water, and boil'd for a considerable Time, its cathartic Quality is so much impaired, that it is not in the least purgative, unless exhibited in a very large Dose. Scammony and Coloquintida may in like Manner be deprived of their purgative Quality by Boiling.

It may seem somewhat more difficult to deprive mineral Substances of their drastic, emetic and purgative Quality by Boiling. But the Truth of this is confirmed by the following Experiment. When in preparing emetic Tartar from *Crocus Metallorum* and Cream of Tartar, the Infusion is boiled long, we observe, that by this Means the Efficacy of the Medicine is greatly impaired, so that ten Grains of it must be exhibited for a Dose, whereas otherwise two or three are sufficient.

All these Experiments sufficiently evince, that not only the Acrimony of Salts, but also the virulent and drastic Qualities of other Bodies, are to be ascribed to their highly subtle and moveable

moveable Parts, which, when closely joined, exert a corrosive and acrid Virtue, which the Air, Water, and Heat destroy, by disjoining them; nor is it surprising that Salts consist of highly subtile Parts, because the more subtile any Body is, the quicker Motion it receives and propagates, as is observable in the Æther, the Air and Water.

But the Corrosion and Dissolution of Bodies by Salts are produced by the intense Motion of their Parts, as is obvious from their Effects. The more concentrated therefore the moving Force is, the more conspicuous and noble is the Effect. Thus the fuming concentrated Spirit corrodes more powerfully than the Spirit of Salt, which again is more corrosive than Oil of Vitriol, because the Spirit of Nitre consists of more subtile Parts than the Spirit of Salt, and the Spirit of Salt of more subtile Parts than Oil of Vitriol.

From all these Considerations, we may conclude, that all Salts are made up of a subtile, penetrating, and, as it were, ætherial Matter, and that their Parts, when joined with the Earth, as a Kind of Cement, are of a highly acrid and corrosive Quality, but when disjoined and separated, totally destitute of Virtue and Efficacy. This may be excellently illustrated by a Burning-glass; for, as by its Means the Rays of Light, when much concentrated, produce an intense Heat; so when they are more diffused, they operate in a proportionably more languid and faint Manner. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 15.*

SAL ACIDUM. An acid Salt. See ACIDA.

SAL ALEMBROT. See ALEMBROT. *Schroder* describes the Preparation of a *Sal Alembrot*, thus:

Take of common Salt, Sal Gem, and alkaline Salt, each an Ounce; make a Lixivium with the Juices of Mint, and Clove-Gilly-Flowers each two Ounces, and two Pints of Fountain Water; filter and coagulate.

SAL ALCALI, or ALKALI. See ALCALI.

SAL AMMONIACUM. See AMMONIACUM.

SAL ANATRON. See NITRUM.

SAL ANIMALIUM. Animal Salt. See ALCALI.

SAL CATHARTICUM AMARUM. The bitter purging Salt, commonly called *Epsom Sal*. This was first made by Dr. Grew, by evaporating the *Epsom* Waters. Some Years after, several other bitter purging Springs were found in different Counties, and Salts in small Quantities were boiled up from them, but from no Place, nor all the Places put together, in such large Quantities, as from the Springs on one Side of *Shooter's Hill* in *Kent*, about the Year 1700, which were then in the Possession of those two ingenious Chymists, Mr. George and Mr. Francis Mault, and where they made such large Apparatus for evaporating the Water, that they have sometimes boiled down 200 Barrels in a Week, from which, in a dry Season, and when the Land Waters did not get into their Drains, they have obtained 224 Pounds of Salt. After these Works had gone on some time, Dr. Høy found out a more expeditious Way of making a purging Salt, so nearly resembling that from the purging Springs, in all its Properties, that it soon passed on the World for the other, and continued so to do. The great Consumption of these Salts (which then went only by the Name of *Epsom Salts*) as well at home as abroad, engaged some of our Physicians (many Years before M. Bolduc took Notice of it) to suspect, that even what was made at *Shooter's Hill* was spurious, and received an Addition of something to increase the Quantity. But these Suspicions, I dare positively affirm, were entirely groundless, as to the Salts made there, and readily believe the same of any other Place, where the Spring Waters were boiled down for Salt. But upon a Consideration, that there were greater Quantities of this Salt consumed than all the Places where the Waters were boiled could produce, which was the real Fact at that Time of Day, there was sufficient Room to suspect that some of them were not genuine, as appeared to be true some time after. For the Secret, which was then in a few Hands, of making these Salts cheap, gave those who had it an Opportunity of underselling those who made it from the Waters, and, in a Year or two, rendered them incapable of making it to any Advantage: So that the Work on *Shooter's Hill* was thrown up; and I believe there has not been 100 Pound of Salt made from the Waters since that Time in any Part of the Kingdom.

Some Time before this Work at *Shooter's Hill* was broke up, some Pairs were taken to discover the Secret those had, who sold the Salt so cheap; and upon examining the several Salts, that were sold about Town, those disposed of by Mr. G. and F. Mault, were certainly genuine, and were therefore a proper Standard to judge of the rest by. But from all the Experiments then made, there could no material Difference be found between the Salt made from the Waters, and that made by them who were in the Secret. There was indeed a

Salt sold by some, which, in the Course of those Trials, was found to be a *Sal mirabile*, made from the *Oleum Vitrioli* and common Salt, but shot into such small Crystals, as not at first Sight to be distinguished from the other. Necessity being Mother of Invention, it was not long before it was discovered, and the Experiment was tried at the Lady Carrington's Salt-Works near *Portsmouth*; where it was found the same Thing could be done, as at another Work not far from it, and in which Dr. Høy had been concerned. It was some Years after this Salt had been made at *Portsmouth*, before the Salt-Makers at *Lemington* attempted, or indeed knew the Method of making it, who are now the greatest Traders in it, and have sent several Ton in a Year to *London*, besides what has been directly exported from thence.

I remember it to have been the Opinion of the Proprietors of the Salterns near *Portsmouth*, that this purging Salt could not be made at any other Salt-Works except theirs, and that the bitter Taste in the Salt was communicated from the Earth to the Sea-Water, whilst it stood exposed in their Sun-Pans. But Time has proved this Opinion false; for besides what has been said of its being made at *Lemington*, it was about four or five Years ago begun to be made near *Newcastle*, where it is still continued to be made, and doubtless may be made at any Salt-Works, where the common Salt is made from Sea-Water by Evaporation. Whether any Thing of this Kind has been attempted at any of our Inland Salt-Springs, either in *Cheshire* or *Worcestershire*, I am not yet satisfied. There is some Difference in the making the common Salt in *Hampshire*, from that about *Newcastle*: At the first of these Places, in the Beginning of the Summer, at Spring Tides, or at New and Full Moon, the Sea-Water is let into their feeding Ponds, which are their Reservoirs for their Summer's Working; and from hence is conveyed into small square Pans, and again, after some time, from these it is conveyed into larger Pans, or Beds, which they call Brine or Sun Pans, all which are made of Sea-mud and Earth. In these last Pans, or Beds, it lies exposed to the Sun and Wind, in order to exhale the weakest Waters; and it is in these Beds, if the Weather prove very favourable, that they can make as good Bay Salt as any we have from *France*; and at such a Time they never bring their Brine to the Boilers. But if the Weather is not hot enough for that Purpose, their Brine is exposed so long in these Pans, till it becomes of such a Strength as to support their Eggs made of Glass or Wax, to a certain Height above the Surface of the Brine, which from thence is conveyed into large Stone Cisterns, and then into Boiling Pans made of Iron, where it is boiled down (after having been frequently cummed) to a Sea-Salt. 'Tis observable, that whilst the Brine is boiling, there precipitates a hard crusty Matter, which is partly taken out by Vessels placed in proper Parts of the Pan for that Purpose, and Part of it fixed on the Bottom of the Pan so hard, as to be afterwards dug off, and this the Workmen call *Scratch*, and is what Dr. Collins, concerning the Sea-Water boiled at *Shields*, calls a Stone Powder. When the Operation for the Sea-Salt is finished, it is taken out hot, and put into wooden Troughs, with Holes at the Bottom, through which runs the superfluous Liquor: Under these Troughs are set other Vessels (with Sticks fixed in them in a perpendicular Posture) to receive what runs through. In these Vessels the Liquor is suffered to continue some time, and according to the Quantity of Sea-Salt still left in it, will crystallize to the Sticks, something like Sugar-candy, but in much larger Shoots; and this they call Cat-Salt, or Salt-Cats, and it holds some Share of the bitter Salt. When this Salt is broken small, or rather powdered, it is so white, that some Gentlemen choose it for their Tables; but the greatest Consumption of it is among the Cake Soap-boilers. The Liquor that will not shoot to these Sticks, is what, at these Works, they call the *Bittern*, fit for making the *Sal Catharticum*.

Near *Newcastle*, their Method is to receive the Sea-Water into their Reservoirs at High Water, at any Time of the Moon; if there be no Fresh in the River, occasioned by Rain in the higher Country; and from these Reservoirs, without exposing of it in Beds, as at *Lemington*, they pump it into their Boiling-Pans, where evaporating it almost to a Pellicle, they fill it up again eight or nine Times, and then waste it with a gentle Heat for the common or Sea-Salt. The Liquor that runs from this Salt, when taken out, and put into proper Vessels, is what they call the *Bittern*, which, if it stands some Time in those Vessels, a Salt will shoot and crystallize to the Sides, in Taste pretty much like Sea-Salt, but with a Share of Bitterness, and seems to answer to the Cat-Salt of the *Lemington* Works, and very probably would shoot after the same Manner, if they made Use of the same Apparatus.

I could not but mention this general and loose Account of making the common Salt, as necessary to introduce the Liquor called *Bittern*, which, before Dr. Høy found out an Use for it, was always flung away; being so different in its Properties from

from the Brine made use of to produce the Sea-Salt, that it would not boil up into the Operator, to determine the Time when to take out the Sea-Salt from the Pans, before the Bittern incorporated with it, which would otherwise spoil the whole Making.

The Bittern at *Lemington* (as observed before) not shooting to the Sticks, is carried by Channels into Pits made tight with Clay, where it stands for some Months, and there will shoot again. What Liquor remains is boiled down, till it is observed to be in a Disposition to crystallize, and then is conveyed into wooden Coolers lined with Lead. The Liquor, which will not shoot there, is boiled down after the same Manner, in order for another Crystallization. By this Time the Liquor seems to have altered its Property, and becomes of a very pungent biting Taste, and, if boiled down, will not longer shoot into Crystals, as before, but precipitates, during the Boiling, a small grained Salt; and if you should continue to boil down the Liquor, separated from this Salt, each Quantity of Salt thus produced will be still more pungent than the other. If you boil down the whole Quantity of this Liquor, it will produce a Salt, which, if exposed to the Air, will run *per Deliquium*. The Liquor that produces this Salt is always flung away wherever the *Sal Catharticum* is made.

This is what at present I can give no other Name to, than a third Salt produced from the Sea-Water, differing, in some Respects, as much from the other two, as they differ from one another.

To return to the several Crystallizations, such as mentioned to be shot from the Bittern, these will be of different Sizes, as to their Figures, and hold some Share of the third Salt, but now taken Notice of, which makes them subject to give and dissolve; nor is their Taste come yet to that simple Bitter of the pure Salt. These therefore are either separately, or altogether, to be flung into a Copper, with as much common Water as is sufficient to dissolve them, and allow of a gentle Evaporation, till they are again ready to be poured into the Coolers, in order for Crystallization. This generally proves to be the pure *Sal Catharticum*, thoroughly freed (as far as the Experiment I have tried can be convincive) from either a Sea-Salt, or the third Salt. The Liquor decanted from this Shooting may be boiled down again, in order for a second Shooting, and after that a third; but as the Liquors from these Shootings are boiled away more or less, so you will sooner or later meet with the pungent Liquor, which contains the third Salt, as you did in the former Shootings from the Bittern, from which the pure *Sal Catharticum* is as necessarily required to be freed as from the common Salt; a Proof of which cannot be better determined than by one of the Experiments to be taken Notice of hereafter, *viz.* that with the *Oleum Vitrioli*, which will certainly ferment with this Salt, if the Sea-Salt has not been well separated from it, or if it still holds some of the third Salt. And when any of the Crystallizations will not stand the Test of this Experiment, they ought to be dissolved and shot again, as before, by which Means the pure Salt is to be obtained. I do not mention this as a Trial made Use of at the Salt-Works, but what I have by Experience found to be true. And the same Experiment will serve to distinguish a *Sal mirabile* made at these Works, from that made with Oil of Vitriol and common Salt. The Account they give of it is this: They take any Quantity of coarser grained Crystals boiled from the Bittern, which, when dissolved and evaporated, more than they would otherwise do for making the *Sal Catharticum*, they throw into a Wooden Bowl, with some Oil of Vitriol, where it stands for ten Days, and shoots into large Crystals, transparent, and like the *Sal mirabile*. But as this Salt, by this Method, is not sufficiently satiated with the Oil of Vitriol, (if they use any) so it is easily discovered by the Oil of Vitriol, which will readily ferment with it; whereas it has no Effect on the other *Sal mirabile* made as above.

By the Assistance of *Robert Cay*, Esquire, at *Newcastle*, I have received the several Shootings of Salts from their Bittern, as also some of the Bittern itself; from which I have obtained a pure *Sal Catharticum*, as also the like Kind of third Salt, as mentioned from the *Lemington* Bittern. The Method I took for doing it is agreeable to that I have already mentioned, and many Years ago tried at the Salt-Works near *Portsmouth*. It is by Mr. *Cay* that I am informed they sometimes boil their Bittern, without letting it stand any Time to shoot of itself. The Difference is not very material.

If this Account be intelligible, what the *Sal Catharticum* is, will no longer be a Mystery, and the next Thing worth the enquiring into will be, whether this Salt deserves the Reflections that have discouraged the Prescription of it? And why it may not pass for a Salt as excellent in its Kind, and be of the same Nature, and have the same Properties, as that produced from the *Epsom*, or any other bitter purging Springs? Dr. *Grew*, in his Treatise, *de Natura Salis Cathart. Amari*,

Cap. 2. says, that in the Evaporation of any of the bitter purging Waters, they yield a Cream at Top, as also a Sediment, both together weighing six, eight or ten Drams, from a Gallon of Water; and that the lesser Part of this Sediment is, in Substance, the same with the Cream; the rest is all Salt, but consists of two Sorts, one a muriatic Salt, the which is proper or peculiar to these Waters. In the *Epsom* Water, the muriatic Salt is about a twentieth Part of the saline Mixture; in the *Dulwich* it is in greater Proportion, and the same in several others; it is both in its acrimonious Taste, and Figure of its Crystals, not unlike to common Salt. The other Salt is that which he says is particular or proper to the purging Waters, and is made by Evaporation and Crystallization. In this Preparation, first the earthy or plaistery Part is to be separated, next the muriatic Salt, and lastly a brown and dark Liquor from the proper Salt of the Waters. And in the fourth Chapter of the same Part, having shewn the Difference of the Figure betwixt the Crystals of this Salt and those of Alum, he goes on, Neither is there any better Ground to account the purging Salt a Species of common Salt, from which being perfectly freed, it differs as much in Taste as from Alum. And in the same Chapter, he says it will appear, the bitter purging Salt, altho' it hath some Qualities in common with other Salts, yet is truly, or specifically different from them all. Thus far Dr. *Grew*.

Now I cannot see any thing in this Account, but what will, considering all things, very well agree with the Purging Salt from the Sea-Water: For, first, there is an earthy or plaistery Part contained in these Waters, and this must be separated. The very same is in the Sea-Water, and is precipitated in the boiling them down, as has been observed, and by the Operators is called *Scratch*. Next there is a muriatic Salt allowed to be in these Waters; in some more, in some less; and this is also to be separated. The very same is done from the Sea-Water, tho' in a vastly larger Proportion. And lastly, there is a black and dark Liquor to be separated. Tho' this is but an obscure Way which the Doctor makes use of to express himself, it cannot be better explained than by what has been found to be fact in boiling down the Waters at *Shooter's Hill*: That after several Shootings of Salts, by repeating the Boilings of the Waters, there would at last remain a Liquor of a deep brown Colour, which would no longer yield a crystallized Salt; but if boiled up dry, would afford a Salt of the same kind with the third Salt already mentioned. And this explaining Dr. *Grew's* black and dark Liquor, helps at the same time to prove, in this Article too, that the Sea-Water affords the same kind of third Salt. I have tried several of the Experiments mentioned by the Doctor, by which he distinguishes his Salt from other Salts. Such as not affecting the Colour of Syrup of Violets; Curdling of Milk when boiled; in the Figure of its Crystals; in its easy Dissolution in the same Quantity of Water; in its coagulating with the Oil of Tartar *per Deliquium*, in its Calcination; and in the Bitterness of its Taste, as well before as after Calcination, &c. and find this Salt thus separated from the Sea-Water answer to all the Trials. Some few Experiments, that the Doctor has not taken notice of, I shall here subjoin, and then leave the whole to the Opinion of better Judges, whether there is any specifical Difference between those two Salts.

In order to have a Standard for these Experiments, I purposely got Mr. *Hyet*, Apothecary at *Epsom*, (whose Fidelity I could depend on) to boil me down some of their Waters; which he did from the Well in the Town, and sent me a sufficient Quantity of the Salts, to answer the Purpose I wanted them for. I procured, also, some of the first Salts from the *Lemington* Bittern: These do not hold so much of what I have already distinguished by the Name of the third Salt, as I find the *Newcastle* Salts do. This *Lemington* Salt, I (for Distinction-sake) call the first *Lemington* Salt. Part of this I dissolved, and shot into pure *Sal Catharticum*, being freed as well from the Sea-Salt, as the third Salt; and this I call the second *Lemington* Salt. I procured, also, from *Newcastle* the first Salt shot from their Bittern, which I call the first *Newcastle* Salt. Part of these I dissolved and shot, and obtained a pure *Sal Catharticum*; and this is what I call the second *Newcastle* Salt. I am obliged to make use of the *Sal Mirabile*, made from Oil of Vitriol, and common Salt, that having been taken for the *Sal Catharticum*, as also common Salt, that having been represented as the principal Substance of the *Sal Catharticum*.

I took half an Ounce of each of these Salts, and dissolved them in about two Ounces of Water to each half Ounce of Salt. A small Quantity of each Dissolution I poured into as many Glasses, and dropped into them all some Butter of Antimony. The Precipitation that followed, seemed to be alike in them all; and upon dropping a little Oil of Vitriol into each, what was precipitated being more powerfully attracted by the Oil, the several Liquors became clear. These are the

two only Experiments in which I found the Consequences so much alike in them all.

In the following Experiments, the *Sal Mirabile* is sufficiently distinguished from all the rest. Slices of Gall cut into these several Solutions have no manner of Effect upon any, except that of the *Sal Mirabile*, which is soon tinged of the Colour of Sack, or rather deeper. Spirit of Sal Ammoniac, with Tartar dropped into the several Solutions, turns them all milky, except that of the *Sal Mirabile*, which keeps its Transparency. The Spirit of Sal Ammoniac with Lime, the Oil of Tartar per Deliquium, the Tincture of Cochineal prepared with Spirits of Wine do every one, used after the same manner, sufficiently distinguish the *Sal Mirabile* from all the rest.

In the following Experiments, the *Epsom* Salt, the second *Lemington* Salt, and second *Newcastle* Salt, agree together, and differ from the common Salt, the first *Lemington* Salt, and the first *Newcastle* Salt. In the several Solutions I dropped a Solution of Silver in Aqua Fortis, from which followed these Consequences. The Solutions of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, became equally milky, before the Precipitation. The Solution of the Sea-Salt, and first *Newcastle* Salt, let the Precipitation pass without receiving any milky Tinge. The first *Lemington* Salt, as holding less of the third Salt than the first *Newcastle* did, took a little milky Tinge. The Precipitation fell nimbly through the Solution of the *Sal Mirabile*, leaving it milky.

In the Condition these were in, I poured some Oil of Tartar per Deliquium to each of them; on which, after some time, a blueish Scum arose on the Surfaces of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt. There also appeared a little on the first *Lemington* Salt, but not on the rest.

A Solution of corrosive Sublimate was made in Water, ten Drops of which, mixed with the several Solutions, produced little or no Alteration; but upon dropping in the Oil of Tartar per Deliquium, the following Appearances were produced: In the Solution of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, the Precipitations were red; in the Solution of the common Salt, and first *Newcastle* Salt, the Precipitations were white; in the Solutions of the first *Lemington* Salt, the Particles precipitated approached pretty near the Colour of the three first.

I took some of these several Salts in Substance, and to each of them poured a little Oil of Vitriol, which is one of the Experiments Dr. Grew tried upon his Salt; and which he says causes a moderate Ebullition, whereby it appears to partake of an alkaline Principle: But without looking for this alkaline principle from its fermenting with an Acid, (Terms justly exploded by the learned Dr. Freind in his *Prælectiones Chymicæ*) I am inclined to believe, that the Salt in which he tried the Experiment had not, according to his own Directions, been thoroughly separated from his muriatic Salt. For this Oil poured on the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, produced no sensible Fermentation. On the Sea-salt it acts with Violence, forcing off its acid Spirit with an insufferable Gas. The same Effect in Proportion it had on the first *Lemington* Salt; none at all on the *Sal Mirabile*, as being a Sea-salt already fatiated with the Oil.

What I have all along called the third Salt, answers in most of these Experiments to the Sea-salt, and yet has some Properties exceedingly different from it; to those I have mentioned, these may be added; it will decrepitate like Sea-salt; it readily melts, when put in a Crucible in the Fire; and when calcined till red-hot, affords a Calx equal to, if not stronger than, a Lime-stone, and ferments violently, as well with Water as with Oil of Vitriol. This Calx, when exposed to a moist Air, will Part of it run per Deliquium; but not so soon as before Calcination. All these Properties differ in every respect from the common Salt, and leave me still in doubt what to call it, as also how far Experiments of this kind may be deemed conclusive. By Mr. John Brown Chymist, in the *Philosophical Transactions abridg'd*, Vol. VIII. P. 730.

THE METHOD OF PRESCRIBING THE BITTER PURGING SALT.

It may be taken in any Liquor agreeable to the Patient's Constitution or Palate. I often use the following Method:

Take of Spring-Water, two Quarts; Mace, a Dram; boil them a little, and in the Liquor dissolve such a Quantity of the bitter Purging Salt, as may be agreeable to the Constitution and Disease of the Patient; for an Apozem, to be drank hot, warm, or sometimes cold, in the

Morning fasting, in the Space of two Hours, with a little Exercise. This Apozem may be either taken by itself, or in the Working of other Physic.

The Operation of the Salt may be quickened by the Addition of Sena and Manna in the following Manner:

Take two Quarts of Spring-Water; Mace, a Dram, *Alexandrian* Sena, two Drams or three; boil them a little; and then add an Ounce of the Salt; an Ounce and half or two Ounces of the best *Calabrian* Manna; and run the Liquor through a Sieve.

The Salt may also be safely taken thus:

Take three Pints and a half of Spring-Water; of the bitter purging Salt an Ounce, or ten Drams. Mix them, and when the Water boils, pour upon it half a Pint of new Milk, and strain the Liquor from the Curd.

The most proper Vehicle for this Salt in Summer is the *Tunbridge*, or any other chalybeate Water. For instance a Dram or a Dram and half of this Salt, taken in the first three or four Draughts of *Tunbridge* Water, and repeated for some Mornings, prepares the Humours, and clears the Way for the intended Course. The chalybeate Waters do sometimes bind; which Inconvenience is remedied, by putting a little of this Salt into the first or last Glafs.

Every Draught of the Purging Waters themselves may be, also, usefully impregnated with a Dram of the Purging Salt; three Drams or half an Ounce of which is also extremely proper for sharpening Clysters.

TO QUICKEN A DECAYED APPETITE.

Take a Flask of Spaw-Water, or a Quart or three Pints of any other chalybeate Water; or if not to be had, of maced Water; of the bitter Purging Salt, half an Ounce, six Drams, or an Ounce; mix and drink them fasting.

TO STAY VOMITINGS.

Take of any chalybeate Water, three Pints or two Quarts; or instead thereof maced Water; of the bitter Purging Salt, six Drams, an Ounce, or ten Drams; mix them, and drink them fasting warm or cold. Repeat them thrice either every Day or every other Day.

IN THE PAIN OF THE STOMACH.

Take of the best Sena, two Drams; Mace, a Dram; boil them in a sufficient Quantity of Spring-Water, to three Pints or two Quarts; and to the strained Liquor, add six Drams, an Ounce, or ten Drams of the bitter purging Salt; of the Syrup of Steel, an Ounce and half; for a purging Apozem to be drank in the Morning after the usual Manner. Or it may be made without Sena.

IN THE HYPOCHONDRIACAL AFFECTION WITH HEAT.

Take of any chalybeate Water a Quart, three Pints, or two Quarts; dissolve in each Draught half a Dram, or a Dram of the bitter Purging Salt; drink it at seven or eight Draughts cold. Or instead of Chalybeate Waters, it may be taken in simple Milk-Water, or distilled from the Leaves of Borage and Burnet. The Salt may be, also, successively taken in this Manner for the Heart-burn.

IN THE COLIC.

Take of Spring or River Water seasoned with Mace, three Pints and a half; Chamomile Flower Water, or Mint Water, six Ounces; the bitter Purging Salt, an Ounce or ten Drams; Manna, an Ounce and half or two Ounces. Mix them for an Apozem. Let the Patient take about half a Wine-Pint at a Draught hot, and all of it in an Hour, or an Hour and half, altho' he should vomit some Part of it. A Spoonful or two of the Tinctura Sacra may be taken before every Draught of the Apozem.

IN THE WORMS.

Mix a Dram or a Dram and half of the Salt with any Food commonly made for Children, without Milk.

IN NEPHRITIC PAINS.

Take of Chamomile Flowers, a Handful; Cumine Seeds, sweet Fenil Seeds, and Parsley Seeds, all bruised, of each an Ounce; Marsh-mallow Root sliced and bruised, two Ounces: Boil them in a sufficient Quantity of fair Water. To the strained Liquor add half an Ounce of Turpentine, dissolved in the Yolk of an Egg; of the bitter Purging Salt, half an Ounce; and Syrup of Marsh-mallows, three Ounces; mix them for a Clyster. If the Pains are very great, add to the Clyster forty or fifty Drops of cydoniated Liquid Laudanum.

If the Pains still continue, Recourse must be had to the following Apozem:

Take of the Decoction of Pearl Barley, seasoned with Mace, three Pints, or two Quarts; six Drams, or an Ounce, of the bitter Purging Salt; Syrup of Marsh-mallows, three or four Ounces: Mix them for an Apozem, to be taken hot, in an Hour, an Hour and half, or two Hours, although the Patient should vomit Part of it.

This Apozem may also be used successfully in an ISCHURY or HEAT OF URINE.

IN A DIABETES.

By this Salt, or the Waters, in conjunction with the constant Use of Chalybeate Waters, and Hypnotics, I have restored some, but indeed young Patients to perfect Health.

IN THE JAUNDICE.

In any Sort of Jaundice, with or without Stones in the Gall, the Purging Water or its Salt is very properly given in the following or other like manner:

Take of Pilula Ruffi, half a Dram; Rhubarb, and volatile Salt of Urine, each half a Scruple; Syrup of Wormwood enough to make them into six Pills to be taken going to Bed. In the Morning following let the Patient drink this Apozem.

Take two Ounces of the Shavings of Harts-Horn; boil them in three Quarts of Spring-Water, to two: Then add Mace and Turmeric, each a Dram; and having boiled them a little, dissolve in the strained Liquor the bitter Purging Salt, and Syrup of Steel, of each an Ounce; for an Apozem to be drank as usually.

IN MADNESS.

To quicken the Operation of purging Medicines, use the following Apozem:

Take of the Leaves of Baum and Borage, each a Handful; infuse them in two Quarts or five Pints of boiled Spring-Water while it is hot, and let them stand in a Vessel well covered for half an Hour. Add to the strained Infusion an Ounce or ten Drams of the bitter Purging Salt; of the Syrup of Violets, three Ounces. Mix them for an Apozem to be drank by itself, or with any convenient Purge instead of Posset-Drink. Or,

Take an Ounce of the bitter Purging Salt; dissolve a Dram in a Draught of any chalybeate Water, and let the Patient drink eight such Draughts.

The same Water or Salt may also be taken usefully in the Intervals of other Purgations.

IN THE HEAD-ACH.

After Bleeding, and (if necessary) Vomiting, exhibit the following Medicines:

Take prepared Scammony, powdered Rhubarb, and Mercurius Dulcis, of each ten, twelve, or fourteen Grains; Syrup of Buck-Thorn, enough to make them into five Pills, to be taken at four or five o'Clock in the Morning, and let the Patient sleep upon it. After three Hours let him drink this Apozem.

Take of Spring-Water seasoned with Mace, three Pints or two Quarts; of the bitter Purging Salts, six Drams

or an Ounce; Syrup of Violets, two Ounces. Mix and let the Patient take them by convenient Draughts, being kept warm in the Working.

Let the Pills and Apozem be repeated every third and fourth Day, and the Apozem by itself on the intervening Days, continuing this Course, if necessary, for a Fortnight or three Weeks.

IN THE MEGRIM.

With other proper Remedies, use the following:

Take of Pilula Mastichina, two Scruples; Chymical Oil of Marjoram five Drops: Mix and take them going to Bed. Next Morning drink this Apozem.

Take of Spring-Water seasoned with Mace, a Quart, or three Pints; the Water of Sage of Virtue, four Ounces; sweet Marjoram Water, two Ounces; the bitter Purging Salt, six Drams; mix and take them in the usual manner.

IN FITS OF THE MOTHER.

If a temperate Purge be necessary, use the Purging Salt dissolved in Spaw-Water, or that of Baum.

IN THE WANDERING GOUT.

The Purging Waters or their Salt may be taken, with other proper Remedies, in the following manner.

Take of the Powder of resinous Jalap, half a Dram; of prepared Scammony, six Grains; Calomel, half a Scruple; Syrup of Buck-Thorn, enough to make a Bolus, to be taken at five in the Morning, the Patient sleeping upon it. After three Hours let him drink this Apozem.

Take of Pearl-Barley, an Ounce and half; Currants, three Ounces; boil them in Spring-Water, to two Pints and a half; adding, towards the End of the Boiling, half a Dram of Mace; in the strained Liquor, dissolve an Ounce of the bitter Purging Salt, and half an Ounce, an Ounce, or an Ounce and half of the best Manna, for an Apozem.

If the Patient is not easily wrought upon, let him take six Drams, or an Ounce of the Syrup of Buck-Thorn in the first Draught: And let the Bolus be repeated with this or the like Apozem, every other, or third, or fourth Day.

This Apozem is also excellent in some Sorts of Itch, not that which is contagious, but in that which proceeds from the Scurvy. It is likewise beneficial after the Small-Pox is shelled off, and with most Purges in the Room of Posset-Drink.

Those who on a long Journey, especially in Summer, are usually costive, by two or three Drams of this Salt taken in a Draught or two of Spring-Water, will hereby keep themselves soluble and very cool.

DISEASES IN WHICH THE BITTER WATERS AND THEIR SALTS MAY BE PREJUDICIAL.

In all Dropsies; in a continual Fever; in an Ague; the Green-Sickness; Spitting of Blood; Cholera Morbus; and the Palsy. Nor are they to be allowed to Women with Child, without great Circumspection.

They may also prove hurtful in a Suppression of Urine, which depends upon an Ulcer in the Bladder, or a Stone too big to pass; in either of which Cases the Patient is to abstain from all Diuretics. But otherwise I have often given this Medicine successfully; that is to say, in bringing away the Urine, and Stones with it not of the least Size. *Grew on the Bitter Purging Salt.*

SAL CATHARTICUS HISPANICUS.

This is a Salt produced near *Madrid* from the Waters of a certain Spring, which spontaneously form themselves in Crystals. It is a Salt of the neutral Kind, and in Properties exactly agrees with *Glauber's Salt*; and 'tis even observed to purge more gently, surely and copiously than *Epsom Salt*. *M. Bartlet. Mem. del Acad. Royal, An. 1724.*

SAL SEDATIVUM; Sedative Salt.

This Salt invented by Mr. *Hamburg* is a perfect *Sal Salsum*, which arises in the Form of Flowers, or a Kind of white, light, dry Species of Meal; in the Distillation of a Solution of Borax and Oil of Vitriol, which contains a very strong Acid. It neither alters the Colour of the Juice of Violets, nor acts sensibly on the Solution of corrosive Sublimate, nor upon the Solution

Solution of Mercury by the Spirit of Nitre; it is a Salt very useful in Medicine, tho' it is only sedative, that is, tho' it only alleviates the violent Paroxysms of Fevers for six or seven Hours, during which Time the Physician may prescribe more efficacious Medicines, which could not have been otherwise used. *Hist. de l'Acad. Royal, An. 1732.*

SAL POLYCHRESTUM DE SEIGNETTE. This Salt, which has been used in Medicine for many Years, takes its Name from Mr. *Seignette* a Physician of *Rochele*, who invented it, and during his Life kept it a Secret, which he only transmitted to his Children, who in their Turn kept the Secret so inviolably that no Chymists have hitherto been able certainly to discover the Mystery, some taking it for one, and some for another Thing.

The great Reputation of this Medicine, from its first Discovery to our present Times, induced Mr. *Boulduc* to attempt a Discovery of its Composition.

The first Experiment, says that Author, which I made with this Salt, was to put some of it upon a live Coal, upon which it became fused, bubbled, yielded a Smoke, and at last left a Coal-like Matter. But among all these Effects, what most engrossed my Attention was the Smell exhaled from it, which could not well be mistaken by Chymists, since it was the same with that of Tartar, or Cream of Tartar, which do not differ from each other. I did not confine myself to the Fusion and boiling of this Salt upon the Coals, because these are Properties common to many Salts; but tasting the Coal which remained, after all the Smoke was evaporated, I found that it made nearly the same Impression on my Tongue with fixed and lixivial Salts.

These two Properties, the Smell of burnt Tartar, and the lixivial Taste, joined to its easy Solution in cold Water, made me at first suspect that it might possibly approach to the Nature of soluble Tartar. But not satisfied with this Proof, which to me appeared superficial, I proceeded to Distillation. Two Ounces therefore of this Salt, pushed by the Fire in a Retort, yielded a sufficiently clear Liquor, with a black Oil floating on its Surface. Upon examining both, I found the Liquor to be the Spirit of Tartar, and the Oil was what we call the empyreumatic or fetid Oil of Tartar. Then I distilled two Ounces of soluble Tartar, and the Produce was the same as in the preceding Distillation.

Hitherto I thought I had Reason to believe, that the Salt of Mr. *Seignette*, and soluble Tartar, were one and the same Thing, but at last some Circumstances made me suspect that they were different.

After the two Distillations now mentioned, I viewed the Residuum which to me appeared the same, since they were both a black, Coal-like, porous and rarified Matter, which I took for a calcined Tartar, and from which I could only obtain a fixed alkaline Salt. Accordingly, upon pouring Spirit of Nitre upon both, they both produced a Fermentation; however, the Residuum of the soluble Tartar apparently fermented much more briskly than that of Mr. *Seignette's* Salt, and carrying my Researches farther, I calcined both Residuums in an open Fire, and after having dissolved them in Water, and filtrated them, I found in the Residuum of the soluble Tartar, a Taste simply lixivial, and upon the Filter a kind of Ashes. But the Lixivium of Mr. *Seignette's* Salt had some Smell resembling that of a rotten Egg; and when filtrated, had not the Colour of Water like that of the soluble Tartar, but a blueish Colour. Upon pouring distilled Vinegar upon this Solution, the Liquor became turbid, and after some Time, precipitated a white and apparently sulphureous Matter.

But after all these Experiments, there was nothing certain to distinguish Mr. *Seignette's* Salt from the common soluble Tartar; and tho' I have had frequent Opportunities of conversing with the two Mr. *Geoffroy*s, who frankly communicated their Sentiments on this Subject to me, I confess I always remained uncertain as to the Matter of which this Salt consisted, and for ought I know, might have done so all my Life, if my Friend Mr. *Grosse* had not one Day opened my Eyes, by communicating to me what he had observed in making Experiments on the Salt of Kali; for he shewed me a Salt which gradually separated or subsided from a Solution of that Substance, and which, tho' in Figure it resembled *Glauber's* Salt, yet it fermented with all Acids, and especially very briskly with mineral Acids, but more slowly with vegetable Acids, such as Lemon Juice, Vinegar, and some others, and most faintly of all with Cream of Tartar. But however slow its Dissolution with Cream of Tartar when cold was, yet it was in process of Time perfectly dissolved; and Mr. *Grosse* added, that this Mixture deserved to be examined by Evaporation and Crystallization.

I immediately laid hold of this Hint, and imagined that this Mixture would afford a new Species of neutral Salt, or soluble Tartar; and from that Time forth, I suspected that Mr.

Seignette endeavouring to make a new Cream of Tartar, which as is well known, is nothing else but Tartar rendered soluble by the fixed Alkaline Salt of the same Tartar, might have believed, with some other modern Chymists, that all alkaline Salts obtained from Plants by Calcination, are the same, and that the Fire leaves no essential Part of the Plant from which they are obtained; that consequently one might be indifferently substituted for another, and at last, that according to this Principle, having easy Access to the Salt of Kali, he could of it make his soluble Tartar; and that upon executing this Design, he had obtained from it a Salt, which was not found to be precisely the common soluble Tartar, known for so long a Time, but a new Salt, or rather a new Species of soluble Cream of Tartar, to which he afterwards gave the pompous Epithet of *Polychrest*, on account of the many good Effects it produced.

In this Opinion I remained for a long Time, without making any Trial whether it was really so or not, tho' I had frequently communicated my Sentiments to several Chymists upon this Subject.

But at last I resolved to put the Design in Execution, which Mr. *Geoffroy* did at the same Time; and tho' none of us knew that the other was engaged in this Task, yet we both found precisely the same Thing.

In order to make Mr. *Seignette's* Salt, we take the Salt of the best calcin'd, whitest and hardest *Alicant* Kali, reduced to a Powder; of this we make a strong Lixivium by boiling in Water, and filtrate the Lixivium, which is very transparent.

Then we take separately some Cream of Tartar in Powder, upon which we pour this Lixivium, when warm. This Mixture excites a Fermentation, which lasts for a considerable Time, and which even after it has ceased, is renewed at certain Intervals. In the Time of this Fermentation, the Cream of Tartar is resolved; after which there is a copious Precipitation of a spongy and light Earth, which is to be separated from the Liquor by Filtration. Then we evaporate this Mixture to the Consumption of about a third Part. Then it is to be left at rest in earthen Vessels, by which Means, after some Days we find Crystals transparent like Crystal, which when disengaged, and not supported by the Vessels, are formed into Cylinders or Columns, which through all their Length have many flat Surfaces, above nine of which I have sometimes counted, tho' they are not generally found in so great a Number.

In my Opinion, it is impossible exactly to determine the precise Proportion of the Salt of Kali, and the Cream of Tartar, since some Kinds of Kali contain a larger Quantity of Salt than others. But the most natural Way of finding this Proportion, is to dissolve in the Lixivium as much Cream of Tartar as it will receive, that is, to the Point of Saturation.

A Lixivium of six Pounds of Kali generally absorbs two Pounds and three or four Ounces of Cream of Tartar, and when the Kali is very white and richly impregnated with Salt, the Lixivium of six Pounds sometimes absorbs an equal Weight of Cream of Tartar. This Difference, as we may easily conceive, can only depend upon the Quality of the Kali, according as it is more or less impregnated with alkaline Salt.

But when I took the Salt which subsided in the Solution or Lixivium of Kali, and the Configuration of which nearly resembles that of *Glauber's* Salt, half a Pound of this Salt dissolved, easily received thirteen or fourteen Ounces of Cream of Tartar, and the Mixture precipitated scarcely any Earth. This is the justest Proportion I can propose for the Substances which enter the Composition of Mr. *Seignette's* Sal Polychrestum. If we only wait for a short Time, we have the Crystals of Kali, after which the Mixture is more equally made, and is not subject to the Precipitation of the different heterogeneous Substances which the Kali communicates to the Lixivium.

In a Word, my Salt when formed into Crystals, and compared with that of Mr. *Seignette* also crystallized, was found to be precisely the same in all Circumstances; for they are figured like each other, are easily dissolved in cold Water, when reduced to a Powder, have the same Taste, and communicate a certain Coldness to the Tongue. When put upon a live Coal, they become fused and bubble, yield the Smell of burnt Tartar, and are at last reduced to a black and spongy Coal, which yields Tartar.

If after this Examination, we should doubt of the Conformity of this Salt with Mr. *Seignette's*, we may be convinced of it by an Experiment, which makes a speedy Decomposition of it: For if we dissolve equal Quantities of both Salts separately in warm Water, and pour into each Solution Oil of white Vitriol, till its Action ceases, in Proportion as these Solutions become cold, a saline Concretion is formed, which when examined, is found to be true Cream of Tartar, in Crystals regenerated or separated from the Alkali, whilst the Oil

Oil of Vitriol is united with it, and afterwards by Crystallization, forms with it a *Glauber's Salt*, in the same Manner as if this Oil had been poured upon the Lixivium of the Kali.

Mr. *Seignette's* Sal Polychrestum is therefore a Cream of Tartar rendered soluble by the Alkali of Kali. *Mem. de l'Acad. Royal des Sciences, An. 1731.*

SAL CORALLI. Salt of Coral. See CORALLIUM.

SAL CORUM CERVI. Salt of Hartshorn.

SAL EX DUOBUS. A Name for the ARCANUM Duplicatum, which see.

SAL EBSHAMENSE. See SAL CATHARTICUM AMARUM.

SAL ENIXUM PARACELSI. See ENIXA.

SAL ESSENTIALE. An Essential Salt. See ACETOSA.

SAL FIXUM. A fixed Salt. See ALCALI.

SAL FLUOR. An acid Salt in a liquid Form, before it is fixed by uniting with a terrestrial Substance. *Lemery's Pharm. Univers.*

SAL FOSSILE. Sal Gemmæ.

SAL GEMMÆ. See SAL ALIMENTARIS.

SAL INDICUM. Sugar. See SACCHARUM.

SAL JOVIS. Salt of Tin. See JUPITER.

SAL LIXIVIOSUM. A lixivial Salt. See ALCALI.

SAL MARINUM. Sea Salt. See SAL ALIMENTARIS.

SAL MARTIS. Salt of Iron. See MARS.

SAL MEDIUM. A Neutral Salt.

SAL MERCURIALE. *Hartman* informs us, that this imports *Sal Ammoniac*. But some call Mercury Sublimate by this Name.

SAL MIRABILE GLAUBERI. *Glauber's Salt*. See SAL ALIMENTARIS.

SAL NEUTRUM. A Neutral Salt. See NEUTER.

SAL NITRI. Nitre. See NITRUM.

SAL POLYCHRESTON. See NITRUM.

SAL PRUNELLÆ. See NITRUM.

SAL SUCCINI. See AMBRA.

SAL SULPHURIS. Salt of Sulphur.

Take of Sal Polychrestum, four Ounces, powder it in a Glas Mortar, with a Pestle of the same; put it into a flat wide-mouth'd Glas, and add to it of the Spirit of Sulphur two Ounces, stir them well together, and evaporate in a Sand Heat, which will leave a pleasant acid Salt, which put up in a Vial for Use.

This is not, strictly speaking, the Salt of Sulphur, but Nitre fixed by Sulphur, and afterwards impregnated with its Spirit. It is diuretic, and if given in a large Dose, cathartic, as most Salts. In the former Intention it is given from ten Grains to one Dram, in the latter up to four Drams, dissolved in Broth, or any proper Vehicle warm.

SAL TARTARI. Salt of Tartar.

SAL THERIACALE.

The Ancients made Use of a Compound, which they call Salt of Vipers, or *Sal Theriacale*.

Diascorides describes it, as made by burning a Viper in a new earthen Pot, with some Figs, common Salt and Honey, and when it was reduced to Ashes, adding a little *Spica Nardi* or *Malabathrum*. *Pliny* adds nothing to the Viper, but the Juice of Fennel, and a Grain of Incense. But *Galen*, *Paulus* and *Aetius* describe a much more compound *Sal Theriacale*. *Le Clerc*.

SAL VITRI. Salt of Glas, or Sandiver. See AXUNGIA VITRI.

SAL VOLATILE. A Volatile Salt. See AMMONIACUM, and ALCALI.

SAL VOLATILE OLEOSUM. See AMMONIACUM.

SAL URINOSUM. A Urinous Salt; that is, a volatile Salt, which rises in the Distillation of Animals, and Vegetables, and smells somewhat like Urine.

Besides the Salts above taken notice of, there are some very curious Salts mentioned in the Memoirs of the Royal Academy of Sciences; as the Salt of *Dauphiny*; the *Spanish* Salt; and the sedative Salt.

SALT OF DAUPHINY.

This Salt was first of all accidentally discovered near *Grenoble*, the Capital of *Dauphiny*, by some Miners, who searching in some of the old metallic Mines, which as yet remain'd open, missed what they sought for, but in its stead found an Earth impregnated with small shining Substances, which some of them knew to be of a saline Kind. Thus imagining that they had found an Earth abounding with Salt Petre, they made a strong Lixivium of it, and perceived, in the Evaporation of this Lixivium, Crystals, which bore some, tho' a very imperfect, Resemblance to those of Salt Petre.

But tho' the Crystals of this Salt had borne a greater Resemblance to those of Salt Petre than they did, it does not hence follow, that the former ought to be taken for the latter, if the other specific and distinguishing Properties of Salt Petre

were wanting; since the Configuration alone of any Salt does by no means ascertain its Essence or Characters.

But in order the more effectually to discover what this Salt is, we shall consider its external Properties, and the Principles or Elements of which it is composed.

This Salt then generally comes from *Dauphiny* in large Lumps, the inferior Part of which is about an Inch in Circumference, irregular, white, opaque, and pretty firm; whereas the superior Part, which is about two or three Inches in Circumference, represents a Cluster of small, transparent, and shining Crystals, some of which are disposed in flat Laminæ: But the greater Part are formed into oblong Squares, tho' so much interfering with each other, that they seem to have been prevented in the Configuration to which they had a natural Tendency; for there are very few of them which form small Columns perfectly, consisting of four Sides.

This Irregularity and Confusion is the Effect of too precipitate an Evaporation and Crystallization. But this Salt, in whatever State and Condition, is easily dissolved in about an equal Quantity of common Water, is friable, and becomes tarnished by Heat, and in process of Time by the Influence of the Air. It is easily melted on a live Coal, but does not become fused and take Flame like Salt Petre; for it only bubbles by means of the Water it contains, which being dissipated by the Heat of the Fire, it is transformed into a saline Calx. This Salt, when tasted first, conveys a sensible Bitterness to the Tongue, which is soon succeeded by a Sensation of Cold.

By these Marks and Properties, tho' only external, we generally use to judge of the *Sal Mirabile Glauberi*, similar to which is the Salt of *Dauphiny*, since it is possessed of the same Qualities. But that the Analogy, or rather Identity, of these two Salts may be the more effectually evinced, we shall enquire into their constituent and component Principles.

With respect, therefore, to artificial *Glauber's Salt*, we certainly know that it consists of a saline and an earthy Principle; the former is a fixed vitriolic Acid; and the latter, an Earth of Sea-Salt with which the Acid mixes and incorporates itself; so that the Salt of *Dauphiny* must have the same two Principles, in order to be entirely similar to that of *Glauber*.

Tho' it would be sufficient to prove the saline Principle of the Salt of *Dauphiny*, and deduce the other from it as a just Consequence, since we are convinced that a vitriolic Acid can with no known Substance, except the Basis of common Salt, form a Salt of the same Configuration and Properties which *Glauber's Salt* ought to be possessed of, yet I shall not entirely overlook the second or earthy Principle of the Salt of *Dauphiny*.

In order, therefore, to prove the true Principle of the Salt of *Dauphiny*, 'tis needless to observe, that by means of inflammable Substances, it is easily converted into a Liver of Sulphur, which in this Change can be nothing but a vitriolic Acid. Nor shall I insist upon the Precipitations which it produces of Lead dissolved in Aqua Fortis, or of Sugar of Lead dissolved in Vinegar. I shall only confine myself to its Effects with Quick-Silver; and upon one Experiment made for this Purpose build another, in order to prove its earthy Principle.

I therefore dissolve an Ounce of Quick-Silver in an equal Quantity, or a little more, of good Spirit of Nitre: I pour this Solution into five Ounces of the Salt of *Dauphiny*, dissolved in common Water. Upon which the vitriolic Acid, contained in the Salt of *Dauphiny*, immediately abandons its earthy Basis to the Spirit of Nitre, from which, as being the stronger of the two, it separates the Quick-Silver; and after having intimately united itself with it, they both subside to the Bottom of the Vessel, in a yellow Powder like Turbith Mineral, which is commonly prepared with Quick-Silver and Oil of Vitriol.

After having removed this yellow Powder, which is really a Turbith Mineral, as we shall afterwards shew; and having washed and dried it, I mix an Ounce of it with two Ounces of well-dried Sea-Salt. This Mixture I push in a Sand-Heat, in a Vessel whose superior Part is very convex; upon which a new Scene appears, for the Acid of the Sea-Salt proves superior, and in its Turn separates the Quick-Silver from the vitriolic Acid concentrated in the Turbith, and rising together to the Top of the Vessel, they form a kind of sublimate Mercury; whilst the vitriolic Acid finding an Earth like that which it had abandoned to the Spirit of Nitre, and which in this Case is the Earth left by the Acid of the Sea-Salt, it joins itself to it, and remains with it at the Bottom of the Vessel, in the Form of a saline Powder; which, when dissolved in Water, regenerates a Salt perfectly similar to that which I had employed to precipitate the Mercury, having the same Configuration of Crystals, the same Properties, the same Principles; and, in a word, the genuine Characteristic of *Glauber's Salt*.

Those who are ignorant of Chymistry may possibly be surprized

prized at the different Changes which happen in these two Experiments: For in the former, which is the Mixture of the Salt of *Dauphny*, with a Solution of Mercury, the vitriolic Acid contained in this Salt, enjoys its full Force. "For, almost on all Occasions, it is superior to other Acids; and according to particular Occurrences, separates from them the Salts and Earths they contain. It, also, separates from them their metallic Substances, as it does in this Case with respect to the Mercury, which the Spirit of Nitre had dissolved. It also forces this Acid to yield to it, and is afterwards precipitated with it into a Turbith Mineral." But a Circumstance apparently small produces a very considerable Change in the second Experiment, which is the Mixture of this Turbith with Sea-Salt. Chymistry, as well as other Arts, has Exceptions from its general Rules, one of which occurs in this Experiment, which is, "That every time that certain metallic Substances are dissolved by any Acid, in which there is Sea-Salt, or its Principle, or if these are added to the Acids, they deprive them of their metallic Substances, because they have more Analogy with these than with the other Parts of such Acids. Perhaps this Analogy or Relation depends on the mercurial Nature of these metallic Substances." This Effect is, however, produced by the saline Principle of this Salt upon the Mercury; for it separates it from the vitriolic Acid, which kept it confined in the Turbith, and raises it along with itself into a Sublimate, leaving its Earth behind it, which Effect was in its Turn produced by the vitriolic Acid.

By these two Experiments the constituent Principles of the Salt of *Dauphny* are rendered conspicuous: For it quickly precipitates Mercury into a Turbith Mineral, which can only be done by a vitriolic Acid. This Salt has, therefore, such an Acid for its saline Principle.

The Salt of *Dauphny* must, also, for its other Principle, have the Earth of Sea-Salt: Because, as we have already observed, the vitriolic Acid cannot, without the Concurrence of that Substance, form a Salt possessed of such Properties, and such a Configuration of Crystals, as those of the Salt of *Dauphny*, and which it has in common with the Salt of *Glauber*. This is confirmed by the second Experiment, where the vitriolic Acid of the Salt of *Dauphny*, which was added to the Mercury, finding in the Sea-Salt an Earth similar to that which it had abandoned to the Spirit of Nitre, again forms with it a Salt crystalized in the same manner, and possessed of the same Properties with the first I employed.

Thus the Salt of *Dauphny* has the same Principles with *Glauber's* Salt, and is for that Reason a genuine *Glauber's* Salt of the natural Kind, because Art contributes nothing to its Production; so that 'tis to be hoped a due Regard will in process of time be paid to this Salt, since it produces the same Effects on the human Body with a true *Glauber's* Salt, and is perfectly possessed of all its Characteristics; which are, That it does not become moist in the Air; does not alter the Tincture of Tournsol and Flowers of Violets; and that itself is not altered by the Oil of Vitriol, like other Salts, which still retain some Portion of Sea-Salt. *Mem. del Acad. Royale des Sciences, An. 1727.*

1. SALAMANDRA Offic. Schrod. 5. 345. Aldrov. de Quad. Ovip. 639. Schw. Rept. 163. Gefn. de Quad. Ovip. 80. *Salamandra terrestris*, Raii Synop. A. 273. Jonf. de Quad. 137. *Salamandra terrestris maculis luteis distincta*, Charlt. Exer. 28. THE SALAMANDER, or QUENCH-FIRE.

The Salamander is a Species of Lizard; of a black Colour, mark'd with yellow Spots. Its Head and Belly are thicker than those of the common green Lizard, but its Tail is shorter. It has a sharp Snout and full Eyes. Each of its Feet is armed with four pretty big Claws, but it is much slower in its Pace than the common Lizard. On its Back is a Figure much resembling that of a Cross, and it is mark'd with two Lines, which reach from the Neck to the Tail. There are two kinds of Salamanders, the terrestrial and the aquatic; the first is found in cold and moist Places, the other delights in Fountains and running Streams.

Salamanders are found in *Italy*, *Germany*, and in *Normandy*. It was formerly believed, that they could live in the Fire, because it was observed that they remained a longer Time in the Fire, without being consumed, than other Animals; because they are full of a lacteous and viscid Humour, which for some time diminishes the Heat of the burning Coals, but at length the Fire penetrates and burns them. The Bite of this Reptile is esteemed as dangerous as that of a Serpent. In Biting it discharges a lacteous, virulent, and very acrimonious Juice. It contains a good Quantity of caustic volatile Salt, Oil and Phlegm.

The Salamander is corrosive, burning and depilatory, being

outwardly applied. It can hardly be touched without hurting the Fingers. *Lemery des Droguez.*

The Ashes of a Salamander are an excellent and effectual Cure for scrophulous Ulcers, being sprinkled on the Parts affected. *Schroder.*

2. SALAMANDRA AQUATICA. This is distinguished in the following manner:—

Lacertus aquatilis, Offic. Schrod. 5. 343. *Lacertus aquaticus niger*; Mer. Pin. 169. *Salamandra aquatica*, Raii Synop. A. 273. Charlt. Exer. 28. Rondel. de Aquat. 2. 230. *Salamandra aquatica, aliis Lacertus aquaticus*, Jonf. de Quad. 137. *Scincus aquaticus quibusdam*. THE WATER LFT.

It is found in Fish-Ponds and standing Waters. The Powder of it is commended for facilitating the Evulsion, or Drawing the Teeth.

SALAPPA. Jalap.

SALCÆ OLEUM. Oil of *Salca*. The best Preparation of Oil of *Salca*, and as I prepared it in *Alexandria*, says *Actius*, is in the following Manner:

Take of Aspalathus, half a Pound; of Xylobalsamum, nine Ounces; Cyperus, four Ounces; Elecampane, both Sorts of Iris, each half a Pound; Calamus Aromaticus, eighteen Ounces; Flowers of the Juncus Odoratus, two Ounces and half; of fat Storax two Ounces; two Indian Nuts; Malabathrum, eight Ounces; Spikenard, one Ounce; Cloves, Zedoary, each one Ounce and an half; Amomum, three Ounces; Casia, two Ounces; Castus, one Ounce; Myrrh, one Ounce; Hypnum (a Species of Moss) Xylocasia, each three Ounces; Oil, ten Sextaries. Then boil together in the Oil the Xylobalsamum, Iris, Cyperus, Elecampane, and Xylocasia, decorticated, grossly pounded, and macerated two or three Days in Water; stir them continually, infilling Water by Degrees, when they begin to grow dry. When they have boiled three Hours or more, take them off, and let them stand covered for a whole Night. The next Day take them out, and separating the Water from the Oil, boil them again in pure Water mixed with a small Quantity of Wine; and as soon as they begin to boil up, put in the Calamus, the Flowers of the Juncus Odoratus, all first steeped in old scented Wine. The third Day take them out in like manner as before, and adding more Water, boil them a third Time, putting in the rest of the Ingredients as soon as they begin to boil. They make a secondary Sort, which is done by adding six Sectarii of Oil to what remains after the third; and after boiling it a sufficient time, adding three Ounces of good white Myrrha Stacte; half a Pound of *Siroma* [Water of Opobalsamum;] half a Pound of Mastich; and an Ounce of good Storax. Oil of *Salca* is used by the Women to anoint their Heads, and what I have here given is by far the best Way of preparing it. *Actius, Tetrab. 1. Serm. 1.*

Another Preparation of Oil of *Salca*.

Take of Oleum Omphacinum, twenty Sectarii; Iris Illyrica, one Pound; Amomum, one Ounce and an half; Aspalathus, Hypnum, each one Pound; Calamus Aromaticus, two Pounds; Cloves, Malabathrum, Carpopbalsamum, each one Pound; Xylocasia, five Ounces; Casia, four Ounces; Costus, fat Storax, Saffron, each one Ounce; Myrrh, Zedoary, each three Ounces; Spikenard, four Ounces. Boil them all in Water, and manage them as it is directed in the former Preparation. *Actius, Tetrab. 4. Serm. 4. Cap. 114.*

SALEFUR. Garden-Saffron. *Rulandus.*

SALEP. See ORCHIS.

SALICARIA.

The Characters are;

The Calyx is tubulous, striated, and multifid; the Flowers are rosaceous, hexapetalous, and grow out of the upper Incisures on the Inside of the tubulated Calyx, almost in a Series of Whorls, and are furnished with a Multitude of Stamina, sometimes no fewer than eighteen. The Ovary, which is adorned with a long Tube, that has an Apex shaped like a Bason, when ripe becomes an ovated, bicapsular Shell involved in the Calyx, and full of small Seeds.

Boerhaave mentions four Sorts of *Salicaria*, which are;

1. *Salicaria*; vulgaris; purpurea; foliis oblongis. *Tourn. Inst. 253. Boerb. Ind. A. 221. Raii Synop. 3. 367. Lysimachia purpurea spicata*. Ger. 386. Emac. 476. Park. Theat. 546. Raii Hist. 2. 1036. *Lysimachia spicata purpurea forte Plinii*, C. B. P. 246. *Lysimachia purpurea quibusdam spicata*, J. B. 2. 902. *Blattaria rubra spicata major, glabra, communis* [* S]

foliis acutis, Hist. Oxon. 2. 490. SPIKED WILLOW-HERB.

It grows in marshy Places, and by the Banks of Rivers, and flowers in July. The Herb, which is used in Medicine, is an Ophthalmic. *Mont.* The distilled Water is a present Remedy for Wounds, Punctures and Sugillations of the Eyes, as well as Dimness of Sight and all other Infirmities incident to those Parts. *Park.* It is a Specific in Inflammations. *Raii Hist.* The Decoction of the Herb is an excellent Remedy for the epidemic Diarrhoea of Ireland. *Threk. Synop. Hib.*

2. *Salicaria*; *purpurea*; *foliis subrotundis*. T. 253. *Lysimachia*, *spicata*, *lanuginosa*, *folio subrotundo*, *flore purpureo*. H. R. Par. *Blattaria*, *rubra*, *spicata*, *major*, *lanuginosa*, *folio subrotundo*. M. H. 2. 490.

3. *Salicaria*; *Hyssopi folio*, *latiore*. T. 253. *Lysimachia* *spicata*, *purpurea* *affinis*, *hyssopifolia*. H. L. 397. *Hyssopifolia*, *major*, *latisioribus foliis*, C. B. P. 218. *Hyssopifolia*, *aquatica*, J. B. 3. 792.

4. *Salicaria*; *Hyssopifolia*; *angustiore*. T. 253. *Hyssopifolia*, *minor*, *angustioribus foliis*. C. B. P. 218. M. H. 3. 613. *Boerb. Ind. Alt. Plant. Vol. 1.*

There has been no Virtue observed to belong to this Plant, tho' it be the *Lysimachia* of *Diocorides*, and it only serves as an Ornament in Gardens, on account of its beautiful Flowers. *Hist. Plant. Ascript. Boerhaave*, p. 299.

SALICORNIA.

The Characters are;

It is aphyllous, smooth, succulent, and has the Appearance of Houseleek, consisting of Scales articulated box-wise. The Flower is apetalous, naked, and grows out of the Commissures of the Scales. The Fruit is a Vesicle containing one Seed.

Boerhaave mentions but one Sort of *Salicornia*, which is, *Salicornia*. *Dod. p. 82.* *Salicornia*, *geniculata*, *annua*. T. Cor. 51. *Kali*, *geniculatum*, *majus*. C. B. P. 289. M. H. 2. 611. *Kali*, *geniculatum*, *sive Salicornia*. J. B. 3. 704. *Boerb. Ind. Alt. Plant. Vol. 2.*

A Decoction of the Leaves is very opening, provokes Urine and the Menfes, accelerates the Birth, expels the Foetus and Secundines, and purges watry Humours, whence it is of Service in a Dropsy. Its Ashes are used in making Soap and Glas; and being infused in Water, cure the Itch and all cutaneous Diseases, the Parts affected being washed therewith. *Hist. Plant. Ascript. Boerhaave.*

SALIVA.

By *Saliva* we mean in general, that Fluid by which the Mouth and Tongue are continually moistened in their natural State. This Fluid is principally supplied by Glands, called for that Reason Salival Glands, of which they commonly reckon three Pairs; two Parotides, two Maxillares, and two Sublinguales. These are indeed the largest, and they furnish the greatest Quantities of Saliva; but there are a great Number of other lesser Glands of the same Kind, which may be reckoned Assistants or Substitutes to the former. All these may be determined salival Glands, and they may be enumerated in the following Manner:

Glandulæ Parotides.	Glandulæ Linguales.
Glandulæ Maxillares.	Amygdalæ.
Glandulæ Sublinguales.	Glandulæ Palatinæ.
Glandulæ Molares.	Glandulæ Uvulæ.
Glandulæ Buccales.	Glandulæ Arytenoidæ.
Glandulæ Labiales.	Glandula Thyroidæa.

The Parotides are two large, whitish Glands, irregularly oblong and protuberant, situated on each Side, between the external Ear and the posterior or ascending Branch of the lower Jaw, and lying on some Part of the neighbouring Masseter Muscle. The superior Portion of this Gland lies before the cartilaginous Meatus of the Ear, and touches the Apophysis Zygomatica of the Os Temporis; and it is extended forwards and backwards under the Lobe of the Ear, as far as the Mastoide Apophysis.

From the anterior and superior Portion of this Gland, a white membranous Duct or Canal is produced by the Union of a great Number of small Tubes, representing so many Roots. This Duct runs obliquely forwards on the Outside of the Masseter, and then perforates the Buccinator from without inward, opposite to the Interstice between the second and third Dentes Molares, where the Hole or Orifice represents the Spout of an Ewer.

This Canal is named Ductus salivalis Stenonis, or Ductus Superior. It is about the twelfth Part of an Inch in Diameter, and in some Subjects is partly covered by small glandular Bodies, united with it in different Quantities. The Arteria and Vena Angularis run up over this Duct, and the Portio Dura of the Auditory Nerve runs through the Gland itself; and it also receives Filaments from the second vertebral Pair.

The maxillary Glands are smaller and rounder than the Parotides, and are situated each on the Inside of the Angle of the lower Jaw, near the Musculus Pterygoidæus Inferior. From the Inside, or that which is turned to the Musculus Hyo-glossus, each of them sends out a Duct in the same Manner as the Parotides, but it is smaller and longer, and goes by the Name of Ductus Salivalis Whartoni, or Ductus inferior.

This Duct advances on the Side of the Musculus Genio-glossus, along the inner Part and superior Edge of the Glandula sublingualis, to the Frenum of the Tongue, where it terminates by a small Orifice in form of a Papilla.

The Glandulæ Sublinguales are likewise two in Number, of the same Kind with the former, something oblong, and flattened like a blanch'd Almond. They are situated under the anterior Portion of the Tongue, one on each Side, near the lower Jaw, on the lateral Portions of the Musculi Mylo-Hyodæi, which sustain them. The two Extremities of each Gland are turned backward and forward, and the Edges obliquely inward and outward.

They are covered on the upper Side by a very thin Membrane, which is a Continuation of the Membrane that covers the under Side of the Tongue. They send out laterally several small short Ducts, which open near the Gums by the same Number of Orifices, all ranked in the same Line, at a small Distance from the Frenum, and a little more backward. In many Animals we find particular Ducts belonging to these Glands, like those of the Glandulæ Maxillares; but they are not to be found so distinctly in Men. The Musculi Genio-glossi lie between the two sublingual Glands, and also between the two maxillary Ducts.

The Molares are two Glands nearly of the same Kind with the former; each of them being situated between the Masseter and Buccinator; and in some Subjects they may easily be mistaken for two small Lumps of Fat. They send out small Ducts, which perforate the Buccinator, and open into the Cavity of the Mouth, almost over-against the last Dentes Molares; and from thence M. Heister, who first described them, called them Glandulæ Molares.

All the Inside of the Cheeks, near the Mouth, is full of small glandulous Bodies, called Glandulæ Buccales, which open by small Holes or Orifices through the inner Membrane of the Mouth. The Membrane which covers the Inside of the Lips, a Continuation of that on the Cheeks, is likewise perforated by a great Number of small Holes, which answer to the same Number of small Glands, called Glandulæ Labiales. The Glandulæ Linguales are those of the Foramen cæcum of the Basis of the Tongue.

The Glandulæ Palatinæ belong to the Arch and Septum of the Palate; the Glandulæ Arytenoidææ are described under the Article LARYNX. The uvular Glands are only a Continuation of the Membrane of the Palate, in form of a small Bunch of Grapes. We might likewise reckon among the salival Glands, those of the superior Portion of the Pharynx; and also the glandular Bodies of the Membrana Pituitaria of the Nares, and of the Sinuses that communicate with these.

The Amygdalæ are two glandular Bodies of a reddish Colour, lying in the Interstices between the two lateral half Arches of the Septum Palati, one on the right the other on the left Side of the Basis of the Tongue. Their Appearance is not unlike that of the Outside of an Almond Shell, both because their Surface is uneven, and because it is full of Holes big enough to admit the Head of a large Pin.

These Holes, which represent a Sieve or a Piece of Network, are continued to an irregular Sinus or Cavity within the Gland, filled commonly with a viscid Fluid, which comes from the Bottom of the Sinus, and is from thence gradually discharged through these Holes into the Throat. To see the true Structure of the Amygdalæ, they must be examined in clear Water, having first been washed in lukewarm Water, and handled very gently.

The Thyroide Gland is a large whitish Mass, which covers the anterior Convex Side of the Larynx. It seems, at first Sight, to be made up of two oblong glandular Portions, united by their inferior Extremities, below the Cricoid Cartilage, so as to resemble a Crescent, with the Cornua turned upward. It is of a moderate Thickness, and bent laterally like the Thyroide Cartilage from which its Name is taken. The two lateral Portions lie on the Musculi Thyro-Hyoidæi, and the Middle, or inferior Portion, on the Crico-Thyroidæi. The Thyro-Pharyngæi Inferiores send Fibres over this Gland, and they communicate on each Side by some such Fibres with the Sterno-Thyroidæi and Hyo-Thyroidæi.

This Gland seems to be of the same Kind with the other salival Glands, but it is more solid. Some Anatomists thought they had discovered the excretory Duct, but they mistook a Blood-Vessel for it. We sometimes meet with a Kind of glandular

glandular Rope, which runs before the Cartilago Thyroides, and disappears before the Basis of the Os Hyoides.

This glandular Rope goes out from the common Basis of the lateral Portions of the Thyroid Gland, and is lost between the Musculi Sterno-Hyoidæi, behind the Basis of the Os Hyoides, or between that Basis and the Epiglottis. There are likewise small Openings on the Side of the anterior Ligament of the Epiglottis, or that by which it is connected to the Basis of the Tongue. One of these Openings appears like a small Papilla; and this is the farthest that I have been able to trace the glandular Rope. *Winslow's Anatomy.*

The Saliva is a thin pellucid Humour, incapable of being concreted by the Fire, almost without Taste and Smell, and frothing much when shaken. It is an Humour of the glandular Kind, secreted from the pure arterial Blood: In hungry Persons it is fluid, acrid, and copiously discharged. And in those who have fasted long, it is highly acrid, penetrating and resolvent. In farinaceous and succulent Vegetables, it not only produces a Fermentation, but also augments one already begun. It is swallowed not only by Brutes, but also by human Creatures in a sound State, even when asleep. Too copious an Evacuation of it made voluntarily, produces Loss of Appetite, bad Digestion, and an Atrophy. It consists of a pretty large Quantity of Water and Spirits, and is, also, of a saponaceous Nature in consequence of a small Quantity of Oil and Salt it contains.

By Manducation, therefore, the Saliva is expressed and accurately mixed with the attenuated Food, which contributes, first, to the Assimilation of the Aliments to the Nature of the Body to be nourished; secondly, to the due Mixture of the oleous with the aqueous Parts; thirdly, to the Solution of the saline Parts; fourthly, to Fermentation; fifthly, to a Change of the Taste and Smell of the Aliments; sixthly, to an Augmentation of the intestine Motion; seventhly, to a momentaneous Relief from Hunger; and eighthly, an Application of the sapid Parts, tho' it is insipid itself.

The Saliva, therefore, which is in a curious and surprising Manner elaborated from the arterial Blood, and which, when discharged, is mixed with the Aliments, cannot on other Occasions be evacuated without bad Consequences; but after it is swallowed, has performed its Offices, and is corrected by a fresh Circulation, it assumes a better Quality, as is obvious from certain Disorders, the Remedies appropriated to their Cure, and their several Crises.

An excessive Evacuation of the Saliva disturbs the first, and consequently all the succeeding Concoctions; induces Thirst and Dryness of the Parts; generates black Bile, and forms a Tabes and Atrophy. If the Saliva is not at all secreted into the Mouth, or secreted in a smaller Quantity than usual, the Manducation, Taste, Deglutition and Digestion of the Aliments, are hindered, and the Patient's Thirst is augmented. *Boerhaave's Institut.*

SALIVALES DUCTUS. The Salival Ducts. See SALIVA.

With respect to these Ducts, Mr. *Monro* gives the subsequent Case in the *Medical Essays*, Vol. 2.

Mr. *Ker* of *Frogton*, a young Gentleman of a delicate Constitution, and threatened with a Consumption from an Ulcer in his Lungs, was seized, after riding in a cold Night, with a very hard Tumour about the Middle of his left Cheek, which the Gentleman who attended him, endeavoured at first to resolve; but observing a Suppuration to come on, it was opened with a Lancet on the Inside, and afterwards an external Orifice was also made, and Escharotics were applied to waste down the hard Stool of the Tumor that still remained. When no more Hardness was felt, his Surgeon endeavoured to incise and cicatrize, but was disappointed by a constant plentiful Discharge of a thin clear Lymph. The Orifice was again enlarged, and it was dressed a considerable Time with Astringents and Dryers, in different Forms, but without any Success.

In September 1727, being accidentally in the Neighbourhood of *Kelso*, where Mr. *Ker* lived, I was sent for to advise with Dr. *Abernethy* and Dr. *Scot*, Physicians there, and with Mr. *Jamieson* Surgeon concerning his Cure. The external Orifice in his Cheek was as large as would have received the Point of my Thumb, and at the Bottom of it we could distinctly see some Part of the superior salivary Duct laid bare, with a Hole in the outer Side of it, large enough to allow the Button of a middle sized Probe to enter it; and when he moved his lower Jaw at our Desire, the Saliva ran out plentifully at that Orifice. When the Jaw was not moved, a very small Quantity of the Spittle oozed out; but in Time of Dinner, it made a Napkin, laid eight Fold over the Plaister that covered the Ulcer wet all through.

We agreed to make an artificial Opening for the Saliva into his Mouth, which I did in the following Manner; having

with two Fingers of one Hand stretched his Cheek outwards, I directed the Point of a large Shoe-maker's Awl, which I held in the other Hand, into the open Breach of the Duct, and thrust the Awl obliquely forwards, through the Cheek into the Mouth, betwixt my two Fingers; then drawing back the Awl, I passed an eyed flexible Probe, mounted with a small Cord of Silk, through the Passage made by the Awl, and brought it out between his Lips with my Fingers, leaving one half of the Cord hanging from the external Ulcer; then the Ends of the Seton being disengaged from the Probe, were tied loosely near the Angle of the Mouth; and his external Ulcer was dressed up with dry Lint kept on with a Plaister. He was desired to rinse that Side of his Mouth frequently with Brandy; and the Sides of the external Ulcer were kept from going out too fast, or turning callous, with the lunar Caustic. In less than three Weeks this Management had the desired Effect, of rendering the Passage in which the Cord was engaged, callous, (which the Looseness of the Cord, and the Want of Pain when it was drawn, plainly shewed;) when Mr. *Jamieson* took out the Cord, and healed the external Ulcer very soon. In a little Time I saw our Patient at *Edinburgh*, with a firm Cicatrice on the Part where the Sore had been.

This Operation is plainly directed by my Friend Mr. *Chefelden*, in these Words: "When this Duct is divided by an external Wound, the Saliva will flow out on the Cheek, unless a convenient Perforation be made into the Mouth, and then the external Wound may be healed." None, however, of the chirurgical Writers whom I have looked into, give any Instance of this Operation having been formerly performed.

THE EXTIRPATION OF THE SALIVAL GLANDS.

Though many Methods have been proposed for removing scirrhus and indurated Glands in other Parts of the Body, yet the Method of extirpating the parotid and maxillary Glands, which are sometimes exceedingly tumified, and are connected with the larger Branches of the carotid Artery, has not hitherto been mentioned. What has been hitherto advanced in particular Treatises and Theses, with regard to these Glands, relates very little to their Extirpation; an Operation which has been reckoned by some very pernicious and extremely dangerous.

Nor can I altogether discommend this Opinion; for the Branches of the carotid Arteries passing through these Glands, are so large, that when they are wounded, the Patient may bleed to Death, unless attended by a skilful Physician or Surgeon.

Tho' the Hemorrhage may, in this Operation, be very large, yet it does not follow, that it never can be stopped by a prudent Physician; for whom it is not sufficient that he can relieve the Patient in slight Disorders, but he must also make Experiments where the Case is doubtful, or in the Opinion of some, desperate. And I have often had Recourse to this Method of Extirpation, when these Glands have been violently swelled, and severely indurated, even approaching to a carcinomatous Nature, after they had been treated by other Physicians with Digestives, Corrosives, and other Medicines.

In performing this Operation, it is necessary to be provided with a good styptic Liquor, Linnen Rags, much scraped Lint, a Puff-ball, thick Compresses of different Sizes, and a Bandage about six Ells long. Then let the Patient be placed in a Seat with his Face towards the Light, having his Head and Hands secured by Assistants. The Operator must next open the Skin above the Tumor, with a longitudinal Incision, and carefully separate the scirrhus or indurated Gland from the contiguous Parts with the Knife, and at last from the Arteries with which it is connected. The Blood then rushes out so profusely, that near a Pound will be lost before the Operator can lay aside his Knife and take up the Dressings. He must therefore immediately dip a Ball of Linnen Rags in the styptic Liquor, and press it, also, upon the larger wounded Arteries. The Remainder of the Cavity of the Wound must be well filled with scraped Lint and dry Rags, and compressed with the Finger, then apply a large Piece of Puff-ball, with three or four thick Compresses; securing the whole with a proper Bandage. Thus, by Degrees, the Hæmorrhage will be assuaged, especially if the Patient be laid upon the Bed, and the wounded Part compressed for three or four Hours, by the Hand of an Assistant. But it is necessary to observe, that if the Tumor be extremely large, it may more easily be extirpated by a crucial Incision. The Patient must then rest in Bed for the three or four following Days, without loosening the Bandage, to prevent a fresh Hæmorrhage. That this Time is necessary, I not only know from the Nature of the Wound, but from Experience; for having performed the Operation on a Girl, she was impatient under the Stricture of the Dressings, which

which I attempted to relax a little the next Day; but so violent an Effusion of Blood immediately ensued, that I thought her Life was in Danger, and I was obliged to make the Bandage tighter than before.

After the third or fourth Day, the Bandage and the Compresses, filled with the fetid Blood, may be gently removed, being first softened with warm Wine, or Spirit of Wine; so much of the Puff-ball as is loose may also be removed, leaving every Thing that has a strong Adhesion. New Compresses, dipped in warm Spirit of Wine, or digestive Fomentation, such as Lime-Water, or camphorated Spirit of Wine, must be directly applied, and secured with the Bandage as before, but a little more relaxed, that the Patient may be able to take some Aliment, which was before impossible, or extremely difficult. The second and third Dressings must be performed only every other Day, and the rest must be renewed every Day, because the Wound will discharge much Matter. In every Dressing it must be carefully observed, that none of the Compresses, Puff-ball or Lint be removed, but what are quite loose; and when any of the first Lint comes away, the Wound must be again filled with fresh Lint, spread with some digestive Ointment, till all the Lint and Puff-ball come away spontaneously, which usually happens about the eighth or tenth Day. Then the Wound may be cleansed by some digestive Ointment, and inclosed with a vulnerary Balm; and the Cure may be completed with dry Lint, as in other Wounds. But it ought to be observed, in performing the Operation, to make the Wound behind the Cheek or maxillary Angle, that the Cicatrix may not deform the Face.

It is surprising that *Garengot*, who is so ample in other Parts of Surgery, and even bestows a Chapter on this Operation, should take no Notice of the Method of stopping the Hæmorrhage. He even asserts that there is no Occasion for any Remedies for suppressing the Effusion of Blood, in extirpating these Glands, or even indurated Breasts; because only a few Drops of Blood will be emitted in removing the largest of these Tumors; and that the Wound itself may be easily healed, by closing its Lips with a Suture. Hence, I think, it is evident, that in his general Doctrine he little regarded these indurated, parotid or maxillary Glands, or perhaps never saw the Operation. Hence we may see the pernicious Consequences of writing in general Terms, without Specifications of Exceptions. For it is certain, that whoever follows *Garengot's* Directions in this Operation, must unavoidably destroy the Patient by the Effusion of Blood, as happened to a Surgeon at *Yena*. This Case is related in the *Commerc. Lit. Norimberg. An. 1733*, where the Author adds this Observation, "That we may hence learn how much safer it is to relinquish these Tumors than to extirpate them." This Remark, however, should not deter the skilful Surgeon from the Operation, which I have often successfully performed myself, without the Death of one Patient. I must however allow, that *Garengot's* Assertion may hold in the Extirpation of scirrhous Glands in most other Parts of the Body. Extirpations of this Kind we meet with in *Koehneusen*, Obs. I. and in the Additions of *Tilingius* to *Scultetus*, published at *Leyden* in 1693.

As this Operation, however, is extremely dangerous, and often leaves a large Cicatrix, as these Tumors may sometimes be resolved by proper Remedies; this Method ought certainly to be tried first, rather than to proceed directly to Extirpation. For this Purpose, anoint the scirrhous Tumors daily with Oil of Bricks or of Soap, and a little Camphire, or with warm Oil of Amber, or of Juniper; apply over the indurated Part a Plaister of Diachylon, with the Diaphoretic Mercury of *Mynsicht*, or the Soap Plaister of *Barbette*, with Oil of Amber or Juniper, or the like proper Digestive; warm medicinal Bags will likewise be proper for this Purpose.

In the mean time, internal Medicines are not to be neglected; such as resolvent Decoctions of Swallow-wort and Fig-wort, which may be drank two or three times a Day, or taken in the Morning in Bed to raise a Sweat. Between these Draughts take every Day the Powders of burnt Sponge, Sal Gemmæ, Diaphoretic Antimony, or others of the like digestive Nature. Some prescribe as much bruised Lizards as will lie on the Point of a Knife. I have often found excellent Effects from the *Æthiops Mineral* and *Mercurius Dulcis*; tho' in the Use of these Medicines it is proper to exhibit Purges at proper Intervals. But if all these Remedies prove ineffectual, it may not be improper, if agreeable to the Patient, to proceed to a Salivation; which, according to *Agricola*, and other celebrated Physicians, has been very efficacious in dissolving scirrhous Tumors in the Neck; and I have experienced its Virtues in some Cases.

But when a Scirrhus of this Kind is attended with an Inflammation, and resolvent Medicines prove ineffectual, it may be proper to bring the Tumor to Suppuration, and treat it like an Abscess. And I have known Instances, wherein Dis-

cutients have made these indurated Glands, and also other Tumors of the Neck degenerate into an Abscess. But when the Disorder is inveterate, emollient suppurative Medicines will turn the increasing Tumor into a malignant Ulcer, or even into a Cancer; and the same Effects are produced by the Application of Corrosives, which also occasion a great Effusion of Blood, and consequently Danger of immediate Death, as I had lately an unhappy Instance in a Person of Quality. *Heister's Surgery*.

SALIVANTIA. Medicines which excite a Salivation.

SALIVARIS. Pellitory of *Spain*. See **PIRETHRUM**.

SALIVATIO. A Salivation. See **MERCURIUS**.

A copious and artificial Evacuation of the Saliva is indicated:

1^{mo}, By Crises which tend that Way.

2^{do}, By the particular Nature of a Disease, especially when lodged in the Glands and *Membrana adiposa*. But in no Case is it more indicated than in a *Lues Venerea*. And,

3^{tio}, By the Nature of an epidemical Disease.

The Body is most commodiously prepared for a Salivation, by the previous, duly continued, and liberal Use of attenuating, diluent, lenitive, and warm Decoctions of scabious, Pellitory of the Wall, Burdock, China Root, Sarsaparilla, Sassafras and Sanders.

A Salivation is excited,

1^{mo}, By washing the Mouth with certain Liquors.

2^{do}, By the slow and protracted Mastication of some viscid Matter, such as Mastich, Wax, and Myrrh, especially if acrid Substances are mixed with these, such as Pellitory of *Spain*, the *Leucanthemum Canariense* Sapore Pyrethri, Ginger and Pepper.

3^{tio}, By drawing into the Mouth acrid and irritating Vapours, such as those of Tobacco, Sage, Rosemary, Marjoram, Thyme, and Mother of Thyme.

4^{to}, A Salivation is excellently excited by the Action of such Medicines as produce a gentle but long continued Nausea, such as Antimony, neither entirely fixed nor totally emetic, taken with a small Quantity of common Vitriol.

5^{to}, By such Substances as totally dissolve all the Parts of the Blood, convert it into Lymph, and render it fit for a Discharge by Way of Saliva; such as crude Quicksilver, Cinnabar, a Solution of Quicksilver in Aqua fortis, white Precipitate, red Precipitate, Turbith Mineral, and sublimate Mercury dissolved. The Action of these Medicines is promoted by warm Fomentations applied to the Head, Neck and Face.

An excessive Salivation is lessened or stop'd:

1^{mo}, By a large and continued Use of mild and tepid Drinks, such as Decoctions of Mallows, and Liquorice, in Milk and Water.

2^{do}, By allaying the Impetus of the Humours by means of mild, oleous, and anodyne Emulsions, with a proper Addition of Diacodium or Opium. And,

3^{tio}, By making a Revulsion of the Humours to other Parts, by any large Evacuation, especially that by Stool. But great Caution is necessary, lest the Impetus of the moved Matter, which in this Case is always acrid, should rush to other Parts, and produce a greater Danger; so that here the Caution of the Physician is necessary for the Safety of the Patient. *Boerhaav. Institut.*

It was no doubt owing to Chance that Mercury was discovered to be a Cure for the Pox, by Fluxing. But the Discovery, that it had such a Power of Fluxing, was not made at the same time. For *Guido* recommends an Ointment, which he calls the saracenic Ointment, for the Scabies, which *G. Forella* says, throws out the Humours by the Mouth. Now *Guido* wrote in 1363, long before the Pox was known in *Europe*. Besides, it is plain that this Property of Mercury was known to *Theodoric*, and even by the Way of Uncction; for he describes several Sorts of these Ointments, lays down the Rules, how often, and how long, the Uncction should be continued, till the Flux rises. The Humour, he says, will flow out at the Mouth like a River; and this Method he knows to be attended certainly with Success, in the *Malum Mortuum* and Scabies. This Author wrote soon after 1252.

These mercurial Applications were taken from the *Arabians*. *Rhazes* and *Avicenna*, and the rest, prescribe them in cutaneous Affections, without any View or Apprehensions of Fluxing. *Alfaharavius*, who was later, seems to have a Notion of this Effect; for he treats of the Cure, when the Mouth, the Tongue, and the Throat were swelled, attended with Corrosion, and great Stinking, from mercurial Uncctions.

The first Instance we have upon Record, of a Salivation being recommended, is in *Joh. de Vigo*, who wrote in 1518. He says there is nothing to be done in the Pox, but to use mercurial Uncctions, which, by Salivation, cure it in a Week. The famous *Jacobus Carpus*, or *Berengarius Carpenfis*, who was in great Reputation in the Beginning of this Century, is supposed

supposed to be the first who was Master of this Secret. Perhaps *J. de Vigo* might have learnt this Way of Unction from him. Indeed *G. Torella*, Physician to *Cæsar Borgia*, and to Pope *Alexander the Sixth*, afterwards made Bishop of *St. Justa* by that Pope, mentions mercurial Unctions, but condemns them as pernicious; and takes notice how many Persons ignorant Quacks had killed by this Practice. *G. Torella* practised about 1498.

Fracastorius recommends mercurial Unctions and Fumigations of Cinnabar. Some time after *Aloysius Lobera*, a Spaniard, in a Treatise of his upon the Subject of the Pox, delivers the Method of Unction with great Exactness; orders the Room to be kept close and warm, and the Patient not to shift; and that the rubbing in of the Mercury should be continued till the Salivation comes on well, and the Symptoms abate. But the Time this may take up is undetermined. *Nicolaus Massa*, one of the best Anatomists of his Age, succeeded these Writers. He says the most secure and certain Method of curing the Pox, is Salivation; which may be done safely, even in Children, and Women with Child. He gives several Forms of Unctions, the Basis of all which are Lard and Mercury. He lays down Rules for preparing the Body, and guarding it against all Inconveniences, and all Accidents which may happen both during the Course and after it. He observes, that the Humour sometimes runs off, not only at the salivary Glands, but by Stool, Urine, or Sweat; and that not seldom with Success. He uses this Method of Unction sometimes for thirty-seven Days; continuing or intermitting it by Intervals, as Circumstances require. *Brasavolus* wrote in 1551. He has no new Instructions in him. *Fallopian*, his Scholar, read Lectures upon this Subject, about the Year 1555. He is the first who is particular in some Points relating to Salivation, either as to the Quantity of the Discharge, or the Length of the Course. The Measure he mentions is from seven to ten Pints a Day; and though sometimes ten Days, or thereabouts, be a sufficient Time for the Flux to continue, yet there are Cases, where he thinks it may be proper to prolong it, till the twentieth. However, he thinks this Method ought never to be attempted but where *Sarsa* and *Guajacum* fail. *Freind's History of Physic*.

THE METHOD OF RAISING A SALIVATION BY FUMIGATIONS.

The Patient being first duly prepared, is placed naked in a proper Chair, or Stove; and small Pieces of Cinnabar, to the Quantity of two or three Drams, being thrown upon live Charcoal, the Steam is received through the Pores of the Skin. The Patient grows soon very warm, and sweats more or less, in Proportion to his Strength. This Operation is repeated every Day, or every other Day, till the Gums begin to swell and ulcerate, and the Spitting rises to a sufficient Quantity.

Some prefer Plaisters to Ointments; and it is certain, that the Effects of them are slower and milder. They are applied to the same Places, and with the same Precautions as the Ointment. (See below.) Others are of Opinion, that a Salivation is most safely raised, and afterwards either increased or diminished, as the Physician shall judge the Patient's Strength to require, by the internal Use of the mercurial Panacea: And it must be owned, that both Fumigations and Ointments are hazardous and uncertain; for Fumigations sometimes affect the Head, and produce direful Symptoms; and Ointments raise sometimes too great a Salivation, sometimes none at all; because a greater or smaller Quantity of the Quicksilver enters the Blood, according as the Pores of the Skin are wider or narrower; and this can never be known but by the Event. But the Usefulness and Excellence of the Panacea consists in this; that being given at first in small Doses, the Quantity of it may be increased at Pleasure, till the Patient spits the Quantity required; and this Quantity is either increased, diminished or continued the same at the Pleasure of the Physician, without any Fear of Danger. The other Methods of Salivating are not, however, altogether to be rejected; for it is sometimes necessary to mix them with the Use of the Panacea, which being slow in its Operation, the Ointment is to be used once or twice in some Cases, to bring the Spitting speedily to the desired Pitch. In Persons, therefore, of a very strong Constitution, the Salivation ought to be raised by Unction, and afterwards kept up by the Panacea; but in weak Habits the Panacea alone is to be depended on, or, at least, with the Assistance of only a few Plaisters. In Cases of violent continual Pains, Nodes, or Exostoses, Plaisters are, also, to be applied; as in the pocky Itch, Herpes, Ulcers, Scabs or Pustules spread over the Body, Ointments are most proper. Lastly, Fumigations are usefully mixed with Unctions, or with the Panacea, when there are Ulcers, Venereal or Condylomata in the Pudenda or Anus.

THE METHOD OF SALIVATING BY THE PANACEA.

The Patient is first to be let Blood once or twice, according to his Strength and the Fulness of his Vessels. The Day after the last Bleeding he ought to take a purging Potion, and at a proper Distance of Time, as two Hours or more, four Grains of Tartar Emetic, dissolved in weak Broth. The next Day he should go into a warm Bath, and repeat Bathing once or twice a Day for six or seven times.

By these Preparations the *Primæ Viæ* are cleared of their gross Contents, the Vessels are relaxed, the Blood circulates more clearly, the Juices become more fluid, and the solid Fibres softer, or less rigid. We ought, however, to take Care not to weaken the Patient too much, by Bleeding or Bathing, lest he be unable to bear a due Salivation; neither are Cathartics to be repeated, because they retard the Spitting: For though Venereal Diseases may be cured by Purging, yet Salivation is much more safe.

The Patient's Body being thus prepared, the next Day after his last Bathing, he ought to take ten Grains of Panacea in the Morning, and five in the Evening; the second Day fifteen Grains in the Morning, and eight in the Evening; the third Day twenty Grains in the Morning, and ten in the Evening; the fourth Day twenty-five Grains in the Morning, and fifteen in the Evening; and thus the Dose may be increased every Day from five to ten Grains, till the Quantity spit in twenty-four Hours amounts to three or four Pints; or the Evacuations by Stool are proportionable to that Quantity. No more Panacea is from thence to be given, except the Evacuations begin to lessen before all the venereal Symptoms disappear. In that Case, Recourse must again be had to the Panacea, beginning with the same Dose which the Patient took last, and continuing it till we are assured of a perfect Cure. If, after the Panacea is left off, the Salivation should increase, a Cathartic ought immediately to be thrown in, and frequently repeated at small Intervals. If, during the Salivation, a Looseness should happen with violent Gripings, and a Dysentery be apprehended, detergent, lenient, and strengthening Clysters are to be exhibited. During the whole time of the Cure, the Patient's Nourishment ought to consist of Broths, Eggs, Panada, and other Spoon-meats, but of nothing solid.

The Panacea ought to be given in some proper Conserve, drinking a Draught of Broth after each Dose; and for three or four Hours afterwards no kind of Nourishment should be given. When the Effects of the Panacea are quite over, the Patient ought to be purged two or three times, and then use a Milk Diet for a considerable time.

Nothing can be with Certainty fixed concerning the Quantity to be evacuated in a Salivation: For after the most copious Evacuations, some Patients have remained uncured; whereas others have been perfectly restored after a very slight Course. This, therefore, must be left to the Judgment of the Physician; as also, whether the Patient has Strength to go through a Salivation, when the venereal Disease is complicated with others. Thus, in a Constitution inclining to a hectic Fever, where the Blood being already too much dissolved, passes out of the Body in profuse Sweats, the Mercury, by dissolving it still more, would undoubtedly evacuate it by all the Emunctories of the Body, and Life along with it. In scorbutic Affections, though the Juices are said to be viscid and concreted, yet the Use of Quicksilver has often been fatal; because, as in these Diseases, the Salts in the Fluids are in greater Quantity and more caustic, than in those of the venereal Kind, yet their Force and Energy is much weaken'd by the Lensor of the Fluids; but, if by the Use of Quicksilver this Lensor is taken off, and the Juices made more fluid, the saline Spicula then prove greatly detrimental to the tender Membranes, by pricking and tearing them to Pieces; whence follow those intolerable Pains, Hæmorrhages, Inflammations and Exulcerations, which arise from taking Mercury.

Quicksilver is said to be a great Enemy to the Nerves, being thought to bring on Weakness, Tremblings, and Palsies; but these Symptoms are not to be attributed to Quicksilver, so much as to the injudicious Use of it: For by giving it in very small Doses, the coagulated Humours are unequally dissolved, so that the concreted Portions which still remain, being hurried along by the more fluid Parts, enter the smallest Canals of the Body, and there stick and form Obstructions; which gradually increasing, both in Strength and Number, the Tone of the solid Parts is weakened and destroyed.

It has been often asked, on what the salivating and anti-venereal Virtue of Quicksilver depends. To explain this, some have, without Ground, had Recourse to Acids and Alkalies: But in the Cure of Venereal Diseases, this Medicine

acts neither as an Acid, nor as an Alkali, since it produces the same Effects, whether it be mixed with acid Salts, or be conveyed into the Blood perfectly crude and unmixed, as by Friction and Fumigation. Neither is their Opinion probable, who say that the venereal Poison is an Acid, since the Saliva of those affected with this Disease discovers no Signs of Acidity; but on the contrary, shews itself to be of an alkaline Nature, by turning Syrup of Violets green, raising an Effervescence with acid Liquors, and by corroding Copper. We are not, therefore, to imagine, that Quicksilver acts like an Absorbent or Alkali, by sheathing the acid Parts of the Poison, for other Absorbents would better answer that Intention. It is more probable, that all the Virtues and Energy of Quick-silver depend on two Qualities, its great Divisibility, and the spherical Figure of its Particles; by which it is enabled to penetrate the most inward Recesses of the Body, insinuate itself between all Parts of the Blood and Serum, and divide all Concretions found therein; not only by preventing their mutual Contact, but by increasing their Fluidity; a small solid Sphere being interposed between each two larger Molecules of the Juices. Again, as these Molecules stagnate at the Orifices of the very small Vessels, with the Globules of Mercury between them, they are fully exposed to the Force of the Solids, and of the circulating Fluids, and thereby divided and broke to Pieces, so as to be capable of passing through the smallest Canals of the Body.

Now, when we consider those Emunctories of the Body, which are capable of transmitting a thick viscid Lymph, we find them all reducible to the intestinal and salival Glands; for those of the Kidneys and Skin give Passage only to the finer Parts of the Lymph, because of the Smallness of the Vessels of which they are composed. And, hence it is, that sudorific Medicines have not a sufficient Effect in venereal Complaints, because they drive through the Pores of the Skin only the thinner Parts, leaving the more thick and viscid behind, which they cannot dissolve; but the salival and intestinal Glands are capable of secreting these more concreted Parts. Therefore, on taking Mercury, both or either of these Emunctories transmit this viscid Lymph, according as it is found in the Body in greater or smaller Quantities. This Excretion is made most commonly and most copiously by the salival Glands, because they are the most exquisitely sensible. But when the Lymph to be evacuated is very acrid, and capable of irritating and stimulating even the intestinal Glands to a sufficient Degree, it passes off, also, by these; so that the Determination of this Lymph to both, or to either of these Emunctories, depends on its Acrimony; and for this Reason it is, that when the Irritation of the intestinal Glands is very much increased by a Cathartic Medicine, the Excretion is principally made that Way, and the Salivation decreases, or may be totally stopped. *Geoffroy.*

There are many ways of raising a Salivation, and all by Mercurial Preparations. The Preparations which I have used myself, says *Turner*, as the safest and most commodious, are Calomel and *Mercurius Dulcis* six times sublimed, given inwardly, in the milder Pox; or the same being faster radiated, and got into the Bones, the crude Mercury externally, in the way of Unction.

The *Mercurius Vita*, *Arcanum Corallinum* with the red, yellow and green Precipitates (however in Use with some) I think too churlish, and scarce safe for tender Constitutions; nor indeed can I see any Reason for their Use, whilst we have better and less hazardous Medicines to supply their Room.

In salivating by the internal Method, to an adult Person, of a tolerably good Habit, as to his Strength, and who has not been much used to the Medicine, I generally give fifteen Grains of Calomel with a little Conserve of Roses in the Morning, and the like Dose in as much of Diacordium without Honey, at Night, which I prefer to the larger given once, or, as customarily, twice a Day; because it is now less liable to run suddenly through them, or too hastily sub-lime, and endanger them that way, by the Inflammation. Besides, in this gradual way of proceeding, it comes on more certainly, easily, and also more securely to the Patient; the Effect of each Dose affording Opportunity of foreseeing readily, what more be requisite, and when you must intermit, if not entirely forbear its farther Exhibition. I know a Physical Writer hath lately acquainted us, that we are each time to double the Dose of Calomel; as for the first, fifteen Grains, for the second half a Dram, for the third a Dram, and so till the Spitting comes on; but I would advise, that no Person take this Author for his Guide in this Affair, lest inadvertently he destroy his Patient, together with his own Reputation.

After three, four, or five Days of this Management, we usually observe the Fauces to enflame, the Inside of the Cheeks to become tumid, or high and thick, being ready to fall in betwixt the Teeth, upon shutting of the Mouth; the

Tongue looks white and foul, the Gums also stand out, the Breath stinks, (which is a favourable Omen of its coming on) and in general, the whole Inside of the Mouth appears shining, seems as it were parboiled, lying in Furrows, as it appears, after strong Spirits have been retained in the Mouth. They now begin to refuse their Nourishment, while the Tongue, Gums and Cheeks are swelled, and so fore that they cannot chew, especially solid Food, but must be now content with Liquids and the softer Aliments. Besides, they are often sick at the Stomach, and frequently puke, or bulk up a thin Phlegm, another promising Forerunner of a good Salivation, when the Pukes are moderate and easy, and come by Intervals. But if attended with *Cardialgia*, or violent Pains and Torture at the Stomach, perpetual and incessant Reachings, Fainting and cold Sweats, nothing is more dangerous.

The Inside of the Mouth beginning to appear thus whealed, you may expect soon after to find it ulcerated, especially about the salival Glands; and then it may be proper to desist for a Day or two, if not give over, that you may the better observe the Increase of the Ulcers, what Sloughs are likely to be raised, and of what Depth and Dimension they are like to prove; from which a near Conjecture may be made, of the Duration as well as Quantity of the Spitting, now begun; the Consistence of the effluent Lymph, being at the same time considered.

When the Salivation is thus raised, the Patient ought to be encouraged to proceed cheerfully; and to be sometimes refreshed with a little mulled Wine, of what Sort he likes best; but Red is preferable, if there be any Tendency to a Diarrhæa, adding a third, and sometimes one half of Water. Let his Diet be a small Chicken Broth, Water-Gruel and Panada; his Drink a small Sack-Whey, or Posset-Drink, with a Draught of good Small Beer and a Toast between whiles: But in Gripes or a Looseness, the white Drink, prepared of calcined Hartshorn, or Rice-Water; also the Decoction of the Shavings of Hartshorn and Ivory, boiled with a Crust of Bread, and sweetened to the Patient's Taste, are to take Place of the rest.

Thus having given him some few Days Respite, if after the coming on of the Ptialism, you find him hearty, and his Chops but moderately swelled on the Outside, and not very fore within, the Ulcers not increasing, and few or no Sloughs appearing, the Flux also inconsiderable in Quantity, you may now again give him a Scruple of Calomel in Diacordium, as he goes to Rest, repeating the same for two or three Days following, as you find Occasion.

When in this Way he has taken about half an Ounce of Calomel (tho' there is seldom Occasion to go so high) with but little Alteration as to the Swelling or Soreness of his Mouth, and as little Appearance of the Ptialism; his Pulse and other Circumstances, with respect to any ill Symptom attending, favouring the same, he may be vomited with eight, nine, or ten Grains of the Turpeth Mineral by itself, only made into a Bolus with Conserve of Roses, or farther mixed up with half a Scruple, or fifteen Grains of the Calomel, encouraging the Operation with small Draughts of common Posset-Drink between whiles, upon each Motion to reach; but without loading his Stomach, as is customary in other Emeticks, lest happening to run downwards, it invert the Order or Course of its intended Operation. The same Vomit, if found requisite, may be repeated two or three Days after, which at these Times often answers our End, by raising the Humours towards the Jaws, and forwarding the Salivation much more effectually, than more Doses of the Calomel, simply repeated, would have done; and if, after this, it should so happen, as in spite of all Endeavours to the contrary, it sometimes will, whether from some singular Idiosyncrasy, the Tenacity of the Lymph, or some Defect in the glandular Secretion, that the Spitting will not rise to any Quantity, notwithstanding the Tumefaction, Inflammation, Stench and Putrefaction, and sometimes Ulceration also in the Patient's Mouth, you must forbear and purge it off. The Relief of the Patient must now be attempted some other Way, as by giving Calomel once or twice a Week, and purging it off again next Day, or two Days after; and on the intervening Days, direct some other antivenereal Specific, such as the alterative Pill of Gum Guaiacum, diaphoretic Antimony, and the *Æthiops Mineral*, with a good strong Decoction of the Woods, well chosen and energetic, suiting also with the Temperament of the Patient; as, if cold and phlegmatic, the Scobs of Guaiacum; if hot and dry the Sarsaparilla and China Roots; which, however slighted by some as insignificant, yet observed with a strict Discipline, as to the other Non-naturals, have certainly very great Advantages attending them, as well perspiring the noxious Particles, and drying up the superfluous Serum by the one, as counterpoising the acrid and four Juices by the other. By this Method, duly profecuted, tho' it may be somewhat longer, the Purpose may be at length effected, which by the former

former was not to be obtained. Some have remarked, that those Persons who are purged with great Difficulty, are with great Difficulty salivated; which may arise from the same Cause, the Toughness of the Humours, and slower Secretion. Altho' in the Evacuation downwards, we often find thin, choleric, and dry Bodies, are more easily moved by Lenients, as common Oil, Manna, lenitive Electuary, Cassia, Diaprunum, even a Bit of fresh Butter, or fat Broth, than by stronger Purgatives of Scammony, Colocynth, and the like.

When the Ptyalism proceeds successfully, it may be left to take its Course, till it declines spontaneously, which, in Proportion to the Ulcers or Thickness of the Sloughs about the Parts of the Mouth, may happen at the Expiration of one and twenty Days, or sometimes a Month from the Time of its first Rising, which is usually long enough to subdue this Disease, after it is confirmed. I said, from the Time of its rising, or spitting perhaps a Pint and a half a Day, till it comes to three, four, or five Pints, in twenty four Hours, and so gradually goes off again; for often the first four or five Days, and sometimes a whole Week, is spent in bringing it to the first Proportion.

Besides, this Way of salivating by the Calomel, in the more stubborn and rebellious Pox, attended not only with cruel nocturnal Pains, Gummata, Tophi and Nodes, but also rotten or foul Bones; where the Patient has been long used to the taking of Calomel, or a like mercurial Preparation internally, and has perhaps been often salivated by such Preparations to no Purpose, it is better to attempt the Cure by salivating with the Unction, in which little Regard is to be had as to the Choice of the Ointment with which the Quicksilver is to be incorporated, since the Stress is entirely laid on the Quicksilver. In this Method, as well as in the other by Calomel, Care must be taken not to proceed too hastily.

If you have one Ounce of the Quicksilver to three Ounces of *Axungia* (which is the Proportion I have usually observed) about an eighth Part may be used Night and Morning; letting the Patient rub it gently with his own Hands, into his Limbs before the Fire, beginning from his Ancles up his Shins to his Knees, all round his Joints; and so to his Thighs, which are presently after to be covered close up with his Yarn Stockings and Flannel Drawers; then let him use the Remainder of this eighth Part about his Elbows, and so to his Shoulders, wiping his Fingers and Hands clean about the Glands of his Armpits, or those of his Groin: His Body being all the while defended from the cold Air, by a Screen or Blanket hung behind him, and after wrapt up warm in his Flannels, as he must also be in the other Method of salivating, such I mean as a Flannel Shirt or Shift, Waste-coat and Drawers, a Cap and Muffler pinning up thereto behind, and covering well his Throat, Chin, and Cheeks before, to keep these Parts from the cold Air, which above all is highly necessary.

Some also anoint the Trunk, especially the Spine; but I always found the Pores of the other Parts sufficient to let the Globules of the Mercury into the Blood; and it is not material by what particular Pores it had first its Admittance.

For those who are very weak, once a Day may suffice; but the robust and strong may be anointed twice, or, which is as well, and will save Trouble, divide the Unction into four Parts, and consume one Part about him every Night, after which let him enter into a warm Bed, with Flannel Sheets or Blankets, disposing him to a gentle breathing Sweat, with a Draught of warm Posset-drink, Mace-ale, or, if very feeble, a Cup of his mull'd Wine; by which the Pores being opened, the mercurial Particles may have the freer Entrance.

It is usual to increase the Mercury and Ointment to four Times the Quantity which we have directed. Thus *Harvey* prescribes one Pound of *Axungia* to be mixed with three Ounces, and sometimes six Ounces of Quicksilver, adding also a little white Ellebore and crude Antimony in fine Powder, pretending thereby, to forward the Salivation, and increase the Force of Medicine in mastering any Malignity. *Mr. Wiseman's* Composition was also six Ounces of Mercury to one Pound of the other Materials, of which he used one Ounce, or two Ounces at a Time, once or twice a Day, for four, six, or eight Times, according to the Patient's Strength, and the Ease or Difficulty of raising the Flux. *Hildanus* directs six Ounces of Mercury to twenty Ounces of *Axungia*, and the other Ingredients. But I can see no Reason for using so much *Axungia*, provided a Half, or a fourth Part of it be sufficient to convey the Quicksilver into the Blood; nor to what End any other Ingredients should be added to the *Axungia*, unless the Turpentine, being, as I conceive, more like to hinder, especially the Species or Powders, by stopping up the Pores, than to forward the Operation. But leaving every one to follow the Proportion he likes best, in relation to my own, I must farther observe, that if after the third Unction, supposing the whole divided into four Parts, the Patient begins

to complain of his Chops, or that the Inside thereof appears ulcerated, you must stay a Day or two to see the Effect of what is already done, before you proceed farther. The like must be observed when Gripes, or bloody Stools approach. But if the Spitting comes not on, and no supervenient Symptom contra-indicates, you may expend the remaining fourth Part in like Manner; and perhaps in some Bodies, there may be Occasion for a Half, or full as much more. However, it will always be found safest to proceed leisurely, when you have gone thus far, and sometimes to wait a Day, two, or three, before you continue the Unctions; since altho' at first it may seem as if the Medicine had taken no Effect, you may soon after find it sufficient. For, tho' a Day or two after the fourth Unction, the Flux may be longer than usual in coming forwards, and the Excoriations about the Chops or Inside of the Mouth appear inconsiderable; yet in a Day or two more they may be seen to spread and increase to a copious Spitting, beyond what was expected. But when after rubbing in an Ounce, or an Ounce and a Half of the Mercurial Ointment, the Salivation appears not, it may also be necessary here to administer a Dose or two of the Turpeth Mineral, at a Day or two Days Distance; and where there are Gummata, Tophi and Nodes, you are in the Unction more especially to rub the Ointment well into these Parts, laying over them afterwards the *Emplastrum de Ranis*, with a double Quantity of Mercury. This will both help the Resolution of them, and encourage or keep up the Ptyalism, which being arrived to the Quantity of four, five, or six Pints, in a Day and Night, is accounted a sufficient Discharge. Yet this is no absolute Rule to go by, or upon which we can safely pronounce the Patient whole and sound, any more than the Quantity of the Medicine to be used, can be limited to any one certain, or constant Proportion. Since we have known some who have spit more, yet miss their Cure; whilst others who have come very short of such a Quantity, have notwithstanding obtained theirs. However, during the Salivation this Way raised, upon its too sudden Declension (tho' it commonly happens that the Sloughs being deeper, and their Mouths forer, they usually spit longer than by proceeding internally with the Calomel) it is often expedient to give a Scruple of the same, every Day, or every other Day, for two or three Times, as there may be Occasion; and toward the Conclusion, you are to purge your Patient with two or three Ounces of the common Infusion of Senna, and one Ounce of the Syrup of Buckthorn, or for those that are very weak, an Infusion of sliced Rhubarb, Senna Leaves and Tamarinds, with Salt of Tartar, adding to the strain'd Liquor one Ounce of the best Manna, or solutive Syrup of Roses, which may be repeated once or twice a Week for two or three Times; and when he is a little easy, his Chops growing pretty well, he may be permitted to eat a little Meat, as the Flesh of a Chicken or Rabbit, also Veal or Mutton, but well roasted, without Sauce or Gravy. About this Time also, it is usual to sweat them, at least before they go abroad, in their Bed, or Stove, or under the Cradle, with Spirit of Wine burning just by, to be continued as their Strength will bear, for an Hour or two, and to be repeated at two or three Days Distance, if there be Occasion, observing that the utmost Care be now taken, that your Patient be not injured by the cold Air, and that he gradually cool himself, by lessening or withdrawing the Heat or Bed Cloths he lies under, lest getting Cold, he make some fresh Complaint of Pains, which, tho' arising from this new Occasion, he may impute to the old one, and think the worse of his Cure for some Time.

During his Sweat, let him rub his Body thoroughly with warm Napkins, conveyed to him in the Bed; and when faint, let his Spirits be kept up with three or four Spoonfuls of some proper cordial Julap, or a Draught of his burnt Wine.

In order to promote this Diaphoresis, he may take a little *Venice Treacle*, with a Scruple of the Cinnabar of Antimony, or half a Scruple of Bezoar Mineral, upon which let him drink a Draught of his Diet-drink, made as hot as he can bear it. This Drink he ought to be strictly confined to, for three Weeks or a Month after he comes out of the Salivation, that having by this Evacuation secured his Body from any Relicks of the Disease, or its Remedy, the redundant Serosity remaining after the Colliquation may be dried up, before the Blood is supplied with fresh nutritious Juices. By the Neglect of this Circumstance, and by running over hastily to their wonted Liberty and Custom of Living, they too suddenly fill their Blood with a Load of improper and unsuitable Juice, at this Time in a weak infirm State, and despising their Purgings, Sweating, or Diet, as needless Pieces of Formality, or an useless Penance, too often incur the Misfortune of an unhappy Relapse.

Dr. Sydenham indeed tells us, that the Salivation must take its Course, by which the Mercury, together with the pocky Venom, sufficiently spend themselves needing no other Help

or Way of Evacuation. But certainly, as I have sometimes found, 'tis ill trusting hereunto; for the Sluices being set open, so great a Colliquation, both of nutritive, as well as excrementitious Juices, has then happened, that if the Current were not otherwise to be diverted, and the Tone of the Blood after invigorated, some Patients would be in Danger of losing their Lives by the Pyralism, or at least of falling into a Consumption; others from the impoverished and languid State of the Blood, are subject to incurable Dropsies; which has been the Fate of some, even where Endeavours have not been wanting to turn the Stream.

Yet I think this Author was not mistaken in his Opinion of the Pre-requisites of a Salivation, proposed as necessary by some; such as purging the Patient plentifully; which he has justly censured, as only needlessly harrassing the Body, impairing the Strength, and weakening the Spirits, of all which the Patient is now suddenly more than ever to stand in need, by reason of the Conflict which will be unavoidably excited by the Mercurial Particles in the Blood. However, a lenient Purgative two or three Days before, and the taking a little Blood, from those especially of a plethoric Habit, as also a more than ordinary Abstinence for such Space of Time, may be necessary to keep under a Fever, Dysentery, and Inflammation of the Parts; as also to moderate some other Symptoms which might create Trouble, when these Remedies are not so fit to be put in Practice. Bathing also in warm Water, for some lean, hot, and emaciated Patients, has been found serviceable. If the Case admits of Delay, the best Time for salivating is the more temperate Season, about the End of the Spring or the Beginning of Autumn; otherwise it may be enterprized at any other time, only taking Care to provide a good close Room with a Fire suitable, in the Winter or extreme cold Weather; and one more large and airy in the exceeding Heat of Summer. Let the Women, also, be laid down, just after the menstrual Purgation is over.

One thing of no small Moment in this Affair is, the Choice of a Nurse, who (if possible) should be a Person thoroughly acquainted with the Business, knowing how to succour them under their several Difficulties, taking care not only of their Mouths, by syringing where it is wanting, but of their Bowels, by Clysters, when they are called for to appease their Gripes, and remove the Tenesmus.

The first Accident which usually attends a Patient under a Salivation, is a *Diarrhœa* at the Beginning; and if not timely prevented; sometimes soon terminating in a Dysentery, accompanied with bloody Stools, and horrid Torture of the Bowels; which Accident may be removed in the following Manner.

Take of Diafcordium, and Conserve of red Roses, each half an Ounce; Red Coral, finely triturated, and Japan, Earth, and true Bole, pulverated, each a Dram; Diafcordium, enough to make them into an Electuary: Of which take about the Size of a Chestnut every fourth Hour, or oftner, during the Continuance of the Flux, drinking after three or four Spoonfuls, of the following Julap.

Take of Barley-Cinnamon Water six Ounces; Mint-Water, and Aqua Mirabilis, each two Ounces; Syrup of Quinces, one Ounce; mix them for a Julap.

Let his Drink be prepared of the Decoction of burnt Harts-Horn, coloured with a little Cochineal; and, when the Pains are very urgent, attended also with a Tenesmus, or perpetual Desire of going to Stool, discharging only a bloody Mucus, in the Intervals betwixt them, exhibit the following Clyster:

Take of the Decoction of burnt Harts-Horn, half a Pound; Diafcordium, or Venice Treacle, half an Ounce; dissolve them in the White of an Egg, with two Ounces of Canary Wine. To be repeated as Occasion may require.

Which will, as a Fomentation, not only comfort the Intestines, and alleviate the griping Pain, but also, by its absorbent Quality, correct the sharp Humour, and thereby abate the Stimulus. But if, notwithstanding this Remedy, the Looseness still continues, prescribe thus:

Take of Diafcordium without Honey, and Conserve of red Roses, each half an Ounce; the Barks of yellow Myrobalans, and the Cinnamonum Acutum, a little bruised, each a Dram; Barley-Cinnamon Water, half a Pound: Infuse them warm for an Hour, then strain it; and add, of Mint-Water, an Ounce; Dr. Stephens's Water, two Ounces. Mix them, and (first

shaking the Bottle) take two or three Spoonfuls after every Stool.

Let him, also, at some times drink four or five Spoonfuls of Red Wine or Claret, boiled up with a third of Water and a little Spice, sweetened with double-refined Sugar; which will serve as well as any Cordial, and into which, under great Extremity of Pain, may be infilled twelve, fifteen or twenty Drops of the cydoniated Liquid Laudanum, especially at the Hour of Rest. Now although it must be allowed, that at these times there is nothing to be done without the Help of Opiates, yet the less Occasion we have for them the better; because by retarding or slackening the Motion of all the Fluids in general, together with the glandular Secretion, they are subject, also, to thicken the Lymph itself, which should be discharged by the Glandules of the Fauces. Wherefore, so soon as ever this Accident is overcome, you must lay them aside, forbidding Poffet-Drink, Water-Gruel, Sack-Whey, but especially Malt Liqueurs, for some time; instead of which, as before advised, let him be kept strictly to the Decoction of burnt Harts-Horn, or Rice-Water. Let his Chicken be, also, boiled with a Crust of Bread, a little Rice, or a few Shavings of Harts-Horn. All which are gradually to be left off, and changed again for the more diluting Drinks, when the Diarrhœa is checked, and the Salivation comes forward; which is scarce to be expected so long as the Looseness continues, by which the Humours are carried downwards, the direct contrary way that they ought now to take.

In giving Opiates, the Consequence of one Dose is always to be observed, before another be ordered; which must be at about two Hours Distance, if there should be Occasion for a Repetition; the Quantity being increased according to the Age, Sex, Habit, and Strength of the Patient.

The next Accident we shall take notice of in raising a Mercurial Salivation, is the Sickness and Vomiting; which, if mild and gentle, may be let alone, only ordering the Patient to drink freely of a small Chicken-Broth, Poffet-Drink, or thin Water-Gruel, that his Retching may be the easier; and giving a Sup of mulled Wine with a Sprig of Mint, a little Lemon-Peel, a Blade of Mace, or a bruised Clove infused in it, to comfort the Stomach, and refresh him between whiles; by which this Complaint (the Salivation soon after rising) goes off in few Days, without farther Trouble. But if Cardialgia, or racking and intolerable Pains about the Mouth of the Stomach appear, with incessant or perpetual Vomiting, Spasms of the Members, continual Sickness without Respite, Leipothymia or Fainting, with cold Sweats upon the Forehead and Eyebrows, the Patient is in the utmost Danger; and Mercury must not only be desisted from, but the Course of what has been given must be turned downwards, especially if costive, by directing the common emollient Clyster, with two or three Ounces of the coarse Sugar, and as much of Olive Oil; adding, if there be Occasion, as a Stimulus, a Dram or two of the *Species Hiera*, and as much Sal-Gem; while, in the mean time, you are using all Endeavours to take off the Orgasm in the Spirits, to compose the enraged Stomach, with some proper Cordial Julap, or the burnt Wine; with which, if his Pulse allow, you may mix an Opiate, in such Quantity as the Importance of the Complaint, and the Strength of the Patient shall indicate. A little mulled Sack, with Spice and a few Drops of Liquid Laudanum, after his Bowels are emptied by the Clyster, will sometimes answer: Or you may direct the following Mixture.

Take of the Water of black Cherries, and Barley-Cinnamon Water, each two Ounces; Spirit of Mint, one Ounce; prepared Crabs Eyes, and red Coral finely levigated, each half a Dram; Salt of Wormwood, one Dram; Syrup of Lemons or Quinces, an Ounce; London Laudanum, carefully dissolved, and mixed with the rest, two Grains. Mix them, and (after shaking the Bottle) give two Spoonfuls, every two Hours, sooner or later, as the Exigency may require, during the Vomiting and Pain of the Stomach.

Three or four Spoonfuls of simple Mint Water, well freed from the Empyreumatic Oil that comes over in the Distillation, and swims on the Top, supped hot as Tea is drunk, is, also, proper to alleviate this Illness; likewise Epithems of Decoctions of the Tops of *Roman* Wormwood, with some of the Aromatics, as the Roots of Galangals and Zedoary, the Calamus Aromaticus, Cloves, Nutmegs and Mace, in red Wine, are not improper. Flannel Cloths should be expressed from the same Decoction made hot, and applied to the Pit of the Stomach; after which the whole Region of the Stomach may be anointed with the expressed Oils of Mace and Nutmegs.

Nutmegs, adding a few Drops of the distilled Oil of Worm-wood, and afterwards applying the great Stomachic Plaster.

For this Purpose I have likewise successfully prescribed the following.

Take of Hungary Water, and Liquid Laudanum, each one Ounce; dissolved Camphire, half a Dram; mix them for an Epithem; in which, when warmed, soak a piece of soft woollen Cloth, folded to the Breadth of four Fingers square; which, being strongly wrung, apply to the Pit of the Stomach, to be renewed when dry, or as Circumstances may require.

But this Symptom is often too powerful for these or any other Remedies, and frequently carries off the Patient in a few Hours; usually proceeding from the Ignorance of the Undertaker in hurrying on the Flux, giving disproportionate Doses of the Medicine, repeating them too fast, or continuing them longer than was proper; by which means the Patient is hurried to the Grave.

A third Complaint very usual at these Times (and which is always to be expected) is the soreness of the Chaps. For easing which, at least in some Measure, let the Patient hold in his Mouth, sometimes a little Barley Water, or Chicken Broth, made lukewarm; also now and then a little warm Milk, which is proper to lenify or assuage the Pain. But let them by no means use any restraining Mouth-waters or Gargarisms of Alum, Sage, Plantain, Bramble or the like; nor the digestive ones of fat Figs, the Roots of Marsh-mallows and Liquorice, Raisins, &c. lest by the one, you harden and dry the Ulcers, and stop the Current of the Rheum; by the other you too soon digest, and hasten off the Sloughs before their Time, and healing the Sores too soon, shorten the time of the Ptyalism. However when the mercurial Salts with those of the acrid Lymph, have eaten deep into the Parts, by which the Putrefaction spreading there may be danger, by the Loss of Substance, of a foul Jaw Bone, at such Times the Surgeon must be careful to check the farther Erosion, and promote the Digestion of the Ulcer; consuming the rotten Flesh, by touching the Parts with fifteen or twenty Drops of the Spirit of Vitriol, mixed with an Ounce of the Honey of Roses. Let him also take a Gargarism of the Decoction of Barley, with the Leaves of Plantain, Horse-tail and Strawberries, with which may be mixed a small Quantity of the Tincture of Myrrh and Aloes, with Honey of Roses. If the Putrefaction still increase, let the Parts be touched two or three times a day, with an armed Probe dipped in the following Mixture made hot.

Take of Honey of Roses, one Ounce; Tincture of Myrrh, extracted with White Wine, two Drams; or rectified Spirit of Wine, one Dram; of the Flos Unguenti Ægyptiaci, one Dram; mix them for Use.

It also frequently happens that the Jaws are so locked up, that the Patient cannot without Difficulty receive his Sustenance, nor the Surgeon inspect the Ulcers; for obviating which Inconveniences I have been under a Necessity of thrusting a bit of Stick, covered with a soft Rag, in at the Corner of the Mouth, between the backward Teeth. But if notwithstanding, any Adhesion happen of the Inside of the Cheek to the Gum, occasioning a Stricture, and hindering the Patient in the free opening of his Mouth, or in the Performance of Mastication, such a Stricture is carefully to be divided.

It is not unusual in raising a Salivation or during the Course of it, especially where there are some rotten Teeth, for a Blood-Vessel or some small Artery to burst open, by reason of the stronger Pulsation than ordinary at such times, the Circulation being somewhat impeded by the Fluxion of Humor and Tumefaction of the Parts, and consequently the Vibration of the Coats of the Artery stronger than at another Time; or this Misfortune may proceed from the Erosion of the Coats of the Vessel by the caustic Salts; whence great Hæmorrhages have ensued. At these times a little Peller of Lint covered over with the fine Powder of Crude Alum, or of Vitriol, or dipped in and expressed from the Aqua Styptica Regalis, and thrust close down into the Cavity, stops the Effusion, being held tight with the Finger for a little while; or if the Situation will admit, a Compress dipt in Oxycrate with the White of an Egg, and the Jaws close shut may be sufficient. *Wiseman* recommends an Egg boiled hard, and held between the Teeth, provided the bleeding Vessel can be compressed by it. I once met with a Flux of this Nature so very impetuous, that I found it the safest way to clap a red hot Steel Probe into the Socket of a rotten Tooth which had been some time before extracted, whence the Blood spurted out, and thus searing the Vessel restrained the Flux. The like Accident sometimes happens at the Separation of the Sloughs on the Sides of the

Cheeks; but here a little Oxycrate held in the Mouth will be sufficient; or where the Bleeding is inconsiderable, it may be suffered to run off with the Lymph, which is only streaked or discoloured with it, perhaps three or four Days, without any other Detriment. If it should last longer, discharging in any considerable Quantity, to the weakening of the Patient, some restraining Liquor, such as the Decoction of Oak-bark, or a strong Infusion of the Leaves of red Roses, unripe Galls, Pomgranate Bark, and Balaustine Flowers in Forge Water, acidulated with Spirit of Vitriol, or the like, may be held in the Mouth and spit out again as often as there is Occasion.

We have already taken Notice of the Diarrhæa, and directed how it may be repressed; but if upon renewing the mercurial Medicine either inwardly or outwardly, notwithstanding all Endeavours, because of some Idiosyncrasy, in the Patient, it will fly to the intestinal Glands, the Discharge may be permitted to proceed that way, if the Strength of the Patient permits, and the Symptoms are not too pressing, and by this way have I known the venereal Venom entirely removed; only taking Care to sheath the Intestines, which are deprived of the Mucus, by frequently injecting as a Clyster some good Flesh Broth, or the Broth of a Sheep's Head, or of the Entrails of a Capon, in which dissolve the Whites of new laid Eggs. These not sufficing you must proceed to greater Anodynes, and even to Opiates themselves. The contrary to this Accident is an over Costiveness, which seldom happens, so as to hinder the Salivation in comparison of the Looseness and Bloody Flux. If the Body be hot and dry, and the Patient spits but little, although his Chaps be much inflamed and sore, if he has been without a Stool for some Days past, it may be proper to throw up a laxative or emollient Clyster, such as warm Milk, with Sugar and Oil; or if the intestinal Fibres are very sluggish, a little common Salt may be put in; also a Suppository of the Species of Hiera Picra, Sal Gem, and Honey, boiled and made up in a proper Size; which emptying his Bowels, and cooling his Body, may probably dispose him to a freer spitting. Now also a greater Liberty may be granted him in his Liquors, of which, for the better diluting of his Blood, let him drink freely; as of Small Beer warmed with a Toast, Barley-water, a small Sack-whey or Posset Drink; also by way of Diet, Water-gruel, Oatmeal Caudle, small Chicken or Veal Broth, sometimes allowing him a roasted Pippin, if his Mouth will suffer it, or a few stew'd Prunes, with such other opening, cooling and diluting Liquids, as are forbidden those who are subject to the Diarrhæa.

There are two other supervenient Accidents which sometimes perplex a mercurial Ptyalism, and endanger the Patient's Life, I mean the too sudden Rise of the Salivation, as it were all at once, by which he may be choaked or strangled; and its Continuance, after the Time of its expected Declension, by which the nutritious Juices being thus constantly drained away, an Atrophy or Consumption must necessarily ensue.

The best Way to prevent the former is to begin with the lesser Doses, and when you find the Humors tending upwards, to proceed warily, intermitting the Repetition of the Medicine a Day, two, or three as there may seem Cause. But if by any unforeseen Accident the Fauces should suddenly inflame and tumefy, the Patient is brought into apparent Danger, and Derivation and Revulsion must be immediately attempted; as of sharp Clysters prepared of the common Decoction for Clysters, in which are to be dissolved Confectio Hamech, Species Hiera Picra, Sal Gem, or a small Quantity of the Pulp of Coloquintida tied up in a Rag may be boiled with the other Ingredients. Also some cathartic Medicine may be taken by the Mouth when it can be swallowed. Bleeding under the Tongue, in the Arms, and Cupping with Scarification on the top of the Shoulders, sharp and large Blisters between the Shoulders and behind the Ears, extending along the Jugulars on each Side of the Neck, may be very beneficial; at the same time some moderate attenuating Injection may be thrown into the Throat with a Syringe, to clear it from any viscous Phlegm, such as the Decoction for the Syrup of Marsh-mallows, with the Syrup of the five Roots, and Lemon Juice; or the Pectoral Decoction, a little sharpened with dulcified Spirit of Nitre, Spirit of Sulphur or Vitriol, adding Syrup of Mulberries, Honey of Roses, and Syrup of Brambles, or the like, taking Care not to use repercutient or restraining Gargarisms, which increasating and locking up the Humors in the Glands, would farther hazard a Suffocation. If the Humors are viscous, besides the above Injection, the Patient may drink warm Draughts of the same Decoctions, and where his Lungs are more than ordinarily stuffed with a tough and viscid Phlegm, as is usual in some cold, bulky and asthmatic Persons, he may take a Spoonful of fresh Linseed Oil drawn without Fire; if his Stomach can bear it, with a like Proportion of simple Oxymel; or Oxymel of Squills may be taken between whites in a Draught

of the pectoral Decoction; which is an excellent Promoter of Expectoration.

Purging Clysters and Cathartics are, also, to be repeated at proper Intervals, when the Spitting holds longer than it should; by which the Patient's Strength is daily impaired, and a hec-tical Indisposition contracted. But here the sharper Purga-tives are not so proper, the Humours being more gently car-ried off downwards, or moved that Way at repeated Di-ffances. Diuretics are here, also, requisite, to divert the se-rous Humours by the Glands of the Kidneys, from those of the Mouth: For this Effect the Salt of Tartar is excellent; after which, in order to fix the Mercurial Particles, and re-strain the farther Colliquation, Sulphur is esteemed one of the best Remedies. Wherefore let half a Dram or a Dram of the Flowers of Sulphur, or from a Scruple to half a Dram of its Magistery, called Lac Sulphuris, with a little Conserve of Roses, be administered two or three times a Day; or a little of the following Composition.

Take of the Conserve of red Roses, and Quinces, each half an Ounce; Milk of Sulphur, two Drams; Cina-mon Bark, Japan Earth, and red Coral, all prepared, each a Dram; Leaves of Gold, twelve; Syrup of Myrtle, enough to make them into an Electuary.

Let the Patient's Drink be a chalybeated Tincture of Roses, gratefully sharpened with Spirit of Vitriol, or a small Lime-Water. Mean while, let his old Stockings, Drawers, Shirt, Muffler, Cap, and Sheets, with whatever he had on during the time of the Uction, and in his Spitting Course, be changed for others very well aired before they are put on. If the Patient be already in a hec-tical State, Asses Milk and te-staceous Powders are the fittest Medicines; which may be ordered for him in the following Manner:

Take of the Conserve of red Roses, an Ounce; prepared Crabs Eyes, prepared Pearls, and prepared red Coral, each a Dram; of the Species Diatragacanthi frigidi, a Dram and half; Syrup of Marsh-mallows, enough to make them into an Electuary; of which take about the Size of a Nutmeg, early in the Morning; drinking af-terwards half a Pint of new-milked Asses-Milk, and sleep-ing after it an Hour. Let the Dose be repeated at four in the Afternoon, with the same Quantity of Asses-Milk.

But if there be any febrile Paroxysm, the Bark must be prescribed, which, by its specific Property, will not only take off the Fits, but by its manifest Stypticity, invigorate also the languid Condition of the Blood, and so put a Check to the Salivation.

If a Dropsy happen to ensue, from the broken Texture of the Blood, accompanied with anasarca Swellings of the Feet, Legs and Thighs, and sometimes, also, an Ascites of the Abdomen, the Indications and Remedies are the same as in other watery Tumours.

If a Palsy should be the Consequence, such inciding, vo-latile, and warm invigorating Medicines, as may open the obstructed Tubes, and restore the nervous Fluid to be car-ried on in its accustomed Channels, together with such local or topical Application, as may excite the Spirits, and give a new Tenility to the Nerves themselves, are most effectual. *Tur-ner's Syphilis*.

A CONSUMPTION FROM A SALIVATION.

Salivation is either natural, or procured by Art; and both of them is a plentiful Separation of the nutritious Juice by the Glands which supply the Spitte; upon which Secretion and Expend of the nutritious Juice, after a long Course of Sali-vation, the Blood becomes sharp and grows hot, and the muscular Parts being deprived of their due Nourishment, fall into an Atrophy, or Consumption.

A natural Salivation, or Spitting, for the most Part happens to those that have the Scurvy, and that because the Blood, by reason of its Acrimony, is not able to assimilate the new Chyle, and reduce it to its own Nature, and therefore as it circulates continually, throws it off by the Glands, which supply the Spitte. From whence it comes to pass, that even silly Women know, that Spitting too much inclines Men to a Consumption; for which Reason they do well to pre-scribe the swallowing of the Spitte to prevent a Consumption. Whereby not only the Progress of the Salivation is hindered, (for Spitting does by a certain continual Drawing, as it were, suck the Glands, which afford the Spitte, and put them upon a new Separation of it) but also the Chyle, which is separated by the salivatory Ducts to no purpose, is restored to Nature, to make up the Loss which the Mass of Blood sustains.

It is, also, as certainly true, that every Salivation procured by Art, that is, raised, with Mercurial Medicines, (if it con-tinues long) brings on a hec-tical and consumptive Dispo-sition.

In this Case (the Salivation being ended) the Patient must be put into a Milk Diet for a long time, by which the Sharpness of the Blood may be corrected, and a consumptive Disposition may be prevented. After that he must be sent into an open and benign Air, and be nourished with the plen-tiful Use of such Food as affords good Juice; and besides all this, (if it be necessary) he must drink the chalybeate Wa-ters.

I met with a very remarkable Instance of this kind of Con-sumption in the Daughter of Mr. Daulton, an Apothecary, who, from a Salivation that was raised with Mercury to cure the King's Evil, fell, as soon as ever the Salivation was ended, into a fatal Consumption; and by reason of the great Ex-pence of the Humours caused by her Spitting, she could never be restored, either by the Help of the Air, or by a Milk Diet, or any other Art; but being gradually wasted away with a Consumption, after a Month or two from the End of the Salivation, she died without any Sign of a Consumption of the Lungs. *Morton's Phthisiologia, Lib. 1. Cap. 9.*

SALIUNCA NEAPOLITANA, *sive Nardus ex Apulia.*
Italian Spikenard.

SALIX.

The Leaves are entire; the Flower, which is Male, and grows on a separate Plant, is amentaceous, spiked, and con-sists of a Multitude of Stamina. The Ovary, which is found only on the Female Plant, is furnished with a long Tube, adorned with four Horns; is of a conoidal Figure, and con-stituted in such a manner as to become a spiked Fruit, con-taining a Multitude of Capsules resembling Horns, and gaping by Maturity into two Parts. These Capsules are full of many downy Seeds.

Boerhaave mentions eighteen Sorts of *Salix*, which are;

1. *Salix; vulgaris; alba; arborescens. C. B. P. 473. Tourn. Inst. 559. Boerb. Ind. A. 2. 210. Salix, Offic. Ger. 1203. Emac. 1389. Raii Synop. 3. 447. Salix arborea angustifolia, alba, vulgaris, Park. Theat. 1430. Salix maxima, fragilis, alba hirsuta, J. B. 2. 212. Raii Hist. 2. 1419.*

COMMON WILLOW.

This is the largest of all our Willows, having tough, slen-der, green Twigs, clothed with long narrow Leaves, green above and whitish underneath, serrated about the Edges, and set on alternately. Early in the Spring come long, slender, loose Catkins, which inclose very small Seed in a white Down. It grows every where in moist Places, and by River-Sides.

The Bark, Leaves, and Juli, are cooling and binding, and useful against all kind of Fluxes and Hemorrhages. The Sap which flows from the wounded Bark, is accounted good for inflamed and bloodshot Eyes. The Ancients used to put the Branches of the Green Willow about the Beds of those who were sick of Fevers, to cool and temperate the Air. *Mil-ler's Bot.*

It grows in watry Places, and by the Sides of Brooks. The Leaves, which are used in Medicine, are refrigerating, dry-ing, and somewhat astringent, tho' its principal Use is in re-straining venereal Diseases. Outwardly they are of Service in Hemorrhages from Wounds, or from the Nostrils, and the like Disorders.

The Leaves of the Willow being laid in Water, and the same placed in a Room where the sick Person lies, are com-fortable and refreshing in an extraordinary manner. They are, also, very grateful Food to Cattle. A Decoction of the Leaves is very proper in an Hæmoptoe; and a Clyster is pre-pared of the same for a Dysentery. The Leaves, externally used, are of Service in Baths for the Feet in order to procure Sleep, and cool the Heat of Fevers. The Bark of the Tree has the same Virtues; and besides, the Ashes thereof, as *Dioscorides* says, are effectual for extirpating Warts and Corns. *Hist. Plant. Ascript. Boerhaave.*

2. *Salix; vulgaris; nigricans; folio non serrato. C. B. P. 473.*

3. *Salix; vulgaris; rubens. C. B. P. 473. Tourn. Inst. 590. Boerb. Ind. A. 2. 210. Salix rubens, Offic. Salix angustifolia purpurea seu nigra, Park. Theat. 1430. Salix rubra minime fragilis, folio longo angusto, J. B. 1. 215. Raii Hist. 2. 1421.*

COMMON RED WILLOW.

It grows in watry Places, and the Leaves and Bark, which are the Parts used in Medicine, have the same Virtues with the common Willow.

4. *Salix; lutea; sativa; folio crenato. C. B. P. 473.*

5. *Salix; folio amygdalino, utrimque virente, aurito. C. B. P. 473. Boerb. Ind. A. 2. 210. Tourn. Inst. 591. Salix nigra, Offic. Salix Spontaneo Amygdalino folio, fragilis auriculata, J. B. 1. 214. Salix viminalis nigra, Park. Theat.*

1420. *Salix folio splendente auriculato flexilis*, Raii Hist. 2.
1420. Synop. 3. 448. SHINING WILLOW, or FRENCH WILLOW.

It grows in Plantations among other Willows, but I find no peculiar Virtues ascribed to it.

6. *Salix*; oblongo, acuto, incano, folio. *C. B. P.* 474.
7. *Salix*; folio longo, angusto, acuto, leviter serrato, supra viridi, infra albescente; viminibus luteis.
8. *Salix*; Platyphyllos; Leucophlaeos; Dalechampi. *Lugd.* 276.

9. *Salix*; foliis longissimis, angustissimis, supra atroviridibus, infra incanis, margine crispo.

10. *Salix*; folio longo, utrimque viridi, acuto, serrato.
11. *Salix*; montana; major; foliis Laurinis. *H. R. Par.*
12. *Salix*; latifolia; rotunda. *C. B. P.* 474.
13. *Salix*; folio ex rotunditate acuminato. *C. B. P.* 474.
14. *Salix*; humilis; capitulo squamoso. *C. B. P.* 474. *Salix*, *Helice Theophrasti*. *Lugd.* 277.

15. *Salix*; folio longo, non auriculato; viminea rubra. *Cat. Cantabrig.*

16. *Salix*; pumila; foliis utrimque candicantibus & lanuginosis. *C. B. P.* 474.

17. *Salix*; pumila; brevi angustoque folio, incano. *C. B. P.* 474.

18. *Salix*; minima; flore eleganti luteo. *An Salix, pumila, montana, folio rotundo*. Raii Hist. 1423? *Boerb. Ind. Alt. Plant. Vol. 2. p. 210.*

Besides the foregoing Species of *Salix*, Dale mentions the following.

Salix, Helice. Offic. *Salix, Helice Theophrasti*, Park. Theat. 1435. *Salix Rosea Anglica*, Ger. 1204. Emac. 1390. ROSE WILLOW.

It grows by the Sides of Brooks, and is esteemed only a *Lusus Naturæ*.

SALLENA. A Species of Salt-Petre. *Rylandus*.

SALMERINUS, or SALMERO. A Fish very like the Salmon, but smaller; it is found in Rivers and Lakes. This Fish has something of the Trout, and is at least of as good a Taste as it and the common Salmon. It is tender, delicious and short, and not at all viscous; but on the contrary, so easy of Digestion, that some Physicians allow the Sick to eat it. It corrupts very soon, if not salted, and produces very near the same Effect as the Salmon.

Some pretend this Fish does not at all differ from the common Salmon, and that in time it grows as big as the other. However, *Johnston* makes a different Species of it; and we may easily apprehend by the Description this Author has given us of its Form, that there is some small Difference between it and the Salmon. Besides, *Gesner* says, he once consulted a very experienced Fisherman and Man of Probity upon this Subject, who assured him, this Fish would never grow so big as a common Salmon, tho' it were to continue many Years in the River. *Lemery on Foods*.

SALMO. The Salmon.

The Salmon is a Fish of an excellent Taste, and covered with numerous small Scales, marbled with red or yellow Spots. It is usually two or three Foot long, and very thick, tho' there are some six Foot long; some have weighed from twenty four to thirty six Pound. It has been said that this Fish will not live but in troubled and muddy Waters; but small Fishes have been found in its Belly; nor is it probable that so large and strong a Fish should live only upon troubled Water, and his numerous Teeth seem designed for solid Food.

Tho' the Salmon be a Sea-Fish, it usually comes up the Rivers in the Beginning of Spring, where it is observed that he fattens. But when he has tarried above one Year in a River, he grows pale, dry, lean, and ill-tasted. This Fish lives several Years, and may be kept a long Time out of the Water before it dies.

The best Salmon is well fed, large, of a middling Age, tender, short, reddish, and taken in fine clear and running Water. It is eat either fresh or salted; the first is much more agreeable to the Taste, but soon corrupts. It is tender, short and savoury, and abounds with volatile Salt, and oily and balsamic Principles, which render it nourishing, strengthening and restorative; it also promotes Urine, is pectoral and restorative; but if eat immoderately, being very fat, it causes Reachings and Indigestions; and if too old, it is dry, hard, and heavy upon the Stomach. *Lemery on Foods*.

SALOME. *Σαλόμε*. The Name of a Plaster described by *Galen*, de Comp. M. p. G. Lib. 2. C. 7.

SALOMONIS SIGILLUM. Solomon's Seal. The same as the POLYGONATUM.

SALPA. Stock-Fish.

This is a Sea-Fish pretty large, long, and resembling a common Cod. It feeds upon Sea-ware, and Excrements, but is not much esteemed for Food, because its Flesh is hard, and has no great Taste. They are dried till they are as hard

as Wood, so that before they are prepared, they must be beaten in order to make them tender. They are said to be of an aperient and resolvent Nature. *Lemery des Drogues*.

SALPETRA. Nitre.

SALPINGO-PHARYNGÆUS, according to *Valsalva* and *Douglas*, is one of the Origins of the Muscle of the Pharynx. It arises from the Extremity of the bony Part of the Tuba *Eustachiana*.

SALPINGO-STAPHILINUS MUSCULUS. A Muscle of the Uvula, thus described by *Douglas*. It arises fleshy from the bony Part of the Tube of the Ear, and is inserted into the Basis of the Uvula, where it joins Fibres with its Partner Muscle on the other Side.

Its Use is to draw the Uvula upwards and backwards.

SALSAMENTUM. The same as TARICHOS, which see.

SALSAPARILLA. The same as SARSAPARILLA.

SALSATURA. In the Preparation of the Philosophers Stone, is Dealbation.

SALSEDO. Saltnefs.

SALSEDO MUCRUM. Salt Petre, that is, Nitre.

SALSUGO. Pickle, or Brine.

SALTABRI. The same as *Sal Alembrot*. See ALEMBROT and SAL.

SALVATELLA. A Vein in the Back of the Hand, the opening of which some Physicians have fancied to be of singular Use in Melancholly. It is the Vein which comes from the little Finger, and that next to it; or, according to others, that which proceeds from betwixt the Thumb and Fore-Finger.

SALVIA.

The Characters are;

It agrees almost in every Character with *Scalaria*, or Clary. The Galea is sulcated, or fornicated, the Beard trifid, the middle Segment thereof being almost excavated. The Stamina of the Flowers, by their Inflexion, represent the Fabric of the Os Hyoides.

Boerhaave mentions twenty Species of *Salvia*, which are;

1. *Salvia*; major; an *Sphacelus Theophrasti*? *C. B. P.* 237. *Tourn. Inst.* 180. *Boerb. Ind. A.* 166. *Salvia hortensis major*, Offic. *Salvia major*, Ger. 623. Emac. 764. *Salvia major vulgaris*, Park. Theat. 49. *Salvia latifolia*, J. B. 3. 304. Raii Hist. 1. 509. COMMON SAGE.

Sage is a shrubby Plant that grows in every Garden, and is well known to have long, rough and wrinkled Leaves, sometimes of a hoary Green, and sometimes of a reddish Purple Colour, of a pretty strong Smell; the Flowers grow on long Stalks, set on Verticillatim in Spikes; they are large and galeated, having the Galea crooked and hollow, and the Labella broad, of a bluish Purple Colour, set in large clammy Calyces, in the Bottom of which grow four round smooth Seeds; it is planted in Gardens, and flowers in May; the Leaves and Flowers are used. *Miller's Bot. Off.*

It grows in Gardens, and flowers in June, and the Parts in Use are the Leaves and Flowers. Sage is diuretic; it provokes the Menfes, when retained through Thickness, and moderates their Excess; it is also serviceable in Palsies, Vertigos, Tremblings and Catarrhs; outwardly it absterges Aphthæ in the Mouth. *Dale from Schroder*.

Sage, which is produced almost in every Garden, is an excellent Cephalic, and was always highly esteemed by the Inhabitants of the Eastern Nations, who at present prefer its dried Leaves to Tea. In Consequence of the subtil, vaporous, and sedative Oil it contains, a Decoction or rather Infusion of it by Way of Tea, is highly efficacious in spasmodic Disorders, in Contractions of the Members, and chronical Epilepsies. Baths of it prepared with an Addition of nervous Substances, such as Iron-wort, Origanum, and Mother of Thyme, are very serviceable in curing paralytic Members, and restoring the Tone of the Uterus. In order to allay Inflammations of the Fauces, and other Disorders of the Teeth and Mouth, Surgeons order a Decoction of Sage to be used as a Gargarism. *Hoffman. de Præstant. Remed. Domest.*

See BURO.

2. *Salvia*; major; an *Sphacelus Theophrasti*; floribus candidis? *C. B. P.* 237.

3. *Salvia*; perelegans; tricolor; argentea; *Belgarum*. *H. R. Par.*

4. *Salvia*; major; foliis ex viridi & luteo variegatis. *H. R. Par.*

5. *Salvia*; major; foliis ex viridi & albo variegatis.

6. *Salvia*; latifolia; serrata. *C. B. P.* 237. *Prodr.* 113.

7. *Salvia*; major; arborefcens; foliis vieticis, laceris, Fimbria aureâ donatis.

8. *Salvia*; Cretica; non pomifera. *Clus. H.* 343.

9. *Salvia*; folio lato, amplo, subrotundo.

10. *Salvia*; minor; aurita & non aurita, *C. B. P.* 237. *Tourn. Inst.* 181. *Boerb. Ind. A.* 166. *Salvia hortensis minor*, Offic. *Salvia minor*, Ger. 623. Emac. 764. Raii Hist. 1.

510. *Salvia minor auriculata*, J. B. 3. 305. *Salvia minor frue pinnata*, Park. Theat. 50. SAGE OF VIRTUE.

This Sage is smaller than the common Sort, having lesser, narrower and smother Leaves, of a whitish hoary green Colour, with frequently two small Pieces or Ears growing on them next the Stalk, which in some Plants are wanting, and in others but on one Side; it is of a milder Scent than the common, and has rather smaller Flowers, but much of a Colour, flowering at the same Time, and is also planted in Gardens.

The Virtues of both this and the common Sort are much the same; the common is used more in the Kitchen; they are Cephalic, and good for all Diseases of the Head and Nerves, as the Palsy, Convulsions, &c. They are likewise diuretic, and good for uterine Obstructions, and are much used in Fevers of all Sorts, in Tea or Posset-drink. *Miller's Bot. Off.*

11. *Salvia*; angustifolia; serrata. C. B. P. 237.

12. *Salvia*; Orientalis; latifolia; Absinthium redolens; florecarneo magno.

13. *Salvia*; Orientalis; latifolia; hirsutissima; viscosa pinnata; flore & calice purpureis; inodora.

14. *Salvia*; Africana; frutescens; folio subrotundo, glauco; flore aureo, magno. H. A. 2. 183.

16. *Salvia*; baccifera. C. B. P. 237.

17. *Salvia*; bacciferae similis; sed foliis magis undulatis.

18. *Salvia*; Cretica; frutescens; pomifera; foliis longioribus, incanis, crispis. T. C. 10. T. Voy. 1. 77.

19. *Salvia*; Hispanica; folio Lavandulae. T. 181.

20. *Salvia*; Absinthium redolens. J. B. 3. 307. *Boerb. Ind. Alt. Plant. Vol.*

The first Species of *Salvia* is called *Sphacelus Theophrasti*, because its Leaves bruised and applied to a gangrenous Place, cure a Gangrene, and prevent a Sphacelus. Some of the Species are said to be pomiferous; the Occasion why they are so called is, that in hot Countries a certain Insect half penetrates the Leaf, principally of those Plants which have wrinkled Leaves, and there lays its Seed, whence in the following Year is produced what we name a Gall. These Species being transported hither, are furnished with those Galls for the first Year, which disappear in the next, because we have no such Insects in these Countries.

Salvia is so called from *Salvus*, sound, healthy, because no Plant has a greater Reputation for Healthfulness and Wholeness, whence the Question in the old Verse,

Cur moriatur Homo cui Salvia crescit in Horto?

Why dies the Man whose Garden Sage affords?

All the Species have a very fragrant Smell beyond all other Plants, and if smelled to for a considerable Time, cause a Sort of Ebriety, and at length a Vertigo; for examining this Plant upon an empty Stomach, I found myself almost drunk with the Smell thereof, and when I had taken some of the Flowers, I felt a Heat, with an Accession of Strength from them. The Leaves infused in Water blacken it like Tea, and Ink may be made with the same as well as with Galls. Drank after this manner, it is astringent, stimulates the Fluids, and corroborates and dries the Fibres and Bones; whence I conclude it to be a Strengtheners, Heater, and Raiser of the Spirits. It is justly, therefore, by *Dioscorides* esteemed a most effectual Sudorific, Cardiac and Cephalic, and has given Occasion for the Verse in the *Schola Salernitana* above cited. The Leaves infused in Wine fasten loose Teeth and Gums, and are good for the Scurvy, and by their balsamic Virtue corroborate the Parts. It is an excellent Plant for all Diseases of the Head proceeding from Weakness of the Stomach, and is of Service in the Palsy, Lethargy, Apoplexy, Epilepsy, Podagra, Arthritis, Vertigo, Leucophlegmatia, and Chlorosis or Cachexy of Virgins. It is subject, however, to one very great Inconvenience, which is, that it harbours Toads under its Roots; the Way to avoid which is to plant near it Rue, which these Animals cannot endure. Hence the rhyming Verse,

Salvia cum Ruta faciunt tibi Pocula tuta.

Sage indeed was by the Ancients justly esteemed alexipharmic, sudorific, cardiac, and especially cephalic, but it was only in cold Diseases, where Phlegm abounded. The distilled Water, and the Conserve of the Flowers, were usually exhibited as Preservatives against all Sorts of Poison, by their sudorific and strengthening Virtues. Sage is also reckoned to have an antiseptic Virtue, which renders it very serviceable in seasoning Carcases, and therefore of great Use and Esteem in the Seraglio of the Grand Signior; for, first, it defends the Parts from Worms and Insects; secondly, by its astringent Virtue it causes a Constriction of the Parts; and lastly, by its grateful Fragrance resists Corruption. The *Chinese* are said to have so great a Love for it, that when you present them

with some of it, they cannot forbear asking how the *Europeans* can take such Delight in their Tea, when they have so much Sage of their own Growth. Sage corroborates and constricts the solid Parts, and is employed by the Surgeons in repressing Hemorrhages from Wounds, by Constriction of the Arteries; and the Herb boiled in Wine is very good for a paralytic Limb, being of an aromatic and astringent Quality, attended with somewhat of Austerity. All the Species have the Nature of the *Quercus*, whence they are binding, excite the Spirits, and move the Nerves; hence they are a very good Remedy in a Laxness and Inertness of the Nerves. A Conserve of Sage is very proper for a Weakness of the Stomach in Women, for those of that Sex who have for Years together laboured under an Infirmitas or Debility of the Stomach, are cured by taking half a Dram of the Conserve. *Hist. Plant. ascript. Boerhaave.*

SALVIA AGRESTIS. A Name for the *Scordium*; alterum; frue *Salvia agrestis*.

SALVIA MONTANA. A Name for the *Sclarea*; glutinosa; floris lutei, variegati, Barba amplà cavà.

SALVIA SYLVESTRIS. A Name for the *Stachys*; Canariensis; frutescens; Verbasci folio.

SALVIA VITÆ. A Name for the *Ruta*; muraria. See **ADIANTHUM ALBUM.**

Besides the foregoing Species of *Salvia*, Dale mentions the following,

Salvia folio tenuiore, C. B. P. 237. Tourn. Inst. 181. Raii Hist. 1. 510. *Salvia Indica*, Ger. 623. Emac. 765.

Salvia minor aurita odoratissima Hispanica, Park. Theat. 50. *Salvia tenuifolia*, J. B. 3. 306. **SPANISH SAGE.**

It is cultivated in Gardens, and the Leaves, which are the Part used in Medicine, are endued with the same Virtues as those of the common Sage.

SALZ, SULZ, or SELENIPPUM. Brine.

SAMBACH. A Name for the *Jasminum*; frue *Sambach Arabum Alpini*.

SAMBUCUS.

The Characters are;

The Branches are full of a fungous Pith; the Flower is monopetalous, rotated, multifid, as it were rosaceous, and disposed in Umbellas, or Bunches. The Ovary, which penetrates the Bottom of the Flower, becomes a Berry full of Juice, and generally containing three oblong Seeds.

Boerhaave mentions eight Species of *Sambucus*, which are;

1. *Sambucus*; fructu in umbella nigro. C. B. P. 456. Tourn. Inst. 606. *Boerb. Ind. A. 2. 223. Sambucus Offic.* Ger. 1234. Emac. 1422. Raii Synop. 3. 461. *Sambucus vulgaris*, Park. Theat. 407. J. B. 1. 544. Raii Hist. 2. 1609. **COMMON ELDER.**

The Elder-Tree is a common Hedge-Tree, whose spreading Branches have a spongy Pith in the Middle. The outside Bark is of an Ash-Colour, under which is another that is green. The Leaves are pinnated, of two or three Pair of Pinnæ, with an odd one at the End, which is larger than the rest: They are oval, sharp-pointed, and serrated about the Edges. The Flowers grow in large flat Umbels; They are small, of one Leaf cut into five Sections, with as many small Stamina, and are succeeded by small, round, deep, purple Berries, full of Purple Juice. The Elder-Tree grows frequently in Hedges, especially in moist Places, and flowers in May, and the Berries are ripe in September. The Bark, Leaves, Flowers, and Berries are used.

The inner green Bark purges thin serous Humours, and is much used for the Dropsy, the Leaves are only used outwardly, being good for Inflammations, St. Anthony's Fire, and the Piles. The Flowers are helpful for the same, and are frequently put in Fomentations and Cataplasms, for all kinds of Swellings and Tumours, and Pains of the Limbs. Inwardly used they expel the Wind, and help the Colic. The Berries are cordial and useful in hysteric Disorders. They are diuretic, and good for the Dropsy; and are frequently put into Gargarisms for sore Mouths and Throats.

On the Trunk of this Tree frequently grows a fungous Excrescence, wrinkled and turned up like an Ear, whitish on the Outside and black within, with several little Veins. These are called Jews Ears, or *Auricula Judæorum*. They are accounted good for the Swelling and Inflammations of the Tonfils, sore Throats and Quinsies.

Official Preparations of the Elder, are the *Aqua Florum Sambuci*, the *Oleum Sambucinum*, the *Unguentum Sambucinum*, and the *Syrupus Sambuci*. *Miller's Bot. Off.*

Its Leaves have a Taste at first herbaceous and saltish, afterwards bitter. The Fruit is sweetish, and gives a deeper Red to the blue than to the white Paper.

Its Leaves yield, by the Chymical Analysis, beside some acid and alkaline Liquors, some volatile concrete Salt, a great deal of Oil and Earth. Thus it may probably operate by a Sal Ammoniac, loaded with more Acid than ordinary, and joined

joined with a great deal of Oil and Earth. The Salt of the Elder-Berries resembles Alum rather than Sal Ammoniac. It affords only a little urinous Spirit from these Parts, but a great deal of Acid, Oil and Earth. *J. Baubin* and *Mr. Ray* took its Flowers to be pentapetalous; but it is monopetalous.

Hippocrates says it purges both by Urine and Stool. *Dioscorides*, also, says, that an Infusion of the Roots and Leaves in Wine evacuates Serofities, and affords Relief in hydropic Cases. He, also, commends Elder Wine, especially that of the Berries, for the Biting of Vipers, and in hysteric Cases; and adds, that it assuages Inflammations and the Gout, cures Burns, Ulcers, and the Bitings of mad Dogs. *Tragus* and *Dodonæus* prescribe either the Juice of the middle and green Bark, or an Infusion of them in Wine or Milk, to evacuate Bile and Serofities. *J. Baubin* gives an Ounce and an half of Elder-Bark Water to be drank thrice a Day, in the Morning, Noon, and at Night, in hydropical Cases. Fresh (not dried) Elder-Flowers fried with Eggs, are said to purge well enough.

Infuse dried Elder-Flowers in Whey, and take a Glass of it Morning and Evening for the Small-Pox, and *St. Anthony's Fire*; bathing the Face, in the mean time, with two Parts of Elder infused in one Part of Spirit of Wine.

A Conserve and a Syrup is made with these Flowers. They boil them gently in Vinegar and Honey for Clysters. *Camerarius* prescribes the Decoction of the young Shoots of Elder, with a little Saffron, to provoke the Terms. They are, also, used in a Conserve and Syrup, or Powder, to keep the Belly open, and purify the Blood. A Rob, Extract, Spirit, Wine, Vinegar, Syrup, and Oil, is made of the Berries of Elder. To make the Rob, take one Pound of the Juice, half a Pound of Sugar, thicken them over the Fire. *Quercetan's* Receipt of the Extract is, make a Tincture of dried Elder-Berries, with a sufficient Quantity of Spirit of Wine, add a little Spirit of Sulphur; let them digest in a close-stopped Bottle five or six Days; filtrate the Tincture, drink half a Spoonful or a Spoonful, which is very good in the hysteric Passion; or draw off the Spirit of Wine by Distillation, and the Extract will remain in the Bottom of the Cucurbit; the Dose is from a Scruple to a Dram, in the same Disease and the Looseness. The burning Spirit of Elder-Berries is very sudorific, as also the Juice of the Berries, which are easily preserved either with Oil, or by mixing a third Part of good Spirit of Wine. That which they call Elder-Wine is this Juice kept a Year: Some boil it with Sugar to the Consistence of a Syrup. The Stones of the Berries, by Expression, yield an Oil which eases the Pain of the Gout. An Oil is, also, made for this Distemper by Diffolution of its Leaves. They bruise the Ribs of its Leaves, put them into a Stone Pot, and bury it pretty deep, after having luted it well with Plaister. At the End of the Year a Sort of Oil subsides to the Bottom of the Pot; which is very lenifying. The Stones given from three Drams to half an Ounce, in Powder, are purgative, or else an Emulsion of about an Ounce may be drawn from them; being macerated in white Wine, they are scarcely purgative. The Leaves boiled in thick Wine are very resolvent; they abate the Swelling of the Legs of hydropic Persons, by placing them so as to receive the Vapours or Steam from a Bath of it, or by frequent fomenting and applying the Fæces as a Cataplasm to them. The Leaves and Flowers of Tansey may be mixed with it.

Matthioli prescribes an excellent Ointment for Burnings: Take Oil of Olive, two Pound; middle Bark of Elder contused, one Pound; boil them together, (adding now and then Elder Water) till the Bark be hard and black. Strain and boil it up to an Ointment, with four Ounces of new Wax, and as much of the Juice of young Elder Shoots, to keep it from burning. Before it is removed from the Fire, add Turpentine, and Male Frankincense, of each four Ounces; two hard Yolk of Eggs; keep it in a Stone Pot for Use. Or boil the middle Bark of Elder-Branched, contused in Oil of Olive or Nuts; bring it up to the Consistence of an Ointment with Bees-Wax, and Yolks of Eggs; keep it in a Basin with fresh Water. This is very good for the Gout, Inflammation of the Piles and Burnings. Apply some Honey, add afterwards some Nut-Oil boiled with Elder. This gives great Relief to Burnings by Gunpowder. Wash Ulcers produced by Burnings with a Decoction of Elder and Ash-Bark. *Zwelfer* prescribes an Ointment for Burnings thus:

Take of fresh Butter two Pounds; Elder-Oil, and green Juniper Berries bruised, of each a Pound; fresh Elder Flowers, six Ounces; white Roses, four Ounces; macerate all these together some Days, then boil them a little, and mix them up with five Yolks of hard Eggs. Apply this Ointment to the Burning with a Feather, and cover it with brown Paper. *Martyn's Tournefort*.

Martin Blockwitz has written a whole Book of the Vir-

tues and Use of Elder, under the Title of *Anatomia Sambuci*, "The Anatomy of the Elder-Tree."

The inner Bark (the middle of the Stem) evacuates serous Humours, whence it is of Service in Dropsies. The Buds, or tender Leaves, boiled in Wine, or eaten in Salads, are not so effectual, but fittest for weak Constitutions. The same pulverized, and taken in Pease-Broth, are good for Costiveness. The inner Bark applied to Ambushions, is said to be effectual to extinguish the igneous Heat. *Dioscorides* recommends a Cataplasm prepared of the fresh and tender Leaves, with Polenta, for Combuitions. *Alvarius* also highly commends the *Sambucus* for a recent Combuition. The Flowers are discutient, emollient, resolvent, sudorific, and anodyne. Their principal internal Use is in preventing or curing an Erysipelas; and externally, they are of Service, also, in an Erysipelas, Combuitions and the Colic. Our Domesticks, says *J. Baubin*, take the Bunches of Flowers, and fry them in a Pancake, and make thereof a grateful and wholesome Food. They may as well be mixed with other Meats, or fried with Eggs, being gently loosening of the Belly. The Flowers dried lose their purgative Quality with their Humidity; but retain their digestive and attenuating Virtue. Vinegar, in which the Flowers have been macerated, is grateful to the Stomach, excites an Appetite, and cuts and attenuates gross and crude Humours. The Berries are alexipharmic and sudorific. The Spirit drawn from the Berries is one of the principal Sudorifics, and also a very noble antifebrile Medicine. And the Wine prepared of the Juice, with white or Rhenish Wine, is of admirable Efficacy in the Dropsy. *Camerarius* writes, that the Juice of the Berries, mix'd with Cock-Broth, in which a good Quantity of Parsley-Root has been boiled, and expressed, is very good for hydropical Persons. The Stones, or Seeds of Elder are absterfiv, and purge violently both by Stool and Vomit. The Decoction of the middle Bark of Elder, or Dwarf-Elder, with Syrup of Poppies, are an effectual Sudorific: For Narcotics added to Diuretics or Diaphoretics are the more provocative to Sweat, as appears from the Mixture of Opium in Theriaca Andromachi, and Mithridate. For Inflammations of the Feet, take a sufficient Quantity of Leaves of Elder, and boil them in Oil and Salt, and therewith foment the Parts.

For the Arthritis, take Leaves of Elder, and put them in a glazed Pot, so as that they may fill it without being wrinkled; press them very well and often, then put a Cover upon them, and bury them a Year under the Earth. After which you will find a Crust above, and Oil below, than which Oil nothing is of greater Efficacy, as it has been often tried. A Conserve of the Flowers has the same Virtue.

The *Sambucus* is less hurtful to the Stomach than the *Ebulus*, and the Leaves have not so strong a Smell, nor so much of a cathartic Force as those of the other. The *Germans* frequently use the inspissated Juice of the Berries as a Sudorific, and give it to their Children with Bread; and sometimes exhibit it with good Success to those who are inclined to a Dropsy. The Berries are boiled in Water, and strained; and then boiled again to the Consistence of a Sapa, or Rob.

A Plum-Tree grafted on an Elder-Tree, bears purging Fruit, according to *Camerarius*, who says he has tried it, tho' he could not easily comprehend the Reason. I think neither of them probable, says *Ray*, and cannot comprehend either the Infision of a Plum-Tree into an Elder-Tree; nor, if this be granted, how it should bear a Fruit of a purgative Quality.

For an Erysipelas, we have a Fomentation much in Use, which is prepared of two Parts of Elder-Water, and one Part Spirit of Wine. This Practice is grounded on Reason and Experience: For the Spirit of Wine, by the Subtily and Activity of its Parts, is disposed to reduce the ruffled and distorted Tubes and Fibres of the Skin into their natural Order; and besides, the Parts affected with the Erysipelas are often eased and relieved by it in a remarkable manner. This is the common Remedy in *London*; but I have often in this Case, says *Dr. Hulse*, successfully made use of Water of Elder-Flowers, mixed and shaken together with Oil of Elder, to which I have sometimes added Spirit of Elder-Berries. I have frequently cured this Disorder with Oil of Elder and Canary Wine, mixed and shaken together.

For a quotidian Fever, take of the Bark of the Root of Elder, one Ounce; of Asarabacca, three Ounces, with a Dram and half of Cinnamon; boil them in Milk, and give it in the Beginning of the Paroxysm. It provokes to Stool, and excites Vomiting at one and the same time.

For Burns, or Combuitions, take of the green middle Rind, or Bark of Elder, a Quantity at Discretion, and boil it in Oil till it be withered, and add thereto a little Wax, in order to render it a lucid Ointment. This, says *Chefneau*, I have several times tried with Success. *Raii H. P.*

The Root rasped and infused in Wine, to the Quantity of

an Ounce, purges Water in great Abundance. The Juice of the middle Rind of Elder, expressed in a glazed Mortar, and exhibited from a Dram to half an Ounce, is the best of Hydragogues, for a Person who is just suffocated with a Dropsy, provided the Viscera be sound, for it always cures in a few Days. It dissolves the Humours to such a Degree, that the Body runs with Streams of Water in every Part, and the Patient faints away on Occasion of so great and sudden an Evacuation. The Bark of the Root is esteemed much the best for Use. The Leaves and Tops are commended by *Dioscorides* in the hysterical Passion, Inflammations, Combuſtions and Gout. The same Author exhibited the Juice of the Middle Rind, infused in Milk or Wine, to those who laboured under the Pestilence, in order to provoke Sweat. The bruised Leaves are very effectual in dissolving all scirrhus and inflammatory Tumors, in easing the Pain of the Gout, and dissipating aqueous Swellings, whence they are of Service in an aqueous Hernia. The Flowers are very salutary, and being infused in the manner of Tea, are very proper in all hot, feverish, variolous and morbillous Distempers. Their Decoction is very good to increase Milk in Women's Breasts; and outwardly they are of Service in an Erysipelas, Phlegmon, Head-ach, and Want of Sleep, being applied in a dry or humid Form, by their demulcent Virtue procuring a kindly and quiet Sleep. Of the Flowers are prepared a Conserve and Syrup, of Use in Clysters. The Tops are good to provoke the Menſes; and the Flowers are proper in all cancerous and scirrhus Diseases, the Pain of the Cholick, and a quartan Ague. Of the Berries is prepared a Rob, which is justly accounted of universal Use in chronic as well as acute Disorders, where is required a Dissolution, or an Evacuation by Stool, Urine or Sweat, according to the different Determination or Tendency of the Humours. I never found any Remedy which gave so much Relief under a Cancer as these Flowers. There was an old Man, who lived to above one hundred and twenty-five Years, who regarded this Rob of Elder as his Arcanum, and happily survived many contagious Seasons, by using no other Remedy, but taking every Day some of this Rob, to which only, and to no other Thing, he imputed his Health and long Life. The Extract is very good in Hysterics, and the Berries are of Service in all kinds of Dysenteries and Diarrhæas; and the Oil is very good in the Gout. The Leaves, or middle Bark, made into an Ointment with Oil, are useful in the Hæmorrhoids, Gout and Combuſtions; and half an Ounce of the bruised Seeds mitigate Pains of the Belly, and destroy Worms. The outer Bark is astringent; and the Pith dried and torrefied is of Service in humid Ulcers. *Hist. Plant. Acript. Boerhaave. Bartholine, in Dissert. de Medic. Dan. Lib. 1. informs us, that Elder is at once more safe and efficacious than the celebrated Antidotes prepared of Theriaca and Mithridate. The Flowers and Rob of Elder are highly and justly esteemed by the common People; for the former are with great Success externally applied for alleviating all erysipelaceous Swellings, Toothachs and Gouts; as also for softening Abscesses and hard Tumours, produced by coagulated Milk. The Water of these Flowers, in consequence of its anodyne Quality, is of singular Efficacy in all Diseases, whether acute or chronic; but especially in those Disorders where Expulsion is proper, where the Pain is intense, and where there is an Inflammation of the internal Parts. The Rob prepared of Elder-Berries, is, as it were, the Panacea of the Country People, who use it as the best Preservative, and the safest Medicine in the Beginning of Diseases, mixing it either with warm Ale or Elder Flower Water; for it not only promotes the Excretions by Stool and Perspiration, but is also possessed of an anodyne Quality. Some, in order to render this Rob more diaphoretic, add about a Dram of calcined Hartshorn to it. If this Rob is mixed with an equal Quantity of Sugar-Candy, and a due Quantity of Brandy poured upon the Mixture, and kindled after a sufficient Agitation, it affords a Medicine, one Spoonful of which is of singular Service in long protracted Coughs, and before the Paroxysm of intermittent Fevers. The frequent Use of this Rob generally mitigates, and sometimes stops the Impetus of these Fevers, provided the Crudities of the Primæ Viæ have been previously treated with Laxatives and Correctors. The Middle Bark of the Elder Tree, if boiled in Ale, Water or Wine, powerfully promotes Sweat, Urine, and the Menſes, for which Reason it is highly proper for cachectic Patients. This Bark, when externally applied, removes oedematous and erysipelaceous Swellings, as also Pains and Tumors of all Kinds. *Hoffman. de Præst. Remed. Dæmest.**

AQUA FLORUM SAMBUCI. See AQUA.
OLEUM SAMBUCINUM. See OLEUM.

ROB BACCARUM SAMBUCI.

Rob of Elder Berries.

Take of the Juice of Elder Berries any Quantity, and let it leisurely be inspissated over a gentle Fire, either by itself, or in Conjunction with a fourth Part of Sugar.

After the same Manner is prepared the Rob of Dwarf Elder, of Juniper and Veronica; unless that in the latter, the Sugar and Juices are required of equal Quantities. After the like Manner others, also, may be prepared.

UNGUENTUM SAMBUCINUM.

Ointment of Elder.

Take of Elder Leaves gathered in May, ten Handfuls, of the young Shoots growing about the Bottom of the Tree, two Pounds, of the inner Bark of the same, one Pound. After these are all cut small, boil them in twelve Pounds of fresh Butter, over a slow Fire, continually stirring them all the while. Press out the Butter and strain it: to it put the same Quantity of fresh Leaves, Shoots and Bark, and repeat the Process as before, and then press it out again with less Force, so that it might be an Ointment.

This is entirely new, and wonderfully well contrived to preserve all the Virtues of the Elder, as much as such a Form will admit of: The Measure of Boiling is until the Leaves, &c. grow crisp.

2. Sambucus; fructu in umbella viridi. C. B. P. 456.

3. Sambucus; racemosa; rubra. C. B. P. 456. Park. Theat. 407. Raii Hist. 2. 1610. Tourn. Inst. 606. Boerb. Ind. A. 2. 223. Sambucus montana, Offic. Sambucus racemosa acinis rubris, J. B. 1. 551. Sambucus racemosa vel Geruina, Ger. 1234. Emac. 1422. MOUNTAIN ELDER.

This Elder differs not a great deal from the common, in Branches or Leaves; these are pinnated, and rather narrower than those of the common Elder, having five serrated Pinnæ on a Stalk. The chief Difference is in the Flowers, which are yellow, and grow in thicker Clusters, and in the Berries, which are not so deep, but of a reddish Colour. This Elder is seldom to be met with in England, but grows plentifully in Germany, and flowers in May.

It is not much used inwardly, being accounted somewhat Narcotic. It is an Ingredient in the Unguentum Populeon, but being rarely to be had, the common Elder is used in its Stead. *Miller's Bot. Off.*

4. Sambucus, laciniato folio. C. B. P. 456.

5. Sambucus; humilis; five Ebulus. C. B. Pin. 456. Raii Hist. 2. 1611. Synop. 3. 461. Tourn. Inst. 606. Boerb. Ind. A. 2. 223. Ebulus Chamææste, Offic. Ebulus five Sambucus humilis, Ger. 1238. Emac. 1426. Park. Theat. 208. Ebulus five Sambucus herbacea, J. B. 1. 546. DWARF-ELDER, or DANEWORT.

This is a much less Plant than the common Elder, seldom growing to be above three or four Foot high, having several long pinnated Leaves, growing two at a Joint; they are longer and narrower than the common Elder, and sharper pointed. The Stalks are square and striated, dying down every Year, and rising again in the Spring; on the Top of these grow Umbels of white Flowers, having frequently a Dash of Purple, each of one small Leaf, divided into five Segments; which are succeeded by round Berries, when ripe, of a deep Purple, or black Colour, and full of a purplish Juice. The Root is thick, and creeping on the Surface of the Earth.

Dwarf-Elder is much of the Nature of common Elder, purging serous watery Humours by Stool, and is therefore good for the Dropsy, and other Distempers arising from a Glut of Serum. It is likewise very serviceable against gouty scorbutic Humours, both given inwardly, and applied outwardly, boiled in a Lixivium. *Miller's Bot. Off.*

The Leaves are a little bitter, and the Fruit is more so. It is stiptic, and does not redden the blue Paper. By the chymical Analysis the Leaves and Tops yield a little acid and urinous Spirit, no concreted volatile Salt, and a good deal of Oil and Earth. The Leaves are emollient and resolving, they are heated under the Fire, and used as a Cataplasm for the Gout, and all Kind of Tumors. The young Shoots and Bark are purgative. They often infuse half an Ounce of its Seeds in a Glass of White Wine; then squeeze them a little, and give the Wine to hydropical Persons to drink, but it purges very gently. It is better to make an Emulsion with six Drams or an Ounce of them, to discuss the dropical Swelling of the Legs, or to cure the Rheumatism, make a Balneum vaporis, with the Leaves of Dwarf-Elder, Tansey, Sage, and such like Plants, or else boil these Leaves in thick Wine to bath the Parts, and apply the Faces to them. The Oil expressed

pressed from the Seed is sweetening and resolving. This Herb is a Succedaneum to Elder. *Martyn's Tournefort.*

The *Ebulus* is supposed to be endued with the same Virtues as the *Sambucus*, but in a superior Degree. The Bark and Seeds are Hydragogues, and therefore of Service in the Dropsy, Gout, and other Diseases proceeding from Serum. A Decoction of the Root and Seeds is celebrated by almost all Botanists for the Evacuation of Water in hydropic Cases, but it ought to be corrected on Account of its Violence. An Infusion of the Bark of the Root of *Ebulus* is a very violent Medicine, but the Decoction is milder, the Cathartic Virtue thereof being much diminished, according to *Fernelius*, in the Boiling. *C. Hoffman* says the Berries and Seeds are inferior in Efficacy to the Root of the *Ebulus*; and I suppose, says *Ray*, the tender Shoots and Leaves are, also, of a milder Nature. The Leaves of the *Ebulus* being bruised and applied, are no less effectual in curing Combuitions than those of the *Sambucus*. The Leaves boiled in a Lixivium, and externally applied in Fomentations, are of Service, also, in mitigating the Pain of the Gout, as we ourselves have in Part experienced; the Oil of the Seeds by Expression does the same more effectually; the Berries, as well as those of the *Sambucus*, dye the Hair.

For Affections of the Spleen, take of distilled Water of *Ebulus* to the Quantity of about four Ounces, for ten or twelve Days in the Morning fasting. This is an approved Prescription of *Du Val*, a Doctor of Physic, for Pains, Inflations, and Obstructions of the Spleen.

6. *Sambucus*; humilior; frutescens; foliis eleganter variegatis. *Suth.*

7. *Sambucus*; humilis; five *Ebulus*; folio laciniato. *C. B. P.* 456.

8. *Sambucus*; major; folio nigriori. *Boerb. Ind. Alt. Plant. Vol. 2.*

SAMBUCUS PALUSTRIS. A Name for the *Opulus*.

SAMBUCUS ROSEA. A Name for the *Opulus*; flore glabro.

SAMECH, in *Paracelsus*, according to *Rulandus*, is Tartar, or Salt of Tartar.

The *Balsamum Samech Paracelsi* is thus prepared.

Take of the best and purest Salt of Tartar, one Pound; reduce this to a strong Lixivium, with a sufficient Quantity of Rain-Water; then dissolve and boil in Rain-Water one Pound of Cream of Tartar; mix both Solutions, Drop by Drop, till you observe the Effervescence totally gone; then suddenly filtrate what is capable of Filtration, and evaporate to the Form of a Salt; and thus you have the *Balsamum Samech* of *Paracelsus*; which may be rendered more perfect in the following Manner.

Take of this inverted Salt of Tartar any Quantity; pour upon it a Quantity of alcohol of Wine, sufficient to rise three Finger-Breadths above it: Let them stand in Digestion till the Spirit of Wine has assumed a highly red Colour; then pour off the Spirit of Wine, and add a fresh Quantity of it. Continue this till you have enough of the Tincture; then mix all the Portions of the Tincture together, and evaporate to an Half; for by this Means is prepared a Medicine, which powerfully carries off the Tartar of the Blood by Urine, and effectually expels Sand and Stones from the Kidneys.

The Dose of the Salt is from half a Scruple to a whole Scruple, in some proper diuretic Liqueur; and the Dose of the Tincture from one Scruple to half a Dram. *Collectan. Chym. Leyd.*

SAMEN. Barley. *Rulandus.*

SAMIA TERRA. Offic. *Charlt. Foss.* 3. *Aldrov. Musc. Metall.* 239. *Matth.* 1391. *Worm.* 5. **EARTH OF SAMOS.**

This is an argillaceous, sebaceous, pinguious, and ponderous Substance, of a white or pale Colour, and astringent Taste. It was brought from the Island of *Samos*; and is recommended by *Dioscorides* for checking Fluxes. It agrees in Virtues with the *Lemnian Earth*.

SAMIES. An obscure Term in *Paracelsus*, which is said to import the secret Effect, or Influence of the Air.

SAMIUS LAPIS. The *Samian Stone*. It is found in the Island of *Samos*, and is used by Goldsmiths in polishing and brightening Gold; the white and ponderous is the best.

The *Samian Stone* is astringent and refrigerating; for which Reason, being taken inwardly, it is of Service in stomachic Disorders. It quickens and preserves the sensitive Organs [for *ambrosia* I read *ambrosia*], and used with Milk, is effectual in Defluxions upon the Eyes, and in Ulcers. Employed as an Amulet, it is supposed to accelerate the Birth, and to prevent Miscarriage. *Disse. Lib. 5. Cap. 173.* See **ALANA TERRA.**

SAMOLOIDES.

The Characters are;

It hath a Flower consisting of one Leaf, which is cut into four Parts almost to the Bottom, and expands in form of a Star. In the Centre of the Flower arises the Pointal, which is surrounded at Bottom by a Number of slender Threads, which are expanded, and accompanied by four Chives. This Pointal afterwards becomes an oblong Seed Vessel, which is Vivale, and contains flat Seeds.

Boerhaave mentions but one sort of *Samoloides* which is; *Samoloides*; quæ *Capraria*, *Curassavica*; *Cabritta vulgò dicta*. *H. A. 1. 79. Boerb. Ind. Alt. Plant. Vol. 2.*

This Plant is very common in *Jamaica*, and several other Places in the *West Indies*, where it hath been by some People dried and used as Tea, from whence it had the Name. In *Curacao* the Goats feed on this Plant, from whence the Inhabitants gave it the Name of *Cabritta*. But at present it is not used by any of the Inhabitants of *America* so far as I can learn. *Millers Dictionary Vol. 2.*

SAMOLUS.

The Characters are;

It hath a Wheel shaped Flower, consisting of one Leaf, which is cut into several Segments; the Pointal arises from the Empalement, and is fixed like a Nail in the Centre of the Flower; which uniting with the Empalement, is turned into a Fruit or Pod, opening at the Top, and inclosing many small Seeds.

Boerhaave mentions but one sort of *Samolus*, which is *Samolus Valerandi*. *J. B. 3. 791. Veronica, aquatica, folio subrotundo, non crenato. M. H. 3. 323. H. L. 622. Anagallis, aquatica, folio rotundo, non crenato, C. B. P. 252. Boerb. Ind. Alt. Plant. Vol. 1.*

This Plant grows wild in swampy Places, where the Water usually stands in Winter, and is seldom preserved in Gardens; it is an annual Plant, which flowers in June, and the Seeds are ripe in August.

It approaches in Resemblance to the *Veronica*, but these have a tetrapetaloid Flower, whereas the *Samolus* is pentaphylloidal; it is endued with a slight, nitrous and antiscorbutic Virtue.

SAMPARANTAM. The Indian Name for an orbicular Fruit, the same as the *Lobus Echinatus Molucensis*. *Ponæ. Lobus Orbicularis fuscus, spinosis Tuberculis obsitus, binos Phaseolos nigros continens. C. B. Clusius* supposes these to have some use in the *Indies*, because all those he saw had Holes bor'd thro' them, in order to be strung; but he could not discover for what they were employ'd.

SAMPSUCHINUM. A Compound Ointment describ'd in *Dioscorides. L. 1. C. 57.*

SAMPSUCHUM. See **AMARACUS.**

SAMSTRAVADI. See **JAMBOS.**

SANALIA. The Syrian Name for those Species of Tumors which the Greeks call *Melicerides. Aetius, Tetrabib. 2. Serm. 4. C. 15.*

SANAMUNDA. A Name for the **CARYOPHYLLATA**; **VULGARIS.**

SANCTUM LIGNUM. See **GUAIACUM.**

SANDARACHA. See **AMBRA.**

SANDARACHA GRÆCORUM. The same as **REALGAR.**

SANDARACHA, Officin. *Vernix Arabum.*

This is a Gum Resin, which flows from the *Cedrus Lycia major Dodon.* It is attenuant and resolvent, but is seldom used in Physic, though very much by the Varnishers, being first dissolved in Spirits of Wine. It is, also, used to embellish Writings, being first scattered on the Paper, and afterwards rubb'd with a Wolf's Tooth; for by this Means the Paper continues to bear Ink, and all Erasures disappear. It is sometimes confounded with Juniper Gum, and is very different from that kind of Orpiment, which was the *Sandaracha* of the ancient Greeks. *Geoffroy.*

SANDASTROS. A precious Stone call'd, also, *Garamatites*, mark'd with yellow Spots. It is esteem'd Cordial, and good to resist Poisons, being powder'd, and taken in the Quantity of half a Scruple, or a Scruple. But *Lemery* is of Opinion, that it only acts as an *Alkali*, and Absorbent.

SANDILZ ANGLORUM, five Anguilla de Arena. The foreign Writers upon the *Materia Medica*, in particular *Lemery*, have mistaken this Word. They mean Sand-Eels; a small Fish, dug out of the Sea Sand in many Parts of *Britain*. They are somewhat longer than a Finger, about as thick, of a blue Colour on the Back, and white on the Belly. They are used in Food, and are esteem'd aperitive.

SANDIVER. See **ARUNGIA VITRI.**

SANDIX. See **CERUSSA.**

SANDYX, in *Dioscorides, L. 5. C. 103*, is Ceruss calcin'd in a Pot, till it acquires the Colour of *Sandarach*, that is, *Realgar*.

SANGUICULUM. The same as **HÆMATIA.**

SANGUI-

SANGUIFICATIO. Sanguification; that is, the Elaboration of Blood.

SANGUIFLUUS. The Name of a poisonous Serpent; the same as *HÆMORRHIOUS*.

SANGUIFUCA. A Filtre. *Rulandus*.

SANGUINALIS HERBA. A Name for the *Polygonum*. Knot Grass.

SANGUINARIUS. The same as *ENÆMOS*.

SANGUINEA. Nitre. *Rulandus*.

SANGUINEUS. Sanguine; that is, full of red Blood.

SANGUINIOLUM, in *Paracelsus*, is a Sign in the Urine of a future Exulceration, and Apostemation.

SANGUIPURGIUM. A slight Fever, thus call'd by some Authors, because it is thought to purge the Blood.

SANGUIS. Blood.

As the Welfare of the Animal Oeconomy depends so much upon the Blood, and its due Circulation thro' the Vessels adapted to convey it to all Parts of the Body, it will be of some Importance to examine the Nature of this Fluid, and enquire into the Vital Powers by which it is elaborated, and render'd fit to support the Body in a State of Health.

All our Food consists of Animal or Vegetable Substances, Salt alone excepted, and Water, and many of these require a Culinary Preparation, in order to render them the more easily dissolvable by the Actions employed for their Resolution. The Business of Cookery, therefore, is to diminish the Cohesion of the Parts of Alimentary Substances, and partially digest them before they are taken into the Mouth; and to harden them by Dressing, as is sometimes done, is an Error of the worst Consequence with respect to Health, however it may indulge the Palate.

Aliments, then, prepar'd, or crude, are taken into the Mouth, where they are comminuted by chewing, mix'd with the *Saliva*, and prepar'd for a future perfect Digestion, towards which this is the first Step. Manducation, or Chewing is performed by means of the *Biventer*, or *Digastric* Muscles, which acting, draw the Chin towards the Breast, and open the Mouth; which again is closed by the Contraction of the Temporal Muscles, the Masseters, the external Pterygoide, and Internal Pterygoide Muscles, which being very strong, press the Jaws together with a prodigious Force.

The first Part of Manducation is, the inciding, or cutting the Aliment with the fore Teeth, which is called biting; the Food is then apply'd to the double Teeth call'd Grinders, by the varied Actions of the Buccinators, the Orbicular Muscle of the Lips, the Zygomaticks, the *Elevator Labiorum Communis*, the *Elevatores Labii Superioris propriæ*, the *Elevator Labii inferioris proprius*, the *Depressor Labii inferioris proprius*, the *Depressor Labiorum communis*, the *Obliquus Labii inferioris*, and the *Platysma Myoides*; when these act all together, the Cheeks and Lips are apply'd so closely to the Teeth, that no Part of the Aliment, whether solid or Fluid, can fall from betwixt the Teeth externally; but when they act separately, the Aliment is apply'd to the Teeth in such a manner as the Circumstances most require. The Tongue, also, has a very considerable Share in applying the Aliment properly to the Teeth. The Action of Mastication is of so much Importance to Health, that *Hippocrates* long ago remarks, that those whose Teeth are good, live to a very old Age. It is therefore a very great Error to swallow the Aliment, before it is duly masticated.

During the Action of Mastication, the comminuted Aliment is intimately mix'd with the *Saliva*, discharg'd from the Parotid Glands, the internal Maxillary Glands, the sublingual Glands, from innumerable Emissaries in the Tongue, Palate, Gums, and Lips, and from Glands situated in the anterior and inferior Parts of the Palate, the Uvula, and from the Tonsils. This *Saliva* is a thin, pellucid Fluid, which does not concrete by Heat; is almost void of Taste and Smell, and when agitated forms a tenacious Froth; it is separated by the Glands from the pure Arterial Blood, and during Hunger, is more copious, fluid, and acrid; after long-fasting it is very acrid, penetrating, detergent, and resolvent; it excites and increases Fermentation in farinaceous and succulent vegetable Substances, and Syrups; in both Men, and Brutes in a healthy State, it is swallow'd during Sleep; and if wantonly spit out, Loss of Appetite, Indigestion, and Atrophies, are hence excited; it consists of a pretty large Proportion of Water and Spirits, and a small Quantity of Oil, and Salt, which are united into a natural Soap, very well suited to attenuate the Aliment, and dispose it to a perfect Solution.

Hence the Error is evident which those commit, who lavish this salutary Fluid, and sollicit the Discharge thereof by smoking, or chewing Tobacco, or by any other Means.

The Alimentary Mass thus masticated, and moisten'd, is thrust towards the *Fauces*, whilst the Teeth are closed, the Aliment confin'd within them by the Contraction of the

Muscles of the Lips and Cheeks, and the Tongue is so directed, as to occupy all that Space betwixt the Teeth of the superior Jaw, and the Palate. Mean time the *Genioglossi*, *Styloglossi*, and *Ceratoglossi*, acting successively, from a Cavity at the Root of the Tongue, under the pendulous Veil of the Palate, the Uvula, and Tonsils; but above the *Larynx*, and *Pharynx*, and before the Membranes which cover the Bodies of the Vertebrae of the Neck, and posterior Muscles of the *Pharynx*, and bring thither all the Aliment to be swallowed down. Then the Root of the Tongue is expanded, elevated, and brought forwards by the Action of the *Genioglossi*, *Myloglossi*, *Geniohyoidæi*, *Mylohyoidæi*, *Stylohyoidæi*, whilst the *Os Hyoides* is applied to be pendulous Veil of the Palate, and the Foramen leading to the Nose is closed. At the same time, the *Os Hyoides* and *Larynx* are elevated by the Contraction of the *Thyrohyoidæus*. Hence the Aliment to be swallowed presses upon the *Epiglottis*, whilst the *Uvula* is depressed by its proper Muscles, and the Chink of the *Glottis* closed. At the same time, the *Genioglossi*, *Myloglossi*, *Geniohyoidæi*, and *Mylohyoidæi*, move the Root of the Tongue, *Os Hyoides*, and *Larynx*, forwards; and thus open the *Pharynx*, which is annex'd to the Root of the Tongue, the *Os Hyoides* and *Larynx*. And thus the Fauces are opened, and Room made for the Aliment to be swallowed; especially when, at the same time, the external Pterygoide Muscles, and some Fibres of the Masseter, draw the intire inferior Jaw forwards, thus making more Room, and bringing forwards the *Glossopharyngæi*, *Hyopharyngæi*, *Thyropharyngæi*, and *Cricopharyngæi*. Thus the superior Part of the *Pharynx* is dilated, and applied to what is to be swallowed, whilst the superior Orifice of the *Pharynx* closes, the *Stylopharyngæi* being contracted, and *Oesophagæi* relaxed, for the farther Passage of the Aliment. At the same time, the internal and external Muscles of the *Gargareon* act in such a manner, as to elevate and expand the Veil of the Palate, and to prevent any Particles from falling either into the Chink of the *Glottis*, or Passage to the Nose. The very instant afterwards, all the contracted Muscles abovementioned are suddenly relax'd, and both the *Sternohyoidæi*, *Sternothyroidæi*, and *Coracocervicohyoidæi*, act; by which Mechanism the broad posterior Surface of the *Cricoidæ* Cartilage is pressed downwards and backwards against the *Pharynx*. And at the very same Moment, the *Glossostaphylini*, *Pharyngostaphilini*, and *Azygos* Muscle of *Morgagni*, act with a kind of convulsive Motion, and great Force; so that the Veil of the Palate then distended, and expanded upwards, is suddenly drawn downwards, in such a manner as to press the Aliment into the Orifice of the *Oesophagus*, now elevated, and dilated by the Contraction of the *Glossostaphylini*, and *Pharyngostaphylini*. With these concur the same kind of convulsive Motion in the *Glossopharyngæi*, *Hyopharyngæi*, and *Thyropharyngæi*; by which the Tongue, *Os Hyoides*, *Larynx*, and posterior Part of the *Pharynx* are so pressed together, as to assist, at the same time, with considerable Force, the Intrusion of the Aliment into the Orifice of the *Oesophagus*. Thus the *Pharynx* is closed, whilst the *Oesophagus* contracts, and the Aliment is retained in the Cavity of the *Oesophagus*, under the *Pharynx*, and is immediately farther protruded into the Stomach, by the Contraction of the longitudinal and orbicular Fibres of the muscular Coat of the *Oesophagus*.

By this exquisite Mechanism is the Aliment conveyed to the Stomach. Hence, however, it is evident, that many Disorders in these Parts may interfere with Deglutition, render it laborious, or utterly subvert it; in particular, Tumors in the Parts subservient thereto, and Palsies of the Muscles. Deglutition may, also, be prevented, by a continued swallowing of dry Substances: For by this the *Mucus*, which lines the Inside of the *Fauces*, *Pharynx*, and *Oesophagus*, is abraded, and wasted; and thus the Organs, subservient to Deglutition, are rendered too dry to perform their respective Offices. When the Uvula is lost, or the Veil of the Palate slit, Deglutition is incommoded; in the first Case, the Person thus affected is subject to a Cough when he attempts to swallow, because a Part of the Aliment is subject to fall into the *Larynx*; in the second Case, the Aliment to be swallowed passes into the Nostrils.

As soon as the Aliment has passed into the Stomach, the superior Part of the inferior Muscle of the Diaphragm contracts upon the inferior Part of the *Gula*, which passes thro' it, and thus closes up the Stomach.

The Food thus moistened, and at the same time full of Air, deposited in the close, moist, and warm Stomach, would there spontaneously begin to ferment, or putrify, according to the different Materials of which it consisted; and either Way would be greatly changed, either into an Acefcent, Alcalcescent, rancid, or glutinous Mass. But the villous Coat of the Stomach, which immediately embraces the alimentary Mass, supplies it perpetually, by innumerable Emissaries, with

a thin, pellucid, frothy Humour, abounding with Spirits, and a little Salt, which, in the most voracious Animals, is neither alkaline nor acid, but somewhat acrid, after long fasting; and with a more viscid and mucous Humour, discharged into the Cavity of the Stomach, from the Emissaries of certain Glands destined for the Secretion thereof. See COELIA.

If it be considered that the alimentary Mass is moistened by the Saliva brought into the Stomach perpetually, and that in large Quantities, from the Mouth, *Fauces*, and *Oesophagus*; that the Stomach dilutes it by the Humours abovementioned; that the Relicks of former Aliment is mixed and agitated with it; that the Air contained in the alimentary Mass rarifying, divides it intimately; and that the Heat of the Part excites and promotes the Action of all these, 'tis evident that the Food must in the Stomach be macerated, diluted, swell'd, attenuated, fermented, and dissolved, and thus rendered fit to mix with the Animal Juices, and pervade the minute Canals of the Body.

Besides these, the Action of the muscular or carnos Coat of the Stomach must be taken into Consideration, which closely embraces all the Contents of this Organ, mixes them and grinds them together by a Sort of vermicular Motion, exposes them to the Action of the surrounding Parts, retains the more gross Parts, and expels the more Fluid towards the *Pylorus*, and thence into the *Duodenum*.

Several other Circumstances must be considered as promoting the Digestion of the Aliment in the Stomach; as, First, the Heat communicated to this Organ by all the surrounding Parts. Secondly, the perpetually-repeated Strokes of innumerable Arteries in the Diaphragm, Omentum, Spleen, Liver, Pancreas, Mesentery, and Peritonæum, upon the Stomach. Thirdly, the violent Vibrations of the *Aorta*, situated immediately under the Stomach. Fourthly, the Action of the nervous Fluid, with which no Part is more copiously supplied than the Stomach; a Circumstance not yet perfectly understood. Fifthly, the perpetual Compressure of the Stomach, and all the abdominal Viscera, by the reciprocal Action of the Diaphragm and abdominal Muscles, during Inspiration and Expiration.

The Effects of all these Causes, acting with united Force, must be,

First, To levigate, dissolve, and intimately mix the most easily mutable Parts of the Aliment, and to press them thro' the *Pylorus* into the *Duodenum*.

Secondly, To retain the more tenaceous Parts; and by a Continuation of the same Causes, to produce the same Effects upon them.

Thirdly, To render juiceless the Membranes, Tendons, Cartilages, and Bones of Animals; and the Skins, Filaments, and harder Parts of Vegetables; and thus to expel them out of the Stomach, in order to their being discharged by Stool.

It is worthy of Remark, that all the Juices employed in bringing about the Digestion of the Aliment, are neutral and saponaceous, and neither alkaline nor acid. Hence appears the Absurdity of those idle Dreams of Authors relative to Ferments, and alkaline or acid Menstruums in the Stomach, than which nothing is more absurd.

We have thus conducted the Aliment to the Stomach, whence it is expelled into the *Duodenum*, where it undergoes some considerable Alterations, from the Action of that Intestine, and of the Bile and pancreatic Juice thereon. For which see the Articles DUODENUM, BILIS, CHYLUS, and PANCREAS.

In the Intestines the Chyle is separated from the *Fæces*, which are expelled by the peristaltic Motion of the Intestines thro' the *Arms*, whilst the same peristaltic Motion impels the elaborated Chyle into the Orifices of the lacteal Vessels, which is afterwards convey'd to the Receptacle of the Chyle, and thence through the thoracic Duct to the left subclavian Vein, where it mixes with the Mass of Blood, and by the *Vena Cava Descendens* passes to the right Auricle of the Heart.

The *Vena Cava Ascendens* and *Descendens* unite in one, and open into the right Auricle, where they unite. There is a little Protuberance made by their Coats on the Inside of the Canal, like an Isthmus, which directs the Blood both of the one and the other into the Auricle, and so hinders them from rushing one upon another. The right Auricle, in its Diastole, receives the Blood from the *Vena Cava*, which by its Systole is thrust into the right Ventricle: (For the tendinous Circle, which is at the Mouth of the Cava, contracts and hinders the Blood to return into it) which at the same time is in its Diastole. In the Systole of the right Ventricle, the Blood is thrust into the Pulmonary Artery: For it cannot return into the Auricle, because of the *Valvula Tricuspides*, which communicates with the *Vena Pulmonalis*, which carries back the

Blood into the left Auricle, which in its Systole thrusts the Blood into the left Ventricle, which is then in its Diastole. In the Systole of this Ventricle the Blood is thrust into the *Aorta*, (for it cannot return into the Auricle, because of the *Valvula Mitrales*) which carries it through all the Body. Now the *Aorta*, when it comes out of the Heart, ascends a little upwards, and then turns downwards to form the descending Trunk; and from the upper Side of this Turning the cervical and axillary Vessels arise. By this Artifice the Blood collides against the Sides of the *Aorta*; its Force is broken; Part of it is taken in by the Mouths of the ascending Branches; but its greatest Part is directed downwards.

The Blood conveyed by the Arteries, is carried to corresponding venous Canals, and so again to the right Auricle of the Heart.

Let us now consider which Way the Blood circulates in the Foetus; for this you must observe, that in the right Auricle, on the lower Side of the Protuberance of the Cava, just opposite to the Mouth of the *Cava Ascendens*, there is a Hole called the *Foramen Ovale*, which opens into the *Vena Pulmonalis*. This Hole has a Valve, which suffers the Blood to enter the Vein, but hinders it to come back again. There is likewise a Passage, or Canal, which runs from the Trunk of the Pulmonary Artery to the Trunk of the *Aorta*.

Now the Blood, which comes from the Placenta, by the umbilical Vein, into the *Vena Portæ*, is sent into the Cava by a Canal, which goes straight from the Trunk of the *Portæ* to the Trunk of the Cava in the Liver. This ascends the *Vena Cava*, and is directly thrown through the *Foramen Ovale* into the Pulmonary Vein, which carries it into the left Ventricle, which throws it into the *Aorta*, to be distributed through all the Body. But the Blood, which comes down the *Vena Cava Descendens*, is diverted by the Isthmus of the Cava, from the *Foramen Ovale*, and falls into the right Ventricle, which thrusts it into the Pulmonary Artery, from whence Part of it is immediately carried by the communicating Canal into the *Aorta*. The Reason of these Passages in a Fœtus was, because the Blood could not all pass thro' the pulmonary Blood-Vessels, they being too much compressed by the Substance of the Lungs; but as soon as the Child is born, and the Pressure is taken off from the Blood-Vessels by the Distension of the Lungs with Air, the Blood finding a free Passage thro' the Lungs, runs no more by the communicating Canal, whose Direction, likewise, is not so favourable for its Reception as before; because the pulmonary Artery being stretch'd out with the Lungs, makes it go off at right Angles, and therefore it dries up. And now the pulmonary Veins being distended with the greater Quantity of Blood, which it receives from the Lungs, the Valve of the *Foramen Ovale* is pressed close to its Sides, denying a Passage to the Blood from the Cava, to be mixed with the rest of the Blood. By this you see, that the Blood, which comes from the *Vena Cava Descendens*, passes only through the left Ventricle, whilst the Blood which comes from the *Cava Ascendens* passes only through the right Ventricle.

As the Blood is the only Treasure of Life, so long as it is possessed of a laudable Quality, and in a due Quantity carried through the vascular Parts of the Body, so 'tis necessary the Physician should, by all proper Methods, investigate its Nature and various Mixtures in different Constitutions and Diseases. But nothing has a more direct and immediate Tendency to render us acquainted with the genuine and real Nature of the Blood than a chymical Analysis of it.

In order therefore to this, we must first by statical Experiments discover the Proportion between the solid and fluid Parts of the Blood, both in a fluid and morbid State. The Estimate is to be made in the following Manner: The Blood taken from the Vein is first to be weighed, and then put into a Tin Vessel, in which it is to be dried; then the remaining dry Powder is again to be weigh'd, by which Means the Quantity of the solid and fluid Parts of the Blood may be exactly determined. The larger the Quantity, therefore, there is of a solid Matter, the more thick and tenacious the Blood is; a Circumstance which surprisingly favours the Generation of Obstructions.

We are taught by the Laws of Mechanics, that three of the fluid, and only one of the solid Parts of the Aliments, are necessary to the Preservation of Health. Hence we justly infer, that there ought to be a due Proportion between the Aliments and Drink, since the former by no means contain a due Quantity of Fluid or Moisture.

In the above-mentioned Experiment, 'tis observable that the aqueous Part of the Blood is far sooner evaporated than the same Quantity of any Water placed in a similar Vessel, and exposed to the same Degree of Heat; a certain Proof that the Water mixed with the Blood and vital Humours, is not gross and crude, but highly thin and volatile. Notwithstanding

ing this Circumstance, the human Blood is specifically heavier than Water, on Account of the solid Principle it contains; for if a Vessel full of Water weighs nine Ounces and six Drams, upon pouring out this Water, and filling it with human Blood, its Weight is observed to amount to ten Ounces and two Drams. So that in this Case, the same Quantity of human Blood surpasses the like Quantity of Water by more than half an Ounce.

If the Serum floating on human Blood is put into a Silver Spoon, and held upon live Coals, it is like the White of an Egg, formed into a hard and fissile Body; a certain Proof that this Serum is turgid with a large Quantity of nutritious Juice. And, like the White of an Egg, is it neither of an alkaline or an acid Nature, because it neither produces an Effervescence with Acids nor Alcalis. 'Tis, therefore, no Wonder that it should be coagulated by a Solution of Alum, Oil of Vitriol, and highly rectified Spirit of Wine. Hence 'tis obvious how prejudicial these Liquors must be to the vital Texture and Motion of the Blood.

Blood newly taken from the Vein is totally resolved into Serum, when exposed to a gentle Heat, which is so far from rendering it more solid, that it gradually and successively resolves the Coagulum. If this Heat is continued for a considerable Time, the Blood is still rendered thinner by its Continuance, and, just like the White of an Egg, begins to grow putrid, in which State it not only has a fetid Smell, but also produces an Effervescence, when mixed with Acids. Hence 'tis obvious, that an alkaline Salt is produced by putrefaction. From this Experiment we learn, that the Blood and Serum, by the natural Warmth of the Body, in process of Time degenerate into Excrements, such as Sweat and Urine, and that an Accession of new Chyle is always necessary; otherwise, a long continued Hunger may prove the Cause of Death.

When human Blood is subjected to Distillation from a Glass Vessel, exposed to a gentle Heat, a large Quantity of Water is yielded, which has neither the Appearance of an Acid, an Alkali, nor any spirituous Principle. Hence 'tis obvious, that the spirituous Principle of the Blood is highly moveable, but by no means sulphureous, phlogistic, or of an alkaline and volatile Quality.

If after abstracting the Phlegm of the Blood from the Cucurbit by a very gentle Heat, the coagulated Mass left in the Bottom is put into a Glass Retort, and exposed to a brisk Fire, there is first obtained a yellowish Spirit, and a yellow Oil, after which a volatile white Salt adheres to the Sides of the Vessel in various Figures. Then, upon increasing the Fire, a gross Oil which falls to the Bottom, is obtained, and a large Quantity of volatile Salt ascends.

From the Caput Mortuum no fixed Salt is obtained, except perhaps common Salt, which generally happens if the Person has used large Quantities of that Salt. When the Caput Mortuum is committed to an open Fire, a small Quantity of a whitish Earth remains.

If an equal Quantity of Quick Lime is added to human Blood before Distillation, then, a more pure volatile Salt is obtained, or 'tis rather better to rectify all the Substances obtained from Blood, with Quick Lime.

But we are principally to advert to that Experiment, in which, without the Assistance of Fire, which destroys the primitive, and induces a new Texture, by an Affusion only

of warm Water, the Blood is resolved into its Elements; for if the Blood is dried, reduced to a Powder, and put into warm Water, this Water becomes reddish, and there remains a viscid Matter, of a brownish Colour, which cannot be dissolved by Water. And this Matter, indissoluble on account of its glutinous Substance, is twice as large in Quantity as the Matter capable of Resolution. If it is dried, there remains a Powder of a dark Colour, which easily takes Flame, a certain Proof that it consists of subtil sulphureous Parts, whereas the Remainder consists of more fixed and terrestrial sulphureous Parts.

These two Substances in the Blood may be discovered by the Eye, if Blood flowing from a Vein is received into tepid Water, which is soon tinged with a reddish Colour, whilst in the Bottom of the Vessel there remain white Flakes, composed as it were of Spiders Webs, and incapable of being resolved by Water. Nor is it to be doubted that a Blood thus abounding with such a gross Substance, is very subject to generate polypose Concretions, and produce Obstructions of the Vessels. *Hoffman. Obs. Phys. Chym. Lib. 2. Obs. 21.*

For an Illustration of the Texture and Consistence of the Blood, Dr. Langrish took the Pains to examine it in a statical Way, in every Stage of an acute continual Fever, where Blood could be drawn with Safety; in order to discover the different Proportions of Serum and Gore, and the different Powers of Cohesion between the red Globules which constitute the Crassamentum.

But before we proceed, continues the Doctor, to the Experiments themselves, it may be proper to advertise the Reader of the Manner in which they were made. First, I always took Care to bleed into a Porringer as near the same Shape and Size as possible; because a larger Surface of Blood should not be exposed to the Influence of the Air in one Trial than in another. Secondly, all the Blood was received in one Porringer, because I have found by Experience, that a Pound of Blood does not separate so much Serum when divided into several Parcels, as when contained in one Vessel. Thirdly, I always set the Blood in a cool Place, and after it had stood twenty four Hours, I very carefully weighed the Serum and Cruor separately, in order to find their different Proportions. Fourthly, I took a very thin Glass Tube, twelve Inches long, and one Third of an Inch in Diameter, and having hermetically sealed up one End of it, I blew it out to an obtuse Point, about the Bigness of a middling Pea. Now this Point being set upon the Crassamentum, the Weight of the Tube was not of itself sufficient to press through; and but very seldom when filled with Water; so that my Way of trying the Cohesion of the Gore, was to pour Mercury into the Tube, till it was just heavy enough to cut its Way through; and as the Tube was exactly graduated, I could by these Means very nicely determine the Power of Cohesion between the Globules which constituted the Crassamentum.

N. B. Every Degree was one Eighth of an Inch; so that when it is said in the following Table, *Degrees of Cohesion*, N. 48. we mean that the Cruor was so tough as to be equal to the Weight of six Inches of Mercury, besides the Weight of the Tube, which was three Drams, and fifty six Grains.

The Age of the Person.	The Day of the Disease.	The Symptoms.	The Quantity of Blood taken away.	The Quantity of Serum.	The Taste and Colour of the Serum.	The Colour and Consistence of the Crassamentum.	What Days the Crises happened, and by what Outlets.
A Man aged 45.	IIId	Intense Heat, Thirst, Vomiting, Looseness, excruciating Pains in the Head, Back, and Loins, and clear, pale, limpid Urine.	13 Ounces and two Scruples.	3 Ounces, 3 Drams, and 1 Scruple.	Something more brackish than healthy Serum, and of a flaming yellow.	Very florid, except here and there a blue Speck. Degrees of Cohesion 34.	On the seventh Day by Sweat and turbid Urine.
A Woman aged 32.	III	A quick full Pulse, extreme Pain in the Head and Loins, and delirious.	14 Ounces and 1 Dram.	3 Ounces, 5 Drams, and 2 Scruples.	Almost insipid and of a wheyish Colour.	Extremely florid. Degrees of Cohesion 26.	On the ninth Day by profuse Sweats and thick Urine.
A Man aged 23.	IVth	A foul, moist Tongue, crude Urine, strong full Pulse, Delirium, excessive Heat, and frequent Vomiting.	15 Ounces 2 Drams, and twenty-five Grains.	3 Ounces, 1 Dram, and 1 Scruple.	Quick, saline Taste, and straw-coloured.	Exceeding florid. Degrees of Cohesion 38.	On the 7th and 8th Days by an Hemorrhage at the Nose, plentiful Spitting, turbid Urine, and moderate Sweats.
A Man aged 42.	IIIId	Great Incalcescence, strong full Pulse, a Pain in the Head and Back, giddy and nausea Ventriculi.	14 Ounces, 1 Dram, and 1 Scruple.	5 Ounces, 2 Drams and 16 Grains.	Brackish, and of a Citron Colour.	Of vivid red, with here and there a fizy Speck upon it. Degrees of Cohesion 43.	Died on the 7th Day, by turbid Urine, and profuse Sweats.
A Boy aged 12.	IIId	A Phrenzy with extreme Talkativeness, a wild Stare with his Eyes, a dry brown Tongue, a thick black Film or Skin adhering to the Teeth and Lips, Subfultus, and a quick labouring Pulse.	6 Ounces 1 Dram.	1 Ounce, 16 Grains.	Very Salt, and of a bright yellow Flame-Colour.	A thin white Coat at Top, and florid underneath. Degrees of Cohesion 48.	Died on the 7th Day.
A Boy aged 10.	IVth	A flushed Countenance, an extreme quick full Pulse, a brown parched Tongue, with a white List round it, a Delirium, high-coloured Urine and costive.	6 Ounces. 2 Drams, 12 Grains.	1 Ounce, 3 Drams, 1 Scruple.	Brackish, clear, and Flame-coloured.	Of a vivid Colour. Degrees of Cohesion 23.	On the 8th and 9th Days, by moderate Sweats, and five or six loose Stools.
A Girl aged 14.	IIIId	Exceeding delicious, a full quick Pulse, pale limpid Urine, a dry parched Skin, and costive.	7 Ounces, 2 Scruples.	2 Ounces, 14 Grains.	Very pungent, and extremely yellow.	Of a vivid Red. Degrees of Cohesion 26.	On the 10th Day, by spitting, turbid Urine, and swelled Legs.
A Man aged 34.	Vth	A burning Heat, unquenchable Thirst, general Uneasiness, Watchings, full Pulse, and high-coloured Urine.	12 Ounces 1 Dram, 16 Grains.	2 Ounces, 15 Grains.	Quick saline Taste, and of a bilious Colour.	Very florid. Degrees of Cohesion 56.	On the 11th and 12th Days by profuse Sweats, turbid Urine, and Spitting.
A Man aged 26.	III	Giddiness, sick Fits, great Incalcescence, a strong full Pulse, Pains in the Head and Back, and clear limpid Urine.	14 Ounces, 2 Drams.	4 Ounces, 36 Grains.	No difference to be perceived from healthy Serum.	Of a good Colour. Degrees of Cohesion 22.	On the 6th Day by eight or nine loose Stools.
A Woman aged 22.	IIIId	Excruciating Pains in the Head and Loins, extreme Thirst, inward Burnings, dry parched Skin, and strong full Pulse.	12 Ounces, 1 Dram, 1 Scruple.	3 Ounces, 8 Grains.	Pungent, saline, and draw-colour'd	Exceeding vivid. Degrees of Cohesion 36.	The 8th Day by the menstrual Discharge, and moderate Sweats.
A Man aged 24.	Vth	A very strong, quick, full Pulse, Vertigo, bilious Vomiting, intense Heat, and unquenchable Thirst.	14 Ounces, 26 Grains.	3 Ounces, 5 Drams, 1 Scruple.	Much more brackish than healthy Serum, and deeper coloured.	Very florid. Degrees of Cohesion 28.	The 11th Day by profuse Sweats and thick Sediment in the Urine.
A Man aged 46.	IIId	A brown, dry, parch'd Tongue, Pains in the Head and Back, general Uneasiness and full Pulse.	12 Ounces, 6 Drams.	3 Ounces, 1 Dram, 12 Grains.	Quick, pungent, and yellow.	A thin blueish Film at the Top, and florid underneath. Deg. of Cohesion 33.	The 9th Day by Spitting, Sweat, and thick lateritious Sediment in the Urine.
A Man aged 21.	IVth	A quick full Pulse, great Thirst, Pain in the Head, giddy, clear limpid Urine.	10 Ounces, 2 Scruples, 8 Grains.	2 Ounces, 3 Drams, 15 Grains.	Saline and bilious.	Very vivid. Deg. of Cohesion 28.	The 5th Day by an Hemorrhage at the Nose, and moderate Sweats on the 6th.
A Man aged 38.	IIId	Great Incalcescence, extreme Thirst, bilious Vomiting, a parched Skin, and strong quick Pulse.	15 Ounces, 2 Drams.	3 Ounces, 4 Drams, 6 Grains.	Pungent, and very yellow.	A delicate Red. Degrees of Cohesion 34.	The 7th Day by profuse Sweat.
A Girl aged 15.	XII	A Phrenzy, subfultus Tendinum, a full labouring Pulse, intense Heat, and a parched brown Crust upon the Tongue.	6 Ounces.	1 Ounce, 3 Drams.	Very salt, and of a bright Flame-colour.	Florid and without a Speck upon it. Degrees of Cohesion 28.	The 22d and 23d Days by moderate Sweats, Spitting and very turbid Urine.
A Man aged 36.	XIII	A full heavy Pulse, luvivous Urine, a slight Pain in the Side, a quick and difficult Respiration, a black parch'd Tongue, intense Heat, subfultus Tendinum, and delirious.	8 Ounces, 1 Dram, 16 Grains.	2 Ounces, 22 Grains.	Exceeding pungent, and of a deep bilious Colour.	A thin Buff-coat at Top, and more dusky than ordinary underneath. Degrees of Cohesion 64.	Died on the 19th Day.

I must beg Leave to take Notice of the Reasons which induced me to draw Blood from one Patient on the twelfth Day, and from another on the thirteenth Day of the Disease; especially considering the great Usefulness of Bleeding in the Beginning of this Distemper, and the Danger of doing it towards the Crisis. 1. I was not consulted for either of them till those Days on which I drew Blood. 2. No Evacuations of either Kind had been made before these Times. 3. As to the Girl it was about the Time of Age that we might expect the menstrual Purgations; Pains in her Back, Giddiness, Retchings to Vomit, and the like Symptoms preceded this Illness; her Pulse was full and weak, and seemed to struggle for want of Room. 4. As to the Man, the Day before I visited him, he had taken an Ounce of the Cortex, his Apothecary mistaking a little Remission, for a true Intermission of the Fever; Subtusities, intense Heat, a difficult Respiration, and a slight Pain in the Side soon followed the Use of the Cortex; and for these Complaints I found him taking Boluses, of Lapis Contrayerva, Saffron, Castor, Sal Volatile succinatum, and the like. By this Treatment I presume, he became delirious, his Countenance was flushed, his Tongue black, and dry, his Urine extremely high-coloured, his Pulse full, heavy and something unequal. These were the Symptoms, and these, in my humble Opinion, were sufficient Indications for Phlebotomy, though so late in the Disease. I must add, that I never saw the Blood stream out so violently, and with so large an Arch as it did from the Arm of the Man; and had not my Timidity prevented taking away more Blood, I am persuaded, I had stood a better Chance for the Recovery of my Patient.

From these Experiments it plainly appears, that in ardent Fevers, the red Globules exceed the Proportion which they ought to bear to the serous Part of the Blood: For according to Mr. Boyle's Experiments and Observations of the Weights of the Crassamentum and Serum, after they have separated one from another, it appears that the Quantity of Serum which may be poured off from the Crassamentum, is about one Half of the whole Mass. And indeed, from Experiments which I have purposely made on the Blood of three young Men in perfect Health. I find it to be nearly the same; the Serum in all three Trials, much exceeding one third of the whole Mass, though I cannot say that in any of them, it fully arrived to one Half.

Here we may also observe the different Consistence of the Cruor in a febrile State, from that in Health. The Degrees of Cohesion in the Blood of the three young Men just mentioned, were eight, nine, twelve, or the most viscid of their Blood gave way to the Weight of one and a half Inch of Mercury; whereas we find in the Tables above, that the Cohesion of the Globules which constituted the Crassamentum, was sometimes equal to a Column of Mercury seven or eight Inches in Height.

Since therefore the Blood in acute Fevers is more than ordinary viscid and tenacious, and contains too great a Quantity of red Globules, notwithstanding the usual most fluid Excretions are greatly diminished, even from the very Beginning of the Disease; let us enquire by what Means this Alteration is most likely to be produced.

That accurate Observer of Nature *Leuwenhoek* has shewn us, that the largest red Globules are made up of six smaller Spheres clustered together in a very regular manner; and that so nicely, that in a perfect Globule the Composition comes to be perceptible. He likewise assures us, that he saw Globules in the Blood, much less than those which composed the red Globules; whence we may reasonably conclude, there are several Orders of Globules in the Mass of Blood, the smallest of which, if properly united to others, and those again to the largest Order, exhibit red Globules. And on the contrary the largest Globules may be broken down into their compounding smallest Globules, and by that Means come again under the Denomination of Lymph or Serum.

Hence we may conclude, that whatever will dispose the smallest Order of serous Globules to aggregate or unite into larger ones, and those again into such as are still larger, will at last produce red Globules. Now we know of nothing more likely to produce this great Change than strongly attracting, saline and sulphureous Particles, together with Heat, which invigorates their attractive Power, and thereby greatly conduces to the fixing and uniting the smallest Globules to each other.

It is certain that most of the Antecedents of Diseases are disposed to charge or impregnate the Blood with saline and sulphureous Matter; and indeed, I can give no other Reason why one Man shall catch cold, and have a Fever, and another, perhaps, shall have the perspiratory Ducts more fully stop, and yet have only a serous Defluxion, from the Nose, Eyes, or Lungs, but because in one the Blood is more impregnated, by an intemperate Use of the Non-naturals, with saline and

sulphureous Particles, than in the other; and for that Reason the Juices are more likely to become hot, acrid, grumous, and fit for the Production of a Fever.

To be a little more explicit: Let us reflect on the different States of the Blood under different Diseases. In the Leucophlegmatia, Anasarca, Ascites, and indeed in all Distempers where the vital Powers are depressed, the Pulse weak, low, and slow, and the Heat of the Body is much below the natural Standard; here, I say, we may observe how very subject the Globules of the highest Order are to lose their Contexture, and to be broken down into the smaller compounding Globules, so as to increase the Quantity of Serum. Whereas in ardent Fevers, where the saline acid sulphureous Particles abound too much, where the vital Heat is augmented above the Healthful Standard, and all the Powers of the Body exert themselves to the greatest Degree; there we may observe the smallest compounding Globules intimately united into larger ones, whereby the red Globules increase, and the whole sanguineous Mass becomes more dense, heavy, viscid and tenacious.

Hence we have good Reason to conclude, that the most necessary Requisites towards forming of red Globules in the Blood, and causing these red Globules to coalesce, are a certain Proportion of saline and sulphureous Particles, and a certain Degree of Motion and Heat; whereby the Constituent Parts of the Blood are made to attract each other more vehemently.

Heat, which coagulates the White of an Egg, has not its Effect merely by evaporating the most fluid Part, and thereby suffering the other Parts to approach nearer and nearer to each other; but it performs this sudden and wonderful Change, by increasing the attracting Power of the saline and sulphureous Particles, whereby the smaller Order of Globules run into each other, and form larger ones; and these again join with others till the whole Mass is consolidated.

Thus it is with the Blood; a proper Quantity of saline and sulphureous Matter, and a moderate Degree of Heat are perfectly necessary towards maintaining a natural and healthy Crasis; but whenever they are increased above, or decreased below the natural Standard, either in regard to their Quantity, or Motion, the Blood will become too grumous, and florid, or too thin, limpid, and pale.

In regard to the Action of the Vessels; if they have any Share in compressing and uniting the serous pellucid Globules of the Blood, and forming them into red Globules, we may reasonably conclude, that in ardent, continual Fevers, where the Action of the whole vascular System is greatly increased, the Globules will be most of all compacted and joined together.

From the whole it appears highly reasonable to believe, that a mere Plethora of languid, inert, unactive Matter, is not the Foundation of ardent Fevers; but that the Blood at such Times is too plentifully stored with acrid, sharp, irritating, strongly attracting, saline, and sulphureous Particles. However that nothing may be wanting towards investigating the true Causes of this Disease; I have thought it worth while to separate the constituent Parts or Principles of the Blood, and to take a just Estimate of their several Proportions.

By proper Distillations and the Force of Fire, we may compel Nature to an Account; and though the Bulk and Configuration of the saline and sulphureous Parts are undoubtedly much altered and commuted by the Action of Fire; yet the Proportions of the several Principles of the Blood are not increased or diminished thereby; and consequently by carefully separating and weighing them, and seeing the several Proportions they bear to each other, we may arrive at a Knowledge very useful in accounting for some of the Phenomena of Diseases, and directing us to a right Method of Cure. It is satisfying and useful as well as curious, to reduce to Measure and Weight the constituent Parts of the Blood; and I am persuaded no inquisitive Person will judge it a vain Undertaking.

A CHYMICAL ANALYSIS OF THE BLOOD, BOTH IN HEALTH AND IN ARDENT FEVERS.

EXPERIMENT I.

Eight Ounces of Blood, taken from a young Man in perfect Health, and distilled, afforded as follows.

	Ounces.	Dr.	Gr.
1. Lymph	6	4	45
2. Volatile Salt			38
3. Oil			52
4. Cap. Mort before Calcination		7	25
5. Cap. Mort. after Calcination		2	10
6. Fixed Salt			5
			The

The first three or four Ounces of Lymph seemed to contain little volatile Salt or Oil, it not being fetid or disagreeable either in Taste or Smell; neither did it ferment strongly with Acids; but the latter Part was highly impregnated therewith, and fermented violently with Oil of Vitriol, made a white Precipitate with Solution of Sublimate, and turned Syrup of Violets green.

EXPERIMENT II.

From eight Ounces of Blood drawn from a Man of fifty Years of Age, in perfect Health, something corpulent, and one who indulged in good Eating and Drinking, without using much Exercise, I obtained,

	Ounc.	Dr.	Gr.
1. Lymph	6	4	25
2. Volatile Salt			46
3. Oil		1	12
4. Cap. Mort. before Calcination		7	37
5. Cap. Mort. after Calcination		3	15
6. Fixed Salt			8

Two Grains of the fixed Salt being laid upon a Piece of clean Glas, I dropt upon it one Drop of the Oil of Vitriol, whence arose a violent Fermentation, and a white pungent Fume.

Four Grains of the same Salt being dissolved in two Ounces of Rain-Water, I added to it four Drops of a Solution of Silver in *Aqua Fortis*, which caused a manifest Milkiness, and evidently discovered the fixed Matter to be Sea-Salt; for no other Salt produces a white Fume with Oil of Vitriol, or a white Cloudiness with a Solution of Silver.

EXPERIMENT III.

Eight Ounces of Blood extracted from a Man, on the second Day of an intense Burning Fever, afforded,

	Ounc.	Dr.	Gr.
1. Lymph	6	4	6
2. Volatile Salt			5
3. Oil		1	32
4. Cap. Mort. before Calcination		7	27
5. Cap. Mort. after Calcination		2	45
6. Fixed Salt			4

EXPERIMENT IV.

Eight Ounces of Blood drawn from a Man of a robust Constitution, on the fourth Day of a most acute Fever, afforded,

	Ounc.	Dr.	Gr.
1. Lymph	6	3	28
2. Volatile Salt			34
3. Oil		1	27
4. Cap. Mort. before Calcination		7	56
5. Cap. Mort. after Calcination		2	54
6. Fixed Salt			6

The fixed Salt in these Experiments, exhibited the same Phenomena with that in the preceding ones.

The Lymph in the two last Processes seemed to be more strongly charged with volatile Salt and Oil, than the others, and fermented more violently with Acids.

These were the Proportions of the several Principles which the sanguineous Mass afforded us by the most careful Distillation. Whence it is evident, that the saline and sulphureous Parts did abound more in those seized with acute Fevers, than in those in Health.

DISEASES ARISING FROM TOO GREAT A VELOCITY OF THE BLOOD.

All the Fluids contained in any Vessels arising from the Aorta; are secreted from the Blood alone, which a little before was so effectually mixed in the Right and Left Ventricles of the Heart, that it apparently resembled one homogeneous Fluid.

In Disorders arising from too brisk a Circulation of the Blood, 'tis necessary jointly to consider both the Solids and Fluids of the human Body, the Nature and Properties of the latter of which we shall now investigate.

The Blood then is that universal Fluid which flows into the Right, and is expelled from the Left Ventricle of the Heart. This Organ receives, by Means of the Veins, the whole Blood from every Part of the Body, and having received it, returns it by Means of the Arteries, to all the Parts of the human Fabric. From this Blood, all the Parts of the Body, and all the Viscera, prepare their respective Humours which are different, according to their various Structures. In the Blood therefore are contained all the Humours of the

human Body, not with respect to their particular Nature and Quality, but with respect to their Matter, of which, in all the Parts, according to their peculiar Structure, that is produced which the adorable Architect of the human Body originally and wisely intended. During the Circulation, this Matter changed in all the Parts and Viscera, returns to the Heart, except some Part which is eliminated from the Body. This Fluid is called Blood, both when it is expelled from the Heart, and when it returns to it; and so long as these two Motions are continued, so long Life remains.

Hence we may affirm, that all the Humours are generated of the Blood, and contained in it.

The Blood consisting of so many different, tho' intimately mixed Substances, appears to be an homogeneous Fluid, of a red Colour, but when left to itself in a State of Rest, it is secreted and divided into distinct Parts.

This Blood, when circulating in the Vessels, contains large Globules of a determinate Bulk, a changeable Figure, and a reddish Colour; yellow serous Globules, six times smaller than those of the red Kind; a pellucid Fluid, capable of being concreted by the Fire; and a pellucid, light, and fine Water, consisting of still smaller Globules, which however cannot be discerned on account of their Transparency. The Globules of the first three Species form what we call the Serum, both of which may be discerned by Microscopes.

These Circumstances are supported by the Observations of Mr. *Leeuwenhoeck*; for the human Blood, when viewed through a Microscope is observed to consist of many spherical Parts, collected together, and swimming in a finer pellucid Liquor, whose Parts are not, for that Reason, to be discerned by the Microscope. When with Microscopes, the Motion of the Blood through the Vessels in the pellucid Parts of Animals is observed, it evidently appears that the Molecules of the Blood forced through the narrow Channels of the Vessels, and meeting with other Molecules, have their Figures every Moment changed, and are consequently of a flexile Nature. According to the same *Leeuwenhoeck*, the largest Molecules of the Blood are the red Globules, consisting of six smaller Particles; mutually joined and united; and if these smaller Globules, which by their Union form the red Globule, were not thus united, they would become yellow and be serous Globules. If the same Analogy obtained in all the other Parts of the Blood, then the serous Globules would also consist of six smaller Globules; and the Division would extend to the most subtile Fluids secreted from the Blood: But Experiments are wanting to ascertain the Truth of this; for those Parts of the Blood which are more subtile than the red and serous Globules, are entirely pellucid. But since there are numberless Series of decreasing Vessels between the Aorta, the largest Vessel, and the most minute Nerve, proportionable Humours seem to flow through all these intermediate Series of Vessels. The Congeries of the largest Molecules of the Blood, is called Red Blood, whilst all its more subtile Parts taken conjunctly, constitute what we call Serum; for the human Blood, when taken from the Veins, spontaneously separates into two such distinct Parts.

The red Part of the Blood, when concreted, and separated from the Serum by Rest alone, and in consequence of the Laxity of the Parts, is soon so resolved into Serum as to be almost totally converted, into it.

When the Vein of a sound Person is opened, the Blood flowing out in a full Stream, is a few Minutes after concreted into one red Mass, which gradually begins to be lessened, because its thinner Part is expressed, has its Quantity every Moment enlarged, and generally serves for the red Mass to swim in. Some Hours after this Serum of the Blood is poured off, the red Mass appears still less, and there is a fresh Quantity of Serum collected, till at last almost the whole red Part is converted into Serum. Hence it appears, that the red Portion of the Blood is gradually colligated, and transformed into Serum. According to Mr. *Leeuwenhoeck*, this happens, because the red Globules, consisting of six smaller Molecules, being now freed from the Pressure of the Vessels, gradually recede from each other into those serous Globules, by whose Union they were form'd. Hence appears the Difficulty of determining the Proportion between the red and serous Parts of the Blood, since the former is thus gradually colligated into the latter.

Serum, long kept in an Air moderately warm and moist, by Rest alone, and the Laxity of its Parts, is resolved into a more thin, pellucid, and light Fluid, which gradually becomes putrid, and is so volatile, as to be almost totally evaporated; and these Circumstances are increased in Proportion to the Time.

As the red Part of the Blood is gradually resolved into Serum, so the Serum, when left to itself, is gradually attenuated, begins to putrify, and flies off in Vapours, leaving behind it a small Quantity of feculent Matter. But Serum, thus kept in a moderately warm and moist Place, the thinner it grows, the more acrimonious it also becomes, and can no longer be coagulated by the Heat of boiling Water, or by Alcohol. In the White of an Egg all these Circumstances happen in the same manner: For there are hardly any two Fluids more similar to each other in all their Phenomena, than the White of an Egg, and the Serum of Blood.

All Blood newly taken from the Veins, is, by a gentle Heat, but little surpassing the natural Warmth, and with a small Loss of the exhaling Part, coagulated into a solid, scissile and tenacious Mass, not to be dissolved by Water, Salt, Oil or Spirits. And the like Effect is produced by the Heat of Fluids, which is a particular Sort of Concretion, tho' in its Effects similar to the former.

The Blood, even of the soundest Persons, has a great Propensity to Concretion. When the ruptured minute Arteries of the Nose discharge Blood, it is forthwith concreted into a kind of solid Cake. But this Tendency to Concretion in the Blood is greatly augmented by an Increase of Heat: For as soon as an Heat, surpassing (perhaps) by ten or twelve Degrees the greatest Heat of *Fahrenheit's* Thermometer, is induc'd on the Blood of a sound Person, it becomes totally concreted. Hence it is, that in acute Disorders so great Danger arises from an increased Heat. But Blood once thus concreted, is not to be resolved without the greatest Difficulty. Many Substances, when mixed with the Blood, may prevent its easy Concretion; but when it is once concreted, it can hardly be resolved again; for in this Case neither Salts, nor Spirits, nor Oils, nor Soaps, are of any great Efficacy. Blood thus inspissated by Heat, is afterwards coagulated in the open Air, but then it putrifies at the same time; nor does the Concretion seem to happen, because by the Heat the most subtle Parts are dissipated: For Blood flowing from the Vein into boiling Water, is forthwith coagulated into a scissile Mass. The same Property is also found in the White of an Egg, which, when put into boiling Water, even tho' inclosed in the Shell, is forthwith indurated.

The Redness of the Blood, together with the Serum and Lymph, which are thus capable of Concretion, are produced by the Action of the Vessels, and the Efficacy of the Circulation, as the Change induced on the Nature of the Chyle, Milk and Blood, whether circulating, or without the Laws of Circulation, informs us, and is sufficiently discovered by Microscopes.

'Tis much disputed whence arise the surprising Properties of the Blood here enumerated; such as its Redness, the Yellowness and easy Concretion of the Serum. Philosophers and Chymists have advanced the most palpable Absurdities, with respect to this Affair. No Person, however, could ever, from the finest Aliments, prepare one Drop of Blood; for the human Body alone is capable of preparing its own Blood of a Matter which was not Blood before. Nor is it of any Importance whether the human Body is small, and in the Beginning of its Existence, or whether it is in a robust and adult State: For the Presence of Blood is so inseparable from the Nature of the human Body, that it is found in the weakest Infant, as well as in the most robust Man. Besides, in the human Embryo, as soon as it can be observed by the Eyes, there is red Blood even at the time when there is not the smallest Appearance of red Blood either in the Placenta, the Membranes surrounding the Embryo, or the Fluid contained in these Membranes. Hence we see, that it is the human Body itself which generates the Blood, even in that tender and mucous Principle.

When, in the first Rudiments of a human Creature, red Blood begins to be formed, cannot be easily determined by Experiments: But the incomparable *Malpighi* has demonstrated the Thing in an incubated Egg. An impregnated Hen's Egg, cherished by no Incubation, tho' viewed with the best Microscopes, is observed to contain no red Blood, either in its Shell, Membranes, White, Chalazas, Yolk, or the Bag of the Golliquament.

But in an incubated Egg there appeared a Change almost every Hour; and at the Circumference of the Cicatrix about the Yolk appeared some Vessels visible by the Help of Microscopes. A few Hours after these Vessels began to be distinguished by a Liquor contained in them. About the thirtieth Hour of the Incubation, these Vessels were of a somewhat greenish Colour. At the fortieth Hour they were

of a ferrugineous Colour, resembling that of wither'd Vine-Leaves in the Autumn, because the Congeries of all these Vessels was collected into one, which reaching to the Cicatrix, terminated in a certain Sinus which then first appeared. This Sinus was the right Auricle of the Heart, as afterwards appeared. And in this Sinus, which hung from the Carina, there appeared a manifest Pulsation; and a little after a small red Speck in that beating Body. Then this red Speck appeared diffused through the right and left Ventricles of the Heart; and a little after in the Duct which runs longitudinally along the Carina, or Rudiments of the Spine, and which was the Aorta. Hence we know, that red Blood may be prepared of a Matter which is not red, and that without the Admixture of pre-existent red Blood. This Redness derives its Origin from the beating Point or Speck, for it first appears where the Pulsation is; and there is red Blood present, before any Colour of Blood appears in the Rudiments of the Liver in the Chick. Hence we see, that the Opinion of the Ancients is false, who ascribed the Work of Sanguification to the Liver.

Perhaps, also, the Air (without which neither any Plant can vegetate, nor any Animal live) contributes to the first Formation of red Blood: For after the eighteenth Hour of the Incubation, *Malpighi* (as he informs us in his Treatise *de Ovo incubato*) observed the Cicatrix ascend to the obtuse End of the Egg, where the Air is lodged. In Adults the Chyle to be converted into Blood flows immediately through the Lungs, where, throughout the broadest Part of their Surface, it is in highly tender Vessels almost exposed to the open Air. According to the ancient Alchemists, the latent Food and Support of Life was contained in the Air.

But in adult Persons the Blood is prepared from the Aliments in a similar manner: For the lacteal Vessels receive the Chyle prepared in the Intestines, in the same manner as the Vessels of the Yolk received the White of the Egg attenuated by the Heat of Incubation. As the whole Chyle meets in one thoracic Duct, so in the Chick all these Vessels were united within the Amnion. The Heat of Incubation, the Motion of the Humours through the Vessels, the Force of the Heart, and the Action of the Air concurred within forty-eight Hours to the Production of red Blood in a Chick, which before had none of that kind. But in a sound adult Person the Chyle is converted into Blood in the Space of twenty-four Hours, as is evinced by the Observations of *Lower* and *Waleus*. The Heat of the Body, the Action of the Vessels and Heart, together with the Force of the Air in the Lungs, applied to the Chyle as it passes through them with the Blood, concur to the Transmutation of Chyle into Blood in Adults. But that such a Conversion is sooner performed in adult Persons, than in growing Chicks, seems to be owing to the far greater Action of the Vessels upon their Contents, the Respiration, and the superior Quantity of pre-existing red Blood.

But when these Causes producing red Blood in Adults, are in some measure defective, or act but slowly, red Blood is not produced, but a peccant and degenerating Liquor; as is obvious from what is commonly called the Green Sickness in Virgins, during which Disorder no red Blood is produced; but such a greenish Colour arises all over the Body, as was observed in the Vessels of the Yolk of the Egg, before any red Blood was formed.

Hence the Blood is not, as some imagine, propagated by seminal Force, but produced of a Matter not of the sanguineous Kind in a Body which as yet has no Blood. And as this Circumstance happens in the first Origin and Formation of Man, so it continues to the End of his Life.

When in human Creatures Blood is a forming from the Chyle, various and successive Degrees of Changes are observed: For the Chyle, a few Hours after Meals, is found conveyed to the Blood, tho' not assimilated. Hence, when after a liberal Meal Blood is taken from the Vein, besides the Serum and the red Part, there is a white, sweet, and chylous Part found fluctuating in the Blood.

In a few Hours the Chyle, conveyed with the Blood thro' the Vessels, is separated from the Blood by the Fabric of the Breasts, and affords Milk, which is of a different Nature both from Blood and Chyle; for in Milk there begins to be formed that Tendency to Concretion, which is already present in the Serum of the Blood, for it yields Cheese. But this Tendency to Concretion is never found in the Chyle. Hence we may artificially imitate the Preparation of Chyle in Emulsions, but never the Nature of Milk.

When a sound Woman for twelve Hours totally abstains from Meat and Drink, her Milk begins to be saline and yellowish. If she abstains still longer, nothing is found in the Blood taken from her Veins, but what (like the White of an Egg) is by means of the Fire concreted, which never happens in the Chyle.

Hence

Hence we may conclude that the Bodies of sound Persons are the Formers and Producers of their own Blood, in the same manner as any Plant, by its peculiar Fabric, prepares its Sap from the Juices of the fertile Earth and the genial Influences of the circumambient Air.

But in the human Body the Formation of Blood depends principally upon the Efficacy of the Circulation, by which the Vessels act upon their contain'd Fluids. Hence in the most robust Persons the Blood is reddest, or rather almost black in consequence of its saturated red Colour, and is concreted almost the very Moment it is left in a State of Rest. And in acute Diseases, when the Circulation is increased, all the Parts are intensely red, and the Serum of the Blood is converted into a Scissile Mass. But in weak Persons in whom the Efficacy of the Circulation is far less, all the Parts are pale and languid, whilst the Blood is thin and hardly capable of Concretion. But when, in such Persons, by due Exercise and proper Remedies, the Circulation is augmented, the red Colour and the due Cohesion of the Blood return.

The increased Motion of the Blood thro' the Vessels is produced by more frequent and strong Contractions of the Heart.

After considering the Nature of the human Blood, we now come to investigate the Cause of its Motion and Circulation. Some celebrated Men have imagined that this Cause resided in the Blood itself; for having observ'd that, by the mutual Mixture of certain Liquors, violent Commotions were suddenly excited, they hence concluded that something similar to this happened in the Blood.

But when in the most violent burning Fever, upon the Rupture of a small Artery of the Nose, the Blood is discharged with an uncommon Impetus, and received, whilst as yet hot in a clean Vessel, it is forthwith in a State of Rest, and affords no Signs of an intestine Motion. Hence the Cause of the Blood's Motion is not lodg'd in itself.

But the muscular Action of the Heart, by a strong Force, expels the Blood contained in its Cavities, thro' the Arteries, which immediately after, when the Action of the Heart ceases, by their Elasticity and muscular Force, convey the Blood still farther. These are the true and only Causes of the Circulation of the Blood. But the Beginning or Principle of this Motion is contained in the Heart; for when the Arteries are so contracted that their Diameters are smallest, they would remain in a State of Rest and Inaction; unless they were again dilated by the Blood expelled from the Heart. The muscular Action of the Heart is, therefore, the Cause of the Circulation of the Blood, and when that ceases all the Fluids become stagnant.

If therefore the Action or rather Contraction of the Heart (for in the Diastole the Heart is not active but passive) is rendered more frequent and strong, the Cause of the Circulation will be augmented; for it is not sufficient that the Heart should move frequently and contract itself, since near the Death of any Patient its Contractions are so frequent that they cannot be numbered, whilst in the mean time the Circulation begins to fail because scarcely any Blood is expell'd from the Heart.

But 'tis also requisite, that it should more forcibly contract itself that all the Blood contained in its Cavities may be expelled; for a strong Contraction of the Heart is that which expels all its Contents, whilst the weakest is that which expel none at all. The intermediate Degrees are weaker Contractions of the Heart.

The Contractions of the Heart are rendered more frequent and strong, first by the Brain and Cerebellum promoting a too copious Expression of the nervous Fluid as is observable in Persons under the Influence of any Passion or rack'd with the Agonies of Pain. Secondly, by an Irritation of the Heart, in consequence of an accelerated Motion of the venous Blood, produced either by Friction or the Action of the Muscles; or by some acrid, aromatic, saline, and alkaline, purulent, ichorous, or putrified Substance lodged in the Mass of Blood; and sometimes by a Species of Contagion, Plague or Poison; and when this happens, the Disorder, cannot from the Discoveries hitherto made, be distinctly explained.

We now come to consider those Things which, from Experience, we find capable of exciting and increasing the Motion of the Heart.

1. The Heart has all the Properties of a true Muscle, and is furnished with those Parts which in other Muscles are subservient to their Motions. When the Nerve distributed

to any Muscle is destroy'd, the Action of that Muscle is of course abolish'd, when the Brain is compressed by the Effusion of any Humor, the Action of all the Muscles subservient to voluntary Motion ceases. If, by any Cause, a too brisk Reflux of the Spirits thro' the Nerves into any Muscle is produced, the Action of such a Muscle will be increased even to the highest Spasm. But large and numerous Nerves are distributed to the Heart, which, however, has not a quick and acute Sensation in consequence of these Nerves. The other Muscles of the Body, when fatigued by excessive Motion, are painful, whereas in acute Fevers, when the Heart has for many Days been agitated by an intensely brisk Motion, it perceives no Pain. Now all the Causes which can produce a quicker Motion of the Spirits thro' the Nerves of the Heart, also increase and augment its Motion.

Now that the Passions of the Mind principally and effectually produce this Effect is universally acknowledged, though none has explained the manner in which it happens. The best-natured Man when affronted has such a Change induc'd on the State of his Mind as produces an Alteration in all the Parts of his Body; for the Contractions of his Heart immediately become quicker and stronger, his Pulse large and vehement, his Heat is increased, his Face becomes tumid, his Eyes sparkle, and a burning Fever is sometimes excited, which proves so violent as to determine in Death.

Pain may also so change the whole Brain as to produce a Delirium, after which no farther Pain is felt, or a perfect Syncope, which puts an End to the most racking Tortures. Since therefore Pain is thus capable of changing the common Sensory, it may also affect the Nerves distributed from it. Intense Pain rarely continues long without producing a Fever, that is a quicker Contraction of the Heart, even in Disorders very different from a Fever, such as the Gout for Instance. Hence *Galen* in his Treatise *De Pulsibus ad Tyrones*, Cap. 12. informs us, that "Pain when small and only beginning renders the Pulse more large, vehement, quick and frequent; but when it is increased and becomes so violent as to injure the vital Strength, it renders the Pulse more small, languid, quick and frequent."

2. *As for the Irritation of the Heart;* Besides the Causes of Motion which the Heart has in common with the other Muscles of the Body, there is in the Heart a singular and peculiar Property, which may be called Irritability, or a Capacity of Irritation; for when the Influx of the Spirits thro' the Nerves into the Fibres of the Heart, and the Motion of the Arterial Blood, cease after Death, the Motion of the Heart may be restored by blowing thro' the Veins, or injecting tepid Water into them. The Heart, also, when cut from all the Vessels with which it coheres, retains its Motion for some time, and after it has been in a State of Rest for several Hours, when it is cherished with Heat and prick'd with a Pin, it again begins to move. Physiologists have in a subtle manner explain'd, why the Heart should become alternately Paralytic, and be again contracted, as it were, by an instantaneous and sudden Spasm, and how the Cause producing the Systole of the Heart should every Moment perish, and be immediately after renew'd; and their Accounts of these Phenomena they have deduced from the Structure and Situation of the Parts. But the Heart, when taken out of the Body, and no longer adhering to any Vessels, continues the same Motion, and frequently for a considerable time.

As for the Acceleration of the venous Blood; When in consequence of any violent Passion, or the seeing of any horrid and frightful Object, by any tender Girl, there is an absolute Rest of the Heart, if cold Water is sprinkled on her naked Body, the Parts being contracted by the Cold; convey the venous Blood to the Heart, by which Means its Motion is restor'd. Thus *Homer*, in the Fifth Book of his *Iliad* tells us, that when *Sarpedon* was so excessively wounded as to fall into a Deliquium, he was restor'd by the Blowing of the North-wind on his Body, because the Veins were constricted by the Cold. Hence all these Things which accelerate the Motion of the venous Blood to the Heart, also augment its Motion. Thus an intensely burning Fever may be excited by excessive muscular Motion, and too strong Frictions. See *FIBRA*.

As for acrid and other unfriendly Substances lodging in the Mass of Blood; All the Humours of the human Body, when sound, are mild; since the Blood of a sound Person, when put into the Eye, produces no Pain; and when it is in this State, its Circulation is highly equable. But as soon as acrid Substances are mixed with the Blood, its Motion through the Vessels is, by the Irritation of the Heart, increased, and a Fever produced, which either expels these acrid and unfriendly Substances from the Body, or so subdues them, that they no longer

longer prove injurious. Nor is it of any Importance of what kind this Acrimony is, since they all produce the same Effects, and only differ with respect to the Degrees and Duration of their Actions. In aromatic Substances, the Acrimony contained in a tenacious Oil, is not easily dislodg'd and thrown off. Thus, when large Quantities of Pepper are imprudently taken for the Cure of intermittent Fevers, a mild Tertian is often changed into a burning Fever. The Person who at Dinner uses too large a Quantity of Sea-Salt, will, in the Afternoon, become feverish, and afflicted with Thirst, till by drinking copiously, that Salt is washed off. Vinegar itself, which in putrid Fevers is so efficacious, excites a Fever when too liberally used. When an Imposthuration concealed in the internal Parts collects Pus, this Pus, when reformed and mixed with the Blood, daily excites a Fever, which gradually preys upon the Body, and is called an hectic Fever. When this Pus, by a long Retention, is changed into a thin Ichor, it becomes more acrid; and when reformed, produces more terrible Misfortunes.

Corrupted Bile lodged about the Præcordia, or the putrid Gore of the corrupted Liver, excites violent Fevers, which can never be cured, unless that putrid Fomes could be removed.

But in all these Cases the Acrimony may be discovered by the Senses; tho', at the same time, there are other very surprising stimulating Substances, which can be reduced to no known Species of Acrimony, but yet disturb the Body in all its Functions.

The Contagion of the Small-Pox, by its subtle Miasma, which entirely eludes our Senses, infects the soundest Person, upon which is produced a violent Fever, which in a few Days fills all the external and internal Parts of the Body with a variolous Pus. And in this Pus, by the Disorder formed of the soundest Humours, there is the same Force of propagating the variolous Contagion infinitely, as is obvious from the Method of Inoculation, in which a small Drop of variolous Pus is put into a crude and recent Wound. But none has hitherto been able to explain the Nature of this Stimulus, or demonstrate the Method in which the sound Humours, chang'd by the variolous Contagion, assume a poisonous Nature, and become capable of multiplying the Contagion almost infinitely.

The Kind of Plague peculiar to each Species of Animals, rarely happens to more than one Species at a time. When the Plague raged in Europe among Oxen, even those Persons who used the Flesh of the infected Animals, remained free from every Degree of the Contagion. The most skilful Physicians, after a sedulous Investigation of the Nature of this terrible Disorder, ingenuously confessed, that they knew nothing with respect to the Cause, since its Effects were only subjected to the Senses. The pestilential Virus remains inactive upon Linnen, Leathern, or Woollen Cloths; and upon open and porous Woods, till being applied to the human Body, it becomes active, and by multiplying the Contagion, diffuses itself every where. In this Case, how surprizingly all the Parts of the Body are disturb'd, and what violent Fevers are excited, may be seen in *Diemerbroeck* and others, who have wrote concerning the Plague.

The surprizing History of Poisons evinces, that in some Liquors of poisonous Animals, there are such Stimuluses as have no Acrimony observable to the Senses; but yet, by an inconceivably quick Action, they injure almost all the Functions, and excite violent Fevers. We shall only instance in the Poison of the Viper. The celebrated *Redi*, relying on the Observations and Candour of *Charas*, tasted the yellow Juice adjacent to the Gums of the Viper, and found its Taste to resemble that of the Oil of Sweet-Almonds. Whereas a small Quantity of the same Juice, adhering to an inconsiderable Wound made by a Bite in a Person of Distinction, who handled a Viper imprudently, a few Minutes after produced the most violent Symptoms; so that the Patient hardly escap'd, after numerous Attempts for his Relief.

An increased Motion of the Blood through the Vessels produces a greater Force of the Blood propelled, upon the receiving Vessels; a greater Resistance in the Vessels to the Blood; a strong Compression of the Blood; a violent mutual Attrition of the Vessels and Blood; a strong mutual Attrition of the Parts of the Blood; a greater Heat in all the Parts of the Body; an Exiccation of the Blood, in consequence of the Dissipation of its most aqueous Parts; an inflammatory Viscidity of the Blood, by which it is easily disposed to Concretion; a Resolution of the Blood into Salts, and volatile and acrid Oils; an increased Largeness of the Vessels at their Beginnings; an Impulse of the thick Fluids into the minute Vessels, which produces in them Obstructions, De-

structions, Inflammations, Suppurations, Gangrenes, a Sphacelus, a Scirrhus, and the infinite Misfortunes which may succeed them.

In this Paragraph are considered those Effects on the Solids and Fluids of the human Body, which depend upon an increased Motion of the Blood.

As for the greater Force of the Blood propelled, upon the receiving Vessels; The Arteries are always full; when, therefore, the contracted Heart expels the Blood contained in its Cavities into the Arteries, these latter must be dilated; or such a Quantity of Blood ought to be expelled through the Extremities of the Arteries, as is forced from the Heart into the Arteries. But all the Arteries, except those known by the Name *Coronary*, are dilated in the very Moment at which the Heart is contracted. Hence almost the whole Action of the Heart is employed in dilating the Arteries; and by this Force the Sides of the Arteries are so pressed, that they recede from their Axis, and have all the Fibres constituting their Sides distracted. But as we have already shewn, that an increased Motion of the Blood is produced by a more strong and frequent Contraction of the Heart, 'tis obvious, that the Force by which the Sides of the Arteries are compelled to recede from their Axis, is then increased in a Proportion compounded of the increased Strength, and Frequency, of the Contractions of the Heart.

As for the greater Resistance of the Vessels to the Blood; The Arteries, when distended, are in a State of Violence. Hence, by the Elasticity and muscular Force of their Fibres, their Sides endeavour to approach nearer their Axis; by which Means they repress the distending Blood: For unless the Arteries contracted by their own Force, expelled the distending Blood, the Heart could not, in the following Systole, expel the whole Blood contained in its Cavities into the Arteries, as yet distended; the Blood would be gradually accumulated in the Cavities of the Heart, and the Circulation suffocated. The stronger, therefore, the Action of the Heart distending the Arteries is, the more strongly will that Force act by which the Arteries endeavour to contract their Cavities; and the oftner, in the same Space of Time, the Heart is contracted, the more frequently will the contracted Arteries re-act on the distending Blood.

As for the strong Compression of the Blood; The Blood contain'd in the Arteries is always, as it were, between two Presses; for when the Arteries are dilated, the Contraction of the Heart forces the Blood from the Base to the Apex of the Artery; whilst, in the mean time, the narrow Extremities of the Arteries make the greatest Resistance. When the Arteries are contracted, the Valves about the Basis of the Arteries in the Heart make a Resistance; and there is the same Resistance at the Extremities of the Arteries; hence in both Cases the Blood contained in the Arteries is compressed. But since the constituent Parts of the Blood are flexible, and capable of Compression, as we have already observed, if the compressing Causes, that is, the Action of the Heart and Arteries, are increased, it necessarily follows, that the Compression of the Blood must become stronger.

As for the strong mutual Attrition of the Vessels and Blood, and of the Parts of the Blood with each other; When the Blood is forced from the Heart, it acts upon the Sides of the incurvated Aorta; and this Direction of the Blood is resisted by the strong Sides of the Aorta, and the Blood contained in its Cavity. Hence no Particle of Blood expelled from the Heart into the Aorta, for two Moments, preserves that Direction of Motion which it had when it was expelled from the Heart. Besides, the Aorta is conical, or wider at the Base, but gradually becomes narrower. But since the Direction of the Blood expelled from the Heart into the Aorta, is in Lines perpendicular to the Basis of the Aorta, it must necessarily happen that the Particles of the Blood will strike against the Sides of this conical Canal; and in their Resilition thence, will meet other Parts moved in a different Direction. Hence there is a perpetual Attrition of the Parts of the Blood with each other, and with the Sides of the Vessels. Hence, also, as the Parts of the Blood are flexible, their most considerable Angles being destroyed by the perpetual Attrition, they acquire a spherical Figure. But by an increased Motion of the Blood through the Vessels, this Attrition is augmented in the same Proportion.

As for the greater Heat of the whole Body; From this mutual Attrition of the Parts, and on the Sides of the Vessels, arises Heat. This is sufficiently certain, because as soon as the Blood is in a State of Rest, all its Heat is lost, and the Body is gradually reduced to the same Degree of Coldness with the common Atmosphere. When the Motion of the Blood is increased by violent Exercise, or a Fever, the

the Heat is increased; but weak Persons, the Circulation of whose Blood is languid, are always cold.

Hence we see the Truth of that Assertion of *Hippocrates*, who, in the End of his Book *de Cordē*, informs us: "That the Blood is not naturally hot, but becomes so."

As for the *Exsiccation of the Blood, in consequence of the Dissipation of its most aqueous Parts*; An increased Heat always dissipates the most moveable Parts of any Fluid; but, as we have already shewn, a greater Heat is produced by an increased Motion of the Blood through the Vessels. The whole internal and external Surfaces of the Body have exhaling Vessels, which secrete from the Blood, and dissipate an highly subtile Liquor. An increased Application, therefore, of the Blood to these Organs, will produce a proportionably greater Secretion. Hence it is, that in all Diseases accompanied with an increased Heat, the Body is dried. Hence *Hippocrates*, in *Lib. 1. de Morbis*, informs us, that "They who die of burning Fevers, are taken off by Dryness."

As for the *inflammatory Viscidity of the Blood*; There is in the Blood of the soundest Person a natural Propensity to Cohesion, in consequence of which it is spontaneously concreted when taken from the Veins, and left in a State of Rest. This Cohesion is increased by the greater Heat; since by that Means the aqueous diluting Part is dissipated, and the Force compressing the Blood strengthened. We have already shewn, that by an increased Motion, the aqueous Part is dissipated, and the Heat in like Manner increased. But the Action of the Vessels on the Blood, is a true Compression of the Blood they contain. Hence, since, by an accelerated Motion of the Blood, the Action of the Vessels on the Blood is increased, it is obvious, that all those Causes concur to produce this increased Action of the Vessels on the Blood, which contribute to its Concretion. Then arises the *Phlegma Phlegmonodes*, which is entirely distinct from a languid, cold, and mucous Concretion. In this Case it is called an inflammatory Spissitude, arising from a strong Compression of the Principles of the Blood to each other. The Elements, or component Parts of the Blood, are observed to be spherical, or nearly so. Hence they touch one another in few Points. But when, by a too strong Pressure, their Figure is changed, and the thin aqueous Part, in which they floated, expressed, they come into more numerous Points of Contact, and are by that Means concreted. Hence arises that coriaceous Toughness observable in the Blood of pleuritic Patients.

As for the *Resolution of the Blood into Salts, and volatile and acrid Oils*; The State and Condition of the Salts and Oils of the human Blood, are best known from the Urine; which, as it is the true Lixivium of the Blood, washes off the already form'd Salts and Oils, which are of an acrid, and consequently an hurtful Nature. It evidently appears, that the Urine is the more acrid and fetid, the stronger the Circulation of the Blood is. In weak Persons the Urine is pale, almost without any Smell, and not very salt. Whereas, in robust Persons, habituated to Exercise, the Urine is redder, more fetid, and highly salt: An increased Motion, therefore, of the Blood through the Vessels, renders the Salts of the Blood more acrid and volatile; and its Oils more attenuated, but at the same time less mild. Hence again arise new Stimuluses increasing the Circulation, by the Increase of which they were originally produced; and thus the Effect of the Disease increases the Disease.

As for an *increased Largeness of the Vessels at their Beginnings*; The Force of the Heart expelling the Blood into the full Arteries, is the only Cause which dilates these Arteries. When, therefore, this Action of the Heart increases, the Dilatation of the Arteries will, in like manner, be augmented. But this Dilatation will be the greater, the nearer the Artery is to the Heart: Therefore the Beginnings of all the Arteries will be more dilated; whereas this dilating Force cannot with so great Efficacy be conveyed to their Extremities.

As for the *Impulse of the gross Fluids in the minute Vessels*; The coarsest Part of the Blood is observed to be a red Globule, which naturally can be only contained in the largest Vessels. The next largest Particle of the Blood may enter a smaller Vessel, which, in consequence of its Smallness, excludes the red Globules, but admits all such as are smaller. The same holds in the other Series of decreasing Vessels; and Health seems principally to consist in this, that proportional Fluids remain in their proper and respective Vessels. When, therefore, by an increased Motion of the Blood through the Vessels, the Beginnings of the Arteries of the next succeeding Series are too much distended, grosser Parts, which ought not naturally to be contained in these Vessels, may enter them. Thus, for instance, when the Beginning of a serous Artery, arising from an Artery containing red Blood, is di-

lated too much, the red Blood will enter this serous Artery. And that this really happens, is certain from Experience. If a sound Man runs violently, his whole Face will begin to grow tense, and an excessive Redness will appear in such Parts as were not naturally red. The whole Tunica Adnata of his Eye begins to have its Vessels filled with red Blood, whereas they never in a natural State contain red Blood. After violent Exercise, or Riding in a Chariot in rough and uneven Roads, the Blood passes through the dilated renal Vessels, and a Discharge of bloody Urine by that Means is produced, which, however, is easily cured by Rest alone.

As for *Obstructions and Destructions of the minute Vessels*; An Artery in its Course gradually becomes narrower and narrower, till at last it is almost only capable of transmitting one Molecule of Blood. This evidently appears upon Examining the Circulation of the Blood, in the pellucid Parts of Animals, by the Assistance of Microscopes. But in a particularly beautiful manner, when the Lungs of a live Lizard appearing through a Wound made on Purpose, are viewed with a Microscope. For in this Case it evidently appears, that about the Extremities, or narrowest Parts of the Arteries, all the Molecules of the circulating Fluid are changed into an oblong cylindrical Form, and so transpressed through the narrow Channels of the Arteries. When, therefore, for instance, a serous Artery, dilated at its Beginning, receives any Portion of red Blood, this Blood cannot pass through its most narrow Parts. Hence such an Artery will be obstructed; and since the Fluids propelled by the vital Motion, act upon the obstructed Part, such a tender Vessel must be easily destroyed.

As for *Inflammations, Suppurations, Gangrenes, a Sphacelus, a Scirrhus, and all their Consequences*; Whilst the red Blood stagnating in the minute Canals is compressed, and an Attrition of it produced by the Action of the Blood which succeeds, and is generally put into a violent Commotion by the concomitant Fever, the Disorder is called an Inflammation, which must, for this Reason, most frequently arise from gross Fluids, propelled into Vessels naturally too small for their Admission. But when an Inflammation is once produced, all its Effects succeed: For when the infarcted Vessels, together with the impacted Humour incapable of Circulation, are acted upon by the vital Force, and being dissolved, degenerate into a pinguinous, white and equable Humour called Pus, a Suppuration happens. If, in consequence of a sudden Rupture of the Vessels, the Circulation of the vital Humours through the Part affected is totally destroyed, a Gangrene, or Mortification of the Part is excited; and when this Disorder seizes the whole Substance to the Bone, it is called a Sphacelus. If about glandular Parts, an Inflammation arises, a hard Tumor without Pain, but not to be resolved without the greatest Difficulty, is produced, and distinguished by the Name *Scirrhus*.

From a due Consideration of these Circumstances, it evidently appears, that an increased Circulation of the Blood may produce numberless Disorders. All the Humours of the Body, by an increased Motion, and an augmented Heat arising from it, may be totally changed into a morbid State, by the stronger Pressure, the Coagulum induced by the greater Heat, and the augmented Acrimony. There is a greater Attrition, and often a Rupture of the solid Parts produced. The gross Humours, which cannot penetrate through the narrowest Parts of the Vessels, enter the dilated Vessels: and if we consider that all these Disorders may happen in all the Parts of the Body, 'tis obvious that numberless Diseases may arise from this single Cause.

An increased Circulation of the Blood may therefore be known from an acquaintance with its Causes and Effects already enumerated, but especially from the quickness and hardness of the Pulse; the velocity and difficulty of Respiration; and the intense Heat.

'Tis of great Importance in the Practice of Medicine, to know whether the Velocity of the Circulation is too great or not. If the Causes of an increased Circulation are present, and the Effects of a too violent Motion of the Humors observable, the State of the Patient is no longer dubious. There are, however, some infallible Signs which demonstrate the Excess of the Circulation, such as

The Velocity and Hardness of the Pulse. The Celerity of the Pulse is a Sign, that in the same Time the Heart is oftener contracted; and the Hardness of the Pulse denotes the plenitude of the Arteries, and is a Proof of a Blood highly compacted, dense, and in consequence of its inflammatory Viscidity, with Difficulty capable of passing thro' the Extremities of the Vessels. The Celerity of the Pulse alone without Hardness, denotes that the Heart is oftener tho' not

more strongly contracted; for near the Death of any Patient the Pulse is very quick, tho', at the same time, small. Whereas the Hardness of the Pulse alone without Celerity rather denotes a Suffocation of the Circulation, as is observable in highly plethoric Patients.

An Increased Circulation is also known from a quick and difficult Respiration. The whole Blood expell'd from the right Ventricle of the Heart must pass thro' the Lungs before it can come to the left Ventricle. But the right Ventricle of the Heart is not by its muscular Force alone able to propel the Blood thro' the narrowest Parts of the Pulmonary Artery, 'tis also requisite there should be a Dilatation of the Lungs by Inspiration, in order to make a quick Passage for the Blood expell'd from the right Ventricle. The more frequently and strongly, therefore, the right Ventricle contracts itself in the same Time, the more frequent and strong the Respiration will be. Hence, as soon as by Running or any other Exercise, the Motion of the Blood thro' the Vessels is increased, the Respiration is proportionably augmented and perform'd with greater Difficulty. Thus the Respiration is increased only by an augmented Velocity of the Blood passing thro' the Lungs. But when by this increased Motion an inflammatory Spiffitude begins to be produced, the Respiration will be far more laborious and quick; for the Incapacity of the Blood for circulating, first discovers itself in the Lungs. Hence 'tis that in acute inflammatory Disorders a quick and difficult Respiration is so bad a Sign.

An increased Circulation is also known by the excessive Heat of the Body. So long as there is a free Passage thro' all the Vessels, an increased Celerity of Motion in the Fluids also augments the Heat of the Body, as we have already shewn. But when Blood rendered incapable of Circulation cannot reach the Extremities of the Vessels, a Coldness of the Extremities is produced. But at that very Time there is a burning Heat about the vital Viscera, as happens in the worst burning Fevers. And this is by *Hippocrates*, in his *Prognostics*, and other Parts of his Works, generally reckoned among the Mortal Signs.

The Remedies, therefore, best calculated and most efficacious for allaying an excessive Circulation, are such as diminish the Frequency and Force of the Contraction of the Heart.

These simple Disorders are first to be consider'd in an abstracted Light; for which Reason 'tis here supposed, that nothing is changed in the Body, but only that the Circulation of the Blood is augmented. Every thing, therefore, is a Remedy for this Misfortune, which can remove the proximate Cause of the increased Motion of the Blood. But this Cause is a too quick and strong Contraction of the Heart, so that every thing is a Remedy which can produce a slower and weaker Motion of that Organ. But such a Remedy must act either on the Spirits which move the Heart, upon the venous and arterial Blood convey'd into it, or upon those stimulating Substances which by their Irritation produce a stronger and quicker Contraction of the Heart.

Some of these Remedies have an Influence on the Mind, and others on the Body.

We have already observed, that only a Change in the Disposition of Mind, may in the soundest Person so increase the Motion of the Heart, as to produce a violent Fever. And unless the Physician can then remove that Change of Disposition, other Remedies will be of no Service. But every thing which produces this Effect acts upon the Mind without inducing any change on the Body. Thus when a Man in a violent Passion is frightened, his Passion is removed without any Change induced on his Body, whilst only the State and Disposition of his Mind is altered. The other Causes removing the material Causes of an increased Circulation act only on the Body.

The former of these Remedies are such as allay violent Passions by Reasoning; excite the contrary Passion, or divert the Person under its unhappy Influence.

Violent Passions are sometimes removed by Reasoning. We are conscious to ourselves, not only that we think, but also that we think on Objects different from the Act of Thinking itself. And if these Objects are only perceived by an ordinary Perspicuity of Mind, they affect us but little, and only retain the Soul in a kind of simple Contemplation. This is sufficiently evinced in profound Mathematicians, who sometimes so spend their Lives in thinking upon Mathematical Subjects, that they are but little affected with other Objects. We have also a particular kind of Perception, which tho' we cannot communicate it to others, yet

makes as strong and ardent an Impression upon us as Truth itself. Thus upon tasting a delicious and grateful Wine, an Idea is excited in the Mind, which we can no otherwise explain, than by saying that it is pleasant. But that this Idea is pleasant, is so evident, and affects the Mind so strongly, that no Truth can make a greater Impression upon it. On the contrary, if any Person tastes a rotten Egg, he so abhors it that he would almost submit to any Thing rather than taste any more of it. Thus the Affections of the Mind, together with its Perception, almost by an absolute Necessity, carry the whole Mind along with them, so as to desire to render the pleasant Idea permanent, and to remove or destroy that of the displeasing Kind.

But this Pleasure or Disgust accompanying any Idea, not only differs from the Idea itself, and the Principle of Thought, but also disturbs the whole Train of Ideas, influences the Will, and as it were destroys Liberty. Since it necessarily determines us to like and dislike. This singular Phenomenon has induced Philosophers to call the Affections of the Mind Passions; and justly, because we are not their Masters, but their obsequious Slaves, since we often approve of what is good and laudable, and under an immediate Sense of its Worth pursue its fatal Opposite.

Philosophers have greatly erred in endeavouring to destroy this Pleasure or Disgust which accompanies the Perception of Ideas; for no more is requisite of Mankind, than that they should govern the Affections of their Minds by Reason. But this latter is often so weak, that it cannot subdue the former. Hence Resolution and Perseverance become necessary, that Reason fortified by an Habit of Opposition, may at last come off triumphant; for certainly the wisest and best of Men can hardly conquer the exorbitant Passions of their Minds, by the most refin'd and exalted Suggestions of Reason and Religion.

Violent Passions are also removed by exciting the opposite Affections. The wisest Legislators, conscious that human Society could not be govern'd by Reason alone, have proposed Rewards and Punishments. The Dread of Punishment is sufficient to stifle the dire Effects of Passion, when the most beautiful moral Precepts are of no Use. 'Tis, therefore, of great Importance to know the opposite Affections of the Mind; Anger is suppressed by violent Dread, whilst the most timorous Man is render'd bold by Anger. If we observe the Changes induc'd on the Body under these two contrary Passions, they will be found intirely opposite.

In an angry Person there forthwith arises a stronger and quicker Contraction of the Heart. The Pulse becomes fuller, stronger and quicker, and all the Parts, even in the most extenuate Persons, become tumid and expanded. A greater Heat arises in the whole Body. Almost all the Muscles become tense, the Eyes are stern, prominent, sparkling, and as it were cover'd with Blood, whilst Menaces and Reproaches are alternately pour'd forth. *Homer*, who every where paints Nature in her truest Light, in *Lib. I. Iliad.* compares the Eyes of *Agamemnon* when angry, to sparkling Fires. In the same Book, *Achilles*, when represented as enraged at the Loss of his beloved *Briseis*, is said to have his Eyes sparkling in such a manner as to strike Terror in all who beheld them. *Achilles*, in his Answer to *Ajax*, persuading him to take Arms, tells him that his Heart was become tumid with Anger. And *Achilles*, when viewing the Arms, brought by his Mother *Thetis*, is said to have immediately fallen in such a Passion, that his Eyes struck Terror, and appeared like Sun-Beams under his Eye-brows.

A Man suddenly struck with Terror, becomes pale and cold, whilst his whole Body is contracted, his Pulse is quick, but small and unequal; he is seized with a Palpitation of the Heart, and a violent Oppression about the Lungs, and a Sighing. The whole Strength of his Limbs is destroy'd, his whole Body trembles; and sometimes Persons in this Condition become stiff like Statues, whilst the trembling Accents die upon their fault'ring Tongues. Hence *Homer* gives the Epithets *cold* and *pale* to the Passion of Fear. And when *Alexander* flies from *Menelaus*, rushing in upon him, Trembling seized his Limbs and Paleness his Cheeks.

Hence it appears that contrary Affections of Mind produce opposite Effects in the Body, and consequently that one Affection of the Soul may be a Cure for another. The same might be demonstrated by comparing other opposite Affections.

Violent Passions may also be remov'd by diverting the Person under their Influence. The human Mind has a surprising Faculty of affixing the Ideas it forms to certain Signs merely arbitrary, whilst there is no manner of Similitude between these Signs and the Ideas, tho' afterwards upon seeing such Signs, the Idea before affixed to them is rendered present to the Mind. By a few Letters variously combin'd, Ideas are excited in our Minds, which we had some Years before,

before, though the Remembrance of these Ideas had been entirely lost, unless these arbitrary Signs had preserved them. The same holds true with respect to the Affections of the Mind. Thus *Eneas*, when beginning to yield to the Intreaties of vanquished *Turnus*, when he views the Belt of *Pallas*, whom that Warrior had killed, is transported with incredible Rage. This Accident is beautifully described by *Virgil*, in the twelfth Book of his *Æneid*.

— *furiis accensus, & ira*
Terribilis: Tunc hinc spoliis indute meorum
Eripere mihi! Pallas te hoc vulnere, Pallas
Inmolat, & poenam scelerato ex sanguine sumit.

When, therefore, this Pleasure or Disgust accompanies the Ideas renewed by these Signs, more intense Affections of Mind are excited, and may by this Means be, at last, rendered perpetual. Then the almost infinite Variety of the Thoughts of the Mind is destroyed, and all its Powers employed upon this one Subject. The Will, which before could chuse an infinite Number of Objects, is now intensely fixed upon one. This Species of Disorder is called a Delirium; but if it is very violent, 'tis called Fury. If it is accompanied with a Fever, and an Agitation of the Humours, it is called a Phrenitis. If these Symptoms are absent, it is called a *Mania*; and if the Disorder is attended with a Neglect of every Thing, it is called *Foolishness*.

Hence skilful Physicians, without the Knowledge of the Patient, remove all those corporeal Marks which renew such Ideas, whether by the Intervention of the Senses, or of the Memory. Other Objects presented to them, and capable of exciting other Ideas, which gradually lessen and diminish the too strong Impression made by a particular Object or Train of Ideas, are said to divert the Patient. For this it is sufficient, that the Thoughts be in such a manner chang'd, that the same Idea, by a long Continuance, may not afterwards possess the whole Mind, and become indelible.

But when violent Affections of the Mind disturb the whole Body, and irritate the whole nervous System, which frequently happens in hysterical Disorders, then we have recourse to such Medicines as soothe the Spirits, and, for a time, totally abolish the Action of the Brain. Such a Relief is principally afforded by the Juice of the Poppey, which, when exhibited in a small Quantity, induces the most pleasant Sensation imaginable; and, like the celebrated *Nepenthe* of *Helen*, creates a perfect Forgetfulness of all Misfortunes. A considerable Dose of it induces Sleep, and an excessive Quantity an Apoplexy. The Use of Wine, in a Person not much accustomed to it, produces the same Effects, excites uncommon Cheerfulness, allays violent Passions, and, at last, induces Sleep, which puts an agreeable temporary Period to all Misfortunes.

The other Medicines proper for allaying an excessive Circulation of the Blood, respect the Body, and act by a Rest of the Muscles, a Relaxation of the Veins, by correcting Acrimony, by diluting, by obtunding, and by removing the Causes of the Pain.

As for a Rest of the Muscles; One of the Causes of the Motion of the Heart, is the Influx of the venous Fluid into the Cavities of the Heart, as we have already observed. But the Motion of the venous Blood to the Heart is accelerated by the Motion of the Muscles; for most of the Veins situated on the Surface of the Body, lie upon the Muscles. Hence they are compressed by the Muscles, when become turgid in acting; by which means the Blood contained in the Veins is conveyed towards the Heart, because the Direction of the Motion of the venous Blood is from the Apex to the Base. Besides, when the Muscles act, they become pale; because all their Blood is expressed, and at that time is quickly conveyed through the Veins to the Heart. Hence the Circulation of the Blood is greatly increased by muscular Motion. Surgeons are sufficiently apprized of this, who, if upon opening a Vein, the Blood is slowly discharged, order the Patient to move his Fingers; upon which it is immediately more quickly and copiously discharged. Hence the ancient Physicians, though unacquainted with the Circulation of the Blood, in all Disorders accompanied with an excessive Motion of the Fluids, ordered the greatest Rest, removed all Objects capable of affecting the Senses strongly, and enjoined that the Patient should be lodged in a dark Room remote from all Noise.

As for a Relaxation of the Veins; In highly acute Disorders, in which there is the greatest Circulation of the Blood, it is always observable, that the greatest Quantity of Blood is lodged in the arterial Vessels, whilst a Depletion of the Veins is, by that Means, produced. On the contrary, in languid, slow Disorders, in which the Circulation is defective, the

Veins, and all the Cavities of the Body, are filled, whilst the Arteries are emptied; a Relaxation, therefore, and Impletion of the Veins, accompany a diminished Circulation of the Blood. Besides, the relaxed Veins being more easily distended by the Blood impelled from the Arteries, must also contain more Blood. A smaller Quantity of Blood will, therefore, return to the Heart, and by that means one of the principal Causes of the Motion of the Heart will be diminished. The Impetus of the Blood forced from the Arteries into the Veins, is, also, more retarded, because there is, in the Veins, a larger Quantity of Fluids to be moved; and for both these Reasons the Velocity of the Circulation is diminished.

But since, as is observed under the Article *FIBRA*, any Part of the Body may be relaxed, this End is best obtained by a Vapour-Bath applied to the Surface of the Body; whilst the same Intention is, also, pursued by proper Clysters, emollient Decoctions, and Aliments of a relaxing Quality. This Method was universally used by *Hippocrates* in acute Diseases.

As for a Correction of Acrimony; The Degrees of Acrimony, when known and reduced to their proper Classes, may be removed by Art, provided the Viscera are as yet sound. Thus an alkaline, acid, or aromatic Acrimony are pretty easily removed. But when such poisonous stimulating Particles, or contagious Miasmata, not to be discovered by the Senses, but only known from their Effects, are the Causes of an increased Circulation, then the healing Art becomes defective. When that highly-poisonous Animal, known by the Name of a Rattle-Snake, bit a sound Girl, as we are informed by *Louis Feuillée*, in *Journal des Observ. Physiques, Mathemat. et Botan.* soon after Death ensued, and though the Physician was present, he could afford her no Relief; and when, a few Hours only after her Death, they attempted to remove her Body, the putrid and corrupted Flesh was separated from the Bones. When the soundest Man is infected with the variolous Contagion, which is so subtle as to elude the Senses, all the Parts of his Body are disturbed, and a violent Fever is excited, which so surprizingly changes all the Humours of the Body, that within fourteen Days all the Parts of the Body, whether internal or external, are almost dissolved into a gangrenous Gore. If, in the Beginning of the Disorder, this Stimulus could be rendered inactive by a proper Antidote, no bad Symptoms would ensue. This is that *toû bîsot*, that preternatural and incomprehensible Quality in Diseases, which so frequently baffles the Efforts of Art, and is the Reason why so often Physicians cannot check the excessive Motion of the Fluids. All that Art can do in this Case, is to weaken the Principle of Life, by which alone Poisons are rendered active; since they produce no Effects upon a Carcase. Then the Poison is to be obtunded by the Exhibition of the most emollient Substances; and washed off by diluting Liquors drank in large Quantities.

As for removing the Cause of the Pain; In a Luxation of any Joint, the most violent Pain is produced. And this Pain brings on a Fever, not to be cured till the luxated Bone is reduced, and the Pain by that Means remov'd.

The Anodynes, Narcotics, and Hypnotics, proper for removing Pain in Disorders arising from an excessive Circulation, are specified under the Article *VULNUS*. *Van-Sweiten. Comment. in Aph. Boerhaave.*

SANGUIS DRACONIS, See *CALAMUS* and *DRACONIS SANGUIS*.

SANGUISORBA. A Name for the *PIMPINELLA*, which see.

SANGUISUGA. See *HIRUDO*.

SANGUISUGUM. A Disorder of the Heart, proceeding from an Accumulation of Blood, is thus called by some barbarous Authors.

SANICULA.

The Characters are;

The End of the Pedicle becomes a monopetalous, quinquefid Calyx, in which is contained a pentapetalous Flower, consisting of Petals closely contracted, and exactly covering two, three, or five Stamina; this is the Description of the Male Flower. The other Flowers are hermaphrodite, seated in a quinquefid Calyx, and having, also, five Petals, which are in like manner closely contracted, and accurately cover two, three, or five Stamina, placed about the Ovary, which consists of two lappaceous Ova, each furnished with an erect Tube. The Seeds are gibbous and echinated.

Boerhaave mentions but one Sort of *Sanicula*, which is, *Sanicula*; *Officinarum*. *C. B. P.* 319. *Boerh. Ind. A.* 73. *Tourn. Inst.* 326. *Sanicula five Diapensia*, *Ger.* 801. *Emac.* 948. *Raii Hist.* 1. 475. *Synop.* 3. 221. *Sanicula vulgaris, five Diapensia*, *Park. Theat.* 532. *Sanicula mas Fuchsii, five Diapensia*. *J. B.* 3. 639. **SANICLE**.

This Plant has a small, stringy, fibrous Root, from which spring the Leaves on long Foot-Stalks. They are five-corner'd, resembling somewhat those of the lesser Maple, and

are ferrated about the Edges, of a dark green Colour, smooth and shining. Its Stalks grow to be about a Foot high, bare of Leaves to the Top, on which grow little Umbels of five-leaved white Flowers, small and full of Stamina; each Flower being succeeded by two rough bur-like Seeds. It grows in Woods and Thickets, and flowers in May. The Leaves are used.

This is one of our prime vulnerary Plants, being frequently put in Wound-Drinks, and traumatic Apozems; and is good for Ruptures, inward Bruises, spitting of Blood, or any Hemorrhages, and for Wounds both inward or outward. *Miller's Bot. Off.*

By the Chymical Analysis, beside several acid Liquors, the Sanicle yields an urinous Spirit, and some concreted volatile Salt, and a good deal of Oil and Earth. It contains some Sal Ammoniac, Sulphur and terrestrial Parts. It is deterfive, vulnerary, and aperitive. It is used with the other Vulneraries in Broths, Pifans, and Potions for Losses of Blood, and to open and strengthen the Bowels. It is used after the manner of Tea. It is an Ingredient in vulnerary and deterfive Lotions, in Plaisters and Balsams for Wounds. *Martyn's Tournefort.*

It is called *Sanicula*, a *sanando*, "from Healing;" because of its sanative Virtue, which is so extraordinary, that the French have a Proverb,

*Qui ha du Bugle et du Sanicle
Fait aux Chirurgiens la Nicle.*

"He who has Bugle and Sanicle never wants a Surgeon." It has an Astringency with its Bitterness, as appears by its Taste. It is good, says *Lobel*, briefly summing up its Virtues and Uses, for internal and external Wounds, Hemorrhages, Dysenteries, Ruptures, and Lacerations, taken inwardly in Decoction, or outwardly applied.

For a Thickness and Protuberance of the Navel in Children, apply a Cataplasm of Sanicle boiled in Wine to the Part, and secure it with a pretty tight Bandage; and to the Back, opposite to the Region of the Navel, apply the bruised Root of Comfrey. This Prescription has been found successful in almost innumerable Instances. *Raii H. P.*

It is useful in consolidating Ulcers, Fistulas, Ruptures and Erosions. *Schroder.*

Sanicle is mightily commended by the French and Walloons, who eat it for Inflammations. It is good, also, in an Hæmoptoe. *Baubine* thinks it proper in hot Diseases of the Kidneys, but I see no Reason for it; but it is a useful Plant in a Languor and Decays from a Viscousness of the Humours. It is of a penetrating, balsamic Virtue; for it has an acrid Sort of a Fragrancy, in which consists its Virtue; and leaves an astringent Taste in the Mouth. The Leaves bruised, and applied to Wounds, cure them without Suppuration. They, also, remove external Tumors, and deterge Sordes. It is serviceable in Hernias and Hemorrhages, and in dissolving Tumors by Resolution or Diffipation; the Leaves being bruised and applied with Wine or Vinegar. The Decoction is taken inwardly to dissolve grumous Blood, and is good in Fractures, where Purgation and Absterfion are required. *Hist. Plant. Ascript. Boerhaave.*

SANICULA, is also a Name for several Sorts of SAXIFRAGA.

SANICULA ALPINA. A Name for the *Verbascum*; *humile*; *Alpinum*; *Villosum*, *Borraginis folio*, & *flore*.

SANICULA AMERICANA. A Name for the *Mitella*; *Americana*; *florum petalis fimbriatis*.

SANICULA FÆMINA. See *ASTRANTIA NIGRA*.

SANICULA MONTANA. A Name for the *CORTUSA*.

SANICULA MONTANA AMERICANA. A Name for the *Mitella*; *Americana*; *florum petalis integris*.

SANIES. The same as *ICHOR*.

SANIODES. *Zanodis*, from *ovis*. A Plank. Flat chested. *Galen.*

SANTAS. *Health*.

SAN-LUCIANUM LIGNUM. *Santa Lucia Wood*.

This is the Wood of a Tree named *Cerasus racemosa sylvestris*, *fructu non eduli*, C. B. P. It is brought from *Lorrain*. It is very tender, and has some Smell, but is little used in Physic. *Geoffroy.*

SAN MARTHANUM LIGNUM. This is a kind of red *Brazil* Wood, used in Dying, and which comes from *St. Martha*, near *Carthage*, in the *Spanish West Indies*. *Geoffroy.*

SANTALUM. *Sanders*.

There are three Sorts of Sanders, the white, red, and yellow. It is brought from *Siam*, and from the Islands of *Timor* and *Salor*; but Botanists are not agreed to what Tree it belongs. According to *Herman* it is called *Sircanda*, and bears Berries. The white Kind comes from the young Trees, the red and yellow from the old ones; the former

of these two being the outer Part of the Wood, the other that next the Pith. The Labourers who cut this Wood are often seized with malignant Fevers, and Deliria of a very singular Kind, the affected Person generally imitating the Actions of that Trade to which he was brought up; and they have also a *fames canina*, of a very terrible Kind. See *Bontius de Medicina Indorum*. The yellow Sanders is most proper for physical Uses. It is resinous, of an agreeable Smell, and excites sweating. The white has not so strong a Smell, and the red none at all; but it may be distinguished from *Brazil* Wood by its Roughness in the Mouth, when tasted, and accordingly it is a little astringent. All the Kinds, especially the yellow, enter into many Compositions; sudorific Decoctions are also made of them. *Geoffroy.*

The white and yellow Sanders of the Shops are produced by the same Tree, the cortical Part of which, according to many, is called white Sanders, and the medullary Part yellow Sanders: But *Garcias* informs us, that there is so great a Resemblance between the Trees which bear the white and yellow Sanders, that they cannot be distinguished except by the Inhabitants who sell them to the Merchants. *Dale.*

SANTALUM ALBUM. *Offic. Ger.* 1389. *Emac.* 1586. *Park. Theat.* 1605. J. B. 1. 486. C. B. P. 392. *Raii Hist.* 2. 1804. WHITE SANDERS.

The Part in Use is the Wood, which is hard, solid, ponderous, of a pale Colour, and of a Smell and Taste like that of the yellow Sanders; both Sorts are imported from the *East Indies*.

Both the white and yellow Sanders are refrigerating, drying and aperitive, hepatic and cordial. Their principal Use is in a Lipothymy, Palpitation of the Heart, and Obstructions of the Liver, and the like Disorders. Outwardly they are of Service in Catarrhs, Cephalalgia, Vomiting, and the like. *Schroder.*

SANTALUM CITRINUM. *Offic. Park. Theat.* 1604. J. B. 1. 486. *Raii Hist.* 2. 1804. *Santalum pallidum*, C. B. P. 392. *Ger.* 1389. *Emac.* 1586. YELLOW SANDERS.

The Heart or solid Marrow, is of a yellow Colour, a bitterish and aromatic Taste, and of a fragrant and grateful Smell.

Yellow Sanders is the Marrow of a certain Berry-bearing Tree called *Sarcante*, in the Island *Timor*, which, when separated from the Integuments, is solid, thick, and of a yellow Colour, of a bitterish aromatic Taste and fragrant Smell. This Commodity is brought from *China* and *Siam*, and the Tree itself is tall like a Walnut-tree, but bears Fruit resembling Cherries. The white Sanders is the paler Marrow of the same Tree, of a fainter Smell, and less aromatic Taste. When these Trees are dried, the Marrow alone is chosen; which, if it is not sufficiently odorous, is called white Sanders. Yellow Sanders derives its fragrant Smell and aromatic Taste from the tender Resin of which it consists, and which is easily extracted by infusing the Shavings of it in a sufficient Quantity of highly rectified Spirit of Wine. By Digestion a very yellow Tincture is extracted from it, which when inspissated over a gentle Fire, after the Spirit is abstracted, constitutes a liquid Balsam of a darkish Colour and grateful Taste, and which in Consistence and Colour almost approaches to *Peruvian* Balsam. And if this Balsam is again dissolved in highly rectified Spirit of Wine, it is a balsamic Essence of singular Virtue.

This Experiment excellently illustrates the Nature and Generation of the *Peruvian* Balsam, the Balsam of *Capivi*, and that of *Mecha*, which are nothing but liquid Resins; for if the resinous Principle of Sanders is dissolved in highly rectified Spirit of Wine, and the Solution inspissated, it assumes the Consistence of a Balsam, and is no more converted into a solid Resin, since some moist Particles have by this means intimately insinuated themselves into its Composition.

The Essence of yellow Sands is of the same analeptic and sedative Virtue with Amber, and is highly beneficial in Disorders arising from a Weakness and want of Tone in the nervous and membranous Parts; for which End, it may either be used by itself, or in Conjunction with the Essence of Aloes, Wood or Amber. *Hoffman.*

SANTALUM RUBRUM. *Offic. Ger.* 1389. *Emac.* 1586. *Park. Theat.* 1605. C. B. P. 392. J. B. 1. 489. *Raii Hist.* 2. 1805. RED SANDERS.

This is the Heart or middle Part of a Tree, that grows in the *East Indies*, upon the Coast of *Cormandel*. It is firm, hard, and ponderous, but of very little Smell or Taste; and is generally believed to belong to a Tree having papilionaceous Flowers.

The red Sanders is likewise accounted cooling and drying, and though of less Virtue is much more used than either of the former, especially to give a red Colour to Infusions, Tinctures, or Decoctions. It is, also, esteemed to be somewhat more restringent. *Miller's Bot. Off.*

It grows in the *East Indies*, beyond the River *Ganges*. The Part in Use is the Wood, or rather the Heart, or Matrix, separated from the outer Integuments, the Bark and Wood, and of a solid, dense, ponderous and red Substance.

This Species of Sanders is refrigerating and astringent. Whatever Virtues, therefore, are by the *Arabians* ascribed to the several Sorts of Sanders, against preternatural Heats, and the like kinds of Disorder, belong in a more especial manner to red Sanders. *Dale*.

From red Sanders, which is the solid, ponderous, and red Marrow of a filiquous and thorny Tree, which grows in *Malabar* and *Coromandel*, with Spirit of Wine, may be extracted a Tincture of a red Colour, as is sufficiently known. But 'tis a Circumstance new and unadverted to, that from this Wood may be prepared a Refin of a dark reddish Colour, a very small Quantity of which tinges a few Ounces of the Spirit of Wine of a beautiful Colour, resembling that of Blood. This Refin is prepared in the same manner with other Refins; for highly rectified and not common Spirit of Wine is to be poured upon the Shavings of the Wood. The Essence is to be extracted by a gentle Digestion; and when we obtain a large Quantity of it, the Spirit is to be extracted, and what remains liquid, is to be inspissated by a gentle Heat. Thus there remains a dark-coloured red Powder, a small Quantity of which dissolved in Spirit of Wine, tinges a large Quantity of the Spirit, of a beautiful and deep red Colour.

'Tis peculiar to this Refin, that it is so free from all Taste and Smell, that when it is kindled, there is no manner of Smell perceived; when kindled it burns, but froths greatly, and leaves a large Quantity of Earth. It tinges Spirit of Wine of a beautiful Colour, but produces no such Effect with any Oils, whether expressed or distilled: Nor is it dissolved by Oils, which sufficiently shews, that it rather consists of a subtle and earthy, than of a pinguious and oleous Substance. It may be used for tinging Medicines; and as it tinges the Spirit of Wine of a deep red Colour, it may by Anatomists be commodiously used for injecting the arterial Vessels of the Head.

SANTERNA. See BORAX.

SANTOLINA.

The Characters are;

The Root is fibrous; the Leaves are alternate, denticulated, crenated, and granulated. The Calyx is squamous, and as it were hemispherical. The Floscules are multifid, and separated from one another by imbricated Leaves. The Flowers grow single at the End of a Branch, and are larger than those of Absinthium or Abrotanum.

Boerhaave mentions twelve Sorts of *Santolina*, which are;

1. *Santolina*; foliis teretibus. See ABROTANUM FÆMINA.

2. *Santolina*; flore majore; foliis villosis, et incanis. T. 460. *Abrotanum fœmina*, flore majore foliis villosis & incanis. C. B. P. 137.

3. *Santolina*; foliis obscure; virentibus flore aureo. T. 461.

4. *Santolina*; foliis minus incanis. T. 461. *Abrotanum fœmina*, foliis minus incanis. C. B. P. 137.

5. *Santolina*; incana; Chamæmeli odore suaviore. *Abrotanum fœmina*, folio collecto, incano.

6. *Santolina*; Hispanica; foliis Chamæmeli. T. 461.

7. *Santolina*; Africana; Ericæ foliolis congestis; flosculis singularibus albis. *Campobrata*, *Africana*, *umbellata*, *frutescens Hermannii*. H. A. 2. 79.

8. *Santolina*; spinosa; foliis ægerati. *Bellis spinosa*. Alpin. Exot. 327.

9. *Santolina*; Africana; Coronopi folio; cauliculis procumbentibus. *Bellis*, *Africana*, *capitula aphylla*, *luteo*, *Coronopifolio*, *cauliculis procumbentibus*. H. L. Flor. 54.

10. *Santolina*; foliis Rorismarini; major. T. 461. *Abrotanum fœmina*; foliis Rorismarini, majus. C. B. P. 137.

11. *Santolina*; Hispanica; foliis vermiculatis.

12. *Santolina*; foliis Ericæ, vel Sabinæ. T. 460. *Abrotanum fœmina*, foliis Ericæ, vel Sabinæ. C. B. P. 137. *Boerh. Ind. Alt. Plant. Vol. 1.*

The first Species is thought by *Fabius Columno* to be the *Polium* of the Ancients, which is a very celebrated Herb, and he seems to be in the right. It is a Diaphoretic and Anticolic, whence it is an Ingredient in all alexipharmic Compositions. All the Species are alexipharmic and aromatic, like the *Eupatorium* and *Petasitis*. *Hist. Plant. Ascript. Boerhaave*.

SANTONICUM SEMEN. Worm-Seed, is a Grain used to destroy Worms generated in the human Body, and to which Children are especially subject. It is also called *Hagiospermas*, *Semen Sundum*, *Semen contra Vermes*, *Semen contra Semenzina*, *Santolina*, or *Xantolina*, and *Worm-Powder*. The Plant which produces this Grain, has Leaves so small, that they can hardly be distinguished from the Grain itself. It is pretended to be a Native of *Xaintogue*, [a Province of France]

whence it takes one of its Names; but what is sold by the Merchants who deal in Drugs, comes from *Persia*, and is imported by the *French*, *English*, and *Hollanders*, from *Aleppo*, *Alexandretta* and *Smyrna*. The Marks of its Goodness are, a full Body, a greenish Colour, a pretty strong Smell, and a bitter and pretty aromatic Taste; and we must be very careful that it be not coloured with an artificial Green, and that the Seed of *Abrotanum* be not substituted in its Room.

It contains much Oil, and essential or volatile Salt. Taken inwardly it is very good to kill Worms in the Body, and suppresses Vapours; the Dose is from half a Scruple to a Dram. *Lemery des Drogues*.

SAPA. See CARENUM, and DECOCTIO.

SAPERDA. *cavignon*. A Fish mentioned twice by *Hippocrates*, in his Treatise *de internis Affectionibus*. It should seem to have been preserved with Salt, or Pickle, like Anchovies. We learn from *Perseus*, that it was brought from the Black Sea.

SAPHADA. Small reddish Scales, which adhere to the Hairs. *Paracelsus*.

SAPHENA. A considerable Vein on the Inside of the Ankle is thus called. *Galen, de Curat. per Venaesectionem*, is of Opinion, that the opening this Vein is of great Service in exciting the *Menses*; for by means of the Orifice made, the Blood is more copiously derived, not only to that Vein on which the Operation is performed, but, also, to all the other Veins arising from the same Trunk, as *Ballini* has at large demonstrated, because there is less Resistance in those Parts where the Vein is opened, than in the other Parts of the Body. If, therefore, Blood is taken from the Ankle, there will, of Course, be a more copious Derivation of the Blood to the Uterine Vessels, which arise from the Vena Cava, as well as the Saphena. Consequently, since the Vessels are greatly distended by a large Quantity of Blood flowing into them, a Passage will be the more easily opened for the menstrual Blood. Thus *Mayer*, in his Treatise *de Morb. Intern. Cap. 22*, informs us, that he had seen speedy and surprising Effects produced by the Application of Leeches to the hemorrhoidal Veins. In like manner, when, without any viscid Quality, the redundant Blood is, through a Fault of the Vessels, retained, upon opening the Saphena, the Humours are not only more rarified, but, also, more copiously conveyed to the Uterus. For both these Reasons, the Momentum of the Blood will be increased, to the uterine Vessels, thro' which the *Menses* will of course be excited. Hence we may form a Judgment of the Doctrine of *Lindanus*, so much extolled by *Eittmüller*: For the former of these Authors distinguishes the Times in which Venaesection is to be used, as *Eittmüller* informs us in the following Words: "When the *Menses* are about to make an Eruption, but have not as yet appeared, a Vein is to be opened in the Arm; but after they have begun to flow, or are suddenly obstructed, the Saphena is to be opened; but in the Ankle a Vein is never to be opened, unless the *Menses* actually flow, or are suppressed." *Eittmüller* accounts for this Doctrine in the following Words: "When the *Menses* are about to make an Eruption, and the Blood in a State of Turgescence and Rarefaction, the Effort of Nature is to convey it downwards; for which Reason, if the Vessels are small, they cannot be forthwith opened, but being rather distended, in some measure retard the Discharge of the Blood. When, therefore, by opening the Saphena, the Impetus of the Blood is conveyed to the inferior Parts, the larger Quantity of it is conveyed to the Uterus, by which means the Disorder is increased; whereas, by opening a Vein of the Arm, some Quantity of it is solicited upwards, the Vessels are freed from Oppression, and the Blood circulates more freely. And an Opening of the Saphena will never provoke the *Menses*, except in Cases where (when actually flowing) they have been suppressed either by Cold or a Fright." In this Reasoning it is supposed, that the Blood is so turgid and rarified, that it might quickly enough pass through the Vessels, unless, in consequence of its being conveyed downwards, Plenitude should obstruct its Motion. But that the Vessels should yield the less easily, the more they are distended with Blood, is a Principle so far from being compatible with sound Philosophy, that it is inconsistent with common Sense. For if opening the Saphena promotes the *Menses*, when already flowing, and recalls them when suppressed, why should it not, at other times, recall their Discharge? Whence happens it, that in one Case it augments the Momentum of the Blood, and in another diminishes it; whilst, at the same time, the Blood is equally strongly conveyed to the Uterus? Since, by opening a Vein of the Arm, some Quantity of Blood is solicited upwards, the Passages of the Uterus are freed from Oppression; but the Impetus becoming languid, in consequence of the Diminution of the Plethora, the Vessels

Veins are not so easily opened, because they are not so much distended. *Etmuller* affirms, that *Riverius* gives us an Instance in Confirmation of this Doctrine of Plenitude, in which he tells us, "That, as often as the Vein in the Ankle was opened in a certain Woman, her Menfes were stopt, whilst they flowed copiously by opening a Vein of the Arm." As this Phænomenon seems contrary to the common Doctrine of Physicians, the Professors at *Montpelier* have explained it in the following Words. "Since this Woman was plethoric, and afflicted with a Suppression of the Menfes, in consequence of a Redundance of Blood, so distending the Vessels of the Uterus, that they could not be sufficiently compressed; the Blood being attracted to those Vessels, by opening the inferior Veins, the Obstruction was augmented. But when, by opening the superior Veins, there was a Revulsion from the Vessels of the Uterus; and when their Plenitude and Distension were lessened, they then more easily contracted themselves, in order to perform the natural and usual Expulsion made from the Uterus." There is a Distinction to be made between a Plethora when single, and when accompanied with a Lentor of the Blood; for by the former the Menfes cannot be suppressed, nor consequently the Opening of the Saphæna, which increases the Plethora to the uterine Vessels, prove hurtful to the Eruption of the Menfes. But in a Plethora, accompanied with a Lentor of the Blood, because there is an Obstruction in the Uterus, that is, because the viscid Blood stops in the capillary Vessels, the Humours being more copiously conveyed to the Uterus by opening the Saphæna, and the Blood flowing out more impetuously, there is a greater Adhesion of the viscid Parts to the Orifices of the Vessels. But this Danger in opening the Saphæna is not to be ascribed to the Plethora, but rather to the Lentor; so that the Caution of *Lindanus* only holds good in that Species of Plethora which is accompanied with a Lentor of the Blood. The Woman already mentioned from *Riverius* laboured under a Plethora of this Kind; for which Reason her Physicians justly made it their Intention of Cure to diminish the Plethora by liberal Venesection in the Arm; and afterwards, by opening the inferior Veins, to solicit the Blood to them, especially about the usual Time of Eruption. The Reason why it is of more Service to open a Vein in the Arm first, and afterwards the Saphæna, seems to be this. When the Quantity of Blood is diminished by Venesection in the Arm, the Velocity of the Remainder is increased; and when the Saphæna is afterwards opened, the Blood is propelled more forcibly to the inferior Parts; and thus the Plethora in the uterine Vessels is perpetually increased. Hence the Plethora and Velocity being both increased, the distending Force of the Blood on the uterine Vessels, is, for a double Reason, augmented, and in consequence of this, a due Evacuation is excited. *Freind's Emenologia*.

SAPHERA, or ZAPHERA. *Zaffer*, a bluish mineral Substance, made, according to *Lemery*, from the *Caput Mortuum* of Cobalt, left after the Sublimation of Arsenic, and twice the Quantity of powder'd Flint calcin'd together, so as to form a Sort of Stone. It is used by the Painters and Enamellers, but is possess'd of no medicinal Virtues.

SAPINDUS. The same as **ARBOR SAPONARIA**, which see.

SAPINUS, according to *Blancard*, is the Fir, or the inferior Part of the Fir without Knots.

SAPO. Soap. See **OFFA HELMONTIANA**.

SOAP FROM EXPRESSED OILS AND A FIXED ALALK.

Take a Quantity of expressed Oil-Olive in one Glass, and an equal Weight of Oil of Tartar in another, pour the Oil gently upon the Lixivium, and it will float thereon, and the two Liquors remain perfectly distinct. Shake the Vessel wherein they are both contained, and the Mixture will immediately appear white, opaque, thick, and somewhat viscous; and when suffered to stand in this State, it will continue for some time equally mixed, but at Length the Oil and the Lixivium will separate from each other; whence it appears, that expressed Oils, by Means of the Acid always lodged therein, are disposed to mix with Alkalies, even tho' diluted with Water; but that this Union is so weak as easily to be separated. Again, it seems probable, that the Acid is the Means of procuring this Combination; because Oils, deprived of their Acid, more difficultly unite with Alkalies. If this Mixture be gently boiled over a slow Fire, till the Water is gradually exhale, it comes into one consistent white Mass, of a nauseous oily Smell, and a sharp, alkaline, ungrateful, unctuous Taste, which will easily resolve in the Air; but if in the Boiling, a just Proportion

of the dissolved Alkali or Oil be added, or mixed therewith, so as that the Compound may perfectly dissolve in Water, without separating from its Oil, and yet manifest nothing alkaline to the Taste, and remain long in the Air without running, it is then called perfect Soap. It was afterwards found, by a successive Repetition of Experiments, that the stronger the Alkali, the more perfect the Soap; and as Quick-Lime wonderfully increases the Power and fiery Nature of Alkali, an Alkali prepared by means of the same, began to be used instead of the simple Kind, for the making of Soap; and because they also observed, that the Union was made more perfect by long continued Boiling, and that this Boiling required a larger Proportion of Water, they added Water more plentifully, and at length, by repeated Trial, they likewise found that a certain Proportion of Oil and Alkali was required; and thus by successive Degrees, the certain and determinate Way of making Soap was found.

They take the fixed, alkaline fiery Salt, prepared with Quick Lime; this they dissolve in such a Proportion of hot Water, that the Lie may support a new-laid Egg; and this the Soap-makers call their capital Lie. They afterwards dilute Part of it with more Water till a fresh Egg will sink therein; and this they call the weaker Lie. They afterwards mix their Oil-Olive with an equal Weight of this weaker Lie, by stirring them well together, till the whole becomes white, then boil the Mixture with a gentle Fire, keeping it continually stirring, till the Water being exhale, the Remainder begins to unite; at which time they throw in thrice the Weight of capital Lie, in Proportion to the Oil, and mix and boil till the Mass becomes so thick, that a little of it laid upon a cold Stone, appears to be of a due solid Consistence; and if now a Part of this cold Mass is dissolved in Water, it manifests no Signs of Oil, this shews that the Oil is well united with the Alkali; but if any Oil still appears, the Addition of a little more capital Lie is required, and the Boiling must then uniformly be continued, till the Soap will perfectly dissolve in Water. At this Time the Soap is tasted, and if it proves sharp and alkaline, it is a Sign that Alkali abounds too much therein. Therefore a little more Oil is added, and the Boiling continued, till at length a Mass is obtained, so hard as to cut in the cold, and that will perfectly dissolve in Water, and neither taste alkaline upon the Tongue, nor run spontaneously in the Air; and thus the Soap is perfected.

Instead of Oil-Olive any other fat Substance may be used, as the Fats of Animals and the Oils of Fish; thus black Soap is made from Train-Oil, or the boiled Blubber of Whales; but the purer the Alkali is, and more scentless, tasteless, and less ungrateful the Oil, the better the Soap, especially for medicinal Use.

REMARKS.

Here we see an intimate Combination of native Oil with fixed Alkali, by Means of Water and Fire, into a homogeneous Mass, which will perfectly dissolve in Water; whence it appears, that the Oil here loses its former fat Nature, and acquires another more agreeable to Water; and that this is brought about by the Means of sharp fixed Alkali. And therefore, where the Humours of the Body abound with Oil, Salts are generally useful, and consequently in this Case, a prudent Use of fixed alkaline Salt may be allowed. Hence also we are shewn a Way, whereby the Acrimony of Alkali may be entirely blunted, so as to grow soft and put off its corrosive Nature, by the means of Oils. Whence again, in such Cases, where the like sharp, saline Matter predominates, fresh expressed Oils, drank in plenty, will blunt it; and this has been often practised with good Success in the acutest Diseases, and the more pernicious Kind of Scurvy; again, when this Acrimony is spontaneously generated in a certain Place, as in the Kidneys or Bladder, where the Stone drinking in the Urine, turns it to this Kind of Acrimony: But in the Soap so produced, tho' the Tenacity of the Oil is abolished, yet the former Virtue of the lixivial Salt remains, whereby it deterges without Danger of corroding; for when mixed with Water, it makes a strong saponaceous Lie, which by Heat, Motion, and Trituration, dissolves Gums, Oils, Rosins, and gross Fats, rendering them also saponaceous, or soluble in Water; and thus it has a scouring, detergent, opening, cleaving Property. Hence it renders coagulating Humours fluid, opens old Obstructions, and thereby restores the lost Use of the Parts. It, also, has great Effects upon Concretions, consisting of gross Earth and Oil; it prevents Acids from coagulating the Chyle or Milk, and even resolves them after Coagulation. Whence it appears to be almost an universal Opener, Diluter, Resolver, and thinner in the Body, in the abovementioned Cases; being drank upon an empty Stomach, well

well diluted and at different Times, in a sufficiently large Quantity, and assisted by the Motion of the Body. It is likewise wonderfully serviceable, being externally applied in sinuous and fistulous Ulcers. It may be ting'd and disguised, by giving it a grateful Colour with Saffron, Turmeric, Cochineal, or other Pigments; and if it still proves disagreeable, on account of the nauseous Smell acquired by the Oil in boiling, it may be corrected by a little Balsam of Peru. But its Use is highly pernicious in those Distempers, where Life is in Danger from a Putrefaction, that dissolves and corrupts the Humours, as has frequently appeared in the Plague and other putrid Distempers, according to the just Observation of *Diermerbroeck*. Many other Particulars of chymical and medicinal Use may be easily deduced, concerning this noble Production, from what is above delivered. Soap effects what neither Water nor Oil could perform, does that with Safety which Alkalies do with Danger, and can perform what other Salts cannot.

SOAP FROM DISTILLED OILS AND FIXED AL-CALI

Chymists considering the Virtues, which by Experiment they found in distilled Oils, were concerned to find that these Oils, not mixing with Water, could not enter and act upon the Humours of the Body; and therefore observing that expressed Oils might be successfully united with fixed Alkali, they went upon trying the same with distilled Oils, but found that these lost their Virtue by boiling, and even could not thus be joined with the Alkali, and hence tried various Experiments to unite these different Bodies, till excited by the Directions and Promises of *Helmont*, some of them seemed to have found the Means of effecting the Thing. I myself, formerly made many tedious Experiments to this Purpose, and at length succeeded as I shall now relate. The Secret consists in this, that the Alkali should be perfectly sharp, pure and dry, and come in Contact with an Oil perfectly deprived of Water; all the rest is successfully performed by the Atmosphere; but if the least Water should enter, the Experiment will be frustrated.

Take the purest and strongest fixed Alkali, and grind it in a clean Iron Mortar, with an Iron Pestle, to fine Powder, the finer the better, while it remains thoroughly hot from the Fire, and almost ignited; then put it into an extremely dry and well heated Urinal, and set it in a hot and dry Place, on a clear and dry Day; and at the very Instant that the hot Salt is all collected at the Bottom of the Glass, let fall therein the true ætherial and pure Oil of Turpentine, so that one Drop may immediately follow another, and fall upon the middle of the hot Salt; the Oil itself having been first well heated; and thus the Oil will immediately, with a great Fume and hissing Noise, be attracted into the thirsty Salt, and diffuse itself intimately through the whole Mass. Continue to pour in the Oil quick, till enough is entered into the Salt, and floats above it, so as to prevent it from touching the external Air - which is always moist with Water, or from touching the Surface of the Salt. Set the Glass in a Cellar, where being covered with Paper, the Oil will soon disappear, and be united with the Alkaline Salt; then pour some more of the warm Oil thereon, and mix it with a Stick into the former Mass. Set the whole by, as before, and continue thus till near thrice the Quantity of the Oil is united with the Salt; the whole will be now a saponaceous and penetrating Mass, which, the more it is stirred, the sooner and better it is made, whence it may be expeditiously obtained, by putting it into a strong Glass, and suffering it to be carried daily, and shook in a Stage Coach, as Doctor *Grew* and *Bohn*, have formerly observed. The Experiment has always succeeded well, when I have observed the foregoing Circumstances; but never if the least of them were neglected. The Operation is known to be well performed if a little of the Soap will mix with Water without manifesting any Sign of Oil. If the Soap, thus prepared, be long kept in the Urinal, there usually rises, by degrees, along the Sides of the Glass, a certain white crystalline Salt, of no disagreeable Odour, and of a penetrating, mild, saline, but not alkaline, Taste; which is wonderfully insinuating, easily soluble, and affords an highly useful medicated Soap.

This Salt which is but little in Quantity, I suspect gave Origin to the Assertion, which perhaps is too free, that fixed Salt of Tartar was here rendered Volatile, by means of Oil added thereto, so as to become a Substitute for the Alcahest; but when I urged this Soap with Fire, after it was well prepared, I did not find the promised volatile Salt.

REMARKS.

This Experiment also shews us the thirsty Nature of pure fixed Alkali, whereby it drinks in and unites these Salts with itself, and again how a sharp fiery Alkali may be softened into a mild oily Salt. We have sufficiently spoke to the Virtue it has against acid, austere and viscous Coagulations, under the former Process; we must however observe, that all the Virtues there related, are here found more Noble and Active, and constantly somewhat heating. Hence we understand the Nature of distilled Oils, with regard to fixed Alkalies, or of fixed Alkalies with regard to them; and of the new Production by a proper Combination of the two. *George Starkey*, and his Followers, call this Soap Volatile; but I never could find it so, as I said above. This is the Soap which *Matthew*, an Empiric of London, made under the Title of *Matthew's Corrector*, wherewith he mixed Opium, and the Roots of Hellebore and Liquorice, and then digesting them together, he made general Pills thereof, that were diaphoretic, scarce emetic, or purgative, but anodyne, though they would often vomit the next Day. *Starkey* published a more correct Preparation of these Pills at the End of his *Pyrotechny*, where he boasts of their Virtue after the Manner of Chymists, unjustly pretending that the Virtue of the Hellebore remained entire, though deprived of its vomiting Quality. The excellent *M. Hemberg* observes that a strong Lixivium made of this Soap, mixed with a sharp Acid is strangely rendered turbid and changed; while the Alkali being attracted by the Acid, lets go the Oil. These Soaps being well dried and digested with pure Alcohol, are in some measure resolved into the less Elixir of the Philosophers, where the Sulphur and Spirit are united.

THE SOAP OF BALSAM OF SULPHUR.

1. Take the Balsam of Sulphur, as directed to be prepar'd with a Vegetable express'd Oil under the Article BALSAMUM. Dilute it with twice or thrice its Weight of the same Oil as was used in its Preparation, and herewith make a Soap. This will be the Soap required, which *Starkey* in his *Pyrotechny* so highly commends from *Helmont*.

2. Or take Balsam of Sulphur, with Turpentine as directed under the same Article, and therewith, instead of simple Oil of Turpentine, make a Soap: This Soap will be the sulphureous Soap of the Philosophers.

REMARKS.

These Processes shew the Ways whereby natural simple Sulphurs, as also such as closely adhere to Semi-Metals, as the Sulphur of Antimony, &c. may be joined to fixed Alkaline Salts, and thus become mixible with nearly all the Animal Juices, and exert their Virtue in all the Vessels of the Body. The followers of *Helmont* hence promised themselves wonderful medicinal Effects, not easily to be obtained by other Means; because in these Sulphurs, so opened, they find a great solutive Power, which is manifest by their disagreeable Odour, their ungrateful, and highly penetrating and heating Taste; but the same Effects may be had in the Soaps described above, without the disagreeable Odour and Rancidness. These Processes, however, have their Chymical Use.

THE BALSAM, OR SOAP OF SULPHUR, UNITED WITH ALCOHOL.

1. To the terebinthinated Balsam of Sulphur contained in a tall Bolt-Head, add six times its Weight of pure Alcohol, and make a Solution; which having stood for some Time, the Sulphur in part precipitates out of the Balsam, into sulphureous Crystals, and in part remains dissolved, so as to afford an alcoholized Balsam of Sulphur.

2. Or take the terebinthinated Soap of Sulphur, as describ'd in the preceding Process. N^o 2. digest it with Alkali, and this makes perfectly the same Solution, of a very penetrating Taste and Odour. *Boerhaave's Chymistry*.

SAPONARIA. A Name for the *Lycnis, Sylvestris, quæ Saponaria vulgo*.

SAPONEA. The Name of an Arteriacal, or Pectoral Medicine, made of Oil of sweet Almonds and Sugar dissolv'd in Water of Violets. *Castellus* from *Claudianus*.

SAPOR. Taste. See GUSTUS.

SAPOTA. The *Mammia Sapota*.

The Characters are ;

It hath a Rose shaped Flower, consisting of several Leaves, which are placed in a circular Order ; from whose Emplacement arises the Pointal, which afterwards becomes a large, oval, short, fleshy Fruit, inclosing an oblong pointed Stone or Fruit, which is finely polished, having a rough Fissure on one of the Edges, of an Ash Colour.

Miller mentions two Sorts of *Sapota*, which are ;

1. *Sapota fructu turbinato minori. Plum. Nov. Gen.*
2. *Sapota fructu ovato majori. Plum. Nov. Gen.*

The Name of *Sapota* is what these Fruit are called by the Natives of *America* ; to which some add the Appellation of *Mammæ*. But there is no other Name given to these Fruits by the *English*, since they have settled in the *West Indies*, so far as I can learn.

The first of these Trees is common about *Panama*, and some other Places in the *Spanish West Indies*, but is not to be found in any of the *English Settlements in America*. The second Sort is very common in *Jamaica*, *Barbadoes*, and most of the Islands in the *West Indies*, where the Trees are planted in Gardens for their Fruit, which is by many Persons greatly esteemed.

These Trees grow in *America*, to the Height of thirty-five or forty Foot, having a strait Trunk, covered with an Ash-coloured Bark. The Branches are produced on every Side, so as to form a regular Head. These are beset with Leaves, which are a Foot in Length, and near three Inches broad. The Flowers, which are produced from the Branches, are of a Cream Colour ; when these fall away, they are succeeded by large, oval, or top shaped Fruit, which are covered with a brownish Skin, under which is a thick Pulp of a Russet Colour, very luscious, called natural Marmelade, from its Likeness to Marmelade of Quinces. *Miller's Dictionary, Vol. 2.*

SAPON. The Name of a Wood used in dying, but of no medicinal Virtues.

SAPPHIRUS. Offic. Aldrov. Mus. Metall. 971. Geoff. Prælect. 80. Kentm. 48. Mont. Exot. 14. Calc. Mus. 223. Boet. 183. Worm. 104. Schröd. 320. Charlt. Foss. 38. De Laet. 30. *Sapphirusmas caruleus*, Schw. 391. *Lapis Sapphirus*, Matth. 1387. **THE SAPPHIRE.**

The Sapphire, called by some the Gem of Gems, is a hard Stone of a blue Colour like that of the clear Sky. It comes nearest the Diamond in Splendor, Transparency, and Hardness, and is of two Kinds ; one pale, called the Female Sapphire, the other of a deeper blue, called the Male. There is a third Sort, likewise, which has no Colour at all, and is sometimes made to pass for a Diamond, but is neither so hard nor so brilliant.

Sapphires are brought from different Parts of the *East Indies*, and thence called *oriental*. The rest are found in *Silesia* and *Bohemia*, called *occidental*. The Colour of Sapphire may be taken out by Fire, and then it looks like a Diamond ; for which Reason I believe this Colour to come from a small Mixture of fine Sulphur of Copper. Many are the inestimable Qualities superstitiously ascribed to this Stone ; but, besides these, we are told that it raises and exhilarates the Spirits, resists Poison, and cures Ulcers of the Intestines. *Geoffroy.*

It is of a cold and dry Quality, astringent, consolidating, alexipharmic, cordial, and ophthalmic. *Schroder.*

SAPRIAS. *σαπρία*. The same as **ANTHESMIAS**.

SAPURUS. The same as **SAPPHIRUS**.

SARAFFI, is explained by *Rulandus*. *Gypsa*.

SARAPOUS. *σαράπους*. A Person whose Toes are very distant from each other. *Galen. Exeges.*

SARCA, SAYRSA, or SARRA. Iron. *Rulandus*.

SARCION. *σαρκιον*. A Caruncle.

SARCOCELE. *σαρκοκήλη*. From *σάρξ*, Flesh, and *κύλη*, a Tumor. A Species of *Hernia*. See **HERNIA**, and **CATRATIO**.

SARCOCOLLA. Offic. C. B. P. 498. Park. Theat. 1544. Raii Hist. 2. 1847. Geoff. Tract. 364. *Sarcocolla Officinarum*, J. B. 1. 308. **SARCOCOL.**

This is a Gum which comes over in small whitish yellow Grains, with a few of a reddish Colour mixed among them, of a viscid and somewhat bitterish Taste, with a sweetish Relish. There is another Sort, which has been brought over lately in Lumps of a brownish yellow Colour, smelling and tasting somewhat resinous, very friable, and powdering of a whitish yellow Colour. It is said to come from *Persia*, but we have no Knowledge of the Tree which produces it.

It is of a refringent, consolidating, glutinous Nature, good to heal and cicatrize Wounds. It is serviceable against Dysenteries, Spitting of Blood, and Bleeding at the Nose ; and is frequently made use of in Distempers of the Eyes. It is put into *Trochisci albi Rhafis* and the *Emplastrum Opodeldoc*. *Miller's Bot. Off.*

To make it into a Collyrium, nothing is required but to dissolve it in Plantain Water. *Geoffroy.*

Chuse what is recent, of a Colour inclining to Paleness (for the old and stale is reddish) of a bitter Taste, a porous and glutinous Substance.

It is heating, drying, astringent, consolidating, conglutinating, digestive, and maturating. Its principal Uses are in extirgishing and consolidating Wounds, and inducing a Cicatrix over them, whence it has its Name. It is of excellent Service in Rheums, Albugo, or Films affecting the Eyes ; for which Purposes it is macerated five Days in Asses or Women's Milk ; and being mixed with Rose-Water, and (if you think fit) with a little Sugar, is applied to the Eye-lids. It is an Ingredient in *Anacollemas* for Hemorrhages of the Nose. *Dale.*

SARCOEPIPOCELE. A Kind of compound Rupture, consisting of a Descent of the *Epiploon*, and a *Sarcocele*. Or a Rupture of the indurated *Epiploon*, either umbilical or scrotal.

SARCOMA.

A Sarcoma is defined a fleshy Tumor, arising in any Part of the Body, from some Effusion of the nutritive Juices out of their Tubuli, as happens in Contusions, and by some other Accidents. This Tumor being certainly made up of the same Materials, and having the like manner of Accretion with that of other Parts, but with this Difference only, that the latter is restrained by the Course of the Vessels, to some certain Figure, and equal or irregular Dimensions, whilst the former is in Form, and under no certain Restriction or Limitation.

For when this precious Liquor, by Reason of some Obstacle, is perverted from its primary Use or Office of nourishing some certain Parts, rather than lie unactive, busy Nature will be still forming something thereof, however rude or unshaped, as well as useless it may prove.

The same *Lusus* or Aberration is daily seen in Plants, with the like Excursions of their Sap, analogous to the Blood of Animals, when by some Accident of Let or Stop in its more regular progressive Motion, it is forced to deviate or turn aside out of its Channels.

The Sarcoma is distinguished from encysted Tumors, in that it has no Cystis or proper containing Capsula like those, nor is it moveable as they are ; neither yet does it give way as the rest to any Pressure, having no Cavity, but is firm, compact, and more solid.

As to the Cure, whoever reflects upon the Nature and Matter of this Tumor, will easily apprehend it is to no Purpose to expect it should either be repelled or dissolved, and as little to hope for Suppuration ; since it is made up of Flesh itself, or the extravasated nutritious Juice here carnified, and turned to a solid Substance ; and if the Base or Foundation thereof be not small enough to allow of the Ligature, it can be no otherwise removed than by Knife or Fire, either actual or potential : By the first I mean, the hot Iron ; by the latter, the escharotic, or caustic Application.

It may, indeed, so happen as to want all three, not only to stay the Hemorrhage, or Flux of Blood, but to eradicate and consume the Basis ; which being done, and the Wound digested, you are to incarnate, if there be Occasion, or otherwise to dry up the Remains into a Cicatrix.

But before you enterprize any of these Operations, you are thoroughly to examine the Nature of the fleshy Body you are about to eradicate, either of these Ways : Thus, when of a mild Appearance, soft and tractable, of the natural Colour or kindly Aspect, attended with little Pain, situated free from the larger, or fed only by some capillary Blood-Vessels, clear also of the Nerves and Tendons, in a good Habit of Body, and a governable Patient, there will be greater Encouragement. On the contrary, when hard, livid, unequal, painful, seated in the Joints, or among the tendinous Parts, nourished by some large Artery, the Body cacochemical, and the Sick unruly, 'tis better not to meddle therewith.

Farthermore, observe in all Operations of this kind, and indeed in many others, though seemingly of less Moment, it will be requisite, that the Patient's Body should be prepared three or four Days before, by Phlebotomy, Clysters, or lenient Purgation, as also an abstemious Diet, which latter ought to be continued through the whole Course of the Cure, to prevent a Fever, with the consequent Symptoms. *Turner's Surgery.*

SARCOMPHALON, from *σάρξ*, Flesh, and *ὄμφαλος*, the Navel. A fleshy Excrecence at the Navel.

SARCOPHAGOS, *σαρκοφάγος*, from *σάρξ*, Flesh, and *φάγω*, to eat. A Name for the *Assius Lapis*. Cathartics are, also, thus called.

SARCOPHYIA, *σαρκοφύια*. A fleshy Excrecence, or **SARCOMA**.

SARCOPYODES, *σαρκοπώδης*. An Epithet of Spit resembling purulent Flesh, which is sometimes cough'd up in a Consumption.

SARCOSES,

SARCOSIS, *σαρκωσις*. The same as **SARCOMA**.

SARCOTHLASIS, *σαρκόθλασις*, or **SARCOTHLASMA**, *σαρκόθλασμα*. From *σαρξ*, Flesh, and *θλάω*, to confuse. Confused Flesh, or a Confusion of the Flesh. *Nonus*.

SARCOTICA. Sarcotics. That is, Medicines which generate Flesh in Wounds.

SARDA, or **SARDINA**. The Pilchard.

This is a small Fish found in the *Mediterranean*, which resembles the Anchovy, but is larger and thicker; and it is less than a young Snad. Sometimes they keep in the Middle of the Sea, and at other Times resort near the Shores.

This Fish is best when young, tender, well fed, fresh, and catch'd in March or April. It contains much Oil and volatile Salt. When fresh it is delicious Food, nourishing, opens the Body, produces good Juice, and is of a dissolving Nature, and may be advantageously applied, when pounded, to Swellings of the Gums and Legs.

When pickled, it loses some of its excellent Taste, heats much, causes Thirst, makes the Humours sharp and pungent, and produces nearly the same Inconveniencies with the Pickled Herring; but it has a much finer and more agreeable Taste, and may be reckoned among those Foods which are more pleasant than wholesome. When it is fresh, it is good in cold Weather, for any Age and Constitution; but when it is pickled, it ought to be eaten more moderately, especially by those who are young, and of a hot and bilious Constitution.

SARDA, is also a Name for the *Sardius Lapis*, Cornelian.

SARDONIUS RISUS. Sardonian Laughter, a convulsive and involuntary Laughter; it acquires this Name from the *Herba Sardonica*, or *Sardoa*, which is the *Ranunculus*; *palustris*; *apii folio*; *lævis*, and which is said to excite a Kind of Madness and Convulsions, by which the Cheeks are contracted in such a manner, as to resemble those of Persons under a Fit of Laughter. This Disorder, which has passed into a Proverb (in which Acceptation *Sardonius Risus* signifies a forced Laugh) is justly regarded as very dangerous, since it induces sudden and unexpected Death, under the Disguise of a false Laughter.

The Cure for those who are disordered by taking this Herb is first to vomit, and then to take a Draught of Hydromel and Milk, and to use Fomentations, Embrocations, and Inunction of the whole Body with hot Ointments. The Patient is, also, to bathe in Water and hot Oil, and after Bathing to be anointed, and very well rubbed. In general the Cure is to be managed in the same Manner as for Convulsions; Castor, also, may be taken, either alone, or in Passum, with other Medicines of the like Nature. *Actius, Tetrab. 4. Serm. 1. Cap. 66. copied verbatim by Paulus and Actuarius.*

SARDONYX, Offic. Boet. 233. Kentm. 49. Charlt. Foss. 34. De Laet. 70. Worm. 97. Calc. Mus. 241. *Sardonyx Indica*, Geoff. Prælect. 78. **THE SARDONYX**.

The *Sardonyx*, as the Name imports, is a precious Stone, of an Appearance betwixt the *Sardus* and *Onyx*. *Geoffroy* says, that the *Onyx*, or *Sardonyx* according to some, is different from the true *Sardus*. See **ONYX**.

The *Sardus*, or the Sardian Stone, is very rare, and not perfectly transparent. We meet with two kinds of it, one called *Oriental*, the other *Occidental* or *European*, the former of which is the hardest. Both these were by the Ancients termed *Sardonyx*. The second Sort is the *Indian* and *Arabian*, of which the former is pellucid, the other opaque.

The *Indian Sardonyx* resembled both the *Sardus* and *Onyx*, its Surface being like the *Onyx*, or human Nail; but its Root was white, like the *Sardus*, or of a Flesh Colour; and was mostly transparent, though some of them being opaque, were from thence called *Cæca*, or blind.

The *Arabic Sardonyx*, called by some *Memphitis*, was distinguished by a black or dark blue Substratum, surrounded by a white Circle, and by its Surface being more or less white. This, by Jewellers, is termed simply *Onyx*.

The Ancients were of Opinion that the *Sardus*, by a certain Irradiation, exhilarated the Mind, banished Fear, inspired with Courage, defended against the Power of Witchcraft and Poison. It is given in Powder to stop all bloody Fluxes; but is very little used at this time. *Geoffroy*.

SARDUS. See **CARNEOLUS**.

SARE. The same as **ESSERE**.

SARFAR. Iron. *Rulandus*.

SARGAZO. The *Vitis Marina*. See **FUCUS**.

This Plant covers a large and spacious Sea of the *Indies*, elevating itself a Hand's Breadth above the Surface. It shoots forth several fine, slender Stalks, interwoven one among another. The Leaves are long, thin, strait, serrated at the Edges, of a reddish Colour, and of a Taste like that of *Percepie*. The Fruit is a round Berry, as big as a Pepper-Corn, light, and empty. The Plant is very tender when first taken out of the Water, but becomes hard and brittle when it is dry'd. There is no Root to it as yet discovered, but only the

Mark where it has been broken off when taken out of the Sea; but it has, very probably, its Root in the Bottom of the Sea. This Herb, by its vast Abundance, renders the Navigation of that Sea very dangerous. It is eaten in Sallads. *Lemery des Drogues*.

Sargazo is very aperient, and good to provoke Urine, and break the Stone in the Kidneys and Bladder, for the nephritic Colic, and the Scurvy, being either eaten, or taken in Decoction.

Sargazo comes from *Sargasso*, which is the Name the Portuguese give that Extent of Sea which lies between the Islands of *Cape Verde* and the *Canaries*, and the main Land of *Africa*.

SARGUS, a bulky Fish, fleshy and thick, and found in the *Egyptian* Sea, on the Shores, and in the Sand. It has a large Body, covered with fine Scales, and is of a Colour inclining to a Violet. It has a capacious Belly, sharp Snout, and great Teeth resembling human Teeth. It has a black Spot towards the Tail, and its Body is often beautified with Streaks of the Colour of Gold and Silver. It is a Native of the *Adriatic* Sea, and is said to be so great a Lover of Goats, that if it smells them, or does but see their Shadow, it leaps and throws itself forward in order to get upon them. It commonly feeds on the Mud and Surf, that is found on the Sea-shore. It is good to eat, but its Flesh is hard.

The *Sargus* is esteemed good for the Dropsy, being taken in Broth. The Teeth worn about the Neck, are supposed to be a Preservative from the Tooth-Ach. *Lemery des Drogues*.

SARMATICA LUES, is the **PLICA POLONICA**.

SAROPUS. The same as **SARAPUS**.

SARRACENA. The Side-Saddle Flower.

The Characters are;

It hath a Flower consisting of several Leaves, which are placed circularly, and expand in Form of a Rose, and resting in a many-leaved Empalement. From the middle arises the Pointal, which is membranaceous, and shaped like a Hood, and afterwards becomes a roundish Fruit divided into five Cells, which contain oblong Seeds.

Miller mentions but one Species:

Saracena Canadensis foliis cavis et auritis. Inst. R. H.

This strange Plant is a Native of *New-England*, *Virginia*, and several Places in *North America*; where it grows on Bogs, and such Places where the Waters usually stand in Winter. The Leaves of this Plant arise from the Root every Spring, being eight or nine in Number, which are small at the Bottom, but swell larger towards the Top, and are hollow like a Pitcher, having a Sort of an Appendix at the Top, somewhat resembling a Flap, so that in these Leaves there is commonly a large Quantity of Water contained. Between the Leaves arises the Flower-Stem, which hath several rosaceous Flowers growing on the Top, which are succeeded by roundish Fruit.

The Name was given to this Plant by *Dr. Tournefort*, in honour of *Dr. Sarazin*, a curious Botanist, who sent the Plant from *Canada* to *Dr. Tournefort* at *Paris*. *Miller's Dictionary*.

SARRAMPIO. The same as **PICOTA**.

SARSAPARILLA. Offic. *Smilax aspera Peruviana*, Park. Theat. 173. *Smilax aspera Peruviana sive Salsaparilla*, C. B. P. 296. Raii Hist. 1. 656. *Smilax Peruviana Salsaparilla*, Ger. 709. Emac. 859. *Smilax affinis Salsaparilla*, J. B. 2. 117. *Ivapeçanga Brasiliensis*, *Sarsaparilla Hispanis*, Marcg. 11. *Macapatlil seu Zarca-parilla*, Hernand. 288. *An Carivillandi?* H. M. Part. 7. p. 59. T. 31. **SARSAPARILLA**.

This is a very long, slender Root, free from Knots, about as thick as a Goose-Quill, with a brown wrinkled Bark on the Outside, and white and somewhat mealy within, having a small, tough, stringy Pith in the Middle, of little Smell or Taste. A great many of those long Roots descend from one large Knot or Head. It grows in *Petu* and *Brazil*, and is described by *Piso* under the Name of *Ivapeçanga*, being a Species of *Smilax aspera*, having slender prickly Stalks, and long oval sharp-pointed Leaves, of a deep Green on the upper Side, and whiter underneath, with three large Veins and two Claspers set on by them. The Flowers grow in Bunches at the Ends of the Stalk, and are succeeded by small black Berries.

Sarsaparilla is heating, drying, attenuating and sudorific; and particularly useful for the French-Pox, for which it has been accounted a Specific, and much used in Diet-Drinks for that Distemper. It is likewise serviceable against the Gout, Rheumatism, Scurvy, and the King's-Evil, being accounted a Sweetner of the Blood. *Miller's Bot. Off.*

It is of fine Parts, and accounted a Specific for the Lues Venerea, Arthritis, Rheumatism, and the like Diseases. Whether *Sarsaparilla* be specifically different from *China-Root*, I will not, says *Dale*, taking upon me to determine.

Sarsaparilla is a very noted Root, which began to be very much celebrated about the same time with the Root of *China*, as appears from the Epistle of *Vesalius* [quoted under the Article *CHINA*.] It is inferior indeed to *Guaiacum*, but is generally supposed to be much superior in Virtue to *China* Root, and even to exceed *Guaiacum* itself, when after a Course of mercurial Inunctions, and drinking Decoctions of *Guaiacum*, the Patient is still molested with Ulcers, Rhagades about the Anus, Tophi, Nodes, Ganglia, and Gummata; but especially with Rheumatic Pains, either fixed or wandering, and owing their Original to the venereal Infection, in which latter Case it is esteemed a Specific.

It is imported from several Countries of *America*, and especially from *Peru*, *Mexico*, and *Brazil*, where it is said to grow spontaneously, and plentifully, even in the Hedges. It is generally believed to be the Root of a Plant, the same with the *Smilax Apera*, or very near akin to the *Smilax*. Hence it is called by the Spaniards *Sarsa-parilla*, or *Zarza-parilla* (that is, a small Vine resembling the Bramble) which is the Name they give the *Smilax Apera*, as we are told by *Andreas Lacuna*, because the *Smilax* in its Leaves, Branches, and Tendrils resembles the Vines, but in its Thorns and Prickles the Bramble; for *Zarza* in Spanish is a Bramble, and *Parilla* a little Vine. This Opinion is, also, favoured by Experience; for it is certain, that the Roots of our *Smilax Apera* very nearly resemble in Figure those of *Sarsa-parilla*, and almost equal them in Virtue, since we are assured by *Fallopianus*, *de Morbo Gallico*, that he made use of the Roots of the *Smilax Apera* gathered in *Italy*, with happy Success, and cured Multitudes of the Lues Venerea.

Sarsa-parilla is prepared in Decoction after the same manner as *China*, that is, by cutting two Ounces of the Root into small Bits, and macerating them a whole Day in six Pints of common Water, after which they boil them over a gentle Fire in a double Vessel well closed with a Lid, till one third, or half, be evaporated. Of this Decoction the Patient is to take a Glass, that will hold ten Ounces, very early in Bed; what remains serves during the rest of the Day for ordinary Drink, and this Course is continued for twenty or twenty-four Days. As to the rest, the Patient is allowed a somewhat greater Latitude in Diet, than under the Use of *Guaiacum*, and observes, in that Respect, the same Regimen as is prescribed to those who drink the Decoction of *China*. See *CHINA*. *Astruc de Morb. Ven.*

SARTORIUS.

This is the longest Muscle in the human Body. It is flat, and about two Fingers in Breadth, situated obliquely along the Inside of the Thigh.

It is fixed above by a very short Tendon, in the lower Part of the anterior Superior Spine of the Os Ilium, before the *Musculus Fascia latae*. The Beginning of its Body lies in the Notch between the two anterior Spines of that Bone.

From thence it runs down obliquely over the *Vastus Inter-nus*, and other Muscles that lie near it, all the Way to the Inside of the Knee, where it terminates in a small Tendon, which grows broader near its Extremity, and is inserted obliquely and a little transversely, in the fore Part of the Inside of the Head of the Tibia, near the Spine or Tuberosity of that Bone, immediately above the Insertion of the *Gracilis Interior*.

The fleshy Body of this Muscle is inclosed in a Vagina formed by an Expansion of the *Fascia Lata*. Its Fibres in general are longitudinal, and where its lower Tendon turns obliquely round toward the Head of the Tibia, it seems to be braced down and secured in its Place, by a tendinous Frænum or Vagina. A little before it is inserted, it detaches a distinct Aponeurosis or tendinous Branch, which runs obliquely downward on the Inside of the Tibia.

The *Sartorius* performs the Rotation of the Thigh from before outward, whether extended or bent; being an Antagonist to the *Musculus Fascia Latae*, and a Congener to the *Quadrifemini*.

If during this Rotation the Leg be extended, the Toes are turned outward; but if the Leg be bent, it is turned toward the other Leg, as when we lay it over the other Leg or Knee, in the manner that Tailors sit at Work, from whence this Muscle got the Name of *Sartorius*.

It, also, bends the Thigh, or raises it forward; it moves the Pelvis forward on the Os Femoris; and when the Pelvis rests on the two Tuberosities of the Ischium in sitting, it keeps it in that Situation. In this Action it is a Congener to the *Rectus Anterior*; but acts with much more Force, as having its Line of Direction further from the Center of Motion.

Lastly, it bends the Leg, whether it performs the Rotation of the Thigh at the same time or not. In this latter

Case it is directed by the Co-operation of some Congener, or counterbalanced by the Action of the *Musculus Fascia Latae*.

The Length and Obliquity of its fleshy Portion, the Passage of the inferior Tendon through the Aponeurotic Vagina, the particular Insertion of this Tendon, and the Extent of the Aponeurosis, which it sends over the Tibia, contribute very much to these different Uses.

Besides all these Uses, it may in some Cases assist the *Pso-pliteus*. *Winslow's Anatomy*.

SARX. *cæq.* Flesh.

SASSAF SYRORUM. A Species of Willow that grows in Syria and Egypt.

SASSAFRAS, Offic. Ger. 1341. Emac. 1525. Park. Theat. 1606. Raii Hist. 2. 1568. *Arbor sine Lignum Pavanum*, J. B. 1. 483. *Arbor ex Florida Ficulneo folio*, C. B. P. 431. *Comusmas odorata folio trifido, margine plano, Sassafras dicta*, Pluk. Almag. 120. *Anhuiba, sine Sassafras Brasiliensium*, Pison. 145. SASSAFRAS.

This is a large Tree, which grows in Virginia, and other Parts of the West Indies, arising to a good Height before it spreads into Branches. It has two Sorts of Leaves; those which grow on the lower Parts of the Twigs, are oval but sharp-pointed; and those which grow on the upper End are divided into three Sections, somewhat like the Maple. The Flowers are small and yellow, growing in Clusters, and are succeeded by small Berries. The Root is thick and large, covered with an iron-coloured Bark, under which is a light brown, not very hard Wood. It is of a very pleasant Smell, especially the Bark.

The Root with the Bark, which are only used, are heating and drying, and diaphoretic; helps the Scurvy, Gout and Dropsy, and are an usual Ingredient in Diet-Drinks for the Lues Venerea. A Tea made of the Shavings is mightily commended by some against catarrhus Defluxions, and for Shortness of Breath.

Official Preparations are the *Electuarium e Sassafras*, and the chymical Oil. *Miller's Bot. Off.*

It is principally of Use in removing Obstructions, and strengthening the internal Parts, in causing Fertility, and curing the Lues Venerea. It is accounted a Panacea, or sovereign Remedy for Catarrhs. *Dale*.

Much about the same time with the other anti-venereal Woods and Roots, was imported the Wood called *Sassafras*, from several Parts of *America*, but principally from *Florida*, where the Natives call it *Pabamue*, as we are told by *F. Coreal, Voy. aux Ind. Occid.* *Sassafras* is of a reddish Colour inclining to white, ligneous, of a light and rare Substance, contained under a thin Bark, which is ash-coloured without, and sanguineous within, of an acrimonious, sweetish and aromatic Taste, and of a fragrant Smell, whence it is usually called *Lignum Fœniculi*, or *Fœniculatum*, Fennel-Wood.

There was prepared and used a Decoction of *Sassafras*, after the same manner as the Decoctions of *China* and *Sarsa-parilla*; but as *Sassafras* comes next to *China* in the Virtue of curing the Symptoms of the venereal Disease, so it is very much inferior in that respect to *Guaiacum* and *Sarsa-parilla*.

It has been the Custom for a long time past to take the two Woods, *Guaiacum* and *Sassafras*, with the two Roots *China* and *Sarsa-parilla*, which are all of a like Nature and Virtue, and boil them together, generally without any Cathartic, but sometimes with Leaves of Senna, which was the Fashion since the Year 1550, as we are informed by *Brassavolus, de Radicis Chinae Usu*. Of these Drugs in Conjunction then were prepared Decoctions and Bochets, [See *BOCHETUM*] which were sometimes only diaphoretic and diuretic, but sometimes Cathartico-diuretic, and very commonly known by the Names of *Ptisana sudorifera*, or *Ptisana e Lignis sudorificis*.

The Proportions of the Ingredients were various, according to the different Intentions which were to be answered. Generally they take two Ounces of Lignum *Guaiacum* in Dust or small Chips, or many Ounces of Wood of *Sassafras*, cut likewise very small, and the like Weight of the Roots of *China* and *Sarsa-parilla* each, cut into very small Bits, and infuse them warm in ten or twelve Pints of common Water, for twenty-four Hours. After this they add thereto, if it shall be thought requisite, two Ounces of crude Antimony, grossly bruised, and loosely tied up in a Nodule, and boil the whole over a gentle Fire, in a Vessel covered with a Lid, to the Consumption of a third Part; after which they add thereto an Ounce of Scrapings of Liguorice, and, if they would have it purge, half an Ounce of the Leaves of Oriental Senna, which are to boil a Moment. This done, when warm, they strain the Decoction, and set it aside in Glass-Bottles well stopped for Use.

The Custom is to take three Draughts of this Decoction every Day, for twelve or fifteen Days together; the first in the Morning fasting, the next four or five Hours after Dinner, and the last going to Bed; or at least two Draughts, that

that is to say, in the Morning and Evening, omitting the Afternoon's Draught, if it shall be thought proper. During the Time of taking it, the Patient is to be kept to a sparing Diet, and to confine himself at Home, if the Season of the Year requires it. *Astruc de Morb. Ven.*

SASSIFICA. A Name for the *Tragopogon*; *purpureo-cæruleum, porri folio, quod Artifi vulgo.*

SATHE. *sat.* The PENIS.

SATURANTIA. Absorbents are sometimes thus call'd, because they saturate the Acid residing in the first Passages.

SATURATIO. Saturation; in Chymistry it is the perfect Impregnation of an Alkali with an Acid; or of an Acid with an Alkali, so as to render the Mixture entirely neutral.

SATUREIA.

The Characters are;

The Leaves are oblong and narrow; the Calyces are small, sharp, several on one Pedicle, and a Pedicle on each Side. The Galea is erect, and bifid; the Beard trifid, and the middle segment crenated. The Flowers are dispersed in the Wings of the Leaves, and not collected into Heads, nor disposed in Whorles, nor growing on ramous Pedicles.

Boerhaave mentions nine Sorts of *Satureia*, which are;

1. *Satureia*; *Sativa*. *J. B. 3. 272. Boerhaave Ind. A. 161. Tourn. Inst. 197. Satureia*; *Offic. Satureia hortensis*, *Park. Theat. 4. Raii Hist. 1. 518. Satureia Æstiva hortensis*, *Ger. 461. Emac. 575. Satureia hortensis sive Cunila Sativa Plinii*, *C. B. P. 218. SUMMER SAVORY.*

This Savoury has small stringy Roots, from which spring a great many woody Branches, eight or nine Inches high, a little hairy, and having two long narrow Leaves at a Joint, narrowest next the Stalk; the Flowers grow toward the Tops in small Whorles of a whitish Colour with a bluish of Red, galeated and labiated, set in five pointed Calyces containing four small dark brown Seeds; it is sown in Gardens, and Flowers in June, the Leaves and Tops are used; *Miller's Bot. Off.*

It is one of those hot and acrimonious Herbs which provoke Urine and the Menfes, and, supposed to have much the same Virtues with Thyme and Hyssop. *Dale from Ray.*

2. *Satureia*; *montana*; *durior*; flore in pediculis ramosis exilis foliorum. *Boerb. Ind. A. 161. Thymbra*, *Offic. Satureia hortensis*, *Ger. 461. Emac. 575. Satureia vulgaris*, *Park. Theat. 4. Satureia montana*, *C. B. P. 218. Satureia durior*, *J. B. 3. 272. Raii Hist. 1. 518. Calamintha frutescens*, *Satureia folio, facie & odore.* *Tourn. Inst. 194. WINTER SAVORY.*

This is more woody and shrubby than the former, having the Leaves more like Hyssop, stiffer and harder, and seemingly pierced full of Holes, and ending in Spinulæ: The Flowers are of the Colour of the former, and the Seed much alike. This is likewise cultivated in Gardens, and Flowers at the same Time.

They are both much of a Nature, being heating, drying, and carminative, expelling Wind from the Stomach and Bowels, and are good for the *Asthma*, and other Affections of the Breast: They open Obstructions of the Womb, and promote the menstrual Evacuations. The Winter-savoury is much used in the Kitchen. *Miller's Bot. Off.*

3. *Satureia*; *Cretica*; folio rigido, brevi, crasso. *Boerb. Ind. A. 161. Thymbra vera*, *Offic. Thymbra legitima*, *Tourn. Cor. 13. Thymbra Græca* *I. B. 3. 373. Thymbra sive Satureia Cretica legitima*, *Park. Theat. 4. Satureia Cretica*, *C. B. P. 218. Ger. Emac. 576. Raii Hist. 1. 519. Tragoriganum*, *Alpin. Exot. 78. An Hyssopum montanum Cilicium quibusdam*, *J. B. 3. 277? TRUE SAVORY.*

There are two Species of *Tragoriganum* growing in *Crete* (or *Candy*) one with larger and thicker Leaves and Branches, and rougher Leaves; the other is less, and more slender: Both of them produce from one Root many hard, woody, somewhat rough and slender Stalks, which shoot forth here and there into several small, strait, round and slender Branches, situated at Intervals on each Side of the Stalk; and thick set with small, blackish Leaves, broader than those of Thyme, and generally dispos'd on each Side by Pairs, one Leaf larger than another. The Branches which bear the Flowers are furnished with Leaves, which stand three or more in opposite Order. The Leaves of the greater Species are larger and rougher, being furnished on every Side with rough and somewhat stiff Hairs. The Flowers are dispos'd round the Extremities of the Stalk, and collected into Tufts, as in the *Marrubium*: They are small, of a Sky-blue colour, and have a pleasant Smell, and produce a very small Seed. The Root is small, slender, woody, and divided into other smaller Roots. The whole Plant has a sweet Smell, and is considerably heating and acrimonious to the Taste. *Honorius Belius* believed this Plant to be the *Thymbra*.

It is hot and dry beyond the second Degree. Both the Leaves and Flowers revive the languishing Heat of the Sto-

mach, and corroborate the same, being in some Measure astringent. A Dram of the Flowers or Leaves taken in Wine, or any other Liqueur, are an effectual Remedy against cold Diseases. The Plant taken in Wine, or its Decoction drank, effectually promote the Menfes, heat a cold Uterus, and digest Flatulences. The Leaves boiled in Vinegar, and taken for several Days together, are very successfully used for an obstructed and indurated Spleen. The Decoction of the tender Buds, besides being useful for the Purpose aforesaid, has also, as *Dioscorides* observes, a cathartic Virtue, by which it purges yellow Bile by Stool. *Prosper Alpinus de Plantis exoticis.*

4. *Satureia*; *Cretica*; folio rigido, crassiore majore. *Tragoriganum*, *Creticum*, folio & ramo majori crassiorique, foliis asperioribus. *Alpin. Exot. 79.*

5. *Satureia*; *spicata*. *Offic. C. B. P. 218. Boerb. Ind. A. 161. Satureia Sti. Juliani*, *Ger. 461. Emac. 576. Raii Hist. 1. 518. Satureia spicata Sti. Juliani*, *Park. Theat. 4. Satureia foliis tenuibus, sive tenuifolia Sti. Juliani quorundam*, *I. B. 3. 273. Satureia tenuifolia Sti. Juliani quorundam*, *Thymbra vera, sive genuina aliis*, *Chab. 423. Thymbra Sti. Juliani, sive Satureia vera Lobelio*. *Tourn. Inst. 198. ROCK SAVORY.*

It grows on Hills and Walls, flowers in Summer, and agrees in Virtues with the rest of the Savories. *C. Baubine* takes this for the *Saxifraga prima Matthioli*, but *Parkinson* makes it a different Plant.

6. *Satureia*; *Cretica*; angusto, oblongo folio, in pediculis ramosis exilis foliorum. *Calamintha*, *Cretica*, angusto, oblongo folio. *T. 194. Clinopodium Creticum*. *Alpin. Exot. 265.*

This Plant shoots up with six, or perhaps more or fewer, strait, round, slender Stalks, to the Height of a Span, and thick set with Leaves, in Size, Figure, and Odour resembling those of *Serpyllum*, and disposed in opposite Pairs, at very small Intervals. Between the Leaves and the Stalks are produced the Flower, two or three together, of a vinaceous Colour, from which proceed every minute Seeds. The whole Plant has the Smell of *Serpyllum*, only sweeter, and has a hot Taste. The Root is long, slender, and woody, and without Smell or Taste. They who sent us the Seeds of this Plant from *Crete*, call'd it by the Name of *Saxifraga*; because it is celebrated for its extraordinary Virtue in breaking the Stone in the Kidneys and Bladder. But it seems to us to agree well enough with the Characters of the *Clinopodium* of the Antients, which is described by *Dioscorides* to be a shrubby Plant, with Leaves like those of *Serpyllum*, ramous, two Spans in Height, and growing in rocky Places. The Flowers, which grow at Intervals like those of *Marrubium*, by their Disposition resemble in some measure the Feet of a Bed. From the Description, we are persuaded that this Plant of ours is most like *Clinopodium*, especially on Account of the Likeness of its Leaves to those of *Serpyllum*; but if it had Flowers, also, like those of that Plant, and trailed on the Ground, we should have made it a Species of *Serpyllum*.

This Plant, from its Taste and Smell, appears to us to be of a heating and drying Quality, beyond at least the first Degree, which is farther evident from the Fineness of its Parts, with some slight Measure of Astringency. We may therefore rationally suppose it to be of good Service to the Stone and Gravel, and other nephritic Disorders, though as yet we are unacquainted with its true Uses in Medicine. *Prosper Alpinus de Plantis Exoticis.*

7. *Satureia*; *Virginiana*; *Par. Bat. Thymus, cephalotes, autumnalis, longiore folio*. *T. 196. Serpentaria Virginiana*. *Bocc. Mus. P. 2. 161. Tab. 108. 115.*

8. *Satureia*; *major*; *frutescens*; *verticillis densissimis. Tragorigani secundi altera Species*. *Clus. H. 355.*

9. *Satureia*; *an Cretica*; *spicata. Sberard. H. Mauror? Boerb. Ind. Alt. Plant. Vol. I.*

Savory is of a very hot, penetrating, and aromatic Taste, whence it is of Service in all Diseases in which Water and an inert Phlegm are predominant; as also in Expulsion of Humour, and corroborating the Parts. It has a mighty Influence in moving the Nerves, stimulates to Venery, excites Thirst, prevents Sleep, and causes long Watchings. It is of service in Obstructions of the Menfes, and an Ichury, or Retention of Urine. It is to be observ'd, however, that the too free Use of it excites bloody Urine, which is succeeded by an Hemoptoe; it is therefore very pernicious in all Hemorrhages, but is excellent Seasoning for farinaceous Foods, as Beans, and the like; and is accounted one of the best Antiscorbutics, and highly commended against pituitous Diseases, and the Dropsy. It is a very serviceable Plant in Affections of the Stomach, or Crudities and loss of Appetite, and sharpens the Sight. Externally, it eases Pains of the Ears, dissolves Cold Tumours, and strewed in Beds, is said to kill the Fleas. *Hist. Plant. ascript. Boerhaave.*

SATURNUS, Lead. See PLUMBUM.

SATYRIACE, *σατυριακή*. The Name of an Antidote described by Paulus Aegineta. L. 7. C. 11.

SATYRIASIS, *σατυρίασις*. Is a violent Desire of Venery, attended with a Tension and Rigidity of the Pudendum, occasioned by a morbid Disposition of the Body. It takes its Name, as some will have it, from the Relation it bears to *Satyrus*, who, according to the Report of Fable, and the Talk of the common People, are a Kind of Demons extremely addicted to Wine and Venery; or, as others say, from the Herb *Satyrion*, which has an extraordinary Virtue of exciting venereal Desires, accompanied with a Rigidity of the genital Parts.

Antecedent Causes of this Disorder are, Medicines taken as Provocatives to Venery; these are called *Satyrice* [according to the former Etymology] or *ἐντατικά* (*entatica*. See ENTASIS.) which are acrimonious, incentive, and prejudicial to the Nerves. Or the Disease may be occasioned by an intemperate and unseasonable Use of Venery.

The *Satyrasis* is an Affection common to both Sexes, and mostly incident to the Young and Middle-aged; for the Vigor of Age is continually prompting to venereal Exercises.

The Patient under this Disorder is affected with a vehement Tension and Rigidity of the Pudenda, attended with a Pain, a burning Heat, and an immoderate and urgent Itching and Stimulation to Venery; besides a Depravation of Reason, a quick Pulse, very short Breath, Despondency, want of Sleep, Deliriousness, Thirst, loathing of Food, difficult Evacuation of the Urine, so as generally to occasion a Retention of the Fæces, and sometimes a Fever. There is in all universally a Contraction of the Nerves, which the Greeks call *σπασμός*, *Spasmus* [Convulsion] and involuntary Ejection of the Semen. At first they fancy themselves in some measure relieved by the Use of Venery, and the Discharge of Semen; but soon after they are afflicted with a more violent Extension of the Parts, for they are much incommoded and injur'd by this short Gratification, tho' they fancy themselves relieved for a short Space of Time, in the same Manner as those who are affected with the Itch or Soreness of the Eyes would frequently be rubbing the Parts, and imagine they find some Ease, though but for a Moment, in what the Greeks call *χειραψία* (*Chirapsia*, from *χρῆ*, the Hand, and *ἅπτω*, to touch) "the Touch of the Hand." In the Decline of the Disorder, all the beforemention'd, by the Greeks called *συμπτώματα* (*Symptomata*) Symptoms, and by us *Accidentia Passiois*, "the Accidents of the Disease," are abated.

All the abovementioned Symptoms are, also, incident to Women labouring under this Disorder; but in them the *Pruritus* is more prevalent by Nature, and to such a Degree, that without any Sense of Shame they apply their Hands to the Parts, and beg of every Man who approaches to gratify their Inclination.

A *Satyrasis* is different from a *Gonorrhœa*, which we call *Semini Lapsus*, "a Flux of the Semen;" for this latter is an involuntary and continual Efflux of the Semen, without a Tension of the Pudendum. Neither is a *Satyrasis* one of those slow Diseases which the Greeks call *χρόνια*, *chronia*, chronic, nor in any respect like what the Greeks call *πριαπισμός*, *Priapismus*, a Disorder mentioned by *Demetrius Aitaleus* in his Book of Signs, who relates that he observ'd it in an old Man, who labouring at Masturbation, could perform nothing, and was affected with an excessive and somewhat painful Tension of the Pudendum, so as to pass for a Horn, in which State it continued for many Months, without yielding to Medicines, but was by Length of Time, and slow Degrees, reduced to its primitive and natural State. But a *Satyrasis* is an acute Disease, and continues not long upon the Patient; but consists, as I said, in a Convulsion of the Nerves, and an ardent and stimulating Desire of venereal Pleasure. It is therefore a Disease of Stricture, and of an acute and vehement Nature; for the whole Frame of the Nerves is affected, as we may judge by the disorder'd State of the Mind, and the Convulsions of the Members: But the Parts which seem to be principally affected, are the femoral Passages, or Ducts, called by the Greeks *πόροι σπέρματικοί*, (*Pori spermatici*), and those which are more immediately concern'd in the Act of Coition.

In our Method of Cure we order the Patient to live in a warm Place, silent, and free from Noise, with his Buttocks and Pudenda, as far as the Pubes, which the Greeks call *ἤσπον*, (*etron*) wrapped in fine Wool, forbidding all Visits, especially of young Women; for the Sight of a fair Visitant proves an Incentive to the Sick, who perhaps could not when in his right State of Health converse with such desirable Objects without unchaste Emotions. At the Approach of the Fit, it will be proper to take some Hold of the Patient by the Joints, and to keep off his Hands from the affected Parts. When the Fit is come to its Height, we apply Wool

expressed out of sweet and hot Oil, or a Decoction of Fenugreek, Linseed, or Marshmallows. After the Remission of the Fit, we think it convenient to use Phlebotomy, on account of the Violence of the Symptoms, and that within the *Diatrias*, [see that Word] if there be a Necessity for it, or on the *Diatrias*, if there be no such urgent Occasion. By Remission of the Fit we understand, if there be a Fever accompanying the Disorder, the Remission and Abatement of the Fever. For it is necessary, in such a Case, that when the Disease is exasperated, the Fever should be increased; and when that is mitigated, this also should be diminished. But when there is no Fever, we judge of that Remission by the Mitigation of those other Accidents, called by the Greeks *συμπτώματα*, Symptoms, as Redness, Heat, Itching, or venereal Longings, or the rigid Tension of the Pudenda; or the like. After Phlebotomy, we anoint the Body all over; and having washed out the Mouth and Fauces, we give the Patient *Halica* (*Alica*) in Honey, or Bread sop'd in Water, and poach'd Eggs. On other Days, to those Parts which we had covered with Wool, we apply a Cataplasm prepar'd of the Seeds of Fenugreek and Linseed, or Flour soak'd in Water, which the Greeks call *ἀμυγδαλέου*, (*amen lusi*, a crude Solution) or in Water and Honey. At the same Time we apply Cupping-Glasses, in the Time of the Fit, without Scarification; but at Intermittions we scarify the Buttocks, and the Pudenda to the Pubes, shaving off the Hairs. We apply also Leeches, and use Vaporation with Sponges, having first boiled some Laxatives in the Water. We administer also a Clyster of warm Oil, or warm Water and Oil, and then renew the Cataplasm before Meat. Besides these Means we also make Use of an Encathisma, (*Semiciupium*) sometimes prepared of Oil, or of warm Water and Oil, and sometimes of lenient and laxative Decoctions. For Women we prescribe a Pessary to be dipped in warm Oil, and to be gradually introduced into the Vagina by the Hands of some experienced Person of the Female Sex, and cover the whole Breadth of the external Parts with Wool, or a Cataplasm, and apply Cupping-Glasses to both Alæ of the Pudendum. In the Decline of the Disease we advise Gestation, and bathing in Oil or warm Water, in a Tub or Vessel for that Purpose, with the frequent Use of the Bagnio, and a proper Diet, consisting of Variety of Foods of good Juices, prohibiting acrimonious Things, strong Broths and Wine for a considerable Time; we also apply Cerates to the Parts affected. For the Female Sex we order more liquid Compositions, and inject them by Way of Clyster, with the Use of Pessaries, composed of Fats, Marrow, Melilot, or the like, of which we shall treat more at large in the Book we design to write on the Diseases of Women.

None of the Physicians, except *Themison*, have treated of this Disease, though it does not only happen very frequently, but has been known to be very common. *Themison* informs us, that in *Crete* many Persons died of the *Satyrasis*, which we may suppose to be occasioned by an Error in Diet, and their too frequent and plentiful eating of the Herb *Satyrion*. He tells us farther, that at *Milan* he saw a young Woman, modest in all other Respects, and Wife to a Person of Quality, destroyed with a *Satyrasis*. And in the second Book of his Epistles to *Asilius*, he proposes a Method of Cure, in which he prescribes Phlebotomy, Fomentations, and refrigerating Cataplasms, in order to extinguish venereal Desires; he advises, also, drinking cold Liquors; all which Directions are incongruous, and inconsistent with one another. For that Relaxation and Remission, which are effected in the Body by Phlebotomy, are contrary to the Constriction and Condensation of the Parts which are procured by the Cataplasms and Fomentations with cold Liquors. Since, therefore, the Desire and Delights of venereal Pleasures are owing to an Inflammation [*Tumor* in the Language of *Cælius* and the *Methodici*] of the Pudenda, as well as the Disorder of Reason to an Inflammation of the Membranes of the Brain, the Inclinations to those Pleasures must be heighten'd, and even doubled, by the Use of Coolers and Constringents. *Cal. Aurelianus* L. 3. C. 18. *Acut.*

The same Author, *Chron.* L. 5. C. 11. gives us the following Account of a Priapism.

An Erection of the Penis, without any concomitant Pain, or the Consent of other Parts, is called a Priapism; because the Penis, in this erected State, resembles that of the lewd and infamous God *Priapus*. *Demetrius Apameus* makes mention of this Disorder, in his Book concerning the Signs of Diseases; for he informs us, that a certain old Man used the unnatural Practice of Masturbation, without ever being able to procure an Emission of Semen; whilst, at the same time, the Erection, which was accompanied with a small Pain, and continued for several Months, was so great, that the Penis resembled a Horn. This Man's Misfortune would yield to no Medicines, but ceased slowly, and after a long Time; a Circum-

Circumstance which sufficiently distinguishes a Satyriasis from a Priapism, since the former is quickly over, and does not long afflict the Patient, because it is produced by a Distension of the Nerves, and a violent Desire or Stimulus to Venery. Whereas a Priapism may be conceived to be a Palsy of the femoral Vessels and other Nerves, distributed to the Parts about the Penis, by the Distension of which the Patient is subjected to this Misfortune. *Cælius Aurelianus Morb. Chronic. Lib. 5. Cap. 9.*

Doctor Cheyne, in his Treatise concerning the Nature of a Fibre, describes a certain Species of the Satyriasis in the following manner.

Among convulsive Disorders, says he, there is one so rare and uncommon, that I don't remember to have read any thing remarkable about it; and I never saw but three Persons afflicted with it. Those who are fond of reducing Diseases to certain Classes, refer it to a Satyriasis, a Disorder treated of by all who have wrote Systems of Physic. But from the Descriptions given by these Authors, a Satyriasis, though not of the venereal Kind, appears to be among the Number of inflammatory Disorders; and to be incident to young and vigorous Persons, especially those of a lascivious Turn, and such as have wantonly indulged themselves in the Gratification of their Lust. Whereas the Disorder of which I treat is incident to the Infirm, to Persons of weak and lax Fibres, to such as digest their Aliments slowly and imperfectly, to the Hypochondriac, to such as are distended with acrid Flatulences, and those who are sad and dejected. This Disorder is rarely troublesome to the Patient in the Day-time, but principally in the Night, especially after the Person becomes first warm in Bed, at which time he is seized with a violent Inflation and Tension of the Penis, as if an Attempt was made to pull it off; though, at the same time, he is not stimulated to lust, because the intense Pain is more than a Balance for every lascivious Idea, which is so far from being grateful, that it is rather observed to be disagreeable to him. In this Case the only Circumstance which procures an Alleviation of the Pain, is to get out of Bed, and expose one's self to the cool Air, by which means the Inflation immediately subsides; for which Reason the Disorder to me seems to be of the convulsive kind, and not to be different from the Spasms of other Members, which are pretty frequent and well known. But in such Patients this Member is (perhaps) principally seized with Spasms, either because its Fibres are more easily irritated, or through some Fault or Piece of Imprudence in the Patients themselves. Besides the Pain arising from the Convulsions, there is another Circumstance highly detrimental to the Constitution, which is that the Paroxysm of the Disorder happens principally at that Time, when the Patient being moderately warm in Bed, begins to be inclined to sleep, which is interrupted by his being forthwith obliged to get out of Bed; so that he is not sufficiently recruited by Rest, but his Appetite and Digestion becoming languid, and he himself being in a few Weeks rendered more like a Spectre than a Man, is ready to do or suffer any Thing for the Sake of Sleep, which in this Case is not easily procured, since both Opiates and all hot and cardiac Medicines increase the Disorder. Every Time it has occur'd to me in Practice, I have attempted its Cure in the same manner with other convulsive Disorders, by a Repetition of gentle Emetics according to the State of the Patient; when the Disease began to return, by persisting for six Months in the Use of Milk of Sulphur, Æthiops Mineral, and Cinnabar of Antimony; by a shorter and scanty Use of volatile Medicines; such as Flowers of Benjamin, and Salt of Harts-Horn; by a slender Diet long protracted, three or four Ounces of Flesh, for instance, each Day; a small Quantity of red Wine mixed with Bristol-Water; and, lastly, by the Peruvian Bark, and the exterior Part of Orange Peel, and a few Grains of the Vitriol of Mars. By these Medicines, and this Regimen, by moderate Exercise, and frequent Immersions in cold Water, in two Years time, I perfectly cured two of the Patients I found afflicted with this Disease. The third, who, as he was advanced in Years, would not submit to the Labour and Length of a Cure, tho' he generally lives free from the most troublesome Symptom of his Disorder, is nevertheless subject to a Relapse, if he at any time indulges himself in high Living. See PENIS.

SATYRION. A Name for several Species of ORCHIS, which see.

SAVICH. An Arabic Word, importing a subtle Meal, or Powder. *Castellus from Valescus de Tarenta.*

SAUNIA. The Name of a Composition made into a Mass like a Leaf, of Sweet-Almonds and Sugar, each one Pound; of Amylum, half a Pound, and of Oil of Sweet-Almonds, an Ounce and a half; this Mass was made into small oblong Leaves, of an Ounce Weight each. *Castellus from Clementinus Clementius.*

SAVONEA. The Name of an Arteriacal or Bechical Confection in *Forestus.*

SAURE, according to *Blancard*, is the **NASTURTIIUM.**

SAURURUS. *Lizard's Tail.*

The Characters are;

The Leaves are like those of the *Arioides.* The Flower is apetalous, furnished with two Stamina, and hermaphrodite. The Ovary is of an oval Form, soft, monospermous, and furnished with a trifid Tube. The Flowers and Fruit are disposed in long, slender Spikes.

Boerhaave mentions four Sorts of *Saururus*, which are;

1. *Saururus*; arborescens; fructu adunco. *Plum. Pl. Am. 58. Fig. 77.*

2. *Saururus*; frutescens; foliis Plantagineis; fructu breviori. *Plum. Pl. Am. Fig. 76.*

3. An *Saururus hederaceus*; cauliculis maculosis; major. *Plum. Pl. Am. 50. Fig. 66?*

4. An *Saururus hederaceus*; cauliculis maculosis; minor. *Plum. Pl. Am. 5. Fig. 67? Boerb. Ind. Alt. Plant. Vol. 2.*

The Name *Saururus* is from *σαῦρα*, (*Saura*) a Lizard, and *οὐρα* (*Ura*) a Tail. Its Virtues are the same with those of the *Arium* and *Arioides.* *Hist. Plant. Ascript. Boerhaave.*

SAXIFRAGA.

The Characters are;

The End of the Peduncle becomes a tubulated Calyx, which has deep Incisures in the Saxifrage, but less deep in the *Geum*, and is quinquefid. The Flower is roseaceous and pentapetalous, arising from the Circumference of the Ovary, and furnished with eight or ten Stamina. The Fruit is roundish, horned, bicipular, and full of small Seeds. In the Saxifrage it grows together with the Calyx, but in the *Geum* is supported thereby.

Boerhaave mentions thirteen Species of *Saxifraga*, which are, first, those with a roundish, crenated, and tender Leaf.

1. *Saxifraga*; rotundifolia alba: C. B. P. 309. *Raii Synop. 3. 354. Tourn. Inst. 252. Boerb. Ind. A. 222. Saxifraga alba*, Offic. Ger. 693. Emac. 841. *Raii Hist. 1048. Saxifraga alba vulgaris*, Park. Theat. 424. *Saxifraga alba radice granulosa*, J. B. 3. 706. *Sedum bicornis*, album, rotundifolium, erectum, radice granulosa, Hist. Oxon. 3. 473. *Sanicula radice granulosa, flore albo*, Herm. Cat. Hort. Lugd. Bat. 535. **WHITE SAXIFRAGE.**

The Roots of White Saxifrage consist of several small, reddish, round Grains, with a few small Fibres mixed among them; from which spring thick, hairy, half-round, whitish, green Leaves, set on very long foot Stalks, and crenated about the Edges. The Stalks grow to be a Foot or more high, somewhat hairy, and branched at the Top; on which grow Spikes of white five-leaved Flowers, with several white Apices. The Seed is very small, included in two-horned and roundish Seed-Vessels. It grows in Meadows, and flowers in April and May. The Herb and the granulated Root is used.

This Plant has its Name from its supposed Virtues, being diuretic and lithontriptic, good for the Stone and Gravel, and Stoppage of Urine.

The only Official Preparation is the simple Water. *Mil-ler's Bot. Off.*

This Plant is esteemed a great Diuretic. Its Roots may be either used in White Wine, or a Decoction may be made of them in common Water. *Fuchsius* affirms, that it provokes the Terms, and attenuates the dense gross Lymph, which hinders the ordinary Motions of the Lungs. *Martyn's Tournefort.*

It is said to be good in Obstructions of the Menfes.

2. *Saxifraga*; rotundifolia; alba; flore pleno.

3. *Geum*; rotundifolium; majus. T. 251. *Sanicula, montana, rotundifolia, major*: C. B. P. 243. *Sedum bicornis, montanum, serratum, hederaceo folio, majus, guttato flore*, M. H. 3. 476.

4. *Geum*; folio circinato; pistillo floris pallido. T. 251. *Sanicula Alpina, Cotyledonis folio rotundo, umbilico pallido*, Flor. 2. 97.

5. *Geum*; folio subrotundo, minori; pistillo floris rubro. T. 251.

6. *Geum*; folio oblongo, crenato; fructu & cauliculis ruberrimis; flore pallidulo, rubris guttulis adsperso.

The three following have oblong serrated Leaves, resembling those of the *Aizoides*.

7. *Saxifraga*; sedifolio; flore albo; multiflora. T. 252. *Sedum, serratum, flore albo, multiflorum*. Ac. Reg. 113. *Sanicula, Pyrenaica, longifolia, multiflora, elegantissima*.

8. *Saxifraga*; sedifolio, angustiore, serrato. *Tourn. Inst. 252. Boerb. Ind. A. 222. Umbilicus Veneris alter*, Offic. *Umbilicus Veneris minor*, Ger. Emac. 529. *Cotyledon altera minor*, Park. Parad. 232. *Cotyledon media foliis oblongis serratis*,

C. B. P. 285. *Sedum ferratum*, I. B. 3. 689. Raii Hist. 2. 1045. SMALL NAVEL-WORT.

This Plant is found in the Mountains of Germany, and flowers in Summer: It agrees in Virtues with the *Sedum majus vulgare*.

9. Saxifraga; foliis subrotundis, ferratis. T. 252. *Colyledon, minor, foliis subrotundis, ferratis*. C. B. P. 285. Prodr. 132. I. B. 3. 690.

10. Saxifraga; muscosa; trifido folio. T. 252. *Sedum, Alpinum, trifido folio*. C. B. P. 284.

11. Saxifraga; alba; petraea; Ponæ. in Fol. 337. T. 252. *Trydaetylites Alpina*. I. B. 3. 762. *Sedum, tridaetylites, majus album*. C. B. P. 284. M. H. 3. 479.

12. Saxifraga; tridaetylites; Alpina; pallidè lutea. T. 252. *Sedum, tridaetylites, Alpinum, pallidè luteum*. C. B. P. 284.

13. Saxifraga; verna; annua; humilior. Tourn. Inst. 252. Raii Synop. 3. 354. Boerb. Ind. A. 223. *Paronychia rutaceo folio*. Offic. Ger. 499. Emac. 624. *Paronychia foliis incisiss*, Park. Theat. 556. *Tridaetylites testorum flore albo*, I. B. 3. 762. *Sedum Tridaetylites testorum*, C. P. B. 285. *Alpine Tridaetylites testorum*, Herm. Hort. Lugd. Bat. 20. *Sanicula aizoides Tridaetylites murorum*. Pluk. Almag. 331. RUE WHITLOW GRASS.

This is a small, low Plant, seldom above three or four Inches high, usually of a reddish Colour: The Leaves are thick, fat, and somewhat clammy, divided into three Parts at the End, whereof the Middlemost is largest: They are hairy as well as the Stalks, which are a little branched, having on their Tops small, white, five-leaved Flowers. The Seed-Vessels are round and swelling, and contain very minute Seeds. The Root is small and fibrous. It grows on the Tops of Walls, and low Houses, flowering in April, and perishing by the Summer's Heat, arising yearly from the scatter'd Seed.

This Plant is accounted a specific against the King's-Evil being very much commended by Mr. Boyle for that Distemper: And Sir John Colebatch, in his Essay upon Acids and Alcalies makes mention of a poor Girl at Worcester afflicted with scrophulous Ulcers, who received great Benefit from it. *Miller's Bot. Off.*

I myself, says Boyle, have often gathered an unpromising Plant, called *Rue leaved Whitlow-Grass*, which slightly infused in Beer, to my Knowledge, lately, without Pain, and in few Days, cured a Kinsman of Sir Kenelm Digby of the King's-Evil: Yet I dont find any Botanist recommend it for that Distemper.

A Physician, says Boyle, whom I knew, was sent for to a scrophulous Patient, in whose Throat he found a Tumour so large, and so unluckily seated, that greatly compressing the Oesophagus, it render'd Deglutition exceedingly difficult; the Tumour was, also, hard and stubborn, as not to be discuss'd nor brought to a Suppuration; whence the Patient was put in imminent Danger of being starv'd. In this Strait, the Physician remembering the Character I had given of Whitlow-Grass, sent about the Country to get all that could be procured, and first gave a little of it, in the Form of Infusion, in such liquid Aliments as the Patient was able, though with great Difficulty, to get down; and having by this Means, after some Time, gradually made the Deglutition more easy, he gave the Remedy in greater Plenty, to impregnate the whole Mass of Blood and Juices of the Body with the Virtue of the Herb, whereby the Tumour was at length dissolved, and the Patient cured.

The first, seventh, and eighth are possess'd of a nitrous, balsamic, and saponaceous Quality. *Hist. Plant. Boerb. ascript.*

SAXIFRAGA, is also a Name for several Sorts of TRAGOSELINUM, which see.

SAXIFRAGA MONTANA. A Name for the *Fœniculum*; *tortuosum*; and for several Sorts of *Seseli*.

SAXIFRAGA, ROTUNDIFOLIA, AUREA. A Name for the *Chrysosplenium*; *foliis amplioribus, auriculatis*; and for the *Chrysosplenium*; *foliis minoribus, subrotundis*.

Besides the foregoing Sorts of Saxifraga, Dale mentions the two following.

1. Saxifraga antiquorum. Offic. Saxifraga antiquorum quibusdam, I. B. 3. 338. Raii Hist. 2. 1033. Saxifraga antiquorum quibusdam, Gypsophyton, & Symphytum petraeum, Chab. 443. Saxifraga magna Matthioli, Ger. Emac. 605. Saxifraga major Italorum Matthioli, Park. Theat. 426. Caryophyllus Saxifragus, C. B. P. 211. Lychnis minor Saxifraga, Tourn. Inst. 338. THE GREAT SAXIFRAGE OF MATTHIOLUS.

It grows on the Top of Mount Lups, and flowers in June. The whole Plant is admirably endu'd, as Matthioli says, with the Virtue of breaking and expelling the Stone.

Dioscorides describes his Saxifraga to be a ramous, shrubby Plant, growing in rocky and rugged Places, and like Epi-

thymum; which is so short a Description as to give Occasion for much Controversy among Authors, and for many Plants of quite different Kinds to be taken for it, or to be call'd by its Name. In our English Shops there are two Sorts of Plants known by the Name of Saxifrage, and used accordingly. These are the *Pimpinella Saxifraga*, or *Burnet Saxifrage*, and the *Saxifraga vulgaris*, or *Meadow Saxifrage*; but neither of them agrees with the Description of *Dioscorides*, though the same Virtues are ascribed to them by Authors. But we are to enquire what Plant was the true Saxifrage of the Antients. *Matthioli* and *Lugdunensis* will have it to be a Species of *Savory*, which *C. Baubine* takes to be the same as the *Thymbra S. Juliani Lobeliana*. Our *Parkinson* proves, that the *Saxifraga vera* of *Matthioli*, and the *Thymbra S. Juliani* of *Lobel*, are very different; and therefore censures *C. Baubine* as mistaken in making both of them synonymous, or the same, with his *Satureia spicata*; and assures us, that the Plant which he saw and tasted (for the *Saxifraga vera Matthioli*) did not at all agree, either in Smell or Taste, with the *Satureia* or *Thymus*, but came nearer to his (*Baubine's*) *Thymum inodorum*. *Dodonæus* and *Gerard* take the *Serpyllum vulgare* for the Saxifrage of *Dioscorides*; but *Parkinson* supposes them all mistaken, and I should think he was in the right for rejecting the Judgment of the forementioned Authors, did he not pertinaciously adhere to the *Saxifraga vera* of *Matthioli*, since there is another Plant in the same Author, which is more likely to be the Saxifrage of *Dioscorides*, for which Reason we have exhibited it above as such. For its admirable Virtue in breaking and expelling the Stone, the Reader may consult *Matthioli* himself, who was convinced of the same not only by his own Experience, but also by the Testimony of *Calceolarius*, an Apothecary of *Verona*, who first communicated it to him. Dale.

2. Saxifraga Dioscoridis, Matth. fol. 976. Saxifraga vera Dioscoridis, C. B. Meth. 693. Lugd. 4. Saxifraga, Matth. Comp. 642. Cam. Epit. 716. Saxifraga vera Dioscoridis Matthioli, Park. Theat. 426. THE TRUE SAXIFRAGE OF DIOSCORIDES ACCORDING TO MATTHIOLUS.

It grows on Rocks and stony Places. The Herb boiled in Wine is good in feverish Disorders; it is, also, serviceable in the Strangury, cures the Hiccough, breaks the Stone in the Bladder, and provokes Urine.

These are the Virtues which *Dioscorides* ascribes to his Saxifrage; but in my Opinion they were not intended for this Plant, and therefore we have only followed *Matthioli* in ascribing them to this above. What was the true Saxifrage of the Antients I have endeavoured to shew under the SAXIFRAGA ANTIQUORUM, and suppose the Virtues abovementioned to belong to that Plant. Many Botanists are not satisfy'd as to the Plant we have given above, nor know where to fix the Name, and some suspect it. Dale.

SAXIFRAGA. Medicines which have the Power of dissolving, or breaking the Stone. The same as Lithontriptics.

SAXONICUS PULVIS. This Powder is prepared in the following Manner. Take of the Roots of recent Garden Angelica four Ounces; of the Roots of wild Angelica, Marsh-mallows, and Polypody of the Oak, each two Ounces; of the Roots of common Nettle and Swallow-wort, each one Ounce; of Valerian Root half an Ounce; and of the Bark of the Root of German Mezerion an Ounce and an half.

These when cut down are to be put into a glaz'd Vessel, and such a Quantity of strong Vinegar is to be poured upon them as to rise two Inches above them: Then the Vessel is to be close stopp'd, and the whole boil'd over a gentle Fire: Then the Vessel is to be open'd, the remaining Vinegar thrown away, and the Roots dried till they can be reduced a Powder, to which are to be added twenty-four of the Berries of the Herba Paris, also pulveriz'd.

This Medicine is highly esteem'd against Poisons, the Plague, and other malignant Disorders. It purges violently on account of the Bark of the Root of the Mezerion. The Dose is from half a Scruple to two Scruples, or a Drachm.

In this Preparation, it seems sufficient to correct the Bark of the Root of the Mezerion, and in some measure deprive it of its corrosive Acrimony, by boiling it in Vinegar; but as the other Roots have nothing of a malignant Nature, their most volatile and essential Parts are carried off by boiling; so that by impregnating them with the Acid of the Vinegar, the remaining Part of their volatile Principles is fix'd; for which Reason 'tis sufficient to dry them in the ordinary Manner. The Quantities of Ingredients, and the Manners of preparing this Powder, are different in different Authors. It borrows the Epithet *Saxonicus*, from *Saxony*, where it was first invented; but it is only used in Germany,

Germany, since it would be too violent for Persons of a less robust and hardy Make. *Lemery. Pharmacop. Universelle.*

SBESTEN. Quick Lime. *Ralandus.*

SCABIES. The Itch. See LEPROA.

SCABIOSA.

The Characters are;

The Calyx is expanded in Manner of a Star, deeply jagged, and consists of a double or tripple Order of Scales lying one upon another. The exterior Order of Floscules consists of larger Floscules than the rest, and those generally bilabiated; but those which are contained in the Middle, within the others, are quadrifid or quinquifid. The Top of the Ovary has a hairy, foliaceous, or acculeated Crown, in Manner of a Calyx, surrounding the Flower, which grows in the Apex. The lower Part of the Ovary grows in a globous Placenta.

Boerhaave mentions forty eight Species of *Scabiosa*, which are;

1. *Scabiosa*; *Africana*; *frutescens*. *Par. Bat. Ic.* 219.
2. *Scabiosa*; *Africana*; *frutescens*; *maxima*, *foliis rugosis & crenatis minor*. *Par. Bat. Descr.* 220.
3. *Scabiosa*; *Africana*; *frutescens*; *maxima*; *foliis tenuissimis incisiss.*
4. *Scabiosa*; *Alpina*; *folio Centaurii majoris*. *C. B. P.* 270.

I received as a Present from *Naples* a Plant, which I took for a Species of the *Centaurium majus*, which it very much resembles in Leaves; for it sends forth from its Root many large and blackish Leaves, so like those of the *Centaurium majus*, that every one took it for that Plant the first Year: But in the second Year it produced several naked, slender, round, rushy, strait Stalks, two Cubits in Height, or more, bearing on the Top round Heads, very like those of *Scabious*, as are also the Flowers, which are of a yellow Colour; and the Seeds, which are long and black, no less resembling those of that Plant. The Root consists of a Multitude of long, slender Fibres, proceeding from one Origin. From the Heads, Flowers, and Seeds, we thought we had Reason to reckon this Plant a Species of *Scabious*, and accordingly distinguish'd it by the Name of *Scabiosa Centauroides*, on account of the Resemblance of its Leaves to those of the *Centaurium majus*. The Seeds are intensely bitter, from which Quality the Moderns have generally infer'd of the several Species of their *Scabiosa*, that they are of a heating Properties. Hence it appears that this, as well as the other Sorts of *Scabious*, are heating and drying to a considerable Degree; and cut and deterge gross Humours, by which Means they are very effectual in opening Obstructions of the Viscera. For these Purposes some exhibit a Decoction of the Seeds, or of the Roots, in Water; and also, for the Scabies, or Itch, and for the French Pox. Some have bestowed high Commendation on the expressed Juice of the Leaves or Roots, or the Decoction of the Roots, or the Powder of the Seeds with a little old Theriaca, as Sudorifics in pestilential Fevers; of all which Properties and Virtues we suppose our *Centauroides*, since it is endu'd with the same Bitterness, to be possess'd. This Plant endures the Frosts in *Italy*, and is perennial. *Prosper Alpinus de Plantis Exoticis.*

5. *Scabiosa*; *pratensis*; *hirsuta*; *quæ Officinarum*. *C. B. P.* 269. *Tourn. Inst.* 464. *Boerb. Ind. A.* 129. *Scabiosa*, *Offic. Scabiosa major vulgaris*, *Ger.* 582. *Emac.* 719. *Scabiosa vulgaris pratensis*, *Park.* 484. *Scabiosa major communior hirsuta, folio laciniato*. *I. B. 3. 2. Raii Hist.* 1. 374. *Synop.* 3. 191. SCABIOUS.

The lower Leaves of *Scabious* are rough and hairy; four or five Inches long, an Inch or more in Breadth, sometimes deeply cut in, and often almost whole, and without any Incisions, upon breaking asunder, drawing out into long Threads, the Stalks grow to be two or three Foot high, round and hairy, having two smaller and more finely cut Leaves set at a Joint; and on their Tops round, flattish, blue Flowers, whose middle Part is compos'd of several smaller hollow Flosculi, each set in its particular Calyx, but having an outer Row larger and more showy: Each Flower is made of one Leaf cut into five unequal Parts. When the Flowers are fallen, the Heads grow round by the enlarging of the Calyces into hairy, flattish Seed; the Root runs down deep into the Ground: It grows in Fields and Meadows, and flowers in June. The Leaves are used.

They are accounted cordial, alexipharmic, sudorific, and pectoral; and good for all Distempers of the Lungs; as Coughs, Shortness of Breath, and as also for sore Throats and Quinsies. Outwardly, they are serviceable against the Itch, whence it takes its Name of *Scabiosa*; scabby Sores, Tettors, and other cutaneous Distempers; and takes black and blue Marks out of the Skin.

Officinal Preparations from *Scabious*, are the *Syrupus Scabiosæ Comp.* and the *Valentia Scabiosæ*. *Miller's Bot. Off.*

Scabious is bitter, and gives a faint Tincture of red to the blue Paper, which gives us Reason to believe, that it contains a Salt resembling the *Sal Ammoniac*, and joined with a great Quantity of fetid Oil, and Earth; for,

By the chymical Analysis, beside several acid Liquors, a great deal of Sulphur and Earth, and a little urinous Spirit, and volatile concrete Salt are obtained from it. The *Scabious* is alexipharmic, sudorific, aperitive, deterfive, vulnerary, and good to promote Expectoration when the Bronchia and Vesicles of the Lungs are stuffed with a glutinous and condensed Phlegm, the Juice of this Plant, from three to six Ounces, in which one Dram of Treacle and ten Grains of Camphire are dissolved, may be given for a Sudorific: This is a good Remedy in malignant Fevers, Small-pox, Measles, and in the Pleurisy, after the Use of antimonial Medicines. *Scabious* and *Carduus Benedictus* Water are mixed in expectorating and diaphoretic Ju-
leps. A Syrup of the Juice of this Plant is very good for cutaneous Diseases; but the outward Parts must be bathed at the same Time with the Decoction of *Scabious*: Take a Pint of this Decoction; three Spoonfuls of well camphorated Brandy, separate what of the Camphire remains upon the Surface of the Decoction, by passing it through a Linnen Cloth, and give it by Spoonfuls for the Vapours; bathe for the Tettors for about the space of a Month, and continue the Use of the Syrup for the whole Time. The same Decoction may be given to those who make purulent Urine, and those that have Ulcers in their inward Parts. It is used also to wash Wounds. *Tabernaemontanus* says, that the Juice of *Scabious* mix'd with a little Borax and Camphire takes away the white Spots that are often seen upon the Horn of the Eye. *Martyn's Tournesort.*

It is an Alexipharmic and Pulmonic, and is of principal Use in Imposthumes, a Pleurisy, Quinsy, Cough, Asthma, the Pestilence, and fistulous Ulcers. Outwardly, it is used in the Scabies, Pruritus, Impetigo, and the like cutaneous Distempers. *Dale from Schroder.*

6. *Scabiosa*; *Alpina*; *vulgari similis*; *folio viridiori, magis laciniato*; *flore purpureo*.

7. *Scabiosa*; *major*; *communior*; *hirsuta*; *folio non laciniato*. *I. B. 3. 2.*

8. *Scabiosa*; *integrifolia*; *glabra*; *radice præmorsa*. *Boerb. Ind. A.* 129. *Morsus Diaboli, & Succisa, Offic. Morsus Diaboli, Ger.* 587. *Emac.* 726. *Morsus Diaboli vulgaris flore purpureo*, *Park.* 491. *Succisa glabra, C. B. P.* 269. *Succisa five Morsus Diaboli, I. B. 3. 11. Raii Hist.* 1. 380. *Scabiosa radice succisæ flore globosa*; *Raii Synop.* 3. 191. *Scabiosa folio integro glabro, flore cærulea*. *Tourn. Inst.* 466. DEVIL'S BIT.

The Root of Devil's Bit is thick and short, at the Head shooting out strings, or large Fibres on every Side, but seeming as it were cut off in the Middle, whence it takes its Name *Succisa*. The Leaves are long, and somewhat broad, and pointed at the Ends, rough and hairy, standing on long foot Stalks, little or nothing ferrated about the Edges. The Stalks arise to be a Foot high, or more, and round and hairy, having two smaller Leaves set at a Joint, and on their Tops Flowers, like those of *Scabious*, but in rounder Heads, and all of a Bigness, each made of a short Tube, cut into five Segments, set in its proper Calyx, and followed by a round striated Seed. It grows in Meadows and Pasture Grounds, but flowers not till the End of Summer: The Leaves are used.

They are accounted alexipharmic, and useful in malignant Fevers and pestilential Distempers, and against the Bites of venomous Creatures. They are good to dissolve congeal'd Blood, and therefore serviceable against the ill Effects of Falls and Contusions; and being applied as a Cataplasim, take away the black and blue Marks in the Skin arising from them. Our Herb-Women generally sell the Leaves of this Plant for those of common *Scabious*. *Miller's Bot. Off.*

The Leaves of the *Succisa*, which they call (in English) Devil's-bit, are bitter, and stain the blue Paper with a deep red Colour. The Root, which is bitter and stiptic, stains it with a deeper. The same Virtues are attributed to this Plant that are to the *Scabious*. *Martyn's Tournesort.*

9. *Scabiosa*; *folio integro*; *flore albo*. *T. 466. Succisa; glabra, floribus albis. C. B. P.* 269.

10. *Scabiosa*; *folio integro*; *flore incarnato*. *T. 466. Succisa, glabra, floribus incarnatis. C. B. P.* 269.

11. *Scabiosa*; *Africana*; *frutescens*; *folio rigido, splendente, ferrato*; *flore albicante*. *H. A. 2. 185.*

12. *Scabiosa*; *Syriaca*; *annua*; *flore cæruleo*; *Sylvan ex Syria dicta*. *H. Maurocen.* 157.

13. *Scabiosa*; *altissima*; *annua*; *foliis Agrimonie non nihil similibus*. *H. L.* 539.

14. *Scabiosa*; *Orientalis*; *argentea*; *foliis inferioribus incisiss.* *T. Cor.* 34.

15. *Scabiosa*;

15. Scabiosa; Stellata; folio laciniato; major. C. B. P. 271.

16. Scabiosa; Stellata; folio non deflexo. C. B. P. 271. *Scabiosa Arborescens*. Alpin. Exot. 34.

The Plant which I call *Scabiosa Arborescens* has a whitish, thick Trunk, a Span high, springing from a small Root, which runs into many long, slender Fibres, spreading obliquely under Ground. From the Trunk spring many long, slender Stalks, which rise obliquely upwards, and are adorned at just Intervals with five, six, seven, eight, or perhaps nine hoary, whitish Leaves; in Shape and Size resembling those of the Aizoon, or Sempervive. The Flowers are large, of a Carnation Colour, inclining to white, of the Size and Shape of those of the common Scabious, and grow two or three on a Stalk, hanging by long Pedicles, into which the Stalk is divided. These Flowers consist of Floccules closely collected into a round Head, of the Size of a Cherry, from whence are produced small round Seeds. The whole Plant has a white, hoary, and very beautiful Aspect, and grows to the Height of two Cubits, or more. It is destitute, especially the Flowers, of Smell; but has a bitterish and somewhat astringent Taste, whence it appears to be of a deterfive and aperient Quality, and somewhat hot and dry, and therefore serviceable in conglutinating and incarning Ulcers. *Prosper Alpinus de Plantis exoticis.*

17. Scabiosa; Stellata; pretescens; Leucii folio minor, unâ alterave crenâ inciso. Flor. 2. 56.

18. Scabiosa; Indica; prolifera. Hort. Edinb.

19. Scabiosa; peregrina; rubra; capitulo oblongo. C. B. P. 270.

20. Scabiosa; peregrina; capitulo oblongo; flore carneo.

21. Scabiosa; peregrina; capitulo oblongo; flore atropurpureo.

22. Scabiosa; peregrina; capitulo oblongo, variegato.

23. Scabiosa; capitulo globosa; minor. C. B. P. 270.

24. Scabiosa; capitulo globosa; major. C. B. P. 270.

25. Scabiosa; folio molli, incano; flore incarnato.

26. Scabiosa; tenui folia; flore cœruleo; biennis.

27. Scabiosa; Catalanixestensis; minor; folio palmato feu Cardiacæ; incarnato flore.

28. Scabiosa; capitulo globoso, foliis in tenuissimas lacinias divisiss. C. B. P. 271.

29. Scabiosa; Alpina; altissima; foliis tenuissimè dissectis; flore cœruleo. H. Mauroc. 156. *Coronâ feminis purpureâ.*

30. Scabiosa; Alpina; altissima, foliis tenuissimè dissectis; flore cœruleo. H. Mauroc. 156. *Coronâ feminis albâ.*

31. Scabiosa; *ωχρεόφυκω* flore; five VII Clus. H. iii.

32. Scabiosa; *ωχρεόφυκω* flore; five VII. Clus. H. ii. flore albo.

33. Scabiosa; Cretica; capitulo pappos mentiente. T. Cor. 34.

34. Scabiosa; Virgæ Pastoris folio. C. B. P. 270.

35. Scabiosa; Orientalis; hirsuta; tenuissimè laciniata; flore parvo purpureo. T. C. 34.

36. Scabiosa; fruticans; angustifolia. C. B. 270.

37. Scabiosa; foliis argenteis. Wheeler.

38. Scabiosa; Indica. Bontii.

39. Scabiosa; argentea; angustifolia. C. B. P. 270.

40. Scabiosa; fruticans; angustifolia alba. C. B. P. 270.

41. Scabiosa; flore globoso, niveo. C. B. P. 270.

42. Scabiosa; maritima; parva. I. B. 3. 7.

43. Scabiosa; fruticans; latifolia; alba. C. B. P. 296.

44. Scabiosa; altissima; flore cœruleo.

45. Scabiosa; altissima; flore carneo.

46. Scabiosa; frutescens; foliis infrâ integris; flore cœruleo.

47. Scabiosa; perennis; ficula; flore sulphureo.

48. Scabiosa; annua; parva; ramosa; flore parvo, pallidè cœruleo. Boerb. Ind. Alt. Plant. Vol. I.

It takes its Name from the *Scabies*, which it is said to cure. These Plants are very serviceable in Diseases of the Breast, whenever a gross tenacious Matter requires to be attenuated and lubricated; and it is of most Virtue when taken in a Decoction with Honey in hot Countries. The Seed is exhibited in all violent Fevers, for it is demulcent and attenuating. For Contusions and Wounds, and especially for the Pestilence and French Pox, it is said to be more effectual than Sarsaparilla, or Lignum Guaiacum. The fifth and seventh Species are proper for cutaneous Diseases, and take their Name more particularly from the *Scabies*; and their Infusion, Decoction, or expressed Juice, may very safely be used against the Pleurisy or Peripneumony; for the Juice is somewhat viscid, and the Herb is maturing, and promotes Expectoration in acute Diseases. The same, you will say, has been affirmed of *Savory*; but this is sometimes too stimulating, and provokes to Stool; whereas *Scabious* is a very gentle Plant,

and no way heating. The eighth and tenth Species go by the Name of *Devil's-bit*, because their fibrous Roots are cut off in the Middle, and by their Section represent a Crown. The Antients say, that the Devil, in spite to Mankind, bit off a Piece of the Root in Paradise, as knowing how beneficial it would be to the Human Race. The Root perishes yearly, and is renew'd in Autumn. The distilled Water of the fifth Species is much commended; but I believe it to be of no more Virtue than Rain-water. The ninth is especially recommended for the Pestilence. They are all aperient and sudorific, and therefore of Use in the Small-Pox, Quinsy, Cough, Asthma, and Fistula's, or running Ulcers of the Breasts and Legs. Outwardly, they are effectual in the Pruritus, Tinea of the Head, Impetigo, Pains of the Hæmorrhoids, and Pimples in the Face. *Hist. Plant. ascript: Boerhaave.*

SCABRUS, in *Paracelsus*, is a Disorder of the Ear, consisting in a Pain, or Asperity, of that Organ.

SCACURCULA. The Spirit of the Bone of a Stag's Heart. *Rulandus.*

SCADIDA CALLI. A Name for the *Euphorbium verum antiquorum.*

SCALA. A Ladder, us'd sometimes as a surgical Instrument, for reducing a Luxation of the *Humerus*.

SCALENI MUSCULI.

These are compound Muscles, irregularly triangular, and from this Figure the ancient *Greeks* gave them their Name. They reckoned them to be only two in Number, situated laterally on the Vertebrae of the Neck, all the way down to the first and second true Ribs. Afterwards they were divided into six, three lying on each Side; but I have commonly found no more than two on each Side, one lying upon the other; the first of which I name *Scalenus Primus*, or *Primæ Costæ*; the other, *Scalenus Secundus*, or *Secundæ Costæ*.

The *Scalenus Primus* is fixed to the upper Part of the Outside of the first Rib, by two distinct Portions, called commonly Branches, one anterior, the other posterior. The anterior Branch is fixed to the middle Portion of the Rib, about an Inch from the Cartilage. From thence it runs obliquely upwards, and is inserted in the transverse Apophysis of the sixth, fifth, and sometimes third Vertebra of the Neck.

The posterior Branch is fixed more backward in the first Rib, an Interstice of about an Inch; but being left between it and the other Branch, through which the Axillary Artery and Brachial Nerves are transmitted. From thence it runs up obliquely behind the former, and is inserted in all the transverse Apophyses of the Neck.

The *Scalenus Secundus* is fixed a little more backward in the external Labium of the upper Edge of the second Rib, sometimes by two separate Portions, and sometimes without any Division. The anterior Portion is fixed immediately under the posterior Portion of the first *Scalenus*, by a short flat Tendon, united a little with the first intercostal Muscle. From thence it runs up over the posterior Portion of the first *Scalenus*, communicating also with that Muscle, and is fixed by Insertions, partly tendinous and partly fleshy, in the transverse Apophyses of the four first Vertebrae of the Neck.

The posterior Portion is fixed in the second Rib, more backward than the other. From thence it runs up, being divided into two Portions, whereof one is inserted in the transverse Apophyses of the three first Vertebrae of the Neck, behind the *Scalenus Primus*. The other Portion runs up behind the former, and is inserted in the transverse Apophyses of the two first Vertebrae.

The vertebral Insertions of both *Scaleni* vary, they being sometimes confounded with each other, and sometimes with those of the neighbouring Muscles. Behind the *Scalenus Secundus*, there is a small fleshy Plane inserted in the transverse Apophyses of the last Vertebrae of the Neck, and in the second Rib. This does not belong to the *Scaleni*, but is the first of the *Musculi Supra Costales*, or *Levatores Costarum*, as they are commonly called.

In dissecting the anterior Portion of the second *Scalenus*, I have observed a small Muscle fixed to the Extremity of the transverse Apophyses of the last Vertebra of the Neck, which having run down from thence to the inner and lower Part of the first true Rib, was slightly inserted there, and seemed to continue its Course to the convex Side of the Pleura. I have also seen all the *Scaleni* inserted in the first Rib.

The *Scaleni* seem better fitted for the Motions of the Neck, than for those of Respiration; and I frankly acknowledge, says *Winflow*, that in reflecting on this, I began to doubt of this latter Use; especially when I called to Mind what I said about the Uses of the *Subclavius*, (See *SUBCLAVIUS*) which

which is, that I could not believe this Muscle to be employed in Respiration, because of its Insertion in the cartilaginous Portion of the first Rib, which is immovably fixed to the Sternum, and also much shorter, much broader, and consequently much less flexible than the Cartilages of the other Ribs.

Moreover, the Neck, in many Situations, cannot serve as a fixed Point to the *Scaleni* for the Motion of the Ribs; as for Instance, when it is bent forward over the Sternum, or inclined very much to either Shoulder; and yet we find that none of these Situations do in the least hinder the Motions of Respiration.

From this Time, therefore, I shall rank the *Scaleni* among the Muscles which move the *Vertebrae* of the Neck, because the Articulation of the first Rib on both Sides, with the first Vertebra of the Back, seems to serve only for the Motion of that Vertebra on the Rib, and not of the Rib on the Vertebra. In this manner ought Truth to be embraced wherever it presents itself. *Winflow's Anatomy.*

SCALPRUM. A Lenticular, or Raspatory. *Blancard* explains *Scalprum*, a Chisel for Amputations; or a Launcet.

SCAMMA. *σκάμμα*, in *Caelius Aurelianus, Morb. Chronic. Lib. 2. Cap. 1.* was the Limit, or Bound of the Space, or Plot of Ground, allotted for the Use of those who exercised themselves in Leaping, and mark'd by laying along a Rail, or drawing a Trench. The same Author uses the Word to signify the Rails, or Posts, which marked out the Area, or Space of Ground, design'd for Walking. *Scamma* was, also, the Pit in the Stage where the Wrestlers played their Prizes.

SCAMMONIA. *σκαμμωνία*. Scammony. A Plant, which from one Root shoots up a Multitude of fat, and somewhat hairy Stalks, to the Height of three Cubits, with hairy Leaves, resembling those of the Helxine, or Ivy, but softer and triangular. The Flowers are white, round, concave in manner of Baskets, and of a strong Smell. The Root is very long, as thick as a Man's Arm, white, of a strong Smell, and full of Juice, which is collected in the following manner: They separate the Root from the Head, and with a Knife excavate it in Form of a Cupola; into this Cavity from all Parts runs the Juice, which is taken out in Shells. Others dig a Cavity of the same Form in the Ground, and strewing the same with Walnut-Leaves, let the Juice run into it, and there suffer it to dry before they remove it.

The best Scammony is pellucid, light, rare, of the Colour of Bull's Glue, with small fistulous Perforations, and fungous; such is what is imported from *Myfia in Asia*. In trying the Goodness of it, it is not sufficient that it turns white when touched with the Tongue, for so it will do when mixed with the Juice of the *Tithymalus*, but Regard is to be had to the forementioned Characters; and, also, that it is not over-heating or burning upon the Tongue, as it is when mixed with the *Tithymalus*. What is made in *Syria* and *Judea* is the worst, being ponderous, dense, and adulterated with the *Tithymalus* and Flower of Vetches.

A Dram, or four Oboli of the Juice taken in Hydromel, or Water, purges downwards Bile and Phlegm. Two Oboli with Sefamum, or some other Seed, are sufficient for loosening the Belly. But where stronger and more efficacious Purg- ing is required, the Dose may be three Oboli of the Juice, with two Oboli of black Hellebore, and a Dram of Aloes. A purging Salt is, also, prepared by mixing twenty Drams of the Juice of Scammony with six Cyathi of Salts: This is exhibited in Proportion to the Strength, the full Dose being three Cochlearia, the middle two, and the least one. A Dram or two of the Root, mixed with the before-mentioned, serves also for a Purge; and some drink the Decoction of it. The same boiled in Vinegar, and then triturated with Barley-Flower, makes a useful Cataplasm for the Sciatica. The Juice applied in a Pessary with Wool, destroys the Embryo; made in a Litus, with Oil or Honey, discusses a Phyma; boiled in Vinegar, cures the Leprosy, rubbed on the Parts affected; and mixed with Vinegar and Oil of Roses, is good to wash the Head affected with an inveterate Cephalagia. *Dioscorides, Lib. 4. Cap. 171.*

SCAMMONITES. *σκαμμωνίτης*. Scammonites, or Wine of Scammony, is prepared by taking fifteen Drams of the Root of Scammony, digged in the Time of Harvest, and putting them, bruised and tied up in a Linnen-Cloth, into a Congius of Must. It purges the Belly, and evacuates Bile and Phlegm. *Dioscorides, Lib. 5. Cap. 83.*

SCAMMONIUM.

We have two Sorts of Scammony in the Shops, that of *Alep- po*, and that of *Smirna*. The first is the best and most pur- gative; and is got from a Plant named *Scammonia Syriaca*, *C. B. P.* which is a Species of *Convolvulus*; it is a very strong Cathartic, but causes great irritation, and even Inflammations in weak Habits. It is given, in Substance, from two to twelve Grains; but ought never to be used when there is the least

Suspicion of Inflammations in any part of the Abdomen. It is likewise a very ticklish, uncertain Purge; sometimes it has no Effect at all; sometimes it causes fatal Super-purgations; and, which is most remarkable, it sometimes does not operate at all the first Day, but brings on an insupportable Tenes- mus and Hypercatharsis the next. It is very proper to dilute it with some oily, viscid Substance; such as the Yolk of an Egg, or an Emulsion made with Sweet-almonds, and the cold Seeds. Prepared Scammony, or Diagridium, is a very proper Ingredient in the *Pulvis Cornachini*, which purges without any of the bad Effects of Scammony. *Madam Grimald's* Powder seems to be nothing but the *Pulvis Cornachini* dis- guised. Scammony is the Basis of many purgative Composi- tions, such as the *Diaphanicum*, the *Diaprunum*, *Confectio Hamelch*, and others. *Geoffroy.*

PREPARATIONS OF SCAMMONY.

There are various Ways which Authors have contrived to prepare Scammony, and all with a View to make it a milder and safer Cathartic. Most agree in doing this with Acids; to which purpose some bake or roast it, inclosed in the Fruit of a Quince, and then it is called *Diagridium*; others wash it with the Juice of Lemons, Citrons, and with distilled Vi- negar; but the following Preparation is most preferred.

SCAMMONIUM CUM SULPHURE PRÆPARATUM.

Scammony prepared with Sulphur.

Lay the Powder of Scammony upon thick, strong Paper; then hold it over Coals, upon which Sulphur is to be burned, until it turns white and melts. Afterwards rub it in a Mortar, a little greased, to a fine Powder for Use.

This is prescribed from three Grains, to eight or ten Grains, and has the Virtues of the Scammony itself, being little altered by this Preparation.

RESINA SCAMMONII.

Resin of Scammony.

Take any Quantity of Scammony, and dissolve it in a suf- ficient Quantity of Spirit of Wine; decant it, and put to it common Water, which will occasion it to turn mil- ky, and let the Resin fall to the Bottom; or put it into a Retort, and gently draw off the Spirit.

This is somewhat stronger and rougher in Operation than the Resin of Jalap. Its Dose is from two Grains, to six or seven. *Quincy.*

TINCTURE OF SCAMMONY.

The milky, unctuous, thick Juices, which spontaneously distil in plenty from wounded Plants, usually appear Resinous, when inspissated by the Heat of the Air, or Sun; such Juices are particularly those of the Hawk-weeds, Sow-thistles, Goats- beard, Succory, Spurge, Euphorbium, Poppy, or the like; and these Juices, when reduced to a dry Form, and ground to Powder, and boiled once or twice with Spirit of Wine, dis- solve in great measure, leaving only a little earthy Fæces be- hind; and this is particularly the Case of Scammony.

R E M A R K S.

The Tincture of Scammony, so prepared, purges in a small Dose, or in the Quantity of two Drams, if mixed in three or four times its Weight of the Syrup of Damask Roses. This Process principally shews, the Action of pure Spirit of Wine upon vegetable Compounds, according to this ancient chymical Rule, that Spirit dissolves its like. For Alcohol, when perfectly pure, scarce extracts any thing more from well-dried compounded Vegetables, than the inflammable Parts, Spirit, Balsam, Oil, Colophony, Rosin, and resinous Gum, and what is merely saponaceous; leaving a pure, dry Salt and Earth behind. If, therefore, the Artist knows that all the particular Virtue required presides in these Parts, then the Operation must be perform'd with pure Alcohol alone; but when the Virtue required lies in a mixture of the oily, resinous, saline, and saponaceous Parts together, it is better to use the common rectified Spirit, than Alcohol; because that Spirit acts, by its aqueous Part, upon what is saline and sapo- naceous; and by its Alcohol, upon what is balsamic, oily and resinous; so that by this Means, the united Virtues may be obtained

obtained in the Tincture. This is evident in the Roots of Hellebore, Hermodactyls, Jalap, Mechoacan, and Turbith; because the Tinctures drawn from them with a Spirit only once rectified, purge much better than those extracted by pure Alcohol. For if a refinous Tincture be drawn by Alcohol from Jalap, it purges less; while the Remainder, being boiled in Water, communicates a purging Virtue thereto. But if the Tincture be extracted with common Spirit, it proves highly purgative; and the Remains contain scarce any thing worth the extracting. Hence we learn, that a fixed alkaline Salt is not required in the making of many Tinctures, because it would either destroy, or change their particular Virtues; and that they are not always to be made with Alcohol; but we are first to consider what Spirit should be used. All the Tinctures prepared with pure Alcohol, will burn entirely away, almost like pure Alcohol itself; whence it is manifest, that this Menstruum extracts only the inflammable Part from the Compound, and leaves the rest behind. If, therefore, the Virtue of a Plant entirely resides in the saline, saponaceous Part, to boil it with Water is better than Alcohol. The Opium dissolved in Water is the best, the next is that dissolved in Wine, and the next in Spirit of Wine; but always the worse, the better the Spirit.

A PURGING POTION.

If two Drams of the Tincture of Scammony, prepared, as above, with rectified Spirit of Wine, be mixed with thrice its Weight of a proper purging Syrup, as that of Rhubarb, and this Dose be taken upon an empty Stomach, in a Distemper, Constitution, and Age, that requires so strong a Purge, it commonly has the desired Operation in purging the Bile.

R E M A R K S.

Many Virtues of Vegetables usually reside in their Rosins, which are generally tough and ready, by their Tenacity, to stick to one Part of the Body, and thus their Virtues are either retarded or hindered; but when dissolved in a spirituous, vegetable Menstruum, they operate quicker, and in a much less Dose. Rosins dissolved in Spirits are so sharp, that they cannot be drank alone; and if diluted with Water to render them potable, they are presently precipitated into a tenacious Mass; whence nothing seems more proper than to mix them with a thick Syrup, where they cannot be precipitated, but are mitigated by the saccharine Part; which, by its extraordinary simplicity, does not, at the same time, change or impair their Virtue. *Boerhaave's Chymistry.*

SCAMNUM HIPPOCRATIS. See BATHRON.

SCAMPIUZA, *σκამπιούζα*, A Name for the Tussilago or Coltsfoot. *Fuchsius in notis ad Nicolaum Myrepsum*, Sect. 1. Cap. 505.

SCANDELLA. The same as GYMNOCRITHON.

SCANDIX, called also ANTHRISCUS.

The Characters are;

The Root is annual and fibrous, and the Seeds resemble a long Needle.

Boerhaave mentions three Sorts of *Scandix*, which are;

1. *Scandix*; femine rostrato; vulgaris. *C. B. P.* 132. *Tourn. Instit.* 326. *Boerb. Ind. A.* 70. *Raii Synop.* 3. 207. *Scandix*, Offic. *Scandix vulgaris*, seu *Pecten Veneris*, Park. *Theat.* 207. *Pecten Veneris*, *J. B.* 3. 71. *Raii Hist.* 1. 428. *Pecten Veneris*, seu *Scandix*, *Ger.* 884. *Emac.* 1041. *SHEPHERD'S NEEDLE, OR VENUS'S COMB.*

It grows frequently among the Corn, and flowers in May and June.

Scandix is reckoned among wild oleraceous Plants, or Greens, and is friendly to the Belly and Stomach, whether it be eaten raw or boiled. The Decoction drank is good for the Bladder, Kidneys and Liver. *Dioscorides, Lib. 2. Cap.* 168. Some say, that the Root hereof bruised with Malloes draws out all manner of Splinters, or other Things, infixed in the Body. *Buxb.*

2. *Scandix*; Cretica; minor. *C. B. P.* 152. *Prodr.* 79. *Pecten Veneris, foliis tenuissimis dissectis, Anthriscus Casabonæ.* *J. B.* 3. 273. *Anisomarathrum*, *Col.* 1. 180.

3. *Scandix*; Orientalis; flore maximo. *T. C. Boer. Ind. Alt. Plant. Vol. 1.*

SCANTON. The fetid Smell of Urine. *Rulandus.*

SCAPELLATUM. Uncovered, it is used with respect to the Retraction of the Prepuce in a *Paraphimosis*.

SCAPHA, *σκάφη*. A Bathing Tub, or Cistern. *Scapha*, in Anatomy, is the external Circumference of the Ear, opposite to the Helix. *Castellus*. It is, also, the Name of a Species of Bandage for the Head. *Galen, de Fasciis.*

SCAPHION. *σκαπίον*. A small Bathing Tub. Or that Part of the Head which is covered with Hairs. Or the *Acetabulum*. *Scaphia* are the Buttocks.

SCAPHIS. *σκαψίς*. A small Bathing-Tub; or a Milk-pail, or a hollow oblong Vessel, in which Barley was

bruised. In *Hippocrates* it sometimes imports the oblong, hollow Shell of the Sea-Muscle; or a Measure, the same as *Concha*.

SCAPHOIDES OS. The same as *Os Naviculare*. See *CRUS*.

SCAPULA. The Scapula is the triangular Bone situated on the Outside of the Ribs, and extended commonly from the second to the seventh true Rib; its superior posterior Angle, when it is in the least straining Position, being about three Inches from the spinal Processes of the Vertebrae, while the long Side between that Angle and the inferior one is stretched obliquely forward as it descends, having nothing between it and the Ribs, except the thin Extremities of some Muscles; but as the Scapula advances forwards to its Articulation with the Arm Bone, its Distance from the Ribs increases.

The Sides and Angles of the Scapula are all unequal; for the posterior Side or Base is the longest, the inferior Costa is the second in Length, and the superior Costa is about as much proportionally shorter than the inferior, as this is than the Base. The inferior Angle is very acute, the superior is near to a right Angle; and what is called the Anterior, does not deserve the Name; for the two Sides do not meet to form an Angle. The Body of this Bone is concave towards the Ribs, and convex behind, where it has the Name of *Dorsum*. Three Processes are generally reckoned to proceed from the Scapula. The first is the large Spine that rises from the posterior convex Surface, and divides it unequally. The second Process stands out from the anterior Extremity of the superior Costa; and from its imaginary Resemblance to a Crow's Beak, is termed *Coracoides*. The third Process is the whole anterior thick bulbous Part of the Bone.

After thus naming the several constituent Parts of the Scapula, the particular Description will be more easily understood.

The Base, which is tipped with Cartilage in a young Subject, is not all strait: For above the Spine, this Side runs obliquely forwards to the superior Angle; in which oblique Space the *Musculus patientia* is inserted. At the Root of the Spine, on the Back-part of the Base, a triangular plain distinct Surface is formed by the lower Fibres of the *Trapezius*. Below this the posterior Edge of the Scapula is scabrous and rough for the Insertion of the *Serratus major anticus* and rhomboid Muscles. The inferior Angle is made smooth on its posterior Surface, by the *latissimus dorsi* passing over it. From this forwards the inferior Costa, by the Action of that same Muscle, is for some Way brought to a more direct Course; and so far the posterior Surface is flattened by the Origin of the *Teres major*. As this inferior Costa runs forwards from this, it is of a considerable Thickness; and on its posterior Surface is slightly hollowed, and made smooth by the *Teres minor*; while it has a Fossa formed into it below by the *Teres major*; and between the two a Ridge with a small Depression appears, where the *longus extensor Cubiti* has its Origin. The superior Costa is very thin, and near its anterior Extremity has a semilunar Cavity formed in it; cross the Extremities of which a strong Ligament is stretched, and sometimes the Bone is continued, to form a Hole for the Passage of Blood-Vessels and Nerves. Immediately behind this Cavity the *Musculus coraco-hyoideus* has its Rise; and from it to the Termination of the Fossa for the *Teres minor*, the Scapula is narrower than any where else, and supports the third Process. This Part has got the Name of *Cervix*.

The whole *Dorsum* is always said to be convex; but by reason of the raised Edges that surround it, it is divided into two Cavities by the Spine, which is stretched from behind forwards, much nearer to the superior Costa than to the inferior. The *Cavitas suprascapularis* is really concave where the Muscle of the same Name is lodged; while the Surface of this Bone below the Spine is convex, except a Fossa that runs at the Side of the inferior Costa; and on this Surface the *Musculus infraspinatus* is placed. The internal or anterior Surface of this Bone is hollow, except in the Part above the Spine which is convex. In the Hollow the *subscapularis* Muscle is contained. When this Muscle is removed, several Ridges and intermediate Depressions appear, that at first View would seem to be adapted to the Ribs; but the Scapula is situated too obliquely for allowing the Ribs to make these Impressions in such a Direction; and they point out the Interstices of the Bundles of Fibres of which the *subscapularis* Muscle is composed, as *Winslow* justly observes.

The Spine rises small at the Base of the Scapula, and becomes higher and broader as it advances forwards. On the Sides it is unequally hollowed and crooked by the Actions of the adjacent Muscles. Its Ridge is divided into two rough flat Surfaces: Into the superior the *Trapezius* Muscle is inserted; and from the inferior, Part of the *Deltoid* has its Origin. The Extremity of the Spine becomes very broad and flat, and is well known by the Name of the *Acromion*, or

Top of the Shoulder. This in Children is an *Epiphysis*; and in some old Subjects I have seen it only joined by a Cartilage to the Spine. The interior Edge of the *Acromion* is flat, smooth, and covered with a Cartilage, for its Articulation with the external Extremity of the Clavicle; and its inferior Surface is hollowed, to allow a Passage for the *infra- and supra-spinati* Muscles, and free Motion to the *Os humeri*.

The coracoid Process is not straight, but a little crooked, with its Point inclining forwards; so that a Hollow is left at its inferior Root, for the Passage of the *infra-scapularis* Muscle. The Extremity of this Process is marked with three plain Surfaces: Into the internal, the *Serratus minor anticus* is inserted: From the external, one Head of the *Biceps flexor cubiti* rises; and from the inferior, the *Coracobrachialis* has its Origin. At the superior Root of this Process, immediately before the *Cavitas semilunaris*, a plain or rather somewhat hollowed Surface is made by the Origin of the other Head of the *Biceps flexor cubiti*; and from a rough scabrous Surface on the upper Part of the coracoid Apophysis, strong Ligaments go out, to connect it to the Clavicle and *Acromion*.

From the *Cervix scapulae* the third Process is produced. This is superficially hollowed on the anterior Part by a glenoid Cavity, which is somewhat elliptical; but has an obtuse Extremity below, and an acute one above; therefore, resembles much the Shape of the longitudinal Section of an Egg. Between the posterior Brims of this *Glenae*, and the anterior Root of the Spine, a large Sinuosity is left, for the Transmission of the *supra- and infra-spinati* Muscles. The Root of the *Supercilia* is surrounded by a rough Circle, for the firmer Adhesion of the circular Ligament of the Articulation, and of the Cartilage which is placed on these Brims, where it is very thick, but becomes very thin as it is continued towards the Middle of the Cavity, which it lines all over. The medullary Vessels enter the *Scapula* near the Base of the Spine.

The Substance of the *Scapula* is, as in all other broad flat Bones, cellular, but of a very unequal Thickness; for the Neck and third Process are very big and strong; the inferior Costa, Spine and coracoid Process, are of a middle Thickness; and the Body is so pressed by the Muscles, as to become diaphanous.

The *Scapula* and Clavicle are joined by plain Surfaces, tipped with Cartilage, to which Sort of Articulation I applied the technical Name *Arthrodia*, by which neither Bone is allowed any considerable Motion, being tightly tied down by the common circular Ligament, and the proper one that proceeds from the coracoid Process; otherwise their Surface of Contact is so narrow, that they would be frequently dislocated: A small Flexion however is necessary; and therefore they are not united, into one Bone. Sometimes a movable ligamentous Cartilage is found in this Joint, sometimes such a Cartilage is only interposed at the anterior Half of it, and in some old Subjects I have found a sesamoid Bone here. The *Scapula* is connected by *Synsarcosis* to the Head, *Os hyoides*, *Vertebrae*, Ribs and Arm-bone; and by Means of the Muscles, that have one Extremity fastened to these Bones, and the other to the *Scapula*, it is moved upwards, downwards, backwards or forwards, and can turn in its own Plain, carrying always the exterior Extremity of the Clavicle and the Arm along with it, which Motions are at great Length explained by *Winslow*. The glenoid Cavity of this Bone receives the *Os humeri* by *Enarthrosis*.

The Use of the *Scapula* is to serve as a *Fulcrum* to the Arm; and, by altering its Position on different Occasions, to allow always the Head of the *Os Humeri* a right-situated Socket to move in, and thereby to assist and enlarge the Motions of the superior Extremity, and to afford the Muscles which rise from it more advantageous Actions, by altering their Directions to the Bone they are to move. This Bone, also, serves to defend the Back-part of the Thorax, and is often employed to sustain Weights; or resist Forces too great for the Arm to bear.

The Base, *Acromion*, coracoid Process and Head of the *Scapula*, are all in a cartilaginous State at the Birth; and the three first are joined as *Epiphyses*; while the Head, with the glenoid Cavity, is not formed into a distinct separate Bone, but is gradually produced by the Ossification of the Body of this Bone being continued forwards. *Monro's Osteology*.

The *Scapula* in many Subjects has a small cartilaginous Border along its whole Basis, which in Children is remarkable enough, but in full-grown Persons it disappears.

The Glenoid Cavity of this Bone is covered with a Cartilage, which is thicker toward the Circumference than the Middle, and a little raised above the Edge of the Bone. This Thickness of the cartilaginous Circumference makes the Cavity greater than it appears in the Skeleton; and sometimes in place thereof there is an additional Border, which is thick at the Circumference of the Cavity, thin towards the Bottom, and very narrow. It is of a pliable slippery Substance, yet some-

thing different from that of a Cartilage, resembling in some measure the Border of the Cotyloid Cavity of the *Os Innominatum*.

The small cartilaginous Surface of the *Acromion*, is thicker in the natural State, and very little convex.

The small triangular Surface, at the Extremity of the Spine of the *Scapula*, near the Basis, is covered with a very thin smooth cartilaginous Lamina; but being transparent, it does not appear very white. There are no other Cartilages commonly found in the *Scapula*; though we sometimes observe in dry Bones several Places which seem to have been cartilaginous; but this is owing to the dried Remains of Ligaments and Tendons.

The Neck of the *Scapula*, at a small Distance from the Edge of the Glenoid Cavity, gives Insertion to the capsular Ligament or mucilaginous Bag, and to the articular Ligaments of the Joint of the *Scapula* and *Os Humeri*.

Besides these articular Ligaments of the *Scapula*, there are three ligamentary Cords fixed to the Tuberosity of the Coracoid Apophysis, two of which, by their other Extremities, are inserted in the oblique Eminence on the lower Side of the Humeral Extremity of the Clavicle, the third under the *Acromion*. There is also a thin flat broad Ligament, which reaches between the Crista of the Spine of the *Scapula* and the Edge of the inferior Costa. *Winslow's Anatomy*,

See FASCIA, for the Bandages recommended for Disorders of the *Scapula*.

SCARABÆUS CORNUTUS. Schrod. 5. 345. *Scarabæus maximus Platyceros, Taurus nonnullis, aliis Cervus volans, Raii Insect. 74. Scarabæus Cervus volans dictus, Mer. Pin. 201. Scarabæus major cornutus, Mouff. Insect. 148. Jonf. de Insect. 67. Cervus volans, Aldrov. de Insect. 451. Charlt. Exer. 46. THE STAG-FLY.*

This Insect is, as I take it, what is usually called the Cock-Chaffer. It is recommended as an Amulet for an Ague, or Pains and Contractions of the Tendons, if applied to the Part affected. *Schroder* reports, that if tied about the Necks of Children, it enables them to retain their Urine. An Oil prepared by Infusion of these Insects, is recommended by the same Author in Pains of the Ears, if dropped into them.

SCARABÆUS PILULARIS. Schrod. 5. 345. *Jonf. de Insect. 70. Raii Insect. 105. Charlt. Exer. 47. Aldrov. de Insect. 449. Mouff. Insect. 153. Scarabæus Pilularis Melanocyanus, Mer. Pin. 201. THE COMMON BEETLE.*

The Powder of this Insect sprinkled upon a protuberating Eye, or prolapsed Anus, is said to afford singular Relief. In order to reduce them to Powder, they are first to be exposed to the Sun in a Glass-Vessel stoppt, that they may be dried.

An Oil is directed to be prepared of these Insects, boiled in Oil till they are consumed, which applied to the blind Hemorrhoids, by means of a Piece of Cotton, is said to mitigate the Pains thereof. *Schroder*.

Schroder takes notice of another Species of *Scarabæus*, which he calls,

SCARABÆUS UNCTUOSUS. This Insect is found in May and June by the Sides of Paths, in Woods; and, when touched, tinges the Hands with a pinguious yellowish Liqueur. They are somewhat of the Nature of *Cantharides*, and are recommended by *Wierus*, in the irregular and wandering Gout, if taken in Powder. The Liqueur abovementioned, is said to be a good Topic for Wounds. The Insect is an Ingredient in some Plaisters for Bubos, and Carbuncles; and in some Antidotes; and an Oil is prepared from them, by boiling them in Olive-Oil, which is said to be good against the Bites of Scorpions.

SCARABELAPHUS. A Name for the *SCARABÆUS CORNUTUS*.

SCARDULA. A Fresh-Water Fish, called, also, *Brama*, and *Cyprinus Latus*, the Bream. It is a Fish resembling a Carp in many Respects. It lives in the same Places, upon the same Food, and also very long; and its Flesh produces nearly the same Effects: Its Shape too is like the Carp; but it is soft, tender, and better tasted than the Carp. Most Authors, who have treated of it, say that this Fish contains gross and excrementitious Juices, and that its Taste is more pleasant than wholesome. However, we have not found it has produced many ill Effects. *Lemery on Foods*.

SCARIFICATIO. [Scarification. See CUCURBITULÆ. *Oribasius*, either from *Apollonius* or himself, speaks very fully of the good Effects of Bleeding by way of Scarification, a thing little taken notice of by former Writers; and assures us, from his own Experience, how successful he had found it in a Suppression of the Menfes, Defluxions of the Eyes, Head-ach, and Straitness of Breathing, even when the Person was extremely old.

When he himself was taken ill of the Plague, the second Day he scarified his Thigh, and took away two Pounds of Blood;

Blood; by which Method he entirely recovered, as did several others, who used it. This Manner of Scarifying was different from that of Cupping. The *Arabians* seem to have a Notion of the latter only. But from this Place, as well as from some Passages in *Galen*, it is plain that the Ancients made deep Incisions into the Skin by the Knife. The *Egyptians* practise it to this Day, and *Prosper Alpinus* describes at large the Apparatus: They first make a strait Ligature under the Ham, then rubb the Leg, and put it into warm Water, and beat it with Reeds to make it swell, and so scarify. In the Cure of Giddiness, *Oribasius* himself speaks of them as two distinct Operations. *Freind's History of Physic*.

SCARIFICATORIUM, or SCARIFICATOR. A Chirurgical Instrument, used for making Scarifications. See *CURBITULA*.

SCARIOLA. A Name for the *Cichorium*; *latifolium*; *sive Endivia vulgaris*.

SCARLATINA FEBRIS.

1. Tho' the Scarlet-Fever may happen at any time, yet it generally comes at the Close of Summer, when it seizes whole Families, but especially Children. (1.) A Chills and Shivering come at the Beginning, as in other Fevers, but without great Sickness. (2.) Afterwards the whole Skin is covered with small red Spots, which are more numerous, larger and redder, but not so uniform as those which constitute the Measles. (3.) They continue two or three Days, and after they are vanished, and the Skin is scaled off, there remains a kind of branny Scales, dispersed over the Body, which fall off, and come again for twice or thrice successively.

2. As this Disease seems to me to be nothing more than a moderate Effervescence of the Blood, occasioned by the Heat of the preceding Summer, or some other way, I do nothing that may prevent the Despumation of the Blood, and the Expulsion of the peccant Matter through the Pores, which is quickly enough performed. Accordingly I refrain from Bleeding, and the Use of Clysters, which make a Revulsion, whereby I conceive the noxious Particles are more intimately mixed with the Blood, and the Motion which is more agreeable to Nature is checked. On the other hand, I forbear Cardiacs, by the Heat of which the Blood may perhaps be put into a violent Motion, than so gentle and mild a Separation as effects the Cure requires; and besides, by this means a high Fever may be occasioned. I judge it sufficient for the Patient to refrain wholly from Flesh, and all Kinds of spirituous Liquors, and to keep his Room, without lying always in Bed. When the Skin is entirely peeled off, and the Symptoms vanished, it is proper to give a gentle Purge, suited to the Age and Strength of the Patient. By this plain and manifestly natural Method, this Disease in Name only (for 'tis little more) is easily cured, without Trouble or Danger: Whereas, on the contrary, if we add to the Patient's Evils, either by confining him continually in his Bed, or exhibiting Abundance of Cardiacs and other superfluous Remedies, the Disease is immediately augmented, and he frequently falls a Victim to the the Over-officiousness of the Physician.

3. But it should here be observed, that when epileptic Convulsions, or a Coma, arise in this Disease at the Beginning of the Eruption, which sometimes happen to Children and young Persons; 'tis highly proper to apply a large and strong Epispastic to the Neck, and immediately exhibit a Purgative of Syrup of White Poppies, which is to be repeated every Evening during the Illness; and he must be directed to make use of Milk boiled with thrice its Quantity of Water, for his ordinary Drink, and to refrain from Flesh. *Sydenham*.

SCARLEA. The same as **SCLAREA**. *Clary*.

SCAROLACHANUM. A Plant mentioned by *Nicolaus Myrepsus*, Sect. 8. C. 71. which *Fuschius* takes to be the **SCARIOLA**.

SCARUS. This is a large Fish, which is said to be of the ruminating Kind, and lives upon Herbs and Sea-wreck, without eating any other Fishes. It is found among the Rocks in *Sicily*, *Asia*, and *Greece*. It is esteemed good Food, because its Flesh is tender, friable, and of easy Digestion. Its Liver, when eaten, or when dried, reduced to a Powder, and taken in White Wine, is said to be good against the Jaundice, and proper for removing Obstructions. *Lemery des Drogues*.

SCATEA, in *Paracelsus*, is the second Species of tartareous Urine.

SCAURUS. The same as **SARAPUS**.

SCEILEN. A Name for the **SALVATELLA**.

SCELERATA HERBA. A Name for the *Ranunculus palustris*; *Apii folio*; *lavis*.

SCELETON.

All the Bone of an Animal, freed from the Teguments, Muscles, Vessels, Glands and Viscera, and orderly connected, have the general Designation *Skeleton*. This Term might indeed be applied to any dry Preparation, but is now, by the

common Consent of Anatomists, restrained to this Preparation of the Bones.

Of the two *Skeletons* there are two Sorts; one natural, when the Bones are kept together by their own Ligaments; the other artificial, when they are joined with Wire, or any other Substance which is not Part of the Creature to which the Bones belonged. Small Subjects, and such whose Bones are not fully ossified, are commonly prepared the first Way; because were all their Parts divided, the nicest Artist could not rejoin them, by reason of their Smallness, and of the Separation of the unossified Parts; whereas the Bones of large adult Animals are soonest and most conveniently cleaned when single; and there is no great Difficulty in restoring them to, and keeping them firm in their former natural Situation.

Sometimes we prepare the *Skeletons* of the same Animal in both these Ways; that is, we leave the smaller Bones joined by their natural Ligaments, and separate the larger ones till they are cleaned, when they are again connected by Wires, or some such Substances.

'Tis worth while to remark, that when the Bones are brought to their natural Situation, scarce any one of them is so placed as to be in a perpendicular Bearing to another; tho' the Fabric composed of them is so contrived, that in an erect Posture, a perpendicular Line, from their common Center of Gravity, falls in the middle of their common Base. By this Contrivance we can support ourselves as firmly, as if the Axis of all the Bones had been a strait Line perpendicular to the Horizon; and we have, at the same time, a much greater Facility and Strength in several of the most necessary Motions we perform. It is true indeed, that wherever the Bones, on which any Part of our Body is sustained, decline from a strait Line, the Force required in the Muscles to counteract the Gravity of that Part, is greater than otherwise it needed to have been; but then this is effectually provided for in such Places, by the Number and Strength of the Muscles. As long therefore, as we remain in the same Posture, a considerable Number of Muscles must be in a constant State of Contraction; which we know, both from Reason and Experience, must soon create an uneasy Sensation. This we call being weary of one Posture: An Inconvenience that we would not have had in standing erect, if the Bearing of all the Bones to each other had been perpendicular; but 'tis sufficiently compensated by the Quickness, Ease and Strength of a great Variety of other Motions, as was above hinted.

The Bones of Women are smaller, in Proportion to their Length, than those of Men, because the Force of their Muscles is not so great, nor is such strong external Force applied to them, to prevent their stretching out in Length.

The Depressions, Ridges, scabrous Surfaces, and other Inequalities made by the Muscles, are not so conspicuous in them, because their Muscles are neither so thick or strong, or so much employed, to make so strong Prints on their Bones.

Their *Os Frontis* is more frequently divided by a Continuation of the sagittal Suture, which depends on the first and second general Causes assigned above for the Specialities in their Bones, as will appear after reflecting on the Account given formerly of the middle, internal Spine of this Bone.

Their Clavicles are less crooked, because their Arms have been less forcibly pull'd forwards; which in our European Women, especially those of Distinction, is more hindered by their Garb.

Their Sternum is more raised by long Cartilages below, that the Thorax might be there widened, in some Proportion, to what it is shortened by the Pressure upon the Diaphragm when they are with Child.

The Defect of Bone, or the Hole in the Middle of the Sternum, is oftenest found in them, to allow the Passage of the mammary Vessels, say some; but, in my Opinion, this is owing to a lax Constitution, by which the Ossification is not so soon completed, as where the Action of the Solids is vigorous, and the Circulation of the Fluids is brisk; for a much smaller Hole might have served this Purpose; and the Branches of the internal mammary Vessels, which are sent to the exterior Parts of the Thorax, pass out between the Cartilages of the Ribs before these are joined to the Sternum.

The *Cartilago Xiphoides* is oftner bifurcated in Women than Men; for the Reason assigned in the preceding Paragraph, a less forcible Power of Ossification.

The superior Cartilages of the Ribs sooner ossify, to support the Weight of the Mamma.

The middle Cartilages are more flat and broad, by the Weight of the Breasts.

The inferior Cartilages are longer for enlarging the Chest. The *Os Sacrum* is more turned outwards for enlarging the Pelvis.

Weakly Women, who have born many Children when young, often have the Vertebrae of their Back bended forwards,

wards, and their Sternum depressed; or become, as *Chefelden* justly observes, round-shouldered and flat-breasted, by the Pressure and Weight of the impregnated Uterus, and by the strong Action of the abdominal Muscles.

The Os Coccygis is more moveable and less bended forwards, to facilitate the Birth.

The Os Ilium are more hollow and more reflected outwards, and consequently farther removed from each other, in order to widen the inferior Part of their Abdomen, and to support better the impregnated Uterus.

The Ridge on the upper Part of the Os Pubis is larger in such Women as have born Children, being extended by the strong Action of the Musculi recti Abdominis.

The Cartilage between the two Os Pubis is thicker, by which the Pelvis is more capacious.

The conjoined Surfaces of the Os Pubis, and of the Os Innominata and Sacrum are less, that with the straiter Os Sacrum, a larger Passage might be left for the Exculsion of the Child in Birth.

The great Tuberosity of the Os Ilium is flatter in Women than Men; because it is more pressed upon in the sedentary Life which Females enjoy.

In Consequence of the Pelvis of Women being wider, the Articulation of their Thigh Bones must be farther removed from each other; and therefore, as *Albinus* very well remarks, a larger Space is left for the Procreation and Birth of Children; which Distance of the Thighs, may be one Reason why Women, in running, generally shuffle more from one Side to the other than Men, to preserve the Center of Gravity of their Bodies from falling too far to a Side of the Joint of the Thigh that supports them when the other is raised, which would endanger their tumbling to the Ground. *Monro's Osteology.*

SCELETYRBE. See **SCELOTYRBE.**

SCELOS. *σχίλος.* The Leg. See **CRUS.**

SCELOTYRBE. From *σχίλος*, the Leg, and *τύβη*, Tumult. A violent Pain in the Legs, proceeding from the Survey.

SCEMPSIS. *σχέμψις.* The same as **APÓSCEPSIS**, which see.

SCENOS. *σχίνος*, in *Hippocrates*, signifies the whole Body.

SCEPARNOS. *σκηπαρνος.* See **ASCIA.**

SCEPAstra. *σκηπάστρα.* A Species of Bandage for the Head. *Galen, de Fasciis.*

SCEPE. *σκήπη.* A Covering. In *Hippocrates, Epidem. L. 6.* it seems to import the surrounding Air.

SCHAGRI-COTTAM. A Species of Cornel-Tree, which grows in *Malabar*. The expressed Juice of the Fruit mixed with Sugar, and drank, is esteemed very cooling; a Decoction thereof is recommended as a good Lotion for the Uvula when relaxed. The Juice of the Leaves taken with Sugar is good in an hepatic Flux, and Diarrhæa; and, as a Lotion, for Pustules in the Mouth. Of the same Juice, mixed with Vinegar, a Gargarism is made, which is said to relieve in a Quinsey.

SCHASIS. *σχάσις.* Scarification.

SCHENDINIGI. Hemp, or Hempseed. *Rulandus.*

SCHEMA. *σχῆμα.* The Figure of a Part of the Body; or the Form and Type of a Disease.

SCHEM-PARITĪ. The Name of an Indian Species of *Alcea*, to which I find no medicinal Virtues ascribed.

SCHERBET, or SERBET. A Turkish Liquor, prepared of the acid Juices of Fruits and Sugar.

SCHERUNAM COTTAM. H. M. The Name of a bacciferous Shrub, which grows in the *East Indies*. The Vapour of a Decoction of the Leaves eases the Tooth-Ach, and kills Worms bred in the Teeth. *Raii Hist. Plant.*

SCHERUS-CHUNDA. A Name for the *Solanum*; fruticosum; Indicum; Fructu rubro.

SCHESIS. *σχίσις.* From *σχίω*, to have, hold, retain, signifies such a Disposition of the Body as is easily induced or removed, and is called *διάθεσις* (*Diathefis*), as *ἥξις* (*Hexis*) is, on the contrary, a settled Disposition, or Habit. *Σχίσις* is, also, the same as *ἰσχύσις*, a Retention or Suppression; thus *σχίσις τῆς οὔρου*, 6 *Epid. Sect. 1: Aph. 2.* are Suppressions of Urine.

SCHETÆA. *σχετᾶνα.* This Word occurs in *Hippocrates, de Morbis Mulierum, L. 2.* The Phrase is *σχῆτᾶνα δεῖναι*, which the Interpreters explain, *They do Things which ought to be refrained from*, that is, throw up indecently their Aliment by Vomit.

SCHETICOS. *σχετικός.* An Epithet for Diseases, importing their being not so fixed and rooted in the Constitution, but that they may be readily cured. *Galen.*

SCHETTI. H. M. The Name of a bacciferous Shrub, which grows in *Malabar*. The Root bruised and taken in cold Water, is said to be cooling in feverish Burnings, and Heats of the Hands, and to be good for spitting of Blood.

It is, also, recommended for easing Pains of the Head, if that Part is washed therewith. Taken in Milk, it is said to cool the Kidneys, and to be good in a Gonorrhæa.

There is another Plant much like this which is called *Bem Schetti*; the Fruit of which is eatable, and of a sweetish farinaceous Taste.

SCHIAS. The same as **ISCHIAS.**

SCHIDACEDON. A Bone is said to be broken *σχιδάκεται*, *Schidacedon*, when it is fractured lengthways. It is derived from *σχίζω*, to cleave.

SCHINDALMOS. *σχινδαλμός.* A Fissure.

SCHINELÆON. *σχινελαιον.* Oil of Mastich. *Dioscorides, L. 1. C. 50.*

SCHISMA. *σχίσμα.* A Fissure.

SCHISTUS LAPIS. *Offic. Charlt. Foss. 24. Matth. 1382. Schistus Calc. Mus. 274. Worm. 64. Aldrov. Mus. Metall. 655. De Laet. 123. Schistus, seu Scissilis Lapis, Boet. 392. THE CLEAVING STONE.*

It is exported from *Germany*. The best is of a metallic Substance, and of the Colour of Saffron; the others, which are not so good, are blackish, and consist of thin, shining, and transparent Laminæ, which stick to one another. The Virtues are the same with those of the *Hæmatites*, only weaker in every Respect. *Boetius* thinks it a Species of Talc; and *Agricola* perceives no Difference between it and the *Hæmatites* except in the Figure.

Dioscorides says that it fills up a *Cœloma* of the Eyes, [See **COELOMA.**] being diluted with Woman's Milk; and is, also, very effectual for a Rupture, or falling out of the same Part, for Thickness of the Eyelids, and a Staphyloma. *Dioscorides, Lib. 5. Cap. 145.*

SCHCENANTHUS. *Juncus odoratus*, *Offic. Schœnanthum, Ger. 39. Emac. 43. Schœnanthus, seu Juncus odoratus, J. B. 2. 515. Raii Hist. 2. 1310. Juncus odoratus seu aromaticus, C. B. P. 11. Juncus rotundus aromaticus, C. B. Theat. 163. Juncus odoratus tenuior, Park. Theat. 144. Gramen dactylon aromaticum, multiplici paniculâ, spicis brevibus, tomento candicantibus ex eodem pediculo binis, Pluk. Phytog. Tab. 190. Fig. 1. Gramen ad Juncum accedens aromaticum majus Syriacum, Hist. Oxon. 3. 229. CAMELS HAY.*

Though this is commonly called a Rush, yet it is not one, but a Species of Grass, whose Leaves grow thick together, inclosing or inccompassing one another, having a small fibrous Root. They are long and narrow, of a pleasant sweet Smell. The Stalks grow to be a Foot or more high, bearing Panicles of short woolly Spikes, set opposite to one another. It grows in *Arabia*, and other Eastern Countries. The Leaves only are used.

Camels Hay is heating and drying, opening Obstructions of the Liver and Spleen, and provoking the Catamenia. It eases the Pain of the Womb after Child-Bearing, provokes Urine, cleanses the Reins, and helps the Hiccough, occasioned by Wind in the Stomach. It is an Ingredient in the two great Compositions, *Theriaca Andromachi*, and *Mithridate*. *Miller's Bot. Off.*

The Leaves and Stalks are used, and are of an acrid, bitterish, and pleasant Taste, and a very fragrant Smell. It is heating, somewhat astringent, discutient, and of fine Parts. It is principally of Use in Obstructions of the Menfes, Liver and Spleen; in Inflations of the Stomach, Vomiting, and Hiccough; Difficulty of Urine, and Pains of the Kidneys, Bladder and Reins. *Dale from Schroder.*

SCHCENOBATA. *σχενόβατα*, from *σχίσις*, a Rope, and *βαίνειν*, to go. Walking or Dancing on a Rope. It occurs in *Hippocrates, de Victus Ratione, L. 3.* Some think it should be read *κονόβατα*, Walking in the Dust; others read it *κονόβατα*, Running a Sort of Race.

SCHOENOPRASSUM. See **CEPA.**

SCHORIGERIAM. A Species of Nettle which grows in *Malabar*, is called *Batti Schorigeriam*.

SCHULLI. There are two prickly Shrubs which grow in *Malabar*, which are thus called; one is the *Paina Schulli*, to which I find no medicinal Virtues ascribed. The other is the *Nir Schulli*, the Leaves of which powdered, and mixed with the Oil of the *Ficus Infernalis*, [See **GLAUCIUM.**] is said to dissipate Tumors on any Part of the Body, but especially of the Male *Pudenda*.

SCHUNDA-PANA. The Name of a Palm-Tree, which grows in *Malabar*. See **PALMA.**

SCIÆNA. The Grunter, or Shadow-Fish. See **UMBRA.**

SCIAMACHIA, or SCHIOMACHIA. From *σχιδ*, a Shadow, and *μαχουαι*, to fight. A Sort of Exercise among the Ancients, which consisted in Agitations of the Arms, as if a Person was fighting with his Shadow.

SCIATICA.

The Sciatica or Hip-Gout is a continual, heavy, dull, gnawing Pain, in or about the Hip-Joint and the Parts adjacent. [* F f]

cent. This Disorder may arise from the same Cause with that which produces the Gout; but is most generally the Effect of catching Cold, or being exposed to the open Air. It may also be occasioned by Contusions and venereal Disorders.

As for the Diagnostics of a Sciatica, it frequently seizes those who have had the Thigh-bone dislocated, especially in a Change of Weather from hot to cold, and sometimes continues during the whole Winter. Men and Women, young and old Persons, are equally subject to this Disorder, in which an external Tumor or Inflammation seldom appears; neither is the Pain so acute as in other Kinds of the Gout; and tho' it has Remissions, yet 'tis generally continual, and increased by walking, or sitting long in the same Posture. When the Sciatica is inveterate, and of long Standing, especially in Persons of tender, lax, or corpulent Habits, there sometimes happens a Relaxation of the Ligaments, which produces a Lameness and a Pain in Motion, and when increased, a partial Dislocation. Sometimes also the Sciatica is produced in old Persons, by any Cause which relaxes, contracts, or obstructs the Nerves of the Thighs, Legs and Feet; and if this Relaxation, Contraction, or Obstruction are violent or long-continued, they bring on a Palsy, and afterwards an Atrophy of the Parts.

The Sciatica is rarely mortal, and seldom dangerous, but often long protracted; and if it proceeds from Blows, Falls, venereal Disorders, or Old-Age, the Patient often relapses in cold Weather, and continues ill for the most part of the Winter. A Palsy and Atrophy of the Parts are very bad Symptoms.

In Sciaticas proceeding from an internal Cause, a proper Regimen must be observed; and in those arising from Old-Age, a nourishing and balsamic Diet should be prescribed. But in other Cases a moderate Diet is to be used. The Patient should, also, be kept in a warm Air, and use proper Exercise.

In the Cure of a Sciatica, Bleeding is beneficial, except in Persons extremely weak or old; on the Day after Venesection an Emetic of Ipecacuana is to be given, and afterwards a pargoric Draught, if necessary; which may be prepared in the following Manner.

Take of the Pilulæ Matthæi, half a Scruple; of compound Raddish-Water, two Drams; of epidemic Water, half an Ounce; of alexiterial Milk-water, and black Cherry-water, each one Ounce; and of the Syrupus de Mecconio, half a Dram: Make into a Draught to be taken at Bed-time.

This Draught may be repeated, if the Pain should be very violent, and the Patient restless; otherwise it is better to omit it.

In a Sciatica, Emetics of Turpeth-Mineral are highly commended; and may be commodiously exhibited in the following Manner.

Take of Turpeth-Mineral six Grains; of the Powder of Ipecacuana, fifteen Grains; and of the Conserve of Rosemary, a Quantity sufficient for making a Bolus.

After the Operation exhibit the following Medicine.

Take of the volatile Salt of Amber and Castor, each six Grains; of London Laudanum, one Grain; of the Conserve of Wood-Sorrel, half an Ounce; of the Oil of Rosemary, one Drop; and of the Syrup of Clove Gilly-Flowers, a Quantity sufficient for making a Bolus, to be taken with the following Draught.

Take of alexiterial Milk-water, two Ounces; of Treacle-water, one Ounce; of the Syrup of Saffron, half an Ounce; and of the compound Spirit of Lavander, half an Ounce: Mix for a Draught.

After the Exhibition of an Emetic, Purgatives are generally used, and operate best, if Calomel is added to them thus.

Take of the Powder of Jalap, two Scruples; of Calomel, half a Scruple; of the Oil of Sassafras, half a Drop; and of the Syrup of Rhubarb, a Quantity sufficient for making a Bolus, to be taken in the Morning with a proper Regimen, and repeated twice a Week for six Times.

But for such as are old or weak, lenient Purgatives are most proper, exhibiting at proper Intervals a Dose of Calomel, to be purged off and repeated alternately for some time. If the Cathartics operate briskly, and the Pain increases upon using them, a Pargoric is to be used. As the Pilulæ Matthæi are an Opiate both of a diaphoretic and diuretic Nature, so

they seem well-fitted for this purpose.

On the intermediate Days of Purging, but especially after the Course of it is finished, Preparations of the Woods are of Use, thus:

Take of the Bark of Guajacum and Sassafras-Wood, each four Ounces; and of ston'd Raisins, four Ounces; boil in Spring-Water in a close Vessel for ten Hours; so that there may be eight Pints of the Liquor; which, when strained, is to be used as ordinary Drink.

This Course ought to be continued at least for five or six Weeks, and the following Bolus exhibited during that time, when the Patient goes to Bed.

Take of the Cinnabar of Antimony, one Scruple; of Gum Guajacum and Camphire, each five Grains; of the volatile Salt of Amber, four Grains; of the Oil of Sassafras, one Drop; of the Conserve of Wood-Sorrel, half an Ounce; and of the Balsamic Syrup, a Quantity sufficient for making a Bolus.

For Patients of thin; hectic and weak Constitutions, Balsamics may be mixed with the Medicines already prescribed, such as Sperma-Ceti, Peruvian Balsam, and Balsam of Tolu. Warm Baths of Milk are beneficial, as cold Baths are serviceable for those whose Solids are too much relaxed.

Neither are Externals to be neglected when the Part is relaxed. Thus:

Take of Oxycroceum and Paracelsus's Plaister for Ruptures, each an Ounce; of Camphire, two Drams; of the Oil of Amber, one Dram and an half: Make into a Plaister, to be spread upon Leather, and applied to the Part affected.

But when the Part is contracted, the following Topic is to be used.

Take of Diachylon, with the Gums, two Parts; and of the Ammoniac and Cumin Plaister, each one Part: Mix and apply by way of Plaister to the Part.

When the Blood is poor, and its Circulation languid, a Course of Chalybeate Waters may be beneficial; but in the opposite Extreme, a Milk Regimen, with the testaceous Powders, are to be used.

Sometimes the Gout seizes the Os Ischium, or the Os Coccydicis, where it produces the same Symptoms with those observed in the Sciatica, Allowance being made for the Difference of the Parts. Such a Disorder is generally very painful and hard to be cured. And if, as it sometimes happens, the Part should come to a Suppuration, it is very dangerous; the Ulcer always discharging a sanious Ichor, which shews it to be of a phagedenic Nature. Sometimes, also, a sharp and corrosive Humour occasions a Luxation of the Bone, which is a Case still more dangerous, and requires the Assistance of a Surgeon. But in other Respects the Cure does not materially differ from that of a Sciatica.

Ætherial Oil of Turpentine, taken in the Quantity of eighty or a hundred Drops, in Honey, or any proper Vehicle, at Night, going to Bed, and repeated at due Intervals, is said to be a sovereign Remedy in this Distemper.

SCIDEN. Cerufe. *Rulandus*.

SCILLA.

The Characters are;

The Root is bulbous, very large, capaceous, or Onion-like, and acrimonious. The Leaves are broad; and the Flowers are like those of the *Ornithogalus*, or *Hyacinthus Stellaris*, and grow in a Spike before the Leaves appear.

Boerhaave mentions three Sorts of Scilla, which are;

1. Scilla; vulgaris; radice rubra. *C. B. P. 73. Raii Hist. 2. 1164. Boerb. Ind. A. 2. 143. Scilla, Offic. Scilla rubra, magna, vulgaris, J. B. 2. 615. Scilla rubra, seu Pancratium verum, Park. Parad. 133. Pancratium Clusii, Ger. 136. Emac. 172. Ornithogalum maritimum, seu Scilla radice rubra, Tourn. Inst. 381. Cepa maris, & Squilla, Offic. Germ. SQUILL, or SEA-ONION.*

This differs from the White only in the Colour of the Root, which is red, and having its Leaves growing more erect. They are both much of a Nature; but the White is preferred.

They are of a hot bitterish Taste, opening and attenuating; good to cleanse the Lungs of tough viscid Phlegm; and of great Service in Asthmas and Difficulty of Breathing, and are often used as a Vomit, to clear the Stomach, and help the Jaundice and Dropsy. They likewise provoke Urine and the Catamenia.

Official Preparations are the *Acetum*, the *Vinum*, the *Oxymel Scilliticum*, and the *Trochisci de Scilla*. *Miller's Bot. Off.*
 It flowers in September, and the Root, which is the Part used, is imported to us from Spain. It is of an acrid and bitter Taste, attenuant, aperient, discutient, and diuretic; and is principally used in Obstructions of the Liver, Spleen, Biliary Duct, Menfes, and Urine; in mucous Disorders of the Lungs, Coughs, and other like Disorders. *Dale from Schroder.*
OXYMEL SCILLITICUM. See **ACETUM**.

TROCHISCI DE SCILLA AD THERIACAM.

Troches of Squills for the Theriaca.

Take Squills gathered about the Beginning of June, after the Stalk and Leaves are grown dry, of a middle Size, plump, white, with the exterior Part peeled off, and the harder Part, whereunto the Roots grow, cut away, and cover it with a Paste of Wheat-Flower, to be baked in an Oven, until the Crust is well dried; then make an Hole into it with a wooden Scurer, to try whether the Squill is thoroughly tender. When it is so, beat it well in a Mortar, and mix with it the Flowers of white Orobanch, or red Cicers sifted fine, eight Ounces of every one Pound of Squills; then form them into Troches of about two Drams each, with Hands rubbed over with Oil of Roses, and dry them in the Shade.

This Process is the same very nearly as directed in the *Augustin* and first *London Dispensatory*: Its first Contrivance is ascribed to *Galen*, who describes it *de Antidotis*, and in the *Theriaca ad Pisonem*; for it was originally designed; but *Zwelfer* finds great fault with it on many Accounts, with relation to the Virtues of Squills; but let that be as it will, he says in the Troches there is so little as to avail hardly any thing, reckoning that not above nine Ounces at most of the Troches can be made out of this Quantity; whereas it is certain that eight Ounces is owing to the Cicer-Flowers.

VINUM SCILLITICUM.

Wine of Squills.

Take Squills dried, one Pound; infuse them in eight Pints of White Wine fourteen Days; and then strain out the Squills, and keep the Wine for Use.

This is as gentle an Emetic as the Vinegar of Squills; but it is more agreeable to cold weak Stomachs. After some time using this Medicine, it will not vomit, but irritates just enough to squeeze out some slimy Water from the Glands, and thereby greatly contributes to render them ready in the Discharge of their proper Offices; inasmuch that there is hardly any one Medicine that better guards against those Inundations of Rheums, which drown Old-Age, or are the Consequences of Decays from frequent Debauches, than this does; although, indeed it is not very pleasant. From one to four Spoonfuls may be taken every Morning.

2. Scilla; radice alba. *C. B. P.* 73. *Raii Hist.* 2. 1164. *Boerb. Ind. A.* 2. 143. *Scilla alba*, Park. Parad. 133. *Scilla Hispanica vulgaris*, Ger. Emac. 171. *Scilla magna alba*, J. B. 2. 618. *Ornithogalum maritimum*, seu *Scilla radice alba*, Tourn. Inst. 381. **THE WHITE SQUILL.**

The white Squill, has a large, round, somewhat Pear-shaped Root, compos'd of a great Number of Coats, inclosing one another with several Fibres at the Bottom, from the Middle of which rise a few large, shining, green Leaves, rather bigger than those of the Lilly, with a remarkable Rib in the Middle; these continue all Winter, and withering away, there arises in the Spring a thick, round Stalk, a Foot and a Half high, having a long, and large Spike of six-leaved white Flowers, succeeded by large Seed-Vessels. It grows by the Sea Side in all the warmer Countries. The Roots are used. *Miller's Bot. Off.*

3. Scilla; Africana; flore parvo, viridi; bulbo amplissimo, lanuginoso. *H. A.* 2. 187. *Boer. Ind. Alt. Plant.*

The Squill, besides its Acrimony, which it holds in common with *Arum*, has an ungrateful and somewhat nauseous Taste; hence, besides the Virtues it has in common with *Arum*, it excites Vomiting, and provokes to Stool, and is no less effectual than *Arum* in pituitous Affections. While crude it is very acrimonious, and burns the Fauces. For this Reason they do it in Ovens, or the Sun, and prepare it as *Arum*. It is never given in Substance, but affords Matter for the celebrated Preparation of the *Oxymel Scilliticum*, so justly commended for dissolving of Phlegm. *Hist. Plant. ascript. Boerhaave.*

SCILLITICUM ACETUM. Vinegar of Squills. See **ACETUM**.

SCINCUS. *Offic. Schroder.* 5. 346. *Jons. de Quad.* 138. *Aldrov. de Quad. Ovip.* 658. *Beillon. de Aquat.* 47. *Rondelet. de Pisc.* 2. 231. *Scincus seu Crocodilus terrestris* *Raii Synop. A.* 271. *Scincus, quem & Crocodilum terrestrem vocant.* *Gesn. de Quad. Ovip.* 24. *Scincus marinus*, *Mont. Exot.* 6. *Scincus Lacerti Species*, *Ind. Med.* 107. **THE SCINK.**

It is an aquatic Animal, cover'd with ash-colour'd Scales, and mark'd with a sky-colour'd List, which reaches from the Head to the Tail. It is an Alexipharmic, and Provocative to Venery. *Schroder.* For the first of these Qualities, says the famous *Annan*, it is received as an Ingredient in *Mithridate*; and for the other, into the *Electuarium Diasatyrion*, tho' indeed in different Parts; for in the *Diasatyrion*, the Belly and Loins only are used, perhaps for the Sake of an Hypothesis relating to the Situation of the Reins and spermatic Vessels: But *Mithridate* receives only the Belly of the Animal; whence you may infer, says *Hoffman*, that different Parts work different Effects. But since *Dioscorides* commends the Flesh about the Kidneys, *Galen, lib. 1. Simpl.* the Kidneys themselves, and *Pliny, lib. 28. cap. 28.* the Snout and Feet, as Incentives to Venery; these and other Hypotheses relating to the *Scincus* are by *Hoffman* justly rejected. *Dale.*

SCINTILLA VENERIS, in *Paracelsus*, is a Resolution of the Limbs, or Deprivation of Motion from a venereal Cause.

SCIRONA. Autumnal Dew. *Rulandus.*

SCIRPUS. A Name for the *Juncus*; aquaticus; maximus.

SCIRRHONES. Small subcutaneous Lice.

SCIRRHOSIS. A Disorder of the Eye, arising from the Violence of a long continued Inflammation, when the Flesh increases in Bulk, and assumes a somewhat livid Colour.

SCIRRHUS.

A Scirrhus may be produced by whatever is capable of coagulating, inspissating, or drying the Liquids in the Glands; the Seat therefore of a Scirrhus may be any of the Glands, but especially such as contain an easily inspissated Liquor, or from their Situation dispose their Contents to a Stagnation. Hence a Scyrrhus frequently happens in the Eyes, the Nostriis, the Mouth, the Breasts, the Axillæ, the Groin, the Pancreas, the Mesentery, and the Uterus.

A Scirrhus is one of the general Methods in which an Inflammation terminates; when, for Instance, the Inflammation is neither resolv'd, nor yet that Part separated from the sound adjacent Parts, which had been rendered unfit for carrying on the vital Circulation of the Humours according to the Laws of Health, both in the fluid and solid Parts: But as in the Article *Gangrena* that Species of Gangrene is not only considered which arises after violent Inflammations, but also all Gangrenes proceeding from whatever Cause, so in this Article the general History and Cure of a Scirrhus is describ'd.

Galen, when treating of the Difference of Tumors, in *Comment in Aphor.* 34. *Seet* 4. informs us, that hard Tumors without Pain are called *Scirrhus*. This Definition of a Scirrhus he also gives in various other Places, and this seems to have been the general Notion of this Species of Tumor. In some Passages, however, he gives a somewhat different Description of a Scirrhus; for in his *Method Medend. ad Glaucon, lib. 3. cap. 6.* he speaks in the following Manner: "A legitimate Scirrhus is a preternatural Tumour, hard, and without Sensation; but a spurious Scirrhus is not totally depriv'd of Sensation, though it with some Difficulty perceives the Action of Objects upon it; that Species therefore, which is deprived of Sensation, is incurable; whereas that which retains a languid Sensation is not absolutely incurable, though, at the same time, it is not to be removed without great Difficulty". But that *Galen* did not in this Passage use the Word *ἀναισθητός* in the same Sense in which the Word *ἀναισθητός* is generally taken, is obvious from a Passage of his *Method. Medend. lib. 14. cap. 6.* where he speaks thus: "We call a Scirrhus a hard Tumor without Pain, though not absolutely without Sensation; for this latter Species of Tumor is not curable." From all which 'tis obvious, that in all Scirrhuses there is Hardness without Pain, and, according to *Galen*, total Insensibility in those of the worst and incurable Kind.

But *Galen* has described Scirrhuses not only in the glandular, but also in the other Parts of the Body: For when treating of the Cure of a Scirrhus, in the fifth Chap. of the last-quoted Book, he recommends the Virtues of Vinegar as effectual and safe when the fleshy Parts of the Muscles are become scirrhus; but he orders it to be used with greater Caution, if the Ligaments or Tendons are affected with the like Misfortune. And in his *Method. Medend. ad Glaucon, lib. 2. cap. 6.* he informs us, that in a Boy labouring

labouring under an Erysipelas, when his Skin was constricted by Refrigeration, there was a scirrhus Tumor left in his whole Thigh: For it is not to be denied, that preternatural hard Tumors, without Pain, are also found in other Parts of the Body besides the Glands; which, therefore, according to the general Definition of *Galen*, ought to be call'd Scirrhus. But since these Tumors often terminate in a different Method from a Scirrhus, and do not so readily degenerate into a Cancer, I think it would be expedient for the Sake of Distinction to call them scirrhus Tumors.

The Seat of a Scirrhus, properly so call'd, seems to be a Gland, or hollow Follicule, whose Sides consist of all Kinds of small Vessels, and into whose Cavity the opening Mouths of the small Arteries discharge a peculiar Liquor, by the Fabric of the Arteries secreted from the Blood convey'd to the Gland; then the Liquid collected in the Cavity of the Gland is conveyed through its Emunctory, and for various Purposes distributed to different Parts of the Body. There are many simple Glands of this Kind which discharge the Liquid contained in their Cavities either on the Surfaces of the Membranes, or towards the Skin, or the Cavities of the Nostrils, Mouth, Fauces, Aspera Arteria, and Oesophagus. If many of these simple Follicules are conceiv'd united, and their Emunctories terminating in one large common Canal, which conveys the Liquid thus collected for its peculiar Uses, then the Congeries of these Glands contain'd in one common Membrane, and terminating in one common Emunctory, is, by Anatomists, call'd a Compound, or conglomerate Gland. The parotid and other Glands, for Instance, which secrete the Saliva from the Blood, and convey it through one Emunctory into the Cavity of the Mouth, are call'd conglomerate Glands.

Every thing, therefore, which by Coagulation, Inspissation, or Exsiccation, can render the Juice secreted by the Fabric of the Glands, and collected in their Cavities, incapable of passing through their Emunctories, will lay a Foundation for a Scirrhus. The same Effect will, also, be produced by every Cause which by external Compression so straitens the Emunctories of the Glands, that the Discharge of the Liquid secreted into their Cavities is hindered; then the Follicule, or Gland, will be distended by the retain'd Liquid, and only the thinnest Parts will be resorb'd by the Mouths of the Veins which open unto the Glands, or be discharg'd through the straiten'd Emunctories; whilst the grosser Part being retain'd and accumulated, will distend the Follicule of the Gland, and compress the Vessel's running thro' its Membrane; hence will arise a Tumour and Hardness, from an Infarction of the Vessels by Means of the coagulated, inspissated, or dried Fluids. An Absence of Pain will, also, arise from a Compression of the Nerves distributed through the Fabric of the Glands. And in an incurable Scirrhus, as *Galen* calls it, a perfect Insensibility will be produc'd by the same Cause. In other Parts of the Body, also, in which by the arterial Fabric, without the Interposition of such Follicules, the secreted Humours is collected in a certain common Receptacle, the like Misfortunes may happen: Thus, for Instance, in the Testes, the Artery conveying the Blood communicates red Blood to its corresponding Vein, then being divided into numberless Ramifications, which constitutes almost the whole Substance of the Testes, it from its small Mouths discharges into a common Receptacle a peculiar Liquor, by this surprizing Fabric secreted from the Blood. Now, if by any Cause the free Discharge of this Liquid collected in the common Receptacle, is hinder'd, all the same Misfortunes will happen with those already mentioned as incident to the Glands, and the Testis will be distended into a hard Tumor without Pain, that is, will become a Scirrhus. This is evinced by frequent Instances which occur in Practice, and from which 'tis certain, that in this Place, as well as in other Scirrhuses, the Cure is very difficult, and that such Indurations of the Testes are, also, converted into Cancers. The same may also happen in some of the Viscera; for in the Liver the hepatic Bile is secreted from the Blood of the Vena Portæ, and this Bile being receiv'd into the minute Ramifications distributed through the whole Substance of the Liver, is at last poured into one common large Duct, call'd the hepatic Duct, through which it is convey'd to the Intestines. Now if the hepatic Duct is obstructed, or the small Ramifications conveying the Bile, secreted by the Fabric of the Liver into it, by any Cause block'd up, such as a Stagnation, Coagulation, Inspissation, or Exsiccation of the Humours, the whole Liver, or some Part of it, may be distended into a scirrhus Tumor. The Production of this Misfortune is greatly favoured by the slow Motion of the Blood of the Vena Portæ, since being now become venous, it ought again to be forced through the narrow Channels of the converging Ca-

nals, and by the easy Degeneration of the Humour into a State of Toughness, which renders it incapable of circulating. Hence, though according to the Opinion of some Anatomists, there were not in the conglomerate Glands, such as those called the Parotid, and others of a similar Nature, such Follicules collecting the Liquid secreted by the Arteries, and conveying it through their small Emunctories into the common excretory Duct; and though the secretory Ramifications derived from the Arteries, without the Interposition of any Follicules, should convey the secreted Liquid directly into the excretory Duct; yet a Scirrhus would be produced by the same Causes. Thus, for instance, if the Juice thus secreted from the arterial Blood, being coagulated, inspissated, or dried, should obstruct the common excretory Duct, or the small secretory Ramifications which convey this Liquid into this common Receptacle, a Scirrhus will be produced: For the great Difficulty of curing a Scirrhus seated in the Glands, properly so called, principally consists in this, that the Matter being collected in these Follicules, and placed, as it were, without the Bounds and Influence of the Circulation, the Impetus of the arterial Blood, propelled by the Force of the Heart and Vessels, cannot act directly on these Parts. But if the parotid Gland consists of minute Arteries, wrapt up in a Clew, and by their small Emunctories conveying the secreted Liquor into the common excretory Duct, the Impetus of the arterial Fluid will reach the small Mouths of these Arteries, infarcted with an inspissated Fluid, with a Force too small to remove that Obstruction, or by a benign Suppuration to separate these minute Vessels, with their obstructing Humour, from the other Vessels to which they adhere. The Person who duly considers these Circumstances, must be convinced, that scirrhus Tumors are not to be cured without the greatest Difficulty; and the Truth of this is sufficiently evinced from the long-continued Indurations of the Testes, in which, however, the Secretion seems to be made without the Interposition of Follicules.

'Tis therefore probable, that the Cure of a Scirrhus is the more difficult, the more compound the Glands it affects, are; for when these simple Follicules, which in the Surface of the Body collect a pinguous kind of Liquid and evacuate it by their Emunctories, are obstructed, the secreted Humour is accumulated, the Follicule distended, and a Tumor produced; which, according to the various Consistence of the Matter it contains, receives different Denominations, such as *Meliceris*, *Atheroma*, and *Steatoma*, which see under their respective Articles; for such Tumors seems justly to be referr'd to this Class, especially if they contain an hard Matter, as happens in *Steatoma's*, for then they are contained in the general Definition of a Scirrhus. But Surgeons boldly make Incisions in such prominent, inflated Tumors, express their contained Matter, and often happily consume the Cavity of the Follicule by strong Suppuratives, or, sometimes, by Corrosives; for such Tumors rarely degenerate to the Malignity of a Cancer, tho', in external Appearance, they resemble a malignant Scirrhus. Of this I had an Opportunity of seeing a memorable Instance. A Man of sixty Years of Age had, for several Years, been afflicted with an hard Tumor, which was gradually augmented, till it, at last, equal'd the Bulk of an ordinary Fist. It was situated in the inferior left Part of the Face, near the Angle of the inferior Jaw-Bone. Its Basis was broad, but being moveable it could be elevated with the Skin, nor did it adhere to the subjacent Muscles. This Tumor began to be gradually more raised to a Point: The Skin appeared red, or rather almost livid, in the Apex of the Tumor. There first arose an Itching, and then a Pain in the distended Skin; and when his Friends dreaded the worst, because he would apply nothing to it, the Apex or Top broke, spontaneously, and a hard, granulated Matter was discharged. Upon this, the Tumor subsided so far as hardly to leave any Marks of it, and the Patient, for some Years after, enjoyed as good Health as his Age would permit. But in conglomerate Glands, when become scirrhus, this inspissated Liquor is not lodg'd in one Cavity, but is dispersed through several Bags or Vessels. Hence 'tis obvious that the Cure must be far more difficult. Besides, when a conglomerate Gland becomes scirrhus, the Difference of the Vessels, in which the Obstruction of such a Gland happens, is a Circumstance of great Importance; for in every conglomerate Gland there are Vessels which convey to it the arterial Blood, from which, by the Fabric of the Gland, a peculiar Liquid is secreted. In such Glands there are, also, Vessels which secrete this Liquid from the Blood, Vessels which contain it when secreted, and other Vessels which eliminate and carry it off. If the Vessels which convey the Blood to such a Gland are obstructed, the Impetus of the vital Humours seems capable of acting upon these Parts with such a Force, as, by means of a Suppuration, is sufficient to produce a Separation of the obstructed from the other

other Parts; perhaps this happens when, in some Diseases, the parotid Glands so often becoming tumid, fall into a benign Suppuration. But when an Obstruction happens in the secreting Vessels, 'tis sufficiently obvious, that the vital Humours must act upon these Parts with a smaller Impetus; but when this Liquid is concreted and becomes stagnant in the Vessels, containing and collecting the secreted Humour, this Humour, placed without the Limits and Influence of the Circulation, will not yield to the Efficacy of the best Medicines. An Obstruction of the excretory Ducts produces the same Misfortune; unless when their Situation is such, that such Remedies as resolve and attenuate the concreted Humour, may with Success be applied to them; or when there is some Cause lodged about the extreme Orifice of the excretory Duct, which by obstructing or compressing it, hinders the Discharge of the Liquid to be excreted. Thus if the excretory Duct of the parotid Gland is infarcted with any Humour, the whole Fabric of this Gland may be converted into a Scirrhus: But the Situation of this Duct lays a Foundation for hoping, that by Fomentations and Frictions, the beginning Disorder may as yet be surmounted; especially if the obstructing Cause is lodged about the Aperture of this Duct, by which it discharges the secreted Humour into the Mouth, or if any Tumor arising contiguous to this Aperture compresses it. This Doctrine is confirmed by what happens in Diseases of the Genitals; for if by a Gonorrhœa, or any other Cause, a Tumor is produced about that Part of the Urethra where the common Emunctories of the Vesiculæ Seminales, and the Vasa Deferentia open, the Excretion of the Liquid secreted, sometimes in both, but oftener in one of the Testes, is hindered; in which Case, a little after the Vas Deferens and Epididymis, and last of all, the Substance of the Testis, properly so called, begin to swell, I have, in this Case, always observed, that the Epididymis swells first, and often becomes pretty hard, and that the Testis is afterwards distended to a larger Bulk, but remains softer to the Touch than the distended Epididymus. And in this Case the Disorder is generally happily cured, because the Cause is not lodg'd in the Substance of the Testis, but about the End of the excretory Duct: For as soon as the Tumor in the Urethra is diminished, the Epididymus gradually decreases, and by gentle Frictions, is restored to its former Bulk and Softness, whilst the Tumor of the Testis totally disappears. But when the Substance of the Testis is raised into a hard Tumor, without any previous Disorder observable in the Epididymus, the Disease is far more obstinate, since such a Scirrhus is rarely or ever resolved; for in this Case the Disorder is seated in the minute secreting Vessels, or such as contain the secreted Liquid, which are here, with surprising Order, disposed in so many Circumvolutions, that the Impetus of the vital Fluid conveyed through so small a spermatic Artery, must be scarcely any, or at most very small on the obstructed Parts. Scarcely any thing can, in this Case, be expected from external Medicines, since the intricate Substance of the Testis is defended by so many Coverings.

Since, therefore, a Scirrhus arises from a Coagulation, Infissation, or Exsiccation of the glandular Juice, it is obvious, that this Misfortune must happen most frequently in those Parts where, by the Fabric of the Glands, a viscid Humour is secreted, or such a Liquid as though not tough when secreted, yet acquires such a Quality immediately after. The whole internal Part of the Mouth, especially the Fauces, the Oesophagus, the Aspera Arteria, and the Bronchia of the Lungs, have such small mucous Repositories, in which a tough Mucus, for lubricating and defending these Parts, is deposited. 'Tis not, therefore, to be wondered at, if Scirrhuses should be frequently produced in these Parts.

As for the Eyes; 'Tis sufficiently certain from Experience, that the sebaceous Glands, situated in the Edges of the Eyelids, and which prepare the unctuous Matter which anoints the Eyelids, and defends them from mutual Attrition, may, when their Emunctories are obstructed, become tumid, and subject to scirrhous Tumors. The Glandula Innominata is, also, situated here, and obnoxious to the same Misfortune. The Caruncle, also, situated in the larger Angle of the Eye, sometimes becomes scirrhous, and is raised to a great Bulk. *Hildanus, in Observat. Chirurg. Cent. 1. Observ. 2.* informs us, that he happily removed such a scirrhous Tumor, as large as a Chestnut, formed in the larger Canthus of the left Eye; and in three Weeks Time made so complete a Cure, that the Patient's Sight was not injured. The same Author, in *Obs. 1.* gives us an Account of a more terrible Case, in which a hard livid Scirrhus, as large as a Goose's Egg, and beginning to grow cancerous, hung out without the Eyelids, and afterwards became terrible by an excessive Hemorrhage. But *Hildanus* dexterously extirpated this whole Tumor, together with the Eye from its Orbit, and by that means preserved the Patient.

As for the Nostrils; *Ruyfch, in Epist. 9. Tab. 9. Fig. 7.* has demonstrated, and shewn by a Figure, that the mucous Membrane lining the Cavities of the Nostrils, abounds with small glandular Bodies. But since the Liquor secreted in these Glands is easily inspissated, hence Scirrhuses are often formed in these Parts. *Hippocrates, in his Treatise de Morbis, Lib. 2. Cap. 11.* seems to have described Scirrhuses formed in these Parts, when treating of Polypuses; of which he enumerates five Species; concerning the second of which he speaks thus: "The Nose is filled with Flesh, which appears hard to the Touch." This Flesh he orders to be burned by the actual Caustery. The fourth Species of Polypus he thus describes: "Within the Nose, about the Cartilage, something hard is produced by some particular Cause, and seems to be Flesh; but when it is touched, it appears like a Stone." After dividing the Nose with a Knife, he, also, orders this Species of Tumor to be cauterized in the same manner with the former. And in describing the fifth Species of Polypus, he affirms, "That in the superior Part of the Cartilage of the Nose, small Cancers arise in a kind of oblique manner." These he also orders to be cauterized.

As for the Mouth; 'Tis at present sufficiently known, that almost all the internal Parts of the Mouth are furnished with mucous Repositories or Receptacles. The callous Membrane covering the Palate is furnished with them. The Uvula, the pendulous Veil of the Palate, and the Tonsils, which consist of a mucous Membrane, folded up into sinous Wreaths, have an inconceivable Number of such mucous Follicles, which, from their open Mouths, discharge a large Quantity of frothy Mucus. The remotest Part of the Fauces is furnished with a large Number of such mucous Follicles, which resemble small Ulcers so much, that they are often, by the Ignorant, taken for such. 'Tis not, therefore, to be wondered at, that scirrhous Tumors should so often be observed in these Parts. After an ill-cured Inflammation of the Fauces, I have often seen them become scirrhous. *Hildanus, in Observ. Chirurg. Cent. 1. Obs. 19.* observed the Uvula scirrhous, hard, livid, unequal, and so large as almost to fill the whole Cavity of the Mouth, and reach to the Fore-Teeth. The same Author, in *Cent. 1. Obs. 20.* about the Root of the Uvula, saw an hard unequal Tumor as large as an Hen's Egg; by which means the Patient's Respiration was hinder'd, and the Deglutition of Aliments, especially of Drink, render'd highly difficult.

As for the Breasts; Though *Ruyfch, in Epist. Problem 15.* and some other Places, denies that the Breasts are glandular; yet such is their Fabric, and such the Nature of the Milk secreted from the Blood, that scirrhous Tumors are often formed in them, as we are assured from daily Experience: For without the Interposition of any Follicles, the lactiferous Tubes arising from the Arteries, unite with their adjacent Vessels into large Ramifications, and, at last, form the larger Milk-Vessels, which are again contracted, and in small Ducts terminate in the Nipple. But as the Milk collected in the Breasts, and distending the lactiferous Vessels, may again return into the Vessels whence it comes, and as without the Discharge of a single Drop from the Nipple, the most turgid Breast sometimes suddenly becomes empty and subsides, it is obvious, that the lacteal Tubes are a Continuation of the Arteries, without the Intervention of any Follicles. But the Milk naturally disposed to Coagulation, becoming stagnant in the distended lactiferous Vessels, is divided into a Coagulum and Serum. The latter being thin, may easily pass through the Apertures of the Nipple, or return into the Mass of Blood: Whereas, the former deprived of its Serum, remains immoveable in the lactiferous Vessels, where being more dried, it often degenerates into a Scirrhus not to be resolved. And as a Scirrhus formed in the Glands, properly so called, is often obstinate against the best Medicines, because the Impetus and Efficacy of the vital Humours could produce scarcely any Effect upon the coagulated Juice contained in the Cavity of the Gland, so the same will happen in the Breasts; for the larger lactiferous Tubes correspond to the Cavities of the Glands collecting the secreted Liquor. Their narrow Extremities opening into the Nipple, are of a similar Use with the Emunctories of the Glands, which carry off the Humour collected in their Cavities. Hence the Reason is obvious, why Scirrhuses are often formed in the Breasts, tho' they are not, properly speaking, glandular.

As for the Arm-pits and Groin; The Glands situated in these Parts are very fit for receiving what is secreted from the whole Mass of Humours. For which Reason, both in Diseases and sometimes in Health, by a salutary Effort of Nature, some Humours are deposited here, which would have been more hurtful elsewhere. Hence sudden Tumors are often produced in these Glands, and frequently prove very obstinate, whether on account of the virulent Nature of the Matter impacted, or on account of the intricate vascular Compages of these Glands;

by which it happens that the Impetus of the arterial Blood can act with little Efficacy on the obstructed Parts. When an inveterate Scirrhus seizes the Breasts, the subaxillary Glands generally become tumid and indurated. And every one knows, that by means of a venereal Contagion, the Glands of the Groin are often changed into Scirrhuses, not to be cured without the greatest Difficulty.

Nor only in the external Parts of the Body are Scirrhuses found, but also in the internal Parts, where they prove the Causes of the most obstinate chronical Disorders.

As for the Pancreas and Mesentery; 'Tis certain, from many practical Observations, that these Parts have been found scirrhus. Thus, in *Miscel. Curios. Dec. 2. An. 6.* A Country Woman of fifty-one Years of Age, the Mother of a numerous Family, and one who had generally preserved her Health pretty well, yet became sick for about five Years, being afflicted with a Suppression of the Menfes, and a frequent Vomiting, whilst in the mean time a Tumor of the Abdomen was formed, which gradually increasing, filled the whole Right Hypochondrium, might be felt with the Hands, and moved towards the Left-Part of the Body. But after a great deal of Torment she died; and upon laying open her Body, besides other Disorders, all the Glands of her Mesentery were found scirrhus; and the Tumor, which might be felt externally with the Hand, was found to be the Pancreas become tumid and scirrhus. The Mouth of the Pylorus was, also, found scirrhus, and the interior Part of the Stomach was every where full of indurated whitish Glands. *Paré, in Lib. 7. Cap. 21.* informs us, that in a Woman of sixty Years of Age, he saw the whole Pancreas and Mesentery scirrhus, and preternaturally large. And in the same Part he affirms, that in scrophulous Patients, after their Death, he had found the Glands of the Mesentery tumid, of various Bulks, whilst some of them were as large as an ordinary Fist. In some, also, there was a whitish, and in others a purulent Matter. *Lamotte, in his Traité Complet de Chirurgie,* informs us, that in the Carcass of a dropical Woman there were many scirrhus Glands found, ten or twelve of which were as large as an ordinary Fist, and as hard as Wood.

As for the Uterus; *Hippocrates, in his Treatise de Mulierum Morbis, Lib. 2. Cap. 38.* informs us, that the Uterus is subject to scirrhus Tumors. And in this Place alone, so far as I remember, he uses the Word σκίρρυνος. "For, says he, 'if the Uteri are affected with a Scirrhus (ἡ ἀμύρτα σκίρρυνος) the Menfes are obstructed, and the Mouth of the Uterus collapses, and renders them incapable of Conception, and is, as it were, quite different from what it was in a natural State: And if touched, it appears like a Stone.'" In *Paulus Aegineta, Lib. 3. Cap. 68.* a Scirrhus of the Uterus is described. And *Hippocrates, in his Treatise de Natura Mul. Cap. 28.* informs us, that a Cancer is to be dreaded from a Scirrhus of the Uterus. "For, says he, when the Uterus of a Woman becomes hard, it falls down to the Pudenda. If the Groins become hard, and there is a preternatural Heat in the Pudenda, a Cancer is beginning to be formed." 'Tis also certain, from the Observations of the Moderns, that a Scirrhus is frequently found in the Uterus. *Paré, in Lib. 24. C. 41.* in the Carcass of a Woman, who had long been afflicted with an hard and distended Abdomen, found the Uterus as large as the Head of a full-grown Person. And when in the Presence of several Physicians and Surgeons, he took it out and attempted to cut it, he found the whole Substance of it so hard and scirrhus, that it was hardly to be divided by a sharp Knife. The Sides of the Uterus, when cut, exceeded three Fingers-Breadth in Thickness. And in its Cavity was found a thick scirrhus Body, as large as two ordinary Fists, and only in some Parts adhering to the Sides of the Uterus. In this Substance were found Atheromas, Cartilages, and even Bones. In the Middle of the Neck of the Uterus, there was found a similar Scirrhus, larger than an Hen's Egg. This Uterus, with its Contents, exceeded nine Pounds in Weight. *Hildanus, also, in Observat. Chirurg. Cent. 1. Cap. 65, 66, & 67.* furnishes us with Instances which sufficiently evince this.

But tho' Scirrhuses are most frequently found in the Parts of the Body here enumerated, yet they have, also, been found incident to other Viscera. Thus we every where read in practical Authors, that the Liver has been found scirrhus either in whole or in part. *Arctæus de Caus. & Sign. Morb. diuturn. Lib. 1. Cap. 14.* informs us, that a Scirrhus is a Disorder which is not only familiar to, but also lasts a long time in the Spleen. 'Tis also certain from Experience, that scirrhus Tumors have been found in the Stomach and Intestines. In the Abridgment of the *Philosophical Transactions, Vol. 3.* we have an Account of a scirrhus urinary Bladder, whose Membranes were a Quarter of an Inch thick.

Hence a Scirrhus may be produced by an Inflammation; by stagnant, caseous, indurated or coagulated Milk; by a Contusion; by strong Attrition; by Carbuncles; by Bubbles; by Ulcers too speedily closed; by the atrabilious Matter of the Blood or Bile, especially when the Menfes or Hæmorrhoids are obstructed; by a lapidescent, gross, austere, and gypseous Matter; by a melancholy Life; by Hard-living; and by an hereditary Disposition.

As for an Inflammation; 'Tis observed under the Article INFLAMMATIO, that an Inflammation sometimes terminates in a Scirrhus; in which Case the Extremities of the obstructed Vessels, together with the stagnant Fluid with which they are infarcted, are not separated from the adjacent sound Parts; but the morbid Part still remains, and often acquires such a virulent Nature, that it can never after be resolved, but either continues during the whole Life, or must be removed either by the Knife or the Cautery. The ancient Physicians took notice of this Origin of a Scirrhus from an Inflammation. Thus *Arctæus, in his Treatise de Caus. & Sign. Morbor. diuturn. Lib. 1. Cap. 13.* informs us, "That if the Liver is not suppured by an Inflammation, it generally happens, that in Progress of Time the hard Tumor is changed into a Scirrhus." And *Paulus Aegineta, Lib. 3. Cap. 68.* when treating of a Scirrhus of the Uterus, speaks in the following manner: "Sometimes the Uterus becomes suddenly scirrhus, without any evident Cause; tho' this Misfortune generally arises from a preceding Phlegmon, which is neither resolved nor converted into an Abscess." Such scirrhus Remains of an ill-cured Inflammation are found not only in the glandular, but also in other Parts of the Body. This was observed by *Galen, when treating of the Cure of an Erysipelas, in his Meth. Med. Lib. 14. Cap. 3.* For after he had said that an Erysipelas required greater Refrigeration than a Phlegmon, he informs us, "That by the incautious Use of refrigerating Medicines, the Skin becomes livid, or even black, especially in old Persons; so that some of the Parts thus refrigerated, cannot be perfectly cured by Discutients, but leave a certain scirrhus Tumor behind." In inflammatory Disorders a Scirrhus is, perhaps, frequently produced in such Parts as are not glandular, whilst by too frequent Venesections the Strength is so weakened, that the Impetus of the vital Fluid is not able to resolve the obstructing Molecules impacted in the narrowest Parts of the Vessels, nor to separate them by a gentle Suppuration. Hence, perhaps, it is, that after a Pleurisy not only the Pleura, but also that Part of the Lungs adhering to it, are indurated into a Scirrhus; for after the preposterous Cure of violent Inflammations, surprizing Degeneracies have been observed in the membranous Parts. Thus sometimes, and even oftener than is generally believed, the Pericardium is inflamed. And in Subjects who have died of long-protracted Disorders of the Breast, this thin membranous Bag of the Heart has not only been found surprizingly inspissated, but also indurated. Thus in the *Acta Physico-Medica, Vol. 2. Obs. 20.* in the Carcase of a Sailor, who had laboured under a violent Asthma and a Cough, and at last died of a dropical Tumor of the Abdomen, Scrotum, and Legs, the Pericardium, among other Disorders, was found an Inch thick, firmly adhering to the Heart, and of a cartilaginous Hardness; so that it would hardly yield to the Knife. For tho' *Malpighi, in Epist. ad Societat. Londin. de Structura Glandul. Conglobat. and Santorini, in Observat. Anatom.* found the Fabric of the Pericardium, when changed by Diseases, glandular; yet in this Case its membranous Substance seems to have degenerated, since no dilated and indurated Follicules were found; but the Pericardium was become cartilaginous.

A Scirrhus may be produced by stagnant Milk. A Scirrhus frequently arises from this Cause in the Breasts of Nurses; who, dreading a Suppuration, expose their inflamed Breasts to the Heat of the Fire, or foment them with Spirit of Wine: By this Means the Tumor is often lessened, since the thinnest Part of the Milk, stagnant in the lactiferous Ducts, is either dissipated, or discharged from the Nipples; but the remainder is, by that means, rendered thicker, and often forms a Scirrhus not to be resolved by any Art.

A Scirrhus may, also, be produced by a Contusion: As 'tis certain, from Anatomy, that the Glands consist of numberless Arteries, by the various Disposition of which a thin Liquid is separated from the arterial Blood, which, when collected, is discharged from their Emunctories, 'tis obvious, that when these Parts are injured by a Contusion, these Vessels may, by that means, be destroyed, or the Emunctories of the Glands so compress'd or obstructed, that a free Discharge of the Liquid, secreted by the arterial Fabric of the Glands, is hindered. Hence by Stagnation, and an Exhalation or Resorption

sorption of the more liquid Parts into the minute Veins, there arises an Infiltration of the secreted Liquid, and a Tumor is form'd which is hard, scarcely capable of a Resolution, without Pain, and known by the Name of Scirrhus. But if an inveterate, hard, and rough Tumor of this Kind is accompanied with Pain, it is called a Cancer.

A Scirrhus may, also, be produced by violent Attrition. By this Means an Inflammation, and all its Consequences, may be produced. Thus in common Prostitutes, scirrhus Condylomas are frequently produced in the Vagina, by too frequent and violent Attrition. Those addicted to unnatural Lust, are, also, afflicted with scirrhus Tumors; whilst, as *Juvenal* happily expresses it:

— — — *Podice levi*

Caduntur tumida, medico ridente, Marisca.

A Scirrhus may also be produced by a Carbuncle. This happens when, by a sudden and violent Inflammation, the Skin together with the subjacent Parts of the Tunica Adiposa, is converted into a dry and hard Eschar; the Cure of which consists in having its whole Circumference, by means of a Suppuration, so separated from the live Parts, that it may fall off. But if this cannot be obtained, after allaying the Inflammation of the adjacent Parts, such a scirrhus Tumor will remain, especially if it is lodged in the glandular Parts.

A Scirrhus may, also, be produced by a Bubo. Tho' Tumors of the Glands, in various Parts of the Body, are sometimes called Bubos, yet this Name is in a peculiar manner appropriated to Swellings of the inguinal Glands: Such Tumors are most frequently produced by a venereal Contagion, remain long, and prove obstinate against the best Remedies.

A Scirrhus may, also, be produced, by closing an Ulcer too soon. 'Tis frequently observed, that when a Phlegmon is converted into an Abscess, the middle Part is entirely soft and matured, though the whole Circumference of the Tumor is as yet hard, as is observed under the Article SUPPURATIO. Hence such an Abscess is not to be soon opened; but it sometimes happens that in the Top of the Abscess, the Integuments being rendered tense, and macerated by Cataplasms, are spontaneously ruptured, and afford a Discharge for the contained Pus, whilst the rest of the Matter remains crude and hard; unless such an Ulcer remains open, and is treated with such Medicines as excite a Suppuration, there often remains a scirrhus Hardness for a considerable Time; which, however, is generally gradually dissipated in such Parts as are not glandular. But when, after an ill-cured Suppuration, such a Hardness remains in the Breast, it often leaves a Scirrhus which cannot be resolved. But never is a Scirrhus more frequently produced by this Cause, than in venereal Buboes; when, for Instance, being suppurated, they are opened before a perfect Maturation; or when, after they are opened, the Surgeon, weary of the long-protracted Cure, attempts their Consolidation by desiccative Medicines; for in this Case something of a scirrhus Nature is always left.

A Scirrhus may also be produced by the atrabiliarious Matter of the Blood, or of the Bile. When the Blood is deprived of its most fluid Part, whether by violent Motion of the Body, or protracted Exercise of the Mind, then the remaining Part is blacker than usual, becomes incapable of Circulation, in Consequence of its Pitch-like Tenacity arising from an Union of the thick Oil of the Blood with its terrestrial Parts, and with greater Difficulty passes through the narrowest Parts of the Vessels. Hence this Matter, which is called Black Bile, is very fit for producing Obstructions; but when the Bile properly so called becomes stagnant in the Gall-Bladder, it may acquire a surprising Tenacity, and often degenerates into calculous Concretions. Such a sordid and tenaceous Matter, produced by a Stagnation and Infiltration of the Bile, is, also, called black Bile; but it is far more acrid, and more easily becomes putrid, than the former Species produced from the Crassamentum of the Blood. This latter Species may disturb the whole Laboratory of the Bile, obstruct the Parts in which it is contained, and afterwards becoming putrid, produce the most terrible Disorders: But the former Species seems principally calculated for producing scirrhus Tumors; since the Blood, contaminated by such a Lentor, easily becomes stagnant in the intricate Structure of the Glands. Practical Observations evince, that scirrhus Tumors are most frequently found in such Persons as, in Consequence of a peculiar Idiosyncrasy, incline to an atrabiliarious Temperament, the Signs of which are enumerated under the Article TEMPERAMENTUM. The ancient Physicians almost always accused the black Bile, as the Cause of a Scirrhus and Cancer; and Galen, in *Method. Medend. ad Glaucon. Lib. 2. Cap. 12.* affirms, that the only Cause of a Cancer is when the black Bile collected in the Body is neither evacuated by the Hemorrhoids nor Varices, nor propelled to the Skin, but conveyed to other Parts of the

Body. In this Opinion he was confirmed by observing, that in the Parts thus affected, the Veins appeared full of a thick and black Blood: Why this should happen, is shown under the Article CARCINOMA. The great Similitude between a Scirrhus and black Bile sufficiently evinces, that the former often arises from the latter; for the tenacious and pitch-like Humour, called Black-Bile, generally fills and obstructs the Vessels of the abdominal Viscera, and produces Diseases principally of a chronical Nature. When this stagnant black Bile, by any Cause, began to be colleagu'd and corrupted, it was, by the antient Physicians, called the turgescens, or moved black Bile; and when it acquires such a State, it rages with incredible Fury, and excites, in the coldest Constitutions, the most acute Fevers, which soon prove Mortal. It, also, brings on the worst of Dysenteries, Corrosions of the Viscera, Deliquiums, and, frequently, sudden Death. A Scirrhus may be long lodged in some Parts of the Body, without proving uneasy to the Patient, unless it happen strongly to compress the adjacent Vessels: But if the Matter of an inveterate Scirrhus begins to be moved, either spontaneously, or by imprudent Treatment, it soon degenerates into a terrible Cancer.

Scirrhus Tumors are most generally formed in Women, when their Menses cease. The most considerable Changes happen in the Bodies of Women, when their Menses first begin to appear, and when they cease in Women after the Season of Conception. The Observations of almost all Physicians evince, that about those Times, scirrhus Tumors are produced in the Uterus and Ovaria, by an Infarction of the Vessels; but there is so great a Consent between the Breasts and Uterus, that as soon as the Excretion of the uterine Blood is obstructed, the Breasts begin to swell, as appears in pregnant Women, as also in Child-bed Women, when, after the Cessation, or considerable Diminution of the Lochia, the Breasts become turgid with Milk: 'Tis, therefore, not to be wondered at, if, upon the Cessation of the Menses, the Breasts should be affected, their Vessels distended, and scirrhus Tumors formed. 'Tis, also, frequently observable, that scirrhus Tumors, produced by other Causes, are about this Time increased in Bulk, and often changed into Cancers. *Hippocrates*, in his *Treatise de Morb. Mulier. Lib. 2. Cap. 20.* informs us that "the Menses retained in the Uterus, regurgitate to the Breasts;" and after enumerating many Symptoms, by which Women were deceived into a Belief of their Pregnancy, he subjoins, "in their Breasts arise hard Tubercles, some of which are large, and some small. These never come to a Suppuration, but become gradually harder, till at last they terminate in occult Cancers." *Dionis*, in his *Cours d'Operations de Chirurgie demonstr. 9.* concludes, from his own Observation, that among twenty Women afflicted with Cancers, fifteen are seized with this Misfortune between the forty-fifth and fiftieth Years of their Age; and he adds, that in a Journey through the Provinces of France, he saw many in the Hospitals, of almost every Town, afflicted with Cancers, but that the Patients were generally about the Age now mentioned; or if the Disorder happened to such as were younger, the menstrual Discharge was defective in them. *Hollerius*, in *Comment. 2. in Lib. 3. Coac. Hippocrat. No. 40.* informs us, that by the Retention, or scanty Discharge of the Menses, glandulous Tumors are, also, formed in other Parts of the Body; for, in one Year, he saw more than two hundred Girls, who, about the middle of the Spring, had Tumors formed on the Groin, in Consequence of a too scanty menstrual Discharge. And in the Case mentioned above, a Woman about the forty-sixth Year of her Age, before found, having her Menses suddenly suppressed, began to be sick; and when she died, upon opening her Body, the Mesentery, Pancreas, Stomach and Pylorus were found scirrhus; from all which it is sufficiently obvious, how much a Cessation of the Menses contributes to the Production of a Scirrhus, or to the Increase of it after it is already formed.

Scirrhus Tumors are, also, very readily formed, upon a Suppression of the hemorrhoidal Discharge. As the black Bile is frequently conveyed to the abdominal Viscera, and there produces many surprising Misfortunes, nothing seems more commodious than that the tenacious, and often pitch-like Blood should be evacuated by the hemorrhoidal Veins; and this is frequently observed in Persons of a melancholic Habit. Hence *Hippocrates*, in *Aphor. 12. of Sect. 6.* commends the Hemorrhoids as beneficial to melancholic Patients. When, therefore, the atrabiliarious Matter is retained, in Consequence of the Suppression of an usual hemorrhoidal Discharge, it may lay a Foundation for the most obstinate Obstructions in the glandular Parts, as we have already observed.

A Scirrhus may, also, be produced by a lapidescent, gross, austere or gypseous Matter. Unless it were certain, from numberless Experiments, it could hardly be believed that there is, even in the most fine and limpid Humours of the human Body, a certain Matter of which a pretty hard Stone may be formed.

form'd. Thus, limpid Urine separated from the Blood through the minute renal Ducts, often lays a Foundation for calculous Concretions, not only when it becomes stagnant in the Pelvis, Ureters and Bladder, but also in the Kidneys themselves, which have sometimes been found entirely calculous. I have seen, says *Vanswieten*, many renal Stones discharg'd, which had Stalks, by which they seem to have been inserted in the renal Ducts, whilst the rest of their Surface was globular. I also saw, says the same celebrated Author, a small Stone extracted from the sublingual Gland. In the Cavity of the Abdomen, which is only moist with a fine exhaling Dew, small Stones have, also, been found. Calculous Concretions of this Kind have, in like Manner, been found in the Substance of the Brain, and almost in all the Parts of the Body. If, therefore, simular Concretions are form'd about glandular Parts, highly obstinate scirrhus Tumors will be produced. The Stones formed in the human Body are of various Degrees of Hardness; for sometimes they are excessively hard, as is principally observable in the Stones of the Bladder; at other Times they are far more soft and friable, as is principally observable in those form'd in the Gall-Bladder: And, says Doctor *Vanswieten*, I have seen white friable Stones, almost resembling Plaster, thrown up from the Lungs in Coughing. And we are by *Paré* informed, that the Glands of the Mesentery were found scirrhus and turgid with a gypseous Matter.

A Scirrhus may also be produced by a sorrowful Life: In melancholic Disorders, this surprizing Circumstance is observ'd, that black Bile predominating in the Blood, and especially lodging about the Abdominal Viscera, produces such a strange Uneasiness, and so insupportable Sadness, that the miserable Patients are often prompted to lay violent Hands upon themselves. It is, also, observable, that violent Passions produce a simular Matter in the Blood, and fix it in the Vessels of the Abdominal Viscera. Since, therefore, Sadness may produce atrabiliarious Matter, it is obvious, that it may, by that Means, lay a Foundation for a Scirrhus.

A Scirrhus may, also, be produced by coarse Diet: Among other Causes, Melancholy may be produced by austere, hard, terrestrial and dry Aliments, long used, especially if the Patient enjoys too much Rest and Ease. Hence studious Men are so often afflicted with Obstructions of the Abdominal Viscera, because they frequently use Flesh and Fish indurated by Salt, or in the Smoke or Air, Pease and Beans; whilst, in the mean Time, they employ their Minds intensely, without giving any Manner of Exercise to the Body; such Persons generally find to their great Injury, that these coarse and heavy Aliments are to be forsaken by them, and that the softest Pot-Herbs, such as Lettice, Endive, and Succory, together with the tender Fleashes of young Animals, agree far better with the Health of the Learned. When the Children of poor Persons eat farinaceous Substances, crude and unfermented, their Abdomens are rais'd into a Tumor, because their tender Viscera are infarcted with an insuperable Lentor. The like Misfortunes are produced in the Children of Country People, by greedily devouring austere and unripe Fruits.

A Scirrhus may, also, be produced by an hereditary Taint: That a Phthisis, Epilepsy, and Gout are transferr'd from Parents to Children, is certain from daily, but fatal Experience. The same, perhaps, holds true with respect to several other Disorders: And such hereditary Diseases, if not incurable, are yet by all Physicians reckoned very hard to be cured. The celebrated *Boerhaave* us'd on this Occasion to tell his Audience, that he knew a certain Family, all the Children of which, at a certain Period, became icteric, and at last died dropical, since their Disorder would yield to no Medicines; that the Cause of such a Misfortune might be discovered, and afterwards prevented, their Carcasses were cheerfully submitted to the Examination of Physicians, who, upon opening them, found the Liver scirrhus.

The Effects of a Scirrhus form'd are, by its increas'd Bulk to affect the adjacent Parts, to press upon them and compress them, to injure the peculiar Functions of the scirrhus and adjacent Parts, and by these Means to produce Inflammations, Suppurations, Gangrenes, Palsies, Atrophies, a Sphacelus, Sterility, difficult Labours, the Iliac Passion, and many other Disorders of the like Nature, which may be easily deduced from the Nature and Office of the injur'd and compressing Part.

The scirrhus Part is increas'd in Bulk, by which Means it must necessarily happen, that the Vessels of the adjacent Parts must be rendered narrower, and sometimes totally compressed. For this Reason, under the Article OBSTRUCTION, scirrhus Tumors are enumerated among the Causes which by

an external Compression of the Vessels lessen their Diameters. The Effects, therefore, of a Scirrhus may be numberless, and quite different, according to the Variety of the Parts affected, and the Functions of the Parts compressed by the increasing Scirrhus. Thus a Scirrhus form'd in the Breast of a sound Woman by an external Cause, often continues till the Patient is far advanced in Years, without creating her any Pain. But when a Scirrhus seizes the Oesophagus, or the adjacent Parts, which by becoming tumid can lessen and compress its Cavity, Deglutition is entirely obstructed, and after the Patient is tantalized, often for several Months, inevitable Death ensues. 'Tis, therefore, here sufficient to specify the general Sources from which the Effects of a Scirrhus may be deduced. But the Knowledge of the particular Disorders produced by a Scirrhus depends upon the Functions of the Parts affected; the most considerable, however, of these Disorders are here enumerated; such as

Inflammations, Suppurations, Gangrenes, and a Sphacelus: Under the Article INFLAMMATIO, where the Causes of an Inflammation are consider'd, 'tis observ'd, that all the Causes of Obstructions may produce an Inflammation: But, as has been just now observed, a Scirrhus is one of these Causes of Obstruction, which, by an external Compression, lessens the Cavities of the Vessels: But an Inflammation form'd may be succeeded by all its Effects, and consequently by a Suppuration, Gangrene, and a Sphacelus. 'Tis, however, to be observ'd, that a Suppuration never happens in a legitimate and confirm'd Scirrhus; but only in the adjacent Parts compressed by the tumid Scirrhus. Besides, under the Article GANGRENA, when the Causes of an Inflammation are consider'd, 'tis obvious, from the Observations of *Hildanus*, that a Gangrene was form'd in both Legs, in consequence of a scirrhus Tumor compressing the *Vena Cava* in that Part where it is divided into the two Iliacs; and this Gangrene was succeeded by a Sphacelus, which ascended to the Knees, and prov'd mortal to the Patient.

A Scirrhus may also produce Palsies: In order to the voluntary Motion of the Muscles, 'tis requisite there should be a free Communication through the Nerves, between the Brain and the Muscles. If, therefore, a Scirrhus should all along compress a Nerve distributed from the Brain to any Muscle, such a Muscle will be paralytic. Now, if a large, nervous Trunk, distributed to any Member of the Body, should be compressed by such a Cause, a perfect Palsy of that Member will be produced. When the subaxillary Glands becoming scirrhus and tumid, strongly compress the adjacent nervous Trunks, 'tis sufficiently obvious that a Palsy may be produced by this Means. Thus, says Doctor *Vanswieten*, in a Woman of sixty Years of Age, I saw the whole right Breast scirrhus; after which the Glands under the right Arm-pit became tumid and hard, and this Circumstance was succeeded, first, by an intense Pain, and then by a Stupor and beginning Palsy in the whole Arm. The Glands, in the mean time, in the right Side of the Neck, were highly tumid and hard; whilst the Patient was subject to frequent Diliquiums, perhaps from a Compression of the *Par Vagus*, and the intercostal Pair of Nerves.

A Scirrhus may, also, produce an Atrophy: 'Tis observ'd under the Article *Vulnus*, that if a large Artery is so divided, that no more Blood can be convey'd to the Parts farther from the Heart than that Division, then all such Parts as received the vital Blood from this large Trunk become mortified, because they are entirely deprived of the Influx of the vital Fluid. 'Tis under the same Article, also, observ'd, that this may happen in two Manners; for the Fluids no longer propell'd by the Motion of the arterial Blood, either become stagnant and corrupted, by which Means a slow and putrid Gangrene is produc'd: Or, the Humours left in the Parts farther from the Heart than such a Division, by the proper Contraction of the Vessels, pass into the Veins, which by the Assistance of the adjacent turgid Muscles return the Humours they receive to the Heart: Thus the Vessels totally deprived of their Fluids will collapse, their collaps'd Sides will grow together, and the Bulk of the Part will be daily lessen'd, till at last becoming dry, it almost resembles Mummy; as is shewn by a surprizing Instance under the Article *Vulnus*. 'Tis sufficiently obvious, that the same Misfortunes must be produced, if a Scirrhus so compresses the Artery distributed to any Part of the Body, as totally to obstruct the Circulation of the Blood in it.

A Scirrhus may, also, produce Sterility: 'Tis not to be doubted but Sterility may be produced, in either Sex, if the Organs of Generation are so indurated into a scirrhus Tumor, as either to abolish or lessen their peculiar Functions. Thus, 'tis certain, from many Observations, that the Testes in Men may become scirrhus. But since in Women there are still more Conditions absolutely necessary,

not only for the Reception of the Rudiments of the Fœtus, but also for its Retention, Support, and Nourishment, to perfect Maturity in the Uterus, 'tis sufficiently obvious, that the Causes of Sterility are far more frequent in Women than in Men. 'Tis certain from Experience, that scirrhus Tumors, either in the genital Parts or those adjacent; and by their Bulk compressing all the contiguous Vessels, frequently prove the Causes of Sterility. Hippocrates, in his Treatise de Natura Muliebri, cap. 19. observes, that in fat Women the thick Omentum so compresses the Uterus, that they are incapable of Conception. In the same Part he informs us, that if the Mouth or Neck of the Womb is scirrhus, which may be discovered by introducing the Fingers, the Woman will be barren, unless that Disorder is cured. By laying open Carcasses, it has often appeared, that scirrhus Tumors of the Uterus have been the Causes of Sterility. Hildanus in Observat. Chirurg. Centur. 1. Obs. 65. informs us, that upon the Death of a Woman of sixty Years of Age, who had been twice married, but remained barren, he laid open her Body, in order to discover the Cause of her Sterility, upon which he saw a Scirrhus, which like a Ring encompass'd the Neck of the Matrix, and so clos'd up its Aperture, that the Point of a Probe could hardly be introduc'd into it. In the same Century, Obs. 66. he informs us, that in another Woman, who in her first Labour being seized with an Inflammation of the Uterus, afterwards remained barren, he, after her Death, found a Scirrhus as large as a Goose's Egg, so situated before the Mouth of the Uterus, as intirely to block up the Passage to it; and so strongly adhering, that it was impossible to separate it. I saw, says Vanfweiten, the whole Vagina scirrhus, and so tumid, that it would hardly admit a Probe. 'Tis, also, observable, that in such Women as have lived barren, a cancerous Disposition of the Uterus is produced, about the Time that the Menfes generally cease; and this Disorder sufficiently manifests its Malignity by the excessive Pains, the acrid Sauces discharg'd, and the profuse Hemorrhage subsequent to the varicose State of the Vessels, which are at last corroded; from all which it is obvious, that a Scirrhus is justly reckon'd among the Causes of Sterility.

A Scirrhus may also produce difficult Labours: That the Fœtus, when arriv'd at a State of Maturity, may be discharg'd from the Uterus, 'tis requisite that its Orifice and Vagina should be capable of a free Expansion: If, therefore, these Parts are indurated by a scirrhus Tumor, or if such Tumors in the adjacent Parts should compress these Parts, 'tis sufficiently obvious, that the Birth must, by this Means, be render'd difficult, and sometimes absolutely impossible. 'Tis true, that a Scirrhus is rarely so soon enlarged to so great a Bulk, as, if it did not exist before the Conception but is form'd during Pregnancy, to do a great deal of Injury when the Fœtus is to be excluded. But a Scirrhus form'd in the Uterus or Vagina, must, in all Probability, lay a Foundation for Sterility; for which Reason it is enumerated among the Causes of that Misfortune. 'Tis, however, certain, that some Women have become pregnant, tho' the Aperture by which the Semen was convey'd into the Uterus was very small. Hence absolute Sterility is not always produc'd, tho' there is a large Scirrhus in these Parts, tho' in such Cases the Labour will always be difficult. In practical Authors there are many Observations which confirm this Doctrine. Thus, says Vanfweiten, I knew a Woman of thirty-eight Years of Age, who died during Labour of her first Child, neither could the Fœtus be brought into the World. In the Hist. de l'Acad. des Sciences, for the Year 1705, the celebrated Mr. Littré informs us, that in the Carcass of a certain Woman he found the Neck of the Uterus clos'd up by a glandular Substance, which adher'd to the Uterus, and was here and there perforated with small Holes. In the Medical Essays, Tom. 3. we have an Account of a Woman of forty Years of Age, who in her first Labour could only have the Fœtus extracted dead, on account of the excessive Narrowness of the Pelvis: Three Months after Marriage becoming pregnant, she was about the Time of the Delivery, for two Days, rack'd with intense Pains, without any Dilatation of the Mouth of the Uterus. As the Surgeon had not a Speculum Uteri at hand, he separated the Sides of the Vagina with a coarse Instrument, upon which the Cicatrice of the Orifice of the Uterus, which was grown together, appeared; and when with a Knife the Surgeon was laying open the Mouth of the Uterus, he found a cartilaginous Hardness all round it, and was forced to make many small Incisions in it, before he could procure a sufficient Dilatation: A dead Fœtus was extracted by the Surgeon's Hand, upon which the Patient was immediately seiz'd with an acute Fever, a pleuritic Pain, and an obstructed Respiration, which in twenty-four Hours proved mortal. Hildanus in Observat.

Chirurg. Cent. 1. Obs. 67. informs us, that in the Carcass of a Woman who died, after suffering her Pains of Labour six Days in vain, he found the Uterus torn, and the Head of the Infant sticking in the Cavity of the Abdomen. The Cause of this Misfortune was a Scirrhus, almost as large as the Head of the Fœtus, and which by its Bulk hinder'd the Exclusion of the Infant.

A Scirrhus may, also, produce the Iliac Passion: Whatever Cause is capable of so contracting any Part of the intestinal Canal, that its Contents, which by the peristaltic Motion ought to be propell'd to the Anus, cannot pass, may produce this terrible Disorder. Hence, the peristaltic Motion being inverted, the Contents of the Intestines return to the Stomach, and after great Uneasiness, are vomited up in a most unseemly Manner. When an Inflammation accompanies this Disorder, it often proves mortal: But when it has no concomitant Inflammation, the Patient may, for a long Time, be afflicted with it. It has been frequently observ'd, that scirrhus Tumors compressing or totally obstructing the Intestines, have laid a Foundation for the Iliac Passion. Hildanus, in Observat. Chirurg. Cent. 1. Obs. 69, informs us, that in the Carcass of a Man who for some Years labour'd under a fixed and continual Pain, under the Region of his Liver, and at last died of a violent Iliac Passion, he found an exulcerated Scirrhus in the Bottom of the Intestinum Cæcum. The celebrated Boerhaave saw a remarkable Case which confirms this Doctrine. A lively Boy, the Son of a Family of Distinction, happening to over-heat himself by skating, went into the Sledge in which his Father was, where he remained for about an Hour, exposed to a pretty intense Cold: Soon after he perceived a Pain in his Abdomen, and was continually in a languishing Condition. A few Weeks after this he began to be costive, till at last the Discharge of his Fœces was almost entirely suppress'd: His Appetite remained pretty good, though every three Days, after great Uneasiness, he vomited up all the Aliments he had used during that Time. After using various Medicines to no Purpose, the Boy died, and the Body was inspected by the Physicians employed whilst he was alive, and who were of different Opinions with respect to the Disease. Boerhaave prognosticated that his Misfortune proceeded from a latent Scirrhus, and for that Reason only prescribed gently resolvent Medicines, and such Aliments as could generate but a small Quantity of Fœces. Other Physicians concluded, that the pituitous Sordes lodged in the Intestines, and obstructing them; was to be eliminated by Vomit; and persuaded the Boys Parents to have him treated in this Manner. But all the Symptoms were increas'd by these Means. Upon opening the Carcass, there was found a Scirrhus compressing the Intestinum Ileum, in that Part where its Extremity is inserted in the Intestinum Colon. Before the obstructed Part, the small Intestines appeared enormously dilated; but behind it, so contracted, that they hardly surpassed the Bulk of the Vermiform Process.

Besides the Disorders now enumerated, many more may arise from Scirrhuses form'd in other Parts of the Body. Thus we read in practical Authors, that fix'd chronic Pains are produced by scirrhus Tumors of the Stomach and Pancreas, tending to the Malignity of a Cancer. A Scirrhus of the Liver often produces an incurable Jaundice, and afterwards a mortal Dropsy. From what has been said, 'tis sufficiently obvious, that many obstinate chronic Disorders arise from scirrhus Tumors form'd in the internal Parts of the Body. We now come to consider the diagnostic and prognostic Signs of a Scirrhus.

A Scirrhus is known to be present from a Knowledge of its Causes, Effects, and Symptoms, together with an Acquaintance with the Part affected, and the Temperament of the Patient.

A Scirrhus formed in the external Parts of the Body is easily discover'd, but with more difficulty known when concealed in the internal Parts. But obscure Cases of this Nature are illustrated by a Consideration of the following Circumstances.

As for the Cause of a Scirrhus: If the Cause predisposing to the Generation of a Scirrhus is an atrabiliarious Spissitude of the Humours, arising from a long protracted Use of austere, terrestrial and coarse Aliments, without violent Exercise; or from a long-continued Influence of Passions, especially Grief; and if, at the same Time, the efficient Cause is a Contusion; if an Inflammation is neither resolv'd nor changed into a Suppuration; if the usual Discharge of the Menfes or Hemorrhoids is suppress'd; or if the Taint is hereditary, we may from such preceding Causes justly dread a Scirrhus.

As for the Effects of a Scirrhus: A Scirrhus always injures not only the Functions of the Part affected, but also frequently

frequently the Action of the adjacent Parts, which it compresses by its Bulk. Hence, if the Causes fit for producing a Scirrhus have preceded, if the Signs of the injured Functions evince that the Uses of certain Parts, which they enjoy'd in a sound State, are disturb'd, or totally abolish'd, and if the Disorder long continues in the same State without any considerable Increase, the diagnostic Signs of a present Scirrhus are by these Means strengthened. Thus, for Instance, if after an acute Disorder of the Breast, which is neither cured by a gentle Resolution, nor a benign Suppuration, a Difficulty of Breathing and a dry Cough remain; and if these Symptoms are increased after the least Exercise, or a liberal Use of Aliments, we may justly conclude that a Scirrhus is form'd in the Lungs; which by its Bulk straitening the Air Vessels of the Lungs, renders Respiration difficult; and by compressing the Blood-Vessels, hinders the Blood expell'd from the right Ventricle of the Heart from being freely convey'd through all the narrow Parts of the pulmonary Artery. Hence the Motion of the Blood being increas'd by Exercise, or a large Quantity of crude Chyle being mixed with the venous Blood in the right Ventricle of the Heart, the Lungs begin to be compress'd, and the Resistance made to the Action of the right Ventricle of the Heart is increas'd, and this increas'd Resistance cannot be surmounted by all the Efforts made by such a Patient for augmenting his Respiration. A latent Vomica of the Lungs compressing the adjacent Parts, will produce the same Symptoms; but the Uneasiness will be augmented in Proportion to the Increase of the Pus, till the Patient is either suffocated, or freed from his Disorder by a Rupture of the Abscess. A gentle hectic Fever, the almost perpetual Concomitant of a Scirrhus of the Lungs, will sufficiently discover such a latent Disorder. In a Scirrhus, also, of the Lungs, all Circumstances for a long Time remain in the same Condition; and the Symptoms often continue for several Years, without any Increase.

As for the Symptoms of a Scirrhus: When this Disorder affects the external Parts, it is known by a Tumor, Hardness, and Absence of Pain: But when it seizes the internal Parts, these Phenomena cannot be discovered by the Senses; in which Case the Effects of a Scirrhus are only capable of guiding the Physician's Judgment, and directing his Practice.

As for the Part affected: 'Tis already observ'd, that scirrhus Tumors are principally form'd about glandular Parts, especially if the Fluid secreted by the Fabric of the Glands is naturally easily inspissated, such as the Milk in the Breasts, for Instance. Hence scirrhus Tumors are by slight Causes produced in these Parts.

As for the Constitution of the Patient: An atrabiliary Habit, as is already observ'd, most powerfully contributes to the Production of a Scirrhus; and the Signs of such an Habit are enumerated under the Article TEMPERAMENTUM.

From the Circumstances enumerated above, the Termination of a Scirrhus may be prognosticated, considering at the same Time the Duration and Effects of the Disorder: And a Scirrhus, which is of its own Nature benign, by an increas'd Circulation of the Humours acquires a malignant Quality.

In prognosticating, we not only determine the easy or difficult Cure of a Scirrhus known from its diagnostic Signs, but also foresee the Misfortunes which will be produced by the Injury done to the Functions of the scirrhus Parts, or of the adjacent Parts compress'd by the Bulk of the Scirrhus. The Prognostic, therefore, of a Scirrhus, is to be deduced from the same Circumstances on which its diagnostic Signs are founded. Thus, for Instance, a Scirrhus arising from an atrabiliary Spissitude of the Humours, is with far greater Difficulty cured, than a Misfortune of the like Kind remaining after an Inflammation. For greater Misfortunes are to be dreaded, when a Scirrhus adjacent to large Vessels compresses them, than when a Scirrhus seizes the Breast, in which Case it hardly creates any Uneasiness to the Patient, unless it degenerates into a Cancer. But in forming the Prognostic of a Scirrhus, the Physician is principally to attend to the Duration and various Effects of the Disorder; for, as we shall afterwards shew, there are generally great Hopes, that a recent Scirrhus may be cur'd; whereas, when it is of several Years standing, it is incurable, except there is a Possibility of extirpating it. The Effects of a Scirrhus are various, according to the Diversity either of the Parts immediately affected, or of those compressed by its Bulk.

As a scirrhus Tumor is without Pain, it is not naturally productive of great Misfortunes, except when situated in those

Places where, by compressing the adjacent Parts, it disturbs some considerable Functions of the Body. Thus, says Doctor *Vanswieten*, I have known a scirrhus Tumor lodg'd for twenty Years and more in the Breast, without producing any Inconvenience. And 'tis certain, from the Observations of practical Authors, that Tumors of this Kind have been conceal'd in the internal Parts of the Body, without any great Detriment to Health. Thus, in the *Hist. de l'Academ. des Sciences* for the Year 1700, Mr. *Litre* informs us, that in a Man of sixty Years of Age, killed by a Fall from an Height, he found the whole Spleen putrified, though the Man had never complain'd of any Disorder, but always lived in an apparently sound and healthy State. But the Bulk of this Spleen must have been very small, since it only weigh'd an Ounce and an Half, and consequently could not by its large Size greatly press upon the adjacent Parts. *Hippocrates*, in his Treatise *de Affectionibus*, cap. 5. when treating of splenic Persons, speaks in the following Manner: "In process of Time, a splenic Disorder degenerates in some Patients into a Dropsy, and they waste away. In some others, the Spleen comes to a Suppuration, and the Patients, when cauteriz'd, are cur'd; whilst in others the Spleen becomes hard, and large, in which Case the Misfortune lasts till the Patient becomes old: But Disorders of this Kind are produced, when in consequence of Fevers, or the preposterous Cure of any other Disease, Bile, or Phlegm, or both, are deposited on the Spleen; and though Misfortunes of this Kind are long protracted, yet they are not mortal". If, however, the Nature of a Scirrhus is consider'd, it will be sufficiently obvious, that numerous Disorders may arise from it, provided, by any Cause whatever, the Motion of the Humours through the Vessels is augmented: For in the Scirrhus there remains a Liquid, coagulated or inspissated, either collected in the Follicles, or dispersed through the highly intricate Fabric of the vascular Parts. This Liquid may, therefore, be conceived as a dead and unactive Body lodg'd in these Parts: But the Vessels fill'd with this stagnant Liquid, or the Follicles, defended by its Means, in their Membranes, contain Vital Vessels, which being straiten'd by the Compression of the scirrhus Concretion, the Circulation of the Humours becomes more difficult, tho' it may as yet be carried on where the Motion of the vital Fluids is moderate. But if by a Fever, for Instance, the Velocity of the Circulation is increas'd, these vital Vessels, every where compress'd by the scirrhus Concretion, cannot be so dilated, that in the same Time a larger Quantity of Fluids will be convey'd through them: Hence an Obstruction will be form'd in them, and by a quicker Circulation of the Humours, an Inflammation. But since, in consequence of this strong Attrition in these contracted Vessels, a pretty strong Heat must be produced, as is observ'd under the Article INFLAMMATIO, a Putrefaction of that scirrhus Concretion will soon after ensue, and all the Misfortunes enumerated under the Article CANCER be produced. The Reason is therefore obvious, why a Scirrhus, which is of its own Nature benign, may, by an increas'd Velocity of the Circulation, be render'd malignant.

As this accelerated Motion of the Fluids often cannot be avoided, a Scirrhus lays a Foundation for constant Dread and Terror.

No Physician is possess'd of so uncommon Skill, as at all Times to prevent an accelerated Circulation of the Fluids in his own Body; for the Passions of the Mind, which can neither be avoided by any, nor duly check'd by the wisest, often greatly augment the Impetus and Velocity of the Circulation, as is observ'd under the Article SANGUIS. Slight Errors with respect to Diet, may, also, sometimes produce the same Effect; and an increas'd muscular Motion will prove hurtful in the same Manner. But Patients can never be prevail'd upon to avoid these Things with due Caution, since a Scirrhus, in consequence of its Freedom from Pain, is almost always neglected. But though the Patient was, with the greatest Caution, to follow these Dictates, yet he cannot possibly guard against the Irritation of a mild Scirrhus, either by the Shocks of epidemical Disorders, external Injuries, a Contusion, for Instance, or other Misfortunes of a like Nature. Besides, the Changes naturally incident to the human Body are capable of converting a Scirrhus into a Cancer: Such as the Cessation of the Menfes, for Instance, in Women past the Date of Conception, as is shewn under the Article CARCIOMA. 'Tis, therefore, obvious, that a Scirrhus in any Part of the Body lays a Foundation for the constant Dread of a more terrible Misfortune, since no Art nor Care are sufficient to prevent all the Causes capable of changing a benign Scirrhus into the most malignant Cancer.

Hence the Physician is to observe,

1^{mo}, That the Cure of a Scirrhus, which is recent, benign, situated in a proper Place, not perfectly hard, and afflicting a Person whose Juices are laudable, is to be attempted by emollient and resolvent Medicines; the most considerable of which are acid Fumes, and Mercury duly used.

In the Cure of a Scirrhus great Prudence is requisite, and nothing is to be attempted rashly, since Errors committed cannot afterwards be rectified, but bring on a Train of terrible Misfortunes. Physicians and Surgeons ought, therefore, always to remember the salutary Advice of *Hippocrates*, who, in *Apbor. 38. Sect. 6.* informs us, "That it is expedient not to attempt to cure Patients afflicted with occult Cancers, since by these means they soon die; whereas those whose Cures are not attempted, live for a great while." By occult Cancers, *Hippocrates* seems to have meant malignant and inveterate Scirrhuses, which are so easily irritated by the Application of Medicines, and degenerate into exulcerated Cancers. Before, therefore, any Remedies are applied to a Scirrhus, the Physician ought carefully to examine whether it is capable of being resolved. But this is known from its having the following Qualifications.

If it is recent; For in this Case, the concremented Humour has not, in Consequence of the Dissipation of its most liquid Parts, degenerated into an irresoluble Mass; and in a recent Scirrhus the whole Substance of the Gland is rarely affected. Hence there is a better Opportunity of conveying to the affected Part, through the as yet pervious Vessels, resolvent Medicines, whose Efficacy will be still the greater upon the scirrhusous Concretion; because it has not as yet acquired a calculous Hardness. If, therefore, a Scirrhus has for several Months affected any Part of the Body, only small Hopes of its Resolution remain. Hence *Artaeus*, in his *Treatise de Curat. Morb. diuturn. Lib. 1. Cap. 14.* when treating of a Scirrhus of the Spleen, justly advises "to prevent approaching, and resolve beginning Scirrhuses." But in the same Passage he informs us, that the Resolution of a Scirrhus is not very easy.

If the Scirrhus is benign; So long as the Scirrhus is without Pain, not too large nor hard, the Colour of the Integuments unchanged, and no Itching and preternatural Heat perceived in the affected and adjacent Parts, the Scirrhus is said to be benign: But if it is attended with the opposite Symptoms, it is said to be of the malignant Kind; the Signs of which are hereafter enumerated.

If the Scirrhus is situated in a commodious Place. If, for instance, Medicines can be commodiously applied to it, and an Access is given to the Surgeon's Hand, that if, contrary to Expectation, a Scirrhus before benign, being irritated by the Application of Medicines, may be extirpated by means of the Knife.

If the Scirrhus is not perfectly hard. For a stone-like Hardness, and a rough uneven Surface, indicate a confirmed Scirrhus, which will soon degenerate into a higher State of Malignity, by the Application of the most mild and resolvent Medicines. The Scirrhus, therefore, ought to yield to any Pressure; otherwise 'tis to be dreaded that the Vessels and Liquids coagulated in them, are almost concreted into an irresoluble Mass.

If a Scirrhus seizes any Part of a Body whose Juices are found. For since, as we have already observed, an atrabiliarious Cacochymy greatly favours the Production of a Scirrhus, it will be of no Service, by many Efforts, to resolve the Matter impacted in the Vessels; if, after its Resolution, a similar Obstruction is soon produced by the same Cause. Thus, for instance, if the Mass of Blood is affected with an acrid and putrid Scurvy, a Putrefaction, in this Case so hurtful, is to be dreaded, whilst the Resolution of the Scirrhus is attempted by emollient and resolvent Medicines.

So many Precautions are requisite, in order to cure a Scirrhus in a safe and proper manner: But fraudulent Quacks, deceiving Old Women, and too often imprudent Chymists, presumptuously confiding in their Arcanums, despise the Dangers of which they are ignorant; and by their pompous, but delusive Promises, precipitate Persons into the greatest Miseries.

But when, after a mature Consideration of all Circumstances, it is probable that a Scirrhus is capable of Resolution, Emollients which relax the Vessels, and Resolvents which, without exciting a great Commotion, fuse the concremented Humours, are the only Medicines to be used. *Artaeus*, in his *Treatise de Curat. Morb. diuturn. Lib. 1. Cap. 14.* affirms, that in order to remove a scirrhusous Hardness of the Spleen, we are to use Medicines as hot as Fire; but immediately after he orders the Parts to be sprinkled with Oil, Vinegar, and Honey; as also with the Powder of the Glans Unguentaria. For the same purpose he also recommends soft and emollient

Cataplasms. *Galen*, in his *Treatise de Method. Medend. Lib. 14. Cap. 4.* when treating of the Cure of a Scirrhus, lays it down as a practical Rule, "That if any one attempt an Evacuation with violently attractive and discutient Medicines, without softening the Tumor, and colliquating the concreted Juices by moistening and heating Substances, the Cure will for a few Days at the Beginning seem to proceed excellently: But the Remainder of a Disorder, thus treated, will be incurable, for by this means, also, the most subtle Parts being dissolved, what remains will be similar to a stony Concretion." The Truth of this Doctrine is sufficiently evinced in Nurses, who, in order to avoid a Suppuration, expose Tumors formed in their Breasts to the Live-Coins, and rub them; for by this means the Tumor is soon lessened, and a Suppuration prevented; but an incurable Scirrhus remains all the Patient's Life after. In such Cases nothing is more proper than twice a Day to expose the Part affected to the Steam of tepid Water; then to rub it softly, and apply some aromatic Plaister, especially with an Addition of the ferulaceous Gums, such as Gum-Ammoniac, Sagapenum, Galbanum, and others of a like Nature. Fomentations and Cataplasms, prepared of similar Substances, may also answer the same Intentions. Thus:

Take of the Flowers of Marsh-mallows, Chamomile, Melilot, and Elder, each one Handful; of the Lesser Centaury, half an Handful; of the Leaves of Worm-wood, White Hore-hound, Rue and Savin, each one Handful; of White Briony-Root, four Ounces; and of Garden-Angelica, one Ounce: Boil in Water in a close Vessel, and, straining the Liquor through a Cloth, with every four Pints of it mix four Ounces of the Spiritus Vini Theriacalis. Apply to the naked Skin with woollen Cloths, laying over them a Swine's Bladder anointed with a little Oil.

Of the above-mentioned Ingredients boil a proper Quantity in as much Water as is sufficient for making a Cataplasma; adding towards the End, of Gum Galbanum dissolved with the Yolk of an Egg, three Ounces; of Linseed-Meal, two Ounces; and of Linseed-Oil three Ounces.

A Plaister for a Scirrhus is prepared in the following manner:

Take of Gum-Ammoniac, Galbanum, Sagapenum and Opoponax, each two Ounces: Melt all together in an earthen Vessel over a gentle Fire, and depurate; then mix intimately with the whole four well-beaten Eggs; of yellow Wax, two Ounces; of the Meal of White Briony-Root, three Ounces; and of the Oil of Rue, by Infusion, a sufficient Quantity.

By this Method, says *Vansweiten*, continued for some Months, I have frequently cured recent scirrhusous Tumours of the Breast. I have, also, seen happy Effects produced by so thick a Solution of Venice-Soap in Milk, as to resemble a thin Poultrice, received into a Sponge, and applied to the scirrhusous Part, with a Swine's Bladder anointed with Oil, over it.

Acid Fumes, especially those arising from vegetable Juices, prepared by Fermentation, such as Vinegar for instance, are of great service in resolving scirrhusous Tumors. This Method is, by *Galen*, in *Method. Medend. Lib. 14. Cap. 5.* greatly recommended; for he would have the Application of Emollients to be interposed with the Use of such Medicines as attenuate and incide the Matter of the Scirrhus; and he extolls Vinegar as the best of the inciding Liquors. For the Cure of scirrhusous Indurations of the Tendons and Ligaments, he extinguishes the ignited Fire-Stone, or a Piece of a Milstone, in the strongest Vinegar, and orders the scirrhusous Tendons and Ligaments to be moved up and down over the ascending Steam; after which he again applies the emollient Remedies. He was, however, afraid lest the Steam of the Vinegar too long or often applied, should injure the Substance of the Tendons and Ligaments; but affirmed that its Use was safe in a Scirrhus of the Spleen, or any fleshy Parts. He also informs us, that he invented some compound Medicines prepared of Vinegar, and procured a perfect Cure of a scirrhusous Spleen, by the Application of Gum-Ammoniac dissolved in Vinegar to the Consistence of Clay, without any other Remedy. But in his *Method. Medend. ad Glauc. Lib. 2. Cap. 6.* he excellently observes, that by the Use of laxative Medicines, the Scirrhus was mollified, but not diminished; whereas its Bulk was considerably lessened by the Application of Medicines prepared of Vinegar; for which reason, he recommends the alternate Use of these Remedies. *Galen*, also, in the same Book, *Cap. 7.* recommends the internal Use of Vinegar for curing a Scirrhus of the Viscera; and informs us, that

in a Scirrhus of the Spleen external Applications alone are not sufficient; since, in order to the Cure, the Patient must drink strong Potions prepared of the Barks of Caper-Roots and Spleen-Wort, together with the Roots and small Branches of the Tamarisk boiled in Vinegar or Oxymel. The Observations of the Moderns sufficiently evince the salutary Use of Vinegar, in resolving scirrhus Tumors; whether its Steam acts upon the Part affected; whether it is used by way of Fomentation; or whether, being mixed with the ferulaceous Gums, it is applied to the Part affected. 'Tis customary almost in all Shops to dissolve Gum-Ammoniac, Galbanum, Opoponax and Sagapenum in Vinegar; and then to depurate them by straining them. After which they are again dried by means of a gentle Fire. But this Method of Preparation seems not only to have been designed for the Depuration of these Gums, but also that the most acrid Parts of the Vinegar, whose thin and aqueous Parts are dissipated, might be united with the Gums, and their Efficacy, in dividing and attenuating Concretions, by that means increased. Thus *Hildanus*, in *Observat. Chirurg. Cent. 1.* informs us, that a robust young Woman, when suckling a Child, had her Left-Breast inflamed; but when the Inflammation was removed, there remained an hard Tumor, which the Women and Quacks in vain endeavoured to remove by many Medicines. But when *Hildanus* was called, he ordered the Infant to be weaned, and the Breast to be daily anointed with a Liniment, which, among other Ingredients, contained a large Quantity of Gum-Ammoniac dissolved in Vinegar of Squills. He, also, twice a Day applied an emollient Cataplasm; and by this Method, exhibiting at proper Intervals a gentle Purgative, the hard Tumor was entirely resolved. The same Author affirms, that the like Measures proved successful with him in a similar Case.

There is, perhaps, no internal Medicine more efficacious than Vinegar saturated with an highly pure alkaline Salt; or if to a Pint of *Rhenish* Wine, we add half an Ounce of the Salt of *Carduus Benedictus*, of the Stalks of Beans, or some such Substance, of which Mixture the Patient is to take half an Ounce three or four Times a Day. The Ancients greatly extolled the Use of such Medicines. Thus *Pliny*, in *Histor. Natur. Lib. 23.* informs us, "That the Ashes of the Twigs of Vines and vinaceous Trees, when mixed with Vinegar, cure Condylomata, and other Disorders of the Anus; that they cure Tumors of the Spleen, when mixed with Oil of Roses, Rue and Vinegar; and that the Ashes of Twigs sprinkled with Vinegar, cure Disorders of the Spleen." The Steam of kindled Sulphur directed to the scirrhus Part, is, also, greatly commended; but as it is offensive to the Lungs, it cannot, for that Reason, be properly used. The known Virtue of Vinegar, in dissolving the Blood, also, affords greater Hopes of a Cure in such Cases; whereas the Acid of Sulphur, especially when strong, induces a Coagulum of the Blood.

The Efficacy of Quicksilver in removing Obstructions, is universally acknowledg'd; and both the external and internal Use of it has often greatly contributed to the Cure of a benign and beginning Scirrhus: For when it has acquired a stony Hardness, and begins to be malignant, no Relief can be expected from the strongest mercurial Preparations, nor from a Salivation excited by Quicksilver, but all the Symptoms are rather increased by these Means; and, in consequence of the increased Motion of the Humours, the Scirrhus is sooner changed into a Cancer. To a resolvable Scirrhus the Emplastrum de Ranis with Mercury is generally applied with Success, only we must take care, lest, by an imprudent Application of it, a dangerous Salivation should be excited, which frequently happens. Hence, as soon as the Patient begins to perceive any Pain or Tension about his Gums, the Plaster is to be taken off, and the Part to which it adhered carefully washed with a Lixivium of Soap. This Plaster generally produces happy Effects in the Resolution of scirrhus venereal Buboës. The Steam of kindled Cinnabar proves beneficial, since the Virtues of the Sulphur and Quicksilver are united, but it often excites a sudden Salivation.

2do, If the Scirrhus does not yield to these Medicines; if its Place, Situation, adjacent Parts, Mobility, the State of the Disorder, and the Strength and Condition of the Patient permit, it is with all Expedition to be totally extirpated with the Knife.

If, after the Use of these Measures for several Weeks or Months, the Tumor is not diminished, nothing remains but to extirpate it, lest being left, it should lay a Foundation for the perpetual Dread of a Cancer. 'Tis, also, expedient to take this Step as soon as possible, because such a Scirrhus, when long left, is generally increased in Bulk, and often adheres to the adjacent Parts, in consequence of which the Ex-

tirpation is afterwards far more difficult, and often impossible. Besides, it often happens, that the Disorder is propagated to the neighbouring Glands, in which Case several Scirrhuses must be extirpated before a perfect Cure can be obtained: For it rarely happens, that large and irresolvable Scirrhuses are lodged long in the Breasts, before the subaxillary Glands are affected with the like Disorder. Thus, says Doctor *Van-sweiten*, in a Woman who, by means of an external Contusion, had a Scirrhus formed in her Breast, which by the frequent Application of almost boiling Spirits of Wine, had assumed a stony Hardness, not only the subaxillary Glands, but also the whole Breast, Neck and Shoulder of the same Side become hard. But it can never be too warmly inculcated to Surgeons never to think of the Extirpation of scirrhus Tumors, unless they are absolutely certain that they can be totally removed: For if the smallest Part should remain after Extirpation, it will soon degenerate into a Cancer, as is certain from fatal Experience. Before, therefore, the Extirpation of a Scirrhus is resolved upon, the following Circumstances are to be duly considered.

As for the Place of the Scirrhus; This ought to be such as to afford an easy Access to the Hands and Instruments of the Surgeon: For none was ever so far deserted by his Reason, as to think of the Extirpation of internal scirrhus Tumors. Tho' *Tulpius*, in *Observat. Med. Lib. 3. Cap. 34.* informs us; that in a Widow of fifty Years of Age, he saw a Scirrhus, formed in the Vagina, as large as an ordinary Fist, covered with a thick coarse Membrane, within white and resembling the Substance of a Man's Testicles, happily extirpated by a skilful Surgeon, without any Injury done to the adjacent Parts, by which means the Patient was freed from a woeful Train of Misfortunes; since the Tumor, when cut out, afforded pretty satisfactory Proofs, that the Scirrhus was degenerating into a Cancer.

As for the Situation of a Scirrhus, and the Parts adjacent to it; These are principally considered with respect to the large Vessels adjacent, and from an Injury done to which, great Danger arises; if, for instance, there was a Necessity for extirpating the subaxillary or parotid Glands: Nor even in these difficult Cases is the skilful Surgeon absolutely to despair of Success; since 'tis certain from Experience, that expert Surgeons have extirpated Scirrhuses even in these Parts. Thus *Hildanus*, in *Observ. Chirurg. Cent. 2. Obj. 79.* informs us, that he extirpated from a Woman's Breast a Scirrhus already become cancerous; and that he happily extirpated three other Scirrhuses under the Axilla of the same Side, one of which was as large as an Egg; to the Vessels distributed to it he applied a Ligature, for fear of the Hemorrhage justly to be dreaded on such an Occasion. *Abraham Kaau*, in his *Dissertatio de Scirrbo*, informs us, that he saw the parotid and subaxillary Gland, when become scirrhus, happily extirpated by a skilful Surgeon at the Hague; that after the Extirpation of the parotid Gland, there was no Occasion for tying the Arteries, since the Hemorrhage was easily stopt by putting in a Piece of Sponge dipt in some astringent Liqueur, which spontaneously fell out on the eighth Day, whilst a Discharge of Pus appeared underneath. From these Circumstances we may learn what happy Effects may be produced by a skilful Hand, even in the most dangerous Cases.

As for the Mobility of the Scirrhus; Before the Extirpation of a Scirrhus is agreed upon, it ought to be evident, that it is moveable in all Directions, and not adhering to any Part; for unless it is totally removed, the smallest Portion left will most infallibly degenerate into a Cancer, as all practical Authors affirm. But every Gland is lodged in a cellular Coat, and is with it naturally moveable every Way; a Scirrhus ought, therefore, to be laid hold on with the Fingers, and moved upwards and downwards, and to the Sides in all Directions; and when it moves with equal Ease in all Directions, it is said to be moveable, and neither adheres to the sub-jacent nor circumjacent Parts. The cellular Coat, indeed, every where adheres to the Gland, but the one may be separated from the other, without any Loss, or even without any considerable Pain, as we shall afterwards shew. It sometimes happens, that a Scirrhus can be easily enough moved downwards and to the Sides, whilst the Skin adheres to its superior Part; but this is easily known, because in that Part the Skin cannot be elevated. But a Scirrhus of this Kind may be, also, extirpated by cutting out, at the same time, that Part of the Skin to which it adheres. But in such a Case the Wound ought to be very large, and the Cicatrix will be unseemly on account of the lost Skin.

As for the State and Condition of the Scirrhus; Whether, for instance, the Scirrhus is single, or whether other scirrhus Tumors, if present, can be resolved, or, if Necessary calls for it, extirpated with the Knife. Thus, for instance, it would signify nothing to remove a Scirrhus from the Breast, when it is evident, from certain Signs, that the Uterus is

also scirrhus, or that there is a Scirrhus in the other Breast, which, for Reasons to be after mentioned, cannot be extirpated.

As for the Strength and Condition of the Patient; 'Tis certain, that all the Efforts of the Physician ought to aim at the Recovery of the Patient. Hence, if the Strength is so far destroyed, as that the Death of the Patient might be dreaded from the Pain, the Hemorrhage, or the violent Suppurations which often ensue upon the Extirpation of large Tumors, the Cure is, in such a Case, attempted in vain. The same Caution is to be observed in Cases where an excessive Cacochymy has infected the whole Mass of Blood; for in this Case Wounds can hardly ever be brought to a good Cicatrix, unless the State of the Blood could be rendered better. 'Tis certain, that if there is a Suspicion, that a Scirrhus will soon degenerate into a Cancer, this dubious Remedy is to be preferred to so certain and so terrible a Misfortune; and in this Case the prudent Physician ought to advise the Extirpation of the Scirrhus, though the Operation could not be performed without Danger.

When, after a mature Consideration of all Circumstances, the Extirpation of a Scirrhus is agreed upon, great Caution is necessary with respect to the Method in which it is to be done; for actual Cauteries and corrosive Applications are not to be used, unless the Scirrhus is so small, that it may, by these means, be destroyed all at once; and even, in this Case, it is more safely extirpated by the Knife, since, if the smallest Portion is left, a Cancer is to be dreaded. If a scirrhus Tumor, which rarely happens, should be totally prominent beyond the Surface of the adjacent Parts, to which it is only fixed by a Kind of Foot-stalk, some have advised the tight Application of a Ligature about this Stalk, so that all Nourishment being by this means intercepted, the Scirrhus may die away and fall off. But this Method is not to be used, unless the Surgeon is certain, that nothing of the Scirrhus is thus divided by the Ligature; for the Part left, though the far greater Part were already fallen off, would degenerate into a Cancer. The celebrated *Baerhaave* had an Opportunity of observing a memorable and fatal Instance of this, whilst some Persons thus attempted the Cure of a large scirrhus Tumor, with a small Neck situated on the Back, though they were sufficiently advised, that their Measures might be productive of the worst of Consequences: For by means of two Brass Laminæ, prepared on purpose in such a manner as to become gradually tighter by Screws, they endeavoured to compress the Root of this Tumor, but the Event was fatal; for not only the Scirrhus, but also the adjacent Parts, were seized with an excessive Putrefaction, and diffused so fetid and disagreeable a Smell, that the Patient being deserted by every Body, and by his Surgeons, fell a miserable Victim to the preposterous Measures which had been taken with him.

It, therefore, seems most proper to remove a Scirrhus by the Knife, with all Expedition, when there is no hope of a Resolution; for a Scirrhus when left long, is ready to increase in Bulk, adhere to the adjacent Parts, or propagate itself to the neighbouring Glands. A Scirrhus may be extirpated in two manners; for after making an Incision in the Integuments, the entire Scirrhus may be taken out; or the Scirrhus together with the Integuments may be cut out at one and the same Time. The former Method is safer, though more slowly performed, and is to be used in removing small scirrhus Tumors, no where adhering to the Skin, but remaining every where free in the *Membrana Cellulosa*. But when the Scirrhus is large, and adhering to the Skin, the latter Method is to be used; when, for instance, the whole of the Breast being scirrhus, is to be extirpated. In order to take out a Scirrhus in the former manner, the Surgeon stretching the Integuments, is to make an Incision through the Skin and *Membrana adiposa*, to the Scirrhus, without wounding it. This Incision must be varied according to the Bulk of the Scirrhus: Thus, if the Tumor is but small, a strait Incision is sufficient; but if it is large, a crucial Incision is requisite. Then by small Hooks elevating the Corners of the divided Integuments, they are, by a Knife, to be separated from the Scirrhus, till the whole anterior Part of it is exposed to View; then thrusting the Forceps of *Helvetius* into the Body of the Scirrhus, it is to be gently drawn upwards, that it may be the more commodiously separated by the Knife, and taken out. When a scirrhus Gland is lodged in the *Membrana Adiposa*, this Separation may be made without any great Pain, except in that Part where the Vessels enter the Scirrhus. Having removed the Scirrhus, and stopt the Hemorrhage, we are to examine whether any Thing of a scirrhus Nature is left behind; then we are to proceed in the Cure, in the same manner as in the Cure of other Wounds, accompanied with Loss of Substance. See the Article *VULNUS*. The Extirpation of such a Scirrhus, together with all the Cautions necessary to be observed on such an Occasion, are

exactly described in the before-cited Dissertation wrote by *Abraham Kaau*, who saw the Operation happily performed by a skilful Surgeon. In that Dissertation, the Author justly advises, that the Scirrhus should not be imprudently drawn in the Separation: For when the Nerves distributed to the Scirrhus are stretched, and rendered tense, a violent Pain is not only excited, but, also, mortal Convulsions have followed, sometimes long after the Operation. We are, also, to take care not to irritate the Surface of the Wound by acrid Styptics; nor are we to use such Things as violently coagulate the Blood: For the concreted Clots of Blood lodged in the divided Veins, may, through Ramifications which continually become larger, be conveyed to the Heart and Lungs, and lay a Foundation for Polypuses. Lint applied by a proper Bandage, is generally sufficient; Puff-Ball is, also, of singular Use in stopping the Hemorrhage.

But when the Scirrhus is taken away, together with the incumbent Integuments, as in the Extirpation of a Breast, it is requisite there should be an Incision made under the Scirrhus, through the *Tunica adiposa*, without hurting the subjacent Parts: In order to this, the Scirrhus is to be elevated from the subjacent Parts, either with the Hands of the Surgeon only, or by passing proper Needles through it, or by thrusting the Forceps of *Helvetius* into the Substance of the Scirrhus; or passing a kind of Fork through the *Membrana cellulosa* between the Scirrhus and subjacent Parts, the Extirpation is to be performed by a Knife, which passing along close under the Fork, divides all the Parts, and goes through the *Membrana adiposa*. During the Operation, the Scirrhus is to be elevated by raising the Fork, by which means the Knife is hindered from injuring the subjacent Parts. But different Methods of Extirpation are chosen by Surgeons, according to the Bulk of the Scirrhus, and the Nature of the Part in which it is lodged. But the Extirpation of such a Scirrhus cannot be made without leaving a large Wound. Hence there is always Danger, lest the Patient should either be exhausted by too copious a Suppuration, or that the Pus collected in so large a Wound, being resorb'd by the bibulous Veins, should contaminate the Mass of Blood with a purulent Cacochymy. Hence the former Method of extirpating a Scirrhus is safer, since it is never succeeded by so violent a Suppuration, and the Wound is much sooner cured. The Surgeon ought, also, to have intrepid and skilful Assistants, in order to compress the divided Arteries, lest the Blood discharged should incommode the Operator.

If a Scirrhus is old, or known to be malignant from its Colour, Hardness, Roughness, Itching, and beginning Pain; if a bad Event is to be dreaded from the Part affected, or those adjacent; if the Scirrhus adheres to any Parts; if it happens in a cacochemical Person, or cannot possibly be extirpated. Then all those Things are to be avoided which increase the Motion of the Fluids, lest the Scirrhus should become a Cancer. Hence Medicines of an emollient, suppurant, corrosive, caustic and dissipating Nature are bad.

Having already considered the Measures to be taken for the Resolution and the Extirpation of a Scirrhus, we now come to enquire what ought to be done when there are no Hopes of a Resolution, and no Possibility of an Extirpation. The Impossibility of a Resolution is known from the long-standing of the Scirrhus; from a Change of the natural Colour of the Integuments to a red, purple, or livid Colour; from a stony Hardness, accompanied with a rough and uneven Surface of the Tumor. But if to all these an Itching is added, it is greatly to be dreaded, that the Scirrhus will soon degenerate into a Cancer; for then the Scirrhus begins to be put into a kind of Commotion, and the Nerves distributed through it are gently distended. Hence arise so keen a Titillation and Itching, that the Patients, tho' told that a Cancer will be formed, if they scratch it, cannot yet abstain from doing so. And if a Pain soon succeeds the Itching, the Disorder is still more terrible. The Extirpation of a Scirrhus is known to be impossible, if it has so grown to the adjacent Parts, that it cannot be totally extirpated; when it is situated in a Place to which the Hands of the Surgeon cannot have Access; or when the Largeness of the adjacent Blood-Vessels render the Operation too dangerous. But in this last Case, a great deal is to be expected from the Skill and Dexterity of the Surgeon. But if a malignant Cacochymy has so infected the Mass of Blood, that the Consolidation of the Wound made in the Extirpation of the Scirrhus, can hardly be expected; or if several scirrhus Tumors appear in other Parts of the Body, 'tis sufficiently obvious, that, in such Cases, the Operation must be vain and to no purpose. Since therefore, in such a Case, the Disorder can neither be corrected nor removed, the whole that Art can do, is to retain it in the same State, and prevent its degenerating

ing into a more terrible Misfortune. This is that Case concerning which *Hippocrates* affirmed, that it was most expedient not to attempt to cure those labouring under occult Cancers; because those who are thus treated die soon after: Whereas those whose Cures are not attempted, live longer; for a Scirrhus, accompanied with the Symptoms just now enumerated, may be justly called an occult Cancer. It is to be observed, that an irresoluble Scirrhus very soon degenerates into a Cancer, if the Motion of the Humors is increased either in the whole Body, or in the Part affected, as we have already observed: All such Remedies, therefore, as increase the Motion of the Humors, are hurtful, under whatever specious Names they may be recommended; for in this Case a Suppuration can never happen, by means of which the irresoluble scirrhus Concretion may be separated from the sound Parts; but a malignant and unsurmountable Putrefaction, which preys upon all the adjacent Parts, will ensue, as is observed under the Article *CARCINOMA*. So long as a Scirrhus, degenerating into a Cancer, is contained within its own Integuments, it is tolerable; but when, after a Rupture of the Integuments, an exulcerated Cancer is produced, it rages with unsurmountable Fury; all emollient and suppurating Medicines, therefore, by lessening the Cohesion of the Integuments, accelerate and hasten this Misfortune. But corrosive and caustic Medicines prove injurious, far sooner and in a far more terrible Manner. *Hildanus, in Observ. Chirurg. Cent. 1. Observ. 89.* has, by his Observations, demonstrated, how pernicious emollient Substances are, when applied to inveterate scirrhus Tumors. And, says *Dr. Vansweiten*, I myself have often seen foolish Women, when endeavouring to bring scirrhus Tumors in their Breasts to a Suppuration, have soon converted them into exulcerated Cancers, by the Application of such Medicines. *Ettmüller, in Oper. Med. Tom. 2. Part 2.* orders an incurable Scirrhus to be left entirely untouched, or to be converted into a stony Hardness, by the Application of Nitre dissolved in Vinegar. But this seems to be a dangerous Piece of Practice, since the increased Bulk of the Tumor denotes its greater Malignity; for it would be irritated by these acrid Substances, and especially if the Scirrhus is already troublesome by the Punctures with which it is accompanied; if it is painful when touched, or of a livid Colour; to a Scirrhus of which Kind, he orders the Application of this Remedy. It is, therefore, better to hinder the Scirrhus from degenerating into a worse State, by such Things as prevent an Inflammation, or allay it when formed; since the Obstinacy of this Disorder surpasses the Power of any Art hitherto known.

But the most proper Medicines under this Disorder, are Anodynes; such Substances as allay the Motion of the Humours; Preparations of Lead, and mild Preparations of Mercury.

The Food ought to consist of recent Milk, Butter-Milk and Whey; Broths prepared of the fresh Fleshes of Quadrupeds and Fowls; Preparations of frumentaceous Substances, such as Oats, Barley, Millet, Canary-Grass, Rye, Wheat, the Pot-Herbs enumerated under the Article *FIBRA*, mild mature Summer-Fruits, which are partly acid and partly sweet; especially boiled. The Drink ought to be Decoctions of the Roots of China, Sarsaparilla, and the three Species of Sanders. All violent Passions of the Mind ought, also, to be carefully avoided, or, when excited, prudently soothed and removed. All acrid heating Substances, or such as throw the Humours into a Commotion, are in this Case highly injurious. If lancinating Pains, and an uneasy Itching, are perceived in the scirrhus Part, these Symptoms are to be allayed by Anodynes, both internally used and externally applied. Thus:

Take of White Poppy-Seeds bruised, two Ounces; of the Roots of Fennel, four Ounces; of Wild Poppy-Flowers, six Drams; and of the Flowers of Mallows, one Handful. Boil in Water in a close Vessel for a Quarter of an Hour; and with each two Pints mix two Ounces and an half of the Syrup of White Poppys. Of this Preparation let the Patient now and then drink three or four Ounces.

Take of Sperma-Ceti, prepared Red Coral, and unwash'd diaphoretic Antimony, each one Dram; and of pure Laudanum, two Grains; Reduce to a fine Powder, to be divided into four equal Doses; of which the Patient is to take one every Morning and Evening.

External Medicines are also of Use, and an excellent Fomentation may be prepared in the following manner.

Take of the Flowers of Henbane, Melilot, Red Poppy and Elder, each one Pugal. Boil with Water in a close Vessel; and with each Pint and an half of the Liquor, mix Vinegar of Elder and Roses, each two Ounces; and of the rectified Spirit of Wine, four Drams.

Take of the Vinegar of Litharge, one Ounce; of the expressed Oil of Henbane Seeds, of the expressed Oil of White Poppy, and of the Oil of Roses by Infusion, each two Drams: Make into an Ointment, adding towards the End six Grains of pure Opium.

For Plaisters we may use the Red-Lead Plaister, and the Unguentum Diapompholygos: Or,

Take of the expressed and recent Juice of the Leaves of Henbane, Garden-Poppy, and Phellandrium, each four Ounces: Boil over a gentle Fire, inspissate; and towards the End, mix eight Ounces of White-Wax, and one Ounce of the Oil of Roses by Infusion: Mix into a Plaister. Or,

Take of the Sugar of Lead, Cerufs, an Amalgama of Mercury and Lead, each two Drams; of White-Wax, four Ounces; and of the Oil of Roses, by Infusion, three Drams: Make into a Plaister.

But if the Integuments of the Scirrhus begin to be inflamed, we are, by prudently applying Preparations of Lead, to endeavour to check that Inflammation. The most considerable Medicines of this Kind are Vinegar of Litharge, diluted in a large Quantity of Water; the Unguentum Nutritum, prepared of this Vinegar, and the Oil of Night-shade intimately mixed, and the Emplastrum Diapompholygos. These Medicines, also, allay the Itching. The scirrhus Part is to be carefully covered with a Piece of soft Leather, in order to prevent all Attrition of the Cloaths, by which the Integuments might be easily excoriated. Hence Women who have scirrhus Breasts, should never wear Whale-bone Stays, nor use hard Exercise; since, in that Case, the Scirrhus would be agitated by the subjacent pectoral Muscle. Mild mercurial Preparations are in this Case of great Use. An Amalgama of Quicksilver and Lead, mixed with the Emplastrum Diapompholygos, has sometimes proved highly beneficial in Cases where the Integuments of the Scirrhus have already been beginning to be inflamed. Others recommend a thin Plate of Lead, besmeared with Quicksilver, and adapted to the Figure of the Scirrhus. But when Mercurials are applied to a Scirrhus, we ought to be very cautious, lest, by an unskilful Use of them, a Salivation should be excited, which, in this Case, will always prove hurtful, since it cannot resolve the scirrhus Concretion; whilst at the same time it increases the Motion and Acrimony of the Humors, and consequently promotes the Degeneration of the Scirrhus into a Cancer.

If at the same time the Temperament of the Patient is peccant, that is above all other Things to be corrected.

Since the whole Intention of this palliative Cure is to prevent the greater Bulk of the Scirrhus, and hinder it from degenerating into a Cancer, it is sufficiently obvious that the morbid Temperament of the Patient, if he has such, ought to be corrected. We have already observed, that an atrabiliarious Habit, of all others, lays the greatest Foundation for scirrhus Tumors: If, therefore, such a Temperament is present, it will increase a present Scirrhus; for which reason the Diet and Aliments ought to be such as are proper for correcting this Temperament. For this purpose, the Patient is to use such Things, as, by mild and saponaceous Quality, fuse the atrabiliarious Juice. On the contrary, all Substances possessed of any considerable Acrimony are to be carefully abstained from. Honey, Venice-Soap, the mild but strongly resolvent Juices of Herbs, are of singular Service; as also proper Decoctions, such as those prepared of Succory, Goats Rue, Endive, Fumitory, and some others. If, in like manner, the Patient was afflicted with a violent Scurvy, that Disorder is, in like manner, to be removed, or at least mitigated by proper Medicines; because acrid Juices, mixed with the Scirrhus, increase its Malignity, and soon change it into a Cancer. *Van Swieten.*

When a Scirrhus appears to be inveterate, and the Patient is of an infirm Constitution, no Digestion must be attempted; for this Treatment, especially if the Disorder is seated in the Breasts of Women, may easily make the Scirrhus degenerate into a Cancer. But where the Scirrhus is recent, soft, and attended with little Pain, and the Constitution of the Patient is sound, it may not be improper to undertake

undertake its Discussion by the Use of Digestives both internally and externally. The most efficacious internal Medicines are the Decoctions of the Woods, the digestive Essences and Tinctures, with the milder Mercurials, interposing Laxatives for resolving the thick inspissated Humours. As the Use of external Medicines alone are generally more pernicious than beneficial, a skilful Physician ought always to be consulted, not only to prescribe proper internal Medicines, but likewise a necessary Regimen with regard to Diet.

The principal external Resolvents are Plaisters of the Gummi Ammoniacum, Galbanum, Opopanax, Sagapenum, Bdelium, and the like, either separately or mixed; or the Powder of the Roots of Briony and Birth-wort, may be added to them. Of the same Intention are the Emplastra de Cicuta, de Ranis Vigonis, and of Diachylon, with Mercury. Or the following:

Take of the Gums Galbanum and Opopanax, each an Ounce; Ammoniacum and Bdelium, each two Ounces; Olive-Oil, two Pounds; yellow Wax, half a Pound; Powders of the Root of long and round Birth-wort, Lapis Calaminaris, Myrrh, and Frankincense, each an Ounce; Venice Turpentine, four Ounces: Mix them for a Plaister.

Cataplasms may be reckoned the next efficacious Remedies to Plaisters. Thus:

Take of the Roots of white Briony, four Ounces; Roots of round Birth-wort, and Angelica, one Ounce; of the Herbs, Savine, Rue, Scordium, and of Camomile-Flowers, each a Handful; of the Flowers of Melilot, Elder, Mallows, and Lesser Centaury, each a Handful: Boil them in clean Water, and a close Vessel, to the Consistence of a Cataplasm; adding at the End, of Galbanum dissolved in the Yolk of an Egg, three Ounces; Linseed Meal, two Ounces; Linseed Oil, enough to make the whole into a Cataplasm.

This Cataplasm, or a Fomentation made of the same Herbs, boiled in Vinegar, may be applied warm, not forgetting the Use of internal Medicines.

Some greatly recommend Fumigations of Acids, as Digestives in this Case, using boiling Vinegar, either common or that made of Lavender, Elder, Rue, or Treacle, for several Days. Some sprinkle the Vinegar on an ignited Stone, and receive the Steam through a Funnel. Others expose the Part affected to the Vapour of burning Sulphur; but the strongest Remedy used of this Kind, is the Fume arising from ten to twenty Grains of Cinnabar thrown upon live Coals, or an ignited Stone. But particular Care must be taken, that these Fumigations be not too strong, nor too frequently used; for by being drawn into the Lungs, they may produce dangerous Effects; and as the Cinnabar contains Mercury, it may raise a Salivation.

Mercurial Remedies are excellent in this Case, either when applied immediately, or after other Medicines have proved unsuccessful. Besides the internal Use of Mercury, an excellent Ointment may be prepared, by mixing it with Hog's Lard, and a sufficient Quantity of Turpentine, in a Glass or Marble Mortar. With this anoint the Scirrhus twice or thrice a Day, and apply the *Emplastrum Vigonis* with Mercury, or the like. But in order to prevent a Salivation from being raised by this Method, 'twill be necessary to exhibit every fourth or fifth Day a gentle Purge, as the Powder of Jalap, or the laxative Pills, for carrying off the Mercury. Mean while the Fauces should be carefully inspected, which, when they swell or are painful, threaten a Salivation. But in order to prevent it, more frequent Purging is necessary; and the mercurial Remedies must be omitted till the Symptoms of a Salivation vanish. By observing these Cautions, you need not doubt the Patient's Recovery, unless the Case be already desperate.

If all these Remedies prove ineffectual to discuss the Scirrhus; and if it is safely situated and moveable, and the Strength of the Patient will permit the Operation, it will be proper to extirpate the Scirrhus, lest, as often happens, it should degenerate into a Cancer. The Wound may be healed with *Arcæus's*, or any other vulnerary Balsam, as in other Wounds.

But when the Scirrhus is immoveable, unequal and deeply seated; when the Constitution of the Patient is infirm; when the Disorder proceeds from an hereditary Infection, and several are generated in the same Person; when it is seated in some noble Part, and from its Vicinity to the larger Blood-Vessels, an Hemorrhage may prove fatal, then the Use of the Digestives, of the Knife, or of Corrosives is evidently improper. This Sort of Scirrhus almost always degenerates into

a Cancer, or is, at least, attended with very acute Pains. Here, therefore, the Pains are to be removed, and the Cancer, at least, prevented.

In this Case the Blood must not only be corrected by suitable external and internal Medicines, but a proper Regimen of Diet must be observed. Let the Patient, therefore, be nourished with various kinds of Broth, made of the Flesh of young and tender Animals, with some mild Pot-Herbs, such as Barley, Oats, Rice, Millet, Manna, the softer Pulses, Spinache, Asparagus, Viper's Grass, Goat's Beard, Succory, Parsneps, and fresh Hops. The most wholesome common Drink is either fair Water, or a Pisan made of the China Root, Sarsaparilla, Grass, Polypody, Veronica, Hart's Tongue, Agrimony, Saracen's Confound, Pellitory of the Wall, Maiden Hair, and the like. If the Scirrhus be attended with Pain, add to the Patient's Drink a little of the Seed of white Poppy, which may be sweetened to the Patient's Taste. In order to correct the Acrimony of the Blood, exhibit the Powder of Crabs-Eyes, prepared Shells, Salt of Wormwood, native Cinnabar, crude Antimony, and diaphoretic Antimony, mixing with every Dose, to alleviate the Pain, half a Grain of Laudanum Opiatum, once, twice, or thrice a Day, according to the Circumstances of the Patient. What, also, excellently answer this Intention, are, the recent Powder or Juice of Millepedes, a Dram of Sperma Ceti, given with the other Powders; mercurial Purges, either in Pills or Powders; and, lastly, frequent Bleeding and Purging in Spring and Autumn.

Outwardly apply, constantly, a thin leaden Plate well impregnated with Quicksilver; which will not only mitigate the Heat and Pain, but may avert the Danger of a Cancer. If this leaden Plate is not effectual for this Purpose, apply Plaisters and Ointments, composed of Ingredients proper for assuaging Pain; such as the following.

Take of Unguentum Diapompholyges, two Ounces; Opium, ten Grains; mix them together, and therewith frequently anoint the Part affected; and, also, apply it with a Linnen Cloth. Or,

Take of amalgamated Mercury and Lead, one Ounce; Ointment of Roses, a sufficient Quantity; make them into an Ointment, which apply to the Part with a Linnen Cloth, like a Plaister. Or,

Take of the Vinegar of Litharge, one Ounce; the expressed Oils of Henbane, and white Poppies, each two Ounces; the infused Oil of Roses, two Ounces; mix and make them into an Ointment, to which, at the End, add from six to ten Grains of Opium, which spread upon a Linnen Cloth, and apply to the Scirrhus several Times a Day.

If the Patient dislikes these Ointments, refrigerant Plaisters may be applied; such as the leaden Plaister of *Mynsicht*, the Plaister of red Lead, and of Diapompholygos; or the following Composition, which is excellent for alleviating Pain.

Take of the recent, expressed and purified Juice of Henbane Leaves, Garden Poppy, and Water Hemlock, each four Ounces; inspissate them by boiling over a slow Fire; and at the End add, of white Wax, eight Ounces; of the infused Oil of Roses, one Ounce; make them into a Plaister. Or,

Take of Sugar of Lead, Cerus, amalgamated Mercury and Lead, expressed Oil of Henbane, and infused Oil of Roses, each two Ounces; White Wax, four Ounces; mix and make them into a Plaister.

If the Pains are very violent, add to these a little Opium.

Some eminent Physicians, in the Cure of a Scirrhus, bring it to Suppuration, or use corrosive Medicines, or the actual Cautey. But as Suppuration and Corrosives endanger a Cancer, and as People have a natural Abhorrence to the actual Cautey, besides many other Inconveniencies which attend these Methods, they ought to be laid aside as slow, hazardous and cruel. The easiest and readiest Method, therefore, of curing a large and painful Scirrhus, whether it be in the Lips, Salival Glands, or Breasts, or Testicles, is to remove it entirely by Incision, unless much Danger may be feared from the Hemorrhage. But if any of the corrupted Part should be left behind, it will be liable to generate a Cancer of a most malignant Nature; and although the Scirrhus should be entirely extirpated, a new one will frequently arise, without any Fault of the Surgeon. Some Physicians, after the Incision, apply the actual Cautey, in order to stop the Hæ-

Hemorrhage, to entirely extirpate the Scirrhus, and prevent its Return. But this Application appears to me unnecessary, as it contributes little to prevent a new Scirrhus, and as there are many milder and more proper Remedies for stopping the Effusion of Blood.

SCIURUS. The Squirrel. The Fat of this Animal is said to be emollient, and to mitigate Pains of the Ears, if put therein.

SCLAREA.

- The Characters are;

The small Leaves under the Whorls are of a different Shape from the rest; the under Leaves are wrinkled, and of a rarer Texture. The Calyx is tubulous, quinquefid, and as it were bilabiate. The Galea is fulcated, long, crooked; the Beard tripartite, the middle Segment bifid and hollow. The Flowers surround the Joints of the Stalks in circular Order, and are generally six in number, and disposed, as it were, in form of a Spike. The Seeds are roundish.

Beerhaave mentions twenty-nine Sorts of *Sclarea*, which are;

1. *Sclarea*, Tourn. Inst. 179. Boerb. Ind. A. 163. *Horminum*, *Sclarea*, Offic. *Horminum sativum vulgare*, sive *Sclarea*, Park. Theat. 55. *Horminum Sclarea dictum*, C. B. P. 234. Raii Hist. 1. 543. *Gallitricum*, Ger. 668. *Gallitricum sativum*, J. B. 3. 309. *Gallitricum sive Horminum*, Ger. Emac. 768. CLARY.

The lower Leaves of Clary are large, rough, rugged, and wrinkled, broad at Bottom, and ending in a blunt Point: The Stalks are about two Foot high, very hairy and clammy, of a strong Scent as well as the Leaves, growing thick together, and clothed with smaller Leaves: The Flowers stand in large Spikes, of a pale blue Colour, pretty big and large, bending hollow Galea's: They are set on *Verticillatum*, or Whorle fashioned, having two round, hollow, thin, whitish Leaves, with a green Border under each Whorle. The Calyx of the Flower, which is very clammy, is divided into two Parts, the upper ending in three, and the lower in two Spinulæ, containing four round blackish Seed. The Root is woody, and not much branched, and perishes after it has born Seed. It grows in Gardens, and flowers in June and July. The Leaves are used.

Clary is accounted to be of a warming and drying Nature. Infused in Wine, it comforts a cold, windy Stomach: It is particularly commended to strengthen the Kidneys, to help a Fluor Albus, and invigorate a cold relaxed Womb. Miller's Bot. Off.

2. *Sclarea*; flore albo.

3. *Sclarea*; Syriaca; flore albo. T. 179. *Horminum Syriacum*, C. B. P. 238. Prodr. 114.

4. *Sclarea*; Orientalis; folio rotundo; flore magno; partim albo, partim purpurascens. T. Cor. 10.

5. *Sclarea*; Lusitanica; glutinosa; amplissimo folio. T. 179.

6. *Sclarea*; vulgaris; lanuginosa; amplissimo folio. See ÆTHIOPIS.

7. *Sclarea*; laciniatis; foliis. T. 179. *Æthiopis*, laciniatis foliis. Barrel. Ic. 188.

8. *Sclarea*; ficula; folio argenteo, subrotundo. *Æthiopis*, tota, argentea; perennis lanuginosa. Cupani.

9. *Sclarea*; Æthiopica; folio subrotundo; perennis. Ind. 63. *Marum Ægyptiorum*. Alpin. Exot. 252.

There grows in the dry and rugged Parts of Egypt, a Kind of sweet-scented Plant, which runs up in one whitish jointed Stalk, to the Height of a Cubit, or more: On each Side of the Joints stands a long thick Leaf, very like that of the *Horminum Sylvestre*, both in Size and Shape, without Smell, and almost without Taste, but drying, with somewhat of Astringency. These Leaves are covered with a white Down, and proceed from the Joints in opposite Order in the lower Part of the Stalk. In the upper Part, or above the Middle of the Stalk, there proceed from the Joints, together with the Leaves, short, slender, square, Branches; from these Joints on each Side are produced white Flowers, very much resembling those of the *Sclarea*, or *Herba Sancti Johannis*; and having, as well as their small Leaves, a very strong, though not unpleasant Smell: These are succeeded by small Seed-Vessels, containing round, minute Seeds, like Cabbage-Seeds; and of a penetrating Smell. All the young Shoots of the Stalk, with the Leaves, Flower, and tender Branches, are very fragrant; and being dry'd in the Shade, serve to put among Clothes to defend them from Moths, and communicate to them its Fragrancy; for the tender Branches being dry'd, change their strong Smell into one more pleasant.

The Flowers and Seeds are heating, digestive and resolvent. A Decoction of the Leaves, and especially the tender Shoots, in Wine, is good for cold and flatulent Pains, and being apply'd to the griev'd Part, are surprizingly effectual. The

Juice of the Leaves, with Vinegar and Honey, are good to remove Pains from the Face. Prosper Alpinus de Plantis exoticis.

10. *Sclarea*; Indica; floribus variegatis. T. 179. *Horminum hirsutum*, flore violaceo, punctis aureis notata. M. H. 3. Sect. 11. Tab. 13. Fig. 16.

11. *Sclarea*; folio triangulari, dentato. T. 180. *Horminum*, *Lapatii unctuosius folio*, seu majus, hastato folio. M. H. Blæf.

12. *Sclarea*; folio triangulari; caule tomentoso. T. 180. *Horminum Canariense*, tomentosum, hamato folio. M. H. 3. 394.

13. *Sclarea*; rugoso; verrucoso; laciniato, folio. T. 180. *Horminum*, *ceratophyllum*; rugosum, flore sulphureo. M. H. 3. 393.

14. *Sclarea*; Pyrenaica; glutinosa; foliis sinuatis. T. 176. *Horminum anguriae folio*. Par. Bat.

15. *Sclarea*; glutinosa; floris lutei, variegati, Barbâ amplâ cavâ. *Horminum luteum*; glutinosum. C. B. P. 238. *Orvala tertiâ*. Dod. p. 292. *Colus Jovis*. H. Eyf. Æt. o. 8. F. 4. Fig. 1. *Galeopsis Species*, lutea; viscida odorata, nemorensis. J. B. 3. 314. *Salvia*, montana, maxima, foliis *Hormini*, flore flavescente. T. 180.

16. *Sclarea*; Asphodeli radice. T. 179. *Horminum*, *sanguineum*, *Asphodeli radice*. Triumf. 69. M. H. 3. 394.

17. *Sclarea*; folio amplissimo, sanguineo, Bardanæ. *Horminum*, folio *Bardanæ*, sanguineo, amplissimo. Triumf.

18. *Sclarea*; major; foliis in profundas lacinias incis. T. 179. *Horminum*, *sylvestre*, majus, foliis profundè incis. C. B. P. 239. *Gallitricum*, *sylvestre*, flore majore, albo, I. B. 3. 312.

19. *Sclarea*; pratensis; foliis ferratis; flore albo. T. 179. *Gallitricum*, *sylvestre*, flore majore, albo. I. B. 3. 312. *Salvia*, agrestis, flore albo. H. Eyf. Vern. o. 9. F. 2. Fig. 3. *Horminum*, *pratense*, niveum, foliis incanis. C. B. P. 238. M. H. 3. 393.

20. *Sclarea*; pratensis; foliis ferratis; flore cæruleo. T. 179. *Horminum*, *pratense*, foliis ferratis. C. B. P. 238. M. H. 3. 393. *Gallitricum sylvestris vulgò*, sive *sylvestris Sclarea*, flore cæruleo, magno. J. B. 3. 311. *Orvala Sylvestris Species quarta*. Dod. p. 293.

Casalpinus had not well observed the Smell of this Plant, for instead of none at all, as he affirms, it has a bad one. It seems to contain a volatile oily Salt, wherein the urinous Spirit predominates, so that it gives no Tincture of red to the blue Paper. Martyn's Tournefort.

21. *Sclarea*; pratensis; foliis ferratis; flore suaverubente. Tourn. Inst. 179. Boerb. Ind. A. 165. *Sclarea pratensis*, Offic. *Horminum pratense foliis ferratis*, flore suaverubente. Hort. Reg. Par. *Gallitricum sylvestre vulgò*, sive *sylvestris Sclarea* flore purpureo magno. J. B. 3. 311. MEADOW CLARY.

It grows in the Meadows, and is no more than a Variety of the *Horminum pratense foliis ferratis*, according to C. B. P. 11. 244. Buxb. 161.

22. *Sclarea*; Africana; amplissimo folio; annua. Ind. 64.

23. *Sclarea*; folio Salvizæ; major; vel maculata. T. 180. *Horminum sylvestre*, *salvisolium*, majus, vel maculatum. C. B. P. 239.

24. *Sclarea*; folio Salvizæ; minor; five glabro. T. 180. *Horminum sylvestre sive salvisolium minus*. C. B. P. 239. *Gallitricum glabrum*, folio *Salvizæ*, flore purpureo. J. B. 3. 312.

25. *Sclarea*; folio Salvizæ; flore purpureo. T. 180. *Horminum*, *salvizæ folio*.

26. *Sclarea*; Orientalis; folio *Betonice acutissimo*; comâ purpurascens. T. Cor. 10.

27. *Sclarea*; Cretica; latifolio; flore vario.

28. *Sclarea*; quod *Horminum*; sylvestre; flore rubicundissimo, interdum flammeo. Boer.

29. *Sclarea*; Orientalis; foliis rotundioribus, candidissimis. T. 6. 10. Boerb. Ind. Alt. Plant. Vol. 1.

The Juice of the first, second, third, and fourth, and of the twenty-second, called *Africana*, being drank will cause Ebriety; it also resists Acidity, and is for that Reason mixed in Beer, to which, besides, it communicates a vinous Quality, for which it is esteem'd by the Dutch Peasants, who love Beer that will make them soon drunk. It is, also, of Use in Surgery, for it is discutient, and removes Tumors, restores Heat, and resists Putrefaction. But it is to be used with Caution, if fermented, in which Circumstance it is sudorific. The Leaves of this Plant, especially of the first and second Species, and in some measure of the third and fourth, being smelled to for a considerable Time, will procure Ebriety; and the Leaves boiled in Beer, qualify it for rendering Persons soon drunk; but, used with Moderation, they comfort the Spirits and Nerves. The Plant is aperient, antihysterical, and proper in difficult Labours, and Obstructions of

of the Menfes, and is very good also for the Fluor Albus, and a great Provocative to Veneri. The Leaves bruised emit so strong and vinous a Smell, that it is commonly us'd instead of burnt Wine in Liquor intended for Fomentations; for it communicates a heating Quality, and produces Spirits. The Plant is well known to the Cooks. The Leaves bruised, resolve cold Tumors, and expel Sweats. *Hist. Plant. ascript. Boerhaave.*

SCLERIA, *σκληρία*, from *σκληρός*, hard, Hardness, in a general Sense, comprehends all Kinds of Hardnesses, in the same Extent as *σκληρώσις*, *Sclerosis*; but is used by *Galen*, or whoever was the Author of the *Medicus*, to signify a Hardness of the interior Parts of the Eyelids. *Castellus.*

SCLERIASIS, *σκληρίσις*. The same with the preceding Word.

SCLEROCOITIA, *σκληροκοΐτις*, from *σκληρός*, hard, and *κοίτη*, a Bed. Lying on a hard Bed, hard Lodging. Thus *Hippocrates*, *Lib. de Salubr. Diata*, advises those who are of a fat and gross Habit of Body, and are desirous to become lean, among other Parts of Regimen, *σκληροκοΐτιαν*, "to lodge hard;" and those who practise it, are called, *Lib. 3. de Diata, σκληροκοΐταις*, *Sclerocoitiae*.

SCLEROMA, *σκληρώμα*, from *σκληρός*, of *σκληρός*, hard, in the *Definitiones Medicæ*, is a somewhat hard Tumor arising in some Part of the Uterus. In a more general Sense, it is the same as *σκληρίσμα*, *Sclerisma*, a hard Tumor. *Fœsius Castellus.*

A *Scleroma* of the Uterus is a Species of *Scirrhus*, seated principally in the Neck of the Uterus, and resembling a Tumor, but less renitent, and attended with a moderate Pain. *P. Ægineta, lib. 3. cap. 68.* The Cure is the same as that of a *Scirrhus* of the same Part. See **UTERUS** and **SCIRRHUS**.

SCLEROPHTHALMIA, *σκληροφθαλμία*, from *σκληρός*, hard, and *φθαλμός*, an Eye. A *Sclerophthalmia*, or hard Lippitude, is a Disease of the Eye, attended not only with a Hardness and Slowness of Motion, but with a Pain and Redness. The Eyelids, in this Affection, are hard and dry, never effusing any Moisture, with small, writhed, dryish, mucous Concretions in their Corners, and a Difficulty of opening or Inversion, after Sleep, on account of their Dryness. This Disease seems to be a Kind of Inflammation, whose general Characters are a Pain and Redness, but it differs from an Inflammation in a Property peculiar to itself, which is Dryness. It differs also from a *Xerophthalmia*, or dry Lippitude, in that this latter, though necessarily hard on account of its Dryness, is, however, much less hard than a *Sclerophthalmia*, and not so painful.

SCLEROSARCOMA, *σκληροσάρκωμα*, from *σκληρός*, hard, and *σάρκωμα*, a *Sarcoma*, a hard, carnosous Abscess, affecting the Gums, and resembling sometimes a Cock's Comb, sometimes the Flesh of a testaceous Animal. *Castellus.*

SCLEROSIS, *σκληρίσις*, is the same as **SCLERIA**, which see.

SCLEROTICA Tunica, one of the Coats of the Eye, which see described under **OCULUS**.

SCLIOSIS, **SCLIROMA**, **SCLIRUS**, or **SCLERUS**, all import the same as **SCIRRHUS**.

SCLOPETUM. A Gun. For the Preparation of the *Aqua Sclopetaria*, see **AQUA**. For Gun-shot Wounds, see **VULNUS**.

SCOBIS. The rasped Powder of Hartshorn, or Ivory. It also imports the same as *Cineres Clavellati*; or the Scorise of Metals. *Castellus.*

SCODEGHINO. The Name of a particular Sort of Incision-knife, described by *Sculietus*, and us'd by *Roussset* in performing the Cæsarean Operation.

SCODINEMA, *σκιονημα*. This Word is explained by *Erotian*, a Heaviness of the Head.

SCOLECIA ÆRUGO. See **ÆRUGO**.

SCOLECIUM. A Species of venomous Spider. See **PHALANGIUM**.

SCOLECIDES, *σκολεικίδης*. The same as **VERMIFORMIS**, an Epithet for a Worm-like Process of the **CEREBELLUM**.

SCOLEX, *σκόλεξ*. A Worm.

SCOLIOSIS, *σκολίωσις*, from *σκολός*, oblique, Obliquation, Perversion, a turning aside, is particularly apply'd by *Hippocrates* to a Distortion, or Perversion of the Spine sideways.

SCOLIOTES, *σκολιότης*, from *σκολός*, oblique, Obliquity, in *Hippocr. de R. V. 7. A.* is spoken of the Hypochondria, and explain'd by *Galen* in his Comment on the Place, by *σκολιότης*, Inequality.

SCOLOPAX. See **GALLINAGO**.

SCOLOPENDRA, Offic. Charlt. Exer. 57. Mouff. Insect. 199. Mer. Pin. 205. *Scolopendra terrestris*, Aldrov. de Insect. 635. Jons. de Insect. 127. **THE MANY FEET.**

The *Scolopendra* is a flat, slender Worm, three Digits in Length, of a yellowish, or reddish Colour, furnish'd on both Sides with a Multitude of Feet, two pretty long Antennæ, and a bifid Tail. Being boiled in Wine, it is esteem'd by some a Depilatory, or Medicine to take off Hair.

The Bite of the *Scolopendra* is said to be poisonous, *Oribani de Morb. Cruat. l. 3. c. 69.* advises to wash the injur'd Part with Brine; or to lay upon it Ashes with Vinegar.

The *Scolopendra* is a venomous Insect with eight Feet, and a forked Tail. The Bite of this Animal causes a Lividness and Tumor in the Parts about the Wound; sometimes there appears a Feculency, and, though but seldom, a Redness. The Part affected immediately begins to ulcerate, and the Ulceration is both painful, and difficult to be cured; to which we may add, that there is a pruriginous Sensation over all the Body.

For the Cure, pounded Salt is to be apply'd to the Place, or Rue bruised, or Ashes work'd with Vinegar. The Wound is also to be washed with strong Brine, or, as *Archigenes* directs, with plenty of hot Oil, before the Things first order'd are to be applied. Inwardly are to be exhibited, *Aristolochia* in Wine, or *Serpyllum*, or *Calamint*, or *Wild Rue*, or *Trefoil*, or half a Hemina of the Juice of the Root of *Asphodel* mixed with Wine. *P. Æginet. lib. 5. cap. 9.*

This Author makes two Sorts of *Scolopendra*, the terrestrial and marine; and says, that the Bite of the latter is succeeded sometimes by an aqueous and pellucid Tumor; but that of the other, by a Redness of the tumify'd Part: But *Oribosius*, *Aetius*, and *Æturius*, make no such Distinction of a *Scolopendra*.

Aetius advises the same Remedies as are prescrib'd for the Bite of the *Mus Araneus*, with the Application of Salts mixed with Tar, or Cedria with Honey, or Garlick with Fig-leaves, and Cumin and Ervum in Wine. For Portions, the same Things are proper which are recommended against the *Mus Araneus*, and besides these, Wormwood and Mint in Wine.

SCOLOPENDRA MARINA, Offic. Charlt. Exer. 62. Raii Insect. 44. Mouff. Insect. 322. *Scolopendra marina prima*, Rondel. de Aquat. 2. 108. Aldrov. de Insect. 635. Jons. de Insect. 143. *Scolopendra marina rubicundior*, Mouff. Insect. 322. Mer. Pin. 205. **THE SEA MANY FEET.**

It is found in the Bottom of the Sea, according to *Gesner*; or in Oyster-Beds, as *Mouffet* says.

Boiled in Oil, and the Parts anointed therewith, it taketh off the Hair; but the Touch thereof excites Itching. *Dioscorides, lib. 2. cap. 16.*

SCOLOPENDRIA. See **ASPLENIUM**.

SCOLOPOMACHÆRION, from *σκολοπαξ*, a Woodcock, and *μαχαίριον*, a Knife. An Incision-knife shaped like a Woodcock's Bill.

SCOLYMOCEPHALUS. A Name in *Boerhaave* for several Sorts of *Conocarpodendron*, *Hypophyllocarpodendron*, and *Lepidocarpodendron*.

SCOLYMUS. The Artichoke. See **CINARA**.

The Characters are;

The Calyx is squamous; the Ova are separated from one another by a small, thin Leaf which grows to them: The Seed, when ripe, still adheres to the Leaf: It has the Appearance of a Thistle.

Boerhaave mentions two Sorts of *Scolymus*, which are:

1. *Scolymus*; *Chrysanthemus*. C. B. 388. *Tourn. Inst.* 480. *Boerb. And. A. 91.* *Scolymus*, Offic. *Scolymus Theophrasti* frue *Eryngium luteum Monspeliensium*, Park. 972. *Carduus Chrysanthemus Narbonensis*, Ger. Emac. 1155. Raii Hist. 1. 258. *Spina lutea*, J. B. 3. 84. *Cichorium luteum Scolymoides Spinis horridum, Narbonense*, Hist. Oxon. 3. 55. **GOLDEN THISTLE.**

It grows in Italy; and the Root, which is the Part used in Medicine, is supposed to agree in Virtues with that of *Eryngo*. See **ALÆ**.

2. *Scolymus*; *Chrysanthemus*; annuus. A. R. Par. 3. Bot. Monsp. *Cichorium luteum, Scolymoides, spinis horridum, Hispanicum annuum*. M. H. 3. 55. *Boerb. Ind. Alt. Plant. Vol. 1.*

The Root of the *Scolymus* boiled in Broth, in the Spring Time, is reckon'd a wholesome Aliment: The same decorticated, and taken with Vinegar and Oil, is a Carthartic. *Hist. Plant. ascript. Boerhaave.*

SODYMUS SYLVESTRIS. See **CINARA**.

SCOMBER. Offic. Aldrov. de Pisc. 270. Schonef. Ichth. 66. Raii Ichth. 181. Ejsid. Synop. Pisc. 58. *Scomber frue Scombrus*, Gesn. de Aquat. 841. Jons. de Pisc. 63. *Scombrus Bellon de Aquat. 200.* Rondel. de Pisc. 1. 234. Salv. de Aquat. 241. **THE MACKREL OR MACAREL.**

It lives in the Sea, and is commended for the Jaundice, and Obstructions of the Liver.

This Fish is well known, and always found in the Sea, but never in fresh Water. It is fished for when about the Size we usually see it; for it afterwards increases in Bulk, and is not looked upon as the same. This Fish is much used in *England*, but only for a certain Season of the Year, after which it disappears; but in some Countries they have it at all Seasons. Those are best which are fresh, thick, tender, juicy, and agreeable to the Taste. When it is salted, it becomes not so well tasted.

It is nourishing Food, and reckoned to be of a dissolving Nature; but is heating and not reckoned wholesome, producing viscous and gross Juices, and is not easy of Digestion. It contains much Oil, volatile Salt, and Phlegm. *Belonius* blames those who boil Macarel, and says it should be roasted, and seasoned with such Things as promote Digestion. Undoubtedly the Roasting divests it more of its viscous and gross Juices. It agrees, in the Spring and Summer, with young People of a healthy Constitution, who have a good Stomach. *Lemery on Foods.*

SCOMBRUS. The same as SCOMBER.

SCOPARIA. See CHENOPODIUM.

SCOPS. *ουξ*. The Name of a Bird, a Sort of Owl, of no Use in Medicine.

SCOPTULA. The same SCAPULA.

SCOPULA. A Brush.

The Flesh-Brush is an Exercise most useful for promoting a full and free Perspiration and Circulation. Almost every Body knows what well Currying will do to Horses, in making them sleek and gay, lively and active, even so much as to be worth half the Feeding. This it can no otherwise effectuate, than by assisting Nature to throw off, by Perspiration, the Recrements of the Juices, which stop the full and free Circulation; and by constant Friction, Irritation, and Stimulation, to allicite Blood and Spirits to the Parts most distant from the Seat of Heat and Motion, and so to plump up the superficial Muscles. The same Effect it would produce in other Animals, even human Creatures themselves, if they were managed in the same manner, with the same Care and Regularity. I should think it, therefore, well worth the Pains of Persons of weak Nerves and sedentary Lives, especially those threatened with paralytic Disorder, to supply the want of Exercise of other kinds, with spending half an Hour Morning and Night, in currying and rubbing their whole Body, more especially their Limbs, with a Flesh-Brush. And 'tis a wonder to me, that Luxury has not brought Cold-Bathing and Currying in Use, upon the Animals (especially those of them upon whom they can be so readily made use of, such as Oxen, Pigs, Veal, Lamb, and all Poultry, which naturally delight in Cold-Bathing) which are brought to the Table. For certain it is, that Cleanliness and due Exercise (of which Currying is one Part) would much contribute to make all Animals whatsoever, without Exception, healthier in themselves, fuller of Juice and Spirits, and consequently better Food for human Creatures. *Cheyne of Health and long Life.*

SCORAX. The Gum of the Olive-Tree. *Rulandus.*

SCORBUTICA. Remedies for the Scurvy.

SCORBUTUS. The Scurvy.

The Scurvy, a Disorder very frequent in maritime and northerly Countries, is the Cause of many other Diseases; and though it has not been entirely overlooked and neglected either by the Ancients or Moderns, yet it has not hitherto been accurately described, for want of long Voyages and Travels into the cold Countries, where it principally rages.

As this Disorder often imposes on the Physician, by its surprising Variety of Symptoms, it cannot be better known than by forming a Judgment of its Nature, after premising a complete History of it.

It is found among the *Britons, Dutch, Swedes, Danes, Norwegians*, and Inhabitants of the inferior or northern *Germany*; so that it principally affects the northern Nations, and the People living in cold Climates; among these it is in a particular manner injurious to those adjacent to the Sea, to Places overflowed by Sea-Water, to Lakes and Marshes, to fat spongy Soils, to Valleys surrounded by high Hills, and to the Brinks of Rivers or Lakes. It is principally incident to those who lead an idle and sedentary Life; to those who in the Winter-time live cold in Places paved and built with Stone; to Sailors, who use salt Aliments, smoked Fleshes, Biscuits, putrid and verminous Water either by Sea, or on Land; to those who are Lovers of Water-Fowls, salt Fishes, Beef or Pork salted and indurated by the Air or by Smoke; to those who use farinaceous unfermented Substances, Pease, Beans, and salt, acrid, or old Cheese; to those who are subject to Melancholy, Madnefs, hypocondriac or hyfteric Passions, slow Disorders, and more especially to those who have used large Quantities of Peruvian Bark.

When it attacks such Persons, it seizes, is increased, and maturated with the following Phenomena.

First, There is a preternatural Laziness, Torpor, and Love of sitting and lying in Bed, a spontaneous Lassitude and Weight of the whole Body, a Pain of all the Muscles, as it were arising from excessive Fatigue, especially in the Legs and Loins; a Difficulty of Walking, especially up a rising or down a declining Ground; and in the Morning after Sleep, a Sensation of all the Limbs and Muscles, as if they were fatigued and confused.

2do. The Respiration is difficult, laborious, and almost defective upon the smallest Motion; there is an appearing and disappearing Tumor of the Legs, which become so heavy as to be immoveable. On the Legs there appear red, brown, yellow and violet-coloured Spots. The Colour of the Face is of a palish brown. There is a beginning Fætor of the Mouth, the Gums becoming tumid, painful, hot and itching, and upon the least Pressure discharge Blood. The Teeth, in consequence of the Retraction of the Gums, are denudated and loose. Various wandering Pains through all the external and internal Parts of the Body, producing surprising pleuretic, stomachic, iliac, colical, nephritic, cystic, hepatic and splenetic Disorders. There are, also, various but slight Hemorrhages.

3tio. The Putrefaction of the Gums smells like a Carcase; they are, also, inflamed, discharge Blood, and are at last seized with a Gangrene. The Teeth become loose, yellow, black, and at last carious; the Annuli, adjacent to the Venæ Raninæ, become varicose. There are Hemorrhages, which often prove mortal, from the external Skin, without any Appearance of a Wound, from the Lips, the Gums, the Mouth, the Nostrils, the Lungs, the Stomach, the Liver, the Spleen, the Pancreas, the Intestines, the Uterus, and the Kidneys. There are formed every where, especially in the Legs, Ulcers, so obstinate as to yield to no Applications, and which, for a long Time, continue fetid, and inclin'd to a Gangrene. The Patient is afflicted with an Itch, crustaceous Eruptions, a dry and gentle Elephantiasis. The fibrous Part of the Blood taken from the Veins, is black, grumous, thick, though not compact; whilst its serous Part is saline, acrid, and its Surface abounding with a yellowish green Mucus. The Patient is, also, afflicted with corroding lancinating Pains, which soon terminate, and are increased in the Night-time, through all the Limbs, Joints, Bones, and Viscera. Livid Spots, also, appear on the Skin.

4to. There are form'd various burning, malignant, intermittent, wandering, periodical, and continual Fevers, which bring on an Atrophy. The Patient is subject to Vomitings, Diarrhæas, Dysenteries, severe Stranguries, Deliquiums, Anxieties, which frequently prove mortal; the Dropsy, a Consumption, Convulsions, a Tremor, a Palsy, Contractions of the Parts, black Spots, a Vomiting and Purging of Blood; a Putrefaction and Consumption of the Liver, Spleen, Pancreas, and Mesentery; and in this State of the Disorder the Contagion is very quick.

Hence 'tis obvious, that the Nature and Effects of a Scurvy are easily understood by those who duly consider what has been said:

Hence 'tis, also, obvious, that the proximate Cause of a Scurvy is such a State of the Blood, in consequence of which it is in one Part peccant, with respect to Thickness, and in the other with respect to its acrid, saline, alkaline or acid Thinness; which Circumstances are above all Things to be accurately investigated and distinguished.

From these Circumstances, known from the Nature of the Disease, all its Phenomena, however surprising, may be deduced.

This is evinced more fully by the Rules which the prosperous or unlucky Cure of this Disorder has established, the principal of which are these following.

In a Scurvy, that which is thick is to be rendered thin; that which is stagnant, moveable; and that which is coagulated, fluid.

That, in like manner, which is too thin, is to be inspissated; and that which is acrid, corrected, and mitigated, not only in a general, but, also, in particular.

And in the Concretion of the one, we are always to have a due Regard to the Nature of the other. Hence great Skill and Judgment are necessary to the successful Cure of a Scurvy.

Acrid evacuating Medicines always exasperate this Disorder, and sometimes render it incurable.

1mo. Hence the Cure is to be begun with mild, attenuating, deobstruent, and purgative Medicines, exhibited in small but reiterated Doses. Thus,

Take of the Vitriol of Tartar, which is not acid, of the Crystals of Tartar, and of Sal Polychrestum, each half a Dram; reduce to a Powder, to be taken in the Morning

ing in Whey, drinking twelve Ounces of Whey after it. Or,

Take of Sal Polychrestum, two Drams; of the greater Pilulæ Cochizæ, one Scruple; of the solutive Syrup of Roses, with Senna, six Drams; and of distilled Succory-Water, two Ounces; mix up for a Draught. Or,

Take of the Elixir Proprietatis, prepared with Salt of Tartar, two Drams; of the solutive Syrup of Roses, with Senna, seven Drams; and of distilled Fumitory Water, two Ounces; mix up for a Draught. Or,

Take of the greater Pilulæ Cochizæ, one Dram; make into twenty-one Pills, of which let the Patient take two at Night, before going to Bed, and five in the Morning, before Breakfast.

2do. We are to proceed in the Use of attenuating and digesting Medicines, such as *Helmont's* Tincture of the Salt of Tartar, one Dram of which may be taken in two Ounces of Wine; *Harvey's* Tincture of the Salt of Tartar, four Drams of which may be taken in three Ounces of Wine; *Ludovicus's* Tincture of Mars, one Dram of which may be taken in one Ounce of Wine; vitriolated Tartar, Cryffals, and Cream of Tartar, and Vitriol of Mars, half a Dram of any of which may be taken in three Ounces of Wine; Sal Polychrestum, and *Tachemius's* Salts, prepared from Vegetables, one Dram of any of which may be taken in three Ounces of Wine; the Elixir Proprietatis, prepared with Spirit of Vinegar, two Drams of which may be taken; the Elixir Proprietatis, prepared with Salt of Tartar, two Drams of which are sufficient for a Dose; the Elixir Proprietatis, prepared with aromatic Waters, three Drams of which may be taken for a Dose; the volatile, oleous, aromatic Salts, one Dram of which may be taken; Venice Soap, four Drams of which may be taken; *Starkey's* Soap, half a Scruple of which may be taken; simple Oxymel, four Ounces for a Dose; simple Oxymel of Quills, three Ounces for a Dose; compound Oxymel of Quills, two Ounces for a Dose. To this Class, also, the Conserves of Sorrel and Wood-Sorrel; as, also, Oranges, China Oranges, Citrons, Lemons, and Pomgranets.

3tio. After this we are, for a long time, to persist in the Use of mild Specifics, exhibited in any Form; such as Male and Female Southern-Wood, broad and small-leaved Wormwood, all the Species of Sorrel and Wood-Sorrel, Maudlin, Agrimony, the Male and Female Pimpernel, Mugwort, Costmary, Burdock, Beccabunga, Oak of Jerusalem, red Cabbage and Colly-Flower; wild Parsley, Box, Chervil, Ground Pine, Germander, Succory, wild Cabbage, Cumenoides, Endive, Hemp-Agrimony, Fennel, Fumitory, both Species of Galangals, Ground-Ivy, Docks, Lovage, Marjoram, Baum, Mint, Water and Garden Cresses, Moneywort, Rhubarb, Sage, Scabious, Scordium, Flixweed, Paul's Betony, Nettles, Oranges, Citrons, Lemons and Pomgranats; Barberries, ripe Cherries of all Kinds, Strawberries, Gooseberries, Mulberries, sweet and somewhat acid Apples, Apricots, and all ripe Plums. The Fruit of the red and grey Bramble, Raspberries, Elder-Berries, Tamarinds, and Spanish Whortles.

4to. In the mean time, the six Non-naturals are to be duly regulated, so as to be contrary to the Causes of the Disorder before specified.

In the second Stage of the Disorder, described in No. 2. the Substances last-mentioned are proper. Then we are, for some time, to use somewhat more acrid Antiscorbutics, in the Form of expressed Juices, Conserves, Spirits, volatile Salts, medicated Wines, and Ales. The Substances proper for this Purpose, are the Acriviola, Garlicks, Jack-by-the-Hedge, Cuckow-Pint, wild Raddish, Wormwood, Onions, the greater Celandine, Scurvy-Grafs, Elicampane, Hedge-Mustard, Rocket, Gentian, Hedge-Hyffop, Woad, Dittander, Leeks, the Parmica Draco, Garden and wild Raddish, Rue, Savin, Worm-Seeds, Soapwort, the lesser Houfleeck, Mustard, and Water Trefoil. An expressed Juice may be prepared thus:

Take of the Shavings of wild Raddish, four Ounces; and of the recent Leaves of Scurvy-Grafs, Money-wort, and Nettles, each four Handfuls: Express the Juice, and mix with Sugar, and let the Patient take two Drams four or six times a Day.

A Spirit may be prepared thus:

Take of the Seeds of Mustard, Garden Raddish, Rocket, Hedge-Mustard, and Garden Cresses, each one Ounce; of the Leaves of Scurvy-Grafs, Dittander, and wild

Raddish, each two Handfuls. To these, when cut and bruised, add of Sea-Salt two Ounces; of Yest, one Ounce; and of Spirit of Wine, a Quantity sufficient to rise two Finger-Breadths above the Ingredients; distil and cohobate three Times.

A volatile Salt may be thus prepared:

With the preceding Ingredients for the Spirit, instead of Sea-Salt and Yest, mix of Sal Ammoniac bruised, three Ounces; and of Pot-Ash, seven Ounces. Distil as before.

A medicated Ale may be prepared thus:

Take of the recent Leaves of Scurvy-Grafs, Rocket, Hedge-Mustard, and Water-Trefoil, each one Handful; of the recent bruised Seeds of Garden-Cresses, and Garden-Raddish, each two Ounces; of the Flowers of Lesser-Centaurry, one Ounce; and of the Roots of Wild Raddish, five Ounces. Put all into half a Firkin of recent fermenting Ale, which is to be used for ordinary Drink.

A medicated Wine may be prepared thus:

Take of the Bulb of Arum, newly dug out of the Ground, half an Ounce; of wild Raddish, one Ounce; of the Leaves of Scurvy-Grafs and Trefoil, each one Handful; of Mustard-Seeds, two Ounces; and of Rhenish Wine, six Pints: Make into a medicated Wine.

Externally Baths for the Body and Feet are to be used, prepared with antiscorbutic Ingredients. Hot dry Frictions, together with specific Liquids, are, also, to be used. Besides, Venesection will often contribute to diminish the acrid Fluids, lessen the Corrosion of the too much distended Vessels, procure a Revulsion, and pave a Way for the Operation of other Medicines to be used.

But according as the acrid Tenuity of the Fluids, the Heat and the Dread of an Hæmorrhage are greater; or according as the Thickness, and languid State of the Fluids, and Coldness and Paleness of the Vessels are greater, we are to use Specifics moderately astringent, somewhat cooling; or hot and acrid. The moderately astringent Antiscorbutics are Capers, Flowers of Broom, the common Ash-tree, Dock, and all the Species of it, Hops, Polypody of the Oak, Rhubarb, and Tamarisks. The somewhat cooling Antiscorbutics are Oranges, Citrons, Lemons, China-Oranges and Pomgranates; somewhat acid and sweet Summer-Fruits, Sorrel, Wood-Sorrel, Succory, Endive, Lettice, Dandelion, Milk and Water in the Summer, Whey and Butter-milk; Tartar, and all acid tartarized Substances. The hot and acrid antiscorbutic Medicines are already enumerated.

For removing the Disorders of the Mouth in this Species of Scurvy, we must use antiphlogistic, antiscorbutic Medicines, appropriated to the various Species of Scurvies. In hot Scurvies of the Gums, the following Gargarisms may be used.

Take of Lemon-Juice and Honey of Roses, each two Ounces; of the dulcify'd Spirit of Salt, half a Dram; and of distilled Rue-Water, two Ounces: Mix all for a Gargarism. Or,

Take of the Spirit of Sea-Salt, two Drams; and of distilled Sage-Water, eight Ounces: Mix for a Gargarism. Or,

Take of recent Lemon-Juice, one Ounce; of Sal Ammoniac, one Dram; and of distilled Rue-Water, six Ounces: Mix for a Gargarism.

In cold Scurvies of the Gums, the following Gargarism may be used.

Take of the Spiritus Theriacalis, and of the Spirit of Scurvy-Grafs, each one Ounce; and of the Honey of Rosemary, two Ounces: Mix for a Gargarism. Or,

Take of camphorated Spirit of Wine, half an Ounce; of the Tincture of Myrrh, one Ounce; of the Rob of Juniper Berries, half an Ounce; of the distilled Water of Wormwood, four Ounces; and of Sal Gemmæ, one Dram: Mix for a Gargarism.

For the Cure of the third Species of Scurvy, described No. 3. all the already prescribed Measures are to be used; only the Patient is to use large Quantities of lenitive, diuretic, antiseptic,

septic, and antiscorbutic Medicines; whilst a gentle Discharge by Sweat, Urine and Stool, is to be long continued. Thus:

Take of Fumitory, Sorrel, Brook-Lime, and Water Trefoil, each one Handful; of Whey and Butter-milk, each two Pints: Make into a Decoction. Or,

Take of Wood-Sorrel, one Handful and an half; of Betony and Chervil, each half an Handful; and of Tamarinds, one Ounce and an half: Cut all down, and in three Pints of the Whey of Summer-milk, infuse for an Hour in an almost boiling Heat, tho' without Boiling: Then with the Liquor, when expressed through a Linen-Cloth, mix of the Syrups of Citron-Juice, Rasp-berrys and Violets, each one Ounce: Of both these Preparations let the Patient drink one Ounce every Half-Hour during the Day.

The fourth Species of Scurvy is rarely to be cured; but the Method of Cure is to be varied according to the Variety of the Symptoms. Sometimes Mercurials prove beneficial, as also the Medicines last recommended.

If what has been said is duly considered and compared with the Phenomena of the Disorder, and the Dissections of those who have died of it, it will be obvious, that, in order to a successful Cure of this Disease, the Physician must carefully investigate the Nature of the peccant Humor, and the peculiar predominating Acrimony. And as this Acrimony may be either saline and mucous, acid and austere, alkaline and fetid, or rancid and oleous; so a Knowledge of these particular Circumstances will render the Cure of the Disease more easy than it would otherwise be. Hence, also, the Reason is obvious, why Whey, Butter-milk, and medicinal Waters, have so often removed the most terrible Symptoms of this Disorder, and what these Symptoms are? Why the acid Juices of ripe Summer-Fruits, such as Oranges, Citrons, Lemons, Pomegranates, Sorrel, Wood-Sorrel, Vinegar, Rhenish and Moselle Wine, are so often Specifics for this Disorder; and in what Cases they prove such? Why astringent and austere Substances, such as Rhubarb, Dock, Tamarisks, Capers, austere Wine either of the black or red Kind, and Preparations of Steel, so often prove beneficial, and in what Cases they are so? Why the most acrid aromatic Substances, such as Scurvy-Grass, Dittander, Ginger, the lesser acrid House-Leek, alkaline Salts of the volatile, fixed, oleous, aromatic, and saponaceous Kinds, so often prove beneficial without the Help of any other Medicines? Why what is serviceable to one scorbutic Patient, is prejudicial to another? And lastly, why, instead of perplexing ourselves about the various Names of this Disorder, we ought rather to investigate the peculiar Genius of each Species of Scurvy, as if it was a distinct Disease? *Boerhaave Aphor. § Mat. Med.*

The Name *Scurvy* is at present so extensive and common, that almost any chronical Disorder, if accompanied with any Degree of Impurity, comes under that Denomination. Thus nothing is more usual, than to class a Cachexy, a Gout, a Dyspnea, a Palsy, an Erysipelas, a Colic, an Atrophy, a Rheumatism, the Purples, and several others, among the scorbutic Disorders. 'Tis, also, customary for ignorant Physicians, when, from certain Signs, they can neither know the Disease nor its Cause, to affirm that it is a Scurvy, assigning for its Cause a scorbutic Acrimony. In Practice there, also, frequently occurs a singular Disease, accompanied with surprising spasmodic and convulsive Symptoms; in which Case the Ignorant either refer the Disorder to Fascination, or falsely call it by the Name of the Scurvy. This Opinion is opposed by some celebrated modern Physicians, who either absolutely deny that there is any such Disorder as the Scurvy, or pretend that it is only an Exacerbation of the hypochondriac and hysterical Disorders. But in this they are mistaken, as will afterwards appear.

A Scurvy, properly so called, is a violent Injury of the Functions of the whole Body, arising from a preternatural Dyscrasy and Corruption of the Blood and vital Juices, produced by the Fault of the Diet and Air, familiar not only to the Inhabitants of maritime and northerly Parts, but also to Soldiers residing in Camps; and not to be cured without great Difficulty.

This Disorder, which is accompanied with various and terrible Symptoms, principally discovers its Nature in the external Parts; for if it is approaching, a spontaneous Lassitude seizes the whole Body, which is succeeded by a Heaviness of the Legs and Feet, accompanied with an Inability of Motion: Then the Colour of the Face recedes from its natural Redness, an Ichor mixed with Blood is discharged from the Gums, whose Flesh is relaxed and consumed to the very Roots of the Teeth, which by that means are rendered loose. In the Legs there appear Spots of various Figures, Bulk and Co-

lours, and which frequently terminate in malignant Ulcers. As the Disorder increases, the Limbs are generally seized with lancinating Pains, either of the wandering or fixed Kind, accompanied with a certain Inability of Motion or convulsive Strictures.

That a Scurvy was not altogether unknown to the Ancients, is pretty certain from *Hippocrates*, who, in his *Treatise de Internis Affectibus*, describes the Scurvy under the Name of the *Disease of the Spleen*, in the following manner: "The Person, says he, who is seized with this Disorder has his Abdomen inflated, then his Spleen becomes tumid, hard, and afflicted with acute Pains. The Colour of the Face becomes black, or pale, resembling the Rind of a Pomegranate. The Gums have a fetid Smell, and are separated from the Teeth. Ulcers resembling nocturnal Pustules, appear on the Legs; the Limbs are extenuated, and the Patient is costive." *Pliny*, also, in *Histor. Natural. Lib. 25. Cap. 3.* beautifully confirms this, in the following manner: "When *Cæsar's Army* was on the other Side of the *Rhine in Germany*, by their drinking insalutary Waters, supposed to be contaminated by some Spells, there appeared among them two new Disorders; one of which being a putrid and fetid Disorder of the Mouth, they called *σφοδραία*; by means of which, in two Years Time, all the Teeth dropt out. Whilst the other so injured the Nerves of the Legs, as to loosen the Joints of the Knees, and vibrate the Legs; from which it got the Name of *οκνισμός*."

But in order to render the Nature and Genius of a Scurvy more conspicuous, we shall trace the History of this Disorder with all its terrible Symptoms, through the several Parts it generally affects, beginning with the Abdomen. Patients of this kind do not very often complain of a Weight and Pain of the Stomach, tho' they are sometimes affected with a Nausea, Cardialgia and Vomiting. The Appetite is, in some, pretty much impaired, and in others preternaturally increased. But it is quite otherwise with respect to Thirst; for there is scarcely any Desire for Drink. Acid, bitter, nidorous, and fetid Eructations are frequently discharged with Violence. Rumbings and a Noise are frequently perceived in the Stomach and Intestines. Some have their Bodies very soluble, whilst others are so costive, that the indurated Faeces can hardly be discharged. In some the *Anus* is, as it were, drawn inwards; so that nothing can be commodiously introduced into it without the greatest Uneasiness. In the Abdomen are violent Colic-Pains, far different from those of the common Kind; for they are lancinating, acute, and so intolerable, that the Patient is ready to lay violent Hands on himself. Nor in this, as in other Colics, is the Abdomen distended with Flatulences. Since the Navel is drawn inwards, so far that an ordinary Fist may be put into the Cavity. This Disorder is long protracted, nor does it easily yield to Medicines and Fomentations, but has this peculiar to it, that it frequently terminates in a Palsy.

We now come to consider what Symptoms occur in the Breast under a Scurvy. Patients of this Kind are afflicted with a Difficulty of Breathing, which frequently arises, or is exasperated, by excessive Motion. This is often accompanied with an Uneasiness which the Patients perceive under the Diaphragm, in the Middle between the Hypochondria, where the *Cartilago Ensisformis* is situated, and which does not suffer them to breathe freely, except in an erect Posture. There is an easy Transition from this Disorder to a Dropsy, which first discovers itself by a Swelling of the Legs, and then of the Abdomen, especially if drastic Purgatives have been used. Besides the Difficulty of Breathing in the Thorax, a Pain is perceived sometimes in the Left, and sometimes in the Right-Side; sometimes towards the Back, and sometimes towards the Sternum, and at other times in the Sternum. But this Pain ought not to be confounded with a true Pleurisy, in which the Pain is continual, pungent, and accompanied with a Fever, a continual Cough, and an Expectoration of coloured Matter. But this is not observed in a scorbutic Pleurisy, where the Pain is most acute, but not continual; since it recurs by Intervals; nor is it accompanied with Thirst and a Fever; nor is the Breathing difficult, except under the Pain. Besides, in a scorbutic Pleurisy, the small and unequal Pulse is quite different to that which happens in a true Pleurisy. Sometimes there is no Cough, or one which is not very troublesome; and when such a Symptom is present, it proceeds not so much from any Disorder of the Thorax, as from a Matter falling down on the Glands of the Fauces. This Disorder may, therefore, be justly called a spurious scorbutic Pleurisy, and may be easily distinguished from a true Pleurisy; because the former continues longer than the latter. A Palpitation of the Heart is, also, frequently incident to scorbutic Patients, who are, likewise, subject to Coarctations of the Breast, and Deliquiums, into which they fall when they endeavour to get out of Bed, without any external Cause. But these Deliquiums differ

differ from others in this, that during the former, the Pulse is large and strong; whereas, in other Deliquiums, it is small and intercepted. Besides, in the Thorax, because in it the Oesophagus is situated, there happens another Symptom; for scorbutic Patients frequently complain, that their whole Gullet is obstructed, and that something like a Stake is contained in it, which would so hinder the Deglutition of the Aliments and Drink, that if any Attempt was made that way, they would run a Risk of being suffocated.

Having thus considered the Thorax, we now proceed to the Neck, Fauces and Head, where various Symptoms occur; such as a preternatural Discharge of the Saliva, a Symptom very frequent to scorbutic Patients. The Gums, also, are in this Disorder greatly affected, since in the Beginning they become tumid, and, when gently handled, discharge a serous Blood. A luxuriant Flesh is, also, often copiously formed on them, which is at last accompanied with a highly fetid Smell. When the Gums are thus indisposed; the Teeth begin to be loose in their Sockets; so that they may sometimes be taken out. There is, also, frequently a Tooth-ach, without any manifest Cause; but this Tooth-ach differs from others in this, that it suddenly disappears, and easily recurs. The Patient is often afflicted with violent and generally wandering Head-achs, which principally have their Periods towards the Evening, but terminate in the Night-time upon the Eruption of a Sweat. Vertigos, also, and Dimness of Sight, frequently happen, and, at certain Intervals, a Drowsiness; and, on the contrary, other Patients are for many Weeks tormented with Watchings, without being weakened, as it happens to feverish Patients. Sometimes, also, an excessive Dejectedness, or an absolute Delirium, happens. But this Species of Delirium differs from others in this, that it seizes the Patient in an anomalous manner, and seemingly without adequate productive Causes.

If we consider the external Parts, we find the Scurvy productive of Convulsions, Pains, and Spasms in them. Thus Convulsions frequently happen in the Hams of the Legs, and the Ancles are sometimes contracted. Here and there, also, violent Contractions happen, which frequently remain in the Joints. This Disorder is excellently described by *Georgius Horstius*. Palsies, also, frequently happen, especially in the Legs, after violent Spasms of the Intestines: In which case, a preceding Stupor is the Fore-runner of the approaching Misfortune. But these Palsies differ from an ordinary Palsy, which is gradually formed, continues long, and destroys all Motion; whereas a scorbutic Palsy seizes quickly, disappears suddenly, and in some measure leaves the Motion of the Part, especially if the Patient keeps his Bed. Besides, an excessive Weariness seizes all the Limbs, without any manifest Cause. Some scorbutic Patients, also, complain of a vermicular Pain, and sometimes an obtuse tensive Pain seizes the Marrow of the Bones. Others are racked with the most intense, pungent and lancing Pains, just as if the Parts were torn asunder. These Pains are generally wandering, and transfer themselves from one Part to another, which they, also, soon leave. Hence they are called the Wandering-Gout. But sometimes they seem to keep a fixed Seat in the Breast; in which Case a Pleurisy is to be dreaded.

Pains arise principally in the Legs, as also about the Ancles and Soles of the Feet; sometimes in the Extremities of the Fingers, the Hip, the Knee, the Back, the Loins, and the Nape of the Neck; and these Pains differ from a true Arthritis, because they wander up and down, not only about the Joints, but also in the Flesh, about the Membranes. In this Disorder the Patient is also afflicted with profuse, troublesome and wasting Sweats, especially in the Night-time. Hemorrhages, also, sometimes happen from the Nose, and are not to be stopped without great Difficulty. Besides, on the Skin appear Spots, which are sometimes larger, and sometimes smaller, resembling the Bites of Gnats, and which are generally at first red, then purple, and somewhat livid, and last of all black. The larger Spots sometimes occupy the whole Legs, and diffusing themselves far, appear sometimes on the Thighs, Neck and Breast, and vanish, and again appear at Intervals. Sometimes, also, Tumors and Tubercles appear in different Parts of the Body. Oedematous Tumors are formed in the Feet, and Exulcerations happen in the following manner: First, the Part is very painful; then the Cuticula is separated from the subjacent Skin, just as if boiling Water had been poured upon it, the Serum is discharged, and then the Part is intensely painful; but a true Pus is hardly ever observed in such Parts. Some Patients are, also, afflicted with dry and deep Ulcers, which discharge neither Pus nor Sanies, but easily degenerate into a Gangrene. Gangrenes are, also, frequently incident to scorbutic Patients, especially in their Toes; but such Gangrenes differ from others in this, that they seize without a manifest Cause and Inflammation, spread slowly, and are long before they destroy the Patient. These are the principal Signs and Symptoms of a Scurvy, which are not all

equally observed in all Patients, since some are afflicted with more, and others with fewer of them; in some they are more violent, and in others more mild; in some continue a longer, and in others a shorter time.

Having given a compleat History of the Scurvy, together with the several Symptoms with which it is generally complicated, we now come to consider the proximate and remote Causes, from which this, and its several Effects, proceed; because both the Prevention and Cure of this Disorder, in a great measure, depend upon an accurate Knowledge of its true Causes. We have already, in the Definition of a Scurvy, placed its continent and proximate Cause in an excessive Impurity and Corruption of the vital Juices, which is highly unfriendly to Life and Health. But since it is not as yet agreed upon, wherein this Taint principally consists, or how it arises and exerts its unlucky Influence, we shall inquire with more Accuracy into these Circumstances.

'Tis, therefore, certain from Physiology, that a good State of Health, or the Soundness of the natural, vital, and animal Functions, depends upon a laudable Temperament, Mixture and Crasis of the vital Humors, the Blood, the lymphatic and nutritive Juices, and the nervous Fluid, and their due Influx and Circulation, through all the Parts of the Body. But since a due Temperature and Purity of the Juices principally consists in this, that the more subtile, moveable, aqueous, æthereal, elastic, and gently sulphureous Parts, be in a due Proportion mixed and united with the gelatinous and fine mucous Parts; and that the gross, glutinous, terrestrial, and various kinds of saline Parts, as, also, the tartareous, alkaline, sulphureous, or bilious, and superfluous, aqueous, and pinguinous Parts be duly eliminated through proper Strainers and Emunctories; such as the Skin, through which Perspiration is made, the Liver, the Kidneys, the Intestines, and the glandular Coats of the Fauces, Nose and Bronchia, it is sufficiently obvious, that an Impurity of the Juices, or a Caco-chymy, must be produced, when the terrestrial, tenaceous, sulphureous, and saline Parts, retained in the Body, surpass those of the mild and temperate kind. But 'tis to be observed, that the impure Dyscrasy of the Blood, in this Disorder, is not always of the same kind, but differs according to the Nature of the excrementitious Particles, and induces different Symptoms; for in some Patients the peccant Matter is highly viscid, fixed, terrestrial, saline and acid; whereas, in others, it is bilious, saline, alkaline, and sulphureous. Hence Authors have ascribed a Scurvy either to a cold or an hot Cause. To these I add a third Species of Scurvy, which arises from a vapid Disposition of the Juices, tending to a putrid Corruption; and this is found to be a Scurvy of the worst and most malignant kind.

The putrid Corruption and vapid State of the Juices is sufficiently evinced from this, that the Scurvy is often propagated by Contagion, and all contagious Disorders have for their Foundation and Cause putrid Exhalations, which penetrating deep into the Body, like a Fomes or Leaven, contaminate, and convert into their own Natures, the predisposed Humours, especially those of the pinguinous Kind. Hence *Sennertus*, in his Treatise *de Scorbuto*, Cap. 1. § 4. observes, that a Scurvy has been produced only by the Stench of Patients who have died of this Disorder; and *Caspar Hoffman*, in his Treatise *de Febris*, Cap. 57. has excellently described the noxious Nature of scorbutic Exhalations in the following manner. "Immediately, says he, after the Patient's Death, there is no Danger; but after the Carcass begins to grow putrid, all Persons ought to keep at a Distance from it, unless they chuse to be infected with the same Disorder." Besides, the excessive Corruption of the Blood and nutritious Juice is sufficiently evinced, from the spontaneous Lassitude; the Languor and Weakness of the Limbs; the Loss of Strength, so far as to produce a Deliquium; the weak and languid Pulse; the excessive Stench of the Sweat and Urine; and the quick and easy Sphacelation of the external Parts, without any previous external Cause.

But in order to generate the Symptoms which afflict scorbutic Patients, the depraved and corrupted State of the Humours alone is not sufficient; but 'tis, also, requisite the Union of the fluid and solid Parts of the Blood should be destroyed, which may be pretty distinctly collected from various Phenomena accompanying the Scurvy. But this Separation of the Fluid, from the more solid and heavy Parts of the Blood, is by no Circumstances better known than by the Discharges of aqueous Blood, which generally happen from the Nose, Gums, and Anus; as, also, from this, that in the external Parts, such as the Face, Lips, and Legs, the Mouths of the Vessels sometimes spontaneously open and discharge Blood. Scorbutic Patients are, also, frequently subject to copious Discharges of the Saliva, Urine and Sweat, which, also, indicate an excessive Separation of the Serum from the thick Blood. Whereas, on the contrary, the in-

constant Pains wandering from one Part to another; sufficiently evince the Thinness and subtle Acrimony of the impure Serum; for a thin and acrid Humour extravasated, is easily and quickly convey'd from one Part to another, which principally happens in a wandering scorbutic Gout. To this Cause we may, also, justly refer the Uneasiness of the Præcordia, the spasmodic Constriction of the Orifices of the Stomach and Diaphragm, and the lancinating Pains of the Intestines and Breast, commonly called a spurious Pleurisy; together with the Itching and Exulceration of the external Parts. The Lentor and Thickness of the scorbutic Humor may be known from the Tumors, the fixed Pains, the Weariness of the Limbs, the Horror and Stupor. Hence, also, we are to account for the Palpitations of the Heart, the Syncope, the Carus, the Lethargy, the small and weak Pulses, the Sadness, the Melancholy, the polypous Concretions in the large Vessels of the Heart, the paralytic Disorders, the sudden Swelling and Increase of the Body, the Largeness of the Liver and Spleen, and the Tubercles in various Parts of the Body.

Besides, that the Union between the solid and fluid Parts of the Blood, which is highly necessary to its Circulation through the minute Vessels and Viscera, is destroy'd; may be known from Blood taken from the Veins of scorbutic Patients, which is generally grumous, black, heavy and thick; with a large Quantity of fetid and ill-tasted Water. I have frequently seen the Blood discharg'd from the Feet of scorbutic Persons in Water, soon compacted into fibrous Concretions; whilst in others, I have seen the Blood received in a Vessel, soon after covered with a very tenacious, glutinous Pellicle. But in others, instead of a duly consistent Blood, I have, with Admiration, seen, a thin, florid, and acrid Serum discharged, which left no thick, black Substance in the Bottom of the Vessel.

Having thus investigated the Causes of a Scurvy, we now come to examine, which of the Viscera are principally affected by it, and what is most properly to be esteemed its Seat. But as Authors differ with respect to this, we shall enquire which of their Opinions approaches nearest to Truth. The Antients, and among the rest *Hippocrates*, affirm'd, that the Spleen, which they thought the Seat of the melancholic and atrabiliarious Humours, was most affected. But from the accurate anatomical Disquisitions of the Moderns, 'tis certain, that the Seat of this Disorder is rather to be placed in the Liver. Thus *Sennertus*, in *Med. Præf. Lib. 3. Sect. 2. Cap. 2.* informs us, that upon opening the Body of a Person who died of the Scurvy, he found almost the whole Omentum putrid and corrupted, but no apparent Disorder in the Spleen. *Forestus*, in *Lib. 20. Observ. Schol. 2.* informs us, that upon opening the Body of a certain Man of Distinction, who died of this Disorder, he rather found the Liver affected than the Spleen. *Reusnerus*, in *Exercitat. 4. de Scorbuto*, informs us, that he saw the Liver of a scorbutic Man, corrupted, callous, and unfit for the Depuration of the Blood, whilst the Spleen had the Bulk and Colour of a sound Liver. *Horstius*, also, in his *Treatise de Scorbuto, Sect. 2. p. 8.* tells us, that he saw the Liver of a scorbutic Man totally scirrhus, both internally and externally, without any Vessels or Blood contained in it; whilst the Spleen was three Times larger than in a natural State it generally is, appeared very found, and by its pretty red Colour, and fleshy Substance, resembled the Parenchyma of the Lungs. And Dr. *Willis* often, dissecting the Bodies of many scorbutic Patients, observ'd, that the Parts most frequently affected, were the Liver or the Gall-Bladder; for in some he found the Liver absolutely without Blood, and like a Cow's Udder after the Milk is drawn from it. In some he found the Gall-Bladder entirely empty, in others obstructed with Stones, and in others full of highly bitter Sordes; whilst the Spleen was found and free from any apparent Disorder.

But I shall not hesitate to affirm, that in this Disorder all the Viscera and Emunctories subservient to the Depurations of the Fluids are affected and disorder'd, since, in consequence of the slow Circulation of the Blood, their minute Vessels and Ducts are easily infarcted, obstructed by a viscid Sordes, and at last absolutely indurated: But in particular, that universal Emunctory of the whole Body, the Skin, through which the thin excrementitious Juices are exhaled, seems to be most considerably affected: Nor are the sanguineous Viscera in the Abdomen, to which the Vena Portæ is distributed, such as the Liver, Spleen, Mesentery, and Omentum, entirely unaffected by this Disorder; because the Liver is destin'd for the Secretion of the impure, saline, sulphureous Parts, and such as have a Tendency to an alkaline Nature. The Spleen, also, principally contributes to the intimate Mixture of the fluid and solid Parts of the Blood, for which Reason the Injuries done to these Parts in a Scurvy,

are to be particularly regarded. But I would have it observ'd, that in this Disorder we are not absolutely to confide in anatomico-practical Observations; because, we rarely find an Opportunity of dissecting scorbutic Persons who have died before they fell into a Dropsy, an Atrophy, an Hæctic, the Morbus Niger, or an internal Sphacelus.

That a Scurvy is so long protracted and so obstinate, as with Difficulty to yield to the most proper and efficacious Medicines, is, in my Opinion, owing to this, that the Laboratory of Digestion and Chylification, by which I mean the Stomach and Intestines, is disorder'd, and considerably injur'd: For as the intimate Dissolution of the Aliments, and the Preparation and Extraction of a laudable, sweet and chylous Juice, depend intirely on the Temperature, gently spirituous Quality, and sufficient Influx of the Salival, gastric and pancreatic Menstruums; so when by the Impurity of the Blood, these menstrual Liquors plainly lose their temperate Nature, they only produce a crude, viscid, and acid Chyle; which being convey'd to the Blood, by its peccant Pores, not only sustains, but also augments the Intemperature and Impurity of the Juices.

Having traced the continent and proximate Causes and true Seat of a Scurvy, and its several Symptoms, and consider'd in what Manner it diffuses itself to all the Parts of the Body, we now come to investigate whence these internal Causes of the Disorder derive their Origins; and this, in my Opinion, is best done by carefully adverting to what the Physicians commonly call the external non-natural Causes, which are daily necessary to the Preservation of Health. Thus, 'tis certain from Experience, that the Scurvy is endemial and familiar to some Countries, especially to northern and maritime Climates, such as those of the *Danes*, *Norwegians*, *Zealanders*, the *Freezlanders*, the *Ditmarshians*, the *Dutch* and the *Swiss*; the Cause of which is to be sought for in the Atmosphere, which being impregnated with impure, putrid, saline, and too aqueous Exhalations, is by that Means in a great Measure depriv'd of its elastic and expansive Force, on which the Tone and Strength of the Solids, and their moving and systaltic Force depend. Hence, in southerly Climates, marshy, dank, and low situated Places, where Inundations, Stagnations of Water, and cloudy Weather frequently happen, are very fit for generating the Scurvy, certainly, for no other Reason, than that the Air impregnated with many moist Exhalations and Vapours, by greatly relaxing the moving Fibres, retards and diminishes the Circulation of the Humours, and consequently the natural Secretions and Excretions.

But since, according to *Hippocrates*, in *Lib. de Flatibus*, Diseases proceed not only from the Air, but, also, from the Aliments: So we find from Experience, that hard, high-salted Beef and Pork, the compact Fleshes of old Animals, when much salted and indurated in Smoke, as also Fish, especially of the Sea Kind, when salted and hardened, greatly contribute to render the Scurvy familiar to some northern and maritime Countries. Pulses of a gross Texture, especially those produced in dank and marshy Places, and coarse, hard Bread, prepar'd of Rye reaped in rainy Weather, or which has contracted a Mouldiness, have, also, a Tendency to produce the Scurvy; which Disorder is, also, generated by crude, hard, saline and stagnant Waters, daily us'd; and by Ales prepar'd of such Waters, when not duly impregnated with Hops, or when they become acid or feculent. And all these Causes are far more injurious, if at the same Time the Life of the Patient is inactive, and free from Labour and Exercise; for by this Means the vital Circulation of the Fluids, and the Secretions and Excretions depending upon it, are greatly retarded, and a Thickness of the Blood and Humours induc'd.

'Tis, also, observable, that Persons of a spongy and loose Habit, those of a sanguineo-phlegmatic Temperament, those who are corpulent, and whose Vessels are very small and numerous, are more subject to a Scurvy than those of dry, slender and firm Habits, who have larger Vessels: Because, in the former the Circulation being slower, and the Secretions more languid, the pinguious watery Juices, upon the Approach of any Miasma, quickly degenerate into a putridinous Corruption. It is, also, observed, that Women are more subject to the Scurvy than Men; Persons who reside in Towns more than the Country People; and studious Persons more than the common People, who by Exercise and Labour expel by Perspiration the peccant Humours accumulated in their Bodies.

But nothing has a greater Tendency to corrupt the Mass of Blood, pervert the Laws of the Animal Economy, and suppress the several Evacuations by Stool, Sweat, and Urine, than a Suppression of the Menfes in Women, and of the Hemorrhoids in Men: So nothing can have a more immediate Influence in producing the Scurvy. Barren Women

are, also, subject to this Disorder; and those whose Menstrues have ceas'd on account of their Age; and in general all who totally omit usual Evacuations of Blood, whether by Scarification or Venesection; for by this Means the Humours being copiously accumulated in the Body, cannot pass freely through all the Vessels, but becoming stagnant here and there, contract an Impurity which is the Origin of the Scurvy. According to *Solomon Albertus, Eugalenus, and Willis*, excessive Hemorrhages from the Nose, the Uterus, the hemorrhoidal Veins, and in child-bed Women by the Lochia, have no less a Tendency to generate the Scurvy, than a Suppression of the usual Evacuations of Blood: For too great a Loss, as well as a Redundance of Blood, lays a Foundation for a Stagnation and Corruption of the Humours.

Old Persons are most subject to this Disorder; for the Diseases most familiar to them have a great Affinity with the Scurvy, because they derive their Origin from an impure, saline, and viscid State of the Blood and Humours. Nor is this difficult to be comprehended; for in the Decline of Life, the minute Vessels by which the Excretion of the Sordes is principally made, the Parts are nourish'd, and the Lymph is intimately mix'd with the Blood, begin to be dried, contracted, and render'd narrow; hence they cannot duly perform their Functions, by which Means the whole Mass of Blood is, in process of Time, rendered impure.

Among the remote Causes of a Scurvy, we may, also, justly reckon whatever weakens the Strength, and diminishes the vital Motions, together with the Secretions and Excretions. Nothing has a greater Tendency to produce these Effects, than violent Perturbations of Mind, induc'd by anxious Care, Sadness and Grief. Thus *Eugalenus in Tr. de Scorbuto, Obs. 15.* positively affirms, that all those who live on coarse Aliments, and labour under long Grief, are greatly dispos'd to the Scurvy. This Doctrine is confirm'd by *Willis*, who observes, that some have been rendered scorbutic by a sudden Fright; for the Passions of the Mind are of singular Efficacy in infringing the Strength of the Solids, and the Circulation of the Blood, which depends upon it: Hence the Humours circulating slowly, become thick, unfit for passing through the minute Vessels, and at last impure. Hence there is an easy Transition to the Scurvy.

As Ease and want of Exercise dispose to the Scurvy, so excessive Motion and Labour too long continued, have generally a Tendency to induce this Disorder; for by this Means, the most pure and subtle Parts of the Blood, nutritious Juice, and nervous Fluid, are dissipated and exhausted: So that the remaining Humours are afterwards easily susceptible of a foreign and corrupted Quality, especially upon the Access of a Contagion. But above all, we condemn unseasonable and intense Exercise, by which the Chyle, as yet not sufficiently digested, is too quickly convey'd to the Blood; and hence arise all the Disorders we have already observ'd to proceed from a bad Digestion and a crude Chyle. Thus *Galen, in Lib. 2. de Sanitate tuenda, Cap. 2.* informs us, "That when Exercise is perform'd, a large Quantity of crude and inconcocted Aliments and Juices ought not to be in the Stomach or Vessels, lest these should be convey'd to all the Parts of the Body before they are duly prepared by a mature Concoction."

Nothing, also, more easily and readily disposes to the Scurvy, than when any previous Disorder has left a kind of Taint in the Blood, the alimentary Juice, or any of the principal Viscera. Hence nothing is more frequently observed in Practice, than that a Scurvy succeeds continual and intermittent Fevers, when preposterously suppressed; or when the Patients, as yet weak, eat liberally. The Reason of this is obvious; for the vital Juices being, by the febrile Heat, deprived of their due spirituous Quality, and their most subtle and sulphureous Parts, circulate with Difficulty. Hence the Miasma, left by the preceding Disease, easily contracts a foreign Quality. But not to mention the many Observations which evince the Power of all Disorders to produce the Scurvy, we shall only specify the Affinity between the hypochondriac Disorder and the Scurvy; for the latter very often either accompanies or succeeds the former, so that some Physicians have falsely asserted, that there was no Difference between those Diseases.

The Patient's Method of Life, also, sometimes proves the antecedent Cause of a Scurvy. Thus Mariners, who undertake long Voyages, are surrounded with a moist Air, and eat large Quantities of gross and high-salted Aliments, are in a principal Manner subject to it. The Scurvy is, also, very frequent in a Camp; because the Soldiers, observing no Regimen, drink stagnant Waters, and often corrupted Liquors, eat crude, and sometimes half putrid Aliments, mouldy Bread, and rancid Bacon; expose their Bodies to an impure, moist and cold Air, especially in the Night; and waste their

Strength by Watchings and Hunger. *Olaus Magnus, in Lib. 16. de Regionibus Septentrionalibus, Cap. 51.* tells us; "That by high-salted and smok'd Fish and Flesh, by cold and crude Aliments, and by ill-bak'd Bread, the Scurvy is produced, in which the Fauces and Gums become putrid, the Stomach is tormented, and the Teeth are seiz'd with a Stupor and become loose." *Hoechsteterus*, also, in *Obs. Med. Decad. 7. Cas. 10.* has a long Observation concerning the Scurvy, as a Camp Disease, formerly raging in the Middle of Germany, the most considerable Circumstances of which Observation are these following: After the King of Sweden, in the Year 1634, subdued *Ausburg*, the Soldiers billeted in the Houses of the Citizens brought into the Town a burning malignant Fever, accompanied with a Delirium and Petechiæ, under which the Emperor's Soldiers, also, laboured, so that great Numbers were cut off by it. But this Disorder remitting in the Beginning of the Winter, many of the Citizens complain'd of a Weariness, Sense of Weight, and Inability to walk, nor could they stand upright on account of the Rigidity, Pain, and Hardness of their Legs, which in some were swell'd, and in others extenuated. Those who were of dry Constitutions, had the Tendons, Nerves, and Muscles of their Legs drawn upwards, so that they could not extend them; and sometimes this Disorder of their Legs was accompanied with an acute Pain, and sometimes not; some were able to tumble up and down in their Beds, but not to extend their Legs; and many of these Patients died about the End of the cold Winter, in the Year 1634. The Legs of some were so weak, that they could not stand upon them, though they were capable of moving themselves in Bed. Spots of the Skin were common to all these Patients, and appeared first red, like Lentils, then blewish, and then livid, sometimes covering the whole Legs. The Gums of the younger Patients were seiz'd with a lax and flaccid Tumor, which when roughly handled, or rub'd, a black and fetid Blood was discharg'd; the Breath was, also, disagreeable, and the Mastication defective: A Leucophlegmatia, an Ascites, a Tympanites, an Atrophy, a Diarrhœa, or a Jaundice succeeding, prov'd mortal to the Patient. Under this Disorder the Sick could not well bear a dry Air, on account of the Ebullition of their Blood. Hence, also, excessive Motion was prejudicial to them.

Having given the History, enumerated the Signs, and specified the Causes of a Scurvy, it will be easy to distinguish it from other Disorders, with which, in regard to its Symptoms, and the impure Dyscrasy of the Blood, it seems to have a great Affinity. I know that many, both of the antient and modern Physicians, affirm, that a Scurvy is the same Disease with that described by *Hippocrates* in *Lib. de Intern. Affect.* under the Name of *Ileum Cruentum*; for in this Disorder, as well as in the Scurvy, the Breath is highly fetid, the Gums recede from the Teeth, Hemorrhages of the Nose happen, and sometimes Ulcers of the Legs appear, some of which are cur'd, whilst others become worse. But since the Spots of the Skin, by which the Scurvy is at present discovered, are not so much as mentioned by *Hippocrates*; and since those labouring under the *Ileum Cruentum*, are said to be sufficiently capable of walking, or labouring, whereas those afflicted with the Scurvy have a Languor, Weight, Coldness of the Legs, and an Inability to walk, I can hardly induce myself to embrace the Opinion of these Physicians. Some, also, refer the Scurvy to the Black Jaundice, in which, also, the Breath is fetid, and the Gums, being corroded, discharge a black Blood, and have Ulcers form'd in them, which are with Difficulty brought to a Cicatrix. The Patients are, also, afflicted with Laziness and Languor, and the Disorder is not cur'd without great Difficulty. But though these two Disorders, on account of the violent Corruption of the Humours, have a great Affinity; yet they differ in this, that in the Black Jaundice the Colour of the Face and whole Body is black, the Fœces are porracious, a bitter Taste is perceiv'd in the Mouth, neither is there any Fever, or Force of Contagion. Besides, in a Black Jaundice, the Liver is principally affected; whereas, in a Scurvy, all the Viscera are disorder'd, and the nervous System afflicted with lancinating Pains and Spasms; which, however, does not happen in the Black Jaundice.

A Scurvy is, also, easily distinguished from hypochondriac and melancholic Disorders, with which, however, it is frequently accompanied; for that in hypochondriac and melancholic Disorders, on account of the destroy'd Tone of the Viscera, and the slow Circulation of the inspissated Blood, there is a certain Impurity and Corruption of the Humours, as also Spasms and Pains, from a Stagnation of the Juices, yet the Mass of Blood is not so putrid and corrupted, nor impregnated with so many and so acrid Salts, as in the Scurvy.

Scurvy. Hence, not only the contagious Force, but, also, the Spots, the putrid Ulcers, the relaxed and bloody Gums, the Weariness of the Body and Limbs, and the Loss of Strength, sometimes productive of Deliquiums, all which are the Symptoms of a Scurvy, are wanting. Besides, the Scurvy, on account of that Corruption which preys both on the solid and fluid Parts, on account of the Spots, Pains and Ulcers, and even on account of its contagious Nature, has a great Affinity with the Lues Venerea. 'Tis, however, of great Importance, to make a due Distinction between these two Disorders, otherwise many Errors will be committed in Practice: We are, therefore, to remember, that the Lues Venerea only arises from Contagion; whereas the Scurvy is produced by a Fault of the Air, Aliments, Water, or an Abuse of the Non-naturals; for which reason, it is peculiar to certain Regions and Climates. Besides, the Scurvy principally affects the Gums, and renders the Teeth carious; whereas the Lues Venerea rather exulcerates and corrodes the Tonsils, Uvula, Nostrils, and Bones of the Palate. The Urine, also, of scorbutic Patients is thick, highly coloured, and richly impregnated with lixivial Salts; whereas, in a Lues Venerea, the Urine is paler coloured, and turbid, with a slimy Sediment. And, lastly, in a Scurvy, the Spasms and Pains are wandering; whereas, in a Lues Venerea, they are more fixed, situated in the Bones, and exasperated in the Night in Bed.

But a Scurvy has a greater Affinity with no Disorder, than with the red chronical Purples, which is generally free from a Fever, and so common, that, by way of Distinction, it is called the scorbutic Purples; because this, as well as a Scurvy, is produced by a great Impurity of the Humours; but it differs in this from a Scurvy, that, in the former, numerous Pustules, as large as Millet-Seeds, here and there appear with Corrugation, Asperity, and Dryness of the Skin, and being accompanied with a profuse Sweat, diffuse a Stench, especially about the Beginning of the Disease, when the Patient is afflicted with Horripulations, Itchings, Heats, and a certain Oppression of the Breast; but none of these Symptoms happen in a Scurvy. Besides, no other exanthematous Disorder is so instable, especially in Persons of delicate Constitutions, as the Purples, since it suddenly appears and disappears, often leaving no bad Consequences behind it, but a certain Oppression of the Breast, and an Hoarseness; which Symptoms are, however, easily removed by a proper Regimen.

Among the Disorders which bear a great Affinity to the Scurvy, we may also justly reckon that Species of Cachexy, which, by the modern Physicians, is generally called scorbutic. But that we may know how far these Disorders differ, 'tis to be observed, that a Cachexy is neither contagious nor epidemic, nor highly offensive to the Gums, nor accompanied with Spots; all which Symptoms, however, generally accompany a true Scurvy. Besides, the material Cause of a Scurvy differs from that of a Cachexy, which proceeds rather from a Redundance of a thin, than of a glutinous and acrid Serum. Hence the external Parts of cachectic Patients Bodies are observed highly relaxed, flaccid and tumid.

Having thus specified the Difference between a Scurvy and other Diseases, which have an Affinity with it, we now come to consider how we may form a prudent Judgment with respect to its Cure and Event. First, then, 'tis to be observed, that the Scurvy is one of those Disorders which neither suddenly seize, nor suddenly forsake the Patient; but proceeding slowly, require a long Time and an exact Regimen, both for their Mitigation and total Cure. Hence it happens, that a Scurvy, upon the slightest Error in Regimen, easily recurs, especially where there is an hereditary Disposition to it, in which Case it is rarely totally removed. The same also happens, when the Disorder is inveterate, the Patient old, or the Body weakened and exhausted by previous Diseases; for, in these Cases, it gradually paves the way to a Dropsy, an Atrophy, a Palsy, Convulsions, a Carus, a Lethargy, an Apoplexy, Sphacelations of the Extremities, and other mortal Disorders. But 'tis otherwise when the Disease is beginning, the Patient young, the Habit firm, and its Origin owing to Contagion; for then 'tis easily cured, especially if its Fomes is carried off by the menstrual or hæmorrhoidal Discharge. It is, also, more easily cured by removing the Patient from insalubrious, maritime and northerly Climates, to more healthy and southerly Countries. When hypocondriac and cachectic Patients, or those labouring under a violent Gonorrhæa, are seized with scorbutic Symptoms, the Cure is highly difficult, tho' not absolutely to be despaired of. It is observable, that tho' the Inhabitants of northerly Climates are very robust, yet they are more difficultly cured of a Scurvy than those of southerly Countries. The Reason of which seems to be assigned by Hippocrates, in Aph. 30. where we are told, "That those who perspire little, are robust, and not

"subject to Disorders; but if they become sick, they are not without great Difficulty restored to Health;" for in the Inhabitants of Northern Countries, whose Skin is thick, dense and constricted by the intense Cold, the subtle and spirituous Part of the Blood is copiously retained and not exhaled. Hence these People are robust and vigorous: But when they are afflicted with Disorders, which ought to be cured by Perspiration, they are with Difficulty restored to Health, on account of the Thickness and Constriction of their Skins.

A sudden Eruption, and a sudden Disappearance of scorbutic Tumors, frequently indicate a Palsy; Gripings of the Abdomen, and continual Contorsions about the Navel, in old Persons bring on a Sphacelation of the Intestines, and sudden Death, or a Tympanitis; the blacker the Spots are, the more malignant is their Nature; and if they degenerate into Ulcers, they are not to be cured without great Difficulty, and often terminate in a sphacelous Corruption. It is, also, a bad Sign, when the Gums and adjacent Parts are exulcerated, and an Abscess is form'd in the Jaw.

Diseases arising from a scorbutic Dyscrasy of the Humours, such as Palsies, chronical Purples, and Cachexies, easily recur, sometimes every Year, and at other times, at longer Intervals, according to the Patient's Method of Living, Regimen, and other Circumstances; and if any Taint is conveyed to the Viscera and nervous Parts, it is not easily removed; for the scorbutic Humour partaking of the Nature of Leaven, and being deeply rooted in the Blood and nutritious Juice, is, with great Difficulty, expelled.

It is, farther, to be observed, that generally hypocondriac and scorbutic Patients, are rarely restored to their former and natural State of Health, because they rarely submit to dietetic Rules and the Directions of their Physicians, but are fond of a sudden Cure by means of Medicines. Hence it is, that running from one Physician to another, and changing one Medicine for another, they render their Disorders worse; especially if Nature being habituated to Medicines, eludes the Force of the most powerful and efficacious. Besides, few Physicians know the Art of treating these rebellious Disorders with proper Remedies, exhibited in a proper Order, Method and Dose; for in these Cases they exhibit powerful and drastic Medicines; whereas it ought to be laid down as a general Rule, that the Scurvy, the most violent of all chronical Disorders, is not to be treated with drastic, but with the most mild and simple Medicines.

Having already consider'd the Origin, Nature and Termination of a Scurvy, we now come to enquire into the Measures most proper to be taken for the Prevention and Cure of this Disorder. But, as in any Disorder, these two Intentions cannot be obtained without removing both its remote and proximate Causes; so there is no more proper Method, both for preventing and curing the Scurvy, than a Removal of its Causes: And as these Causes are to be sought for in the preposterous Use of the Non-naturals, and especially in the Air; since no one, unless infected by another, ever laboured under the Scurvy, provided he has not committed terrible Errors in Diet and Regimen, it is sufficiently obvious, that if we intend to remove the Cause of a Scurvy, we must, above all Things, have a particular Regard to the Patient's Regimen; for which Reason we shall prescribe some dietetic Rules to be observed.

Those, then, who are disposed to the Scurvy, or already affected with it, ought to change the Air in which the Disease was formed, and remove from unhealthy Places where the Air is impure, vapid, deprived of its due Elasticity, cloudy, or impregnated with noxious Exhalations, to Places that are more salutary, and blessed with a purer Air. This seems to be confirmed by Hippocrates, in Lib. 4. Epidem. where a Change of Climates is pronounced highly beneficial in all chronical Disorders. This is, also, evinced from Experience; since we know that those who are born and educated in Places fit for generating the Scurvy, enjoy a far better State of Health, when they remove to Places blessed with a more pure, subtle and temperate Air. Nor in this Respect are any Set of People more curious and observant than the Italians, who, for the Preservation of Health, have one Place of Residence for the Summer, another for the Autumn, and another for the Winter. But the Germans, even those of Note and Distinction, little solicitous about the Purity of the Air, remove from healthy to unhealthy Places, where remaining for a long time; they contract a morbid Habit of Body. Every scorbutic Patient ought, therefore, if possible, to change his Habitation and Air, and to travel from northerly to more southerly Climates, especially to Italy and France. But if the Patient's Circumstances does not permit him to travel from unwholesome to more salutary Places, the Air is to be artificially corrected by burning Juniper-Wood in the Chimney, or by Amber thrown upon Live-Coals.

As for Aliments, those of difficult Digestion are to be avoided; such as the Flesh of old Animals, or Flesh smok'd, high-salted, or become rancid; dry'd Sea-Fishes, and Aliments of an austere and astringent Quality. Scorbutic Patients ought, also, to abstain from pinguous Fleshes, and such as incline to Putrefaction; as also from sweet Substances, which, according to the Diversity of the Juices lodged in the Primæ Viæ, either become acedent, or contract a Lentor, and by that Means induce an Infarction of the Viscera. But it is otherwise with Currants, which, by Means of their mild Sweetness, join'd with a subtle Acid, are laxative, emollient, and correct the Acrimony of the Humours. But nothing is to be more carefully inculcated than a proper Abstinence, or great Moderation in eating and drinking; especially in Patients who are voracious, corpulent, or of sanguineo-phlegmatic Constitutions; because excessive eating generally produces a Redundance of impure and peccant Juices.

Among Liquors, none more powerfully contribute to the Generation of the Scurvy, than Waters that are heavy, stagnant, turbid, and dispos'd to Putrefaction; for which Reason the Patient ought to drink only such Waters as are light, pure, impregnated neither with Salt, nor a calcarious, terrestrial Principle, and in which Meat is easily boiled; and the Ales prepared of such Waters; for it is hardly credible what Mischief is done in northerly Countries by drinking Ales prepared of unwholesome Waters, and not sufficiently hopp'd; which, as they easily become acid and feculent, not only with Difficulty pass through the minute Vessels of the Viscera and Excretories, but also generate large Quantities of Flatulences. Austere Wines, which contain a great deal of Acid, are, also, to be carefully avoided; whereas fragrant sweet Wines, possess'd of a subtle Spirit, moderately taken, prove very beneficial. But the best Wines for scorbutic Patients, are genuine Hungarian Wine, as, also, good Rhenish Wine, which is still better if impregnated with the Essences or Extracts of Wormwood, Scurvy-Grass, or Elicampagne.

As 'tis certain from Experience, that an indolent Life and excessive Sleep greatly contribute to the Generation of the Scurvy, so there is not a more infallible and efficacious Method, either of preventing or removing it, than due and proper Exercise: For, since the continual Systole of the Heart, and reciprocal Action of the Diaphragm and Thorax, by Means of which the Circulation of the Blood thro' the abdominal Viscera is excellently promoted, alone support and govern the vital Motion of the Solids and Fluids; and since this Motion is greatly assisted by Exercise, during which the muscular Motion is increas'd, and the Fluids contained in the Vessels propell'd, we may, without any Impropriety, call Exercise that Universal Remedy which preserves the natural Mixture of the Fluids; and Structure of the Solids, promotes the Circulation of the Blood and Humours, separates the pure from the impure Juices, and consequently prevents and removes Diseases of all Kinds, the Scurvy itself not excepted. Thus Hippocrates, in *Lib. 2. de Dieta*, informs us, "That Idleness moistens and weakens the Body, whereas Exercise dries and corroborates it." The Reason of this Doctrine is obvious, and greatly confirms my Opinion with respect to the Use of Exercise in the Scurvy; for by a sedentary Life, the Circulation of the Blood is render'd slower: Hence, the superfluous Moisture not being sufficiently eliminated through the Excretories, relaxes the fibrous and nervous Parts; whereas, by due Labour, the redundant Moisture is dissipated, by which Means the Tension of the Solids is increas'd, and the Body strengthened. Every thing, also, which diminishes the Circulation of the Blood, such as excessive Watchings, profound Meditations, obstinate Study, immoderate Venery, frequent Drunkenness, and especially exorbitant Passions, such as long protracted Grief and Fear, is to be avoided with the utmost Diligence.

These are the principal Directions to be observ'd, with respect to Diet and Regimen, to which I shall subjoin those Remedies which from Experience I have hitherto found best adapted to remove both the proximate and remote Causes of a Scurvy. Now we have already shewn, that the violent Symptoms accompanying a Scurvy are produced by the excessive Dyscrasy of the Blood, and the Accumulation of the excrementitious Sordes in the Blood, and other vital Juices; and that this Dyscrasy and Accumulation depend upon the slow Circulation of the Blood, and an Infarction or Obstruction of the capillary Vessels in the Viscera and Emunctories. Hence the Medicines adopted to the Removal of this Disorder, ought to dilute and correct the impure, acrid, saline and sulphureous Humours, dissolve those that are tenacious and viscid, open the obstructed Passages of the Viscera and Emunctories, and corroborate the weaken'd nervous

and muscular Systems; for by these Means a free and brisk Circulation of the Fluids through the minutest Canals, and what depends upon it, an intimate Mixture of the Fluids with the Solids, and a mild Temperature of the vital Juices, is excellently obtained.

The Physicians who have wrote expressly concerning the Scurvy, have asserted, that the Dyscrasy of the Humours is of two Kinds; but all of them agree, that, according to the Diversity of the morbid, saline Principle, different, alterative, and correcting Medicines are requir'd, which partly by changing the Acid, and partly by correcting the volatile sulphureous Salt, and allaying the caustic Acrimony, remove the Disorder. Though I grant the Difference of the Salts now mentioned, yet the different and far-fetch'd Correction of them seems to me ridiculous, since, I shall demonstrate, that the only and safest Method of correcting and subduing all morbid Salts, is by proper Fluids.

This Intention, then, is answered by pure and light simple Water, the genuine Menstruum and Dissolvent of all Salts, into which, when taken with a proper Regimen and in a due Quantity, the saline Particles of every Kind lodged in the Blood and Humors, easily immerse themselves, and are by that Means excellently diluted, mitigated and corrected. But besides the correcting Quality of Water, it, also, produces another happy Effect in the Scurvy, whilst it dissolves the tenacious, viscid and coagulated Humours, and frees the infarcted and obstructed capillary Vessels and Emunctories from the impacted, viscid Matter. But this laudable Quality and Virtue is still found more powerful, when Water that is pure, light and subtle, is possess'd with an additional mineral Principle, and impregnated with a sufficient Portion of a neutral, or volatile, or fix'd alkaline Salt; such as the various cold and hot Springs, especially the coroline and selteran Springs, together with those of *Ægra*, *Wildungen*, and *Empfen*; for these being far more active than common Water, pass sooner through the capillary Vessels, enter the Emunctories more expeditiously, and are, for that Reason, highly efficacious in removing Obstructions, and eliminating excrementitious Sordes. Hence 'tis not to be doubted, but the universal Remedy of a Scurvy consists in mineral Waters; especially since for more than thirty Years I have, with great Success, prescrib'd both hot and cold mineral Waters for the Cure, not only of the most obstinate chronical Disorders, especially those of the hypocondriac and hysteric Kind; accompanied with a certain scorbutic Impurity, but also of a confirm'd Scurvy. But the Use of these Waters is succeeded by a far more certain and happy Effect, if an accurate Regimen is, at the same Time, observ'd, and their Efficacy assisted by the repeated Exhibition of proper antiscorbutic and balsamic Medicines.

When these mineral Waters cannot be had, the Cure may be happily obtained by pure and light Fountain-Water; for in obstinate chronical Diseases, pure subtle Waters, impregnated with a chalybeate Principle, are of great Efficacy, as is obvious from the many Cures, not only of a Scurvy, but, also, of other obstinate Disorders, yearly performed by the Waters of *Lauchstadt*, about two Miles from *Hall* in *Germany*; for these Waters contain a subtle Crocus Martis, by which the relaxed Tone of the moving Fibres is excellently corroborated, by which Means the Circulation of the Blood through the whole Body, and the salutary Excretions are greatly promoted, especially if these Waters are us'd both externally and internally. Hence we learn, that the antient Physicians, especially *Celsus*, in *Lib. 2. Cap. 9.* and *Scribonius Largus*, in *Cap. 32.* for what they call the *Lien Magnus*, and the Disorders arising from it, so justly recommended the drinking of Water, in which ignited Iron has been extinguish'd.

But besides mineral Waters, nothing is more effectual in correcting a scorbutic Acrimony than the Milk of Animals, and especially that of Asses, which Hippocrates, Galen, Aretæus, and Celsus so highly extol in subduing various chronical Disorders, and especially those arising from Acrimony. Some of the most skilful of the Moderns, also, confirm this Doctrine; and as a Specific for the Scurvy, prescribe Milk, especially that of Asses, or the Whey of Cows, or Goats Milk; concerning which the curious Reader may consult *Drawitzius*, *Baltbas*, *Brunnerus*, *Eugalenus*, *Wierus*, *Solom. Alberti*, and *Matt. Martini*, who have wrote judiciously concerning the Scurvy; and unanimously confess, that they have cur'd more scorbutic Patients only by a Milk Diet, or Whey impregnated with the Juices of antiscorbutic Herbs, and long us'd, than by all other Remedies whatever; and that those who were wasting away with a Scurvy have received more Strength from this Remedy, than from the best Corroboratives. Nor is the Reason of this Effect difficult to be conceived; for as the violent Symptoms of scorbutic Patients, such as lancing

ing and spasmodic Pains of the Limbs, Corrosions and Exulcerations of the external Parts, derive their Origin from the excessive Dyscrasy of the Humours, a Diminution of the Excretions by Stool, Perspiration and Urine, and an Obstruction of the Vessels; so 'tis certain, that in order to open the obstructed Passages, dissolve the tenacious Humours, and correct such as are acrid and saline, no Medicines are more proper than those of a diluent and dimulcent Kind, and such as render the Humours fit for Transpiration, among which the most powerful are Asses Milk, which is sweeter than that of other Animals, or the Whey of Cows or Goats Milk, especially when infus'd or gently boiled with antiscorbutic Herbs, such as Scurvy-Grass and Water-Cresses, which, besides a volatile Salt, contain a bitter Principle.

But when a Scurvy is accompanied with an Infarction of the Viscera, and a Cachexy, or, which frequently happens, with the Hypochondriac Disorder, and the Purples, the Cure succeeds best if the Milk is mixed, not only with the milder Acidulæ, such as the *Selteran* Waters, and those of *Wildungen*, and *Tœnstein*, but also with the stronger cold Springs, such as those of *Pyrmont* and *Egra*, and thus drank under a proper Regimen. See *Frid. Hoffman. Dissert. de Connubio aquarum Mineralium cum Lactē*.

Besides these Remedies, we must also mention some of the pharmaceutic Kind, and especially those called the antiscorbutic Specifics; among which we may justly reckon Scurvy-Grass, and all the Species of Garden and Water-Cresses; Brooklime, Horse-Radish, the Roots of wild Radish, and Mustard; which, by their subtle and salino-sulphureous Principles, penetrate into the most reclusé Parts of the Body, and induce a surprising Change both on the disorder'd Fluids and Solids; for they dissolve viscid and tenacious Humours, exalt and subtilize such as are fixed and acid, and, by restoring the Tone, Vigour and Motion of the relaxed Solids, prevent a rapid Corruption of the Body. Various Preparations of these Simples are us'd; for some distill Waters, whilst others obtain Spirits from them by Fermentation or Abstraction; others from these Substances, when recent and cut down, express the Juice, which they take by Spoonfuls, either alone or with some proper Vehicle, such as Milk: Others mix them with their Aliments, boil them in Broths, add them to Ale during Fermentation, or prepare Conserve of them with Sugar, as the different Circumstances of the Patient require, which are to be judg'd of by the Physician.

There are, also, various other antiscorbutic Remedies, such as, among Bitters, the Roots of Gentian and Succory, and the Herbs Scordium, Carduus Benedictus, Wormwood, the lesser Centaury, and Water Trefoil: Among Balsamics and Corroboratives, Juniper Berries, the Tops of the Fir and Pine Trees, Winter's Bark, Cascarilla, Peruvian Bark, Copper Bark, the Herbs Spleen-wort, Paul's Betany, White Horehound, Dodder of Thyme, and the Roots of Elicampagne, Zedoary, and Arum: Among Gums, Gum Ammoniac, Sagapenum and Galbanum; and among Wood, Sassafras, Guaiacum, and Aloes; which, if us'd either in Substance or in Decoctions, or Infusions, or reduced to Extracts, or Elixirs, and exhibited at proper Times, in a due Order and in just Doses, are highly efficacious in mitigating the Symptoms and removing the Disorder; for by their active, gently sulphureous and balsamic Principle, they rouse and invigorate the languid Circulation of the Blood, and correct the acid and viscid Intemperature of the Humours.

There are, also, other Remedies no less efficacious in the Cure of a Scurvy; and these, partly by their gently sulphureous and vaporous Principle, and partly by their emollient and correcting Quality, are excellently adapted to allay and soothe the Pains and Spasms: Of these, the most considerable are the recent Fats of Animals, especially human and Dogs Fat, the Cream of Milk, Oil of sweet Almonds obtained without Fire, Sperma Ceti, Castor, *Asa-foetida*, the Extracts of Yarrow and common Chamomile, the Theriacal Cœlestis, Diafcoridium, Saffron, Earth-Worms, the Shavings of the Tooth of the Sea-Horse, and the Elk's Hoofs, of which various Medicines may be prepar'd in a liquid Form, and successfully exhibited according to the different Circumstances of the Patient, and Stages of the Disease.

Having already considered the Cure of a Scurvy, so far as it is obtain'd by those Medicines which attenuate and incise the gross Humours, correct those that are acrid and saline, open the obstructed Vessels, and corroborate the relax'd Parts, we now come to treat of Evacuants, because we derive the Origin of a Scurvy from a Diminution or total Suppression of the natural Excretions by Stool, Urine, and Perspiration; as, also, by the menstrual and hemorrhoidal Discharges. As for Venesection then, whether in the Arm

or the Foot, whether by the Lancet, Scarification, or the Application of Leeches, we affirm, that it is not to be used in the Scurvy without the greatest Caution, and a mature Consideration of all Circumstances. Thus, if the Patient is plethoric and young, if the Disorder is recent, and arises from the Cessation or total Suppression of the Menstrues in Women, or the Hemorrhoids in Men, Venesection may be properly and safely us'd, in whatever Part the Physician thinks most proper. But if, as it often happens in the Progress of the Disease, a Redundance of impure and corrupted Serum is generated, then Venesection, especially when copious, by impairing the Strength, would infallibly do more Harm than Good. But when a Diminution of the Quantity of Blood is indicated, and especially when the Pains, Tumors, and various Defections of the Parts, render such a Depletion necessary, it is most safely obtained by frequent, though not copious, Detractions of Blood, and, perhaps, still more properly by Scarification; which Method, as it is safest, so I always greatly approved of it in the Cure of violent Disorders.

As for other Methods of Evacuations, and the Use of Purgatives, I am of Opinion, with other skilful Physicians, that, excluding all drastic Substances, we ought only to use those of the mildest Kind, such as the Roots of Polypody, Sena Leaves, Agaric, Rhubarb and Manna, which when duly mixed with the abovementioned antiscorbutic Ingredients, and us'd by Way of Infusion or Decoction, are highly beneficial, by gently eliminating the peccant Humours lodg'd in the Primæ Viæ. This Intention is answered by the Pilulæ Polychrestæ Balsamicæ, prepared after *Becher's* Manner, of well depurated Aloes, Extract of Rhubarb, bitter Herbs, and temperate balsamic Ingredients, exhibited at proper Seasons, interposing or not, as the Physician thinks proper, the absorbent Powders and digestive Salts. The same Caution is to be observ'd with respect to Diuretics; the more drastic of which, because they too copiously evacuate the Serum, are to be rejected, and those us'd which gently evacuate the viscid and tartareous Humours, such as Decoctions of the five aperient Roots, especially of Parsly, Salery, Fennel and Asparagus, which were, also, us'd by *Hippocrates* and *Aretæus*. The same, also, holds true with respect to Diaphoretics, the best of which are those which open the Pores, render them pliant, and convey the Blood and Humors to the Surface of the Body. But we are to reject those which, by throwing the Humours into too violent Commotions and Exagitations, diminish the Serum and Strength, by excessive Sweat. The safest Diaphoretics are, therefore, these which gently promote Perspiration, such as the bezoardic Liquor of *Buffius*, the Spiritus Nitri dulcis, the Spirit of Tartar, the Mixtura Simplex, the succinated Spirit of Hartshorn mixed with three Parts of the Anodyne Mineral Liquor and Spirit of Scurvy-Grass, Flowers of Sulphur, Æthiops Mineral, Infusions of Tea, Paul's Betany, Carduus Benedictus, Scordium, and Elder Flowers, diaphoretic Antimony, Cerufs of Antimony, calcin'd and uncalcin'd Hartshorn, Amber, Bezoardic Mineral, Medicinal Regulus of Antimony, Native Cinnabar, and Cinnabar of Antimony, compound Powders of Crabs Claws, *Ludovicus's* and my Bezoardic Salt; to which, according to the Circumstances of the Patient, may be added, a Quarter of a Grain of Camphire.

Having thus considered the general Method of Cure, we now come to subjoin some Cautions with respect to particular Cases and Circumstances. In a hot Scurvy, therefore, which seizes young Persons of choleric Habits and accustomed to drink Wine, and arises from a Redundance of sulphureous and bilious Particles in the Mass of Blood, specific Antiscorbutics, turgid with a sulphureous volatile Salt, such as Scurvy-Grass and its Spirit, ought to be very cautiously exhibited; for, by sharpening the Spicula of the Salts in the impure Blood, and agitating them with a brisker Motion, they exasperate the Symptoms, produce Pains of the Head and Limbs, Anxieties and Inflations of the Spleen, by which Means they do more Harm than Good. But they may be more safely exhibited when corrected with Acids, such as Wood-Sorrel, and the Juices of Citrons, Oranges, Barberries and Pomegranates. Thus, the Conserve of Scurvy-Grass, mixed with an equal Quantity of the Conserve of Sorrel, taken twice or thrice a Day, drinking after it some Antiscorbutic Water, produces very happy Effects, especially if in hot and bilious Patients, it is accompanied with a moistening Diet, consisting of Milk Meats, Emulsions of Sweet Almonds, Decoctions of Barley and Oats, Broths prepared of Fowls, with Lettice, Endive, Sorrel and Cresses, interposing at proper Intervals, gentle Laxatives and Diuretics. But it is to be observed in general, that the Use of antiscorbutic Herbs, and their Juices, whether by themselves or with a Vehicle, ought to be very long persisted in. . . .

When

When a Scurvy proceeds from muriatic Salts, which happens in those who eat liberally of smok'd and high-salted Aliments, and have corroding Ulcers, a stinking Breath, putrid Gums, a thick and saltish Urine, as is generally observed in old Sailors, then happy Effects are produced by Whey, long and copiously drank; by Citrons, China Oranges, and ripe Fruits; whereas spirituous and volatile antiscorbutics are generally detrimental.

Scorbutic Patients are frequently afflicted with lancinating Pains of the Abdomen, and oppressive Pains of the Breast, which ought by no means to be treated with Carminatives or hot Medicines. But it is expedient at proper Intervals, and in due Doses to exhibit my anodyne Liquor, or an antispasmodic Elixir, prepared of the anodyne Liquor, and the Essences of Castor and Saffron. Besides, excellent Effects are produced by Broths of Fowls, prepared with a proper Quantity of Oil of Sweet-Almonds and Sperma Ceti; Whey, boiled with the Roots of Marsh-mallows, red Poppy-Flowers, and Earth-Worms; Water-Gruel; and emollient Clysters prepared of Milk, with the Addition of a little Castor and Saffron. No less Caution is requisite, if, as it frequently happens, there are spontaneous Evacuations, Diarrhæas, for instance: For these, if gently treated, generally afford great Relief; but when too soon stoppt, leave behind them Cardialgias, Inflations of the Hypochondria, and Infarctions of the Viscera.

In order to alleviate the intense Pain, and procure Rest, small Doses of Opiates, corrected with Purgatives, or Alexipharmics, are only to be exhibited twice or thrice, in order to preserve the Strength; which, when the Pains cease, is better restored, and renders the Patients fitter for surmounting the Disease. Topics are more frequently hurtful than beneficial in scorbutic Pains, Exulcerations, and Spots; as is principally observable in the wandering Gout, in which Topics, indiscriminately applied, by repelling the peccant Matter to the internal, and especially to the nervous Parts, often excite violent Symptoms, such as Vertigos, Dulness of hearing, Difficulty of breathing, Cardialgias, violent Gripes of the Intestines, and sometimes terrible Convulsions of the Limbs. 'Tis, therefore, better, in this Case, totally to abstain from Topics, and keep the Parts affected in an equal Perspiration, by wrapping them up in warm Linnen Cloths. But if crusty black Ulcers require external Remedies, we are to imitate *Eugalenus*, who prudently advised, that rejecting all acrid Substances, we should only use those of a mild Nature, such as Preparations of the Yolk of an Egg, Myrrh, Olibanum, Saffron, Oil of Roses, and Peruvian Balsam. When there is an excessive Impurity of the Humours, tending to Corruption, we are to be very cautious in ordering Scarifications, for fear of a Gangrene, which may be excellently prevented by Quick-Lime Water, exalted by camphorated Spirit of Wine, and Sal Ammoniac.

Where the Corruption of the Humours is very great, the Tumors and Inflammations easily degenerate into obstinate Ulcers, which create a great deal of Trouble both to the Physician and the Patient. When the Patient is of a dry and delicate Constitution, the Pains and Spasms easily produce Fevers, which greatly waste the Body, and impair the Strength. When the Body is spongy, phlegmatic, and corpulent, the Humours degenerate into a putrid Corruption, which spreads like a Sphacelus, and, in process of Time, produces a great and even a fatal Loss of Strength. For this Reason the prudent Physician ought to attack the Disorder, not only by Topics, but, also, principally by such internal Remedies as cleanse the Blood, and resist Putrefaction. But both Physician and Surgeon ought to take care not to open inflammatory Tumors, before they are come to a sufficient Suppuration: For when this Error is committed, a putrid Corruption is soon formed in corpulent and moist Habits.

In order not only to cleanse and consolidate the putrid and bloody Gums, but, also, to fix the loose Teeth, I have found nothing afford a more instantaneous and efficacious Relief than one Part of my Balsam of Life, mixed with three Parts of the Syrup of Oranges, and applied to the Gums by way of Ointment. If this Medicine cannot be had, we may commodiously substitute in its Room, the Essences of Amber or Myrrh, camphorated Spirit of Wine, and the dulcified Spirit of Salt, mixed with a proper Quantity of Honey. In such Cases, a gentle Scarification is, also, beneficial, in order to procure a Discharge of the ichorous Matter. In bloody Tumors of the Gums, great Benefit is, also, obtained by the external Application of the Unguentum *Aegyptiacum*, mixed with Honey of Roses and Spirit of Scurvy-Grass, or by applying Gum Lac and Spirit of Scurvy-Grass. Internally a Decoction of Horse-Raddish with Milk, or Ale boiled with the Tops of the Pine, produce very happy Effects.

When the Symptoms are mitigated, and the Disease begins to remit, *Matthæus Martini*, in *Traſſat. de Morbis Me-*

ſenterii, thinks Baths of sweet Rain-Water highly beneficial; and from the Advice of *Fernelius*, in *Obſervat.* 44. orders their Use to be persisted in for more than ten Years. Nor is this Advice to be rejected, since *Volcammer*, in *M. N. C. Diſc.* 2. an. 6. informs us, that an hypocondriac and scorbutic Patient was, in three Days time, perfectly cured, and recovered his Strength, by using every Morning and Evening a Bath of sweet Waters, prepared with emollient Herbs. In the Waters of the Bath, which were highly fetid, there floated a thick, black, acrid Sordes, which daily became larger. In order to soften and disolve hard and painful Tumors of the Feet and Legs, I have found nothing more beneficial than Baths prepared of the antiscorbutic Herbs, Brooklime, Water-Cresses, and Scurvy-Grass, left after the Expression of the Juice; as, also, Baths prepared of the Tops of Fir and Pine-Trees, frequently used.

I have only one Thing to advise, with respect to the Use of Baths, whether natural or artificial; and that is, that they ought never to be used after a putrid Corruption is discovered in the external Parts; and that they ought not to be too warm, and dispose the Body to profuse Sweats; for hence follow an excessive Weariness of the Limbs, an insatiable Thirst, Palpitations of the Heart and Cardialgias; which, if any one endeavours to remove, by drinking cold Liquors, or other refrigerating Substances, the Tone of the Stomach and Intestines will, in all probability, be greatly destroyed by that means.

Many scorbutic Patients, according to *Martini*, in the Part already quoted, perceive little Advantage during the Cure, but are cured when they dismiss their Physicians, and forbear the Use of Medicines: For Nature being weakened by the Medicines, upon desisting from them, recovers Strength sufficient to subdue the Disorder. This Circumstance was not only adverted to by the ancient Physicians, but, also, recommended for removing various Disorders. Thus, *Aetius*, in *Lib. 2. Serm. 2. Cap. 3.* and *Rhaſes*, order Medicines to be sometimes abstained from for three Weeks; and *Aræteus* asserts, that many Diseases are spontaneously cured by discarding the Physician. This Observation I have often found to hold in the Cure of many chronical Disorders, especially those of the hypocondriac and scorbutic Kinds; for that Maxim of *Celsus* is founded upon Truth, "That sometimes the best Medicine is to use no Medicine at all." *Frederic Hoffman*.

SCORDIUM.

The Characters are;

The Flower is like that of the *Chamædrys*, one or two preceding from the Ala of each Leaf. The Calyx is tubulated. The Smell resembles that of Garlic.

1. Scordium; *Offic. Ger.* 534. *Emac.* 661. *Raii Hist.* 1. 576. *Synop.* 3. 246. *Boerb. Ind. A.* 183. *C. B. P.* 247. *J. B.* 3. 242. *Scordium legitimum*, *Park. Theat.* 111. *Chamædrys palustris*, *Allium redolens*, *Hist. Oxon.* 3. 423. *Chamædrys palustris consensens*, seu *Scordium Officinatum*, *Tourn. Inst.* 205. 172. WATER-GERMANDER.

Scordium has a small, stringy, creeping Root, from which spring a great many square hairy Stalks, about a Foot high, beset with two oblong, round-pointed, somewhat wrinkled and hairy Leaves at a Joint, without Foot-Stalks, having roundish Indentures about the Edges. The Flowers come forth among the Leaves in thin Whorles, of a reddish Colour, having no Galea, but only a Labella. They are set in hairy five-pointed Calyces, at the Bottom of which grow four small Seeds. The whole Plant has a strong aromatic Scent; but with somewhat of the Garlick. It grows in marshy, fenny Places, as in the Isle of *Ely*, in great Plenty, and flowers in July. The Leaves are used.

Scordium is sudorific and alexipharmic, of Use both as a Preservative, and a Remedy against all malignant and pestilential Diseases, and putrid Fevers; it resists Putrefaction, and destroys Worms, and is good against the Bites of all venomous Animals; it is an Ingredient in *Venice Treacle* and *Mithridate*; and *Diaſcordium* takes its Name from it. *Miller's Bot. Off.*

The *Scordium* is bitter, aromatic, and gives a faint red Colour to the blue Paper: It contains an oily, volatile Salt, the Sal Ammoniac of which is not entirely disengaged, but wrapped up in a great deal of Sulphur. The *Scordium* is a good Dissolver; it is aperitive, diuretic, sudorific; the Infusion of it should be drank in malignant Fevers, the Small Pox, Measles, and Diseases of the Skin. It is used after the Manner of Tea, or a Pupil of it may be boiled in lean Broth, to restore the Appetite, kill Worms, and purify the Blood by insensible Transpiration. Half an Ounce of the Extract of this Plant in a Bolus, or an Ounce of the Conserve of its Leaves and Flowers; usually prove sudorific. This Conserve is of Use for purulent Spitting. This Plant is also deterfive and vulnerary: It is used in Lotions, with Wormwood and the lesser Centory. Fomentations are made of these Herbs, and they are applied

as a Cataplasin on Parts which are threatned with a Gangrene. To cure a Gangrene, the spacelated Flesh must first be eaten off with the Water of corrosive Sublimate, and Arsenic, or the Butter of Antimony; for without this Assistance, the vulnerary Plant would be of no Use. The *Scordium* is used in the *Theriaca*, the Mithridate, the Orvietan of *Hoffman's* Composition, *Matthiolus's* Antidote, and most alexipharmic Compositions. It has given Name to the *Diascordium* of *Fracaforius*, and to that of *Sylvius*. *Martyn's Tournefort*.

2. *Scordium*; alterum; five *Salvia agrestis*. C. B. P. 247. *Boerb. Ind. A.* 183. *Scorodonia*, *Salvia sylvestris*, Offic. *Scorodonia*, five *Salvia agrestis*, Ger. 536. Emac. 662. Raii Hist. 1. 576. Synop. 3. 247. *Scorodonia five Scordium alterum quibusdam*, & *Salvia agrestis*, Park. III. *Scorodotis five Scordium foliis Salviae*, J. B. 3. 293. *Chamaedrys fruticosa sylvestris melissae folio*, Tourn. Inst. 205. WOOD SAGE.

The wild Sage has several square, woody and hairy Branches, on which are set, by Pairs, rough, wrinkled, Sage-like Leaves, but which are greener and broader than Garden Sage; of a pleasant Smell, but with a Touch of the Garlick. The Flowers grow on the Tops of the Branches in long Spikes, with a small Leaf set on by each Flower; they are yellow, of the verticillate Kind, having no Galea, but in its Place a few purple Stamina; their Calyces are hairy, containing four brown Seeds. The Root is slender and creeping. It grows in Hedges and bushy Places, and flowers in July. The Leaves are used.

Wood Sage is accounted very good for the Gout, Rheumatism, Scurvy and Dropsy; it provokes Urine and the Menfes, and is an excellent vulnerary Plant, and prevents Mortifications and Gangrenes. *Miller's Bot. Off.*

Its Leaves are very bitter and aromatic; they have a little Taste of Garlic, and give hardly any Tincture of red to the blue Paper; which gives us Reason to believe they contain a Salt like that of the *Germander*, but loaded with more essential Oil, and in which the Sal Ammoniac discovers itself but little. This Plant is very aperitive, diaphoretic, vulnerary and resolvent: *Dodonaeus* prescribes the Decoction of it in the venereal Disease. *Tragus* commends its Juice and Infusion in Wine, as a Medicine very aperitive and sudorific, good to strengthen the Stomach and kill Worms, to provoke Urine, and to carry off the Jaundice and the Tertian Ague; they use it very successfully at *Paris* for the Dropsy, by giving to drink every four Hours a Glass of the Infusion of this Plant in white Wine. *Martyn's Tournefort*.

3. *Scordium*; frutescens; folio angusto *Salviae*; flore luteolo. *Boerb. Ind. Alt. Plant. Vol. 1.*

The first Species is found to be an excellent and safe Remedy against the Pestilence. *Rudbeckius* found by Experiment, that this Plant intruded into the Mouth, Intestines, and Nose of a dead Body, preserved it from Putrefaction. *Scordium*, among the Antients, was an Ingredient in all Medicines against the Poisons of mad Animals. It expels all foreign Matter, especially what inclines to Putrefaction, by Sweat; it has an intolerable and nauseous Bitterness, but not such as creates a Nausea, by which it seems qualified for killing all Manner of Insects and Worms. But I shall not take Occasion from hence to determine, whether or not the Eggs of Insects, as *Kircher* and others think, are drawn in by Inspiration with the Air, in pestilential Times, and thus cause the Infection, which this Herb, by killing those Worms as soon as generated, seems adapted to remove. It cures a Gangrene, resolves Tumors, and is proper in intermittent Fevers; externally applied, it cleanses Wounds and Ulcers, and mitigates the Pain of the Gout; the expressed Juice, with Sugar, is exhibited in pulmonic Disorders. *Fracastratus* has written largely of the Virtues of this Plant, and *Sylvius* in his *Praxis*, with a great deal of Labour, extracts from it a very penetrating Tincture, which is not to be had so good at the Druggists or Apothecaries, who will not take the necessary Pains for obtaining it. If therefore we would with any Measure of Certainty rely on its Effects, we ought ourselves to take Care of the Preparation. The Extract is called *Diascordium Sylvii*, and supply the Place of the *Mithridatium*, as a Sovereign Remedy. The Conserve is sudorific, and good for the Asthma and Shortness of Breath, and for Virgins labouring under a Chlorosis, and Obstruction of the Menfes; the Leaves infused in Wine, are serviceable in Dropsies. The second Species is adapted to surgical Uses; for the bruised Leaves, with Vinegar, Litharge, and Salt, cure a Gangrene and Cancer. *Hist. Plant. ascript. Boerhaave*.

Scordium, with other proper Things, is prescribed by *Heister* in Fomentations and Cataplasms, for a Gangrene and Sphacelus, and in a sudorific Potion for a Chilblain.

SCORDOLASER. *Asa Fetida*. See SILPHIUM.

SCORPOENA or SCORPIS.

This is a Sea-Fish, by some thought to be the Female of the Sea-Scorpion, because 'tis pretty much of the same Shape; but it is really another Species of Scorpion, far less, and of a cineritious or brownish Colour. Its Principle of Life is so strong, that it moves for some Time after its Heart and Entrails are taken out. Its Bite is not venomous, and it feeds upon Sea-Wreck, and is good Food. Its fixed Salt is possessed of the same Virtues with that of the Sea-Scorpion. *Lemery des Drogues*.

SCORIA. The Dross or Recrement of a Metal.

SCORITH. Sulphur. *Rulandus*.

SCORODON. Garlick. *Rulandus*.

SCORODONIA. A Name for the *Scordium alterum*, five *Salvia agrestis*.

SCORODOPRASSUM. See ALLIUM.

SCORODOTHLASPI, *Ulyssis Aldrovandi*, J. B. This is a Species of Thlaspi, or small Plant, which from its Root sends Leaves, resembling those of the Daisy. Some of these Leaves are jagged, others furrounded with small Teeth, and others without Teeth or Jaggs, but nervous and green. From amidst these Leaves arise some small Stalks, which also bear Leaves, and at their Tops Flowers, composed of four small white Leaves and a Pistil, which afterwards becomes a flat Fruit, like an oval Purse, which contains Seeds almost round and flat. The Root is simple, white, and furnished with some Fibres. The whole Plant smells like Garlick, and is of an agreeable Taste, having a small Degree of Sharpness in the Mouth. It is cultivated in Gardens, and is of an highly aperient Quality, and proper to resist Putrefaction. *Lemery des Drogues*.

SCORODOTIS. A Name for the *Scordium*; alterum, five *Salvia agrestis*.

SCORPIACA. The Name of an Antidote in *Galen de Antidot. L. 2. C. 12.* which is recommended against the Sting of the Scorpion.

SCORPIO. Offic. Schrod. 5. 346. Ind. Med. 107. Ims. de Insect. 95. Charl. Excr. 54. *Scorpius*, Raii Hist. Insect. 9. Aldrov. de Inxit. 577. Mouff. Insect. 204. THE SCORPION.

It is an Animal with eight Feet, resembling a Crab, only less, and of a blackish, or sooty Sort of Colour. Burnt alive, and the Ashes exhibited, they provoke Urine, when obstructed by the Stone in the Kidneys or Bladder; bruised and applied to the Place, they cure the Poison of their own Stings.

The Scorpion is an excellent Remedy of itself for its own Poison. Some bruise it and apply it to the Wound; others take it bruised in Wine; and others infill the Oil of Scorpion into the Wound, *Heister Chirurg.* The Oil of Scorpions is by some recommended as effectual in a Suppression of Urine, the Bladder being anointed with it hot, or before a Fire, *Idem*.

The Sting of the Scorpion is succeeded by a most violent Pain of the injured Part, with a Coldness, Tension and Numbness; a cold Sweat about the Wound, and over all the Body. They who are stung in the lower Parts, are affected with a Swelling of the Groins; if the Wound be in the upper Parts, and but slight, there is a Tumor under the Arm-pits; but if the Hurt be considerable, a burning Heat affects the Place, as in Ambustions; and there is an Eruption of Warts, resembling Ants, about the Lips and the whole Body; so that the Patient fancies himself struck with Hail-stones. The Face is distorted; a glutinous Sordes gathers about the Eyes; the Tears are viscous; there is a Hardness of the Joints, and a falling down of the Anus, with a Desire to go to Stool; a Froth about the Mouth, much Vomiting, Hickups, and Convulsions like those in an Opisthotos.

The Cure is performed by taking inwardly Serpyllum, the Root of Althæa, and Elaphoboscus, which last is an excellent Remedy, whether eaten green, or drank in Powder. The Seeds of wild Parsnep, and Hasle-Nuts, are, also, good Medicines; and the latter worn about the Body, are a Preservative against the Sting of the Scorpion. Or take a House-Snail and apply it, together with the Shell, upon the Place, and the Pain will immediately cease. Earth-Worms are said to have the same Effect. Or take a River-Crab, and bruise it with Wine and Lafer, and exhibit it in a Potion. Another excellent Antidote against the Poison of the Scorpion, and with which I cured myself when affected, is thus prepared: Take of Castor, Succus Cyrenaicus, Pepper, each four Drams; Costus, Spikenard, Saffron, Juice of Centaury, each two Drams; Honey clarified, a sufficient Quantity; the Dose in the Quantity of a Hasle-Nut, for the Sting of a Scorpion in diluted Wine; but for the Bite of an Asp, in Vinegar. It is of an attractive Quality, so as to attract the poisonous Juice, tho' digested, and settled in the Joints. Garlic, also, bruised either by itself, or with Salt; or Wild Rue, or the Herb Scorpiurus, are proper to be applied. I used to bruise a Dram of wild Rue in Vinegar, and with an Ounce of Wax, and a Quarter

Quarter of an Ounce of the Refin of the Pine-Tree, and a little Oil, make into a Cataplasim, and apply it to the Place, and it proves an admirable Remedy. Sheeps Dung, also, boiled in Wine, and applied immediately, removes the Pain. *Aetius, Tetrab. 4. Sermon. 1. Cap. 10.*

Oil of Scorpions is prepared, by putting thirty-five Scorpions into two Pounds of Oil of Sweet Almonds, and after exposing them to the Sun for forty Days, straining off the Oil.

SCORPIODECTOS, *σκορπιόδεκτος*, A Person wounded by a Scorpion. *Dioscorides.*

SCORPIOIDES.

The Characters are;

It has a Part full of Joints, and convoluted like a Snail or a Caterpillar, having in each Joint a Seed of an oval Figure.

Boerhaave mentions four Sorts of *Scorpioides*, which are,

1. *Scorpioides*; folio Bupleuri. *C. B. 287. Clymenos, Dioscoridis. Col. 1. 155, 156.*

2. *Scorpioides*; Bupleuri folio; filiquis lenibus. *Park. Theat. Bot. 1117.*

3. *Scorpioides*; filiqua crassa Boelii. *Ger. Emac. App. 1627.*

4. *Scorpioides*; Bupleuri. folio, corniculis asperis; magis in se contortis & convolutis. *M. H. 2. 127. Boerb. Ind. Alt. Plant. Vol. II.*

This Plant, by its Signature, promises some Virtue against the Bite of Serpents; but it is not safe to rely upon it in such Cases.

SCORPIOIDES LEGUMINOSA. A Name for the *Ornithopodium*; *Scorpioides*; filiqua compressa.

SCORPIOIDES MAJOR. A Name for the *Heliotropium*; minus; angustifolium; palustre; seu glabrum.

SCORPIOIDES MATTHIOLI. A Name for the *Ornithopodium*; *Portulaca folio.*

SCORPIOPECTOS. The same as **SCORPIODECTOS.**

SCORPIURUS ANNUUS. A Name for the *Heliotropium*; minus; angustifolium; arvense; seu hirsutum.

SCORPIURUS PALUSTRIS. A Name for the *Heliotropium*; minus; angustifolium; palustre; seu glabrum.

SCORPIUS. A Name for the *Genista-Spartium*; majus; longioribus aculeis.

SCORPIUS MARINUS. *Offic. Bellon. de Aquat. 248. Schonef. Ichth. 67. Salv. de Aquat. 199. Scorpis, Aldrov. de Pisc. 195. Jons. de Pisc. 41. Gesn. de Aquat. 845. Rondel. de Pisc. 1. 201. Scorpis major Rondeletii, Raii Ichth. 331. Ejusd. Synop. Pisc. 142. Scorpis, Charit. Pisc. 23. THE SCORPION FISH.*

It is taken in the *Mediterranean Sea*; the Gall of it is good for Cataracts, an Albugo, or other Infirmities of the Eyes which darken the Sight. *Dioscorides.*

SCORTUM. The **SCROTUM.**

SCORZONERA.

The Characters are;

The Root is carnosus, and full of a lacteous Juice: The Leaves are alternate; the Calyx is oblong, squamous, and shorter than the Petals of the Flower. The Seed is oblong, and generally contain'd in a Husk.

Boerhaave mentions six Species of *Scorzonera*, which are;

1. *Scorzonera*; latifolia; sinuata. *C. B. P. 275. Tourn. Inst. 476. Boerb. Ind. A. 89. Scorzonera nostra & Hispanica viperaria, Offic. Scorzonera Hispanica major, Park. Parad. 301. Raii Hist. 1. 248. Viperaria Hispanica, Ger. 598. Viperaria sive Scorzonera Hispanica, Ger. Emac. 736. Tragopogon Hispanicus sive Escorzonera, aut Scorzonera. I. B. 2. 1060. VIPERS-GRASS.*

The Root of this Plant is about a Finger thick, but little branched, of a reddish brown on the Outside, and white within, full of a white milky Juice: The lower Leaves are broad, long, sharp-pointed, and waved about the Edges, of a pretty firm Texture. The Stalk arises to be two or three Foot high, smooth and round, beset with Leaves, without Footstalks, broad at the Bottom, and growing narrower and grassy at the Ends. The Flowers grow on the Tops of the Stalks in scaly Calyces, compos'd of several Rows of narrow Petals, somewhat like Dandelion, which afterward turn into Down, having long, slender, whitish Seed. It grows in some Parts of *Spain*, but is planted here in Gardens, and flowers in *July*. The Root is used.

It is accounted cordial, sudorific, and alexipharmic, useful in all Kinds of Fevers and malignant Distempers, and is accounted good against the Stings or Bites of venomous Creatures. *Miller's Bot. Off.*

The Root of *Scorzonera* is of a sweetish and not unpleasant Taste, and as good to eat as a Parsnep, whether raw, boiled or pickled; it is even serv'd up at the Tables of Persons of Quality, and prefer'd before a Parsnep, or Skirret.

It is not only good for the Bite of the Serpent *Escorzo*, but for the Bites of all other Serpents. The Virtues hereof are extended, also, to pestilential Fevers, all Manner of Disorders of the Heart, Melancholy, Palpitations, Syncope, Epilepsy, Vertigo, Obstructions of the Viscera, and Affections of the Uterus. *Monardus* has written a Book on this Plant, in which he relates surprizing and even incredible Things of its Virtues against the Serpent *Escorzo*. The *Scorzonera* of the Island *Amagria* is bitterer than the *Spanish*, or what is cultivated in our Gardens, and is very serviceable in the Beginning of a Dropsy, or in a stubborn Jaundice. If you want an hepatic Medicine for gross and adust Bile, this bitterest Sort of *Scorzonera* is most effectual. The mountainous *Scorzonera* is celebrated as an Alexipharmic in *Ephem. Germ. Au. 11. Obs. 81. Raii H. P. 248.*

2. *Scorzonera*; latifolia; altera. *C. B. P. 275.*

3. *Scorzonera*; laciniatis foliis. *T. 477. Tragopogon, laciniatum, luteum, C. B. P. 274.*

4. *Scorzonera*; ficula; altissima; folio plantaginis hirsuto.

5. *Scorzonera*; foliis gramineis. *Sher.*

6. *Scorzonera*; foliis laciniatis; supina. *Bocc. Boerb. Ind. Alt. Plant. Vol. I.*

Scorzonera takes its Name from *Escorzo*, a *Catalonian* Word signifying a Viper, because it is said to be very effectual against the Bites of that Animal. The *Scorzonera* imported from *Spain* is far superior in Virtue to ours, which wants the aromatic Quality of the *Spanish*. Perhaps it had its Name from its Effects on the Viper, which if 'but touch'd with the Juice of this Plant, immediately droops and sickens; and it is said, that a Person may take a Viper in his bare Hand without receiving any Harm, if he first rubs his Hand with this Herb; for the Viper will not be able to bite, but faints and sickens. And I know an Apothecary, who commanded his Servant to take in his Hand a living Viper, such as they put into *Venice Treacle*: The Servant was immediately bit by the Viper, and sunk to the Ground, when his Master immediately apply'd this Herb bruised to the Wound, and to the Viper, which still hung to it. The Effect was, that the Viper immediately fell off, and the Servant was cured. The Juice is very serviceable in Inflammatory Diseases; three Ounces thereof being taken in the Morning fasting, are recommended against all volatile Poisons; and the Herb apply'd, cures envenom'd Wounds. The Root, which is perennial, is proper to be taken out of the Earth before it produces Leaves, and to be hung up or dry'd, or preserved in Sand. It is a proper Herb in all Diseases proceeding from too great a Mobility of the Humours, and which require Agglutinants and Demulcents; also, in all Disorders arising from a putrid Blood, such as the Small-Pox, Measles, Pestilence, burning Fevers, Peripneumony and Pleurisy. The Root is an excellent Cleanser and corrective, for which Reasons it is of extraordinary Use in hypochondriac Disorders, being boiled in Barley-Water. The Root bruised in a Marble Mortar, and the Juice expressed through a Linnen Cloth, makes an excellent Medicine; but all its resolvent and nutritive Virtue is lost in Decoction. It is of good Service in Melancholy, and Pains of the Gout, and some use it with Success in an immoderate Flux of the Menfes. There is no Herb more commended than the first, second and third Species in the Phthisis, Extenuations, and the Jaundice. *Hist. Plant. ascript. Boerhaave.*

Besides the foregoing Sorts of *Scorzonera*, *Dale* mentions the following.

SCORZONERA SUBCERULEA, *Offic. Scorzonera angustifolia subcerulea*, *C. B. P. 275. Raii Hist. 1. 249. Tourn. Inst. 476. Scorzonera elatior angustifolia Pannonica, Park. Theat. 410. Viperina 63, Ger. 598. Viperina angustifolia elatior, Ger. Emac. 737. Tragopogonis Species sive Scorzonera major angustifolia subcerulea flore, I. B. 2. 1062. HUNGARIAN VIPERS GRASS.*

It grows in hilly Places, and the Root, which is the Part used in Medicine, perfectly agrees in Virtues with that of the common *Scorzonera*, and may supply its Room.

SCOTODINOS, *σκοτοδίνος*, or **SCOTODINE**, *σκοτοδίνη*, or *σκοτοδίνη*. A Vertigo attended with a Dimness of Sight; from *σκοτος*, Darkness, and *δίνη*, a Vortex.

SCOTOMIA, or **SCOTOMA**. From *σκοτος*, Darkness. The same as **SCOTODINOS**.

SCOTOS, Darkness, or Dimness of Sight.

SCREATIO. The Action of Hawking, in order to bring up Matter lodg'd in the *Fauces*; or the Matter thus brought up.

SCRIBLITA. A Wafer. *Castellus.*

SCRIBONIUS LARGUS. The Name of a Roman Medicinal Author, who lived under the Emperors *Tiberius* and *Claudius*, and wrote many Things in Medicine, of which his Treatise *Of the Composition of Medicines*, is still extant, [* N n]

extant, and often quoted by *Galen*: It was dedicated to *C. Julius Callistus*, the favourite Freedman of *Claudius*; and it is only by this Dedication that we are able to judge of the Time in which *Scribonius* lived, for he speaks in one Place of *Messalina* and *Claudius* after a Manner which leaves no room to doubt that he lived under their Reign: "*Messalina*, says he, the Consort of our God *Cesar*."

Some learned Men have thought that *Scribonius* wrote this Book in *Greek*, and what we now have in *Latin* is nothing but a *Latin* Translation, made a long Time afterwards. What gave Occasion for them to think thus, was, that the *Latin* of *Scribonius* did not seem to them to come up to the Purity of that Language, which was still preserved in the Reign of *Claudius*. But *Rhodius* has prov'd, that these learned Men are mistaken, and that our *Scribonius* has all the Air of an Original, though the Language be not quite so pure as that of *Celsus*, who preceded him not long before; which only proves, according to *Rhodius*, that Men who live in the same Age speak not always with equal Purity of Style; and indeed, the whole Book shews that he wrote it in *Latin*; and in the Preface he makes his Acknowledgments to *Callistus* for presenting his *Latin* Medicinal Treatise to the Emperor. As to his Person, his Name shews that he was a *Roman*, and of the *Scribonian* Family, except it be suppos'd that he borrowed that Name from the same Family, in Imitation of other Strangers; but if this were the Case, he would have join'd his own proper Name to it. *Le Clerc*, *Histoire de la Medicine*. *Fabricii Biblioth. Græc.*

SCRIPTULUS. A Scruple; the same as **SCRUPULUS**.

SCROBICULUS CORDIS. The Pit of the Stomach.

SCROFFA. The same as **SCROPHULA**.

SCROLLUS. A River Fish, found in the *Danube*, somewhat smaller than the *Perch*. It is red on the Back, greenish on the Sides, with a Mixture of red Spots, and white on the Belly. It is esteem'd excellent Food, but is not used in Medicine. *Lemery des Drogues*.

SCROPHULA. The King's-Evil; from *Scrophæ*, a Swine; because this Animal is said to be much subject to such a Disorder.

Quincy remarks, that the Gout and the King's-Evil agree, in being frequent amongst Persons strong both in Body and Mind, who are hearty Feeders, and on other Accounts well and healthful; in this respect, however, considerably differing, that the Evil generally appears at three, four, or five Years of Age; and dries away by that State of Manhood that the Gout gives its first Warnings of approach; though neither of these are without some Latitude of Exception. And as the Gout is owing to sharp saline Humours, that are contracted by a particular Way of living, and favoured in their Accumulation by a peculiar Make of the Parts where they settle, upon the Declension of the natural Strength, so this Disease seems owing to a hot, sharp Humour, propagated *à Semine* from the Parent, in the first Formation discovering itself at an Age, when certain Glands are fitted for its Reception, and disappearing when the digestive Powers have arrived to their greatest Strength.

That Persons subject to the Evil do early shew an uncommon Vivacity of Mind, and Forwardness of Understanding, is a Fact that all have experienced who have been accustomed to such Opportunities of Observation; as, also, that if the Distemper goes on without much Interruption from its natural Course, and dries away about the Age of Manhood, as it commonly does, such Persons are generally strong, and free from Distempers afterwards.

That such a Humour can be derived from the Parent, is granted, perhaps, in more Instances than where it is really so, and is likely to be yielded by many, more on the score of a vulgar Opinion, than for any true Notions of the Manner how such a Thing is possible: It may be, therefore, necessary to form some rational Conceptions hereof, in order to judge what Disorders spring from such an Origin, and which not; because, without some Rules to determine by, Cases may be confounded and mistaken, from some Resemblance in their Appearance, which flow from very different Causes.

To this Purpose, then, I cannot see what we have to do with the Philosophy of the Microscope, so far as it asserts the Semen to be animated before Generation, because it seems not in any Manner to affect the Matter under Inquiry; but so far as we get any Knowledge of the sensible and manifest Properties of that small Portion of Matter, from whence we boast the Production of the finest Machines in the Creation, it appears to consist of a very subtle, active Salt, floating in a soft, balsamic Vehicle; whereas, therefore, we can conceive what Consequences to the Economy already formed, may flow from an Excess or Defect in the more active Prin-

ciple of such a Composition; so may we, by a Parity of Reason, conjecture, what must be the Result of every Deviation from the natural Standard in the same Principle before its Animation in the Matrix. Where, then, this Principle abounds with Heat and Pungency in the masculine Semen, it will not only irritate more frequently and more strongly to venereal Embraces, but carry with it the same Qualities into the impregnated Ovum; and, without some uncommon Interruption, or Contemperature from opposite Qualities, will encrease in the growing Fœtus, in Proportion to its Enlargement, and make a Part of that Constitution to which it gave Being, with the same Affections and Properties as it stood possessed of in the generating Semen.

Hence, it will be no difficult Thing to imagine what a Condition the Off-spring of such a Parent must be in; and how, sooner or later, in one or another Part, this primitive Matter may shew itself in a very troublesome, if not a very mischievous Manner; as the Circumstances of Life, and Strength of the Constitution encourage or obstruct its Exertion, and the peculiar Configuration of the Glands favour or resist its Accumulation and Lodgment: And though in the Case immediately under Enquiry, it principally shews itself from a little Time after Birth to a State of Manhood, is probable from this Reason, that sooner, it is not in Quantity enough to be discernable, or is hindered from Exertion by the Laxity of the Parts, and Viscidity of Humours, which is always more or less the Case of very young Children; but that when the Parts have got some Degree of Firmness, and have digested away the tough Humours, this hot, sharp Matter becomes sensible to the fine Strainers and Membranes as it passes in the Course of Circulation, and at last fixes upon them so as to occasion Pain, Inflammation, Swelling, and running Sores: But when, again, the Constitution takes another Turn, and arrives to its utmost Vigour, the digestive Powers become able either to destroy its Pungency by Attrition and Comminution, to detach it off by some natural Outlet, most commonly the Glands of the Skin, or to lessen it, so much at least, in Quantity, that it flows with the ordinary Current without sensible Effect, and never afterwards appears, but in giving to the generating Principle the same bad Taint from whence it derived its Existence: And that even frequent Coition and Propagation shall vent and draw off a great deal of this Matter, to the Benefit of the Parent, and Detriment of Posterity, is not only probable, but almost demonstrable; because, during that Time of Life, and in Proportion to such Indulgence, the Parent is always the most free from it, and that during the Travail of a Woman with Child, before subject to such Humours, or any of the like Kind, she shall be entirely free from it then, though, if the Issue survives the common Fate of Convulsions, a little more Age seldom fails to discover when such a Mother had her temporary Relief.

That the Distemper then under Consideration may be thus propagated, is not only out of Question from common Experience, but the Manner of it may in some measure be conceived from these Hints, and the Nature of the generating Matter. The same Way of Thinking, also, will suggest in what Circumstances a Person may fall into this Distemper without having it to charge upon Parents, or the Milk of a tainted Nurse, which, also, may possibly happen, tho', it is believed, very rarely; and that is from a Way of feeding, or any other Condition of living, that gives to the Mass of Humors an uncommon Heat and Sharpness, which in Time shall fix upon the same Parts, inflame and ulcerate them in the same Manner as that derived from a distemper'd Semen. And this will not appear at all strange to those who consider how many cutaneous Foulnesses, that are generally propagated by Infection, do sometimes derive their Origin from a Constitution thus disposed to generate the same Humour within itself, without any Infection; as what is ordinarily called the Itch, which is commonly got by Infection, does yet in some scorbutic Habits arise to the Height of that Distemper, so as to be in a Condition of infecting others, though it was generated *de novo* of itself.

The various Shapes and Appearances of this Distemper, as it is differently circumstanced in Proportion to the Quantities, Aperities, and other Aggravations of the Peccant Humours, with the Parts it settles upon, must be left to the Descriptions of Authors who have professedly wrote about it, it being sufficient to our Design here, to take Notice, that it is from a hot, sharp Humour, fitted to be deposited upon certain Glands, and affect them in the Manner as it is notoriously known to do.

But so far as from the principal Circumstances of this Distemper are suggested to us any Means of Cure, it is most obvious, that as the greatest Difficulty in getting rid of the morbid Humour which causes the Gout, is in its lying so far distant

distant in the Habit from the common Reach of Medicine, so this seems not quite so remote, but to flow mostly in the common Stream of the Blood, and to be immediately deposited by that upon the Parts affected, and most suited for its Reception. Besides, therefore, promoting Digestion, Commixtion and Transpiration, as, also, softening and smoothing the Asperities of burning corrosive Humours, a constant well-chosen Course of Diuretics must necessarily be of great Service. And too many Instances we have, by Experience, of Cases that have been sufficiently laboured with Mercurials, and the ordinary officinal Alterants, without Success; that have afterwards been conquered by means seemingly much slighter, such as the Millepedes, and the common antiscorbutic Drinks, made principally with cooling and diuretic Herbs and Roots; no general Form of which can be contrived to suit every Patient and Circumstance, and must, therefore, be left to the Contrivance of a Physician, according to the particular Exigences of different Constitutions. As to that singular Way of Cure, whence this Distemper comes by the Name of the King's Evil, there is something in it so remote from all good Sense, since it can take place only on a deluded Imagination, that I think it justly banished with the Superstition and Bigotry that introduced it. *Quincy's Medicina Statica.*

The *Scrophula* or *Struma* is a hard glandulous Tumor, usually of the same Colour with the Skin, seated principally on the Sides of the Neck, about the Musculi Mastoidei, behind the Ears, and under the Chin; either more or less moveable, single of the conglobate Kind, or in Clusters of the conglomerate Kind; many Patients having been observed to have them contiguous from the Ear down to the Clavicle.

Though the principal Seat of this Disease is in the Sides of the Neck, scarcely any Part of the Body is exempted from it; and it affects either Glands, Muscles, Membranes, Tendons, Bones, or the Viscera.

The Glands are the most remarkable Seat of this Distemper, and whenever the outward Glands appear swelled, those of the Mesentery may be concluded to be so too, the Mesentery being usually the Part first attacked by this Malady.

In the Eyes it shews itself in a troublesome Ophthalmia, producing both the Anchylops and Epylops; and in the Lids, the Epiphora and Lippitudo; sometimes the whole Ball of the Eye is thrust out by these glandulous Tumors. This Distemper appears in the Nose, by the Ozena; in the Lips, by the Labrifulcium; or thick pouting Tumor, especially of the upper Lip, with a Fissure in the middle; in the Throat, by the tumefied Tonsils; under the Tongue, by the Ranula; on the Wind-Pipe; by the Bronchocle; under the Chin, and on the Sides of the Neck, by the Struma, properly so called. It breaks out in the Groin and Arm-pits, and the Breasts too are subject to it. The Testicles and Prostates may be liable; but in these Cases another Distemper is generally suspected. The Strumous Matter is sometimes collected, like a gummy Substance, about the Muscles and Tendons, especially in the Fingers, Hands, Feet, and Toes; and the Elbows, Knees, and Ankles are often attacked in this manner. The fixed, immoveable, white Swellings on the Joints, are the undoubted Offspring of this Distemper.

The Bones are often affected with this Distemper, not the Skull itself excepted; though the Bone swells, it appears externally hard and sound, but the Heart and Marrow may be entirely rotten; and this is called the Spina Ventosa. When a strumous Tumor touches a Bone, it becomes carious. The Viscera too are often subject to these Tumors, which is not surprising, if we consider that most of the Viscera are supposed to be made up of Glands.

The strumous Tumors of a round Figure are reckoned the mildest, which, as well as others, arise without Inflammation or Pain, and with moderate Hardness, but by Increase of Heat inflame and suppurate. Some of the mildest and biggest suppurate, without changing the Colour of the Skin, but in a few Days they renew their Hardness. When they suppurate with Inflammation, the Matter is mixed with Blood, and they are named Phlegmonoides; others are indurated and become scirrhus, yet sometimes fret, and grow painful and soft in their upper Part, which by some has been mistaken for a Suppuration; but at their Opening they only gleet, and often degenerate into a Cancer. Sometimes these Tumors are primigenial, as when the Disease is Original; and secondary when they succeed some other Distemper, as particularly a Fever, which often terminates in a Congestion of Matter. It, also, sometimes happens after Catarrhs, and other Distempers; and some proceed from sudden Fluxion, and others from long Congestion. The *Steatoma*, *Atheroma*, and *Meliceris*, as they are frequently Companions of, so they are often not easily distinguishable from, these Tumors.

When the Tumor affects a conglobate Gland, it is usually round, moderately hard, and moveable without Pain. Those

of an oval Figure, which are hard, and accompanied with Pain without Inflammation, are malignant; and if they grow unequal, threaten a Cancer. When the Tumor seizes a conglomerate Gland, the Shape of the Gland is usually preserved, especially when it is wholly affected; but sometimes they are oval, round or flat. In a Muscle the Shape of the Tumor is uncertain, and always distinct from the Muscle.

The Particulars to be considered in the Prognostic are, whether the Tumors be many or few; in Clusters, or more distinct; great, or small; deep, or superficial; moveable, or immoveable; benign, or malignant; soft, or hard; the Situation; whether near great Vessels, Joints, Nerves, Tendons, or Bones; also, the Habit of the Body, and Age of the Patient.

If the Habit of Body be tolerable, the Patient young, the Strumæ recent, and but moderately hard, the Resolution and Suppuration may be easily effected; but if they have been of long Continuance, are hard and lie deep among the Vessels, the Work becomes difficult; yet the Cure of both is often promoted by accidental Ferments, which often either resolve or suppurate them. If the Strumæ be moveable and free from remarkable Vessels, the Extirpation is not difficult; but if the Habit of Body be bad, and the Strumæ immoveable, they are not to be meddled with; if they be moveable, and yet lie deep among the great Vessels, the Extirpation is dangerous: Besides, in the best Habits of Body, new Strumæ are ready to rise while the old ones are extirpating.

If the Strumæ have been long ulcerated, and are become sinuous and virulent; and if they lie near one another, they often find a Communication to one another, though they appear distinct: In this Case the Lips grow callous, and the Ulcers corrosive, frequently sordid, and the Cure is not to be hoped as long as any one Cystis remains, or the Vessels that feed them; but if the Ulcerations be simple, the Cure is accordingly easy. Those who are seized with Strumæ in the Neck, after forty Years of Age, seldom recover, as they generally labour under great Obstructions, whence spring scorbutical Affections, Jaundice, Fainting, Vomiting, Loss of Appetite, sometimes a Dropsy; and sometimes a Cough, in which Case they die tabid.

If strumous Tumors arise from Caries in the Bones of the Fingers or Hands, their Cure will require great Care; if in the Foot or Toes, it will be more difficult; if in the Os Calcis, Joint of the Ankle, or Astragalus, or in the Knee-Bones, and Ichia, or the like, where you can't lay open, or judge of the Caries, the Case is deplorable, the Work is long, and the very Discharge of Matter exhausts the Spirits of the Patients; so that they generally die of a Marasmus. But if, by Strength of Body and Help of Medicines, the Ulcer digests, sometimes the rotten Bones moulder and exfoliate, and by a *Callus* within, the Member is supplied.

If strumous Tumors outwardly foul the Bones; if the Habit of Body be tolerably good, and the Ulcers well handled, they may recover: But if the Habit of Body be bad, new Ulcers arise; so that the Work is long and difficult.

THE METHOD OF CURE.

In the Cure, three Things are required.

1. A Regimen of Diet, and the other Non-naturals.

2. Pharmacy, or internal Prescriptions.

3. The Application of Externals, either to discuss, suppurate, or extirpate the Glands.

With respect to a Regimen of Diet, Regard ought to be had to the Constitution of the Patient, whether it be hot or cold, dry or moist, old or young, robust or delicate. If the Body be cold or moist, we generally suppose a Surfeit preceded, and Crudity to abound; in which Case, Abstinence from Meat and Drink, or at least great Moderation, is requisite. Their Diet ought to be moderately heating and drying, as Mutton, Kid, Rabbit, Pullet, Chicken, Partridge, Pheasant, Poultry, and the like, and these roasted; avoiding all Aliments which yield a gross phlegmatic Nourishment, such as Water-Fowl, Fish, especially those of Standing-Waters, Herbage, Cheese, all smoak'd, seasoned or dried Meats. Their Bread ought to be of Wheat, well-baked, and their Drink medicated Ale or Beer; Wine also is allowed, and Water utterly forbidden.

In hot and dry Constitutions tending to a Hætic, we allow a Diet of a more humid Nature, their Meat being boiled with Lettice, Spinnage, Purslane, Wood-Sorrel, and the like; to some of these we dare scarce permit the eating of any Flesh, but rather a Milk-Diet, or Asses Milk; though Milk will not be always found agreeable; in which Case we prescribe medicated Broths. Pork is, by some, forbidden strumous People.

Air is a great Help to the Cure, which ought to be mild and gentle, in cold Weather heating and attenuating, and in the hot cooling. Exercise of Body ought to be enjoined, it being

being necessary to waste Superfluities. Sleeping in the Day is forbidden, unless where the Case is painful, to which it is an Anodyne. The Passions of the Mind ought to be moderated.

The internal Prescriptions must be qualified according to the Habit of the Body. If it be cold and phlegmatic, abounding with gross viscid Humors, the Prescriptions ought to be heating and attenuating. In plethoric Constitutions, the stronger Cathartics ought to be exhibited, or the milder often repeated. The Purgatives are, the Species Hieræ with Agaric, Diaturbeth, Pulvis Cornachini, Pilulæ Cochizæ, à duobus, Rudii, de Hermodactylis, Alophanginæ, Imperiales, à Succino, Trochisci, Alhandal, Diagrydium, Refina Jalapii, and Mercurius Dulcis, and all those Medicines prescribed in the Lues Venerea.

Alteratives are also usefully taken on those Days in which the Patient does not purge. Among these, a Decoction of the Woods claims a Pre-eminence; to which are added one or other of the Specifics, so called, such as the Roots of Fig-wort, Drop-wort, Devil's-bit, Soap-wort, Bur-dock; the Bark of the Walnut-tree; the Herbs, Rag-wort, Crane's-bill, Herb-Robert, the greater Celandine, Hound's-tongue, white Hore-hound, Fox-glove, and the like.

In these Decoctions, it is very common to put also a Lump of crude Antimony, of four Ounces or half a Pound Weight, grossly powdered and tied up in a Rag; a Specimen of which you have in Dr. Fuller's *Decoction Liberans*, and his *Decoction Edulcorans*; of a Diet, in his *Cerevisia ad Scrophulas*, and his *Decoction ad Scrophulas*.

For such as are not able to be at the Expence of these, or unwilling to be at the Trouble of preparing them, which must be continued for a long time, I have frequently ordered a Solution of Quick-Lime, one Pound, to a Gallon of Spring-Water; which being decanted, two or three Ounces of the Shavings of Sassafras Wood, with half an Ounce, or an Ounce of Liquorice Root sliced, may be steeped therein; these not only taking off the brackish Taste, and changing it for one more pleasant, but giving, likewise, a very agreeable Smell and Colour to the Solution.

As to the cold Infusion of several Drugs, prescribed by some Physicians, the Cost seems to be ill bestowed; the Water being before saturated with the Salts of the Lime, and the Woods too compact to yield any Virtue this Way, which require a Decoction of many Hours, with as many taken up in a preceding hot Infusion preparatory thereto: For which Cause, when I would have the Water more thoroughly medicated therewith, I either order them to be boiled in Lime-Water, somewhat weaker, prepared for the purpose; or having made the Decoction in Spring-Water, to each Quart thereof, half a Pint of the common Lime-Water may be added. And thus the Salts of the Lime have been found, perhaps, more beneficial than more pompous Forms of Remedies.

Besides these Liquors to be taken as a Diet, there are other Medicines, such as the diaphoretic Antimony, Bezoar Mineral, Æthiops Mineral, and Gum Guaiacum.

The Lapis Spongiæ, or Sponge-Stone, with Sponge itself calcined, Dr. Turner says, he has often experienced successfully, and relates the following Case.

A Countryman, about thirty Years of Age, presented himself to me for Advice, with both Sides of his Neck (where the Strumæ were placed *racematim*, as I may say) like a Bunch of Grapes, but more fitly compared to that of Turneps, with which extending forwards, the Larynx was so compressed as to endanger Suffocation. He had the like Glands upon the pectoral Muscles, about the Axillæ, with other ganglionide Tumors on his Arms and Wrists. Of a Case so pertinacious and inveterate I had little Hope; I prescribed him a Diet of the Woods, with some Antistrumatics; Purgation with Extract of *Rudius*, and *Mercurius Dulcis* between whites; also an alterative Electuary of Gum Guaiacum, Æthiops Mineral, Powder of Millepedes, made with the Conserve of Hips; together with a Roll of the Plaister of Frogs, with double the Quantity of Mercury, to be applied externally upon the Glands plaister-wise, and renewed as there was Occasion; returning him back into the Country, where he had before undergone a copious Salivation for thirty Days; notwithstanding which the Distemper increased.

But growing weary of Method, he quickly after threw all aside; till meeting with one who had laboured under the like Malady, and had got his Cure by a Remedy, which required no Regimen, this Acquaintance procured from his Correspondent in Town some of the same for our Patient, being a large Gally-Pot full of a dark or blackish Powder, out of which he took a Spoonful, Night and Morning, in a Draught of Beer; and finding his Kernels waste, he was encouraged to go on, especially considering how easy it was purchased; his Friend making no Secret of the Matter, but frankly telling him what it was. Upon which, that he might not be far-

ther troublesome, he desired a Relation he had here, according to the Direction given him, to buy a large Quantity of the most gritty and fabulous Sponges he could pick out, which drying in an Oven he reduced to Powder; and having continued taking the same for about three Months, the Glands were all dispersed, and his Distemper vanquished; so that being in Town about some Business at the Year's End, I saw him with a smooth Neck, scarce a Vestige of the Disorder remaining, having, as he expressed himself, *Piss'd away the King's Evil*.

Somewhat related to this, adds Turner, is the *Pulvis ad Strumas* of Dr. Bates, prepared of Lapis Spongia, three Parts; Sal Gem, two Parts; and vitriolated Tartar, one Part; which I have seen beneficial, also, in some Cases. But whoever thinks that by this he has got an infallible Medicine, will find himself mistaken. *Grulingius* prescribes it thus:

Take of Sponge, Sponge-stone, and Pumice-stone, each equal Parts; let them be calcined, and take a Dram for a Dose, twice a Day, with a Diet-Drink.

In another Part of his Writings I find it thus:

Take of Sal Pumicis, half a Scruple; Sal Gem, two Scruples; Salt of Tartar, one Scruple; mix and make them into a Powder. Let it be given in Wine, or Aqua Scrophulariæ, beginning when the Moon decreases, and continuing to the Change.

For the same Purpose in another, I find this:

Take of the Powder of the Root of the Gladiolus, half a Dram; let it be taken in a Spoonful of the Syrup of Violets, every Morning, for a Month.

If the Patient be of a hot and dry Constitution, the Case is more difficult, because the Medicines eminent in the Cure of this Disease, are generally such as are like to injure the Body in one of these Qualities, being most of them such as either heat, or at least dry it; many of them do both, as *Sarsa*, and the Woods; as, also, the Cineres Spongiæ, Sal Gem, and all the Species. In this Case the Waters will have their Place, though *Wiseman* does not so particularly approve them as others do. Asses Milk is of great Efficacy in this Case; and where Asses Milk does not agree, distilled Milk may be prescribed: Also, Decoctions of *Sarsa*, China, Mastich Wood, white Sanders, and Shavings of Harts-Horn and Ivory, with the more temperate Pectorals and opening Roots. Purging, in this Case, if the Body requires it, ought to be with Lenitives; and to Children, the Infusion of Rhubarb is sufficient. Emulsions, Pearl Julaps, and Opiates, are, also, beneficial. *Wiseman*, also, directs the testaceous Powders; but Turner says, that by Reason of their Grit, or exceeding Hardness, unless very finely levigated, I should suspect their Passage through the Lacteals; or passing, their being coacervated in the mesenteric Glands; as I remember once to have found them in a strumous, tabid Patient upon Dissection, who had taken great Quantities of them.

I have, therefore, a better Opinion of the Millepedes, which are usefully prescribed, not only in these Infarctions, but for attenuating, absterging, or cleansing all mucilaginous and tartarous Concretions upon the Viscera, which they precipitate by Urine.

The Method of prescribing them, is after they are washed and dried, to bake them in an Oven, and reduce them into Powder, which is given from a Scruple to half a Dram, in any convenient Vehicle, such as white Wine; but their Infusion alive in white Wine, and taking the Expression is much preferable. Thus two, or two and a half Ounces of the live Millepedes, may be steeped in a Pint of good white Wine, and two or three Spoonfuls of the Expression given for a Dose twice a Day. Or twenty may be swallowed at a Time, an easy Task to many, whereby their volatile Parts are preserved; which may be impaired, if not destroyed, by the Heat of the Oven.

The third Intention is performed by the Application of Externals, 1. To the Tumors which we endeavour to resolve, or suppurate, or to extirpate. 2. To the Ulcers which are the Effect either of Suppuration or Extirpation. In Tumors we shall begin with Emollients and Discutients, though it is no easy Work to resolve these Glands, if we consider the Stubborness of the Matter, and its being contained within a Cystis; yet in some soft delicate Bodies the milder Sort of Glands, which are not too much indurated, frequently resolve. The *Emplastrum de Ramis cum Mercurio* is frequently applied for this End, as also that of the Gums, *Annoniacum*, *Galbanum*, *Bdellium*; to which crude Mercury may be added, as it is in the New Dispensatory. Some neat

Forms of which are to be met with in *Dr. Fuller's Emplastrum Antimoniale*, and the *Linimentum de Bryonia*, prescribed for the same Purpose; as also in *Bates's Emplastrum ad Strumas*, and *Diagalbanum*, with his *Unguentum Digitalis*.

Zacutus de Prax. Admirabile, Vol. II. Lib. I. Obs. 101. says he never used the following Ointment without Success.

Take of the Root of Great Bryony, plump and round, half a Pound; cut it into small Pieces, and fry it with three Pounds of recent Olive Oil, till they become dry and wasted; strain it, and add of Turpentine of Fir, half a Pound; Yellow Wax, five Ounces; remove it from the Fire, and make it into a viscid Ointment.

The Herb Goose-grass or Clivers, beat up with Lard, and the Strumæ therewith anointed, discusses the same, while the distilled Water of the whole Plant lends farther Assistance. The Root of Smallage is recommended by Mr. Ray for the like Use. *Crollius* as highly extols the Lesser Celandine or Pilewort, whose Roots, he says, are a Kind of Specific in this Disorder. An Ointment prepar'd of these Roots is directed thus.

Take of the Root of the Lesser Celandine, cleaned and bruised, and Hogs Lard, each a Quantity at Discretion; let them be pounded and boiled together, till the Roots become dry; repeat this Operation twice, till the Lard is well impregnated with the Roots; and thus you have an excellent Ointment.

Etmuller and Mr. Ray recommend the *Pulvis Cyani*, or Tincture of its Flowers; others, the *Radix Cynoglossi*, or Root of Hound's Tongue, drinking the Decoction of it, and applying it outwardly in Cataplasms. But the *Folium Digitalis*, or Leaf of Fox-Glove, pounded and applied to the Strumæ, or the Ointment of its Juice, is highly esteemed by the Botanists. *Dr. Bates's* Preparation of this Ointment stands thus.

Take of May Butter, three Pounds; fresh Leaves of Fox-glove, bruised, as much as you can mix with the Butter; expose them to the Sun thirty Days; then boil them till the Leaves become curled, and let a strong Expression be made.

This seems to be the same used by Mr. *Wiseman*, which he calls the *Valentia Digitalis*, having undergone a repeated Infusion of fresh Leaves, by which the same is farther impregnated with the Virtues of the Plant. *Helmont* praises the spongy or hairy Excrecence, growing out of the Canker-Rose, the Powder being taken to half a Dram mixed with Sugar.

The *Radix Ruscii*, or Root of Butcher's Broom, in fine Powder, given to a Dram every Morning in White-wine, especially if an equal Proportion of those of *Flupendula* or *Scrophularia* be added, and administered in the like Dose, is praised by *Ermuller*, as is the Rue-leaved Whitlow-Grass by Mr. *Boyle*. *Arnoldus Villanovensis* says, that the fresh Root of *Scrophularia*, eaten for ten Mornings fasting, certainly cures the King's-Evil.

When the Glands discuss not, but begin to enflame, a Suppuration will be the Consequence; to promote which, let the stronger emollient Suppuratives be applied, as the Roots of white Lillies, Bryony, Marshmallows, Sow-bread, wild Cucumbers, to which may be added, fat Figs, and Pigeons Dung; and if the Progress be very slow, for stirring up the sluggish Humour, and rousing its Heat, the Root of Pellitory of Spain, and the Seeds of Staves-acre and Mustard. To promote the Suppuration, it is, also, common to pinch them hard; and some People in the Country thrust a Thorn into them, which excites Inflammation, and disposes them to suppurate. Care must be taken to endeavour a perfect Concoction; for if they are opened while any Part of the Gland is hard, it will encrease, and occasion a Necessity of eradicating it, or of leaving the Cure imperfect.

With regard to the Manner of opening them when suppurated, that by Incision makes the least Scar; but if the Struma be large, the Caustic may give a larger Opening with less Pain: The Matter being discharg'd, you may deterge with *Paracelsus's* mundificative, precipitate, and the Vitriol Stone; and afterwards incarn and cicatrise.

But in old and hard Strumæ, we seldom obtain a complete Suppuration: Sometimes, during the Application of the most subtle Discussants, we raise a Heat in the Skin, which affecting the Cystis, and Part of the Gland next under it, causes an imperfect Suppuration; by the continued Use of

the Discussants it at length frets its Way in small Apertures; which, if the Applications are continued, grow bigger, and become so many painful Ulcers, spreading one into another; the Body of the Gland remaining hard; without Hopes of Suppuration. But if you dress them one, two, or three Days with a Pledge of *Unguentum Basilicon*, you may qualify the Heat, and moderate the Ulceration; and so by interchangeably applying the Discussant or Lenient, you may happily waste the whole Gland; if the Patient be treated with proper Internals. Sometimes the Strumæ protrude in a Fungus, and may be thrust quite out by passing a Spatula under them, and the Ulcer may be healed in a few Days: Where they are incapable of being so thrown out, the protuberant Part may be cut off, and the remaining Basis consumed with Echarotics.

If the Struma be movable, and free from remarkable Vessels, the speediest Way of Cure is by cutting the Skin; and taking them out whole with their Cystis: Those which have Stalks, and are pendent, or grow small near the Basis, may be tied and cut off: In those which are so thick in the Basis, that you cannot make Deligation on them, you may pass a proportionable big Needle under the Roots of them, and cut them off under the Needle.

The common Way of taking out all the Species of Strumæ, Atheromata and Meliceris, by Incision, is in cutting the Skin the Length of the Tumor; and the Incision should be made warily, lest the Cystis should be divided; and the Matter flow forth. After they are separated round to the Basis, it may be sometimes necessary to make a Ligature upon the Vessels, before they are cut off. Those which are very large, with a proportional Basis, as Steatomata, generally called Wens, are sometimes taken out by making a crucial Incision, and sometimes by an oval one, taking off so much of the Skin as may be judged superfluous; then separate it with great Caution, because the Skin commonly adheres so close to the Cystis, that they cannot be divided without the Help of the Knife: Having separated it, turn it out, and make a Ligature underneath upon the Vessels, and cut it off; then bring the Lips of the Wound together, with two or three Stitches, and dress it up in a proper Manner. Some Empiricks cut them off without more ado; scarce making a Ligature on them: But this Way being always attended with a Flux of Blood, others chuse rather to pass a Seton-Needle with a strong Ligature close under the Basis, or as near as it may be, and that way make a Ligature strictly about it. Sometimes we make the like Ligature without Incision, and are content to eat off the Tumor by straitening it; thus it falls off without Effusion of Blood; but there is great Danger of mortifying the sound Parts underneath, or of causing such a Disturbance as prolongs the Cure. Therefore, it may be more proper in great Steatomas and complicated Tumors, which are inclosed in Cystises, rather to cut the Cystis, and with the Hands pull out the preternatural Body, leaving the Cystis behind. The Cystis will, by Digestion, separate and cast off; and the Wound will, also, heal by Agglutination, if the superfluous Skin be cut off, and the remaining Lips brought together.

After the same Manner may all those Tubercles in the Eyebrows and Face be treated, where the Cystis separates difficultly from the circumjacent Parts, or where a great Scar may be unseemly.

Where the Strumæ are large or lie deep near considerable Vessels, there, if Extirpation be safe, the best Way will be by Caustics and Escharotics. To prepare the Patient for this Operation, the Body ought to be purged frequently; and, if the Constitution be plethoric, Bleeding may be necessary; also, during the Extirpation they ought to be under an antistrumatal Course of Physic, with Alteratives; otherwise new Glands will arise while you are eradicating the old; upon which Consideration, you are to furnish yourself with such Escharotics as may penetrate deep into the Gland, and do their Work with least Pain.

In eradicating the Strumæ, we are sometimes necessitated, upon the accidental Erosion of an Artery, to apply the strongest Escharotics; but generally we qualify them according to the Habit of Body, Age and Strength of the Patient, and Condition of the Glands; as they are hard or soft, have more or less Sense, or are seated in or near an Emunctory. Those Compositions which have Sublimate in them, are exceedingly painful, scarce to be endured in the strongest Bodies; and though they be taken off in five or six Hours Time, yet the Salts having once penetrated the Glands, the Pain will continue vehement many Hours after, and affect the neighbouring Parts with great Inflammation and Tumor, frequently raising new Glands. When these Compositions are applied to the softer Sex, or tender Bodies, it affects the Head with violent Pain, benumbing that Side

and the circumjacent Parts, and depriving them of their Series. Fainting, and Palpitation of the Heart, are frequent Effects of such Escharotics.

The Method I usually begin this Work with, is by the Application of such a Caustic as will least spread, making it proportionably long, reaching from the lowest Part of the Gland upward; for in consuming, the Strumæ will sink downwards. The Sides must be defended with Plaisters, to prevent it from spreading; for the Lips being once divided, they will give way, and accordingly as your Escharotics penetrate into the Body of the Gland, the Sides of it will fall in, and be eradicated out of the narrowest Opening you can make; and the narrower it is, the less Blemish will arise from the Cicatrix, and the sooner it will be cured. The Eschar being made, you may divide it the whole Length, and with a caustic Stone rub into it till it hath penetrated into the Body of the Gland, which it will the sooner do, if interchangeably you press into the same Place with a Stick dipped in Oil of Vitriol. Having thus done, dress it up with Unguentum Basilicon, with Lint-seed Oil hot, embrocating the Parts with Oil of Roses, and with Vinegar, and apply a Plaister of Bole over all. This Way of dressing is not without Pain, but it seldom lasts above half an Hour. The third Day after you may dress again, and if you find the Eschar in the Middle dried hard, dress it with Lenients; but if it feel soft, rub it again interchangeably with the caustic Stone and Oil of Vitriol, thrusting them every Way into the Body of the Glands, taking Care that the Lips of the Ulcers be not enlarged thereby. By this Way of proceeding, a great Part of the Strumæ will be eradicated, before the first Eschar in the Circumference cast off from the Skin. Having thus near eradicated the Struma, you may consume the Remainder with precipitate Mercury, and keep it open with Dossils of Lint, permitting the Ulcer to contract narrower the while, that it may heal with a Cicatrix. This I conclude the easiest and speediest Way to eradicate the largest Strumæ; but in these complicated Strumæ, and others which will not admit of such Proceeding, I apply an Escharotic, or the strongest cathartic Powders, as I see Cause. The Steatomia being Suet, yields not to Escharotics.

Hitherto we have treated only of the King's-Evil as it is contained in a Cystis, being the Struma of the Antients; but as in the History of the Disease, we enlarged its Bounds further, we shall proceed to the other Species here mentioned, which cannot be reduced to the Method here proposed. As to the Struma, and other preternatural Tumors included in a Cystis, affecting the Muscles, Tendons, Ligaments, and other Parts of the Body, they differ not in the Way of Cure from what has been already delivered, except that they require more Caution in the Extirpation of them, as they affect the Joints, or sensible Parts.

The Gumminess upon the Muscles and Tendons, require emollient and discutient Dressings.

The Swellings affecting the Joints in this Disease are of two Sorts, both made by Congestion, and increase gradually; yet differ, in that the one arises externally upon the Tendons, and between them and the Skin, or between them and the Bone; the other internally, within the Bone itself.

That which arises externally affects the Ligaments and Tendons first, and sometimes relaxes them to such a Degree, that the Heads of the Joints frequently separate from one another, and the Member emaciates and grows useless. But for the most Part, the Humours over-moistening the Ligaments and Tendons, produces a Weakness and Uneasiness in the Joint, raising a Tumor externally, and, in its progress, the Membranes and Bones are corroded by the Humour.

Particular Care must be taken, not to be deceived in taking the Case either for a Dislocation or some common Abscess, for fear of undoing the Patient with rough Usage, under Pretence of setting a Bone that was never out; or, by treating it with Maturatives, of making Work for a fistulous Ulcer with foul Bones, which will never after be in your Power to heal up again. As a farther Guide in the Way of Diagnosis, if the Tumor be of the strumous Kind, arising more especially from an internal Cause, there are usually some of the other Symptoms attending, as sore Eyes, swelled Lips, Glands about the Neck, or under the Chin, or the Parents have been subject to the same Distemper, and entail'd it thus upon their Issue. But if its Rise were first of all from some Strain or Bruise, the greater Caution is requir'd in forming a right Judgment.

In order to the Cure, apply, in the Beginning of the Fluxion, astringent and drying Plaisters, as of red Lead, and Bole, with moderate Bandage, and place the Member in such a Position as may prevent the Descent of Humours. If Blood abound, a Vein may be opened; but this

Humour requires purging with Calomel, &c. and Alteration by specific Decoctions, diaphoretic Antimony, Bezoar mineral and the like. In the Decline of the Fluxion, strengthen the Joints with Fomentations, and Plaisters of a discutient and astringent Quality, Tops of St. John's Wort, Centaury, Wormwood, Marjoram, and Betony, Flowers of Sage, Rosemary, Red-roses, Balauftines, Cypress Nuts, Myrtle and Juniper Berries, &c. in Wine, with the Addition of Brandy and the Emplastrum de Sandice. But if, through want of such Treatment, they grow excessively swelled, and the Humour incapable of being pressed back or discussed, you may suspect the Bones to be corroded; for that Swelling is mostly raised by a Hyperfarcosis within; and ought not be opened without a Prediction of a Caries; for, however it may, by a seeming Fluctuation, be thought to have Matter, yet, upon opening, it will only discharge a Gleet, and the Hyperfarcosis will thrust out in a Fungus. If in some particular Part a Suppuration visibly appears, and upon Aperture an albuginous Matter is discharged, you may conclude the Bone under it is rotten, especially if it be in the Hand or Foot; and the longer you delay the Opening, the more rotten the Bones will be.

Therefore, in such Cases, having foretold the Patient or his Friends of the Danger, give vent to the Matter proportionably large (according to the Rectitude of the Vessels) to the Bone, and proceed to the Cure as in Ulcers with Caries, being careful to keep the Member in a right Position, that the Joint above it do not contract; as it frequently happens in the Elbow, Knees and Hip. It sometimes happens, that these Diseased Creatures fall into the Hands of Pretenders to Surgery, who, by improper Applications, raise great Tumors; and not knowing how to dress them, suffer the Aperture to be filled up, and overgrown with luxurious Flesh till the Bone rot underneath. Others, when consulted in such Cases, although they know the Bones to be carious underneath that Hyperfarcosis, advise the leaving them to Nature, persuading their Patients, that it is the Work of Time, and that the Assistance of Surgery will but increase the Malady. But as one rotten Bone cannot cast off another, they may well rot in Pieces; and till the Hyperfarcosis be removed, and the Bones laid bare, nothing can be expected but Apostumations one after another, and the Patient will at length die hectic. It is proper, therefore, to consume the Hyperfarcosis by such Applications as the Strength of the Patient can bear, making way for the Bone or Bones; pull out such as are loose, and dispose the others to exfoliate; then by Compress and Bandage press out the Matter, and endeavour to restore the Part to its natural Smallness; and for this Purpose, the Ulcer must be well deterged, and the native Heat cherished by discutient and drying Fomentations. The Compresses under the Bandage ought, also, to be pressed out of a Solution of Salt of Nitre, &c. in Vinegar. By this Method you may happily cure them, if Internals be prescribed, with Regulation of Diet.

The other Sort of Abscesses, which take their Beginning from an Ulcer in the Bone, have been already mentioned under the Name of *Spina Ventosa*. This Disorder arises from a morbid State in the medullary Juice, which corroding the Fibres, makes a Solution of Continuity there, corrupts the interior Part of the Bone, and at last (if not prevented) corrodes the Shell, and passes its subtiler Humour through some Perosity it had made.

This Disease of the interior Part, by Degrees, usually so affects the external Shell of the Bone, as to raise it to a preternatural Tumor, which at the same Time over-stretching the Periostum, causes an Uneasiness; and this Pain, if it grow so acute as to produce Inflammation, an Abscess consequently follows.

If the Bone be spongy, and is soft, it is wonderful to see how quickly the Fibres of it will be mollified, and prepared for a sudden Distention, as if the Part were rather muscular than osseous. So in Childrens Fingers I have seen a Bone swelled in a Night; and the like Tumor raised in the spongy Bones of Adults, in a few Days, and without much Difficulty yield again to exsiccant Remedies.

It sometimes happens, that the interior Part of the Bone is totally corrupted, without any external Tumefaction or Pains, till the acid Humour makes its Way through the Cortex, and corroding the Periosteum, causes a Solution of Continuity there; which, by Access of Pain, swells and inflames the external Parts, and produces Maturation in a few Days. Those the protuberating Bones, also, frequently raise Abscesses after the same Manner, and sometimes when the exterior Parts suffer under another Ulcer, different from this.

In some Species of this Disease, there is a sudden Tumor raised in a Night; in others it swells gradually, and never corrupts externally. In others, the Humour pierces through the

the Cortex, and raises suddenly an Abscess. And these Differences may be said to arise, somewhat, from the Place or Bone they affect; for, accordingly as the interior Part of it is softer or harder, or the external Cortex is solid or porous, so it suffers Solution sooner or later. Those of the Cranium, for the most Part, pass their Way through the interior Lamina, and affect the *Dura Mater*, &c. producing great Pains, Convulsions, Spasms, Epilepsies, and they die before the Disease is discovered. In the great Bones of the Knees, Ancles, Elbows, &c. they pass their Matter slowly, and are more generally diseased with Apostemations, externally arising from the Protuberance of them. In the *Ossis Tali*, or Heel-bone, which is spongy within, and full of external Pores, they make their Way through, more suddenly, and so they do in the Jaws, Fingers and Toes.

The most visible Signs of the *Spina Ventosa*, are a Protuberance of the Bones, without discolouring the Skin, and often without Tumor or Pain.

The Apostemations proceeding from the *Spina Ventosa*, most certainly shew them, rising always between the Membranes and Tendons; and somewhat a Fluctuation may be felt there before the external Skin be considerably inflamed; also, if upon opening it search be made with a Probe, it will penetrate deep into the Bone, yet is the Cortex of it white; whereas the other Abscesses always begin externally; and if the Bone be bare, yet is it only superficially carious, or stained by the Matter.

The Cure of the *Spina Ventosa*, in the lesser Bones, is possible; but those in the bigger Bones are for the most part deplorable. Infants and Children are generally the Subjects of this Disease.

In the Cure of these, the same Method is required which has been above proposed in those Abscesses, and Ulcers with Caries; as, also, the same Regulation in Diet, and other Non-naturals.

The Topics ought in the Beginning to be such as are astringent and drying, as the Plaster e Bolo, *Cæsaris*, of simple Red-lead, &c. with Soap de Sandice, and of Eriogs, with double Mercury, with good Bandage.

If afterwards they press their Matter externally, they must be laid open by Incision, according to the Length of the Protuberance. Those of the Cranium are not much protuberant, from the Reasons given; yet you ought to make Inspection, and proceed accordingly, by Rugin, or Trepan, as the Symptoms indicate. Those of the Jaws are visible, and require Vent by the Extraction of the Teeth, after which the Caries must be consumed by Medicines of a drying Quality, of which the Actual Cautery is the most speedy and effectual. Those of the Fingers and Toes are to be laid open by Incision, in case of Apostemation, the Length of the Protuberance, and the Bone cut into, and the Caries dried up. The Ulcers in the greater Bones ought, also, to be opened, that the Matter may be discharged, and the Bone laid bare in order to Exfoliation, if it be possible. But if the interior Part be much corrupted, your best Way will be to keep that Part of the Ulcer dilated, which lies over the Aperture in the Bone, by some Dressing dipped in Spirit of Wine, or the like, healing the rest of the Ulcer, and prescribing such Internals as may dispose the Body to a better Habit; for these only are the carious Bones which we may leave to Time, it being in vain to attempt the Exfoliation of great Bones, where the Rottness, as in a Pear, beginning at the Core, hath consumed the Substance of them. See Os.

OF THE STRUMOUS OPTHALMIA.

This Species of sore Eye takes its Beginning from vicious Humours inflaming the Tunica Adnata, which increasing, sometimes affects the other Tunics with great Pain, Tension, and Pulsation, whence Pustules arise and suppurate, terminating for the most Part in Ulcers, which leave hard Cicatrices, and, by reason of the sharp Desquiction falling upon the Edges of the Eye-lids, make a Blearedness; and therefore these Inflammations are in *Latin* called *Lippitudo*.

The Causes are the same with those of the *King's-Evil*; yet it may be more particularly imputed to Abundance of Humidity repleting the Head, and descending to the weak Eyes.

An Ophthalmia is supposed to be strumous, when it has been of long Continuance, arising without manifest Cause, and yielding not to the common Remedies of Bleeding, Blistering, Purging, with the Anodyne Collyria, vulgarly prescribed. It is known to be so, when it is periodical, and accompanied with strumous Swellings in the Neck, a thick chopt upper Lip, an Ozæna, a crusty, scabby Nostril, and the like.

If the Ophthalmia be from Plenitude, the Face is high-coloured, the Eye-lids somewhat swelled and inflamed, the capillary Veins large and full; yet the Humours are not so liable to fret as in other Cases, nor is the Pain extremely vehement. If the Disease be from Choler, the Visage is not red, but the Pain is sharper, and with Excoriation of the Eye-lids. If it proceed from pituitous Humours, all the before-mentioned Symptoms of Inflammation, Pain, &c. are more remiss, and the lacrymal Humours are not corroding, unless there be a Mixture of saline Humour joined with it. Whether an Ophthalmia can arise from Melancholy, may be doubted; but if it do, there is a small Fluctuation or Pain. That proceeding from the *King's-Evil* is of an acid Quality, with sharp Fluctuation and Pain; the Eyes are, also, more subject to be gummed together with a viscous Humour, than they are in those from the aforesaid Causes. Whether the Humours affecting the Eyes, flow from the external or internal Vessels, may be discerned from their Complaint: For, if they flow from the Pericranium, &c. the Pain, Pulsation, with Heat in their Forehead and Temples, will demonstrate it; but if the contrary, the Pain will be more intense, and deeper within amongst the Membranes; there will be, also, an Itching in the Palate and Nostrils, with frequent sneezing.

The Time of the Inflammation ought also, to be considered, in order to the Cure, and is thus discerned: In the Beginning, the Eyes look red, and the Humours distilling upon them are thin: In the Increase, the Heat and Pain are augmented; in this State, the Inflammation and Pain are great, and the Humours thicken, and gum the Lids together, especially in the Night: In the Declination, the Fluxion, Pain, &c. visibly diminish.

The strumous Ophthalmia is of most difficult Cure, and in Children very vexatious, by reason of the Humidity they abound with; also, because of their Frowardness, and Incapacity of taking proper Remedies, or admitting external Applications; and, in consideration of the Laxity of their Eyes, they are subject to relapse upon every little Disorder. Those arising by Consent from the internal Parts, the *Dura Mater*, &c. are subject to more grievous Symptoms than those which proceed from the Pericranium, and other external Parts.

If in an Ophthalmia the Pain, &c. persevere any long Time, there is Danger that the Tunics of the Eye may be corroded; and if the Cornea happen to have been long ulcerated, a Blindness follows, or at least a Dimness of Sight, by reason of a Condensation of a gross Matter about the Pupil.

In order to the Cure, the Diet ought to be of Meat of easy Digestion, with great Moderation, avoiding all sharp, salt, hot, or spicy Meats, and such as may beget Crudities. In the Beginning of the Disease, Wine is forbidden: Hydromel is allowed; but in hot, bilious Desquictions, a Decoction of Barley, with a small Quantity of Cinnamon-Water, is only permitted. The Air ought to be pure and temperate; that which is windy, dusty or smoaky, being offensive to the Eyes: So is Sun-shine; therefore, a Piece of Silk, or Linnen, should be put before the Eyes, commonly a Piece of green Sarfenet. Exercise of every Kind is forbidden, and Quiet enjoined. Sleep in these Diseases is necessary, when it can be obtained, the Eyes enjoying Quiet the while, which mightily conduces to their Recovery.

The same Antistrumatics are to be directed as were mentioned before, for the Disease in general; unless, that in Place of the hotter Cathartics, the more lenient and gentle Purgation is by some preferred, giving Calomel over Night, and purging it off therewith next Day, or the Day after; repeating the same once, if not twice a Week; remembering that on the purging Days, especially if the stronger have been administered, some gentle Anodyne be given at Night, as half an Ounce, or six Drams of *Syrupus e Meconio*, in one or two Ounces of the Water of Cowslip Flowers, or the Water of white Poppies. On the intermediate Days, the Expression of Millepides may be given, as above directed.

Revulsion and Derivation is necessary, by cupping on the Neck and Shoulders, bleeding with the Lancet in the Arm and Jugulars, or with Leeches at the Temples, or behind the Ears. Shaving the Head, Blistering, Issues and Setons, are of frequent Use; but Issues in the Neck often cause Strumæ to arise thereabouts, and therefore some prescribe them behind the Ears. In the declining of the Ophthalmia, and after general Evacuation and Diversion of the Humours, bathing the Body in luke-warm Water will be found of great Advantage in contemporizing hot, sharp Humours, if the Season of the Year, and the Age of the Patient will permit.

In the Application of external Remedies to the Eyes, we ought not to be too hasty; for the mildest Medicines dropped into them, prove generally offensive in the Beginning of Inflammation. Authors do not agree on the set Time when we should begin our Applications to the Eyes; but all of them concur in proceeding first with general Evacuation and Diversion of the Humour, and afterwards, suppose about the third Day, to use Collyria. The Ingredients mixed with Collyria, ought to be well washed, that they may be without Acrimony, and so finely powdered that they be not the least gritty. The Decoctions also ought to be cleanly made; and in dressing the Eyes, special Care ought to be taken in cleansing them and their Lids of viscous Matter, to which Purpose an Eye-cup is most necessary.

In the Use of external Remedies, it must be considered, whether the Disease be in its Beginning, State, or Declination. For let the Empyrics boast of this or that universal Collyrium, they cannot cure these Ophthalmias with any one particular Medicine; for, in the Beginning of the Inflammation, they require Repellents; in the Increase, somewhat of Resolvents ought to be mixed with them; in the State, they ought to be treated with Resolvents of a digestive Quality; and in the Declination with Resolvents and Deterfives of an exsiccant Quality.

Thus, in the Beginning, all Epithems or Collyria are to be moderately repercutient, as the Waters of Roses, Plantane, Frogs-Spawn, with the Water beat up with the White of Eggs. To these are added the Lapis Tutiae and Calaminaris, or the Sief Album Rhafis.

In the Increase, Resolvents should be mixed with the former; among these are reckoned the Waters of Eye-bright, Celandine, Fennel, with the Mucilages of Linfeed, and the Seeds of Fenugrec and Marsh-Mallows. To which, in the State, are added the Gum Sarcocolla, moistened with Breast-milk, as more powerfully digesting than some others. Again, in the Declension, Resolvents with Restrictives.

When great Pain attends the Fluxion, some mild and anodyne Collyria are most convenient; such are the Mucilages of the Seeds of Mallows, Flea-wort, and Quinces, extracted in Poppy-Water, also Womens Milk dropped from the Breast into the Eyes, and Pidgeons Blood infilled into the Eyes. Likewise, the Mucilages of the Seeds of Poppy and Henbane, extracted in Rose-Water, to any of which may be added, in extreme Pain, a few Grains of Opium. When there is great Heat, Itching, and Redness, add half a Scruple of Sugar of Lead, to two or three Ounces of the Collyria, with one, two, or three Grains of white Vitriol.

During the Use of these Remedies, Intercipients may be applied to the Temples, as Gum Maffich, or Tacamahacca, with a few Grains of Opium and Camphire, melted and spread upon a circular Piece of thin Leather.

Epithems, or frontal Defensives may, also, be laid to the Forehead, of true Bole, Dragons-Blood, Frankincense, with Whites of Eggs, Vinegar of Roses, and Farina Volatilis, [or the fine Flower that flies off in dressing Corn]; or the Whites of Eggs beat up with Rock-Allum. Which last Sort are to be frequently renewed, as they grow stiff and dry.

Instead of these, more especially over the Eye-lids, may be applied Cataplasms of the Pulp of four Apples, roasted under the Ashes, mixed with any of the above Mucilages; or a Decoction of the Leaves of red Roses, and Flowers of Elder, with the Addition of Crums of White Bread, the Yolk of an Egg, and a little Saffron.

A Fomentation of the same Decoction may be farther serviceable to resolve the Tumor, and give a Breathing to the impacted Humor, if judiciously prescribed. Where the Cilia, or Eye-lashes, are subject to be glued together, as commonly happens after Sleep, let them be lightly smeared with a Feather, dipped in the Unguentum Tutiae, upon going to Rest.

While these Topics are applied, some other Internals are to be prescribed, which from their supposed Faculty of strengthening the Sight, are named Oxydorcica; some Forms of which you may meet with in the Cerevisia Oxydorcica, Pulvis Cibarius, Pulvis Ophthalmicus, and the Electuarium Oxydoricum of Dr. Bate. What specific Virtue is in the Euphrasia, the Basis of these Compositions is uncertain; but the Millepedes ought to be mixed with them, or added to the other Ingredients. And indeed, if the Ophthalmia be strumous, the other Alteratives before recited seem preferable.

If there should happen any Danger to the Sight, by a Speck or Suffusion on the Pupil, some gentle Deterfiv may be dropped in, as a Collyrium prepared of white Sugar-candy, with some Grains of Sal-Ammoniac, or white Vitriol, dissolved in the Water of Fennel, Oats, Eye-bright, or Celandine. The Juice, also, of those Plants are often mixed with Honey, and made into a Liniment, or with the fine Powders of Myrrh and Aloes, also the Water distilled from Honey is recommended for these Uses.

The subtle Powder of Crocus Metallorum, infused for some Days in one of the abovenamed Waters, half a Dram or a Dram to two Ounces of the Water, which must be poured off clear at the Time of Use, has excellent Effects in this Case. But there are many Compositions for this End; some proper Forms you will meet with in the Collyrium Ammoniacum, Collyrium de Succis, and the Collyrium Vitriolicum of Dr. Fuller, and a very celebrated one in the Aqua Ophthalmica Sappharina of Dr. Bate. For the EPIPHORA see CATARRHUS.

OF THE STRUMOUS ÆGILOPS.

Æglops is a Tubercle in the inner Canthus of the Eye, either scrophulous, atheromatous, or of the Nature of a Meliceris, or sometimes with Inflammation. The Greeks call it Ancylops when not ulcerated; and Ægilops when it is. In which latter Case it is liable to grow sinuous, and being so, is called Fistula Lachrymalis, sometimes passing through the Bone of the Nose itself.

The Causes of the Ægilops are the same that produce the like Tumors in other Places. But in some Cases it is made by Fluxion, and appears first as a small Phlegmon. This Disease frequently occurs in the *Lues Venerea*; but these here treated of are strumous.

If it proceeds from the Struma, it is then made by Congestion, and the Tubercle is round, without discolouring the Skin. If it be made by Fluxion, Pain and Redness appear, with Inflammation over all the Eye. Sometimes it begins only with a Weeping of that Corner, and is not discovered till it affects the Eye with Redness; and then by Pressure with the Finger upon that Canthus, a mixed Matter may be discharged, Part of which is not unlike the White of an Egg. Sometimes this Matter eats quite through the Bone, and discharges itself downwards through the Nose, with a fetid Smell.

Fistulae Lachrymales are difficult of Cure, from what Cause soever they arise, the Part being loose and spongy, and the Eye very sensible, and the Laxity of the Part makes Humours subject to soak into it, and to penetrate even to the Bone itself. The Sensibility of the Eye renders it subject to Pain and Fluxion, and, also, unfit to be dressed with sharp Medicines, such as these Diseases require. That Fistula which is recent, with sufficient Opening, is the easiest of Cure. Those of a long Continuance are for the most part accompanied with Ulcerations of that Gland, and Caries in the Bone, which makes them subject to a Weeping after they are cured. If the Ulcer be accompanied with Erosion, it will be subject to terminate in a Cancer.

The Indication of Cure is taken from the Condition of the Ægilops; whether it be in its Beginning with Inflammation, or by Congestion, passing its Matter forth under the Cilium in the Eye; into which Case it is fistulated.

In the Beginning of the Ægilops Bleeding by Lancet is necessary, and so is purging; also, such Alteratives as have been prescribed in the general Cure of Strumæ, with Regulation of Diet accordingly.

You may attempt to resolve the Humour by some gentle Anodyne, and discutient Cataplasma; but if it inflame and suppurate, you must hasten the Maturation, as well as the Discharge, because of the Part it lies upon, and the Danger thence arising from delaying the Evacuation. Having dilated the Sinuosity, and digested the little Abscess, you may try a Sarcotic of Myrrh, Aloes, and Sarcocolla, made up with Honey of Roses, or a Tincture of the said Gums in Wine, mixed with equal Parts of the Honey. But when, notwithstanding your Endeavours to incarne and agglutinate, the Matter still continues to discharge, not only by the outward Orifice, but, also, under the Cilium into the Corner of the Eye, you may try some more powerful Desiccative; such is the Solution of the *Lapis medicamentosus Crollii*, in Plantane Water, or a strong Lime-Water, assisted by a suitable Compression on the Cavity; for which a late-invented Instrument, by the Screw, has been admirably well contrived and adapted.

These Remedies failing, let it be considered, whether you have a good Foundation to heal upon; and having made Trial with your Probe, if you discover any Roughness on the subjacent Bone, or if the same be made bare by the Acrimony of the Humour, it will be to little Purpose to proceed farther in the above Method, till by a fine-pointed actual Cautey you have dried it, and fitted it for Desquamation, or perforated quite through, thereby deriving the Matter by the Nostril, and disposing the Caries to throw off that Way; when your outward Ulcer, which before had baffled your Endeavours, will heal up with the milder Epulotics, or perhaps with a little dry Lint, without any farther Disturbance.

In the Use of Medicines to this Part, you must not only have Regard to the Eye itself, but to the Gland and its Caruncle; for if they happen to be too detersive, corrosive, or sharp, there may be Danger of a Rhyas, or Consumption of the Part; as by the Digestive and Sarotic too long continued, an Encanthis, or too great Prominence may ensue; for which, as Incarnatives will be wanted for the former, so Cathartics will be required for the latter.

OF THE SCROPHULOUS TONSILS.

The Tonsils, or Almonds of the Ears, are, also, frequently swelled in the King's-Evil. These Swellings are raised by Congestion, gradually, without Pain, and, therefore, are seldom taken Notice of, till by their Growth they bring Inconveniencies with them; as a Catarrh, Cough, or Difficulty of Deglutition, insomuch, that the Drink often runs out at the Nose.

These differ from the common Swellings of the *Amygdalæ*, as Tumors by Congestion do from those made by Fluxion; which latter are of sudden Growth, and terminate as soon; whereas the other may have been many Years growing; increasing and decreasing with the Moon, as generally all Tumors by Congestion in the Glands do. The Causes of Tumefaction of these Glands are the same with those of the Strumæ.

They are soft, fleshy Tumors, of a round or oval Figure, retaining the natural Colour of the Skin, and have little Sensation; so that you may pierce the Body of them with a Knife or Probe, without causing Pain or drawing Blood; yet are they subject to Inflammation, and the like Accidents that other Swellings of the Glands are.

If the Tumefaction be small, the Disturbance is little; many having had them from their Infancy without great Inconvenience. If the Swellings be big, there may be Danger of Suffocation. But in that Case they may be extirpated without running great Hazard.

In order to the Cure, Physicians generally prescribe Venesection, and Evacuation by Clysters and lenient Purges: They, also, endeavour Derivation by blistering, cupping, Fontanels, and the like, which is necessary, in which astringent Lotions may be, also, proper. But in those made by Congestion, the speediest Way of Cure is by Extirpation; and that either by Abscission, at once cutting them off, or by actual or potential Cautery. Modern Writers have said little of these Extirpations. *Fabricius, ad Aquapendente*, makes the Abscission of them both difficult and dangerous.

The Extirpation of them may be attempted by the Actual Cautery, passing it through a Cannula, and twice or thrice perforating the Body of the Tonsil; but some Remains of the Excrecence will be left. The Way of Potential Cautery, is by working with a caustic Stone, and other Escharotics, fixed in such an Instrument as may serve to eat into them, without offending the neighbouring sound Parts. To this Purpose, make way into the Body of the Gland, consuming it within; and at last the Shell, or exterior Part, falls in Pieces, and is so eradicated. The Way by Excision is, by making a Ligature about the Basis of them, and snipping them close off with a Pair of crooked probe Scissars. In this Work you ought to consider well, how they are eradicated; for sometimes they are rooted like a Crista, deeper in the Throat; in which, if in cutting them you only cut that Part you tied, and cut the Ligature at the same Time, it will slip down into the Throat, and hazard their choaking. Therefore, while you hold the Ligature with one Hand, you must pass the Scissars down as close by the Basis of it as you can, so as by one Strip you may cut it clear off. But lest you should fail, it will be necessary to have another Ligature fitted in an Instrument for your Purpose, and the Patient's Head to be held steady, that in case you fail in the first Attempt, and it fall into the Throat, you may readily return it, and tie it at the same Time; which is no difficult thing to do. The Excision made, the Bleeding will be soon stopped by Gargling with Oxycrate; and you may cicatrize it in, few Days, by touching it with the Vitriol and Alum Stones.

OF THE STRUMOUS RANULA.

The Ranula is a soft Swelling, possessing the salival Glands under the Tongue, sometimes on one Side, at others on both Sides of the Frenum. It is made by Congestion, and in its Progress fills up the Space between the Jaws, and makes a Tumor externally under the Chin. It is a soft Tumor, without Pain or Alteration of Colour in the Skin, yielding to the Impression of the Fingers, but rising on taking them

off. It contains a Matter not unlike the White of an Egg, or such as we meet with in an Atheroma. By raising the Tongue, it obstructs the Freedom of its Motion, and occasions a thick Speech, which some have fancifully compared to the Croaking of Frogs; others, from a supposed Resemblance that this Tumor has to that Creature, will have it thence denominated *Ranula*. It is not dangerous as to Life, but difficult of Cure.

As for Topics; they seldom have much Effect, especially when it has been of long standing. However, some of the volatile, or of the fixed Salts, with certain Aromatics and stiptic Powders, may be held under the Tongue, to attenuate and discuss the viscous Humours; such as Sal-Ammoniac, Sal-Gem, the Powder of the Root of Ginger, Cloves, Pomegranate Peel, dried Hyssop, Powder of Galls, and the like. These, with others of the like Nature, having been ineffectually tried, the Tumor must be opened, and the Contents discharged, either by a pointed actual Cautery, which is commonly used, or by Incision.

That Stones are formed about this Part, the Tonsils, and others adjoining, some of them gypseous, or brittle, like the Gout-Stones, others more solid, like these found in the Bladder, we have many Examples; and that Struma's are liable to such Concretions, is less surprizing, if we consider the Proneness of their Juices to Coagulation.

OF THE STRUMOUS OZÆNA.

The Ozæna is an Ulcer of the Nostrils, so named from its fetid or strong Scent; which, if strumous, has usually the same Attendants for its diagnostic Signs, with the Ophthalmia. It admits of a doubtful Prognostic, being a stubborn Malady, hard to cleanse, so as to get a firm Foundation for healing upon; and, when of long standing, a Work difficultly accomplished.

In the Cure, the usual Evacuations by bleeding and purging may be necessary to carry off the Humour other Ways, while the same antistrumatic Alteratives are prescribed, as for the other Species. Having loosened the crusty Matter usually stopping up the Passage, by putting up a little Oil, a Bit of fresh Butter, or throwing up some emollient Injection, such as the Decoction of Mallows in Barley Water, you are, after thus digesting, to mundify, or deterge, by another Decoction of the Leaves of Agrimony, Plantain, Lesser Centaury, and St. John's Wort, adding to the strained Liquor a little of the Honey of Roses, from an Ounce to half a Pound; or if the Ulcer be putrid, half an Ounce of the Tincture of Myrrh and Aloes, more or less, according to the Degree of Putrefaction, and the Sense of the Part; may be added; as, also, of the Unguentum *Ægyptiacum*, an Ounce or more, especially the *Mel* thereof fluctuating on the Top, which may be farther increased, and is a most suitable Medicine, not only for the fordid Ulcers of this Part, but of the Throat also.

The Ulcer being deterged, we may attempt to heal it with the Ointment of Tutty, thrust up with a Tent, or some other Epulotic, which availing not, a stronger Desiccative must be used, as a Solution of the Lapis Medicamentosus, or the Lime-Water, with a little Honey of Roses; likewise a strong Tincture of Rose-Leaves, Pomegranate Peel, and Flowers of Balaustines, drawn in the Forge-Water, or a rough stiptic Wine. This Tincture may be thrown up with a Syringe, made with a Snout for that Purpose.

But when these, and other Errhines of the like drying Nature, succeed not, we have recourse to the cinnabarine Fumigation. Some have recommended the Fume of a Wax-Candle burnt under the Nostril, for the same Intention.

But observe, that in setting about the Cure of this Disease, as well as the Ophthalmia, with others of the same Kind, you must be careful to distinguish the venereal from the strumous; for as in the first, we can do nothing without Mercurials; so in the last, together with them, we are to direct some antistrumatic Remedies between whiles.

For the Labrifulcium, or chopped Lip, see *LABRISULCIUM*. *Wifeman and Turner*.

Those Tumors are called strumous or scrophulous, which appear externally, on the anterior and lateral Parts of the Neck. Of these Tumors there are different Species; some are small, some of a moderate Size, and some surprisingly large; some are soft, others hard; some are moveable, others immoveable; some are favourable, others malignant. Scrophulous Tumors arise in indurated Glands of the Neck; sometimes in the small moveable Glands; sometimes in the superior and inferior salival Glands, and sometimes in the Thyroid Glands, which last are by some particularly called *Scrophulæ*.

le, or the King's-Evil; and by the *French, Ecouelles*. Some are of the same Nature with encysted Tumors, containing a Substance sometimes harder, and sometimes softer, like Cheese, Suet, or Lard. But when a Tumor arises in the anterior Part of the Neck between the Skin and the Aspera Arteria, and is distended with Air, Humors, or a thick Matter, having been occasioned by a Strain, in lifting a Weight or the like, it is named a Bronchocele. It is proper to observe, that some Nations are almost free from this Distemper, whilst others are severely afflicted with it. Among the latter may be reckoned the *Spaniards*, and among the *Germans*, the Inhabitants of *Styria, Swabia, Bavaria, and Switzerland*; but above all, those of *Tyrol*, among whom the strumous Swellings increase to such a prodigious Size, as to hang down to the Belly or Navel, and sometimes to the Knees. This Species is always flaccid. The Cause of this Disorder raging in particular Places, is ascribed to the Nature of the Air, and of the Water. But the Manner in which these operate, has not yet been sufficiently explained by Medicinal Writers, although many specious Opinions have been offered. In some Women these Tumors appear in different Parts of the Neck after a difficult Labour. Besides the Differences already mentioned, some are mild and almost without any Pain or Inconvenience; some are attended with Inflammation and Pain; some become indurated, like a Scirrhus, and obstruct Respiration and Deglutition, or being entirely malignant, gradually degenerate into a Cancer. But to whatever Species they belong, when they become inveterate, they seldom or never are cured; but when they are recent, they may be discussed, especially when the Tumor proceeds from an Induration of the Glands.

In order to the Cure of a recent Struma, it is not only necessary to prescribe an exact Regimen of Diet and Way of Living; but also to remove the internal Cause by digestive, sudorific and purgative Medicines, agreeable to the Age and Constitution of the Patient. Such internal Medicines should, also, be assisted with the following Ointment externally applied.

Take of crude Mercury, one Ounce; Venice Turpentine, two Drams; Hogs-Lard, a sufficient Quantity to reduce them into an Ointment, in a Glass Mortar.

Let the Tumor be anointed with this Ointment several times a day, and apply the *Emplastrum de Ranis cum Mercurio*, mixed with a little Roman Vitriol, or the Plaister of Galbanum, of Sperma Ceti, of Henbane, or of Soap. It will, also, be necessary to exhibit a proper Cathartic once or twice a Week, lest the Mercury, mixed with the Ointment, should occasion a Salivation. *Scultetus* and *Fabricius ab Aquapendente*, prefer the following Ointment in this Case.

Take of the Oil of Bays, one Ounce; Rock-Allum, half an Ounce; common Salt, two Drams; make them into an Ointment.

Others, not improperly, apply *Oleum Philosophorum*, or *Petroleum Album*, either alone or mixed with the Oil of Soap. Some advise to apply to a recent strumous Tumor or Bronchocele, a leaden Collar or Plate of Lead anointed with a mercurial Ointment, and secured by a proper Bandage; by which, if the Tumor is not entirely discussed, its Increase is at least prevented. Some superstitious Remedies are advised in this Case, which are supposed to act by Sympathy, such as drawing the Hand or Bone of a dead Person gently over the Tumor, with others of the same kind not worth mentioning.

If the strumous or scrophulous Tumor has been of long Continuance, but moveable, the Knife becomes preferable to Medicine, because it may then be entirely rooted out by Incision. But if it be entirely fixed and deeply seated in the Neck, a Cure can scarcely be expected unless they be soft; for in this Case the large Blood-Vessels and Nerves are exposed to the utmost Danger of being divided, or at least wounded, if Incision be attempted; the Consequence of which would be some violent Disorders, or even Death itself. *Garengot* and *Petit* affirm, that no indurated or scirrhus Glands, not even those which are immoveable, are connected with, or rooted in the sound Parts; and therefore Extirpation may be safely used in fixed strumous Tumors. But as they have given us no Instances of their Success from this Opinion, it must, at least, be looked upon as doubtful and uncertain. When the Tumor hangs by a slender Part, like a Stalk or Root, (which is not a frequent Case) it may be extirpated with a Ligature. But if it be connected with a broad Root, a longitudinal or crucial Incision, if the Swelling be very large, must be made through the Integuments, to the Bag of the Tumor, from which the Lips of the Wound must be sepa-

rated with the Knife. It may then be extracted, like other encysted Tumors, with the Hand, or a Hook, or a threaded Needle, or with a proper Forceps. (See *Tab. 44. Fig. 1.*) Mean while Assistants should be ready with Linen-Cloaths, or a Sponge, for wiping the Blood from the Wound, which might otherwise obstruct the Surgeon in the Operation. If a large Blood-Vessel should happen to be divided with the Root of the Tumor, it must be closed by applying rectified Spirit of Wine, or some other styptic Liquor; and if these fail, by a Ligature or the actual Cautey. As the divided Skin is now more than sufficient to cover the Wound, the superfluous Part must be cut off, and enough left to induce a Cicatrix; then the Lips may be brought into Contact, and the Wound may be healed by a sticking Plaister, as in other Wounds. Soft Tumors of the strumous and scrophulous Kind, I have opened with the Knife or Cautey, extracted the contained Matter, deterged the Wound, and healed it, as before. As these Tumors are often attended with little or no Pain, it is not surprising that they should be often neglected, especially by the poorer Sort of People, who disregard the Deformity produced by them, and are apprehensive of the Torment they must undergo in the Cure. Such a Neglect is still less surprising, if these very Tumors should be esteemed a considerable Ornament, as they are by the *Tyrolese*. If the Patient be afraid of the Knife, Tumors of this Kind, which are mild, soft, not connected with large Veins, nor deeply seated, may be removed by Caustics. *Heister's Surgery*.

SCROPHULARIA.

The Characters are;

The Calyx is monophyllous, consisting of five long, slender, obtuse, or acute Segments. The Flower is monopetalous, anomalous, open on both Sides, generally globular, bilabiated, pitcher-shaped; the upper Lip trussed up with two small Leaves, in Form of Ears, and the Beard bent downwards, with wide Fauces; from the Inside of the Bottom of the Flower arise four Stamina. The Fruit is round, acuminate, cleaving into two Parts, and divided by an intermediate Partition.

Boerhaave mentions fifteen Sorts of *Scrophularia*, which are;

1. *Scrophularia*; annua; folio Urticæ. *M. H.* 2. 481.
2. *Scrophularia*; annua; folio Lamii; flore luteo, *M. H.* 2. 482.
3. *Scrophularia*; nodosa; sætida. *C. B. P.* 235. *Boerb. Ind. A.* 234. *Tourn. Inst.* 166. *Scrophularia*, Offic. *Scrophularia major*, *Ger.* 579. *Emac.* 716. *Raii Hist.* 1. 764. *Synop.* 3. 283. *Scrophularia major vulgaris*, *Park. Theat.* 610. *Scrophularia vulgaris* & *major*, *J. B.* 3. 421. FIG-WORT.

Figwort has tall square Stalks a Yard or more high, with two Leaves set opposite at a Joint, which are at some Distance; they are each Pair set on a contrary Position, on short foot Stalks from a broad Base, ending gradually in a sharp Point; they are serrated about the Edges, and frequently of a brown Colour, with a Smell like Elder. The Flowers grow on the Tops of the Branches in small Clusters, of a purplish dark Colour, being monopetalous, and, as it were, labiated with a gaping Mouth. The lower Part is round and hollow; the upper flat, and cut into two Parts. The Seed-Vessels are roundish pointed, cut into two Parts, full of small brown Seed. The Root is long and spreading, full of white Knobs. It grows in the Hedges and Thickets, and flowers in June.

This Plant, from the Signature of the Root, is accounted good for scrophulous Tumors, or the King's Evil in any Part of the Body; as also for the Pain and Swelling of the Hæmorrhoids, or Piles either used inwardly or outwardly; as also for cancerous stubborn Ulcers. *Miller's Bot. Off.*

Its Leaves are very bitter and stinking, even more than those of Elder, and give but a very faint Tincture of red to the blue Paper; the Root gives it a deeper, which makes us conjecture that the Sal Ammoniac, which is naturally in the Salt of the Earth, predominates in this Plant, where it is united with a great deal of fetid Oil.

By the chymical Analysis, we obtain from this Plant a great deal of volatile concrete Salt and Oil. Thus it is no Wonder, that it should be so resolvent, emollient, and sweetning. These Qualities are essential to Medicines which are to dissolve the most obstinate Tumors, accompanied with Inflammations, and those, also, which are called cold. The fetid Oil softens the Fibres, diminishes their Tension, and lenifies; whilst the Sal Ammoniac attenuates, divides and evaporates the Matter that is lodged in the Pores of the Flesh. The greatest Part of Plants that smell like Elder, or the *Stramonium*, have almost the same Virtues, with reference to Inflammations and Tumors, and none are more proper for Wounds in the tendinous Parts. The Juice of this Plant is used to cleanse the most putrid Ulcers; and even those that this

are carcinomatous. The Ointment made with the Roots of this Plant, is used to resolve scrophulous Tumors, and assuage the Inflammation of the Piles. The Parts, also, must be a little strewed with the Powder of the same Roots.

Figwort Ointment, according to *Tragus's* Method, is made thus: Draw the Juice of the whole Plant in *May*, and keep it a whole Year in a Bottle well stopped; then mix it with an equal Quantity of Oil and new Wax. The same Author affirms, that he has seen it cure all Sorts of Scabs and itching Humours, even such as are but a little different from the Leprosy. He recommends the distilled Water of it very much for Pimples and Redness of the Face. The Author of the *Hist. Lugd.* advises to make the Ointment of Figwort after this manner: Take up the Roots in Autumn, bruise them with fresh Butter, and put them a Fortnight in a Vault, in a Stone-Pot well stopped; then dissolve them over the Fire, and keep this Ointment, after having strained it through a Cloth. If you follow *Tragus's* Method, you must put some Oil upon the Figwort Juice, to keep it from growing mouldy, or else mix it with a sixth Part of Spirits of Wine. If you keep this Ointment according to the *Hist. Lugd.* instead of bruising the Roots with fresh Butter, and putting them in a Vault, they must be put in Digestion in *Balneo Mariae* for three Days in a Glass Cucurbit, with its Chapter. These Ointments are excellent for the Gout, Piles and Tetters; but at the same time that they are used, a Dram of the Powder Root of Figwort, mixed with some convenient Conserve, should be taken in the Morning; or else the Patient should drink a Glass of Wine, in which the Root has been infused a whole Night. *Martyn's Tournefort.*

The *Scrophularia* has its Name from its nodous Root, whose white Knobs resembling the Tumors of the *Scrophula*, which this Plant is said to cure, gave Occasion for the Appellation. The Root cures strumous Swellings, and the Hemorrhoids, and is of Use in cancerous and inveterate creeping Ulcers, and a malignant Itch. If any Person, also, be afflicted with the tormenting Pain of the blind Hemorrhoids, let him take but a very small Quantity of the Root or Leaves of *Scrophularia* in his Meat or Drink, and he will immediately receive Ease; or let him take the Plant in Substance either dry or green, or its Decoction. This is an Observation of *Hen. ab. Heers*, who says he has had repeated Experience of the Truth of it. The Powder of the dried Root applied cures the Hemorrhoids; a Dram of the same taken inwardly, expels Worms from the Belly; the distilled Water of the Root, takes off the Redness of the Face.

The following Plaister for the Scrophula, or King's Evil, is the Prescription of *Dr. Sibbald*, in his *Prodromus Histor. Natural. Scotiae*.

Take Fat of Swine, one Pound, and dissolve it over a gentle Fire; then take Leaves of *Scrophularia*, Hounds Tongue, Flowers of the white *Lamium*, of each an equal Quantity; cut them very small, and boil them in the Fat over a gentle Fire, repeating the Boiling three or four Times, till you have an Ointment of a deep green Colour. Then weighing the Ointment, take half its Weight in Wax, as much Rosin, two Ounces of Turpentine, and an Ounce of Verdigrase. Dissolve them all together, then strain it through a Linnen Cloth, and make thereof a Mass, of which spread a sufficient Quantity upon Leather, and apply to the Place. *Raii H. P.*

4. *Scrophularia*; radice fibrosa. *Boerb. Ind. A.* 234. *Betonica aquatica*, Offic. Ger. 579. Emac. 715. *Betonica aquatica major*, Park. Theat. 613. *Scrophularia aquatica major*, C. B. P. 235. *Raii Hist.* 1. 764. Synop. 3. 283. *Tourn. Inst.* 166. *Scrophularia maxima radice fibrosa*, J. B. 3. 421. *Yquetoya Brasiliensis*, N. MSS. D. Tanc. Robinson. M. D. WALTER BETONY.

This has larger and taller Stalks than the former, less-branched, having larger Leaves, round-pointed, and in Shape like *Betony*, growing on longer Foot-stalks. The Flowers are in Shape like the former, but little larger, and of a redder Colour. The Seed-Vessels and Seed much alike; but the Root has none of the Knots, or Tubercles, and it grows by watry Places and Ditch-Sides, and flowers in *June*. The Root is used.

It is much of the Nature of the former, and where that is not to be had, it may supply its Place. It is, likewise, deterfive and vulnerary, and is commended by some as good against the Itch. *Miller's Bot. Off.*

This Plant stinks, is bitter, deterfive, and gives hardly any Tincture of red to the blue Paper; so that it is probable it may contain some Sal Ammoniac, mixed with fetid Oil and Earth. Thus it is no Wonder that it should be deterfive and vulnerary. It has the same Virtues with the *Scrophularia major*. *Martyn's Tournefort.*

5. *Scrophularia*; nemorensis; folio *Urticae rugoso*; flore atropunicante.

6. *Scrophularia*; *Melissae folio*. T. 166.

7. *Scrophularia*; *Hispanica*; *Sambuci folio glabro*. T. 166.

8. *Scrophularia*; maxima; *Lusitanica*; *Sambuci folio lanuginoso*. T. 167.

9. *Scrophularia*; *Ruta caninadicta*; vulgaris. C. B. P. 236. *Ruta canina*. Clus. H. 209.

10. *Scrophularia*; *Lusitanica*; frutescens; *Verbenacae foliis*. T. 167.

11. *Scrophularia*; *Orientalis*; foliis *Cannabis*. T. Cor. 9.

12. *Scrophularia*; *Nebrodenis*; folio *Urticae*; altissima; flore *Phæniceo*. H. Cath. H. *Maurocen.* 158.

13. *Scrophularia*; peregrina; frutescens; foliis *Teucrii crassifolius*. *Breyn. Prodr.* T. 166.

14. *Scrophularia*; subrotundo, crasso, & nigricante folio; flore luteo-pallido; capsula turgida. *Bacc. Mus.* 2. 65. T. 60.

15. *Scrophularia*; *Hispanica*; foliis tenuissimis. *Salvad. Boerb. Ind. Alt. Plant.* Vol. 1.

This Plant takes its Name *Scrophularia* from *Scrophula*, because by its Inequality it resembles the *Scrophula*, and not because it cures scrophulous Tumors about the Neck, as the common Opinion is. The third Species is the *Scrophularia major* of the Shops; but the *Scrophularia minor* is the same as the *Che-lidonium minus*.

The *Scrophularia* is of an acrid and aperient Quality, accompanied with a copious Mucus; whence it is an effectual Lenitive in all Pains proceeding from a peccant Acrimony, mitigating the same, as well as dissipating any gross Matter. A Cataplasm thereof is of universal Esteem for discussing, resolving and maturing, though the Humour be of considerable Hardness. The Leaves, dried in the Shade, retain their corroborating Virtue. The Powder sprinkled on watry Ulcers, closes and conglutinates them, and is proper in a Dilatation of the Hemorrhoids. The third is commended for curing all Strumæ, and resolving hemorrhoidal Tumors. The fourth takes off the nauseous Taste of *Senna*; and because no Cathartic is in better Esteem than *Senna*, a certain Surgeon made a profitable Secret of it, but was discovered by a Botanist, who, by putting the Leaves in Water, found it to be this Plant, and by the same means discovered whence *Senna* had such an Effect. In order, therefore, to take off the nauseous Taste of *Senna*, as well as perfectly to remove its Acrimony, by which it is offensive to the Brain and Nerves, to two Drams of *Senna* add half a Dram of this Plant. The Leaves fresh bruised and applied, cure the Hemorrhoids and Corns in the Feet. *Hist. Plant. Ascript. Boerhaave.*

SCROTOCELE. A Hernia of the Scrotum.

SCROTUM.

The Scrotum is the cutaneous Covering of the Testes outwardly. It is a Bag common to both, formed by a Continuation of the Skin of the neighbouring Parts, and commonly very uneven, having a great Number of Rugæ on its outward Surface. Interiorly it is fleshy, and forms a Muscular Capsula for each Testicle, termed Dartos.

The exterior or cutaneous Portion of the Scrotum is nearly of the same Structure with the Skin in general, of which it is a Continuation, only it is something finer; and it is likewise plentifully stored with sebaceous Glands and Bulbs, or Roots of Hairs.

Though it is a common Covering for both Testicles, it is nevertheless distinguished into two lateral Parts by a superficial and uneven prominent Line, which appears like a kind of Suture, and from thence has been termed Raphe.

This Line is a Continuation of that which divides, in the same manner, the cutaneous Covering of the Penis; and it is continued through the Perinaeum, which it divides, likewise, all the way to the Anus. It is only superficial, and does not appear on the Inside of the Skin.

The inner Surface of this cutaneous Bag is lined by a very thin cellular Membrane, through which the Bulbs and Glands appear very distinctly, when we view its Inside. The Rugæ of the Scrotum are in the natural State commonly a Mark of Health, and then its Size is not very large. It increases in Size, principally according to its Length, and then the Rugæ disappear, more or less, according to the Degrees of the preternatural State or Indisposition. *Winslow's Anatomy.* See DARTOS.

For the Dropsy, and *Paracentesis*, of the Scrotum, see HERNIA. And for proper Bandages for the Scrotum, see FASCIAE.

SCRUPULUS. A Scruple; a Weight equal to twenty Grains. It is the third Part of a Dram, and the twenty fourth of an Ounce.

SCUMA. The same as *Squama*. A Scale. *Rulandus.*

SCUTA TABESI. A Tortoise. *Rulandus.*

SCUTALIS CARTILAGO. The Scutiform Cartilage, at the inferior Part of the Sternum. From *Scutum*, a Shield.

SCUTELLARIA. See CASSIDA.

SCUTIFORME OS. The *Patella*.

SCUTIFORMIS CARTILAGO. The same as *Scutalis Cartilago*.

SCUTUM. A Shield. The *Patella*, is, also, sometimes thus called.

In Pharmacy, a *Scutum*, or Shield, is a pretty solid stomachic Topic, made in the Form of a Shield, and may be either prepared by Way of Bag or Plaster. The former is to consist of hot stomachic Powders, of a corroborating Quality, and the latter, of a due Mixture of Mastich, some stomachic Powder, and the odorous Gums, with a proper Quantity of Turpentine. The Topics of this Kind are used after purging, in order to corroborate the Stomach, correct a cold Intemperature, restore Digestion, and prevent vomiting, *Morelli, Form. Remed.*

SCYBALA. σκυβάλα. Excrement indurated in Lumps.

SCYBELITES. σκυβελίτης. A Sort of Must, which distils spontaneously from Grapes, without pressing.

SCYLACION. σκυλάκιον. The Flesh of Puppies. *Hippocrates.*

SCYROS. σκυρος. A Scirrhus. *Hippocrates.*

SCYTALA. A Sort of Serpent, resembling the *AMPHISBOENA*, which see.

SCYTALIDES. σκυτάλιδες. The Phalanges of the Fingers.

SCYTALION. A Name for the *Cotyledon*, or *Umbilicus Veneris*. *Oribasius, Medicin. Collect. L. 11.*

SCYTHICA RADIX. Liquorice. *Blancard.*

SEB. Gold; or *Alum*. *Rulandus.*

SEBEL. The Arabic Name for the Disorder of the Eye called a *Pannus*.

SEBESTEN. See *MYXA*.

SEBUM. Suet. Suets are esteemed emollient, discutient, and somewhat astringent. That of the Stag, Fallow Deer, Goat, Kid, Sheep, and Cow, are used in Medicine.

SECACUL. A Name for the *Tordylium*; *Oriente*; *Secacul Arabum dictum Rauwolfio*.

SECALE. The Characters are;

It has all the Characters of Wheat, only it has a flatter Spike, which is always bearded with a thinner and more naked Grain.

Boerhaave mentions ten Sorts of *Secale*, which are;

1. *Secale*; *hybernium*; *vel majus*. *C. B. P. 23. Theat.*
425. *Tourn. Inst. 513. Boerb. Ind. A. 2. 156. Secale, Offic. Ger. 61. Emac. 68. J. B. 2. 416. Raii Hist. 2. 1241. Synop. 3. 388. Secale vulgatius, Park. Theat. 1128. RIE.*

Rie grows taller than any other *English* Corn, with a bearded Ear, slenderer than Wheat, and having a smaller darker Grain. It is a Winter Corn, and ears a Month earlier than Wheat, it being a common Saying, That *April* never goes out without an Ear of *Rie*, nor *May* without an Ear of Wheat.

Rie is more used for Bread than for Medicine, tho' it is less nourishing than Wheat, and subject to cause Gripings in those not used to it.

The Farina is sometimes prescribed outwardly in Cataplasms against Tumors and Inflammations. *Miller's Bot. Off.*

Secale is so called a *secundo*, "from cutting;" for there being two Sorts of Fruits of the Earth, the *frumentaceous* and *leguminous*, the latter are gathered, (*leguntur*) or pulled by the Hand, but the *frumentaceous*, such as *Rie*, and other like Grain, are cut (*secantur*) or reaped.

There are two Species of *Rie* observed by *C. Baubine* and *Miller*; one the common, or Winter *Rie*; the other the lesser, or Spring *Rie*. The first is sown in Autumn, as Wheat; the other may be sown in the Spring, in the Season for Barley; but those seem to differ only in the Time of Sowing, and the Accidents thence produced.

Rie holds the next Place to Wheat among *frumentaceous* Grain; the Bread made of it is black and heavy, and has something of an obstruent Quality, is difficult of Concoction, and heavy upon the Stomach, especially if it be not cleansed from the Bran, and generally provokes to Stool, not without Gripings, to such as are not used to it. The Country People are persuaded that the Use of Bread made with *Rie* strengthens the Body. And *Brucerus* assures us, that in the County of *Lyons*, and the neighbouring Parts, the Women who feed on *Rie*-Bread, are strong, jolly, and handsome, tho' at the same Time he supposes, that this affords but a very mean Aliment to the Body. Some prefer Bread made of *Rie* to what is made of Wheat or Spelt, on account of its Moistness, and because it is not so soon dried with the Air.

The People of our Country, says *Baubine*, use to mix with this *Rie* an equal Quantity of Meal of Wheat or Spelt, that the Bread may the longer retain its Softness, and be the lighter and more grateful to the Taste; and the Bread so prepared is,

by Advice of the Physicians, much used by Persons of Quality, especially in Summer.

Here in *England*, and, as *Ruellius* says, in *France*, we sow not only *Rie* by itself, but mixed with Wheat, almost in equal Quantities; and this Mixture we call by a Latin Name, *Miscellane*, and in some Places *MUNG-CORN*.

The Meal of *Rie*, not cleansed from the Bran, bound about the Head in a Linnen-Cloth, is a very certain and approved Remedy in an inveterate Pain of the Head, and is observed, also, to be of Service in a Delirium, especially if mixed with some Tops of Wormwood. *S. Paulli*. It is usual among the common Sort, to put some dry Meal of *Rie* in a Linnen-Cloth, and apply it to the Place affected with an Erysipelas, and by that means to discuss it.

By immoderate Rains, the lower Corn of the Ears of *Rie*, when ripe, grow out into a black purple Grain; or as *C. Baubine* expresses it, some Seeds are protruded a considerable way out of their Husks, and grow to a considerable Bulk; and some of them are bent in the Figure of a Horn; all which contract a black Colour on the Outside, but contain within a white farinaceous Substance, of a pretty close Contexture; of the Taste of Malt, called in some Parts of *Germany* *MUTTERKORN*, that is, the *Mother of Rie*, and esteemed a sovereign Remedy in an immoderate Flux of the *Lochia*. This degenerate *Secale* is, by *C. Baubine*, called *Secale Luxurians*; and by *Lonicerus*, *Clavi Siliginis*. It is proper to enquire whether the Excrescences be occasioned by the Puncture of an Insect. *Raii Hist. p. 1741.*

2. *Secale*; *vernum*; *vel minus*. *C. B. P. 23. M. H. 3. 179.*

1. *Gramen*; *spicatum*; *secalinum*; *latifolium*; *maritimum*; *spica brevior*. *T. 518. Spartium maritimum; frue oceanum, latifolium. J. B. 2. 512.*

2. *Gramen*; *spicatum*; *secalinum*; *maritimum*; *maximum*; *spica longior*. *T. 518. Spartium, spicatum, pungens, oceanum. J. B. 2. 511.*

3. *Gramen*; *spicatum*; *secalinum*; *maritimum*; *maximum*; *spica laxior*. *T. 518. Spartium, Hollandicum, maximum, maritimum; spica secalina. Raii Hist. 1260. Meth. 172.*

4. *Gramen*; *Spartium*; *Juncifolium*. *C. B. P. Theat. 69. Spartium; parvum Lobelii. J. B. 2. 513.*

5. *Gramen*; *Spartium*; *Hollandicum*; *folio capillaceo*; *minus*. *C. B. P. 5. Prodr. 11. No. 30.*

6. *Gramen*; *Spartium*; *Hollandicum*; *variegatum*. *C. B. P. 5. Theat. 72.*

7. *Gramen*; *spicatum*; *aristis longissimis*; *setas equinas referentibus*.

8. *Gramen*; *Spartium*; *pennatum*. *C. B. P. 5. Spartium, Austriacum, pennatum. Clus. H. 221. Boerb. Ind. Alt. Plant. Vol. 2.*

The Seeds of *Rie* yield a Meal, with a proper Bran belonging to it, of which Bread is made, which is of excellent Service in such Cataplasms as are emollient and resolvent. The Crust of it toasted, cleanses the Teeth. The Bread is less nourishing, and not so soon digested as that of Wheat, but is very loosening, and good for those who are costive. The Bran is detestive and emollient, and of Service in a Diarrhæa and an inveterate Cough. *Hist. Plant. ascript. Boerb.*

SECAMONE. The Name of a Species of *Egyptian Apocynum*, called by *C. Baubine*, *Apocynum angusto salicis folio*. It grows in *Egypt*, and is remarkable for a yellow hot Juice which flows from it, and which, when dried, is said to purge off powerfully thin Humours. *Raii Hist. Plant.*

SECANIABIN. Oxytel. The Word is Arabic.

SECESSUS, imports either an Abscess, or a Separation of Parts in a mixed Body; or a Stool.

SECHA. Wormseed. *Castellus* from *Ardoinus*.

SECLA. The same as SECALE. *Rye*.

SECRETIO. Secretion. See GLANDULA.

SECTA. A Sect. For an Account of the various Sects of Physicians, see THE PREFACE.

SECTACROA. The Flower of Nutmeg. *Donaus.*

SECUNDINÆ. The Secundines, or After-birth. See CHORION, AMNIOS, ALLANTOIS, and GENERATIO.

The Human Secundine is said to be of some Use in Medicine. Thus it is by some ordered to be applied, warm as it comes from the Uterus, to the Face, in order to remove Freckles. A Water is also distilled from it in Balneo Marie, for destroying Spots or Blemishes of the Face. When dried and reduced to a Powder, it is used internally against Epilepsies, for accelerating the Delivery of the Fœtus, and allaying the Pain of Wounds. The Dose of this Powder is from half a Scruple to two Scruples. *Lemery des Drogues.*

SECUNDIFORMIS. The same as CHOROCIDES.

SECUR. Gold. *Rulandus.*

SECURIDACA.

The Characters are;

The Flowers are disposed in Form of Rays, and the Pod is strait, flat, annulated, full of Joints, and containing in each Joint a rhomboidal Seed, emarginated inwardly.

Boerhaave mentions but one Sort of *Securidaca*, which is, *Securidaca lutea major*. C. B. P. 348. *Raii Hist.* 1. 921. *Tourn. Inst.* 399. *Boerb. Ind. A.* 2. 52. *Securidaca*, Offic. *Securidaca flore luteo, filiquâ latâ, oblongâ*; I. B. 2. 345. *Securidaca, Hedyfarum, Pelecinum*, Chab. 155. *Hedyfarum majus sive Securidaca major vera*, Park Theat. 1087. *Hedyfarum majus*, Ger. 1056. Emac. 1233. HATCHET VETCH.

It grows among the Corn in hot Countries, but is cultivated with us in Gardens, and flowers in June.

Securidaca, or *Hedyfarum*, is described by *Discorides* as a shrubby Plant, with Leaves like the *Cicer*, and Pods resembling a Horn, and containing a yellowish Seed; of the Figure of a two-edged Hatchet, whence it took its Name *Pelecinum*, [*πέλεκυς*, *Peleys* signifying a Hatchet, or Ax] and of a bitter Taste. It grows among Wheat and Barley.

Clusius says, that the Seed of no Plant better resembles the Hatchet of the Antients than this; and I, says *Dale*, am of this Opinion.

Securidaca taken inwardly, is good for the Stomach, and is an Ingredient in Antidotes. Used in a Pessary with Honey before Coition, it is supposed to prevent Conception. *Discorides*, Lib. 3. 146.

The *Historium Plantarum* ascribed to *Boerhaave*, says its Virtues are unknown.

Securidaca Egyptia. A Name for the *Senna*; *Orientalis*; *fruticosa*; *Sophera dicta*.

Securidaca dumetorum. A Name for the *Coronilla*; *herbacea*; *flore vario*.

Securidaca peregrina. A Name for the *Pelecinus*; *vulgaris*.

SEDAFF. *Rulandus* explains this *Concha marina*.

SEDALIA VASA. The hæmorrhoidal Vessels. *Willis*.

SEDANTIA. Sedative Medicines.

Sedative Medicines are such as are possessed of a Power not only of composing, checking, and allaying the exorbitant and irregular Motions of the Solids and Fluids, but, also, of alleviating and resolving the painful, spasmodic Structures of the Parts. As the Effects of these Medicines are very extensive, we may justly include in their Number, Paregorics, which not only gently relax and soothe the rigid Fibres, but, also, obtund the Acrimony of the Juices; Anodynes, which alleviate the Violence of racking Pains; Antispasmodics, which mitigate and remove the spasmodic Structures of the Parts; Antiepileptics, which check convulsive Motions; Hypnotics, which procure Sleep; and Narcotics, which induce a considerable Stupor of the Senses, and Torpor of all the Motions of the Body.

This sedative Quality is eminently possessed by the Roots of Piony, Valerian, and Mug-wort; the Herbs Clary, Basilicon, Night-shade, and Herb Paris; the Flowers of Sage, Bastard Dittany, the *Egyptian* Thorn, Meadow-sweet, Elder, the Lime-Tree, Piony, red Poppy, common Chamomile, Yarrow, Roses, Mallows, Lily of the Valley, Primroses, and white Lillies; all the Parts of the Poppy, such as its Seeds, Bark, Flowers, Juice, Opium and the Seeds of white Henbane, Dill, and Piony; the Barks of Elder, and the Lime-Tree: Among aromatic Substances, Saffron, Nutmegs and Mace; among Fruits, the Kernels of Cherries, Peaches, Bitter Almonds, and the Nux Vomica. To this Class, also, belong Asa-fœtida, Camphire, depurated and artificial Nitre, Preparations of Cinna-bar, and Substances obtained from Animals, such as Castor, Musk, Civet, human Fat, that of Dogs, Badgers and Foxes, Milk, Cream, the Yolks of Eggs, Earth-worms, and the Shavings of Bones, such as those of Hartshorn, of the Tooth of the Sea-Horse, of the Elk's Hoof, of the Animal Unicorn, of Ivory, of the Stone found in the Head of the Sea-Cow, and of the Human Skin: Among chymical and prepar'd Substances, my anodyne mineral Liquor, the Spiritus Nitri Dulcis, volatile Tincture of Sulphur, Laudanum Opiatum, the Laudanum of Sydenham, Laudanum impregnated with the Juice of Quinces, Hysteric Laudanum, Theriaca, Diacordium, the Theriaca Coelestis, the Pilulæ de Cynoglossa, the Pilulæ de Styrace, the Pilulæ Wildegansii, and the Pilulæ Starkei; the Syrups of red Poppies, Chamomile and Yarrow, the Oils of Henbane and Earth-Worms, the anti-epileptic Powder of *Dresden*, (the Basis of which consists of the Ashes of the Lime-Tree and Mug-Wort;) the cephalic Specific of *Michaeli*, the Pulvis Marchionis, the anti-epileptic Water of

Langius, Waters distill'd from the above-mentioned Flowers, and the Ointment of Poplar.

These Sedatives, in various Manners, exert their Efficacy both on the Solids and Fluids of the human Body. Thus Paregorics, by their mild, mucous, sulphureous and subtle Parts, by an immediate Contact, not only relax the indurated and spasmodically constricted Fibres, but, also, sheath up and obtund the vellicating Spicula, and consequently in Pains, painful Tumors, and acrid Defluxions, great Service is done by Cataplasms, Plaisters or Ointments, prepared with Saffron, the Flowers of common Chamomile, Melilot, white Lillies, Elder, Mallows and Poppies, the Leaves of Henbane, Milk, Cream, the Yolks of Eggs, and the Poplar Ointment for Burns, which is most commodiously prepared of Mallows, the Barks of the Lime and Elder Trees, Linseed Oil, and Wax.

As many Disorders and Symptoms arise, as from their proximate Cause, from spasmodic Strictures and Crispatures of the Vessels and nervous Parts, so Antispasmodics are of very extensive Use in Medicine, though they do not produce their Effects in one and the same Manner; for, by an immediate Contact, they either mollify and relax the tense, indurated, and constricted Fibres, as Milk, especially that of Asses, Oil of Sweet Almonds, Emulsions of Almonds, and of the four cold Seeds, the Fats of Animals, and the Cream of Milk; or by their mild, volatile Sulphur, they allay the tumultuous Commotions of the nervous Fluid: Of this Kind the most considerable are, Waters distill'd with Rain-Water, or May-Dew, from the Flowers of Sage, Bastard Dittany, the *Egyptian* Thorn, the Lime and Elder Trees, Meadow-Sweet, Peaches, white Lillies, common Chamomile, Cowslips and Yarrow; the Kernels of Peaches, Cherries, and Apricots; which Waters, on Account of their antispasmodic Virtue, are with great Benefit exhibited in convulsive and epileptic Fits; or some Antispasmodics produce their Effects by a certain subtle, volatile Sulphur, obtained from the animal Kingdom, and consequently more friendly to Nature, such as Earth-Worms, Castor, the Powders of the human Secundines, of the Intestines of Wolves, Vipers, the Shavings of the human Skin and Cranium, of the Elk's Hoof, of the Tooth of the Sea-horse, and of the Stone found in the Head of the Sea-Cow; as, also, Musk and Civet, which in epileptic and convulsive Motions, as, also, in chronical Epilepsies, are used with great Success.

Of an anodyne Quality, proper for alleviating Pain, and inducing Sleep, are Preparations of Poppies, Opium, Saffron, and Hounds Tongue, which, by their volatile sulphureous Exhalations pervading the small Tubes of the Membranes, check the tumultuous Commotions of the nervous Fluid, and thus not only allay the preternatural Motion in the Part affected, but, also, in the whole Body, since by this Means the Motions of the Heart and Arteries are render'd more moderate; for, as during an excessive Motion and Agitation of the Membranes of the Brain and nervous Parts, the Patient is afflicted with watching; so when these are in a quiet and moderate State and Condition, a kindly Sleep approaches.

But Narcotics, which induce a Torpor and Stupor of the Senses, together with profound Sleep; by a sulphureous, ungrateful, and unfriendly Vapour, by which the Motion of the nervous Fluids is almost extinguish'd, operate in so dangerous a Manner as to prove mortal to weak Habits, and in others to produce Madness. The pernicious Medicines of this Kind are, all Preparations of white and black Henbane, of the Thorn-Apple, and a particular Species of it, the Dutoy, as, also, of Night-shade, and its Apples.

Some Sedatives, also, allay Spasms, mitigate Pains, and procure Sleep, by removing the Causes which hinder these salutary Effects: Of this Kind the most efficacious are Nitre-purified, or artificial; as, also, Preparations of Cinna-bar and Camphire; for nitrous Preparations not only check the Heat and brisk intestine Motions of the sulphureous Parts of the Blood, but also moisten the solid Parts, and render their exorbitant Motions more moderate, so that they possess an excellent refrigerating, moistening, anodyne, and antispasmodic Virtue. Preparations of Cinna-bar, skilfully us'd, are of singular Service in mitigating those epileptic and convulsive Motions, which arise from viscid Lymph, stagnating in the Brain, and in the Membranes thereof; and the spinal Marrow; because, when their Use is long persisted in, they powerfully colliquate such a viscid Lymph. Camphire, especially when mixed with Nitre, excellently diffuses Inflammations, which are always accompanied with Watchings, Pains, and sometimes a Delirium; and thus it exerts an antispasmodic and sedative Virtue. Asa-fœtida and Sagapenum, two fetid Gums, exert their Efficacy in two Manners in allaying those Spasms of the Intestines, which, in hysteric Disorders, greatly afflict Women, partly because they soothe the

the-Spafms and Pains; and partly because by their saponaceous, gummous and acrid Salt, they resolve the tenacious Juices, and remove Obstructions of the Glands and minute Ducts.

Sedatives are therefore of singular Efficacy, since, in Consequence of their active Principle, and subtle volatile Exhalations, when exhibited in very small Doses, they not only suddenly, but intimately pervade the interior Pores and Ducts of the solid Parts, but also remarkably change and allay the exorbitant Motions of that highly subtle and moveable Lymph, which communicates Sensation and Motion to the Parts. But as in all Medicines, the more mild, gentle, safe, and friendly to Nature, are to be preferred to those of a more drastic and active Kind, so the same Caution is carefully to be observed, and diligently inculcated in the Use of antispasmodic, anodyne and sedative Medicines. Nor are we ever to use those of the more drastic Kinds, such as Opiates, when the Intention can be answered by those of a milder Nature, such as hypnotic Waters, prepared from fragrant Flowers, Emulsions of Poppy-Seeds, or Preparations of Nitre, Cinnabar and Castor.

And tho' Opiates, corrected by the Addition of Purgatives and Balsamics, as in the *Pilulæ Starkii*, and the *Pilulæ Wildegansii*, or by the Addition of Alexipharmics, as in the *Theriaca Coelestis*, and the *Diascordium*, or by the Addition of Analeptics, as in the *Laudanum of Sydenham*, are of singular Use and Efficacy, if prudently exhibited; yet if other safer Medicines, capable of producing the same Effects, can be found, 'tis better totally to abstain from the former, especially in weak Habits, old Persons, Children, and Patients whose Strength is impaired by whatever Cause. But we are still more carefully to abstain from those Medicines which have a Mixture of narcotic Substances in their Composition, such as the *Pilulæ de Cynoglossa*, which besides Opium, contain the Seeds of Henbane; and tho' these Pills are at present frequently used by some who are Enemies to all other Opiates, yet I have sometimes observed terrible Effects produced by the Use of them.

Tho' I formerly made frequent Use of corrected Opiates, yet since I happily found the Method of preparing from the sulphureous Portion of Vitriol, which was by the ancient Chymists accounted anodyne, that penetrating Liquor, which is of a fragrant Smell and aromatic Taste, I have safely rejected the Use of all other Opiates: For this Spirit, which I call my anodyne mineral Liquor, is totally sulphureous, burns suddenly and violently till it is consumed, suddenly takes Fire by the Flame of a Candle, tho' at three Inches Distance from it; and in a warm Room is quickly dissipated in the Air. It is, however, cold as Ice to the Touch, and when well distilled and rectified, like Oil it swims upon Water. The Use of this Medicine is very extensive, and its Virtues very various; for it excellently alleviates Pains, and procures Sleep; hence it is with great Success used in violent Pains of the Cholic, Stone, Cardialgia and Gout, as also in Head-achs and Tooth-achs. It also promotes Sweat; and tho' it is of an intensely hot Nature, yet it produces no Commotions in the Blood. Besides, it leaves no Torpor nor Weakness in the Head; for which Reason it is with great Success exhibited to all weak Constitutions, when the Strength is greatly impaired, as in an hectic Fever, for Instance; and which is still more surprising, it even increases the Strength. And as its principal and primary Action is on the Stomach, so it is of singular Use in all Disorders incident to that Part, such as Nauseas, hypocondriac, asthmatic and cardialgiac Inflations, by procuring a Discharge for the Flatulences. *Frederic Hoffman*. See LIQUOR MINERALIS.

SEDENTARIUM OS, in *Deventer*, is the Protuberance of the *Os Coxendicis*, upon which we sit.

SEDES. The ANUS. It, also, imports a Species of Fracture. See FRACTURA and HEDRA.

SEDHE. Cinnabar. *Rulandus*.

SEDIGITUS. A Person who has six Fingers.

SEDIMENTUM. Sediment.

SEDINA, or SEDEN. Dragons Blood. *Rulandus*.

SEDMA. The Lapis *Hæmatitis*. *Rulandus*.

SEDUM.

The Characters are;

The Leaves are alternate, not ordinate. The Calyx is monophyllous, multfid, and deeply cut into as many Segments as the Flower has Petals, which are five, at least. The Flower is pentapetalous, or polypetalous, rosaceous, and generally furnished with as many Stamina as Petals. The Ovary is seated in the Bottom of the Calyx, and consists of a Multitude of little Husks, equal in Number to the Petals of the Flower, each furnished with one Tube, nearly resembling Sheaths, with a corniculated Apex, collected into a round Head, somewhat distant from one another, and containing great Numbers of small Seeds.

Boerhaave mentions twenty eight Sorts of *Sedum*; which are;

1. *Sedum*; majus; arborescens. *J. B.* 3. 686. *M. H.* 3. 470. *Sempervivum*, five *Sedum*, arborescens, majus. *Dod.* p. 127.

2. *Sedum*; majus; arborescens; *J. B.* *Foliis elegantissime variegatis, tricoloribus*.

3. *Sedum*; Canarium; foliis omnium maximis. *H. A.* 2. 189.

4. *Sedum*; Africanum; frutescens; folio longo, serrato, confertim nato. *Ind.* 121.

5. *Sedum*; Africanum; frutescens; caule pellucido; folio subrotundo. *Ind.* 121.

6. *Sedum*; Afrum; montanum; foliis subrotundis, dentibus albis serratis, confertim natis.

7. *Sedum*; vulgare; maximum. *M. H.* 3. 474.

8. *Sedum*; majus; vulgare, *C. B. P.* 289. *Raii Hist.* 1.

687. *J. B.* 3. 687. *Tourn. Inst.* 262. *Boerb. Ind. A.* 286.

Sempervivum majus, *Sedum majus*, *Offic. Sempervivum majus*,

Ger. 411. *Emac.* 510. *Raii Synop.* 3. 269. HOUSE

LEEK.

House Leek has a great many thick succulent Leaves, set together in a round Form, convex on the Outside, and flattish within, sharp pointed, and with somewhat hairy Edges. The Stalk grows to be about a Foot high, reddish, and having a succulent Bark, covering a tough, white String or Pith; the Leaves which grow on it are thinner and longer than those below; on the Top of the Stalks grow reflected Spikes of starry Flowers, made up of several narrow, sharp pointed reddish Petals, set about a greenish hollow Crown, which is afterward enlarged into several small, hollow, horned Pods, or Seed Vessels, which inclose very small Seed. The Root is long, woody, and full of Fibres; it grows frequently on the Tops of Houses all over England; tho' Mr. Ray seems to doubt, whether it be a Native or no.

House Leek is cooling and restringent, and tho' not often given inwardly, is commended by some as good to quench Thirst in Fevers, mixed with Posset-drink, as also for Heat and Sharpness of Urine. *Prevotius*, in his *Medicina Pauperum*, commends an equal Quantity, that is, three Ounces of the Juice of this, and *Periscaria maculata*, boiled to the Consumption of a third Part, and given in Drink as a certain Medicine to stop a Looseness and Bloody Flux. Outwardly it is useful against Burns and Scalds, St. Anthony's Fire, and the Shingles. *Miller's Bot. Off.*

This Plant being analysed, yields a good deal of Acid and Earth, and a very little concrete volatile Salt. It probably contains a Salt resembling Alum, mixed with a little Sal-Ammoniac; for the Juice of this Plant evaporated to one Half, emits an urinous Smell. The House Leek is deterfive and astringent; it is used sometimes to resolve; but it is repellent. For the Quinsy, gargarize the Patient with the distilled Water, and apply some Cray Fish to the Throat, bruised with its Leaves. The Juice also of Cray Fish and House Leek, is used with Success as a Gargarism. These Juices are used also in Injections in the *Procidencia Uteri*, and sinuous Ulcers. The Leaves are applied to Corns, and the Knots of the Gout. For foundered Horses, nothing is better than to make them drink a Pint of the Juice of this Plant. *Martyn's Tournesort*.

It is customary, with us, among the common Sort, says *Schroder*, to give the expressed Juice of House Leek and Sugar in Fevers and hot Diseases. The Botanists in our Country prescribe the Juice infused in Posset, and Dr. *Tancred Robinson* says, he has known it exhibited with good Success in Fevers, and especially in those of the erysipelatous and hectic Kinds; for this Plant abounds with a medicinal alkaline Salt.

Tragus writes, That Linnen Cloths moistened with the Juice or distilled Water, and applied to Inflammations in any Part of the Body, and especially in Phricesies, are of extraordinary Service, as they are, also, in Inflammations and Redness of the Eyes, as well as of the Liver and Kidneys; they give Relief, also, under the Gout, and cure Ambustions. The Juice mixed with the Juice of *Solanum*, and boiled in Swines Fat with Poplar Buds, then strained and made into an Ointment, is of admirable Efficacy, and, in the Opinion of *Tragus*, to be preferred before all Preparations of Unguentum Populeum whatever. *Galen* and *Dioscorides* direct the Application of the Juice with Vinegar, instead of an Epithem, to an Erysipelas, which no Physician, says *Caspar Hoffman*, in our Times, would venture to prescribe. The Juice rubbed on Warts and Corns, so as that they may be well moistened therewith, and the Cuticle or thin Membrane of the Leaves afterwards laid upon the same, effectually cures and extirpates them. For Corns, or horny Excrescences of the Feet take of Leaves of the greater House Leek, a sufficient Quantity, bruise them, and apply them for six Days together. *Chesneau*.

For Ulcers of the Matrix and Urethra, take Juice of the greater House-Leek, four Ounces; Litharge, one Ounce; with two Yolks of Eggs; beat them all together in a leaden Mortar, and so use them. It is the Prescription of a Surgeon of Paris.

The Leaves of the great House-leek stripped of their outer Membrane, and put into pure Water, or Rose-Water, and every now and then applied to the Tongue, when dry or chapt, in Fevers, and renewed frequently, are remarkably lenient and serviceable in such a Case. *Raii Hist. Plant.*

9. Sedum; vulgari magno simile. *J. B. 3. 688.*

10. Sedum; montanum; tomentosum. *C. B. P. 284. M. H. 3. 474. Sempervivum, montanum, rubrum, gnaphalides, Col. 1. 291.*

11. Sedum; Alpinum; roseum; minus; viride; & sub-hirsutum.

12. Sedum; echinatum; vel stellatum, flore albo. *J. B. 3. 680. M. H. 3. 473. Cotyledon stellata. C. B. P. 285.*

13. Sedum; minus; teretifolium; album. *C. B. P. 283. Raii Hist. 2. 1040. Synop. 3. 271. Tourn. Inst. 262. Boerh. Ind. A. 286. Sedum minus, Offic. Sedum minus Officinarium, Ger. 413. Emac. 512. Sedum minus folio longiusculo, tereti, flore albo, J. B. 3. 690. Vermicularis flore albo, Park. Theat. 733. SMALL HOUSE-LEEK.*

The Stalks of this Sedum, before they flower, are of a bluish green Colour, beset, especially towards the Tops, with fat, thick, succulent, blunt-pointed, round Leaves. When they arise to flower, they have a few of the like Leaves growing alternately on them. They have on their Tops small Umbels, of white five-leaved Flowers, which are succeeded by as many little horned Seed-Vessels, full of very small Seed. The Root is fibrous. It grows upon old Stone-Walls and Buildings, and flowers in Summer.

The Leaves and Stalks are used, being much of the Nature of the great Sedum, and, like that, cooling and good for all Kinds of Inflammations. This is the *Sedum minus* that ought to be put in the *Unguentum Populeon*; but if not to be procured, the *Prickmadam* may supply its Place. *Miller's Bot. Off.*

14. Sedum; minus; lato & crasso caule, Portlandicum Belgarum; *M. H. 3. 471.*

15. Sedum; minus; luteum; folio acuto. *C. B. P. 283. M. H. 3. 471. Sedum; minus; flore luteo, J. B. 3. 692. PRICKMADAM.*

This Sedum, in manner of growing, is much like the small Houseleek. The principal Difference is, that the Leaves are slenderer, sharp-pointed, flattish in the Inside, and seeming only stuck on the Stalks; the lower Parts of them turning up a little. The Flowers grow in Umbels, being yellow, of six sharp-pointed Leaves, with as many Stamina and Apices in the Middle. The Seed grows in horned Pods as the other, and the Roots much alike. It grows upon old Walls, and on the Tops of Houses; and is much more frequent than the last, flowering at the same time, and may very well supply its Place, being as cooling, and in all Respects as serviceable. *Miller's Bot. Off.*

This Plant has an herby, styptic, saltish Taste, and gives a pretty deep Tincture of Red to the Blue Paper, which seems to shew that its Salt resembles Alum; but is mixed with a little Sal Ammoniac, a pretty deal of Sulphur, and a great deal of Phlegm. Thus it is astringent. *Martyn's Tournefort.*

16. Sedum; minus; à Rupe Sancti Vincentii. *Raii Synop. 152.*

17. Sedum; minus; teretifolium; alterum. *C. B. P. 283. J. B. 3. 691.*

18. Sedum; parvum; acre; apicibus albis.

19. Sedum; parvum; acre; flore luteo. *J. B. 3. 695. Raii Hist. 2. 1041. Synop. 3. 270. Tourn. Inst. 263. Boer. Ind. A. 286. Illecebra, Offic. Illecebra minor, seu Sedum tertium Dioscoridis, Park. Theat. 733. Vermicularis, seu Illecebra minor acris, Ger. Emac. 517. Sempervivum minus vermiculatum acre, C. B. P. 283. WALL-PEPPER.*

Wall-Pepper, or small Stone-Crop, has its Stalks four or five Inches long, wholly covered with thick, fat, triangular, blunt Leaves, and on their Tops a few star-like, five-leaved, yellow Flowers, with several Stamina in the Middle. The Root is small and fibrous; it grows upon Walls, and the Tops of low Houses, and flowers in May and June. It has a very hot biting Taste, and therefore is called Wall-Pepper.

This is too frequently used in the Shops for the *Sedum minus*, and is sold for it by the Herb-Folks; but it having Qualities directly opposite to the other Sedums, and more apt to raise than to cure Inflammations, it ought not to be put into the *Unguentum Populeon*, nor into any other Medicine for it. This Stone-Crop has been found by Experience to be good

for the Scurvy, both taken inwardly in Decoctions, and the Limbs bathed with it in Fomentations; and it is likewise commended against the King's-Evil. *Miller's Bot. Off.*

The acid Part of the natural Salt of the Earth seems to have let a corrosive Salt resembling the Spirit of Nitre, involved and softened by some Sulphur, escape into the Texture of this Plant. *Martyn's Tournefort.*

There is a third Kind of Sempervivum, which some call wild Purslane, or *Telephium*, and the *Romans Illecebra*. It has small, pretty thick and dense Leaves, like Purslane. It grows on Rocks, and is of a heating, acrimonious, and exulcerating Quality; a Cataplasm thereof, with Swine's Fat, dissolves strumous Swellings. *Dioscorides, Lib. 4. Cap. 91.*

The Juice extracted by means of some-Liquor, and given inwardly, excites Vomiting, and potently discharges gross, pituitous and bilious Humors; whence it is of surprising Efficacy in Quartans.

20. Sedum; minimum; luteum; non acre. *J. B. 3. 695. M. H. 3. 471. Sempervivum, minus, vermiculatum, inspidum. C. B. P. 284.*

21. Sedum; minus; circinato folio. *C. B. P. 283. Aizoon da Syphyllon. Lugd. 1153.*

22. Sedum; Cepæa dictum. *Tourn. Inst. 263. Boerh. Ind. A. 287. Cepæa, Offic. Ger. Emac. 621. C. B. P. 288. J. B. 3. 679. Raii Hist. 1. 690. Cepæa Matthioli, Park. Theat. 727. BASE ORPINE.*

It is cultivated in Gardens, flowers in Summer, and the Herb is in Use.

Cepæa is like Purslane, but has blacker Leaves, and a slender Root. The Leaves exhibited in Wine cure the Strangury, and the Scabies of the Bladder, but more effectually, if taken in a Decoction of the Roots of the *Asparagus*, called *Myacanthus*. *Dioscorides, Lib. 3. Cap. 168.*

23. Sedum; vulgari magno simile; minimum; foliolis acutissimis, confertissime natis.

24. Sedum; Afrum; saxatile; foliolis Sedi vulgaris, in Rosam verè compositis.

25. Sedum; Alpinum; album; foliolis compactis. *C. B. P. 284.*

26. Sedum; pyramidale; elegantissimum.

27. Sedum; Alpinum; Coridis folio. *T. 263.*

28. Sedum; Hispanum; folio glaucò acuto; flore albido. *Boerb. Ind. Alt. Plant. Vol. 1.*

This Plant acquires the Name of *Sedum*, à *sedendo*, "from sitting," because of its sessile Posture on Walls where it grows; or à *sedando*, "from allaying," because it allays or mitigates the Pains of Inflammations; *Sempervivum*, because it is always green Winter and Summer; *Vermicularis*, because its Leaves resemble Worms; and *Jovis Barba*, "Jupiter's Beard;" but for this last Appellation I can give no Reason.

This Plant abounds with a Juice of extraordinary Efficacy in all manner of cold Diseases. All the Species, except the first, agree in their Properties, being of an aqueous, nitrous, emollient and laxative Quality, mixed with something of Acidity, Austerity, and a slight Measure of Astringency. On this Account the Leaves stripped of their outer Membrane, and macerated in Water, are commended in burning Fevers, Inflammations, Gangrenes, and Suppurations of the Stomach and Intestines, for Aphthæ, and the Quinsey. The *Africans* give ten Ounces of the new-expressed Juice in a Dysentery, and with the same cure not only this Disease, but all pestilential and spotted Fevers. It is, also, a very good Plant for correcting the Malignity of the worst Kind of Ulcers. The bruised Leaves cure the Erysipelas, Corns in the Feet, and the Nodes of the Gout. Of the same is prepared an excellent Ointment for the Hæmorrhoids. The nineteenth Species is as hot and acrimonious as the others are mild and gentle. There was in this Country a certain Empiric, who, with two Ounces of this Plant, infused in Milk or Beer, cured Quartans, Dropsies, and other chronic Diseases, by causing the Patients to vomit in a violent manner; under which, if the Disease proceeded from cold obstructing the first Passages, they recovered; but if there was an immoderate Heat in the Case, the Remedy proved mortal. It causes an Alteration in all the Humors, and is of very good Service in a slow Dropsy. It is highly commended in Pains of the Gout and Sciatica; tho' I should not venture to give it inwardly, because of its Acrimony. The former Species are of Service in Combustions and Cancers. *Hist. Plant. ascript. Boerhaave.*

SEDUM is also a Name for several Sorts of SAXIFRAGA and COTYLEDON; which see.

SEDUM AQUATILE. A Name in *Boerhaave*, for the ALOIDES.

SEDUM MINUS FRUTICOSUM. A Name for the *Chenopodium*; *seaisolia minimo*; *frutescens*; *perenne*.

SEDUM PETRÆUM. A Name for the *Alyssum*; *Alpinum*; *hirsutum*; *luteum*.

SEGAX. Dragon's Blood. *Rulandus*.

SEGITH. Vitriol. *Rulandus*.

SEL SERAPIONIS, & AVICENNÆ. The Name of a Fruit, of a bitter and acrimonious Taste. It is said to be produced near *Jerusalem*.

SELAA. A Node, or encysted Abscess. *Castellus* from *Forelius*.

SELACHOS, *ελαχος*. A cartilaginous Fish, or Fish whose Skin is cartilaginous. Of this Kind is the Skate, Ray, and many others.

SELAGINOIDES. A Species of Moss. See the Explanation of Terms under the Article BOTANY.

SELAGO. A Species of Moss. See the Explanation of Terms under BOTANY.

SELATUS. Quicksilver. *Rulandus*.

SELDONTUM ALCALI. *Paracelsus* describes this as something very readily dissoluble, and emitting a Tincture; but his Meaning is not understood.

SELENIACON. A Name for the Species of *Cyphi*, sacred to the Moon, and consisting of twenty-eight Ingredients. It is described by *Paulus Aegineta*, L. 7. C. 22. It was, also, a Name of a Sort of Amulet against the Epilepsy, worn by Children. It is derived from *selene*, the Moon.

SELENITES. Offic. Charl. Foss. 23. Kentm. 32. Worm. 56. Aldrov. Musf. Metal. 678. Boet. 396. Gesn. de Lap. 45. *Lapis specularis argenteus*, Cup. Hort. Cath. Supp. 252. *Crystallus Calcarea*, Mont. Exot. 14. THE SELENITE.

This is a rhomboidal, pellucid Fossil, divisible into thin *Laminae*. It is found in many Places, particularly near *Epsom Wells* in *Surrey*. It is said to agree in Virtues with the *Telluræa*, to be a Sweetner of the Blood, and to restrain Hæmorrhages. Externally it is used as a Cosmetic. In the Catalogue of Simples in the College-Dispensatory, it is confounded with the *Lapis Specularis*.

SELERI. See CELERI, and APIUM.

SELIBRA. Half a Pound.

SELINITES. An Epithet for Wine, impregnated with the Seeds of *Apium*. *Dioscorides*, L. 5. C. 74.

SELINUM MONTANUM. See APIUM.

SELINUM SEGITALE. A Name for the *Sium*; *arvense*; *five Segetum*.

SELINUSIA TERRA. A Species of Medicinal Earth, mentioned by *Dioscorides*, L. 5. C. 174. This, he says, agrees with the *Chian* Earth in Virtues. That is best, which is shining, white and friable, and which readily dissolves when mixed with any Fluid.

SELLA TURCICA. A Sort of Cavity in the Basis of the Skull, formed by four Processes of the *Os Sphenoides*. See CAPUT.

SEMASIA, *συναρσις*. The Access of a Distemper.

SAMBELLA. Half a Pound.

SEMEIOTICE. That Part of Medicine which treats of the Signs of Health and Diseases.

SEMEN. A Seed. The four greater hot Seeds are those of Anise, Caraway, Cumin, and Fenil. *Fr. Hoffman* says Dill, instead of Caraway.

The four smaller hot Seeds are those of Bishops Weed, Ammomum, Apium, and Dancus.

The four greater cold Seeds are those of the Citrul, Cucumber, Gourd, and Melon.

The four lesser cold Seeds are those of Succory, Endive, Lettice, and Purslane.

That the five greater hot Seeds are of singular Use in preparing domestic Medicines, is sufficiently certain from Experience. We shall not here consider them apart, but only observe, that whether reduced to the Form of a Powder, boiled with Ale, or infused in warm Water, by reason of the Sulphur and Oil they contain, which are mild, friendly to Nature, and volatile, they are highly efficacious in correcting the Acrimony, and resolving the Viscidity of the Humours; as, also, in soothing all the Parts of the Body, however agitated or rack'd. Hence they are highly expedient in all spasmodic and convulsive Disorders; for they excellently alleviate Spasms, discurt Flatulences, and, at the same time, correct the Humours. For which Reason we recommend them in Colics, Coughs, Diarrhæas, and Gripes, especially those to which sucking Infants are subject, on account of the caustic Acrimony of the Milk, which discovers itself by the greenish Colour of the Excrements. *Hippocrates* frequently used Anise Seeds, and they are certainly a valuable Medicine, on account of their friendly Quality to the Stomach and Intestines; for this Reason *Helmont* justly called them the great Reliever of the Intestines. A Decoction of these five Seeds with Chamomile Flowers, Oil of Sweet-Almonds, and a little Venice Soap, injected by way of Clyster, is of excellent Service in the most violent Disorders of Children, and excellently dispels their Flatulences, and relieves their Gripes. These five Seeds, also, whether used in a dry or liquid Form, provoke

the Menfes and Sweat; cure the Hiccup, prevent Abortion, strengthen the Stomach in Vomiting and Hiccups; discurt Flatulences; expel Urine and the Stone; remove Hoarseness, and facilitate Labour, especially if the Steam of them is admitted to the Uterus. The Steam of a Decoction of Fennel surprisingly cleanses the Eyes, and strengthens the Sight. It is, also, beneficial in Deafness, as we are informed by *Gabelcheverus Centur. 1. Curat. 6. in Annotat.* A Decoction of Fennel is, also, good for increasing the Milk, as we are told by *Amatus Lusitanus*, in *Centur. 6. Curat. 86.* Nothing is more efficacious than the Seeds of Cumin for strengthening the relaxed Tone of the Intestines; and discurt Flatulences. And *Reinerus Solmender*, in *Lib. 35.* informs us from *Serapion*, that it is excellent for strengthening the Uterus, removing its Flatulences, and checking the Menfes and Fluor Albus. *Hoffman de Præst. Remed. Domest.*

SEMICONGIUS. Half a Gallon.

SEMICUPIUM. A Half Bath; or a Bath in which the Parts above the Navel only are immersed.

SEMEDALIS. *σμηδαλιν*. Fine Wheat Flour.

SEMIFIBULEUS MUSCULUS. A Name for a Muscle of the TARSUS; called, also, PERONÆUS MEDIUS. See PERONÆUS.

SEMIMEMBRANOSUS MUSCULUS.

This is a long thin Muscle, partly tendinous, from whence it has its Name, and situated on the Backside of the Thigh, a little towards the Inside.

It is fixed by a broad Tendon, or long Aponeurosis in the irregular, obtuse, prominent Line, which goes from the Acetabulum to the Tuberosity of the Ischium, a little above the Insertion of the Semi Nervosus, and between those of the Gemellus Inferior and Quadratus, mixing some Fibres with the Triceps Tertius.

From thence it runs down fleshy, in an oblique Direction, behind the inner Condyle of the *Os Femoris*, below which it terminates in a thick Tendon, which is inserted in the posterior and interior Side of the inner Condyle of the Tibia, by three short Branches, the first or uppermost of which goes a little toward the Inside; the second more backward; and the third lower down. Before it is inserted, it sends off sometimes an Aponeurosis like that of the Biceps.

The *Semimembranosus* has the same Uses with the *Seminervosus*. It bends the Leg on the Thigh, and the Thigh on the Leg; it extends the Thigh on the Pelvis; and the Pelvis on the Thigh, and sustains the Pelvis when it is inclined forward. It differs in this one Thing from the *Sartorius*, *Gracilis Internus* and *Seminervosus*, that its Insertion is not on one Side, but behind the Joint; and for that Reason it is better disposed both to begin and continue the Flexion of the Leg, than they are. *Winslow's Anatomy*.

SEMIMETALLA. Semimetals, or Marcasites.

SEMINALIS. A Name for the Polygonum, or *Centindium*.

SEMINERVOSUS MUSCULUS.

This is a long Muscle, half fleshy and half tendinous; or like a Nerve, from whence it has its Name. It is situated a little obliquely on the posterior and inner Part of the Thigh.

It is fixed above to the posterior Part of the Tuberosity of the Ischium, immediately before, and a little more inward, than the Biceps. It is afterwards fixed by fleshy Fibres to the Tendon of the Biceps, for about the Breadth of three Fingers, much in the same manner as the *Coraco-Brachialis* is fixed to the Biceps of the Arm.

From thence it runs down fleshy towards the lower Part of the Inside of the Thigh, having a Sort of tendinous Interfection in the inner Part of its fleshy Portion. Having reached below the middle of the Thigh; it terminates in a small, long round Tendon, which runs down to the Inside of the Knee, behind that of the Gracilis, where it expands in Breadth.

It is inserted in the Inside of the upper Part of the Tibia, about two or three Fingers Breadth below the Tuberosity or Spine, immediately under the Tendon of the *Gracilis Internus*, with which it communicates. It has the same oblique Turn with the *Gracilis* and *Sartorius*, and sends off a like kind of Aponeurosis.

The *Seminervosus* bends the Leg, and may, also, bend the Thigh on the Leg. By its Insertion in the Tuberosity of the Ischium, it, also, extends the Thigh on the Pelvis, and carries it backward; and may, also, extend the Pelvis on the Thigh, when it has been inclined forward with the rest of the Trunk; and consequently prevent its being carried too far along with the Trunk, when we stoop forward, either standing or sitting. *Winslow's Anatomy*.

SEMIHOMBUS. See HEMITONON.

SEMIS. The Half of any Integer.

SEMIEXTUM. The same as HEMIECTON.

SEMISICILICUS. A Dram.

SEMISIDERATUS. Hemiplegic; that is, seized with an Hemiplegy.

SEMISPECULUM. An Instrument for dilating a Wound in the Bladder, in the Operation of Lithotomy, described by *Hildanus*, in his *Treatise de Lithotomia*. C. 15.

SEMISPINALIS COLLI, *five Transverso-spinalis Colli.*

This Name is given to all that fleshy Mass which lies between the transverse and spinal Apophyses, from the second Vertebra of the Neck to the Middle of the Back; the *Splenius* and *Complexus major*, which cover it, having been raised.

It is composed of several oblique converging Muscles, which may be divided into external and internal, and of these the external are the longest.

The external are fixed below, to the transverse Apophyses of the six, seven, eight or nine upper Vertebrae of the Back, by tendinous Extremities, which, as they ascend, become fleshy, and mix with each other. Their superior Insertions in the Neck are six in Number; whereof the first, which is tendinous, is in the seventh spinal Apophysis; the rest, which are fleshy, are in the five next spinal Apophyses.

The lowest of these external Muscles mix more or less by some communicating fleshy Fibres, with the *Spinalis*, *Longissimus*, and *semi-spinalis Dorsi*.

The internal are shorter and more oblique than the external, and partly covered by them. They are fixed, by their lower Extremities, to the transverse Apophyses of the three or four upper Vertebrae of the Back, and to the oblique Apophyses of the four or five lower Vertebrae of the Neck; and by their other Extremities they are inserted in the six spinal Apophyses of the Neck.

Some of these internal Muscles are very short, lying wholly between the spinal Apophyses, and the oblique or transverse Apophyses next them.

The *Semi-spinales* or *Transverso-spinales* of both Sides acting together, extend the Neck upon the Trunk, to keep it from inclining forward in standing or sitting, and bend it backward. The *Semi-spinales* of one Side acting alone, produce the same Motions in an oblique Direction, and in that Case they are assisted by the inferior or vertebral Portion of the neighbouring *Splenius* under which they cross.

The *Semi-spinales* of both Sides may, also, serve for the Rotation of the Neck, but then the inferior *Splenius* of the opposite Side must assist them. This Motion is made in the ordinary Situation of the Neck, principally on the fourth and fifth Vertebra. They may, also, perform the lateral Inflections of the Neck, by assisting the *Longus Colli* and anterior vertebral Muscles of the same Side. *Winslow's Anatomy.*

SEMI-SPINALIS DORSI, *five Transverso-spinalis Dorsi.*

This is a fleshy Mass, which from all the spinal and transverse Apophyses of the Back and Loins, is extended in distinct Fasciculi over the Vertebrae themselves.

It is made up like that of the Neck, of several oblique converging vertebral Muscles, the uppermost of which is fixed below, to the third transverse Apophysis of the Back, and above to the first spinal Apophysis. The lowest is fix'd below to the third transverse Apophysis of the Loins, and above to the last spinal Apophysis of the Back.

They may be divided into external, which are first discovered, and Internal, which lie immediately on the Vertebrae. The external from the first Vertebra to the seventh inclusively, appear to be longer than the internal, which are covered by them. They may, also, be distinguished into those which go from one Transverse to several spinal Apophyses, and those which go from several Transverse to one spinal Apophysis.

The *Semi-spinales* or *Transverso-spinales* being oblique, converging, vertebral Muscles, are Assistants to the *Sacro-Lumbaris* and *Longissimus Dorsi*, which they cross on each Side. By this Decussation joined to the Multiplicity, and graduated Distribution of their Insertions, they increase the Strength of the other Muscles considerably, whether they act equally and uniformly with them, or alternately. The Lumbar *Semi-spinales*, called by the Ancients, *Musculus Sacer*, (See *SACER*.) because of their Insertions in the *Os Sacrum*, are more exposed to Motions and Strains than those of the Back, and are, also, larger and thicker. They are much better fitted than the *Sacro-Lumbares* for supporting the Pelvis on both Sides in walking, and on one Side, when we raise the Foot on that Side, and support ourselves on the other. *Winslow's Anatomy.*

SEMISSIS. The same as *SEMIS*.

SEMITERTIANA. A Kind of complex Fever, which we call a *Semitertian*, and the Greeks *ἡμιτερταία*, *Hemitritæus*, and it deserves our careful Observation. It begins with a Horror, and goes off with a Sweat, yet not so as to leave the Patient entirely free from a Fever. But since it is complicated of an intermittent Tertian, and a continual Quoti-

dian, on one Day it is more exasperated, and moieties the Patient with a Horror, and frequently with something of a Rigor, attended with bilious Vomings or Stools, a burning Heat, and Exhalations of humid Vapours. On the other Day the Patient is rather sensible of a Cold than a Horror, and is not much afflicted with Heat or Thirst; the Pulse is more moderate, and the Fever more gentle on all Accounts; besides, on one Day may be observed two kinds of Fevers, on the other but one. A semitertian Fever is indeed but rare, but where it is once settled, very dangerous. An exquisite *Semitertian* is, when the Supplies of peccant Matter for the intermittent Tertian and continual Quotidian are nearly equal; otherwise there cannot be a pure *Semitertian*, and consequently the Disease, as it is thought, will the more easily give way to Remedies. *Lomii, Med. Obs.*

Among the epidemic Fevers of the intermittent and malignant Kind, we (in Practice) frequently meet with that Species which consists of an intermittent Tertian, and a Quotidian of the continual kind, for which Reason it is by the Greeks called *ἡμιτερταία*; and by the Latins, *Semitertiana*.

This Species of Fever generally seizes the Patient, in the Forenoon, with a violent Cold and Horror; and a contracted Pulse. This State is afterwards succeeded by an Heat, which lasts for some Hours, is accompanied with a frequent Pulse, and remits without being totally removed upon the Eruption of the Sweat. Towards the Evening the Heat is rather increased, after a gentle Refrigeration; and next Day the Disorder is milder, and accompanied with Thirst, till about the Evening, after a slight Horripilation, it again becomes more violent. But on the third Day, the Horror again seizes the Patient, and is succeeded by a more intense Heat, whilst the State of the Disorder is the same it was on the first Day. So that there is always present a kind of growing Fever, the Exacerbation of which happens towards the Evening; and on the third Day, in the Morning, this Exacerbation is most conspicuous, and accompanied with a Rigor. Besides, the Strength is impaired, the Appetite rendered languid, the Sleep defective, and the Urine thin and crude; whereas, after the Paroxysm of a Tertian, it is thick and high-coloured. In Coughing a small Quantity of crude Matter is spit up. This Species of Fever is, also, frequently accompanied with a Pain of the Back and Abdomen, which latter is, also, tumid. Some, upon the Approach of the Tertian Paroxysm, are afflicted with a Nausea and Cardialgia; others vomit; others fall into Deliquiums; and others become absolutely delirious.

This Fever is almost unknown in some Parts of Europe, the Inhabitants of which generally take it for a malignant intermittent Fever; but the former greatly differs from the latter, since it is neither contagious, accompanied with exanthematous Efflorescences, nor attended with so considerable a Loss of Strength. Besides, it has every third Day a conspicuous Exacerbation accompanied with Horror.

Others, in like manner, unjustly confound a *Semitertian* with a continual Tertian; for the latter, otherwise than in the former, has its Exacerbation only on the third Day, but not in the Evening; nor is it wholly continual; but tho' it at first seizes with a continual Heat, yet, on the third Day, it generally loses its Violence, and passes into an intermittent Tertian.

Nor is a *Semitertian* to be confounded with a double Tertian; for tho' the latter seizes every Day, yet the Paroxysms correspond to each other, and the Fever itself perfectly intermits; whereas, in a *Semitertian*, there is absolutely no Intermission, but a Remission. The Paroxysm, also, happens about the Evening, and is always double on the third Day.

A *Semitertian* is, therefore, composed of two Fevers, and must, therefore, have a double Fomes, and a double Cause; that is, the Source of the continual Fever in the Mesentery, in consequence of the intercepted Circulation of the Blood thro' its Structure, and its consequent inflammatory Stagnation in the contiguous nervous Coats. But the violent Paroxysm happening on the alternate Days, has, as well as a Tertian, its Seat and Cause in the Intestines, and especially in the Duodenum; for to the winding Cavity of this Intestine, the lymphatic, bilious, and corrupted Humors, in consequence of the Disorder of the Mesentery, are conveyed from the Glands, the Liver and Pancreas; as also crude Juices from the Stomach, which constitute a morbid Fomes; which, mixing with the Blood, and being conveyed to the nervous Membranes of the Spine, induces a preternatural febrile Motion.

Among the Things which have a Tendency to generate a *Semitertian*, we may reckon all those Substances and Circumstances which render the Juices thick and impure, and especially fill the Primæ Viæ and Vessels of the Mesentery with Sordes. Hence *Semitertians* are most generally incident to those, who, neglecting a salutary Regimen, eat liberally of
[* R r] sweet

sweet, acid, fermentable Aliments, and farinaceous Substances fried with Butter, Sugar, and Eggs; and to those who lead an idle and too sedentary Life; who drink too little; who are too great Lovers of sweet Wines; or who indulge the Passions of the Mind, especially Sorrow. Semitertians are, also, readily incident to Persons after a Recovery from acute Disorders; to those who are costive; to those who frequently use drastic Purgatives; and to such as have the menstrual or hæmorrhoidal Discharge suppressed. These Fevers are, also, less frequent at other Seasons than in the Autumn, the fruitful Source of terrible Fevers, on account of the Variety and Inequality of the Weather, which is highly unfriendly to salutary Perspiration. Semitertian Fevers, also, frequently happen to those, who, when overheated, greedily drink cold Liquors, or who, when sweating, sit down in moist Places.

Semitertians are observed to be more frequent in some Countries than in others. Thus *Galen*, *Spigelius*, and *Baglivi*, inform us, that they rage more in *Italy* than in other Climates. And certainly, in that Part of the World, the Heat, during the Day, generates many acrid recrementitious Sordes, whilst the cold Air of the Night hinders the Exclusion of these; and the cold Drink, of which they are so very fond as to prepare it by putting Ice into it, occasions, that the Juices in the Mesentery, where the Resistance is small, and the Circulation languid, as it were, stand still, and conceive an inflammatory Stagnation. And thus a continual Fever is generated, which is changed into a Tertian, by the corrupted Juices falling from the Mesentery to the Intestines. The like happens in *Hungary*, where a similar State of the Air, and a liberal Use of sweet and spirituous Wines, frequently excite Semitertians.

Since, therefore, a Semitertian, besides the common Cause of Intermittents in the Primæ Viæ, has, for a Foundation, an Inflammation, and a continual Disposition never to admit of a great Remission of the Symptoms, nor of a due Time for recovering the Strength, it is of a very dubious Nature, and far more dangerous than a simple Intermittent.

For this Reason, its Progress is quick, since, for the most part, it terminates on the ninth or thirteenth Day, either in Health, some other Disease, or Death.

When it is long protracted, the Inflammation either comes to a Suppuration, and the Disorder is changed generally into an hectic or slow Fever; or when there is a violent Obstruction of the Mesentery, it terminates in a Dropsy; or, which happens more rarely, when the Primæ Viæ are filled with Sordes, it ends sometimes in a simple, and sometimes in a double Intermittent.

But when the Sweat not only breaks out in the Decline of the Paroxysm, but also on the seventh Day, which is critical; or, if, after this Day, the Intestines are put into a Commotion, and a bilious, pituitous, or even a bloody Flux, is produced, it is a good Sign, and prognosticates the Solution of the Disease; or if there happen violent Pains of the Abdomen, which are increased at certain stated Hours, the Disorder is resolved by them, or afterwards terminated by a subsequent sanious and purulent Diarrhæa, or an Evacuation of a large Quantity of black Blood by Stool.

On the contrary, when none of these Circumstances happen, but rather a Heat about the Præcordia, a Tension and Pain in the whole Region of the Stomach, a Vomiting, a Hiccup, a Restlessness, a Tossing, and a Trembling of the Hands, are perceived, they are bad Prognostics, and indicate that the Inflammation has spread itself farther even to the Stomach.

Those who die of a Semitertian are taken off under the Access of a violent Paroxysm, which keeps the Type of a Tertian, the Inflammation, in the mean-time, being far diffused and converted into Putrefaction. Thus *Spigelius*, in his *Lib. de Semitertiana*, Cap. 14. informs us, that he always found this to be the Cause of the Death of such Patients, in the following manner: "When, says he, I reflect upon what I have observed, in dissecting those who have died of Semitertians, I can ascribe their Death to nothing else but putrid Stagnations in the Vessels; for in the Carcasses of such Persons, I found Inflammations formed of bilious and pituitous Blood, about the concave Part of the Liver, in the Stomach, in the great and small Intestines, in the Mesentery, Omentum and Spleen, and often in one or more of these Parts, and sometimes in them all; and a supervening Gangrene or Sphacelus, tho' perhaps small, was found to be the Cause of their speedy Death."

THE CURE.

The two principal Intentions to be pursued in the Cure of a Semitertian, are,

1^o. With all Expedition either to discuss or hinder the farther spreading of the inflammatory Stagnation lodged in

the Coats of the Mesentery and Intestines, and exposing the Patient to imminent Danger.

2^o. To correct and gently evacuate the febrile Matter during the Intermission, having a due Regard, at the same Time, to the critical Efforts of Nature.

The former of these Intentions is excellently well answer'd, by diaphoretic and gently nitrous Powders exhibited frequently in small Doses. Thus;

Take of the Ceruss of Antimony, of prepar'd Mother of Pearl and Crabs Eyes, each one Dram; of the Solution of Crabs Eyes, and depurated Nitre, each half a Dram; reduce them to a Powder, of which, every three Hours, fifteen Grains may be exhibited in a Decoction prepared of two Ounces of the Roots of Vipers-Grass, one Ounce of the Shavings of Hartshorn, one Ounce of Currans, and half an Ounce of the Roots of Succory, boil'd for half an Hour in four Quarts of Water.

The same Intention is answered, by exhibiting every three Hours a Spoonful or two of the resolvent and diaphoretic Mixtures, prepared of the pectoral and analeptic Waters of Lily of the Valley, Galangals, Carduus Benedictus, Vipers-Grass, and black Cherries, with the distill'd Vinegar of Crabs Eyes, diaphoretic Antimony, the Mixtura Simplex, and the Syrup of Carduus Benedictus.

By Means of these, the Sordes of the Primæ Viæ, which produce the Disorder, being corrected and diluted, are best evacuated by Solutions of Manna, with a due Portion of Cream of Tartar, Rhubarb, Raisins, and Sal Polychrestum; for these, without any Commotion of the Blood, Irritation of the nervous Parts, or Loss of Strength, cleanse the Intestines, and greatly contribute to remove the Infarctions of the Mesentery. This Intention is, also, answered by balsamic Pills, prepared of bitter Extracts, resinous and balsamic Gums, and depurated Aloes, together with the precipitating nitrous Powder, moderately but frequently used. If the more subtle Parts of the Sordes, are, by an increas'd Perspiration, to be eliminated through the cutaneous Pores, the Essence of Scordium mixed with an equal Quantity of the anodyne mineral Liquor, is of all other Medicines the most safe and efficacious.

All Cures are to be so managed, as never to disturb or interfere with the critical Efforts of Nature, but rather to assist them when defective, and moderate them when excessive.

Hence, 'tis highly prejudicial to exhibit Purgatives, especially in the Beginning of a Semitertian, since, by that Means, the unprepared Matter is agitated, the Inflammation increas'd, and the Disease dispos'd to a speedy, tho' a fatal Event.

Saline Deterfives exhibited by themselves, are not to be us'd in a Semitertian, especially in large Doses, except antimoniated Nitre; to which, and the Sal Polychrestum, *Baglivi* justly ascrib'd so much; for these are possess'd of an aperient, diuretic, and gently laxative Quality, and may sometimes be commodiously exhibited to the Dose of fifteen Grains, in a sufficient Quantity of some proper Decoction.

But if a Semitertian seizes a Person who is costive, or if he is long costive during it, his Body is only to be render'd soluble, by Clysters prepared of Paregoric and emollient Substances, the carminative Seeds, and *Venice* Soap, that thus the Primæ Viæ may be freed from the excrementitious Sordes; for if this is neglected, Nature seeks a Way upwards, and excites a Vomiting, especially when the biliary Ducts in the Liver are turgid with an acrid Bile.

In the Decline of the Fever, the Physician is to follow the Tendency of Nature, which often terminates the Disorder by a Flux, so that on this Occasion the above-mentioned Laxatives and balsamic Pills are commonly used.

In a Semitertian, the Physician is to be very cautious in exhibiting Emetics, lest he should create a Vomiting, or Hiccup, or dispose the Stomach to an Inflammation: But if the peccant Matter is to be evacuated by Vomit, in consequence of the Tendency of Nature that Way, the Intention is sufficiently answer'd by drinking tepid Water with Salt, or a very gentle antimonial Stimulus.

In a Semitertian, Venesection is not proper, except there is a violent Plethora, and an intense Heat in Persons as yet vigorous, and labouring under a Suppression of critical Hemorrhages; for in this Case, Venesection is absolutely necessary, in order to prevent a mortal Inflammation of the Intestines; but it is to be us'd in the very Beginning, since the sooner a proper Quantity of Blood is taken away, the sooner the Cure is accomplish'd.

The Patient is, also, carefully to avoid all hot Substances, alexipharmic Essences, bezoardic Tinctures, a hot Regimen, and

and large Quantities of hot Liquors; for by Means of these, the Heat is increas'd, the critical Discharge of the Fomes of the Disease through the Intestines is disturb'd, and the Strength impaired by profuse Sweats.

Astringent, too fix'd, earthy, testacious Powders; and Peruvian Bark, are not to be us'd in a Semitertian; for Baglivi observes, that by Means of these, either mortal Inflammations, or slow and hectic Fevers have been brought on.

Though the Patient should be afflicted with an exquisite Pain of the Abdomen, and frequent Stools, he is nevertheless to abstain from Sedatives, and is only to be reliev'd by anointing his Abdomen with spirituous and corroborative Liniments, whilst the Tumult and Commotion is to be check'd by an internal Exhibition of Diaphoretics.

For ordinary Drink, the most proper is the Decoction before mentioned; as, also, a Decoction of Oats prepared in the following Manner:

Take of clean wash'd Oats, one Pound; of the Roots of Succory, Sarsaparilla, and Vipers-Grass, each one Ounce; of the Flowers of red Poppy, six Pugils; of antimoniated Nitre, half an Ounce; Leaves of Scabious, half an Handful; and of pure Nitre two Drams; boil them in five Quarts of common Water, to a Consumption of a third Part, and edulcorate with Syrup of Carduus Benedictus, wild Poppy, or Citron Juice.

In Semitertians, I have, also, found happy Effects produced by Decoctions of Chamomile Flowers, and the Tops of Yarrow, or by Extracts prepared from these; for such Decoctions and Extracts safely alleviate the Pains, especially of the hystERIC and complicated Kind, and, at the same Time, by their Bitterness, prove excellent antiscorbutic Medicines, and restore the due Tone of the Parts.

As no Fever more readily recurs than a Semitertian, so the Patient is, after it, carefully to avoid the Things already enumerated, as the procolartic Causes of the Disorder. All Things are to be us'd temperately; the Body is to be kept soluble by mild Laxatives; the Increase of Crudities is to be prevented by Stomachics; and, which is of all other Circumstances the most important, the Perspiration is carefully to be kept free and unobstructed; for as in all Fevers, so, also, in those of the semitertian Kind, the Relapses are far worse and more obstinate than the original Disorder.

These are the general Precepts, founded on Reason, and supported by the Indications of Nature, by the Observation of which the Cure may be judiciously attempted, and successfully perform'd: But the particular Method is to be suggested by the Sagacity of the Physician, which is to direct him to the Order, Dose, Time, and Use of proper Medicines, which being the same with those employ'd in the Cure of continual quotidian, tertian and quartan Intermittents, may be seen under these Articles. *Frederic Hoffman.*

SEMIVERBERATORIUS IGNIS. A Sort of reverberatory Fire, which only surrounds the Bottom of the Vessel.

SEMOTIM: Achors, or Pinez. *Castellus from Valescus de Taranta.*

SEMPERVIVUM. See **SEDUM**.

SEMUNCIA, or SEMIUNCIA. Half an Ounce.

SENA. The same as **SENNA**.

SENDANEGUM. The *Lapis Hamatitis*, Blood-Stone. *Rulandus.*

SENECIO. *Senecio*.

The Characters are;

The Calyx is monophyllous, cylindrical, multifold, very slightly squamous in the lower Part, of a conic Figure when the Flower is fallen off, and when it is ripe, generally bending downwards.

Boerhaave mentions ten Species of *Senecio*, which are;
1. *Senecio*; minor; vulgaris. *C. B. P.* 131. *Tourn. Inst.* 456. *Boerb. Ind. A.* 117. *Erigerum*, *Senecio*, *Offic.* *Senecio vulgaris*, *Park.* 671. *Raii Hist.* 1. 291. *Synop.* 83. *Senecio-vulgaris* *sive* *Erigeron*. *L. B.* 2. 1041. *Erigeron*, *Ger.* 217. *Emac.* 278. **GROUNDSEL OR SIMSON.**

Groundsel has a small, stringy Root, full of Fibres, from which springs round, succulent, striated Stalks, which are shorter or taller, according to the Soil it grows in, and frequently of a reddish Colour. The lower Leaves are about two Inches long, and half an Inch broad, cut usually into five Jags or Sections, whereof the last is usually tripartite. The Leaves which grow on the Stalks are set on with a broad Base almost encompassing them: The Flowers grow on the Tops of the Branches, without any Petala, or Border, consisting only of fistular, yellow Flowers, growing in a green striated Calyx, which after turns into a Down. It

grows on Banks, and Walls, and amongst Rubbish, flowering the greatest Part of the Year.

The Juice of this Herb taken in Ale, is accounted by some a gentle Vomit, and of Use to help Pains in the Stomach, and evacuate Cholera, and to help the Jaundice: It likewise destroys Worms. Outwardly apply'd, it is useful in scrophulous Tumors, and Inflammations of the Breast, and helps scald Heads. *Miller's Bot. Off.*

It has an herby Taste, a little inclining to acid; it gives a pretty deep red Colour to the blue Paper.

By the chymical Analysis, it yields, besides several acid Liquors, a great deal of Oil and Earth, no volatile concrete Salt, but a little urinous Spirit; so that it is probable its Salt may resemble that of Coral, being involved with a great deal of Sulphur, and mixed with a little Sal-ammoniac.

Groundsel is emollient, lenifying and resolving; two Ounces of its Juice kills Worms, and eases the Cholic; the whole Plant is used in the ordinary Decoction of Clysters, and in the Cataplasms for assisting Suppurations. A Cataplasm of it boiled in Milk, or fried with fresh Butter, is good for the Gout, Piles, and dissipates curdled Milk in the Breast. *Martyn's Tournefort.*

The Juice taken in Beer, or the Decoction thereof with Currans or Honey, is a gentle Vomit, as we are taught by daily Experience. *Tragus* says it is rarely taken inwardly; others write that it is good in many Cases thus administered, for Instance, in the Cholera Morbus, Jaundice, a hot Distemperature of the Liver, Worms, Vomiting, and Spitting of Blood, Sciatic Pains, and the Fluor Uterinus. Outwardly, it is of Use in Inflammations of the Breast, Scald Heads, Strumæ, Pain of the Stomach, Stoppage of Urine, Gout and Wounds.

It is very likely to be good for the Worms, because our Farriers give the expressed Juice thereof to Horses, for the Worms of the Stomach and Intestines, commonly called *Botties*, whose Effects are suddenly fatal. *Raii H. P.*

2. *Senecio*; *Ægyptius*; folio *Matricariæ*. *Ind.* 40. *Jacobæa Ægyptia folio senecionis, multiflora.* *Vail.*

3. *Senecio*; *Jacobææ* folio. *M. H. B.* 309. *Jacobæa vulgaris, laciniata.* *C. B. P. M. H.* 3. 108. *Erigerum majus.* *Dod.* p. 641.

4. *Senecio*; *Africanus*; altissimus; *Blattariæ* vel *Hieracii* folio. *Schol. Bot. Par. Bat.* 226.

5. *Senecio*; *Africanus*; folio retuso. *H. C. Conyza Africana, Senecionis flore, retusis foliis,* *H. L. App.* 661. *Pseudo-Helichrysum frutescens, Africanum, retusis foliis viridibus, flore luteo, nudo,* *M. H.* 3. 90.

6. *Senecio*; *Africanus*; arborecens; folio serrato. *Conyza Africana, humilis, foliis angustioribus, nervosis, floribus umbellatis.* *T.* 455. *Eupatorium Indicum, flore albo.* *Barth. Ac. Hafn.* *T.* 11. 57.

7. *Senecio*; *Virginianus*; arborecens; *Atriplicis* folio. *Par. Bat.* 225. *Elichryso affinis, Virginiana, frutescens, foliis Chenopodii glaucis.* *Plukn.* 27. *Conyza Virginiana, Halimi folio.* *T.* 455. *Pseudo-Helichrysum Virginianum, frutescens, Halimi latioris foliis glaucis.* *M. H.* 3. 90.

8. *Senecio*; *Africanus*; arborecens; folio *Ficoidis.* *Commel. Rar.* 40.

9. *Senecio*; *Asiaticus*; *Jacobææ* folio; radice lignosa; *China Officinarum dicta nobis.* *Commel. Plant. usu,* (ed. 1724.)

94. *Ind. Med.* 35. *Boerb. Ind. A.* 117. *Pseudo-China, China supposita.* *Offic. Senecio Madraspatanus Rapi folio, floribus maximis, cujus Radix a nonnullis China dicitur;* *Pet. Mus.* 680. *Hort. Elth.* 345. *Hieracio similis India Orientalis umbellatis floribus, radice crassa & carnosa,* *Pluk. Mant.* 102. *Raii Hist.* 3. 140. *Parin Chakka, Act. Philosoph. Lond. N.* 274. p. 943. **BASTARD CHINA.**

It grows in the Kingdom of Malabar.

This is the Plant which some Years ago was sent to the *English East India Company* at London, under the Name of *Parin-Chakka Malabarica*, by *Samuel Brown*. The Description of it by *Dr. Dillenius*, in his *Hortus Elthamensis*, is as follows:

"This Plant is here [in Madraspatam] called *China Root*; but it is very different from that which you call *Spinosa* [that is, *Petiver*]. *Mr. Ingram* of *Newcastle* was cured by it of a Hectic Fever, under which he had laboured many Years. It is two Feet in Height, and has a Root like that of *China*. If Experience shall supply me with any further Observations, I will take Care to inform you."

Some Specimens of this Plant were presented by the Company to the Royal Society at London, and published in the Philosophical Transactions for the Year 1702, No. 274. with Observations. A few Years after the famous *G. Commelin*, *M. D.* was presented with the same Plant, and published a Description of it in *Hort. Medic. Angliæ*, under the Name of *Senecio Asiaticus, Jacobææ folio, Radice lignosa, China Offic. dicta*; "the *Senecio* of *Asia*, with a Leaf like that of the *Jacobæa*, and a woody Root, called the *China* of the Shops."

"Shops," with the following Note; "I had the Knowledge of this Plant from that skilful Surgeon *Andreas Hammel*, who brought it with him from the *East Indies* into his own Country." This gave Occasion to the Authors of the *Catalogus Simplicium*, in the *Pharmacop. Londin.* and the *Indices Medicamentorum* in the *Pharmacop. Paris.* to commit a Mistake, in improperly setting down this *China of the Shops* for the Root of the Plant.

The famous Botanist *Switsen* sent me a Figure with a Description of the *Japanese China*; but this is quite another Plant from what we are speaking of. Its Root indeed is very thick, as in the other; but then it is also tuberous, which is otherwise in the *Senecio*; and is a scandent Plant, like the *Clematites* of *Canada*, or Ivy, or Briony, which last it most resembles. I imagine that our *Senecio* is not so penetrating as to cure the Leprosy; for it is better qualified for an Emollient than an Expeller. But the *Japanese* is far more acrimonious, so as perhaps to be sufficient for the Cure of the Lues Venerea, as it is said of the Root of *China*, tho' I never, as yet, saw any such Effect performed by it. This Root is very dear, and for that Reason very often adulterated; for when it is corroded, and exhausted with Age, they fill up the Perforations, and sell it for good and sound; and therefore I never prescribe it before Examination, for there is no trusting to it unseen. *Hist. Plant. ascript. Boerhaave.*

10. *Senecio*; *montanus*; *altissimus*; *Limonii folio*. *Vaill. Conyza, montana, foliis longioribus serratis, flore sulphureo albicante*. *Comment. Ac. Reg. Soc. Boerb. Ind. Alt. Plant. Vol. 1.*

This Plant is commended for its singular Efficacy in Inflammations of the Fauces, the Juice being used with Oxycras in a Gargarism; it is recommended, also, for scirrhus Tumors. A certain Botanist, *Peter van Hoy*, by Name, told me that all the *China Root* brought from the *Indies* was the Root of this Plant, and that its thick Root is used by the *Chinese* in Decoction, as a general Purger of the Blood, and they say that it cures the Leprosy; and it must be granted, that these Virtues do in some Measure belong to this Plant. *Hist. Plant. ascript. Boerhaave.*

SENECTA ANGUIM. The *Exuvia*, or Sloughs of Serpents. A Decoction or Infusion of these is recommended against Pains of the Ears, Teeth, and Eyes. Some superstitious Women tie them about their Waistes, in order to prevent a Miscarriage, and about their Thighs, to accelerate Delivery.

SENELLA. The Hawthorn.

SENEMBL. An American Lizard, about four Foot long, and half a Foot in Thickness. Certain Stones found in the Head of this Animal, are esteemed, by the Inhabitants, good for the Stone in the Kidneys and Bladder, taken in the Quantity of a Dram.

SENICA. A Sort of Gum. See *ACACIA SILIQUIS COMPRESSIS*.

SENNA.

The Characters are;

It has a rosaceous, pentapetalous Flower; the Pod is flat, incurvated and bivalve, and the Seeds are like Grape-Stones, and separated from one another by small Partitions.

Boerhaave mentions seven Sorts of *Senna*, which are;

1. *Senna*; *Italica*; *foliis obtusis*. *C. B. P. 397. Tourn. Inst. 618. Boerb. Ind. A. 2. 57. Senna Italica, Park. Theat. 225. Raii Hist. 2. 1792. Ger. 1114. Senna foliis obtusis, Ger. Emac. 1297. Senna Florentina, J. B. 1. 377. ITALIAN SENA.*

This is distinguished from the true *Senna*, by the Largeness and Roundness of its Leaves. This Leaf is, also, much thinner, and more brittle than the other. It is a very weak Cathartic, but gripes violently, and therefore is seldom used. *Geoffroy.*

2. *Senna*; *Alexandrina*; *five foliis acutis*. *C. B. P. 397. Raii Hist. 2. 1742. Tourn. Inst. 618. Boerb. Ind. A. 2. 57. Senna Alexandrina, Offic. Senna Orientalis, Ger. 1114. Emac. 1247. J. B. 1. 377. Senna Alexandrina, Park. Theat. 225. ALEXANDRIAN SENA.*

Senna is a shrubby Plant, having many woody Stalks arising to be two or three Foot high, full of winged Leaves, composed of three Pair of Pinnæ, with an odd one at the End, which are oval and sharp pointed; the Flowers are yellow, five leaved, full of purplish Veins, with several crooked Stamina in the Middle. The Seed, which is of a yellowish, green Colour, flat, and in Shape like a Grape-Stone, is inclosed in a broad flat membranous Bladder, sticking so close together, that they are with Difficulty parted. *Senna* grows in *Egypt*, *Arabia*, and other Parts of *Turkey*; the best comes from *Alexandria*, and ought to be of a pale, yellowish, green Colour, not broken, but free from Stalks; and of a pleasant fresh Scent.

Senna is a Purging Medicine, of frequent Use, being one of the milder Sort of Cathartics, yet working pretty briskly, and carrying off cholic and phlegmatic Humours out of the Stomach and Bowels; but being somewhat griping, and of a nauseous Taste, it ought to be corrected with Spices or other Carminatives.

Official Preparations of *Senna* are, the *Decoctum Sennæ*, the *Syrupus Rosarum cum Senna*, the *Pulvis Senna Compos. major, et minor*. *Miller's Bot. Off.*

Geoffroy remarks, that this is the true Oriental *Senna*, smoother to the Touch, and not so green as that of *Tripoli*, and its Infusion is of a pale Colour. The Leaf is of a pretty strong Consistence, and shaped like the Point of a Spear. This is the best Sort of *Senna*. It purges Phlegm in a particular manner; but as it is subject to gripe, it ought to be given with Caution to those who have weak Viscera, or are of an inflammatory Habit of Body. It is usually mixed with Carminatives, such as Coriander Seed, Cinnamon, &c. or more effectually with alkaline Salts. It ought to be well cleansed from its Stalks, and then the Dose in Substance is from a Scruple to a Dram; and in Infusion, from two Drams to half an Ounce. Some have endeavoured to correct *Senna* with the *Scrophularia magna aquatica*; but that is now left off, common Tea having the same Effect. Some Physicians order *Senna* by the Name of *Folia Orientalia*.

The Follicles or Fruit of the *Senna Tree* purge in a less Degree than the Leaves. The common Dose is from three to six Drams in Infusion or Decoction. *Geoffroy.*

Senna is a very usual Purgative, proper for eliminating hot and serous Humours; and, consequently, yellow Bile and Phlegm from the Head, Liver and Spleen. Because it is of a hot and drying Quality, it is to be corrected by the Flowers of Violets and Borrage, and by Prunes; and because it is flatulent, and might prove hurtful to the Stomach, it is to be corrected with Cinnamon, Galangals and Ginger. *Dale from Schroder.*

DECOCTUM SENÆ.

Take of the Leaves of Alexandrian *Senna*, one Ounce and a half; of the Seeds of the lesser Cardamons, two Drams; and of Salt of Tartar, three Drams: Infuse the whole in one Pint of boiling Spring Water, and strain it off for Use.

PULVIS DIASENÆ.

Compound Powder of *Senna*.

Take of *Senna* Leaves, and Cream of Tartar, of each two Ounces; of Cloves, Cinnamon, Galangal, and Seeds of Bishop's Weed, of each two Drams; of Diagyridium, half an Ounce. Make them into a Powder.

This is the *Pulvis Sanctus* of *Brasavolus*, and is preferable to either the *Pulvis Sennæ Compositus major*, or the *Pulvis Sennæ minor Compositus*, as the Quantity necessary for a Dose is much less, and therefore easier to be taken in a Bole or Mixture. Its Dose is from one Scruple to one Dram.

PULVIS SENÆ COMPOSITUS MAJOR. See **PULVIS**.

PULVIS SENÆ MINOR COMPOSITUS. See **PULVIS**.

SYRUPUS ROSACEUS SOLUTIVUS CUM SENA.

Solutive Syrup of *Roses* with *Senna*.

Take of *Senna* Leaves, picked clean, six Ounces; of Caraway and sweet Fennel Seeds, of each three Drams. After these are first sprinkled over with white Wine, let them be steeped in three Pints of an Infusion of Damask *Roses* for the space of two Days; then strain the Liquor, and boil it up into the Consistence of a Syrup, with two Pounds of white Sugar.

This is in the new Dispensatory of the College exactly as in the *Syrupus à Succo Rosarum*; but therein are also many other solutive Syrups of *Roses*, with *Agaric*, *Hellebore*, &c. which are very justly expunged here.

3. *Senna*; *orientalis*; *fruticosa*; *Sophera dicta*. *Sophera Indiæ Orientalis*, *Brayn. Prodr. 1. 51. Galega affinis, Sophera dicta, C. B. P. 352. Securidaca Ægyptia, Park. M. H. 2. 78. Ponnam Tangera, H. Mal. 2. 101. Efcapathi, altera. Hernand. 376.*

4. *Senna*;

4. Senna; Occidentalis; odore Opii virofo; Orobi Panonici foliis mucronatis glabra. *H. L. Cassia Americana, fœtica, foliis oblongis glabris.* T. 619. *Pajornirioba*, Pisonis. 185.

5. Senna; Occidentalis; odore Opii virosissimum; foliis Ebuli hirsutis.

6. Senna; Occidentalis; foliis Ebuli acutis, glabris; odore minus virofo.

7. Senna; Occidentalis, odore Opii minus virofo; foliis glabris obtusis majoribus. *Boerh. Ind. Alt. Plant. Vol. II.*

One Dram, or half an Ounce of the first and second Species, made into an Infusion, is an excellent Purge; but now diffused, on account of the nauseous Taste, and the Gripes, they produce. The Gripes are removed by an Addition of Fennel-seeds, and the nauseous Taste by Figwort. The Indians put the bruised Leaves of the fourth and fifth Species into the Waters, and by that means catch the Fishes, as it were, sleeping near the Surface of the Water. These Leaves are also said to alleviate Pain. *Hist. Plant. ascript. Boerhaave.*

Besides the foregoing Species of *Senna*, *Geoffroy* mentions the two following.

1. SENNA TRIPOLITANA. This Sort is greener, larger, rougher, and of a more disagreeable Smell than the common Senna. It does not yield so much by Infusion; that is, a greater Quantity is required to make the Infusion of equal Strength; but it is of a greener Colour.

2. SENNA DE MOCHA. The Leaves of this Kind are longer and narrower than those of the common Sort; its Smell stronger, and it gripes more violently. It is not used in this Country.

SENSIBILIS, αἰσθητός, sensible; is applied to whatever is capable of making an Impression on the Senses. *Galen, de Dign. Puls. Lib. 3. Cap. 1.*

SENSIFICUS, αἰσθητικός, sensific; according to the best Philosophy, is the proper Epithet of the Nerves of the external Senses, which convey the animal Spirits, as the efficient instrumental Cause, to the sensory Organs. *Galen, de Hip. & Plat. Decr. Lib. 7. Cap. 5.*

SENSIO, SENSATIO, αἰσθησις, is properly spoken of actual Sensation, which consists in the Perception of any sensible Thing, affecting and causing some Alteration in the Organ of Sense.

SENSITORIUM. The same as SENSORIUM.

SENSORIUM, αἰσθητήριον, according to the ancient Hypothesis, the Instrument of any Sense. *Galen, de Odor. Instr. Cap. 5.* Agreeably to the same Doctrine, *Sensorium commune*, κοινὸν αἰσθητήριον, the common Sensory, is what receives the Impressions of all sensible Objects, conveyed to it by the Nerves of each particular Organ of Sense, and consequently is the immediate Cause of Perception. This Office is, by *Dr. Willis*, assigned to the striated Parts of the Brain, and by *Des Cartes*, to the *Glandula Pinealis*.

SENSUS EXTERNI. The External Senses, are the Means, or Instruments, of external Sensation, and are commonly reckoned five in Number, which may be found under their proper Articles. The Exertion of the External Senses, that is, external Sensation, consists only in a Change made in the Superficies of a Nerve by the Contact of an external and sensible Object; and propagated by a free Communication of that Nerve to a certain Place in the medullary Substance of the Brain, or what the Schools call the *Commune Sensorium*, on which Occasion there is excited in the Mind some Idea of the sensible Object.

SENSUS INTERNI. The Internal Senses, are those Actions of the Mind or Intellect, to which it is excited from its Perception of Ideas, and are generally reduced under four Heads, *Memory*, *Imagination*, the *Passions*, and *Attention*; some add *Hunger* and *Thirst*. A more particular Account of these, more than what may be found under *Imaginatio*, and occasionally under other Articles, we think unnecessary.

SENTIS. A Name for the RUBUS. *Blancard.*

SEPARATIO, διαχωρις, διαχωρίσις. The same as SECRETIO, or SEGREGATIO. See SECRETIO.

SEPARATORIUM. A Separatory. A chymical Vessel contrived for separating Liquors. It is of an oblong, and, in some measure, uniform Figure, with an Orifice as big as one's little Finger for pouring in Liquors, and a small Hole in the Bottom, about the Bigness of a Needle for discharging them; in the Middle it is bellied for the greater Capacity. It is also called HYPOCLEPTICUM. *Separatorium* is also a Surgeon's Instrument for separating the Pericranium. *Rulandus, Castellus.*

SEPEDON, σπεδόν. See PUTREDO.

SEPHIROS. A kind of hard and dry Imposthume, a spurious Scirrhus. *Paracelsus de Ulc. & Apost.*

SEPIA. Offic. Schrod. 5. 332. Ind. Med. 109. Salr. de Aquat. 165. Mont. Exot. 6. Aldrov. Exang. 44. Charlt. Exer. 51. Jonf. Exang. 7. Bellon. de Aquat. 336. Rondel. 1. 498. Gefn. Aquat. 851. *Lalige, Sepia*. Mer. Pin. 191. THE CUTTLE-FISH.

This Fish is a kind of Polypus; it has a Bag in its Neck, containing a black Liquor, like Ink, which it emits to trouble the Water, when pursued by other Fishes. The Bone recommended in Physick as a good Diuretic, is found about its Middle. Others make a Powder of it for cleaning the Teeth. *Geoffroy.*

The Parts in Use are the Bone, or Shell, the black Liquor or Humor, and the Eggs. The first is a testaceous Substance, white and smooth, and tumid on each side; on the upper Part it is somewhat hard, smooth and glabrous; on the lower, fungous, softish, somewhat rough and friable. It grows on the Back of the Fish, and tastes a little acrimonious.

This Substance dries and absterges; cures Spots, Freckles, and the humid Itch; is good for the Eyes; removes Swellings in the Gums; gives Relief in the Asthma; stops a Gonorrhœa; expels the Stone, and provokes Urine. The black Humor found in the Bladder within the Body, is said to loosen the Belly; and the Eggs absterge the Kidneys and Ureters, and provoke Urine and the Menfes. *Dale* from *Schroder.*

SEPIUM. The Bone or Shell of the *Sepium* before described.

SEPLASIARIUS. Properly a Seller of Perfumes, sweet Balls, and Ointments; from *Seplasia*, the Market-place of *Capua*, famous for those Commodities; but it is, also, frequently used to signify one who deals in the *Materia Medica*; the same as MATERIALISTA, a Druggist or Apothecary.

SEPS. Offic. Jonf. de Serp. 14. Charlt. Exer. 32. Gefn. de Serp. 118. Aldrov. Hist. Serp. 186. *Seps* sive *Lacerta Chalcidica Calumna*. Raii Synop. A. 272. Aldrov. de Quad. Ovip. 638. THE SERPENT SEPS.

This is a very poisonous Serpent, about three Foot long, and proportionably thick, said to be found in *Syria*, *Croatia*, and many other Countries. *Dioscorides* informs us, that taken in Wine, it cures its own Bite. The Poison of its Bite acts like that of the Viper, and is cured by the same means.

SEPTA, according to *Blancard*, are Septic Medicines.

SEPTANA. A septinary Fever; that is, one which performs its Period in seven Days.

SEPTENTRIO. The North. *Aquasfortis* is, also, called by this Name. *Rulandus.*

SEPTICA. Putrefactive, or corrosive Medicines.

SEPTINERVIA. A Name for the *Plantago*; *latifolia*; *sinuata*.

SEPTUM CORDIS. The Partition betwixt the two Ventricles of the Heart.

SEPTUM LUCIDUM. The thin Partition which divides the two lateral Ventricles of the Brain. See CEREBRUM.

SEPTUM NARIUM. The Partition betwixt the Nostrils.

SEPTUM TRANSVERSUM. The Diaphragm.

SEQUESTRATIO, in Chymistry, is Separation.

SERANGODES, σερανγώδες. Cavernous; having many Pores or Interstices; spongy.

SERAPIAS. Salep. See ORCHIS.

SERAPINUS. Gum Arabic. *Rulandus.*

SERAPIUM. A Syrup.

SERBET. The same as SCHERBET.

SEREX. *Rulandus* explains this *Lac Acetosum*.

SERGETICUM, σεργητικόν. An Epithet in *Galen*, for the *Unguentum Irinum*.

SERJANIA.

This Name was given to this Genus of Plants by *Father Plumier*, who discovered them in *America*, in Honour to the Reverend *Father Philip Sergeant*, who was of the Order of the *Minims*, and a Person well versed in the Knowledge of Botany and Physick.

The Characters are;

It hath a rose-shaped Flower, consisting of four or more Leaves, which are placed in a circular Order; from whose Flower-cup arises the Pointal, which afterwards becomes a Fruit composed of three Cells, having three Wings, and each Cell containing one round Seed.

The Species are;

Serjania Scandens; *Polyphylla* et *racemosa*. *Plum. Nov. Gen.*

Serjania Scandens; *Enneaphylla* et *racemosa*. *Plum. Nov. Gen.*

Serjania Scandens; *Triphylla et racemosa*. *Plum. Nov. Gen.*

These Plants were found by the late Dr. *William Houftman*, at *La Vera Cruz* and *Campechy*; where they grow to a great Height, whenever they grow near large Trees to support them; for they have Tendrils by which they fasten themselves to whatever Trees grow near them. *Miller's Dict.*

SERICIACUM. Arsenic. *Rulandus*.

SERICUM. Silk. See **BOMBYX**. The red Jejube is, also, called *Sericum*. See **ZIZIPHUS**.

SERINUS. The Canary Bird; more remarkable for its Song, than any medicinal Virtues; though it is said to be good for the Epilepsy, if eaten.

SERIOLA. A Name for the *Cichoreum*; *latifolium*; *five Endivia vulgaris*.

SERIPHIMUM. A Name for the *Sisymbrium*; *annuum*; *folio Absinthii minoris*. A Species of Wormwood is distinguished by this Epithet.

SERIS. A Name for the *Cichoreum Sativum*. *Serides*, *cicidus*, are esculent Pot-Herbs.

SEROSUS. Serous, aqueous, abounding with Serum.

SERPENS. See **ANGUIS**.

SERPENS INDICUS. See **COBRA DE CAPELLO**.

SERPENS MARINUS. Offic. Aldrov. de Pisc. 346. Gefn. de Aquat. 864. Rondel. de Pisc. 409. Bellon. de Aquat. 157. Sale de Aquat. 58. Jonf. de Pisc. 9. Charlt. de Pisc. 6. Raii Ichth. 107. Ejusd. Synop. Pisc. 36. *Serpens marinus quindecim Pedes longus*, Johnf. Iter. Cant. 410. 1632. p. 17. **THE SEA SERPENT.**

It is found in the *Mediterranean Sea*. The Flesh is said to cure Incontinence of Urine, if taken with Lily Root. *Dale*.

SERPENTARIA NIGRA. See **ASARUM VIRGINIANUM**.

SERPENTARIA VIRGINIANA. Offic. *Serpentaria Virginiana*, *Contrayerva Virginiana*, *Viperina*. Mont. Exot. Med. 7. *Tres Radices sub hoc nomine in Officinis nostris veniunt, ut nos monuit eruditissimus ille Botanicus*, Leonard. Plukenetius. *M. D. in Literis ad me datis, viz. (I.) Aristolochia polyrrhizos, auriculatis foliis Virginiana*, Pluk. Phytog. Tab. 78. Almag. 50. Tourn. Inst. 162. Raii Hist. 3. 393. (II.) *Aristolochia Violæ fruticosa foliis Virginiana, cujus Radix Serpentaria dicitur*, Pluk. Phytog. T. 15. Almag. 50. Raii Hist. 3. 394. (III.) *Aristolochia, Pistolochia, seu Serpentaria Virginiana, caulenodosa*. D. Banister. Cat. MS. Raii Hist. 3. 394. Tourn. Inst. 162. *Aristolochia polyrrhizos Virginiana, fructu parvo pentangulari*, Hist. Oxon. 3. 310. *Pistolochia Virginiana*, Ger. Emac. 848. (*ubi confundit cum Pistolochia Cretica Clusii*) *Aristolochia polyrrhizos Virginiana*, Park. Theat. 420. *Radix Snagrolnothæ Creticus* (**SNAKE ROOT** *Novæ Angliæ*) Corn. 214. **VIRGINIAN SNAKEWEED.**

We have two or three Sorts of Roots, which are sold under this Name in the Shops; the first is the *Pistolochia, Virginiana* Ger. Emac. and the *Pistolochia Polyrrhizos, Virginiana*, Park. The second is figured by Plukenet, in his *Phytographia*, Tab. 15. And a third, whose Description was sent by Mr. Banister from Virginia to Mr. Ray, and is in the *Philosophical Transactions*, N°. 247. for December 1698; being to this Purpose.

The *Pistolochia*, or *Serpentaria Virginiana*, hath a bushy Root, consisting of a Number of small Strings of a yellowish Colour, and a hot aromatic Scent and Taste; thence grow one or two smooth or very little hairy Stalks, round and not square, upright and not trailing. The Leaves grow alternately on the Sides, and that one at a Joint. They are thin, long, and pointed, coming in like a Heart at the Foot-stalk; a little hairy above, and rough, with many protuberant Veins underneath, and in handling stick a little to the Fingers. Near the Ground grow one or two hollow Flowers, each upon its own Foot-stalk, terminating in a Heel, which supports a broad, round, galericulated Lip, the Center of which opens into the Hollow of the Flower. The Lip is of a light russet Colour. The Seed-Vessel is hexagonal, shap'd like a Pear, about half an Inch Diameter, when ripe. It grows in May, and the Seed is ripe in August. The Leaves and Stalks die in Winter.

Snake-Root is a Cordial, alexipharmic, and sudorific; good in all kinds of Fevers, particularly malignant and contagious Ones, and the Plague itself. It is carminative, expelling Wind, strengthening the Stomach, and helping the Colic. It cures the Bite of a mad Dog, and other venomous Bites, particularly that of the Rattle-Snake. *Miller's Bot. Off.*

It is given as a Diaphoretic in the Small-Pox, Measles, and to kill Worms. It is, also, Emmenagogue and Diuretic. The Dose is from ten Grains to a Dram. *Geoffroy*.

There is another Species of Snake-Root, called the *Senekka Rattle-Snake-Root*, which is said to cure effectually the Bite of a Rattle-Snake, if taken immediately after it. The

Bite of this Snake is sudden Death, for the most Part; that is, Death follows often in fifteen Minutes, sometimes sooner; and at other times the Patient may live some Days. The Reasons of these Differences, in the Time of Death, are various, such as the Season of the Year, Constitution of the Patient, and Part bit. Those that travel or hunt in the Woods, carry this Root powdered in their Shot-Bags, to chew and swallow as soon as they are bit by the Snake, the Stagnation of the Blood being prevented by its peculiar Activity.

A Nation of Northern Indians, called the *Senekkas*, were the Discoverers of the Efficacy of the Root of this Plant; they observing that the Root and Flowers resembled the Rattle of the Snake, concluded that Providence had impressed that Characteristic to point out its Use. From that Indian Nation this Root is named *Senekka Rattle-Snake-Root*, to distinguish it from the other Plants called Rattle-Snake-Root, which are much inferior in Efficacy. These Indians returning from a War with a southern Nation called *Catawbaes*, in the Year 1712, communicated the Efficacy of this Root to *William Caniko*, a Planter in the Frontiers of *Virginia*, which he imparted to the Country about him, and so it was soon known throughout *America*.

The Root of this *Senekka Rattle-Snake-Weed*, has since been used, as is said, with Success, in the epidemical Fevers of *Virginia*; in Pleurifies, Peripneumonies, Gout, and Rheumatisms, either in Decoction, Infusion, or Substance; and in these it should seem to be a good Medicine, if the Accounts we have of it could be depended on.

SERPENTARIUM Lignum. See **COLUBRINUM LIGNUM**.

SERPENTINA, a Species of **STELLARIA**. *Blancard*.

SERPHEA. The Name of a Medicine in *Paracelsus*, *Lib. 2. de Tart.* that will liquify the Stone.

SERPIGO. The same as **HERPES** or **IMPETIGO**, for both which Affections this Word is sometimes used.

SERPILLUM.

The Characters are;

The Leaves are broader than those of Thyme. The Stalks are procumbent, less woody and hard. Its other Characters very much resemble those of Thyme.

Boerhaave mentions six Sorts of *Serpillum*, which are;

1. *Serpillum*; vulgare; majus. *C. B. P.* 220. *Raii Synop.* 3. 221. *Boerb. Ind. A.* 133. *Tourn. Inst.* 197. *Serpillum verum*, Offic. *Serpillum majus*, Park. Theat. 8. *Raii Hist.* 1. 522. *Serpillum majus flore purpureo & albo*, Ger. 456. Emac. 570. **GREAT MOTHER OF THYME.**

It is cultivated in Gardens, and flowers in Summer. The Herb, which is the Part used, provokes Urine and the Menfes, and is good for the Gripes, Ruptures, Lacerations, and Inflammations of the Liver, eases Pains of the Head, and is particularly serviceable in Phrenesies and Lethargies; stops Vomiting of Blood, and is good for the Bites of Serpents. *Dale from Dioscorides*.

2. *Serpillum*; vulgare; minus. *C. B. P.* 220. *Park. Theat.* 8. *Tourn. Inst.* 197. *Boerb. Ind. A.* 155. *Serpillum* Offic. *Serpillum vulgare*, Ger. 455. Emac. 570. *Raii Hist.* 1. 521. *Synop.* 3. 230. *J. B.* 3. 269. **MOTHER OF THYME.**

Mother of Thyme has a small, stringy, creeping Root, from whence spring a great Number of very slender, leaning woody Stalks, having two small, roundish green Leaves, set at a Joint on short Foot-stalks. The Flowers grow on the Tops of the Stalks among the Leaves, in small loose Spikes, whorle-fashion, labiated, but with a very small Galea, of a reddish Purple Colour, set in small hairy Calyces. The Leaves and Flowers have a strong pleasant Smell; it grows frequently upon Heaths and Commons, and flowers in June and July. The whole Herb is used.

Mother of Thyme is cephalic, stomachic, and uterine; good for the Palsy, Epilepsy, and green Sickness, promoting the Catamenia. It is good against catarrhus Defluxions, and old Coughs, and helps spitting of Blood. The distilled Oil is good for the Tooth-Ach. *Miller's Bot. Off.*

Mother of Thyme is a little bitter, acrid, spicic, odoriferous, and stains the blue Paper with a pretty deep red. It is likely that it abounds with an aromatic and oily volatile Salt; but this Salt retains still a Part of the Acid of the Sal Ammoniac of the Earth; whereas, in the aromatic, oily, artificial, volatile Salt, the acid Part of the Sal Ammoniac has been stopt by the Salt of Tartar, or by the Ashes. Thus the Mother of Thyme is cephalic, stomachic, and good for the Vapours. It destroys the explosive Matter which causes convulsive Motions; it restores the spirituous Parts of the Blood, and re-establishes the Functions of the Primæ Viz. Infuse all Night a Handful of Mother of Thyme in red Wine, strain the Infusion through a Cloth, and give it to drink fasting to those that have the Green-Sickness for seven or eight Days

Days together, adding to each Dose four or five Drops of essential Oil of Sassafras: The Spirit of the Mother of Thyme, and its distilled Water, are very good for soporific Disorders, and the Vapours. The essential Oil is commended for the Epilepsy, or the Water drawn from its Flowers, macerated in Aqua Vitæ, and distilled afterwards, for a Rheum or an old Cough; throw two great Handfuls of Mother of Thyme into one Quart of Water; let it give but one Boil; then take the Pot off the Fire, cover it, and add two Spoonfuls of white Honey to the Infusion, or else pour a Quarter of a Pint of the same Infusion boiling, into two equal Quantities of Cows Milk, and make the Patient drink it hot at nine o' Clock at Night. A Dram of the Powder of the Mother of Thyme is diuretic. The Conserve of the Flowers and Leaves of this Plant relieves those that are troubled with the Falling-Sickness. *Martyn's Tournesfort.*

3. *Serpillum*; vulgare; minus; folio ex albo & viridi vario.

4. *Serpillum*; angustifolium; hirsutum. *C. B. P.* 220.

5. *Serpillum*; Africanum; hirsutissimum. *Vaill.*

6. *Serpillum*; foliis Citriodore. *C. B. P.* 220. *Tourn. Inf.* 197. *Boerb. Ind. A.* 155. *Serpillum citratum*, *Offic.* *Ger.* 458. *Emac.* 573. *Park. Theat.* 6. *Raii Hist.* 1. 522. *Synop.* 3. 231. *Serpillum Citriodore.* *J. B.* 3. 270. **LEMON THYME.**

It grows in hilly Places, and flowers in August, and agrees in Virtues with the other Species of *Serpillum*.

SERRA, a Saw, a chirurgical Instrument used in Amputations; there are two Sorts, the greater Saw, which is used in cutting off a Limb, as an Arm, or a Leg; and the lesser, which is employed in taking off a Finger or Toe.

SERRATA. A Name in *Blancard* for the **CHAMÆDRYS**.

SERRATULA.

The Characters are;

The Margins of the Leaves are much, and minutely serrated; the Heads are smaller than those of the greater Centaury.

Boerhaave mentions five Sorts of *Serratula*, which are;

1. *Serratula*. *Offic.* *C. B. P.* 235. *J. B.* 3. 23. *Raii Hist.* 1. 331. *Synop.* 88. *Boerb. Ind. A.* 144. *Serratula purpurea*, *Gen.* 576. *Emac.* 713. *Serratula vulgaris flore purpureo*, *Park.* 474. *Jacea nemorensis*, quæ *Serratula vulgo* *Tourn. Inf.* 444. **SAW-WORT.**

It grows in Woods and Meadows, and flowers in July. It is esteemed vulnerary, and is said to mundify Ulcers, and promote the Generation of Flesh therein; to mitigate the Pains of the Hæmorrhoides, and to cure an Intestinal Rupture. The Herb and Root are recommended in Case of Bruises in Falls from Eminences.

2. *Serratula*; flore candido, *C. B. P.* 235. *Jacea nemorensis*, quæ *Serratula vulgo*, flore albo. *T.* 444.

3. *Serratula*; Virginiana; foliis rigidis. *Par. Bat.* 227. *It. & Deser. M. H.* 3. 133.

4. *Serratula*; Noveboracensis; altissima; foliis Doræ molli-
libus, subincanis. *Par. Bat. Prodr. M. H.* 3. 133.

The following Species is elegantly crowned with a hairy Crown.

5. *Serratula*; annua; semineciliari elegantissimo. *Jacea*, annua, foliis laciniatis, serratis, purpurascente flore. *T.* 444. *Cyanus*, pulchro semine Centaurii majoris, *J. B.* 3. 24. *Centauryum capitatum, ciliare, annuum, foliis laciniatis, serratis*, *M. H. Blaf.* 362. *Chandrilla*, foliis laciniatis serratis, purpurascente flore. *C. B. P.* 130. *Senecio-Carduus*, *Apulus.* *Col.* 1. 34. *Boerb. Ind. alt. Plant. Vol.*

SERRATUS MAJOR.

This is a broad, fleshy, and pretty thick Muscle, lying on the lateral Part of the Thorax, between the Ribs and the Scapula, by which it is covered. Its Figure is that of an irregular Square, its greatest Breadth being in the Back-Part, where it terminates by Digitations of unequal Lengths, in a radiated Disposition, their Extremities describing an Arch or Curve; and from these Digitations its Name is taken.

It is inserted backward in the internal Labium of all the Basis of the Scapula, from the superior to the inferior Angle. From thence running forward wholly fleshy, it increases gradually in Breadth, is inserted in all the true Ribs, and often in one or two of the false Ribs, by the same Number of Digitations.

The Insertion in the first true Rib is about five Fingers Breadth from the Cartilage; in the second, something less; in the third, about four Fingers Breadth; the fourth, three; in the fifth, two; in the sixth, one; in the seventh, one half; and in the first false Rib, two Fingers Breadth; but in all these Measures, some Latitude is to be allowed. The Breadth of each Insertion in the Ribs, is at least an Inch.

Tho' the Digitations of this Muscle give it a radiated Appearance from the Scapula to the Ribs, yet these Radii do

not at all lie in that Disposition which at first Sight we would be subject to imagine. The Muscle is made up of two Planes, the one great, the other small.

The small Plane looks like a distinct, narrow Muscle, closely adhering to the superior Edge of the great Plane. It is fixed by one Extremity under the superior Angle of the Scapula, and by the other to the first Rib, by a small Insertion, and to the second Rib, by a broad Insertion. This Plane is easily seen by turning the Scapula forward, having first separated the *Rhomboides*; but when that is turned back, the *Pectoralis minor* being first cut off, this Plane does not appear, being covered and hid by the broad one.

The broad Plane may be divided into two Portions, one superior and one inferior, adhering to each other by their Edges.

The superior Portion is thin, and takes up about three Quarters of the Basis of the Scapula, reckoning from the superior Angle. From thence it contracts, by small Degrees, and forms two Digitations, very like those of the small Plane, which they cover by their Insertions in the two first true Ribs, or in the second and third, and sometimes in all the three.

The inferior Portion is fixed in the lower Quarter of the Basis Scapulæ, from whence it expands itself by six or seven very long fleshy Digitations, which decrease in Breadth as they descend and are inserted in the Manner already said, in the six or seven Ribs which follow the two first. It must be observed, that the three first Digitations take up almost all this Quarter of the Basis Scapulæ, the three last being fixed precisely in the inferior Angle. The Extremities of the three or four lowest Digitations mix Fibres with those of the *Obliquus externus* of the Abdomen.

The Direction of the Fibres and Digitations of the *Serratus major*, will be easily comprehended, by recollecting, that the Ribs are inclined downward in different Degrees from behind forward; for which Reason the Fibres of the superior Portion of the broad Plane, cross over the Ribs at less acute Angles than those below them, so that in the natural Situation of the Scapula, the lowest of these Fibres which run up very obliquely cross over the third, fourth and fifth true Ribs.

The upper Fibres of the inferior Portion of the broad Plane, run up proportionably more obliquely, and therefore cross over more Ribs, and at more acute Angles than the others, which are less oblique; and tho' some of these run transversely, yet the Ribs being oblique, they must cross over some of them, tho' in a lesser Degree. The lowest of these Fibres or Digitations run a little downward, and consequently fall in more with the Direction of the Ribs, but not so much as may be imagined. These Digitations are very small and weak.

The *Serratus major* raises the Shoulder or Top of the Scapula, brings it forward, and hinders it from sinking. In all these, it is the principal Actor; and it is impossible to conceive how Labourers raise and support, by the Shoulder alone, the heavy Burdens with which they are loaded, without the Assistance of this Muscle.

The Thickness, Length, and particular Disposition of its Fibres, but above all, the Insertion of the greatest Portion of them, near the Angle of the Basis Scapulæ, prove sufficiently what I advance; and the general Action of the radiated Portions is to draw the inferior Angle from the Spina Dorsi, toward the lateral Parts of the Thorax.

The uppermost and strongest Portions pull this Angle upwards at the same time, and consequently raise the Acromium, which cannot be pushed forward, by reason of its Connexion with the Clavicula.

These superior Portions cross over the greatest Part of the true Ribs; and accordingly, in raising great Burdens, we find ourselves obliged to hold in our Breath, that is, to lessen Expiration as much as we can, in order to fix the Ribs, and to hinder them from sinking, that they may serve for a solid Fulcrum to this Muscle, in Proportion to the Force with which it acts.

The next Portions run according to the Length of the Ribs, and consequently do not much constrain them in their reciprocal Motions, not being in a Condition either to raise or depress them; and the most inferior and weakest Portions are only Assistants to the rest, in bringing the lower Angle of the Scapula forward, toward the lateral Part of the Thorax.

The small distinct Plane (above described) is not an Assistant to the radiated Portions or inferior Part of the great Plane. It seems designed to regulate the Motion of the superior Angle backward and downward, while the inferior is carried forward and upward by the radiated Portions; and when their Action ceases, to bring the Scapula back to its natural Place.

The superior Portion of the great Plane is an Assistant partly to the radiated Portion, and partly to the small Plane, according

according to the different Places of its Insertions in the Basis of the Scapula.

From all this we see, that the principal Use of the *Serratus major* is to raise the Shoulder, and not for Respiration. When both Planes act together, this Muscle may in some Cases bring the Shoulder directly forward, or rather hinder it from going back; as when we push any Thing with great Force directly forward, with the Hand, especially when the Arm is extended. *Winslow's Anatomy.*

SERRATUS MINOR ANTICUS. Douglas describes this Muscle in the following Manner:

It arises tendinous from the *Processus Coracoideus Scapulae*, but soon grows fleshy and broad, and is inserted tendineo-carnous into the lower Edge of the bony Part of the third, fourth and fifth Rib.

Its Use is either to assist the *Serratus major*, or to draw the Scapula forwards.

SERRATUS POSTICUS SUPERIOR.

This is a flat thin Muscle, situated on the upper Part of the Back. It is fixed on one Side by a broad Aponeurosis to the lower Part of the posterior cervical Ligament, and to the spinal Apophyses of the two last Vertebrae of the Neck, and two first of the Back.

From thence it runs down a little obliquely forward, and is inserted by broad fleshy Digitations, in the posterior Part of the second, third, fourth, and sometimes the fifth, true Ribs, near their Angles; but sometimes it has no Insertion in the second Rib. It is covered by, and closely united with the Rhomboides.

The *Serratus Posticus superior*, is disposed to move upwards the three or four upper Ribs next the first: And if any Portion of this Muscle should be observed to be inserted in the first Rib, that could only serve for the Motion of the Vertebrae, with which that Rib is articulated, and not for the Motion of the Rib itself, because of the Stiffness and Immobility of its cartilaginous Portion.

SERRATUS POSTICUS INFERIOR.

This is a flat, thin Muscle, lying on the lower Part of the Back. It is fix'd in the last spinal Apophysis of the Back, and in the three first of the Loins by a broad Aponeurosis; from thence it runs up a little obliquely, and is fix'd by fleshy broad Digitations in the last four false Ribs: Its Insertion in the lowest Rib is near the Cartilage, and in the other three near their Angles. It is covered by the *Latissimus Dorsi*, to which it adheres very closely, and it covers the *Sacro-Lumbaris* and *Longissimus Dorsi*.

The *Serratus Posticus inferior*, is better disposed for depressing and keeping down the last three or four false Ribs than the *Serratus Posticus superior*.

The Use which has been assigned to these two Muscles, of being Vaginae, or moveable Fræna, to the *Longissimus Dorsi* and *Sacro-Lumbaris*, is without Foundation; for the Portions of these Muscles covered by the *Serrati*, have no more Need of such a Contrivance, than those which are not covered by them. *Winslow's Anatomy.*

SERRIOLA. A Name in *Blancard* for the *CICHO-REUM*.

SERTOLARA. A Name in *Boerhaave* for the *Opuntia marina*; quæ *Corallina latifolia*, & *Opuntia marina*.

SERTULA, Campana. The same as *MELILOTUS*.

SERVITUS, δελία, Subserviency, is spoken of the Functions and Uses of the Parts which are subservient to others. These subservient Parts are distinguished into *Preparatory* and *Deserent*; the *Preparatory*, for Instance, with respect to the Testicles, are the *Vasa Spermatica Preparantia*: The *Deserent* are the *Penis* and *Vasa Deferentia*.

SERUM. Whey. The thin Part of the Blood is, also, called its *Serum*. See *ALBUMEN, LAC,* and *ALIMENTA*.

SESAMION, σισάμιον, or, σισάμις, a Sort of Cake prepared of *Sesamum*, Honey, and Oil. *Foetus.*

SESAMOIDEA OSSA. The *Sesamoide* Bones.

The *sesamoide* Bones, in general, are very small, being denominated from a Seed to which they are supposed to bear a Resemblance. Several such Bones are found in the Joints both of the Toes and Fingers.

Two of them, however, are big enough to be preserv'd in Sceletons. They resemble a large, flat, oval Pearl, hollow'd on one Side.

They are about the third Part of an Inch in Length, and half as broad as long; and they are connected near each other, by a small, short Ligament, to the Basis of the first Phalanx of the great Toe, so as to slide on each Side of the middle Eminence of the double Pulley in the first metatarsal Bone, like two small Patellæ.

Though they are generally fasten'd in Sceletons, to the first Bone of the Metatarsus, they nevertheless belong only to the first Phalanx of the great Toe, as the Patella belongs not to the Os Femoris, but to the Tibia. *Winslow's Anatomy.*

SESAMOIDES.

The Characters are;

The Leaves are oblong and intire, and the Flower is like that of the *Reseda*. The Fruit consists of a Congeries of little Pods, Horns, or Rays, full of a Kidney-shap'd Seed.

Boerhaave mentions but one Sort of *Sesamoides*, which is, the *Sesamoides*; *salmanticum*; *parvum*. *J. Clus. H.* 296. *Beirh. Ind. Alt. Plant. Vol. I.* See *CATANACE*.

Botanists have not determin'd what the *Sesamoides* is, which is frequently order'd by *Hippocrates* to be us'd with black Hellebore. *Dioscorides* describes it in the following Manner.

The *Great Sesamoides* in *Anticyra* goes by the Name of *Hellebore*, because it is mixed with white Hellebore in Purges. It is an Herb like *Senecio*, or *Rue*, with long Leaves, a white Flower, a slender and inefficacious Root, a Seed like that of *Sesarnum*, and of a bitter Taste.

A Pugil of the powder'd Seed, with a Scruple and an half of white Hellebore, taken in Hydromel, purges Bile and Phlegm by Vomit. *Dioscorides, Lib. 4. Cap. 152.*

SESAMUM.

The Characters are;

The Root is annual; the Calyx proceeds from the Wings of the Leaves, almost without a Pedicle, and is small, and consisting of five long, slender Segments; the Flower is monopetalous, and much resembles that of *Digitalis*. The Ovary is filiquous, tetragonal, oblong, divided into four Cells, which are full of many eatable Seeds.

Boerhaave mentions three Sorts of *Sesamum*, which are;

1. *Sesamum, Offic. I. B. 2. 896. C. B. P. 27. Raii Hist. 2. 1327. Park. Theat. 254. Sesamum vel Sisamum, Ger. 1054. Emac. 1232. Sesamum seu Semp. seu Alpin. Egypt. Vol. II. p. 47. Digitalis Orientalis Sesamum dicta, Tourn. Inst. 164. Sesamum congentibus Gangya, Lusitanis Girgilium, Mareg. 21. Gangila sive Sesamum Africanum, Pison. 111. Schit-Elu, Hort. Mal. 9. 105. Tab. 54. Tala Herm. Mus. Seyl. 58. OILY PURGING GRAIN.*

It is heating, moderately moistening, emollient, and pargoric; and is of a viscid, pinguius, and consequently of an emplastick Quality. It dissolves a Hardness of the Nerves, being rubbed therewith, and cures the Pain of the Cholic. *Dale from Schroder.*

Sesamum is very much used by the *Egyptians*, both in Food and Medicine, because it is of quick Growth, as are other Fruits after the Inundation of the Nile, and very well rewards the Planter for his Pains by the Fullness of its Pods, which never fail. *Parkinson*, I know not from what Author, says, that *Sesamum* grows spontaneously in the *East-Indies*, but that it is cultivated in *Egypt*, *Syria*, *Greece*, *Crete* and *Sicily*. The *Arabians* call the expressed Oil of the Seeds *Zeid taib*, that is, good Oil, by way of Eminence; because it is of very frequent Use in Meats; and in *Egypt* it is sold dearer than Oil of Olives.

Margrave describes this Plant with a tender strait Root, furnished with numerous Filaments, reddish on the Outside, and white within, if he does not mistake the Plant.

I am of Opinion, says *Ray*, with *J. Baubine* and *Stapel*, that this Plant is not the true *Sesamum* of the *Antients*; and, therefore, it is to be doubted, whether the Virtues ascribed to the *Sesamum* by *Dioscorides*, really belong to it; we shall, therefore, omit them, and only insert those which *Prosper Alpinus*, in his Book of *Egyptian* Plants, ascribes to the *Sesamum*.

The Decoction of this Plant is used, he says, in Fomentations for Ophthalmies, Coughs, Difficulty of Breathing, Pleurisy, Peripneumony, and hard scirrhus Tumors. It is of Service, particularly to the Women, for Infections, in Hardness of the Uterus: It is of Use, also, in scald Heads, and Sugillations. The Plant and its Seeds boiled with Honey, are of Service in Dryness of the Nerves, Combuitions, and hot Inflammations. The Decoction is of Use in Clysters for the Cholic, to render the Belly soluble, and to promote the menstrual Discharges. The Women very commonly drink the Oil and its Lees, in their Baths, in order to grow fat. The Oil serves the *Egyptians* for many other Purposes, as for Pustules, Asperities, and all other cutaneous Defections from a melancholy Humour, being either drank, frequently taken with Food, or apply'd externally to the Parts affected. Four Ounces thereof taken in the Morning, for many Days together, is an Arcanum with some for Itchings of the Skin, Difficulty of Breathing, desperate Pleurisy, Peripneumony, for provoking the Menstrues, and as a Demulcent both

both inwardly and outwardly, for violent Pains of the Stomach, Intestines and Uterus. *Raii Hist. Plant.* 1327.

2. *Sesamum*; alterum; foliis trifidis; Orientale; semine obscuro. *Pluken. Phyt.* 169. 4. *Digitalis, Orientalis, altera, semine obscuro.* T. 165.

3. *Sesamum*; Orientale; trifidum; flore niveo. *Hort. Compt.* T. 165. *Digitalis, Orientalis, trifida, flore niveo.* T. 165. *Boerb. Ind. Alt. Plant.*

This Plant is very serviceable, being used by Way of Alimentation, in the Pleurisy, Ophthalmy, and scirrhus Tumors; and administer'd in Clysters, is good for the Cholic. The Indians extol it above all Plants, because it procures, as they say, Beauty and Gracefulness to the Body; for their Women anoint themselves with Oil of *Sesamum*, which clears the Face of all Spots contracted by Sun-burning, or otherwise. The Fruit is very nutritive and eatable, and with an Addition of Poppy-Seeds, is made into Cakes. The Oil is the softest of all Oils, and is, therefore, proper in all hot Diseases. *Hist. Plant. ascript. Boerhaave.*

SESBAN.

The *Sesban* is a Shrub of the Bigness of the Myrtle, with the Leaves of the *Securidaca*, only longer and narrower, with nearly an equal Number of tender herbaceous Branches on each Side, if the Plant be pretty well grown. These Branches are of a watery green, somewhat inclining to red, and have something of a Roughness to the Touch. The Flowers are of a Saffron-Colour, very like those of the *Anagyris*, and hang in Bunches from a smaller Branch or Spray. From these Flowers are produced long Pods, nearly resembling those of *Fenugreek*, and containing Seeds not much unlike the Seeds of that Plant. The Pods, as *Veslingius* observes, are divided into distinct Cells, according to the Number of Seeds they contain; and the same Author observes, that the Trunk of this Shrub is armed with rare and short Spines, for which Reason the *Egyptians* plant the *Sesban* in Hedges, which serve to separate their Fields.

The Seeds are said to corroborate and dry a too humid Stomach, and to restrain all manner of Fluxes of the Belly, and to be no less serviceable in repressing an immoderate Flux of the Menfes, whether they be taken in Decoction or Powder. *Prosper Alpinus. Veslingius.*

Morison, in his *Histor. Oxon.* blames *C. Baubine* and *Parlinsin*, for describing this Plant with articulated Pods, when they did not clearly understand what an articulated Pod, properly speaking, was; for an articulated Pod, he says, is divided transversely into many Joints, distinguished by their Interstices; each Interstice, when the Pod is dried and broken, containing a single Seed.

As for our part, says *Ray*, we never yet saw this Plant; nor did *Morison* himself ever see it, as he owns; and therefore we cannot tell whether its Pods are really articulated, or only nodous or protuberant, where the Seeds are, and depressed or narrowed in the Interstices. *Raii Hist. Plant.*

SESCUNCIA, or *SESQUIUNCIA*. Half an Ounce.

SESELI.

The Characters are;

The Root is perennial, in the last biennial; and the Leaves are wider and shorter, and the Seeds longer than those of *Fennel*.

Boerhaave mentions four Sorts of *Seseli*, which are,

1. *Seseli*; perenne; folio glauco breviori. *Boerb. Ind. A.* 50. *Feniculum sylvestre*, Offic. *Feniculum sylvestre perenne.* *Ferula folio breviori*, Tourn. Inst. 311. *Meum latifolium adulterinum*, C. B. P. 148. *Meum alterum Italicum quibusdam*, J. B. 3. 15. *Raii Hist.* 1. 433. *Meum spurium*, Ger. 895. *Meum alterum Italicum*, Ger. Emac. 1152. *Meum spurium Italicum*, Park. Theat. 889. *Saxifraga montana minor Italica, foliis in breviores partes divisis*, Hist. Oxon. 3. 272. **BASTARD SPIGNEL.**

It grows on dry Hills, and flowers in June. The Root, which is in Use, is of a very dry and burning Quality, and offensive to the Stomach. Outwardly it is an Escharotic.

2. *Seseli*; perenne; folio glauco longiori. *Vaill. Feniculum sylvestre, elatius, Ferula folio longiori.* T. 311. *Saxifraga Matthioli, tenuifolia, & umbellifera*, J. B. 3. 2. 18.

3. *Seseli*; quæ *Ferulae facie*, *Thapsia*, five Turbith Gallorum. J. B. 3. 2. 45. *Boerb. Ind. A.* 50. *Turbith cinerium, Pseudo-Turbith*, Offic. *Thapsia ferulae facie, five Turbith Gallorum*, *Raii Hist.* 1. 420. *Thapsia feniculi facie*, C. B. P. 148. Park. Theat. 877. **FRENCH TURBITH.**

It is found in the Mountains of *Aquitain*, and the Root, which is the Part used, agrees in Virtues with the *Thapsia*.

4. *Seseli*; quæ *Saxifraga Pannonica*, *Clusii*, H. 196. *Saxifraga montana minor, multifida folio, Pannonica*, M. H. 3. 273. *Daucus montanus, multifido brevique folio*, C. B. P. 150. *Boerb. Ind. Alt. Plant.*

The Name *Seseli* is ancient, but given to so many Plants, that there is no End of them. *Lobel* first called it *Meum Adulterinum*, by which Name it has been called almost by every one since; and *Morison* reckons it among the *Saxifrages*. There is nothing of it used in Medicine but the Root, which purges in a very violent manner both upwards and downwards. Outwardly it is used in Ointments in all cutaneous Diseases. *Seseli* is not so sweet scented as *Fennel*. *Hist. Plant. ascript. Boerb.*

SESELI is also a Name for several Sorts of *SILAUM*.

SESELI ÆTHIOPICUM. Offic. *Seseli Æthiopicum frutescens*, Ger. 1233. Emac. 1241. *Raii Hist.* 1. 476. Park. Theat. 907. *Seseli Æthiopicum salicis folio*, C. B. P. 161. *Seseli Æthiopicum fruticosum, Periclymeni folio*, J. B. 3. 197. *Eupatorium arborescens, Salicis folio*, Tourn. Inst. 310. *Boerb. Ind. A.* 71. **SHRUB HARTWORT.**

It is sometimes to be met with in the Gardens of the Curious, and flowers in August.

The Seed is much more acrimonious and scented than that of the *Seseli Massiliensis*; whence it is supposed to have some extraordinary Virtues.

SESELI ÆTHIOPICUM is, also, a Name for the *Laserpitium*; foliis latioribus; lobatis.

SESELI CRETICUM. A Name for the *Tordylium*; *Narbonense*; minus; and for the *Tordylium*; *Apulum*; minus.

SESELI MARITIMUM. A Name for the *Ligusticum*; *Scoticum*; *Apii folio*.

SESELI MASSILIENSE. Offic. *Raii Hist.* 1. 414. *Seseli Massiliense alterum*, Ger. 894. Emac. 1051. Park. Theat. *Seseli Massiliense, Ferulae folio*, C. B. P. 161. *Seseli Massiliense nuperorum, folio aliquatenus simili Vissagæ*, J. B. 3. 33. *Libanotis Massiliensis, Ferulae folio*, Hist. Oxon. 3. 310. **ITALIAN HARTWORT.**

The Part used is the Seed, which is of principal Service in Diseases of the Head, the Epilepsy, Weakness of Sight, Convulsions, and the like, and in Affections of the Breast and Lungs, Coughs, Catarrhs; also, in Obstructions of the Liver, Dropsy, Crudities of the Stomach, in the Stone of the Kidneys and Bladder, and in a Stoppage of the Menfes. It is a specific Remedy against the *Cicuta*. *Dale*, from *Schroder*.

SESELI MASSILIENSE is, also, a Name for the *Feniculum*; *toruosum*.

SESELI MONTANUM. A Name for the *Oreoselinum*; *Apii folio majus*.

SESELI PALUSTRE. A Name for the *Thyselinum*; *palustre*.

SESELI PELOPONENSE. A Name for the *Cicutaria*; *latifolia*; *foetida*.

SESELI PYRENAICUM. A Name for the *Apium*; *Pyrenaicum*; *Thapsiae facie*.

SESELI VULGARIS. A Name for the *Siler*; *montanum*; *majus*.

SESQUI. This Word, joined with any Number, Weight or Measure, signifies one Integer and an half.

SESQUIALTERUM. The same as *HEMIOLIUM*. *Sesquialtera*, in *Helmont*, is a sort of irregular or compound Fever.

SESQUIHEMINA. An *Hemina*, and an half.

SESQUILIBRA. A Pound and an half.

SESQUIOBOLUS. An *Obolus* and an half.

SESQUIPLUM. The same as *HEMIOLIUM*.

SESQUISEXARIUM. A Sextary and an half.

SESQUIUNCIA. An Ounce and an half.

SESSILIS. An Epithet for that Species of Wart called *MYRMECIA*.

SETACEUM. A Seton.

Mr. *Bernard* observes, that a Seton was described by *Lanfranc* four hundred Years ago. Dr. *Freind* adds, that *Roland*, who lived earlier in the Thirteenth Century, not only mentions the Thing, but uses the very Word, and gives a Description how the Needle with the Thread should be passed.

Cámanusali, a Physician of *Baldach*, or *Bagdet*, who, at the latest, lived before that City was taken by the *Tartars* in one thousand two hundred and fifty eight, mentions a Seton twice in the Cure of a Cataract, and what he calls the *Lunella*, an Impostume between the Cornea and the Uvea.

Dr. *Freind* thinks, that *Albucahis* describes the Operation plainly, where he treats of cauterizing the Arm-pit, for a Dislocation of the Shoulders, when it arises from too great a Flux of Humors, and makes use of a Cautery, which has two or three Spits or Branches very small and sharp, and runs into the Skin till it comes out on the other side.

The same Method he uses in Tumors of the Spleen, and advises that the Ulcers should be kept running for a long time.

Franciscus Pedemontanus, who was Physician to *Robert King of Sicily*, about one thousand three hundred and ten, transcribes the Words of *Albucasis*, in speaking of a Dislocation in the same Place. The Discourse of *Rhazes* concerning Cauteries, makes it clear, that it was a familiar Practice in his Age. He describes the several Places it should be made in; as in the Neck, between the Ribs, in the Belly, &c. and for what Distempers, &c. The Translator calls it *Sectorium*; and these Ulcers, he says, must be kept open *cum tentis & petiis*; which is as plain a Description of a Rowel, or a Seton, as Words can express. For Pains in the Ears, Eyes or Teeth, he particularly advises one to be made either in the Middle or Pulp of the Ear; and the Running to be continued as long as it can.

Dr. Freind is of Opinion, that the Hint of a Seton was first taken from the Cattle-Doctors; and quotes a Description of it from *Columella*, who wrote in *Claudius's* Time, and says this Method is still in Vogue amongst the Herdsmen. What is proposed by *Columella*, is, with regard to the Plague, or some epidemical Infection amongst Cows; and we find Issues were afterwards applied to the humane Body in the same Distemper; first by *J. Arculanus*, who flourished in the 15th Century; and after his Example, many Physicians in the succeeding Age recommended them as the most effectual Preservatives in that terrible Disease.

In the Time of *Albucasis*, and for some hundred Years after, the way of making a Seton was always by a Cautey. *Hollerius* was one of the first who made it with a Needle unheated; which makes it surprising, that *Hildanus* should so long after describe it as an Invention of his own. However, there seems to be some Ground for the Criticism of *Severinus*, that by the Word *Sectorium*, used in the Translation of *Rhazes*, it is implied that it was not done by Ustion; and indeed it is plain, that *Rhazes* distinguishes the two ways of performing this Operation, either by Burning or Cutting, and sometimes by both jointly; and in the Article where he orders a Seton to be cut between the Navel and the Clavicle, for an Asthma, Phthisis, Pleurisy, &c. he adds, that a Cautey likewise may be applied in the same Place, for the same Complaints. *Freind Hist. Phys.*

When a few Horse-Hairs, a Thread, or Linnen Cord, are drawn through the Skin, particularly in the Neck, with a kind of large Needle, it is called a Seton. There are three Methods of performing this Operation. First the Surgeon takes up the Skin at the lower Part of the Neck, and an Assistant lays hold of it about an Inch higher, both keeping it tight; then the Surgeon passes a large broad crooked Needle (See Tab. 39. Fig. 12. or Tab. 43. Fig. 9.) armed with a Cord of Linnen, Silk or Cotton, or with a long narrow Piece of Linnen, or with twenty or thirty Linnen or Cotton Threads, gently twisted together, (Tab. 42. Fig. 17.) thro' the Skin, and removing the Needle, leaves the Thread behind. Then the Wound must be dressed with some digestive Ointment, and over each Orifice, by which the Thread is transmitted, apply a Plaister; and thus the Seton is compleated, which derives its Name from *Setæ Equinæ*, or Horse-Hairs, that were used by the Ancients for this purpose; in the Room of which the Moderns substituted Linnen or Cotton Threads, as occasioning less Pain to the Patient. The Cord must be twice a Day, in the Morning and Evening, drawn first a little on one Side, and then on the other; and the Matter which is by these means discharged, as in an Issue, must be wiped off. Thus will it become an Ulcer with a double Orifice, daily emitting a large Quantity of purulent Mattee; and this ought to be continued so long as the Disorder of the Patient requires. When the Cord becomes foul, a new one may be fastened to the End of it, and by drawing the old one out, the new one be gently introduced in its stead.

The second Method differs little from the first, except that in Place of a Needle, the Wound is made with a double-edged Knife; (See Tab. 22. Fig. L or B.) and the Cord is introduced by a Probe. Thus the Knife making a larger Wound than the Needle, a greater Quantity of Matter may be discharged. For the more convenient Performance of this Operation, use an Instrument fitted with a Handle, like that in Tab. 44. Fig. 5. for when it has pierced the Skin to the Part B. the Cord or Thread may be drawn out at the Aperture A. and by drawing the Instrument back out of the Wound, it may be left behind.

The third Method of performing this Operation, is with a peculiar Instrument, as exhibited by *Bartisch*, *Andreas a Cruce*, *Hildanus*, *Fabricius ab Aquapendente*, and *Glandorp*; while the Skin is held tight by it, a Perforation is made with a sharp-pointed red hot Iron, and then the Cord is introduced. As this Method of Operation occasions violent Pain, and great Suppuration, it has been preferred as the most effectual, by eminent Physicians, for causing a copious Revulsion of

super-abundant, peccant Humours from the Eyes, and other principal Parts of the Head.

Some think a Seton made longitudinally in the Neck is preferable to the transverse. But though I have purposely tried this Method, I never could discover its Advantage over the other; but always found the Operation more difficult, as the Skin cannot be so easily raised transversely as longitudinally, nor the Needle or Knife be so conveniently introduced. In executing this Method, the Head is to be inclined backwards, and the Skin being taken up, must be perforated with a very crooked Needle, (See Tab. 43. Fig. 9.) But the Operation may be the more conveniently performed, by laying hold of the Skin with a Forceps, than with the Fingers, such as is made for the Polypus of the Nose, having two oblong Perforations towards the Extremities, (See Tab. 40. Fig. 10.) through which the Perforation of the Skin may be made.

Dimis, *Garangeot*, and others, think a Seton of little or no Benefit in the Cure of Diseases. On the other hand, many skilful Physicians have regarded it as a most excellent Remedy against obstinate Diseases, particularly of the Head, as Drowfiness, Head-Achs, Epilepsies, and Disorders of the Eyes. And as a plentiful Revulsion is, by this Operation, made of the superfluous corrupted Humours, from the Head to the Neck, it is not surprising that some Physicians have reckoned one Seton a more efficacious Remedy than two Issues. A Seton has by Experience been proved beneficial in Distempers of the Head, as the Hydrocephalus, Catarrhs, intense Pains, with the Loss of Memory, Epilepsies, Drowfiness, and even the Apoplexy. And, also, in Disorders of the Eyes, as in violent Inflammations, Gutta Serena, and a Cataract or incipient Suffusion. But the Pain and Trouble produced by a Seton, prevent many from experiencing the good Effects of so excellent a Remedy. *Heist. Inst. Chir.*

SETANIOS. *ovaria.* An Epithet for a Sort of Wheat, sown in the Spring, and reaped in the Summer, so as to be but about three Months in the Ground; whence it is called *Trimestre*, *Hornus*, or *Hornotinus*. *Setanios*, according to *Hesychius*, sometimes imports pure or fine.

SEVATIO. A *Steatoma*. *Castellus* from *Ingraffias*.

SEVERI COLLYRIUM. See **ALBUM SEVERI COLLYRIUM**.

SEULO. Lead. *Rulandus*.

SEUTLOMALACHE. The Beet, according to some; but others call the Spinage thus. *Blancard*.

SEVUM. The same as **SEBUM**.

SEXTANS. The sixth Part of a Pound, or two Ounces, or sixteen Drams. *Galen. de C. M. P. G. et de C. M. S. L.* It is, also, used for the sixth Part of any other standing Weight or Measure.

SEXTARIUS. *ærys.* A Measure as well for Liquid as dry Things. See **MENSURA**. We shall only add here, that the Parts of the *Sextarius* were like those of the *As*, *Uncia*, *Sextans*, *Quadrans*, *Triens*, *Quincunx*, *Semis*, *Septunx*, *Bes*, *Dodrans*, *Dextans*, *Deunx*; by which Words a certain Number of *Cyathi* is meant, a *Cyathus* being one twelfth of a *Sextarius*.

SEXTULA. The sixth Part of an Ounce, or four Scruples.

SEXUNX. The Weight of six Ounces, or Half a Pound.

SFERRO CAVALLO. The Italian Name for the *Ferum Equinum*, Horsehoe Vetch.

SHERARDIA.

This Name was given to this Genus of Plants by *Mr. Vaillant*, who was Professor of Botany at *Paris*, in honour to *Dr. William Sherard*, who was the most famous Botanist of the Age.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, which is divided into five Parts at the Brim; the upper Lip being divided into two, and the under Lip into three Parts. The Ovary, which is at the Bottom of the Flower-Cup, afterwards becomes a dry Capsule, containing two oblong Seeds. To these Notes may be added, that the Leaves grow opposite by Pairs.

Miller mentions thirteen Sorts of this Plant; which are;

1. *Sherardia*; repens; nodiflora. *Vail. Nov. Gen.*
2. *Sherardia*; repens; folio subrotundo; crasso; nodiflora. *Vail. Nov. Gen.*
3. *Sherardia*; incana; nodiflora. *Vail. Nov. Gen.*
4. *Sherardia*; nodiflora; Stachadis ferrati folii, folio. *Vail. Nov. Gen.*
5. *Sherardia*; ocyimi folio lanuginoso; flore Purpureo. *Vail. Nov. Gen.*
6. *Sherardia*; teucris folio; flore Purpureo. *Vail. Nov. Gen.*

7. *Sherardia*; frutescens, teucii folio; flore cæruleo; Purpura scente amplissimo. *Vail. Nov. Gen.*
8. *Sherardia*; teucii folio; flore coccineo. *Vail. Nov. Gen.*
9. *Sherardia*; spicata; folio angusto; serratis; flore coccineo. *Houst.*
10. *Sherardia*; spicata; flore purpureo; seminibus majoribus, longioribus, & laxius digestis. *Houst.*
11. *Sherardia*; verbenæ folio; subrotundo; crasso; floribus cæruleis; spica longissima & crassissima. *Houst.*
12. *Sherardia*; foliis oblongis; serratis; flore cæruleo; spica longissima. *Houst.*
13. *Sherardia*; aborescens; nodiflora; foliis rugosis & serratis; flore purpureo. *Houst.*

The first of these Plants is a Native of *Egypt*, so will thrive in the open Air in this Country.

All the other Sorts are Natives of the warm Parts of *America*, so are too tender to thrive in the open Air of *England*.

The second Sort was found by Dr. *William Houston*, growing plentifully in *Jamaica*. This Plant trails its Branches on the Ground, emits Roots from the Joints as the former Sort, so doth not produce many Flowers.

The fourth Sort was found in great Plenty, at *La Vera Cruz*, by Dr. *Houston*; as were the ninth, tenth, eleventh, twelfth and thirteenth Sorts, at *Campesby*, by the same Gentleman.

The third, fifth and sixth Sorts, grow plentifully in *Jamaica*, and several other Places in the *West Indies*, from whence I have received their Seeds.

The seventh Sort is a very specious Plant, which merits a Place in every good Collection of Plants. This produces long Spikes of large blue Flowers, which continue a long Time, and make a fine Appearance. The Seeds of this Sort were sent to *England* by Mr. *Robert Miller*, Surgeon, who gathered them near *Panama*.

The thirteenth Sort rises to be nine or ten Feet high, and hath a wooden Stem.

Miller's Dictionary.
SIAGONAGRA. From *gagron*, a Jaw, and *agron*, a Prey. The Gout in the Jaws.

SIALOGOGA.

In the Class of *Evacuants* are to be reckoned *Sialagogues*, or *Salivants*, which potently excite a lymphatic and salival Flux, that discharges itself by the Mouth. And tho' there be several Things in the Kingdom of Vegetables, which, received by the Mouth as Emetics, or chewed with the Teeth, provoke the salival Humor from the Glands and Fauces, yet there is scarce any thing in Nature which puts the whole Mass of Lymph in so strong a Motion, and so forcibly acts upon the salival Glands and Ducts, as to cause a continual and copious Flow of Spittle, not only for Weeks but Months together, as some Substances with which we are supplied from the Mineral Kingdom, and especially those which belong to the Mercurial or Antimonial Tribe, prepared by the Art of Chymistry. As for Mercury, it is of that peculiar Force and Virtue, that whether used outwardly by Inunction, or taken inwardly in a small Quantity, it excites a most copious Salivation, by the Benefit whereof, if rightly managed, some very stubborn and otherwise incurable Diseases, which proceed from an impure Lymph and Serum, such as the Lues Venerea, Herpes, malignant Scabies, and malignant and spreading Ulcers, may be perfectly cured and quite extirpated. And this singular, and, in a manner, peculiar Virtue, belongs not only to Quicksilver well pounded with Sugar, and taken inwardly with Conserve, but to all artificial Preparations thereof, as *Mercurius Dulcis*, red Precipitate, white Precipitate with Spirit of Sal Ammoniac, Precipitate from a Solution of Mercury in Aqua fortis, Turpeth Mineral, Arcanum Corallinum, *Mercurius Diaphoreticus Jovialis*, Solaris, *Aethiops Mineral*, and *Cinnabar* itself, as well native as antimonial, or common, prepared of Sulphur with Mercury, and the *Antiquarium of Riverius*. Preparations from the reguline Substance of Antimony, which deserve to be mentioned, are the *Crocus Metallorum*, *Monk's Powder*, Sulphur Auratum so called, and prepared either the common Way, by Precipitation with Vinegar, or a Solution of Steel, or even of Gold, or precipitated after a singular manner, as the *Panacea Glauberiana*; which, in the *Brunswick Dispensatories*, is called *Panacea Conordingiana*.

These *Sialagogues*, or salivatory Remedies, before mentioned, may very well be divided into two Classes, the mild and the strong. Of the first Kind, which are, also, mercurial, are, also, *Aethiops Mineral* and *Cinnabar*, when exhibited in large and repeated Doses; in which Case they provoke a Flux of Spittle, and put the lymphatic Humors in Motion; and are beneficially administered in Diseases proceeding from Obstructions of the Glands, or Coagulations of the Serum, or Extravasations of the same in the Head, by resolving and fusing the coagulated Juices. To this last, also, belong Antimonials, because the Sulphur being in a manner incorporated

with the reguline Substance which is in them, they act but gently, nor excite such Perturbations and severe Symptoms, as are the Effects of most chymical Preparations of Mercury. Among the gentler Sorts of *Sialagogues*, may also be reckoned *Mercurius Dulcis*, well washed and prepared, and Quicksilver itself, duly depurated, and reduced by Art into a solid Form and Powder, excepting Quicksilver externally applied; for when it is reduced with unctuous Substances into an Ointment, and rubbed on the inferior nervous Parts of the Feet, of the Hams and Knees, and much more on the Spine of the Back, it frequently, and often suddenly, raises so strong and plentiful a Salivation, as is hardly to be restrained.

The Manner of Operation seems possible to be conceived and accounted for as follows: First, Quicksilver is to be considered as the heaviest of all Fluids, the least of whose Particles, in Solution and Division, always preserve their specific Gravity superior to that of all Fluids. Secondly, the Quicksilver itself may, by all the salival Menstrua, be resolved into infinitely small and subtle Molecules, which, by their corroding Force, together with their specific Gravity, may be enabled to penetrate into the innermost Parts of the Vessels and Pores in the human Body. That the Parts and Pores of Quicksilver may be diffused in a surprising manner, is evident to Sight; in that only one Grain of sublimate Mercury, dissolved in two Ounces of Water, will not only communicate to it a very sensible acrimonious metallic Taste, but, also, endue it with so efficacious a Virtue, that this Mercurial Water, used internally or externally, shall potently excite Excretions by Salivation, Sweat, Stool, or even Vomiting, according to the Disposition of the Subject and Humors; applied outwardly, it shall, on a sudden, dry up and repress the Itch and all cutaneous Defections. Whenever, therefore, Mercurials either externally applied in Suffumigations, Plaisters or Ointments, or taken inwardly, are, by the bilious-alcaline Humors of our Body, dissolved, or reduced into very minute Parts, they speedily and effectually exert their Force upon the Nerves, and especially upon the nervous Fibres of the conglobate and conglomerate Glands, and even upon the very Membranes of the Lacteals and Lymphatics; and, by increasing their Systole and Contraction, accelerate the Motion of the Lymph; by which means the Obstruction in the Glands and capillary Vessels of the Humors are opened, and the Stagnation and Stoppages of the coagulated Lymph, are at length effectually opened and resolved.

By such Ways and Means, then, are the Lues Venerea, and other Diseases of a like Nature, extirpated; but it does not follow, that there is always a Necessity for Salivation in the Cure of these Distempers; for a skilful Person, who is acquainted with the Secret, knows how, by the dextrous Use and Application of well-prepared Mercurials and Antimonials, to cure these stubborn Diseases without Salivation. For, as all skilful and experienced Physicians will readily acknowledge, the Flux of the Saliva is not the Cause of the Cure of the Lues Venerea, but the Removal of the Obstructions of the Glands and capillary Vessels, and the Colliquation of the viscid Humors settled therein; the accidental Consequence of which is a copious Profusion of the salival Humor.

Under a Salivation excited by Mercury, the exterior, especially the lower Parts, particularly the Feet, are generally cold and contracted; there is a Stoppage, also, of the ordinary Evacuation by Stool and Urine; the free Circulation, then, of the Lymph and Serum, as well as the Blood, being, by this Stricture of the lower Parts, interrupted in the capillary Vessels, the serous and lymphatic Humors are diverted upon the superior Parts, and most of all upon the Glands of the Fauces, which are appointed for their ordinary Reception; from which they take their Course where they can first find a Vent, and run off in one continued Current by the Mouth, preventing both Sleep and Eating. I have observed in some who lay under an immoderate Salivation for three Months together, or longer, and were, at last, carried off by a Lipothymy, or suffocated by a Catarrh, a Coldness of the external Parts to such a Degree, that it was impossible by any Medicine, Baths, or Frictions, to recal the Heat into them. And that an Interruption of the free and equable Motion of the Blood and Lymph through all the Parts of the Body, will raise a Salivation, appears from that continual Spitting so incident to melancholy and hypochondriacal Persons, in which, for the same reason, that is, a Constriction of the inferior Parts, the Lymph and Saliva are thrown off in greater Measure upon the glandulous Structure of the Mouth and Fauces.

The Reason of that fetid and putrid Smell, which proceeds from the flowing Humour under Salivation, especially from Persons salivated for the venereal Infection, seems to be, that the very fine Parts of the Mercury exceeding all the other Humours in Gravity, and being intimately united with them, do, by their circumvoluntary Motion, commence a Dissolution of the Mix-

Mixture, Crasis, and Contexture of the Blood, in the same manner as it happens in a Putrefaction, which is the Cause that there exhales a sulphureous Foetor with something of a Volatility, so as to blacken the very Teeth.

All the Panaceas, so highly celebrated by the Chymists, and especially the solar Kind, which owe the greatest Part of their Virtues to metallic and mercurial Elements, if they are rightly prepared, and skilfully used, are not to be defrauded of their just Commendations in the Cure of stubborn and desperate Diseases, which will not yield to ordinary Means. Such Medicines are endued with the highest Activity of Parts, and, though exhibited in a small Dose, have a potent Influence upon the nervous System, and produce very considerable Effects. And I know how to prepare several Medicines of that kind, and especially Antimonials, which, with due Respect to the Dose and Regimen, and a proper Regard to the Subject, shall in a very small Quantity purge, vomit, and even raise a Salivation; but very few Physicians know how to administer them skilfully, and in a right manner. *F. Hoffman.*

SIALISMUS. The same as **PTYALISMUS**.

SIALOCHOOS. *σάλιχος*, from *σάλας*, Saliva, and *χρῶ*, to pour out. In *Hippocrates* it imports a Person in a Quinsy, who discharges a large Quantity of Saliva. *Sialocboi*, *σάλιχος*, is expounded, by *Erotian*, Persons whose Mouths abound with a bitter Saliva; and by *Hesychius*, such People as spit in a Persons Face whilst speaking to him; an Inconvenience often attending, when the Tongue is too large.

SIBAR. Quicksilver.

SIBARE, in *Avicenna*, is a violent Sort of *Phrenitis*; or, according to others, an erysipelatous, or gangrenous Inflammation of the Brain, and its Membranes.

SIBEDATA. In *Paracelsus*, is Swallow-Wort. *Rulandus*. It, also, imports a Stone, on which Colours are ground.

SIBETINA. In *Paracelsus*, is an Epithet for the Cholic.

SIBILUS. A hissing Noise; such as is heard during the Respiration of asthmatic Patients; or as sometimes is perceived in the Ears. The *Uvula*, is, also, called *Sibilus*, by *Vesalius*.

SICCANTIA. Drying Medicines.

SICCHASIA. *σικχασία*. In *Maschion's* Treatise *de Morbis Mulierum*, C. 18. is that Loathing of Food, and Uneasiness at the Stomach, which Women perceive during Pregnancy.

SICCUS. Dry. A dry Belly imports Costiveness: A dry Constitution is one which does not abound with Moisture: A dry Dropsy is a Tympanites; and a dry Ophthalmy, is an Inflammation of the Eye, not attended with a Discharge of Humours.

SICELICA, or **SICULA.** An Epithet for a Medicine recommended against the Cholic by *Galen*, de C. M. S. Loc. L. 9. C. 5.

SICILIANE. See **ANDROSÆNUM**.

SICILICUM, or **SICLIUM.** A Weight, equal to four Drams, according to *Galen*. *Rhedi*, in his Notes to *Scribonius Largus*, makes it only two Drams.

SICUA. A Cupping-Glass.

SICYEDON. *σικυεδον*. The Name of a Species of Fracture; the same as **CAULEDON**. See **FRACTURA**.

SICYOIDES. Single-seeded Cucumber.

The Characters are;

It hath an expanded Bell-shaped Flower, consisting of one Leaf, which is cut into several Segments at the Brim. Of these Flowers, some are Male, which adhere to no Embryo; and others are Female, which rest on the young Fruit, which is afterwards enlarged to the Size of an Almond-Kernel, and is flat and prickly, containing one Seed of the same Shape.

Boerhaave mentions but one Sort of this Plant, which is, the *Sicyoides Americana*; fructu echinato; foliis angulatis, T. 103. *Cucumis Canadensis*, monospermus, fructu echinato. Par. Bat. 133. *Colocynthis monococcos*. Vulgo *Bryonia Canadensis*, *semine Anguria*. Volkham. Boerb. Ind. Alt. Plant.

Boerhaave conjectures this Plant to be poisonous.

Miller takes Notice of another Species of this Vegetable, by the Name of *Sicyoides*; *Americana*; fructu echinato; foliis laciniatis.

SICYONE. *σικυον*. This signifies, in *Hippocrates*, *Colocynthis*; a Species of Gourd in the Shape of a Pear; a common Cupping-Glass; and a conical Cupping-Glass, open at the small End. *Galen*. *Exeges*. *Erotian* explains it, a Wild Fig.

SICYONIUM OLEUM. *Paulus Aegineta*, L. 7. C. 20. gives the Preparation of three Sorts of Oil under this Title. The first is the

SICYONIUM SIMPLEX, which is thus prepared: Take of the Root of the Wild Cucumber, two Ounces, and put them into an Italian Sextary, or Pint of Oil, and boil the same in a double Vessel.

The second Sort of *Sicyonium Compositum*, is prepared in the following Manner:

Take of Oil, ten Sextaries; Root of Wild Cucumber scraped, one Pound; Serpyllum, Melilot, each six Ounces; of pinguious Torches of the Pine, [See *DAIS*.] Marsh-mallows, each five Ounces; of *Scolopendrium*, six Ounces; of *Fænugreek*, two Sextaries: Macerate the *Fænugreek* a Day in Water, then strain it, and put therein the other Ingredients, together with the Oil, and two Sextaries of Wine. Boil them all together, and then add thereto of Stags Marrow, beaten with a moderate Quantity of Oil, four Ounces, and a like Quantity of Fat of Hens. This done, strain off the Oil into proper Vessels: Some, after Boiling, expose it forty Days in the Sun.

Another Preparation of *Sicyonium Compositum*, of greater Virtues, is as follows:

Take Juice of *Elaterium*, three Sextaries; round and long Birthwort, *Styrax*, *Elecampane*, *Hyssop*, *Iris*, *Colocynthis*, *Penyroyal*, *Origanum*, *Cyperus*, Wood of *Libanus*, *Centaury*, Bay-leaves, each two Ounces; Oil, five Sextaries. Mix them together, and boil them till but little of the Liquor remains. *P. Aegineta*, Lib. 7. Cap. 20.

SICYS. A Cucumber.

SIDA. *σίδα*. The Pomegranate. *Sidia*, is the *Putamen*, or Rind of the Pomegranate. *Hippocrates*. *Blancard* says, that *Sida* signifies the *Althæa*, Marsh-mallows, but I don't know his Authority.

SIDA-POU. The Name of a Tree which grows in *Malabar*. It is only remarkable for bearing no Fruit; at least till it is very old. *Raii Hist. Plant.*

SIDERATIO. An Apoplexy; or a Sphacelus; or a Species of *Erysipelas*, which the Country People call a Blaft.

SIDERITIS.

The Characters are;

The *Galea* is erect, the Beard tripartite, long, and pendulous; the Flowers grow in Whorles at the Wings of the Leaves, which are cut like a Crest, and differ from the other Leaves of the Plant.

Boerhaave mentions thirteen Sorts of *Sideritis*, which are;

1. *Sideritis*; Alpina; *Hyssopifolia*. C. B. P. 233.
2. *Sideritis*; vulgaris; hirsuta, erecta. C. B. 233. Boerb. Ind. A. 171. *Sideritis*, Offic. *Sideritis vulgaris*, Ger. Emac. 697. *Raii Hist.* 1. 563. *Sideritis vulgaris hirsuta*, J. B. 3. 425. *Sideritis vulgaris Clusii*. Park. Theat. 585. COMMON IRON-WORT.

It grows common in Germany, Italy, and France, and flowers in June. The Herb is used, which is said to be good for Wounds, and Ruptures, and to be so drying as to cure a *Fluor albus*.

Dale takes Notice of a Species of *Sideritis*, of which this is esteemed only a Variety, tho' he makes them different. It is thus distinguished.

SIDERITIS. Offic. *Sideritis hirsuta procumbens*, C. B. P. 233. *Raii Hist.* 1. 564. *Tourn. Inst.* 191. *Sideritis Clusii Hispanica*, hirsuta, J. B. 3. 426. *Sideritis prima herba Judaica*, Park. Theat. 584. *Sideritis herba Judaica*, Ger. 559. *Sideritis Judaica Lobelii*, Ger. Emac. 690. IRON-WORT.

An Application of the Leaves cures Wounds, without any Danger of Inflammation.

Botanists have not determined what the three Species of *Sideritis* mentioned by *Dioscorides* are. *Dale* thinks this Plant the first; the *Pimpinella Sanguisorba*, the second; and the *Geranium Robertianum*, the third.

3. *Sideritis*; hirsuta; vulgaris; humilior. C. B. P. 233.
4. *Sideritis*; arvensis; latifolia; glabra. C. B. P. 233. *Raii Hist.* 1. 566. Park. Theat. 587. Ger. Emac. 699. Boerb. Ind. A. 171. *Sideritis glabra arvensis*, J. B. 3. 427. *Betonica arvensis annua flore ex albo flavescente*. *Tourn. Inst.* 203. IRON-WORT WITH SMOOTH LEAVES.

This grows amongst Corn, and agrees in Virtues with the other. *Dillenius* thinks this the right *Sideritis* of the Shops.

5. *Sideritis*; Persica; odorata; latissimo folio, hirsuta; flore ex luteo albicante. Ex *Tourn.*
6. *Sideritis*; Hispanica; frutescens; foliis rigidis profunde dentatis. *Jussieu*.
7. *Sideritis*; frutescens; folio incano Oleæ.
8. An *Sideritis*; *Stæchados folio*?
9. *Sideritis*; minima; Ægyptia; ramosa. *Lippii*.
10. *Sideritis*; Lusitanica; minor, flosculis luteis.

11. *Sideritis*; *Hispanica*; *procumbens*; *flore albo major*. T. 192.

12. *Sideritis*; *Hispanica*; *frutescens*; *five lignosior*. T. 192.

13. *Sideritis*; *Orientalis*; *folio Phlomidis*. T. C. 12. Boerb. Ind. Alt. Plant.

It has its Name *Sideritis* from *sidēros* (*Sideros*) Iron, so *Di-scorides* calls those Herbs which are adapted to the Cure of Wounds inflicted by Iron. It is also called *Ferruminatrix* for the same Reason, and *Herba Judaica*, because the Jews formerly used it in Medicine. These Plants are very scarce, because the Seeds are sometimes three or four Years in the Ground before they appear, whence the Time of their Shooting is very uncertain. They are never used in Medicine, except sometimes by Way of Cataplasm in Hernias. Hist. Plant. ascript. Boerhaave.

Dale mentions another Species of *Sideritis*, which is the *Sideritis foliis hirsutis profunde crenatis*, C. B. P. 233. Tourn. Inst. 191. *Sideritis Monspensulana*, J. B. 3. 426. *Sideritis Monspelienfis Lobellii*, Park. Theat. 585. GERMAN IRON-WORT.

It grows in Meadows, and flowers in June and July. It is much used in the Shops of Germany, and is said to be possessed of the same Virtues as the other Species of *Sideritis*.

SIDERITIS, is also a Name for the *Sanicula*, *Officinarium*, for the *Stachys*, *major*, *Germanica*; and for several Sorts of *Marrubiastrum*.

SIDERITIS ARVENSIS. A Name for the *Galeopsis*; *patula segetum*; *flore purpurascens*.

SIDERITIS SPINOSA. A Name for the *Stachys*; *spinosa*; *Cretica*.

SIDERITIS VISCOSA. A Name for the *Galeopsis*; *angustifolia*; *Cretica viscosa*.

SIDEROS. *sidēros*. Iron. See MARS.

SIDIA. See *SIDA*. Rulandus explains *Sidia*, a File.

SIDOIDES. *sidōidēs*, from *sidōn*, a Pomegranate. A yellowish Colour, like that of a Pomegranate.

SIEF. A dry Collyrium. The Word is Arabic.

SIEF DE PLUMBO.

Take of Lead burnt and wash'd, Copper burnt, Antimony, Tutty wash'd, Gum Arabic, Gum Tragacanth, each one Ounce; Opium, half a Dram; Rose-water, a sufficient Quantity; make them into Troches according to Art.

SIEF DE THURE.

Take of Frankincense, Lapis Calaminaris, Pompholyx, each ten Drams; Cerufs, five Ounces; Gum Arabic, Opium, each six Drams; fair Water, a sufficient Quantity; make them into Troches. Pharmac. Londinens.

SIELISMUS. *sielōis*. Salivation.

SIELOCINETICA, from *sielōs*, *Saliva*, and *cinōs*, to move. The same as *SIALAGOGA*.

SIGHA. Liquid Storax.

SIGILLATA TERRA. Seal'd Earth. See *TERRA*.

SIGILLUM SOLOMONIS. Solomon's Seal, a Name for the *Polygonatum*; *latifolium*; *vulgare*.

SIGILLUM HERMETICUM. An Hermetic Seal. A Glass Vessel is said to be Hermetically sealed, when the Glass is melted, and the Vessel by this Means closed.

SIGMOIDES. Sigmoidal, or in the Shape of a Sigma; three Valves of the Heart have this Epithet applied to them. See COR. The Coracoide Process of the Scapula is called the Sigmoidal Process. The Semicircular Cavity of the Cubit, at the Articulation of the Fore-arm, with the *Humerus*, is sometimes called the Sigmoidal Cavity: And the Cartilages of the *Astera Arteria*, have the Epithet *Sigmoidal* applied to them by some Authors.

SILACH, or *SILAC*. A Disorder of the Eye-lid, consisting in a preternatural Thicknes thereof.

SILAUM.

The Characters are;

The Leaves are pretty thin and short, and much like those of Fennel, only wider. The Seeds are long, fulcated, and furnished with a Sort of foliaceous Margin.

Boerhaave mentions five Sorts of *Silaum*, which are;

1. *Silaum quibuscum*; *flore luteolo*. J. B. 3. 2. 171. Boerb. Ind. A. 51. *Saxifraga vulgaris*, Offic. Mill. Bot. 399. *Saxifraga Anglica facie Sefeli pratensis*, Ger. 890. Emac. 1047. Raii Hist. 1. 453. *Sefeli pratense nostras*, Park. Theat. 905. Raii Synop. 3. 216. *Sefeli pratense Silaus forte Plinio*, C. B. P. 162. *Anglica pratensis Apii folio*, Tourn. Inst. 313. MEADOW SAXIFRAGE.

This Saxifrage has a Root about a Finger thick, striking deep in the Ground, of a brownish Colour on the Outside, and whitish within, of a hot aromatick Taste and Smell, from which spring several winged Leaves, not very large, cut into long narrow Segments. The Stalks are channell'd, arising to be two Foot or more in Height, beset with smaller Leaves, and having on their Tops Umbels of pale, yellow,

low, small, five-leaved Flowers, and after them come short striated reddish brown Seeds: It grows common in Meadows and Pasture Grounds, and flowers in August.

The Root, Herb, and Seed are used, being all accounted excellent in provoking Urine, and of great Service in the Gravel, Stone, and other Distempers of the Kidneys, as also in expelling Wind. Miller's Bot. Off.

The Herb and Seed are substituted in our Shops for those of the white Saxifrage.

The Juice, Decoction, distilled Water, or Seed pulverised, are found by common Experience to be effectual in provoking Urine, in diminishing and expelling the Stone, dissolving Flatulences, and easing the Pain of the Cholic. Raii Hist. Plant.

2. *Silaum*; quod *Ligusticum*; *Ferula folio*. T. 324.

3. *Silaum*; quod *Ligusticum*; *Creticum*; *folio Fœniculi*; *caule nodoso*, T. C. 23.

4. *Silaum*; quæ *Angelica*; *pratensis*; *altera*; *Apii folio*. T. 313.

5. *Silaum*; quod *Ligusticum*; *Cicutæ folio*, *glabrum*. T. 323. *Sefeli montanum*, *Cicutæ folio*, *glabrum*. C. B. P. 161. Boerb. Ind. Alt. Plant.

SILER.

The Characters are;

The Leaves are lobated, and of a pretty large Size, with long, intire, blunt Segments, divided at the End into Parts: The Seeds are oblong, large and striated.

Boerhaave mentions three Sorts of *Siler*, which are;

1. *Siler*; *foliis Aquilegiæ*. M. U. 7. 8. *Ligusticum Rauwolfii foliis Aquilegiæ*, J. B. 3. 2. 148. *Libanotis latifolia*, *Aquilegiæ foliis*, C. B. P. 157. *Angelina montana*, *perennis*, *Aquilegio folio*. T. 313.

2. *Siler*; *montanum*; *majus*. Boerb. Ind. A. 52. *Sefali vulgaris* & *Siler montanum*, Offic. *Sefeli five Siler montanum vulgare*, J. B. 3. 168. *Siler montanum Officinarium*, Ger. 892. Emac. 1048. Raii Hist. 1. 439. *Siler montanum vulgo Sefelios*, Park. Theat. 909. *Ligusticum*, quod *Sefeli Officinarium*, C. B. P. 162. Tourn. Inst. 323. COMMON HARTWORT.

Hartwort has a large, thick Root, that strikes deep into the Ground, with a great many stringy Fibres at the Bottom. The Stalk arises to be as high as an ordinary Man, full of Branches, having many large winged Leaves as it were encompassing the Stalks with a thin Sheath, cut into several Segments, each of which is usually divided into five, and at the End three oval smaller Leaves, smooth and pointed at the End. It has large Umbels of small five-leaved white Flowers, each of which is succeeded by two large, long Seeds, striated on the Back, and having a leafy Border on each Side, of a brown Colour, a pretty strong Smell, and a hot, bitterish Taste. It grows upon the Alps, and the Mountains of Italy, and flowers in June. The Herb and Seed is used.

They are both heating and drying, provoke Urine and the Menstrues, expel the Birth and After-birth, and are good in Disorders of the Head and Womb. The Seeds are put both into the Theriaca and Mithridate. Miller's Bot. Off.

3. *Siler*; *montanum*; *minus*. M. U. 7. *Ligusticum*, five *Siler montanum*; *angustifolium*. C. B. P. 162. Boerb. Ind. Alt. Plant.

SILESIAICA TERRA. See *TERRA SILESIAICA*.

SILEX. Offic. Boet. 515. Mer. Pin. 213. Worm. 39. Charlt. Foss. 16. Aldrov. Mus. Metall. 724. Kentm. 44. *Lapis Silex dictus niger*, Cup. Hort. Cath. Supp. 2. 53. *Silex niger*, Imp. THE FLINT.

Flints, according to Schroder, may be us'd internally for inciding tartareous Mucilage, resolving the Stone, and opening Obstructions. They are, also, us'd as Dentifrices.

Flints, like all other Stones, are form'd of Salts, or acid Liquors, which penetrate and intermingle with the Earth, that is an Alkali, in such a Manner, that from this Mixture results a *Coagulum*, which is insensibly harden'd by the subterraneous Heat, or petrified by the Cold. And here it is to be observed, that, according to the Quantity of Earth which unites with an acid Liquor, we find produced the various Sorts of Stones; and that precious Stones and Crystals owe their Denseness and Transparency to such a Proportion as was necessary to make an exact Penetration, and close Union of the Acid with the Earth.

It is very probable, that Stones are hardest when but Earth mixes in the Solution, for then the acid Water acting upon all Parts of that Earth, dissolves it intirely, after which, the Coagulation being a long Time in forming, the Parts intermix and unite incomparably better than when there is much Earth. And it is very easy to conceive, how a large Body may be composed of very small Corpuscles; for if they had been large, they would have left great Spaces, or Pores, in their Conjunction; and great Pores are contrary to hard and compact.

When much Earth mixes with the acid Liquor, the Solution is perform'd but by Halves, and the Coagulation being

too quick in forming, there results nothing but an opaque Stone, with no considerable Degree of Hardness.

Flints are formed of a Combination of a good Quantity of acid or saline Water, with a small Portion of Earth; but they are opaque, because the Earth of which they are composed is sulphureous, and sometimes metallic.

Crytals are compos'd of a perfect Solution of Earth, or Stone, in acid or saline Waters; this Solution must be clear, or limpid like Water, either because it is filtrated in passing through some Earth, or happens in a clean Place. When it settles, it becomes fixed, in the same Manner as when Saltpetre is crystallised in Water, the Crytals retain the Purity of the Solution, and are transparent.

Precious Stones are form'd by a Solution, at least, as perfect and clear as that which forms Crytal; but then in the Solution there is an Intermixture of metallic Particles, which gives them Variety of Colours, and a Degree of Hardness much above Crytal.

Grains of Sand are small Crytals, which appear to us but like Powder of Crytals, but discover their Figure in the Microscope.

We meet with Waters in many Countries, which falling upon Rocks, at the same Instant petrify, as it happens in the Grotto of *Arfi* in *Burgundy*. The Reason that may be given for their Petrification, is, that these Waters contain an Acid, which in passing over the Earths, dissolve some Portion of them, which might be capable of inducing a Petrification; but the great Agitation they suffer in this rapid Descent from the Mountains, hinder their Coagulation, which cannot be effected before these Waters are fallen into some proper Place where they may rest.

In other Places we meet with Waters at Rest, which petrify Woods, Plants, Fruits, and Parts of Animal, cast into it. These Waters are of the same Nature with those just mentioned, only they have more of Phlegm, for which Reason they cannot coagulate themselves, but when you immerge a solid Body in them, they so penetrate it, and unite and fix themselves to it in such a Manner, as to fill all its Pores, so that the Body seems to have chang'd its Nature, and to be turned into Stone.

CALCINATION OF FLINTS.

This Operation teaches the Manner of opening *Flints* and Crytal in such a Manner, that they may be easily reduced to Powder.

Heat *Flints* in the Fire red-hot, and quench them in common cold Water; repeat this Heating and Quenching three or four Times, until they become friable, and may be reduced to an impalpable Powder, after they have been dry'd.

Crytal is calcin'd after the same Manner, but it is sooner render'd friable than *Flints*. A Liquor and Tincture may, also, be extracted from it, as well as from *Flints*, and of like Virtue.

OBSERVATIONS.

River-Flints, which are mark'd with Veins of different Colours, are esteem'd the best, because they are supposed to yield the most Tincture.

The best Way to calcine them well, is to put them in an earthen Pot, cover it well, and then put it in a Furnace in the Middle of a great Fire; the *Flints*, when heated, will sparkle and look red; continue a violent Fire till they no longer sparkle, then uncover the Pot, and cast them, red-hot as they are, into common cold Water, where let them be quenched, and remain about an Hour, after which, separate the Liquor, by stooping the Vessel, and letting it run off into an earthen Pan. If the *Flints* are not yet friable enough, they must be heated red-hot again, and thrown into the same Water.

This Water receives from the *Flints*, a Salt, or Kind of Saltpetre, which, in Conjunction with the Impressions of the Iron, communicated to it from the Pot, render it aperitive, and proper for the Gravel, and Chlorosis. The Dose is a Glas at a Time.

Flints and Crytal are too hard to be reduced to a Powder in the ordinary Way, and, therefore, Methods must be taken to soften them, in order to render them capable of being pounded with Ease. Cold Water renders them friable, when thrown quite red-hot into it; because, Calcination having opened their Pores, the Coolness of the Water stops them all on a sudden, by which Means the small Particles of Fire, which are thus imprisoned within, make impetuous Efforts to free themselves, and breaking their little Prisons, render the Matter porous and brittle. This Heating and Quenching are repeated three or four Times, that the Substances may be penetrated and soften'd in all their Parts. Some use Vinegar instead of Water, for extinguishing *Flints* ~ Crytal.

This Operation is no other than an Exaltation of some Parts of the *Flints*, and of Salt of Tartar in Spirit of Wine.

Mix four Ounces of *Flints* calcin'd and reduc'd to an impalpable Powder, very exactly, with four-and-twenty Ounces of Potash; put this Mixture in a large Crucible, which cover, and set in a Wind Furnace; make a Fire about it by Degrees, in order to give it a gentle Heat, which, afterwards, increase to the highest Degree, and continue it in that State during five Hours, so as that the Matter be always in Fusion; thrust a Spatula into it, and when you have taken it out again, you will see whether your Matter begins to grow transparent like Glas; if it does, pour it into an Iron Mortar heated, and it will immediately congeal into a hard Mass, which must be reduced to a Powder while it is hot, one Half of which is to be put into a very dry and well-heated Matras; pour thereon highly rectify'd Spirit of Wine, till it rises above the Matter four Digits; stop well your Matras with another whose Neck enters into that which contains the Matter, lute exactly the Junctures with a wet Bladder, and place it in the Sand; make a Fire under it, strong enough to cause a Simmering in the Spirit of Wine, for two Hours, and it will assume a red Colour; unlute your Matras, and having separated them, pour off by Inclination the Tincture into a Bottle; pour some more Spirit of Wine on what Remains, and make a Digestion as before; separate the Liquors, which will still be a little red, and having mixed it with the other, put the whole into a Glas Cucurbit, which cover with its Head, and having adapted to it a Receiver, and exactly luted the Junctures, distill off two Thirds of the Spirit of Wine in a Vapour-Bath; take your Vessel off the Fire, and keep what remains in the Bottom of the Cucurbit in a Vial well stop'd.

This Tincture is said to be a good Medicine to remove Obstructions; it is of Use in the Scurvy, and hypochondriac Disorder: The Dose is from ten to thirty Drops in some proper Liquor.

OBSERVATIONS.

The Lime of the *Flints* unites so closely with the Salt of Tartar, by Calcination, that you might say the whole Mixture is converted into Salt, and this is what we shall shew in the following Operation.

The Spirit of Wine you use must be perfectly alcalified, or rectify'd, otherwise you will obtain no Tincture: You must, also, take Care to put the pulverized Matter, as hot as possible, in Infusion. We distil two Thirds of the Spirit of Wine, that the Remainder may be redder and stronger.

Almost all Chymists will have it, that this red Tincture comes from the Sulphur of the *Flints* being diluted with the Spirit of Wine; but it is more probable, that this Colour proceeds from the Exaltation of the alkaline Salt in the Spirit of Wine, since a like Tincture is produced from Salt of Tartar.

LIQUOR OF FLINTS.

This Operation is a Resolution of *Flints* into a Liquid, by means of Salt of Tartar.

Take equal Parts of calcin'd *Flints* and Potash, expose them to the cold and moist Air of a Cellar, in a flat Vessel of Glas, and they will dissolve into a Liquor, as clear as common Water, which filtrate, and keep for Use.

This Liquor is said to be diuretic. The Dose is from five to five-and-twenty Drops in some proper Liquor.

If you mix together equal Parts of this Liquor, and some corrosive, acid Spirit, they will immediately form themselves into a Kind of Stone.

OBSERVATIONS.

The Salt of Tartar, or Potash, attenuates the *Flints* to such a Degree, as to render them dissoluble like itself, as we may observe in this Operation, in which the Humidity of the Cellar entering through the Pores of the calcin'd Matter, insensibly dissolves it; and if this Solution be evaporated, you will find at the Bottom an alkaline Salt.

If this Liquor be mixed with an acid Spirit, there immediately arises an Ebullition; because, the acid Spirits penetrate the Alkali, and afterwards there is form'd a Coagulation stronger than when you throw the acid Spirit upon the Liquor of Salt of Tartar, because their Alkali contains more Tartar, than does Salt of Tartar.

This Liquor is capable of dissolving some sulphureous Obstructions which sometimes stop up the Passages, in which Case it provokes Urine; but if it meets with some acid Humour, it forms a Coagulation, which may possibly be converted into a Stone, for which Reason I would not advise the Use of this Remedy.

From the Coagulation of these two Liquors might be explain'd, in a sensible Manner, the Formation of Stones in different Parts of our Bodies, since acid Liquors and Alkali's frequently enough meet together in those Places.

The Liquor of *Flints* is of Service in extracting the Sulphur from several Minerals: The Alchymists have given it the Name of *Alcabest*, that is, the *Universal Dissolvent*, a Name first used by *Paracelsus*, and compounded of two German Words, *Al Geest*, which signify *All Spirit*, (Tout Esprit.) *Van Helmont*, who borrowed that Word from *Paracelsus*, apply'd it to the pretended universal Dissolvent, of which, he says, he was the Inventor. The Name, however, seems to me to be but ill adapted to the Liquor of *Flints*, as well as to several others on which it has been bestowed, since we find nothing in them but fixed Parts, without the least thing spirituous. *Lemery, Cours de Chymie.*

SILICETUS, in *Paracelsus*, imports flinty, and is us'd by him as an Epithet for very much indurated Tartar, or Gravel, in the urinary Passages.

SILIGNIS. *silignus*. The finest Wheat-Flower.

SILIGO. A Name for the *Triticum*; *Hybernum*; *Aristis carens*.

SILIPIT. Copper. *Rulandus*.

SILIQUA. A Weight in Use among the Antients, equal to three Grains and $\frac{1}{2}$.

SILIQUA, in Botany, is the Carob. See **CAROB**.

SILIQUA HIRSUTA, is the COWHAGE, which see.

SILICUASTRUM.

The Characters are;

The Wings [of the Flower] surmount the Standard; the Keel consists of two Petals; the Pointal, or Pistil, which arises out of the Calyx, is wrapped with the Stamina, and becomes a flat, membranous Pod, full of Kidney-shap'd Seeds. The Leaves are alternate.

Boerhaave mentions two Sorts of *Silicuastrum*, which are;

1. *Silicuastrum*. *Tourn. Inst.* 647. *Boerb. Ind. A.* 2. 23. *Arbor Juda*, Ger. 1240. *Emac.* 1428. *Park. Theat.* 1554. *Raii Hist.* 2. 1717. *Judaica Arbor*, J. B. 1. 423. *Siliqua silvestris rotundifolia*, C. B. P. 402. *Cercis prior Theophrasti quibusdam, aliis Colytea Theophrasti*, *Raii Hist.* 1717. **JUDAS'S TREE**.

The Pod of this Plant is esteem'd astringent.

2. *Silicuastrum*; *Canadensis*. T. 647. *Siliqua, silvestris, rotundifolia, Canadensis*, H. R. Par. *Boer. Ind. Alt. Plant.*

SILPHIUM, *σίλφιον*, was a Root of great esteem in *Lybia*, about *Cyrene*, for its excellent Uses, either at the Table or in Medicine. It was originally called *σίλφι* among the Natives, and thence *σίλφιν*, which at last was formed into the *σίλφιον* of the Greeks. *Salmasius, Exercit. Plin. in Solin.* takes *σίλφι* to be a barbarous Word; but I conceive it was the old *Chaldee* Word for Gum, which is *סִרְפִּי*, *Sereph*. See *Schindler's* and *Castellus's* Heptaglot Lexicon, under the Word. From hence the *Latins* deriv'd their *Serpe*, and the Juice of this Root they called *Lac-serpitum*, which became, afterwards, the *Latin* Name for *Silphium*, and was corrupted into *Laserpitium*, which they falsely deriv'd from *Lafer*. This Juice or Gum of *Cyrene* was of so high Value, that the *Romans* deposited what they could get of it in the public Treasury, as the greatest Rarity, and which *Julius Caesar* carried away in the Time of the Civil War, as *Pliny* says: And whatever was costly and rare, was, by the Greeks, called from hence *βάττα σίλφιον*, the *Silphium* of *Battus*, that is, of *Cyrene*, of which Colony *Battus* was Founder. This *Silphium* of *Cyrene* has been long lost, even before *Pliny's* Time; so that we know nothing of it more than by Conjectures, about which there are many. Modern Philosophers, and Botanists, seem to find it in our *Asa Fœtida*. This is the Opinion of Mr. *Evelin*, Dr. *Bentley*, and Mr. *Laurence* in his new *System of Agriculture*. I must take leave to dissent from these great Authorities; for first, the *σίλφιον* of *Cyrene* is call'd by *Theophrastus* *εὐσμου*, sweet smelling: By *Dioscorides*, as yielding, (*ἵερὸν ὑποσώματον*) a very sweet Saviour: By the old Scholiast on *Aristophanes*, *ἔνδοξον ἰσὶα ἡδύσμου*. How well this Description of the old fragrant *Lybian Silphium* agrees with the detestable Stink of *Asa Fœtida*, I shall submit to the Nose of every Man.

Kempfer indeed, in his Account of the gathering of *Asa Fœtida*, tells us, That beyond the Territory of *Disguun*, the Plant of *Asa* is said to have lost almost all its offensive Smell, and grown so sweet, that Goats are fond of the Leaves, and feed themselves exceedingly fat with them; but neither will this amount to the *εὐσμου σίλφιον* of *Cyrene*.

And to this Description *Kempfer* has added the Figure of the Plant, which I have here given from him. Tab. the last.

Now as the strongest Argument, that I think can be furnished against Dr. *Bentley*, who says that he convinced Dr. *Mead* that the *Asa* of the Moderns was the genuine *Silphium*, I shall give a Medal or two, upon the Reverse of which we have the Figure of the old *Silphium* of *Cyrene* preserved. See TABLE the last.

The first Medal is of *Alexander*, the Son of *Ammon* who is, therefore, horned. The Reverse is the *Silphium* of *Cyrene*, in token of the Oracle of that Country, which declared him to be Son of *Hammon*.

The Legend we see is **KYPA**, implying *Cyrene*, which was represented by its Symbol the *Silphium*, as a Plant proper only to that Place, and the Σ , I conjecture, stands for *σίλφι*, or *סִרְפִּי*, *Sereph*, the original Name of this Plant, as is before mentioned. The Reason why the *Chaldee* *סִרְפִּי* is implied under the Greek Characters Σ is, because this Medal was struck by the Greeks, in Honour of *Alexander*. As this Circumstance, therefore, on the Medal, is what was never taken Notice of by *Agostino*, *Angeloni*, *Spanheim*, or others, it may be worth our Observation, as giving a great deal of Light to the present Etymology of the Word; and shewing us, what we now call *σίλφιον* in Imitation of the Greeks, was originally known by the Name of *סִרְפִּי*, or *Sirpi*, and from hence we may undoubtedly derive our *Sirrup*, or *Syrup*. We may, also, observe, on the other Side of the Plant, a Star in Designation of the Sun, to the intense Heat of which, in that Climate, perhaps, they ascribed all the remarkable Virtues of the *Silphium*.

The other, I suppose is either of *Hammon*, or else of *Old Battus*, according to the Epithet that *CATULLUS* gives him.

Et Batti Veteris Sacrum Sepulchrum.

The Reverse, as the first, is the *Silphium*, with the Legend **KY** for *Cyrene*, without the Σ .

Now if any one will compare the *Asa* of *Kempfer* with this Description of the *Silphium* of *Cyrene*, he must observe that there is not the least Resemblance in the World between these two Plants, the Juice or Gum of which Dr. *Bentley* convinced Dr. *Mead* and others to be one and the same.

Let us now consider the Proof upon which Dr. *Bentley* grounds his Assertion, that good *Asa* is the same with *Silphium*.—*Pliny* describes it thus, *Probatio sinceri prima, in colore modice rufa (Dioscorid. ὑπόκρουστος) et cum frangitur candido*. The good *Silphium* is of a reddish Colour, and white within when it is broken. Now the Doctor rests his Proof upon this, that his *Asa* answered in all Respects this Description of *Pliny*; and therefore concludes that good *Asa* is the same with the genuine *Silphium*. It might be the same, I grant; for the Description of *Pliny* relates to the *Silphium Persicum*, or what we call *Asa*, but not to the *Silphium Cyrenaicum*. *Pliny* owns, that *Multi jam annis in ea terra (Cyrene) non invenitur*.—That the *Silphium* of *Cyrene* had not been found for many Years. And a little after he adds, *Diutius non aliud ad nos invehitur Laser, quam quod in Perside aut Media et Armenia nascitur, sed multo infra Cyrenaicum*. From whence we may conclude, that the *Silphium* he describes was that of *Persia*, or what we call *Asa*, which was that which was common in his Time, and not that of *Cyrene*, which he never saw. So that Dr. *Bentley's* Proof, by which he convinced Dr. *Mead* and others, is no Proof at all to the Purpose it is brought. All it proves is, that the *Asa* of this Day, when it is good, is of the same Marks with that which *Pliny* describes, and that this was *Persian Silphium* is hence evident; because he says no other had been found for many Years, (*diutius*) but what grew in *Persia*, *Media*, and *Armenia*. This ought to teach us, to be a little cautious how we give up our Assent to great Authorities, that have nothing oftentimes to support them but a Name.

This same Observation will likewise hold good with respect to *Dioscorides*; for when he described it *ὑπόκρουστος, colore rufa*, he meant the *Persian Laser*, or *Asa*, as we have it at this day; and which I make no doubt of, from the Figure of the Plant, which *Salmasius* has taken out of a manuscript Copy of *Dioscorides* 1100 Years old, and which seems to resemble very much the Figure in *Kempfer*, but to be widely different from that on the Medals, as may be seen by comparing them; for which purpose I had them engraved.

The Question that immediately presents itself here, is, how do we know that the Figure on the Medals is that of the *Silphium Cyrenaicum*?

The Answer is, that this Medal agrees with what *Aristotle* the Scholiast of *Aristophanes*, and *Tzetzes*, say of the Medals of *Cyrene*, that on one side they had the King *Βασιλεύς*; for so I read it in the Scholiast of *Aristophanes*, not *Βασιλίας*; and On

on the other the *Silphium*. But *Hesychius*, under *Βάρρε δάριον*, is more express. He says, the *δάριον* was so honoured among the *Cyrenians*, *ὅτι ἐν τῷ νόμισματι οὗτος μὲν Ἀμμων, οὗτος δὲ δάριον ἐκχρησίζετο*, as is to be seen on their Medals, where was engraved on one side *Ammon*, and on the Reverse the *Silphium*. How well the Medals agree with this Account of the Ancients, is too evident to need any thing more to be said in Proof, that the Plant on the Reverse of these Medals is a true Representation of the *Cyrenian Silphium*, and which is very different from either that of *Dioscorides*, or *Kempfer*. From whence we may, with great Certainty conclude against Dr. Bentley and others, that the *Asa* of the Moderns is not the same with the celebrated *Silphium* of *Cyrene*. Upon the whole, it is to be supposed, that the *Silphium* of *Cyrene* is quite lost; and that we know no more of it but its Figure, and that it was of great Value for its medicinal and culinary Uses.

The *Asa Foetida* of the Moderns is thus distinguished.

ASA FOETIDA, Offic. C. B. Pin. 499. Worm. Mus. 222. Mont. Exot. 11. Scrod. 4. 184. Park. Theat. 1569. *Asa foetida nostrā Officinarum*, J. B. 3. 133. *Asa foetida*, Ind. Med. 16. *Alitib. seu Asa foetida, Javanis & Malaisi Hindistā*, Bont. 41. *Asa foetida Disgunensis, Hinaiseb, umbellifera, Levisticū affinis, instar Pæoniæ ramosis; caule pleno maximo; semine foliaceo, nudo, solitario, Brancæ Ursinæ vel Pastinacæ simili; radice Asam foetidam fundente*, Kempf. Amæn. Exot. 535. Fig. 536. DEVIL'S DUNG.

Silphium grows in the Countries of *Syria*, *Armenia*, *Media*, and *Libya*. Its ferulaceous Stalk is called *Maspetum*; the Leaves are like those of Smalage, and it has a broad Seed. The Root is heating, hard of Digestion, generates Inflations, and is hurtful to the Bladder. Made into a Cerate, it cures strumous Swellings, and Tubercles, and applied with Oil in a Cataplasm, removes Lividness contracted by Blows in the Face. Mixed with Cerate of Iris or Cyperus, it helps the Sciatica. Boiled in Vinegar in a Pomegranate Shell, and applied by way of Cataplasm, it takes off Excrecences about the Anus; the same drank resists Poisons. In Sauces and Pickles, it makes a grateful Ingredient to the Palate. They collect the Juice that distils from Incisions made in the Root and Stalk. The best is what is reddish, transparent, somewhat like Myrrh, and of a strong Smell, not porraceous, nor of a harsh Taste, but when diluted turns white.

The *Cyrenian* Juice, if you taste but a little of it, raises a Moisture over all the Body, and diffuses a most fragrant Odour, so as almost to take away the Breath of him who tastes it. The *Median* and *Syrian* Kinds are weaker in Virtue, and have a ranker Smell.

All the Liquor, before it is inspissated, is adulterated with *Sagapenum*, or Bean-meal, which may be discovered by the Taste, Smell, Sight, and by diluting it. Some give the Name of *Silphium* to the Stalk, but call the Root *Magudaris*, and the Leaves *Maspeta*. The Liquor is of most Virtue, next to that the Leaves, and least of all the Stalk. This Liquor generates Inflations, is of an acrimonious Quality, and cures an Alopecia, being mixed with Wine, Pepper, and Vinegar, and rubbed on the Part. Made into a Litus with Honey, it clears the Sight, and dissolves a Cataract in the Beginning. For Pains of the Teeth, it is put into their Cavities; or mixed with Frankincense, and tied about them in a Linnen Rag; or, lastly, serves in a Collution, or to wash the Mouth, being mixed with a Decoction of Hyssop and Figs in Oxycras. It is good to be applied to the Wounds made by the Bite of a mad Dog; and is effectual against the Poison of all venomous Creatures, and envenomed Weapons, being either drank, or used to anoint the Part. Diluted with Oil, it makes an Ointment for the Sting of the Scorpion, and is infused into Gangrenes after Scarification. It is, also, applied to Carbuncles, either alone, or mixed with Nitre, Honey and Rue; and extirpates Corns and Calluses, after they have been first cut or pared; for which Purpose it is made into a Malagma with Cerate, or the Infuse of dried Figs. Used with Vinegar, it cures a recent Lichen, and removes a Sarcoma or Polypus, being mixed with Vitriol or Verdigrease, and rubbed on the Parts affected for several Days together; but the Exuberances are to be extracted with the Forceps. It cures an inveterate Roughness of the *Aspera Arteria*; and diluted in Water and supped, it immediately relieves those who are taken with a sudden Hoarseness. Made into a Litus with Honey, it represses the Swelling of the Uvula; and with Oxymel, makes a good Gargarism in the Quinsy. It procures a good Colour to those who use it in Food; and taken in a poach'd Egg, is good for a Cough, and in forbile Liquors for a Pleurisy. Exhibited with dry Figs, it is effectual against the Jaundice and Dropsy; and taken in Wine with Pepper and Frankincense, it removes a Rigor. It is given, to the Weight of an Obolus, in a Tetanos and Opisthotonos; and used in a Gargarism with Vinegar, it expels Leeches adhering to the Throat. Taken in Oxymel, it relieves under

Coagulations of Milk within, and in the Epilepsy. Taken with Pepper and Myrrh, it provokes the Menfes; and with Grape-Kernels helps the *Cœliac* Passion; and the same drank with a Lixivium, gives Relief under sudden Convulsions and Ruptures. For Potions it is dissolved by bitter Almonds, Rue, or hot Bread. The Juice of the Leaves has the same Virtues, but in a much inferior Degree. It is good, eaten in Oxymel, for the *Aspera Arteria*, [*περὶ ἀσπέρτου*] and particularly for a broken Voice [*ἀπώρευσις τῆς φωνῆς*]; it is eaten, also, with Lettices instead of Rocket.

There is another sort of *Magudaris*, said to grow in *Africa*, whose Root resembles the *Silphium*, tho' not so thick, but is acrid, fungous, and void of Juice, yet works the same Effects with the *Silphium*. *Dioscorides*, Lib. 3. Cap. 94.

Asa Foetida is a Gum Resin, brought to us in Lumps of different Colours, white, yellowish, blue or brown, which last is the worst Colour of all. It has a very strong fetid Smell, and we are obliged to *Kempfer* for a very exact History of the Tree which produces it, and of the manner of gathering it.

Asa Foetida is an excellent Remedy in all hysteric Disorders, whether only smelled to, or mixed with what is taken inwardly. It is, also, reckoned a good Sudorific, and strengthens the Stomach. The Dose is from twelve Grains to half a Dram, but with a View to the Stomach only, it must be given in smaller Doses. Externally, it is a good Resolvent; and in that Intention, is an Ingredient in the *Ceratum de Galbano*, and is sometimes tied to the Bits of Horses Bridles. *Geoffroy*.

THE HISTORY OF THE ASA FOETIDA OF DISGUUN.

The *Hingiseb* is an umbelliferous Plant, a-kin to Lovage, with branched Leaves like Piony; a full and large Stalk; an edged Leafy-winged Seed, naked and single, like that of Branc-Ursin or Parsnep; and a Root yielding *Asa foetida*. Its Root lives for many Years; is large, heavy, naked, black on the Outside, which in a Clayie soil is smooth, in a Gravel rough, and, as it were, wrinkled; for the most part single like a Parsnep, but often branched into two or three at a small Distance from the Top, some of which grow perpendicularly down; others run obliquely and irregularly, just as they are bent and twined by what they met in their Way. The Top of the Root throws itself out of the Ground, and is set round and thick like the *Peucedon*, with rough Fibres standing up like Bristles of a reddish-brown Colour. It has a fat juicy Rind, that easily comes off as one pulls up the Plant, and on the concave Part of it is smooth and moist. The Substance of the Root is heavy, solid and white, like a Turnep full of a fat, very white, and very fetid Juice, with a horrid ungrateful Smell, of the Garlick-kind, which is called by the *Persians* and *Indians*, *Hing*; and by the *Europeans*, *Asa foetida*. The Leaves spring out from the Top of the Root in the latter End of Autumn, six or seven in Number, and always more or fewer in proportion to the Greatness of the Root; all Winter they flourish greatly, and wither away about the Middle of the Spring. The Leaf is branched out into several Parts, even about a Cubit long, shaped for the most part like the Piony, and of the Substance, Colour and Smoothness of Lovage. It has a Smell not so strong as that of the Root, and a rank Taste, joined with a Bitterness and aromatic Keeness. It consists of Stalk and Branches. The Stalk is a span or more long, not so thick as a Man's Finger, with Ridges winding round, like a Screw, stringy and of a grass-colour, channelled towards the Bottom, by reason of the Leaves inclosing one another, in the upper Parts round. Each Branch has upon it five, more rarely seven Wings, placed on the opposite Sides, but not directly over against one another, somewhat more than a Hand's-breadth long, running obliquely upwards; the lower one is longer than the others. Each Side of the Wing is divided into several Lobes of uncertain Number, and unequal Bigness, oblong and somewhat oval; in some Plants very narrow and long, distinct and at a good distance from one another, quite to the Ribs; and thus being few and separate from each other, every one looks like a Leaf by itself; in others they are broader, shorter, and more grown together, with oval or circular Indentures in them, according as Nature has been pleased to divert herself in forming them, which she does with such Variety, that the Difference of the Leaves shall make the Plants appear as if they were not of the same Species. The Lobes run obliquely upwards, are narrow at the Bottom, and lie along by the Sides of the Rib, of a sea-green Colour, smooth, juiceless, stiff and brittle, a little hollow on the lower Side. They have one small String running from the Rib unequally along them, very rarely accompanied with others on each Side of it. The Bigness of the Lobes is uncertain; but one may reckon

reckon them, at a Medium, about three Inches long and one broad. Before the Root dies, (which generally happens in the latter End of Summer) there rises, with a Number of Leaves round it, a single, strait, round, furrowed, smooth, herbaceous Stalk or Stem, which grows up to the Height of six or nine Foot or more; at the Bottom it is larger than the Grasp of a Man's Hand; it grows less by degrees, and is divided into a small Number of Branches, and they again subdivided into Umbrellas, like the rest of the ferulaceous Plants. It is surrounded with very small Leaves, which grow alternately about the Distance of a Hand's-breadth from one another; which, with their broad, membranous, and swelling Bases, cling about the Stalk unequally and cross-ways to each other; and when they fall off, leave Marks behind them, which make a false Appearance of its being divided into Joints. It is exceeding full of a white fungous Pith, not broken by Joints, but with a few short Fibres amongst it running irregularly lengthways. The Umbrellas are upon a Stem of a Foot, others of a Span long, or yet shorter, and shoot out into several Radii disposed circularly; each of which making a kind of smaller Umbrella, ends in a few little Radii of about two Inches long; and on these grow the Seeds, naked and upright, upon short or very small Stalks. The Seed is plain and edged, (or leafy, *foliaceum*) of a reddish-brown, oval, nor unlike the Seed of *Sphondylium*, or Garden Parsnep, but somewhat larger and blacker than the latter, a little hairy and rough, marked with three Furrows, one of which runs through the Middle, and the others wind along the Edges, and all reach from End to End. It has a small Scent of Garlic, and a strong smart bitter Taste. In the Middle of the outward Shell or Husk is contained the true Seed, which is black, flat and oval, ending in a sharp Point. The Flowers I did not see; but they say they are very small ones, and of a whitish pale Colour; and I do not question but they consist of five Petals or Leaves.

The Plant of *Asa foetida* is called by *Avicenna* *Andsjudaan* and *Haltut*; which Word *Dioscorides* renders *Asper*, and *Matthioli* *Laserpitium*. In its own Country, both the Root and the Juice it affords, are called *Hingisheh*, and in *India Hung*. But in common Speech, the Word *Hingisheh* is used for the Plant, and *Hung* for the Juice; and in these Senses I have used these Words in my present Description. Whence the Name *Asa* is derived or corrupted, I enquire not. The *Germans*, from its strong and offensive Smell, give it the Name of *Devil's Dung*. This Plant, by the Conjectures of Botanists, has been referred to several different Species, and by the famous Criticks, *Scaliger* and *Salmasius*, set forth by its proper Marks and Names. I shall here give a genuine History of it from my own Inspection and Observation, having for that purpose taken a tedious and fatiguing Journey from the City of *Gamroon* to the Country where it grows.

Persia, only, is its native Country, not *Media*, *Lybia*, *Syria*, or *Cyrene*; wherefore, all the several Distinctions that are to be found in Authors, between the Juice of this or that Country's Growth, are insignificant. I was informed by two *Chinese* Dealers in Spices, that this Plant grows in their Country near the great Wall which divides *China* from *Tartary*, and has a Juice gathered from it. But I am not satisfied of the Truth of this, because I do not find any mention made of this Plant in the *Chinese Herbal*; for the importing the Gum by the Way of the Wall may have given Occasion to such a Mistake among the Ignorant. There are, at this time, but two Tracts of Land in *Persia* which produce this Plant, the Fields and Mountains near *Heraat*, which is a Market-Town in the Province of *Chorasaan*, and a Range of Mountains in the Province *Laar*, which reach from the River *Cabul*, to the City of *Congo*, along the Bay of *Persia*, at the Distance of two, or in other Places three or more Parangs from the Shore. But it is not in every Part of either of these Tracts, that the Plant yields any Plenty of Juice; but about *Heraat*, that only which grows in the wild Champaign Country; and in the Province of *Laar*, that only which is found upon the Mountains near the Town or Territory of *Disguun*. What grows on either side of these Countries, either yields a small Quantity of Juice, and is therefore not worth the Pains of gathering; or if it will yield any, there is no body to gather it. For on this side of *Disguun*, the Inhabitants of the Country, who are *Arabians*, Husbandmen brought over from the opposite Shore, and Strangers to every other way of Life but that of Shepherds, never attempt to gather any of it, but concern themselves only for the Supply of a low and humble Life, which they lead in poor Tents, and become supine and thoughtless of every thing beyond their own wretched Subsistence, and the Care of their little Flocks. Beyond *Disguun* the Plant is said to have lost almost all its offensive Smell, and grown so sweet, that the Goats are fond of the Leaves, and feed themselves exceeding fat with them. In order to fatten them the Day before they graze there, they are fed once

with Mountain Salt, (the only Salt they have there) and for the first fourteen Days after they begin to feed on it, they are never suffered to drink. The Plant grows indifferently in Thickets and craggy Places, and indeed wherever the Wind scatters the Seeds; but most plentifully, and often at no more than a Foot's Distance between the several Plants, in Places flatted and sunk into a Plain, as being fitter for retaining, and (on account of the better Condition of the Soil) nourishing the Seed.

It seldom grows in a moist or rich Soil, but more frequently in a stony, rocky, dry Soil, with a small Mixture of Clay; and if the upper Part of the Land furnishes not Moisture enough, it supplies itself with it from below, by striking the deeper Root. The People of *Heraat* account that which is called *Hingisheh*, and grows (they say) upon the Mountains, and in the Woods of *Disguun*, a different Species from that which they call *Husseh*, growing in their own Fields. The former, they tell you, affords but a small Quantity of Juice, and even that thin and weak; whereas theirs at *Heraat* yields Abundance of *Ouze*, more fat, unctuous, and fetid, and therefore much the better Sort. To try the Truth of this, and to observe in what respects they differed, I carefully compared a Plant of the Growth of *Heraat* (which while I dwelt at *Gamroon* I procured from *Chorasmia*, and had lost a great Part of its Strength) with one of *Disguun*, and I profess I found no Difference in the Shape. I then shewed the Plant of *Disguun* to the Carriers of the *Asa* of *Heraat* (who yearly brought it to *Gamroon*) not telling them of which Growth it was, and they immediately declared it to be their own, the *Husseh* Plant the Parent of the true and genuine *Asa*. Whence I gather, that the Difference between the Plants of *Disguun* and *Heraat* arises only from the Difference of Soil in those two Places. That of the Fields of *Chorasmia* is perhaps a fatter Soil, and therefore furnishes the Root with a larger Quantity of Juice, than the barren Ridges of the Mountains of *Laar* can afford it; to say nothing of the Juices of the Plants of each Province, which, compared together, afford not the least Suspicion that they are of a different Species; but are exactly alike, except in Cases where a Difference is made either by Adulteration, or by the Season or Manner in which they were gathered, as will appear more fully by what follows. The People of *Disguun* distinguish between the Male and Female Plants; those of the former Sex, they say, yield no Juice, but shoot up into a Stalk, which produces Seed, and by that means they die at the Root; the latter afford the Juice, and have no Stalk: However, this is a false Distinction, and made through want of due Attention; for there is no Root ever found but what will yield Juice, if it be cut before it runs to Seed like Fennel; for it will, if left to itself, sooner or later shoot out a Stalk; after which being deprived of its vital Moisture, it withers and dies, which is common to it, with most other Plants of the umbelliferous kind. The Root is said to live a vast while, even to vie with the Life of a Man for Duration; wherefore 'tis no Wonder if the Roots sometimes be found of a monstrous Size. If the Nature of the Soil be such, that it rises not to a Head in the former Part of its Life, (as it sometimes so happens) they affirm the Stem will grow to six Foot in Length, and to the Thickness of an ordinary Man's Wrist. In its middle Age 'tis as thick as a Man's Leg or Arm, and the Thickness got by one Years Growth is that of one's Thumb, always answered with a proportionable Length. The Fibres around the Head are sometimes a Mark of Age, and I am inclined to think they are the Remains of the Stalks of the Leaves which have fallen off, and were too nervous and firm for the Teeth of Time to destroy.

All *Asa foetida* flows from the Root when 'tis cut, and none either flows of itself, or can by any Art be pressed out of the Stalk; that Distinction, therefore, of the famous *Wormius*, between the *Asa* of the Root, and that of the Stalk, comes to nothing. A Root under four Years Growth, yields very little Juice, and is never cut; but as it grows older and larger, it yields proportionably more Liquor.

If it be taken out of the Earth, and not cut till the next Day, yet a milky Juice will flow from it; such a Quantity of Juice it abounds with, that it becomes uncommonly heavy. If it be cut through cross-ways, its whole upper Surface will be overspread with this milky Juice, which springs up in a continued Line winding irregularly. If we observe the Root carefully, we shall not find it all of the same Substance; but in some Parts of a fibrous and harder Substance, the Fibres running lengthwise in an irregular manner; and in others of a softer, more spongy, and homogeneous One; the latter seems designed for retaining the Liquor, and digesting it in its Vessels, the former for the Circulation and Conveyance of it to nourish the Stem. And I add, also, that it contributes to the making the Root firmer and more durable, which is of itself brittle and fragile. When the Root is dried from

all its Moisture, it looses all its softer Parts, and the fibrous ones only remaining, are contracted into a stringy Pith; but the rough Bark loses little of its Dimensions. The Liquor, when it first flows from the Vessels of the Root, is very white, liquid and fat, exactly like the Cream of sweet Milk, and therefore not in the least clammy; but by being kept in the Air or Sun, it changes its Colour to a light brown, and grows firmer and glutinous. Its Scent is the Test of its Excellency; the stronger it is, the better the *Asa*. When it first comes from the Root, it is of a prodigious strong Scent, above what it is, when grown firmer by Age, and brought into Europe; insomuch that one Dram of *Asa* fresh from the Root, will cast a stronger Smell than a hundred Pounds of what is dried by long keeping, and is usually sold by our Drug-gists. When I returned from the Mountains, I carried home with me a pretty many Roots, (into a very large House with a Court in the midst of it) but they filled every Room of it with so noisome a Scent, that I was forced immediately to throw them away. When the *Casila* (a Word they use for a Drove of laden Cattle and their Drivers) arrives with *Asa*, from *Chorasnia*, this Sort of Ware is always unloaded in a Field at a good Distance from the City; but notwithstanding this, if the Wind blows from that Quarter, the whole Air of the Place is infected with its Stench. It must be carried into India in a Vessel by itself, not with any other Goods that are liable to be corrupted; for Experience teaches, it will infect and spoil them all, and does the same by all Liquors. The Vessel in which I crossed over into Arabia, had one single Sack of *Heraat Asa* hanging at her Stern, which made us prodigiously uneasy with its offensive Smell; and the Master of the Ship was apprehensive, that even in that little Way, it would do harm to the Rose-Water, *Schiras* Wine, and the Eatables on board.

Dioscorides, Book 3. Chap. 78. has given us a long List of the medicinal Virtues of *Asa*; and *Garcias Arom. Hist.* B. i. C. 3. has said a great deal of its Excellency that Way. The *Persian* Physicians, by reason of the Nicety of that People, hardly ever use it. The Peasants of the Province of *Laar* became acquainted with its Efficacy in curing Colic Pains, the Dropsy, and especially the Tympany, from the Advice of the *Banjans*. A Citizen of *Disguun* himself told me, that he was afflicted with the Tympany, and that by swallowing a Bolus or large Pill of *Asa*, every Morning for six Weeks together, he was perfectly recovered. During this Course of *Asa* the Wind discharged itself so frequently upwards and downwards, and was of so abominable a Scent, that he was forced to banish himself from all Society and Conversation. The Seed of the Plant has the same Effect, but in a less Degree, and, therefore, the *Indians* fetch it hence for physical Uses. Wounds are said to be healed to a Miracle by the Application of *Asa* fresh gathered. If this Plant be laid in any Furrows where Water drains, and from thence runs into any Gardens or Groves of Palm or Date Trees, that Water will kill all the Worms at the Root of any Plant whatsoever. The *Indians* (especially the *Banjans*) use *Asa* commonly in their Sauces.

The famous *Renodanus* could hardly be brought to believe this Account of it given him by *Gazzia*; for, says he, if this be true, surely either *Asa Foetida* does not stink in India, or the *Indians* Palates are made of Brass. I myself have tasted Cakes that have been mixed with this Liquor, which have had a far more tolerable Relish than I expected from them. 'Tis a common Thing among *Banjans* to rub the Rims of their Cups with this Liquor, to raise an Appetite.

There is a very great Dispute between the Men of *Heraat* and *Disguun*, whose *Asa* is to be preferred; each think to advance the Worth of their own Commodity, by depreciating that of the others. At *Heraat*, the *Asa* of the Mountains of *Disguun* is decried, as lean, dry, and of a bastard Kind; while their own is declared to be fat, soft, and of the highest Scent. The Men of *Disguun* reply in behalf of their *Asa*, that the Fatness of the *Heraat Asa* is not natural but forced, by their mixing it at its first Gathering with the Cream of Camels or Goats; by these Means, they think it does not harden so soon, nor will it keep so long when it is thus sophisticated; thus, say they, the Buyer is cheated into a Belief, that what is really the Fatness of the Mixture, is the genuine Richness of the *Asa*. Envy, and the Love of Gain, engendered this Quarrel; but there is no Reason thence to conclude the *Asas* of these two Places to be of a different Species; wherefore, without Regard to this or any other Distinctions made by Druggists, I shall only distinguish between the Plants themselves, and the *Asa* they produce, as they grow in Fields or Mountains; at *Heraat* or *Disguun*; or, if you would rather use the Names of the Provinces in which they grow, of *Chorasnia* or *Laar*; the one is for the most Part fatter and softer, and brought over wrapped in Sheep's and Goats Skins; the other is drier, and comes in Bags made

of the Leaves of the wild Palm-tree. As all my Observations were made upon the latter, so I here give you an Account of the Manner of gathering it, which is the same with that of gathering the *Asa* of *Heraat*, except in a very few Circumstances.

The Harvest of *Hingisib* or *Asa*, is gathered by some of the Inhabitants of the neighbouring Villages, but principally, by the major Part of the People of *Disguun*, who are, in all, about three hundred, and is completed in four Seasons, or, which is the same, in going four times from the City to the Hills where the *Hingisib* grows, which are distant about two, three or four Parafangs. I will relate the Order of the several Times, or Seasons, in which the Harvest was reaped by the People of *Disguun*, that Year I visited these Mountains, which was 1687. The Order is indeed always the same, tho' perhaps the Day on which they begin their Harvest, or the Distances between the several Seasons of it, be not always exactly the same.

FIRST SEASON.

Before ever they began their Work, they made Enquiry what the foreign Demands for *Asa* were, that they might not spend their Time and Labour in vain; as soon then as they are assured of a Vent for it, they flock to the Mountains about the Middle of April, because that is the proper Season to prepare the Root for yielding its Moisture; of which the *Palenefs*, Drooping, and Withering of the Leaves, is a certain Sign. If the Peasants of the neighbouring Villages determine to gather any, they repair thither in the same Month. When they arrive, they disperse themselves, and keep at a great Distance from one another, so that they who have agreed to make one common Stock of what they gather, whether they are a single Family, or a Number of Families related to each other, or the People of one particular Street thus agreed, pitch severally upon a certain Tract of the Mountain, and gather there. Here each Man cheerfully falls to Work on the Plants he finds; and first, with a Spade, takes away the Earth a little Distance around the Root, which is commonly a firm Sand or Gravel, to about the Depth of a Span, so that the Root appears naked a good Height out of the Ground. Secondly, he takes the Stalks of the Leaves cross-ways in his Hand, and twists them off from the Root, which, in that Season of the Year, is easily done; then takes off the rough Crown of Fibres from its Head, which appears underneath bald and wrinkled. Thirdly, with his Spade, or Hand, he breaks the Clods of Earth he had dug up, and covers the Root again with them to the Top; then upon the Earth he lays the Leaves he has pulled off, or any other that chances to be near him, with a Stone upon them, lest the Wind, which is here often exceeding violent, should carry them away, and he, at his Return, not know where to find the Root.

The Reason of thus covering the Root, is to defend it from the Sun's Heat; for were it exposed to it, it would, in twenty four Hours, putrefy, and yield no Profit to the Labourer. After they have thus prepared many thousand Roots for gathering, (four or five Men usually prepare two thousand) they leave the Mountains and return home, having, in about three Days time, finished the Labour of the first Season, which they call *Kustian*, that is, to kill, as if this were the Season of Slaughter; because, in this Season, the Plants are condemned hereafter to die, by being drained of their vital Juice.

SECOND SEASON.

After forty Days spent at home (this Year they staid longer than they usually did) the whole Number of Gatherers leave the City in the Evening, and in the Morning, the twenty fifth of May, arrive at the Mountains; they then divide themselves, and each Company goes to its allotted Tract of Ground, to collect the Liquor from the Roots, prepared in the Manner described above; which being here got together for the Nourishment of the Leaves, now all stagnates at the Top. The Instruments they had, were, a sharp Knife for cutting the Root, a Sort of Slice or Spattle made of Iron, broad at the End, to scrape the Juice from off the Root, and a Dish or Cup fixed upon their Side, to put the Juice into, as they scraped it off, and two Baskets hanging by a Yoke from the Shoulders, in which they carry off the whole Quantity of Juice they gather. It ought to be mentioned, that every Company divides its Portion of Land, and consequently the Roots, into two Parts, and all in the Company work in each Part every other Day; because, after the Root has afforded a good deal of Moisture, it requires Time both to yield fresh Liquor, and to thicken what it has already yielded.

Each Man takes a Root, and removes the Bundles of Leaves and Earth which cover its Top. He then cuts off the rough Top cross-ways, and leaves the upper Surface concave, whether the Liquor flows, without any Danger of running over, till after two Days it is scraped off. Then, as in the former Season, he again covers the Root from the Injuries of the Sun's Heat, and takes Care to lay the Leaves over the Surface arch-wise, that they may not, by pressing upon it, wipe off the Juice. When their Task is finished for that Day, the next Day, the twenty sixth of May, is spent from Day-break in the like Labour, in the other Division of their Land: On the twenty seventh they revisit the first Part with which they began, and after having taken away the Shelter of Leaves, they scrape off the Liquor they find at the Top of the Root, and put it into the Dish that hangs by their Side. Then they take away a little more of the Earth about the upper Part of the Root, and with their Knife cut off the dry Surface, about the Thickness of an Oat-straw; for it is enough if just the Outward Surface be cut off, which stopp'd up the Pores, which, when that is removed, discharge themselves of their Liquor; and indeed they have experienced, that the thinner the Parings are, the freer and more plentifully the Root flows again. The same Persuasion they have of the Preferableness of one Manner of cutting it, which they require should be performed by striking the Knife through, and not the common Way of drawing it backward and forward; which, they say, does not make them ouze so plentifully as the other.

The Reapers frequently empty the Dishes which hang by their Sides, and then put the Juice into larger Vessels, or pour it into Leaves laid upon the Ground; that the Sun's Heat may stiffen it; by which means also it loses its natural Whiteness; for its Substance being soft and differently situated, admits the Sun's Rays in a greater Quantity in some Parts than in others; its Colour also may be affected by what it is laid upon when fresh gathered.

Thus, after the Root is covered again, the Work is done. On the twenty eighth, the same Business is done in the same Manner, in the second Division. On the twenty ninth they return to the first Division; and when they have gathered the Liquor from the Root a second time, they take away the Earth, cut it, and cover it again as before. On the thirtieth, the Liquor in the Roots of the second Part, is gathered a second Time, and the Roots cut. This is the Work of the second Season, in which the Roots are thrice cut, and the Liquor that pours out of them twice gathered. Then each Man puts his whole Collection into the Baskets, which hang on each Side of him, from a Yoke laid across his Shoulders; and carries it away. Each Company of four or five Men carry off about ten or twelve *Maad* of *Disguin*, that is, about fifty German Pounds. This *Afa* of the first Gathering, is not esteemed the best, but rather a meaner Sort.

THIRD SEASON.

After ten Days time (eight will do) allowed for the Roots to supply themselves with fresh Liquor; on June tenth, at Day-break, they return to the first Division, and go on with their Harvest. Having removed the Shade of Leaves, and the Earth from about the Root as before, they scrape off the Liquor from the Top of it, and then cut it again, and cover up the fresh Wound as before. On the eleventh they do the same in the second Division.

This Liquor, which in ten Days time flows from the Roots in a larger Quantity, and is of a due Consistency, is called *Pispaas*, the other is called *Sjur*, that is *Milk*, from its Whiteness, and want of Consistency. The *Pispaas* is commonly esteemed much better, and is a great deal dearer than the *Sjur*, whether on account of its Scarcity, or its greater Consistency, I know not; this I am sure of, that the *Sjur*, tho' it is thinner, is not of a worse Substance than the *Pispaas*; for if it be longer exposed to the Air, it grows full as firm, and cannot be distinguished from it. I am, therefore, inclined to think, that the People of *Disguin* never before sold the *Afa Sjur* pure and genuine, but always adulterated it, which was easily done, when it was fresh gathered, because it was so liquid and thin; whereas the *Pispaas* being much more consistent and firm, will not mix with any other Substance, and is therefore sold neat and pure. All *Afa* is of itself simple and unmixed; therefore, all heterogeneous Matter in *Afa* comes by Adulteration. The Reapers themselves confessed to me, that they used to mix with the *Sjur Afa*, not Meal, nor any Sort of sagapenous Gum, as most Writers have thought; but a pure Clay, which was just at Hand on the Mountains where they gather it. Most, they said, put an equal Quantity of this to their *Afa*; others twice as much, or in Proportion to their Desire of Profit, still putting in the more, the thinner the *Afa* was. This made the Price of this

Afa very low; and after the Cheat was discovered, the *Afa* of this Sort was despised; and indeed, they who thus adulterated it, suffered enough for it; for no body would buy any *Disguin Afa* for Fear of this Imposition; having therefore learned more Prudence, they no longer use any Kind of foreign Mixture, but put the *Afa*'s of each Sort and Gathering promiscuously together, and carry it in Bundles to *Congo* and *Ormus*, whence 'tis exported. And if there is yet any Mixture in it, it is through the Negligence of the Gatherers, in not covering the Roots carefully after they have cut them: Tho' indeed all their Care cannot prevent Dirt and Dust from falling from the Leaves that shade the Roots, or from being blown upon them by the Wind, which will, in some Measure, foul the Liquor.

On the twelfth Day, in the first Division, and on the thirteenth, in the second Division, they gather the Juice *Sjur*, and cut and cover the Root again; and on the fourteenth they do the same again in the first Division, and on the fifteenth again in the second; so the Roots, after having yielded once the thicker *Afa Pispaas*, and twice the thinner *Sjur*, are left under their Covers.

FOURTH SEASON.

After three Days Stay at home, on the third of July, they visit the Roots again; having been taught, by Experience, that in a longer Intermission, after they have been so often drained of their Moisture, and brought nearer and nearer Death, they will be subject to putrefy, and whatever Liquor they have then in them, would be lost, by deferring the Gathering of it any longer. The first Day is spent in gathering the *Afa Pispaas*, in the first Division, in the Manner before described. The fourth Day is spent in the second Division, in the same Work. On the fifth Day they gather *Afa Sjur* in the first Division; and on the sixth, in the second Division. On the seventh Day they finish the Work in the first Division; they get what Juice they find there, and cut the Roots no further, but leave them uncovered, whereby the Air and Sun presently kill them. On the eighth Day, they concluded the Business in the second Division, and leave the Roots, in the same Manner, to be destroyed. Thus is the Harvest of *Hingeseb* or *Afa* completed.

In three Excursions to the Hills, they gather the *Sjur Afa* eight Times, and the *Pispaas* three times from each Root. But it is to be remembered, that the larger Roots, such as are above twenty Years old, and are found in the furthest Parts of the Mountains, whither they cannot climb without great Difficulty, are not so soon laid aside, but they will yield the *Afa Pispaas* four or five times, and the *Afa Sjur* so much oftener in Proportion. So that these Roots are not compleatly drained of their Juice till September. However, in these Mountains few Roots are found above ten Years old, and none ever exceed twenty. For the great Price that *Afa* hath bore for many Years together, made the Reapers gather all the Roots that ever they could find, so that there has not, of late, been Time enough allowed for any to arrive at so great an Age and Bulk. The Roots being drained of their Moisture, and left uncovered, do every one of them putrefy: Tho' one of the Reapers affirmed to me, upon his own Experience, that if they were covered with Earth, they would grow again; but in this Point none of the rest agreed with him. *Kempfer*.

SILURUS. Offic. Schw. Theriot. Sil. 444. Schonef. Ichth. 69. Rondel. de Pisc. 2. 180. *Silurus Rondeletii*, Raii Ichth. 128. Ejujd. Synop. Pisc. 70. Geln. de Aquat. 867. *Glanis*, Aldrov. de Pisc. 567. Salv. 210. Charlt. de Pisc. 40. Jons. de Pisc. 101. The SHOAR FISH.

This Fish is found in the *Damube*, and its Flesh is nourishing when eaten fresh, and loosens the Belly; but seasoned with Salt, affords very little Nourishment, but clears the *Aspera Arteria*, and mends the Voice. The salted Flesh applied draws out Splinters, and the Pickle cures a recent Dysentery, being used by Way of Insestion, by attracting the Flux of Humours in the Superficies; a Clyster of the same cures the Sciatica. *Discofidus*.

SILYBUM. A Name for several Species of Thistles. Thus there is the *Carduus Lacteus, peregrinus, major, semine fuso*, which is called by Parkinson, *Silybum minus annum*. And the *Carduus lacteus peregrinus Camerarii*. J. B. *albis maculis notatus exoticus*. C. B. is called, *Silybum minus Patricum*, by the same Author. See AGA CRETENSIMUM.

SIMAROUBA.

The most celebrated Plants which have been pointed out and recommended, either by the ancient Botanists in general, or modern Travellers in particular, as specific Remedies, are not really specific, but in certain Cases. Diseases seem not to resemble one another more in some certain Symptoms, which are common to them, than they sometimes differ as to the Causes

Causes on which these Symptoms depend. Hence it must of Necessity happen, that the same Remedies being employed in Diseases, which resemble one another only in Appearance, seldom or never produce the same Effects; and this has given Occasion to the ill Usage which is every Day made of the most salutary Plants, and that Neglect and Disregard which have afterwards been shown to those which were, at first, the most in vogue.

The Plant *Ipecacuanha*, which *Piso* had observed to be one of the most effectual Remedies for a Dysentery with the People of *Brazil*; that famous Root which the late *Helvetius* first employed with so good Success in this Country, and which, from that Time, justly passed for a Specific against that Disease, is on the Point of sharing the common Fate of all wonderful and extraordinary Plants imported from foreign Countries.

Ought we then to condemn as useless that Remedy, because it has not always succeeded in Dysenteries when prescribed? Or ought we not rather to lay the Blame on the Want of Experience in those, who being no Physicians, directed the Use of it on improper Occasions? And indeed what Remedy, tho' ever so effectual, would not be subject to lose its Reputation in such Hands?

The true Reason why *Ipecacuanha* is sunk in its Esteem among us, is, that instead of a prudent Use of it, in a Collection of Crudities in the *Primæ Viæ*, or the abdominal Viscera, it has been prescribed sometimes in hepatic Fluxes, sometimes in dysenteric Fluxes occasioned by an immoderate Use of Purgatives, frequently under an Inflammation about the Abdomen, and sometimes when a pungent and fixed Pain, which attends some Dysenteries, gives Room to suspect a cancerous Ulcer in the Intestines.

To direct the Use of *Ipecacuanha*, on any of these Occasions, would be, in a Manner, to force Nature to produce, by Means of this Remedy, Effects for which she never designed it. If the little Success which attended its Administration in all these Cases, was an evident Proof that they were all out of its Sphere, would it not be prudent and advisable for the practical Physician to abstain from the Use of it, because, in these Circumstances, it had not answered his Expectation? And since he was convinced by his Observations, that this Root cured no Dysenteries but such as were of a certain Character, should not that Experience have put him upon the Search for new Specifics, for the Cure of those which might be of another Kind?

It can hardly be doubted by those who have never so little consulted the antient Botanists, but that such there are in Being; and if the Ancients had the Knowledge of some of them, why should we despair of retrieving them from that State of Oblivion into which they are fallen since their Time?

Dioscorides speaks of a Root of a yellowish Cast, pretty thick, and very astringent, which, he says, was brought from *Barbary*, a Name given in his Time to the remotest Countries of the East. The Bark of this Root was then used in Decoction for Hemorrhages at the Mouth and Nose, for Dysenteries and Fluxes [*Deveyements*]; he gives it the Names of *Maxig* (*Macer*) and *Maxig* (*Macir*).

Pliny calls by the same Names of *Macer* and *Macir*, the Bark of a Tree which was brought from the *Indies*, and which, he says, was of a reddish Colour.

Galen, who in the Description and Uses which he gives us of it, agrees with these two Authors, only adds, that it is aromatic.

And it is not at all strange that *Averroes*, and other *Arabian* Physicians, had the Knowledge of the *Macer*, since it is the Bark of a Tree which grows in the Eastern Countries.

All that has been said by ancient Authors concerning the *Macer*, may be found in the Relations given us by some who have travelled into the *East Indies*, and particularly those who have visited the Coasts of *Malabar*, and the Island of *Sainte Croix*. They tell us of a greyish Bark, which being dried, becomes, as they say, yellowish, is very astringent, and has the same Virtues as the *Macer* of the Ancients.

Christopher Acosta, who has given us one of the first Accounts of simple Drugs imported from the *Indies*, and was Physician to the Viceroy, says, that the Tree which bears that Bark, was, by the *Portuguese*, called *Arbore de las Camareras*, and *Arbore Sancto*; that is to say, "a Tree for Dysenteries," and, for its Excellence, "The Holy Tree;" by the Christians, *Arbore de Sancto Thome*, "the Tree of St. Thomas," by the Natives of the Country, *Macruyre*, and by the Brachman Physicians *Macré*, which agrees with the ancient Word *Macer*.

The same Historian, who is the only one that has given us a Figure of that Tree, compares it with one of our Elms; and as to the Virtues and Use of its Bark, he relates such particular Matters of Fact, of which, he says, he had been an

Eye-witness, that there is hardly any Remedy which might with more Justice claim the Name of a Specific.

To shew the Value which they have for this Bark in the *Indies*, I shall only quote a Passage from the Works of that Physician, being an Elogy, or Commendation, given, he says, by an *Indian*, to the Tree which he called *Macré*, as he was shewing it to him. It was a Tree, he said, pointed out by Angels for the Health of Mankind, and that it was to be preferred in its small Dose before the large Quantity of Barks of *Myrebalans*, *Areca*, and *Coris*, which are usually prescribed, and have been always reputed by the *Indians* the most excellent Remedies against the Dysentery.

Clusius, a Botanist of the sixteenth Century, and particularly famous for his learned Inquiries into foreign Plants, had a Suspicion even in his Time, that a certain small Quantity of Bark, like that just before described, and which he saw at a Physician's at *Amsterdam*, for whose Use it was imported from the *Indies*, as a Specific against the Dysentery, was the same Bark which *Monardes*, a Physician of *Sevil*, says, in his *History of Drugs*, he had so happily made use of in that Distemper, without knowing what it was.

All these Descriptions, which seem to agree to the same Tree, and that Tradition of the Virtues of its Bark, proved true by the Experience of those Authors, have excited my Curiosity, in order to attain the Knowledge of so sovereign a Remedy, and to enquire into the Causes whence it comes to be intirely lost, since the Time of *Galen*, in the Western Parts of the World.

About the Year 1713, there was first imported from *Cayenna*, to M. le Comte de Pontchartrain, Secretary of State, the Bark of a Tree called in that Country *Simarouba*, and which he was assured was used, in those Parts, with good Success, in Fluxes and Dysenteries. This Account of its Usefulness induced that Minister to make a Present of it to the Academy of Sciences, and to M. *Fagon*, at that time first Physician to the King, who presented a Part to the Professors of the Royal Garden. But the small Quantity which was distributed to them not permitting them to make many Experiments, it only served to lie in their Druggery, as a Sample of a rare Drug, whose Effects were not as yet well attested in those Parts.

All that was then discovered relating to it, by the Experiments which M. *Fagon* caused us to make, was, that this Medicine was, at least, safe, and not dangerous, since it had no sensible Effect, neither by any manner of Evacuation, nor by the least Pain in the Intestines.

But in the Year 1718, when the Heats of the Summer were excessive, and gave Rise to vast Numbers of Dysenteric Fluxes, which were so far from yielding to Purgatives and common Astringents, or even to *Ipecacuanha* itself, which was accustomed to be used, with good Success, in repressing those extraordinary and violent Kinds of Evacuations, that, on the contrary, they were rather the more exasperated and increased by the Repetition of those Remedies, we had Recourse, as to the last and most sovereign Remedy, to the small Quantity of *Simarouba* which was left us, of the Distribution which M. *Fagon* had made to us, and we were soon satisfied, in short, that of all the Remedies which we had hitherto put in Practice, none had so readily succeeded as this Drug.

This happy Success having raised more and more my Esteem for this Bark, I intreated M. *Randot*, Intendant General of the Navy, to procure for me another Quantity, with a Design to use it not only in Dysenteries, which were ceased at the Beginning of 1719, but in Fluxes of Blood, which are so common in the Women of this Country, and so dangerous, on Account of the Use of Alum, which has been for some time past the Remedy in Vogue.

The Conjectures which I had entertained of the near Affinity of the Causes which produced those Fluxes, and certain Dysenteries, which are pretty common, induced me to make Trial of the same Drug in both these Disorders; and the continual Success which attended the Use of it on both Occasions, was so far from tempting me to make a Secret of the Discovery, that, on the contrary, it engaged me to compare all those Observations with those I had seen in our ancient Botanic Authors, concerning the Description and Effects of *Macer*, with a View of retrieving, and restoring to the Public, that previous Specific, so much extolled by them.

And such is the Matter of Fact, that in Truth it may be said, that if the *Simarouba* of the *Americans* be not the *Macer* of the Ancients, it has, at least, a very great Resemblance to it, both in Form and Effects.

The Colour of the *Simarouba* is a yellowish Grey. *Dioscorides* says, that the *Macer* is of a yellowish Colour.

Our Bark is more or less thick, in Proportion to the Age of the Tree; the same Author makes the Bark of the *Macer* to be of a competent Thickness.

It is generally acknowledged, by all those who have spoken of the *Macer*, that it is of a very astringent Quality; this, also, is the specific Virtue of the *Simarouba*, the Decoction of which being drank, has the same Success as that ancient Specific exhibited in the same Manner.

It will, indeed, be difficult to demonstrate a perfect Agreement between the *Simarouba* and the *Macer*, because the Antients who speak of the *Macer* are not agreed, as to the Tree which bears that Bark; nor about the Quality of its Smell nor Taste; and it is to the Variety of their Relations on this Head, and the Ignorance of Commentators, who confound *Macer* with *Macis*; that, I think, we ought to impute the Cause of that Oblivion into which that Drug has fallen since *Galen's* Time; for as to the Point of its being a Native of the *East-Indies*, whence *Pliny*, *Serapion*, and *Averroes*, all make it to come, *Garcias ab Horto*, *Acosta*, and *John Morquet*, who travell'd thither in the sixteenth Century, assure us, that it was a Remedy then used in the Hospitals, and that at *Bengal* they made a considerable Traffick with it.

With regard to the *Simarouba*, I shall now give you an Account of what I had an Opportunity to observe, after I had received fifty Pounds of that Drug from *M. Barrere*, Physician and Botanist, at his Return from *Cayenna*, in the Year 1723. This Bark, both as to its Inside and Outside, pretty much resembles that of the Linden-Tree, and is of the same stringy Consistence, which render it flexible, and hard to break; and being chew'd in the Mouth, it has a little bitterish Taste, which is very tolerable, and communicates the same to the Water in which it is boiled.

It is observ'd, that in the boiling, the Liquor grows white and spumous, like Milk, and rises, considerably more in the Vessel, than the Decoctions of common Drugs; and, when it is settled after boiling, takes a reddish Colour, much like that of Small-Beer.

During almost fifteen Years last past, in which I have used the *Simarouba*, I have observed, that two Drams of that Bark boiled in a Pint and half of Water to a Pint, is enough for three Glasses, one of which is the ordinary Dose.

This simple Decoction having always better succeeded with me than the Powder of the Bark and its Wood, I prescribe it with the more Freedom, in that it is not at all disagreeable to the Taste: But since we meet with some Patients, who had rather take the *Simarouba* in Powder, the Bark or its Wood must be rasped, almost in the same Manner we rasp Tobacco, and exhibit twelve or twenty Grains every three Hours, either in Pills, or in a Spoonful or two of Broth. This Manner of exhibiting it, seems preferable to that practis'd by the *Indian* Physicians, who give it, as *Acosta* says, in four Whey.

Before I ventur'd to publish what I now write, I satisfy'd myself by my own Experience, that the Effects of the *Simarouba* were almost constantly the same in obstinate and slimy Dysenteries, and in bilious and bloody Fluxes, which very rarely failed of stopping at the third or sixth Glass, without any Pain, or Evacuation upwards or downwards, except in a more plentiful Discharge by Urine, which becomes high-colour'd, and sometimes, in particularly qualify'd Subjects, copious Sweats.

Almost all those who have been cured by it, have inform'd me, that as soon as they had taken the second Glass of the Decoction of *Simarouba*, they felt inwardly a dull Kind of Motion throughout their whole Body, which they call'd a *Combating with the Disease*, much like to the Effects produced by the *Quinquina*, when being seasonably administer'd it puts a sudden stop to the Return of the feverish Fit.

In short, though I have seen sick Persons, who were very much extenuated, and had lost all Appetite, recover, after the Use of this Medicine for two Nights, a Serenity and Composure of Spirits, which were the Prognosticks of approaching Health, and have their Sleep and Appetite, in a surprizing Manner, restored, yet I have met with some Subjects, who, either through Want of Regimen, or from some Remains of the Disease, have relapsed some Days after their Restoration, but by renewing the Use of the same Drink for two or three Days together, the Disease has at last been totally subdued.

Though such are the good Effects of the *Simarouba*, as I can attest from my own Experience, it must, however, be confessed, that it would be dangerous, or at least of no Service, to use it in Fluxes, Floodings and Dysenteries, where an Evacuation of the *Primæ Viæ* might first be necessary before we think of strengthening the Intestines; because the Constipation which succeeds the Use of this Remedy, and continues for two or three Days, might occasion some Congestion and Settlement of the Humours in some particular Part, especially in Subjects where the Kidneys are obstructed, or when the Party is not free to sweat: Hence it appears to me adviseable, not only to have recourse to general Reme-

dies, before the Use of the *Simarouba*, but also to be careful to proportion the Dose to the Condition of the Patient.

If we might judge by that slight Reliëf of Bitterness perceiv'd in chewing the *Simarouba*, as well as by the whitish and milky Colour it communicates to the Water in which it is boiled, and by the Readiness with which it represses the most stubborn and inveterate dysenteric Fluxes, not only by putting a Stop to the Blood mixed with the Stools, but by restoring the Excrements to their natural Consistence, we may be pretty confident, that there enters into its Composition an acrimonious, saline Matter, involved in oily and balsamic Particles; for its Bitterness, and the Recovery of lost Appetite, which it procures, depend on that acrimonious Matter, which becomes stomachic; the milky Colour which the Water receives from it in boiling, indicates it to be endu'd with an unctuous, balsamic Quality, the certain Proofs of which are, that calm Composure of Spirits, and sudden Cessation of all griping and wringing Pains, and others of any Kind whatever; and, lastly, by its quick Suppression of the Hæmorrhage, and that considerable Constipation of the Belly which it procures, we are convinced of its vulnerary and astringent Virtue, which was the most valuable Qualification of the *Macer* of the Antients.

The Discovery of a Specific for the Cure of certain Dysenteries, which yielded not, in these Countries, to the Use of *Ipecacuanha*, nor to other Remedies celebrated for curing that Distemper, is not the only Fruit which the Public may reap from the Observations here made; they instruct us besides, and let us see that all Plants have their Use, and that we ought not slightly to lessen the Number of those which are useful, by retrenching such as have not all their Properties display'd before us; that it is the Duty of the practical Physician to cause a proper Value to be set on such Remedies, and Assistances, which would come insensibly to be neglected, if Botany were to be regarded only as a Science of pure Curiosity; but that without the Lights afforded us from Botany, it would be impossible to come to the Knowledge of a considerable Number of Specifics indicated by the Antients, and lost for many Ages; and, lastly, we learn what Precautions are necessary in the Use of Things recommended to us and extolled by Travellers, that we may not employ them but in such Cases, and under such Circumstances as require their Assistance. *Memoires de l'Acad. des Scienc. 1729. par M. de Jussieu.*

SIMBOR MANGIANAM, *sive Cornu Alcis*. *Bontii*. The Name of an *Indian* Plant, which grows near the Sea in *Java*, and the Kingdom of *Bantam*, of the Figure of an Elk's Horn. It is said to be emollient and resolute; to loosen the Belly, and kill Worms, if bruis'd and apply'd to the Region of the Navel. It is, farther, us'd as a Resolver of cold Tumors. *Lemery des Drogues.*

SIMIA. *Raii Synop. A. 148. Aldrov. de Quad. Digit. 225. Jonst. de Quad. 96. Schw. de Quad. 121. Charlt. Exer. 16. Gefn. de Quad. Digit. 147. THE APE.*

The Parts in Use are the Stone, or *Bezoar Simia*, which is sometimes found in the Stomach of this Animal, the Heart, and the Flesh. The Heart roasted, or boiled in Hydromel, sharpens the Sight. The Flesh is cold and dry, austere, of very bad Juice, and unfit to eat. *Dale from Schwentfeld.*

SIMIA is, also, a Name for a Fish found in the Nile.

SIMILA, or **SIMILAGO**. The same as **SEMIDALIS**. Fine Flower, or Meal.

SIMITAS. A Flatness of the Nose.

SIMIVULPA. The Name of an Animal mention'd by *Aldrovandus*. It is thus call'd, because it resembles an Ape; and a Fox. It is of no Use in Medicine.

SIMITIUM. *Cerufs. Rulandus.*

SIMOS, or **SIMOTHES**. *Cerufs. Rulandus.*

SINAPELCEON. Oil of Mustard Seed.

SINAPI

The Characters are;

The Pod is full of very tart Seeds, which are of a roundish Figure, and of a very hot Taste, and ends in a fungous Horn full of the like Seeds.

Boerhaave mentions fourteen Sorts of *Sinapi*, which are;

1. *Sinapi, Rapi folio*. *C. B. P. 99. Tourn. Inst. 227. Boerb. Ind. A. 2. 13. Sinapi, Offic. Sinapi sativum, Ger. 189. Sinapi sativum alterum, Ger. Emac. 244. Sinapi sativum secundum, Raii Hist. 1. 803. Synop. 3. 295. Sinapi sativum Rapi folio, Park. Theat. 83. Sinapi siliqua latiusculâ glabrâ, semine rufo, sive vulgare, J. B. 2. 855. Eruca Rapi folia, Rupp. Flor. Jon. 64. COMMON MUSTARD.*

Common Mustard has the lower Leaves large, rough, and pretty much resembling Turnep Leaves. The Stalk grows to be three or four Foot high, smooth, much branched, and having several smaller Leaves than those below, thick,

thick, smooth, and less cut in, but yet a little sinuated about the Edges, and hanging downwards on long Foot-Stalks. The Flowers are small and yellow, of four Leaves a-piece, set many together, and flowering by degrees; before they have done flowering, the Spike of the Seed-Vessel is extended to a great Length; they are squarish, clasping close to the Stalks, and sharp-pointed at the End, full of round, dark, brown Seed, of a hot biting Taste. The Root is whitish, branched, and full of Fibres, but perishes after it has ripened it; the Seed grows frequently in waste Places, and among Rubbish, and is frequently sown in Gardens, flowering in June.

The Seeds are used, and of them is made the Sauce of so common Use, called Mustard, which is a wholesome Condiment, provoking an Appetite, strengthening the Stomach, and helping Digestion. It is, also, good for the Head, and useful in Apoplexies, Lethargy and Palsy, especially of the Tongue. The Seed bruised and infused in Wine or Ale, is of great Service against the Scurvy and Dropsy, provoking Urine and the Menstrues. Mustard outwardly applied, is very drawing and ripening, and laid on paralytic Members, it recalls the natural Heat. *Miller's Bot. Off.*

Mustard Seed, by the chymical Analysis, gives a much greater Indication of an acid than an acid Salt; but it affords a considerable Quantity of Oil, very little fixed Salt simply saline, a great deal of Earth, a little urinous Spirit, and no volatile concrete Salt.

This Seed is stomachic, diaphoretic and antiscorbutic; it is good for the Hypochondria, Green Sickness, Cachexy, and sleepy Distempers. It is proper for such as are threatened with an Apoplexy, to chew Mustard-Seed in the Morning fasting. The following Cataplasm gives great Relief in Rheumatisms of the Breast:

Fry some Leeks, cut small, with a little Vinegar; when they are enough, strew them with a little bruised Mustard-Seed: Apply this Cataplasm to the Part affected; it is very resolvent, and will raise Blisters if you put in a good deal of Mustard.

Some make a Cataplasm with Turpentine, Pidgeons Dung and Mustard, and apply it to the Parts affected with the Gout, and even to the Jaw in a violent Tooth-ach. *Martyn's Tournefort.*

It heats and dries, incises, attenuates, and attracts. Its principal Uses are to excite an Appetite, promote Chylification, and purge the Head. Outwardly it is used in a Sinapism, being put in the Nostrials, or applied to other Parts. It breaks mature Tumors, and excites Sneezing. *Dale from Schroder.*

When Mustard is calcined, it leaves very little Salt in the Ashes, because the Salt is volatile, and flies off in the Calcination.

We have given the Distillation of Mustard-Seed under the Article ALCALI. And must here remark from *Boerhaave*, that Mustard, and other acrid Vegetables, prove excellent Medicines, when prudently given in Distempers attended with an indolent, watery, or cold phlegmatic Humor, no way saline, where acid Humors are lodged in the first Passages; where the Bile is sluggish, and where no alkaline, fetid, or oily putrid Matter is lodged; but the Body remains cold, torpid, and swelled all over; as, on the other hand, they prove hurtful, where the Body is hot and feverish, the Bile sharp, the Juices putrid, the Parts inflamed or wasted; or where the putrid Scurvy abounds.

Oil of Mustard, by Expression, is prescribed with Success in the severest Fits of the Stone. But this Oil, by Expression, is more mild, and by no means like Oil of Mustard-Seed, which is procured by Distillation, and is extremely acrid and igneous.

2. Sinapi; Apii folio; siliqua hirsuta; semine albo, aut rufo. *Boerb. Ind. A. 2. 13. Tourn. Inst. 227. Sinapi album, Offic. Sinapi Apii folio, C. B. P. 99. Sinapi album, siliqua hirsuta, semine albo vel rufo, J. B. 2. 856. Raii Hist. 1. 802. Synop. 3. 295. WHITE MUSTARD.*

This Mustard seldom grows so tall as the former, but it is rather more branched; its Branches are fuller of Leaves, which are rough and hairy, and more divided than the former. The Flowers are larger, and of a deeper yellow Colour; the Seed-Vessels stand out farther from the Stalks, are very hairy, ending in a long empty Point, containing four or five white Seeds, which are larger than the common, and make the Seed-Vessels appear knotted. They are not quite so hot as the other. This grows wild in several Places, but not so frequently as the former, flowering about July.

This is much of the Nature of the common Mustard, and some prefer it before that to make their Sauce, because it is less bitter, and pleasanter to the Taste. *Miller's Bot. Off.*

3. Sinapi arvense; præcox; semine nigro, *Tourn. Inst. 227. Boerb. Ind. A. 2. 13. Rapistrum, Offic. Rapistrum arvenum, Ger. 179. Emac. 233. Park. Theat. 862. Raii Hist. 1. 802. Synop. 3. 295. Rapistrum flore luteo, J. B. 2. 844. C. B. P. 95. Eruca arvensis vulgaris, Rupp. Flor. Jen. 64. CHARLOCK.*

It is frequently found among the Corn, flowers in Summer, and the Seed is used. It is of a drying, deterfive, and somewhat digestive Quality, and provokes Urine. *Dale from J. Bauhin.*

4. Sinapi; Indicum; Lactuce folio, *Par. Bat. 230.*

5. Sinapi; Indicum; Lactuce folio; minus, seu angustifolius profundius crenato, *Par. Bat. 230.*

6. Sinapi; arvense; album; hyemale; folio Rapi; semine luteo.

7. Sinapi; Hispanicum; pusillum album, *T. 227.*

8. Sinapi; quod Sinapistrum; luteum; minus; folii quernis.

9. Sinapi; quod Sinapistrum; Siculum; siliquis Irionis.

10. Sinapi; arvense præcox; semine nigro; foliis integris, *T. 227. Rapistrum flore luteo, foliis non incis, C. B. P. 95.*

11. Sinapi; Siculum; luteum; minus; folio Rhapon-tici.

12. Sinapi; quod Sinapistrum; Syriacum; folio Irionis; altissimum.

13. Sinapi; Chinense; folio Acanthi.

14. Sinapi; Hispanicum; folio glaucii violacei. *Nasturtium sylvestre, Eruca affine. C. B. P. 105. Boerb. Ind. Alt. Plant.*

If Mustard-seed be eaten crude, the Vapour excited in the Mouth not only provokes Tears, but a Tumor, Itching and Sneezing. Externally it serves for the Sinapismus of the Ancients, which consisted in bruising the crude Seeds into a Poultrice, and applying it to the Part where an Exulceration was to be raised; but if this be often repeated, it causes a Gangrene. As to internal Uses, it is proper where an inert, aqueous, or phlegmatic Humor is predominant. I observed a surprising Effect of it on a Girl at *Amsterdam*, who labouring under Convulsions, after she had tried all manner of Remedies in vain, was, at last, by the Advice of *Ruyfch*, cured by the Use of crude Mustard bruised with Wine. What is commonly called *Mustard*, is a Sauce made of the bruised Seed, and is so named because in *Italy* they made it with *Must*, whence they called it *Mustum ardens*, and by Contraction *Mustard*. This Sauce, with Vinegar, is very serviceable in digesting Food, and would be very proper for our (*Dutch*) Sailors, because it is an excellent Preservative against the Scurvy. The Seeds are attenuating and incising; for which reason Mustard is always added as a proper Sauce to Meats dried and hardened in the Smoke. The Seeds are, also, of Service, whether used internally or externally, in hypochondriac Disorders, Inflations of the Stomach, Obstructions of the Spleen, and other Diseases proceeding from an Acid, of which Nature are the Scurvy, Cachexy, Chlorosis, and soporous Affections; they also stimulate to Veneries, and provoke Urine. The expressed Oil is externally applied in the Palsy and cold Diseases; the Seeds are also applied in a Quartan, and sometimes in a quotidian Fever.

There is a new Plant, which may be reckoned a fifteenth Species under the Name Sinapi; luteum; Chelidonii quernifolio. *Hist. Plant. ascript. Boerhaave.*

SINAPI ALBUM. A Name for the *Turritis; foliis inferioribus cichoraceis; ceteris Persiliata.*

SINAPI ECHINATUM. A Name for the *Eruca segetum.*

SINAPI MONSPESSULANUM. A Name for the *Sisymbrium; palustre; minus; siliqua aspera.*

SINAPISIS. Armenian Bole. *Rulandus.*

SINAPISMUS, *συναπισμός*. A Sinapism; that is, a Cataplasm of Mustard-Seed, applied with a View of exciting a Heat and Redness of the Skin.

SINAPISTRUM.

The Characters are;

The Leaves grow three or five on one Pedicle, and are digitated. The End of the Pedicle thickens into a Placentula, whence arises the Calyx, consisting of four small Leaves of the Colour of the Flower. The Flower is tetrapetalous, the four Petals being erected above, and six Stamina taking up the inferior void Part of the Flower. The Ovary grows out of the lower Part of the Placenta, three balsamic Spheres being seated at the upper Parts, is extended forwards, and becomes a cylindrical, bivalve, unilocular Pod, full of many roundish Seeds placed all in one Row.

Boerhaave mentions four Sorts of *Sinapistrum*, which are;

1. Sina-

1. Sinapistrum; Orientale; triphyllum; Ornithopodii filiquis. *T. Cor.* 17.

2. Sinapistrum; Indicum; pentaphyllum; flore carneo; minus; non spinosum. *H. L. Pentaphyllum; peregrinum; filiquosum; bivalve minus*, M. H. 2. 288. *Quinquifolium filiquosum*, *Alpin. Exot.* 322.

3. Sinapistrum; Lusitanicum; triphyllum; flore rubro; filiquis corniculatis. *H. L. Trifolium; Lusitanicum; bivalve; flore rubro*, M. H. 2. 289.

Sinapistrum; Indicum; triphyllum; filiqua maximâ; flore albo. *Boerb. Ind. Alt. Plant.*

This Plant was so called by *Herman*, as if it were a smaller Kind of *Sinapi*, because in Figure and Acrimony it is so very like the *Sinapi*, that it may be used in its stead. *Hist. Plant. ascript. Boerb.*

SINAPIUM. Mustard; that is, a Preparation of Mustard for culinary Uses, and such as is used in Food.

SINCIPUT. The anterior Part of the Head. See CAPUT.

SINE PARI. The *Vena sine pari* is the same as *Azygos*. The *Emplastrum sine pari*, the matchless Plaster, is the pompous Title of a Plaster described in the Old College Dispensatory, but left out of the last.

SINGULTUS. The Hiccup.

As Respiration consists of Inspiration and Expiration, so it may be injured with respect to either of these two. The Faults of Expiration are treated under the Article Tussis; but to the Disorders incident to Inspiration, belongs that by the *Greeks* called *αἰσχυρὸς*, or *αἰσχυρὸς*, and by us the *Hiccup*, which may be defined a Spasmodico-Convulsive, interrupted and uneasy Concussion of the Diaphragm, and some of the Parts affix'd to it, made in Inspiration, and accompanied with a sonorous Explosion of the Air thro' the Mouth.

In order the better to explain the Nature of this Disorder, we shall premise some Things concerning the Structure of the Parts which concur to its Production. The first, then, of these which occurs, is the Diaphragm, which in all its Circumference is muscular; has Fibres which run from the Center to the Periphery; is tendinous in its Center; divides the middle from the lowest Cavity of the Body, by its transverse, and at the same time somewhat oblique Situation, since it is higher before, and somewhat depressed towards the posterior Parts. Towards the Thorax it is convex, but towards the Abdomen concave. It is furnished with pretty large Nerves, partly from the vertebral Nerves of the Neck, and partly from the intercostal Branch and the Par Vagus. It has two Perforations, the Right of which, in a tendinous Circle, transmits the Vena Cava; the Left, in its muscular Part, transmits the Oesophagus and Par Vagus. The Diaphragm, also, adheres to various Parts; for on the anterior Part it adheres to the Ribs, Sternum and intercostal Muscles; in the middle Parts, by means of the Pleura surrounding its convex Surface, to the Mediastinum; to the Stomach, not only by the Nerves, and exterior Coat produced from the Peritonæum, common to them both, and surrounding the concave Part of the Diaphragm, but, also, by means of the left superior Mouth of the Stomach, by the *Greeks* called *αἰσχυρὸς*; to the Liver and its gibbous Surface, by the Ligamentum latum. And at the posterior Region, it is firmly fix'd to the Lumbar Vertebrae, by two musculous and tendinous Appendices.

In Consequence of this Connexion of these Parts, a Change of Place in one of them must be succeeded by the Motion of the others, as we are taught by Respiration in its natural State; for in the first Act of Respiration, which is Inspiration, the intercostal Muscles partly draw the Ribs upwards, and partly forwards; and partly the Fibres of the Diaphragm, which is muscular, contracting, and becoming short from the Center to the Periphery, the Diaphragm is chang'd from a convex to a more plain Figure. Immediately the adjacent Parts imitate this Motion, and the whole Abdomen is drawn upwards and forwards, the Stomach, in the mean time, being compressed by the Abbreviation of the Fibres of the Diaphragm. But all these Parts return to their former Situation, when in Expiration the Diaphragm resumes its convex Figure. Hence it follows, that when the Thorax and Abdomen are drawn upwards and forwards, and the Cavity of the Breast enlarged, then Inspiration is performed, and Expiration when the contrary happens.

Now to apply this Doctrine to the Hiccup; Though the Diagnostic of this Disorder is easy, yet from accurate Attention, we find its History to be as follows. The Breast is exagitated with a quick Impetus, accompanied with an acute Sound. Under this Exagitation, the Thorax and Abdomen are raised, the Cavity of the Breast becomes larger, the Speech of the Patient is intercepted; and the Pain is fre-

quently so great, that, according to *Delaus*, in *Encyclop. Medic. Lib. 3. Cap. 2.* the whole Body seems to be thrown into a Commotion, and the Ribs, as it were, broken. The Sound with which this Disorder is accompanied, is sometimes so great, as to resemble the Barking of a Dog, and be heard by Persons passing in the Streets, or living in the Neighbourhood, as we are informed by *Lazarus Riverius, Obs. 1. Thomas Bartholinus, Histor. Anat. rarior. Cent. 2. Histor. 4. and Vitus Riedlinus, in Obs. 31.*

These Circumstances, compared with the Phenomena of Inspiration, sufficiently inform us, that the Hiccup is a Disorder of that Part of Respiration, or at least happens under it. For as in natural Inspiration, a Motion of the intercostal Muscles is observed to precede; and a Constriction of the Diaphragm, and, at last, an Elevation of the Abdomen to follow; and all these are performed in a slow and gentle manner; so, on the contrary, in a Hiccup, as being a preternatural Inspiration, there is first observed a Constriction of the Diaphragm, and in consequence of the Consent, a Motion of the Parts affix'd ensues; but all these happen quickly, and with Violence. When the Diaphragm is thus suddenly exagitated, the Throat and Stomach must of Course be so too. Hence a Part of the Air taken in being lodged in the Gula, is with a violent Impetus forced upwards thro' the whole Oesophagus, and, at last, in the Palate, which is vaulted, forms that Noise commonly called the Hiccup. See *Langius in Pathol. Animat. Cap. 36.* At last the exagitated Diaphragm, when the Noise is discharged, is more or less slowly rendered convex; that is, its muscular Fibres are again lengthened. Hence arises Ease, and the convulsive Exagitation only returns by Intervals.

Since, therefore, the Hiccup is a very quick Convulsion of the Diaphragm, but remits and recurs at certain Intervals, it is to be distinguished from that spasmodic Distension which keeps the Diaphragm long rigid, and produces a perpetual Difficulty of Breathing. See *Caspar Hoffman, Inst. Med. Lib. 2. Cap. 86. Sect. 6.* and *Galen de Sympt. Lib. 2. Cap. 2.* The last mentioned of these Disorders is observed to approach to a convulsive Colic, or to violent hysteric Paroxysms, but is not accompanied with that Noise familiar to those afflicted with the Hiccup.

It is, also, to be observed, that there is a great Difference between a chronical and an acute Hiccup; since the latter is observed to accompany acute Disorders, such as continual, malignant, exanthematous and pestilential Fevers, and Inflammations of the more noble Viscera. This Species of the Disorder is not only of a short, but also of a dubious Termination. A chronical Hiccup, on the contrary, generally accompanies long protracted Disorders, such as those of the hysteric and cachectic Kind; a bad State of the Primæ Viæ, or a bad Conformation of the Parts subservient to Respiration. And this Species of the Disorder may remain for several Days, Weeks, Months, or even Years. Thus *Bartholine, in Cent. 3. Epist. 61.* gives us an Account of a Woman, who for two Years laboured under so violent an Hiccup, that she seemed to be possessed by a Devil. And in *Cent. 2. Hist. 4.* he mentions an Hiccup which lasted for four Years. Other Authors give other Instances of the same Kind; a large Number of which are found in *Marcellus Donatus, Lib. 4. Hist. Med. Cap. 5.* and *Schenckius, in Obs. Lib. 3.*

Physicians entertain various Opinions with respect to the Seat of the Hiccup. The Ancients, and among the rest, *Hippocrates, in Aph. 36. Sect. 6.* accused the Stomach alone, and affirmed that the Hiccup was a violent Commotion of it, by which it endeavoured to expel something offensive to it. But left by this means they should confound it with a Vomiting or Eructation, they asserted, that by an Hiccup those Things which were lodged in the superior Orifice of the Stomach, were exagitated; whereas, in a Vomiting, the Substances in the Bottom of the Stomach were thrown into a Commotion. See *Forestus, Obs. 12. Lib. 18.* Others, the most considerable of whom is *Felix Platerus, in Lib. 2. de Funct. Læsson. Cap. 5.* have placed the Seat of the Hiccup in the Diaphragm alone, when they saw that the former Opinion would not account for all the Phenomena of the Disorder. Others steering, as it were, a middle Course, affirm that the superior Mouth of the Stomach is primarily affected, but that by Consent the Diaphragm is always exagitated. The most considerable Abettor of this Opinion is *Delaus, in Encyclop. Med. L. 3. Cap. 2.*

But, in my Opinion the principal Seat and Organ of this Disorder is the Diaphragm; for without the Assistance of this transverse Muscle there could be no Inspiration; a preternatural Effect of which the Hiccup is: for since the superior Mouth of the Stomach firmly adheres to the Diaphragm,

phragm, that, as well as the Oesophagus, must necessarily be affected in this Disorder. Hence appears the Reason of dividing Hiccups into those of the idiopathic and those of the sympathetic Kind; the former of which is, when the immediate Cause of the Disorder is lodged in the Diaphragm itself; and the latter when the Cause resides in the Stomach, whose Vellication is propagated to the Diaphragm.

The immediate Cause of the Hiccup, is an Irritation or Stimulation, either of the Diaphragm or Stomach, and a convulsive Exagitation of the Parts induced by that means. For this Reason, the weaker the nervous System is, the more readily any Person is seized with this Disorder. Hence Infants, Children, and old Persons, are more subject to the Hiccup than others; so that they easily fall into that transitory Species of the Disorder which we do not here treat of, and which is produced either by a Refrigeration of the Stomach, greedy Drinking, drinking excessively cold Liquors, or Laughter. But the more secondary and remote Causes which concur to promote a morbid Hiccup, which requires the Physician's Aid, easily exert their Influence on such Patients, and are these following.

This Disorder, then, is very readily produced by a cold and moist Air, especially when the Patient is hot. Those who, contrary to their Custom, walk with their Breasts bare, or only slightly covered, or who walk upon cold Floors with their Feet bare, the more tender they are the more readily they are seized with an Hiccup. And Infants whose Fontanels continue to beat, and are not yet closed, are very frequently seized with this Disorder. *Carolus Raygerus*, in *M. N. C. Dec. 1. Anno. 6. Obs. 211.* gives us an Account of an Hiccup which lasted for three Days, and was produced by staying too long in the Water. But *Riverius*, in *Cent. 3. Obs. 42.* furnishes us with a still more memorable Case of a certain Girl, who was violently afflicted with the Hiccup during the Winter, but was freed from it every Summer.

Aliments either of a bad Quality, or used in too large a Quantity, produce an Hiccup. Voracious Eating alone, in which one Mouthful or one Draught immediately follows another, and remains in the superior Orifice of the Stomach, by vellicating it, produces an Hiccup, though of a slight Kind. Thus *Forestus*, in *Lib. 18. Obs. 12.* informs us, that an Hiccup was produced by a Piece of an Oxes Lungs remaining in the Oesophagus. Aliments, also, which by their too great Quantity load the Stomach, produce the same Misfortune, as is obvious in voracious and glutinous Children. And *Epiphanius Ferdinandus*, in *Hist. Med. 43.* informs us, that Bread alone eaten too greedily and in too large a Quantity produces an Hiccup. Liquors drank in too large a Quantity, especially if the Person is exposed to cold, or if the Liquors themselves are too cold, produce a Cough, as we find from Experience, among those Topers, who remain with their Breasts bare when drinking; and among sucking Children, if cold Malt Liquors are exhibited to them. *Timaeus a Guldenkleee*, *Lib. 3. Cas. 5.* gives us an Instance of an Hiccup produced in a Man, who being pretty hot, drank a large Quantity of cold Water with Nitre. And *Riverius*, in his *Treatise de Morb. infrequent. Obs. 1.* informs us, that a violent Hiccup of half a Years Continuance was produced by a Draught of cold Water.

Whatever Aliments are either too acrid of themselves, or from various Causes degenerate within the Stomach into an acrid and viscid Sordes, capable of vellicating its Coats, produce a more or less violent Hiccup. Every one knows, that Milk and its Preparations becoming corrupted in the Stomachs of Children, produce the Hiccup; a fatal Instance of which is alledged by *Bartholine*, in *Act. Med. Hassn. Vol. 2. Obs. 28.* The same holds true, with respect to acrid and caustic Substances, or such as are absolutely poisonous. *Guldenkleee*, in *Lib. 7. Cas. 4.* mentions an Hiccup produced by eating Hemlock. The same Author, in *Cas. 7.* gives us an Instance of one produced by Euphorbium. *Gatinarias*, de *Cognit. & Curat. Aegrit.* gives us Instances of its being produced by Onions, Garlick and Ginger. *Barbette*, in his *Prax. Med. Lib. 4. Cap. 2.* informs us, that he knew an Hiccup produced, by taking Oil of Vitriol instead of Balsam of Sulphur. And *Schenckius*, in *Lib. 3.* tells us, that Hiccups are produced by the too liberal Use of refrigerating and acid Julaps in acute Disorders. Among the Things capable of exciting this Disorder, we may, also, reckon drastic Vomits and Purges, especially those prepared with Hellebore, which, by corroding, stimulating, and inflaming the Stomach and Intestines, dispose to an Hiccup.

Acrid and corrupted Humours, impregnated with many saline Parts, and acting on the Diaphragm, excite the quickest and generally fatal Exagitations of it. I knew a Man, who being for thirteen Days afflicted with a violent Hiccup, at last died; and upon opening his Body, some Ounces of extravasated acrid Serum were found in his Thorax. To this Species,

also, belongs that kind of Hiccup which is produced by the Translocation of an arthritic or gouty Matter to the Diaphragm. An Instance of this Kind arising from repelled arthritic Pains is mentioned by *Georg. Hieron Velschius*, in *Hecat. 2. Obs. 54.* Hiccups are, also, produced when Diarrhaes or Dysenteries are check'd in the Beginning, or suppressed by means of Opiates, or other Astringents, as is observed in *Hoffman's Notes, ad Pater. Cent. 2. Cap. 47.* A repelled Erysipelas, or in old and weak Habits, one not sufficiently expelled, is frequently accompanied with an Hiccup. All these Effects depend on an acrid, and, as it were, caustic Matter insinuating itself into the nervous Parts of the Diaphragm, or the superior Orifice of the Stomach.

An acute Hiccup is the Concomitant of such Disorders as have a quick and speedy Termination, of which the most considerable are Inflammations of the more noble Viscera. Thus an Hiccup succeeds Wounds or Inflammations of the Diaphragm; as appears in a Paraphrenitis; as, also, Wounds or Inflammations of the Stomach or Intestines, according to *Forestus*, in *Lib. 18. Obs. 12.* Hiccups, also, succeed Phlegmons of the Liver; according to *Celsus*, *Lib. 2. Cap. 7.* and *Barbette*, *Prax. Med. Lib. 4. Cap. 2.* And the pathognomic Sign of this Disorder, is a Pain ascending to the Throat. Inflammations, and violent Wounds of the Brain and Meninges, by reason of the Consent these Parts have, by means of the Par Vagus, with the Stomach and Diaphragm, also, produce Hiccups in a violent Degree. See *Hippocrates*, *Secl. 7. Aph. 3.* and *Heurnius*, in his Comment upon the same Aphorism.

An Hiccup generally accompanies continual, malignant, and exanthematous Fevers, when various remote Causes concur to its Production; for an Hiccup is either produced by a concomitant Inflammation, which, according to *Diemerbroeck*, *Cap. 13. Secl. 5.* and *Cap. 15. Annotat. 15.* principally happens in the pestilential Fever, from a Carbuncle on the Diaphragm or Stomach; or if the due Progress of Fevers is preposterously disturbed by Anodynes and Opiates, an Hiccup succeeds; a memorable Instance of which we have in *Riverius*, *Cent. 3. Obs. 17.* Hiccups, also, succeed the Repression of Sweats, and the Stopping or Repulsion of exanthematous Disorders; or Hiccups accompany an acrid Sordes of the Stomach; an Instance of which, in that Species of Fever called *Hemitritaea*, *Forestus* gives us in *Lib. 5. Obs. 15.* In these Cases, dangerous Symptoms appear, such as insatiable Thirst, considerable Weakness, Watchings, Deliriums, an unextinguishable Heat, a tremulous Motion of the inferior Jaw-Bone, Convulsions of the Nerves, Interception of the Voice, and a Thinness of the Urine; On the contrary, if the Hiccup happens about the critical Days, and the other Signs, especially that of Coction in the Urine, are good, it portends no Ill, but prognosticates a critical Vomiting or a Flux, after which it ceases. These acute Fevers are, also, sometimes attended with an Hiccup, which remains with them, and is augmented through the whole of the Fever. An Instance of which we have in *M. N. C. Ann. 4. Obs. 48.* Of this Kind, also, is the memorable Case related by *Peterius*, in *Cent. 2. Cap. 47.*

To the acute Hiccups of a dubious Event, we must, also, refer those which, according to the Ancients, succeed Inanition, or too large an Excretion of the Humors. That excessive Vomiting or Purging are accompanied with an Hiccup, is confirmed not only by Experience, but also by *Hippocrates*, in *Secl. 7. Aph. 3.* and *41.* and *Secl. 5. Aph. 41.* and by *Sydenham*. Hiccups, also, succeed violent Haemorrhages, whether natural from the Uterus, or from the Nostrils, or by a Spitting of Blood, or produced by violent Wounds, as *Hippocrates*, in *Secl. 5. Aph. 3.* informs us. In these Cases, the Hiccup, generally, as the last Efforts of Nature, precedes universal Convulsions and Death.

A chronical Hiccup sometimes arises from a peccant State of the Blood and Humors; when, for instance, these are either impregnated with any Acrimony, or in Consequence of a Retention of the usual Excretions, too copiously congested in the Vessels of the Diaphragm and Stomach. Hence the Hiccup is very familiar to pregnant Women during the last Months of their Gestation; as also to hysterical Women, whose Menfes do not flow duly. Thus *Schurigius*, in *Parthenol.* gives us an Account of a Woman who, before the Eruption of her Menfes, was always afflicted with an Hiccup, which ceased as soon as these began to flow. Chronical, as well as periodic Hiccups, generally afflict cachectic Patients, and such as labour under Indispositions of the Liver; in which Cases, the Cause is to be sought for in the Bile become acrid and vellicating the nervous Coats of the Stomach and Duodenum. Hence *Lentilius*, in *Jatrom.* mentions an Hiccup, which in a cachectic Patient lasted till a Vomiting ensued.

The Faults of the bony Parts surrounding the Breast, and a bad Conformation, sometimes contribute to the Production of

of a chronical Hiccup. Thus, if the Cartilage Eniformis is relaxed, or by any other Cause bended too much inwards, so as to stimulate the Stomach, it is forthwith observed to produce an Hiccup. Accordingly, *Fernelius* in *Lib. 6. de Part. Morb. and Symp. Cap. 3.* mentions an Hiccup produced by a Depression of this Cartilage, which lasted for three Months. 'Tis, also, certain from Experience, that Hiccups are produced by Luxations, Fractures, and Contorsions of the Ribs; hence *Fernelius*, in the Part last quoted, gives us an Instance of an Hiccup arising from a luxated Rib, which ceas'd immediately upon the Reduction: And *Rhodius*, in *Centur. 2. Obs. 61.* makes mention of a continual Hiccup arising from a Compression of the twelfth Vertebra of the Neck.

As for the Prognostic of an Hiccup, that Species produced by Viscidities, Crudities, or an Acrimony of the Primæ Viæ; is by no Means dangerous, nor is that familiar to hysterical Women much to be dreaded. Much less is an Hiccup dangerous, when it proceeds from Refrigeration, or drinking cold Liquors, provided too large a Quantity of them is not drank when the Body is covered with a Sweat. Hiccups are frequent in sucking Children, in whom it prognosticates no Harm, but is more inauspicious in old Persons. I know a Gentlewoman of forty Years of Age, who for twenty Years has been daily afflicted with an Hiccup, without any apparent Disadvantage to her Health. But an Hiccup is more dangerous, when it happens in acute Fevers, especially those of the burning and pestilential Kind; and if a Delirium, or Convulsions are brought on, it proves mortal. An Hiccup which principally arises from an Inflammation of the Liver, is generally mortal; nor is that Species of Hiccup to be less dreaded, which is produced by acrid Purgatives, Emetics and Poisons. All Hiccups succeeding Inanition, Purging, or liberal Vomiting, are bad; but still worse, when coming after Hemorrhages and Wounds of the Head. Hiccups produced by stopping Diarrhæas, or Dysenteries, or repelling erysipelatous, gouty or arthritic Disorders, are not free from Danger. As the Hiccups attending the Fevers of old Persons labouring under Hernias scarcely admit of a Cure, they generally prove mortal, according to *Forestus* in *Lib. 18. Cap. 12.* Sneezing join'd to an Hiccup, especially that which arises from Repletion, is beneficial, and prognosticates that it will cease.

Every Hiccup does not require a Cure; for that gentle Species which arises from a long protracted Inspiration, or any Distraction of Mind, is easily terminated by exciting Pain in any Part of the Body, by thinking carefully upon any Object, or by Terror unexpectedly rais'd. But a morbid Hiccup, not yielding to these Means, calls for the Assistance of the Physician, who is principally to follow three Intentions of Cure: The first of these is, to mitigate and allay the preternatural, spasmodic, and convulsive Motions: The second is, to remove the material Causes: And the third is, to restore the Parts affected and weakened.

In order to answer the first of these Intentions, the Ancients us'd Opium, and the Medicines prepar'd of it, such as the Laudanum Opiatum, Mithridate, Philonium, Dia-scordium, and the Theriaca, by which, they affirm, that they cur'd the Hiccup. But I prefer gentler, antispasmodic and anodyne Substances; such as Amber, Cinnabar, Saffron and Castor; which last is so highly extoll'd by some Authors, that *Alexander Trallian*, in *Lib. 7.* seems persuaded, that an Hiccup may be cur'd by its Means, us'd in the Form of an Amulet. From a long Series of Experience, I prefer in this Disorder the anodyne Liquor, to all other Medicines, and exhibit it, either alone, or in Conjunction with Tincture of Castor. Nor is the Spiritus Nitri Dulcis less efficacious; provided it is mixed with a small Dose of the Balsam of Life. An Ounce, or half an Ounce of the Oil of Sweet Almonds mix'd with a few Drops of the distilled Oil of Dill, is by some thought a Specific for the Hiccup.

But the Physician is, in a particular Manner, to pursue the second Intention, which is, to remove the material Causes. When, therefore, any Sordes lodg'd in the Stomach, by stimulating its superior Orifice, produces an Hiccup, this Sordes is to be corrected, and gently eliminated. If it is of an acrid and bilious Quality, Absorbents impregnated with Citron Juice, or the precipitating Powders, are to be exhibited in cold Water. A viscid Sordes, obstinately fixed in the Foldings of the Stomach, is to be treated with digestive Salts, especially with the Liquor of the Terra Foliatæ Tartari, and such Roots as are at once of a resolvent and corroborative Quality; such as the Roots of Swallow-wort, which has something of an anodyne Nature in it, and those of the Calamus Aromaticus. The peccant Matter, when duly concocted, is to be eliminated either by Vomit or Stool; the former of these Intentions is answer'd by the Root of *Ipecacuanza*, or, which is best of all, by four or six Grains

of the Powder of Squills, mix'd with three Grains of purified Nitre. The Body is render'd soluble by Preparations of Manna and Rhubarb, by the Pilulæ Aloephanganæ, the Pilulæ Macrocoftinæ, or the Pilulæ de Succino Gratonis prepar'd with a large Quantity of Amber. With these Pills may be commodiously mix'd a few Grains of the Pilulæ de Sytracæ, or of the Pilulæ de Cynoglossæ, by which Means they answer a double Intention. In this Case, also, gently carminative Clysters are sufficiently safe, especially in Infants, whose Hiccup is produced by corrupted Milk, in which Case, Sulphur of Antimony duly corrected, or Aurum Fulminans well prepared, and exhibited in a small Dose, are, also, of singular Service.

If an Hiccup arises from a Suppression of Perspiration by Cold, or any other Cause, the Physician ought principally to attempt the recalling of this Evacuation, besides being kept temperately warm; this Intention is answer'd by Fomentations of the Parts affected, liberal Draughts of warm Liquors, and Infusions of resolvent and corroborating Roots and Herbs, in which it will be expedient to exhibit a proper Quantity of the bezoardic Powders prepar'd of Amber, calcin'd Hartshorn, Diaphoretic Antimony, Cinnabar, and a small Quantity of the Extracts of Saffron and Castor. In this Case, the Spiritus Bezoardicus Buffi, mix'd with the anodyne mineral Liquor, and the Essence of Castor, is an excellent Medicine. When in acute and exanthematous Fevers an Hiccup arises from a Suppression of Transpiration, besides a proper Regimen, Frictions and fix'd Diaphoretics are most properly us'd. In a chronical Hiccup arising from a Refrigeration, and of an obstinate Nature, drinking the Hippocratic Wine affords Relief: Besides this, hot Baths are of singular Efficacy, since they not only recall a Diaphoresis, but, also, soften the spasmodically constricted Parts, which *Riverius* in *Obs. Infrequent.* evinces by an Example.

The same Method of Cure is to be observ'd in an Hiccup arising from an erysipelatous, arthritic, or gouty Matter repell'd, or not sufficiently expell'd: For in this Case, besides the Diaphoresis to be obtain'd by the already mention'd Medicines, it is expedient to recal the acrid and peccant Matter from the phrenic Nerves to its former Seat. For answering this Intention, mild Laxatives and Clysters are of singular Efficacy; Sinapisms, also, and Vesicatories applied to the Scapulæ, or Calls of the Legs, afford great Relief, by drawing off the acrid Serum. When a Gout is receding, it is of singular Service frequently to bathe the Feet in warm Baths: For this Reason *Trallian* in *Lib. 7.* and *Riverius* in *Prax.* highly commend the Immersion of the Hands in warm Water.

When by the Exhibition of an Emetic, a Purge, a caustic Medicine, or a Poison, an Hiccup is excited, such Things are to be us'd as destroy and enervate the Force of the Poison, among which none are more valuable and efficacious than pinguious Substances, Oil of Sweet Almonds, Oil of Olives, mucilaginous Substances, Milk and Cream exhibited seasonably, and before the Inflammation has seiz'd the Part; thus the Poison being sheath'd up, its irregular Motion is to be check'd by the above-mentioned Anodynes. But if the Hiccup proceeds from a Poison received by Contagion, as in the Plague, from the Bite of a mad Dog, or the Sting of any Insect boiling with Rage, then theriacal Medicines, Treacle-Water, and the Theriaca Celestis, in Conjunction with nitrous, antispasmodic and diaphoretic Substances, and Camphire and Cinnabar, afford the greatest Relief. This Method of Cure is, also, to be observ'd, when the Hiccup arises from a malignant, caustic, or exanthematous Matter repell'd from the Surface of the Body to the internal Parts; in which Case, a Powder consisting of a few Grains of Camphire and Nitre, as, also, Emulsions of sweet Almonds, and the four greater cold Seeds prepar'd with the diaphoretic Waters, afford surprizing Relief.

Hiccups arising from violent Hemorrhages, are hardly to be remov'd, till the Effusions of Blood whence they proceed are stopp'd. Now, violent Hemorrhages are to be check'd by internal, temperating, tonic and astringent Medicines, and by external Means; such as proper Applications to the Part affected. When the Effusion is stopp'd, we are to use safe Anodynes, in Conjunction with efficacious Anæsthetics. And, lastly, the Patient is to be supported by Cordials and restorative Aliments.

Nor for the Cure of an Hiccup are we to despise corroborating Medicines, especially in the Decline of the Disease; of these the most considerable are the corroborating Oils, such as those of Mace, Mint, and Worm-wood, mix'd with a few Drops of my Balsam of Life, and exhibited in some of the spirituous Waters, such as those of Cinnamon, Mint, and Baurin, or aromatic Aqua Vitæ, as, also, the carminative Essence of Wedelius, the carminative Water of *Dornrellius*, or a Draught of generous Wine. The Medicines in an Hic-

arising from a Retention of Flatulences, and a Vellication of the Stomach produced by them, answer both Intentions of Cure, when join'd with carminative Clysters. Among Topics, considerable Relief seems to be promis'd by applying to the Præcordia, antispasmodic, pargoric and anodyne Liniments prepared of express'd Oil of Nutmeg, human Fat, the Oils of Mace, Mint and Worm-wood, Saffron, Castor and Camphire. Nervine Cerates, and Plaisters applied to the Pit of the Stomach, as, also, Contrictions of the Parts affected by proper Bandages, seem not to be entirely useless.

An Hiccup arising from an Acrimony or Viscidity of the Stomach, is often cured by the copious drinking of warm Fluids, which sheath up the Acrimony, dilute the Viscidity, and remove the Cause of the Stimulus. But all cold Liquors render the Disorder worse.

An Hiccup succeeding a Diarrhæa, or Dysentery, unseasonably check'd, is of a dangerous Nature; for which Reason, the Means of Relief ought to be speedily us'd. In this Case, therefore, the safest and most efficacious Remedies are, Clysters prepared of emollient and gently laxative Substances, such as the Pulp of Cassia, with an Addition of Extract of Rhubarb frequently injected: But it is not expedient to exhibit Laxatives by the Mouth, for it is rather proper to correct the bilious and acrid Humours, which may be done by the Magnesia Alba, and other Absorbents, but especially by drinking sweet Whey; then we may, also, join internal Anodynes, and external Pargorics.

The Hiccup attending acute Fevers is cur'd by curing the primary Disorder, which is accomplish'd by an equable Promotion of a Diaphoresis. In this Case, we are to take great Care not to exhibit saline, much less laxative Medicines, aloetic Pills, too hot a Regimen, or very warm Drink; for as Cold, so, also, excessive Heat is unfriendly to the nervous Parts, especially if they labour under any Disorder.

For the like Reason we are to guard against the same Practice in Hiccups arising from an Inflammation of the Viscera, in which Case we must, with all Expedition, open a Vein in the Foot; if the Inflammation is as yet recent, and the Patient plethoric, then we must exhibit internally, Discutients, and other Medicines, which promote Sweat and resolve the stagnant Juices; to which, if the Pain is intense, we may add gentle Anodynes; but, particularly, the Body is to be always kept soluble by injecting Clysters; externally, Preparations of Camphire and Saffron, and discutient Bags are to be applied, the Physician at the same Time taking Care of his Reputation by a prudent Prognostic.

Hiccups seizing cachetic Persons, or those labouring under Disorders of the Liver, are cur'd by such Medicines as correct acrid Bile; that is, by resolvent, attenuating, bitter, and evacuating Infusions; and if these should prove ineffectual, nothing is more powerful and efficacious than hot Baths and mineral Waters. A memorable Instance of this is recorded in *Boet. Med. Sept. Lib. 5. Sect. 5. Obs. 6.*

An Hiccup which accompanies hypocondriac Disorders, and is generally owing to a Suppression of the natural Excretions of Blood, is not to be cur'd till the primary Disorder is remov'd. In this Case, if all other Means prove ineffectual, the hot Baths, especially the *Caroline Springs*, using at the same Time those of *Tœplitz*, are of Use for corroborating the Parts. In scorbutic Patients, an Hiccup is most properly cur'd by Asses Milk mixed with the *Selteran Waters* warm'd. This Method is commended by *Paulini* in *Onograph. Cur. Sect. 4. Cap. 3. Par. 1.*

If fractured, distorted, or luxated Ribs produce an Hiccup, the Reduction of the Luxation, and the Consolidation of the Fracture by proper chirurgical Measures, are only capable of affording Relief. The *Cartilago Ensiformis*, when luxated and bended inwards, is most properly cur'd by blind Cupping Glasses applied to the Pit of the Stomach. This Practice is greatly extoll'd by *Vitus Riedlinus Lin. Med. Anno 1695. Mens. Aug. Obs. 4.*

Anodynes must be cautiously us'd in checking Hiccups: If the peccant Matter is large in Quantity, it is above all Things to be corrected and eliminated; especially if it is of an acrid, caustic, or virulent Quality; for Anodynes, before this Matter is discharg'd, would be only adding Fuel to the Flame. As in all Disorders where an anodyne and soothing Quality is requisite, so more especially in spasmodico-convulsive Disorders of all Kinds, Opiates are rarely to be exhibited alone; but when mix'd with proper Evacuants, they are highly safe and efficacious: And this Secret of checking the Force of Opium is of an old Date, as is obvious from that celebrated Medicine of *Asclepiades*, mentioned by *Galen* in *Lib. 8. de Compos. Medicam. Cap. 3.* *Avicenna Lib. 4. Fen. 13. Tr. 5. C. 19.* and which consists of Costus, Saffron, Spikenard, Asarum, Mastich, Aloes,

and Opium. In Imitation of this Medicine are made the *Pilulæ Rondeletii*, the *Pilulæ Poterii*, the *Pilulæ Platerii*, the *Pilulæ Riverii*, the *Pilulæ Wildegansii*, the *Pilulæ Starkii*, and the *Pilulæ Anglicanæ*. In Asthmas, Chincoughs, Hiccups, and other painful and spasmodic Disorders, I with great Advantage use to mix the *Pilulæ Aloephanginæ*, or my *Pilulæ Polychrestæ*, with two or three Parts of the *Pilulæ de Stryace*, or de *Cynoglossio*.

An Hiccup arising from a slight Cause is often happily stopt, without the Use of Medicines: When, for Instance, under a voluntary Motion of the Thorax, made on purpose, the Diaphragm is so press'd, that its moving Fibres are either more stretch'd or relax'd; the former is done by strong Inspiration, by Running, Jumping, or violent Riding; and the latter by strong Expiration, Vociferation, or by tying the Thorax with a Bandage, which is a simple, and often an instantaneous Remedy. Of the same Kind is Sternutation, which as (according to *Hippocrates*) it removes an Hiccup when spontaneous, so the Physician ought artfully to promote it for the same Purpose; and especially when either a viscid or flatulent Matter is lodged in the Coats or Corrugations of the Stomach, Sneezing is to be excited, in order to remove it by violent Expiration, during which the abdominal Viscera, and especially the Stomach, are strongly exagitated. But an artificial Sternutation is by no means to be produced, when an Inflammation, or a subtle Caustic and virulent Matter have deeply insinuated themselves into the nervous Parts.

As for Prevention, a due Use of the Non-naturals, and especially the avoiding a cold Air, is of great Importance. Those whose Solids are weakened by long Diseases, must preserve themselves against an Hiccup by the prudent Use of chalybeate Baths, and chalybeate Medicines, drinking at the same Time proper Liquors, and using due Exercise. *Frederic Hoffman*,

The Hiccup generally happens to the Aged after an immoderate Looseness, but principally after excessive Vomiting, and frequently prognosticates imminent Death. I ingenuously own, that I have not been able to satisfy myself in my Enquiry into the Cause of this Symptom; but I have frequently observed it to arise from some Disturbance raised in the Stomach, and adjacent Parts, by violent Medicines; not without great Danger to the Patient, because Nature is unable to check and quiet this Commotion; and on this Account, I judg'd it proper to assist her by Art, by giving a large Dose, of no less than two Drams of *Dioscoridium*, which seldom failed to remove this Symptom; when the Seeds of *Dill*, and other celebrated Specifics had proved ineffectual. *Sydenham*.

The famous *Jalapum Meschatum* of *Fuller*, so much recommended as a Remedy for the Hiccup, is thus prepar'd.

Take of Damask Rose-water, six Ounces; of the Waters of Orange-flowers, one Ounce; of Barley Cinnamon-water, two Ounces; of Compound Piony-water, one Ounce and an half; of Musk and Ambergrease, triturated with one Grain of Salt of Hartshorn, each two Grains; of Saffron, cut and tied in a Bag, one Scruple; of the Oil of Cloves, one Drop; of the Confection of Alchermes, two Drams; and of the Syrup of Cloves, an Ounce and an half.

This Medicine is a temperate, but powerful Cordial, and highly beneficial in malignant Fevers, which convey deleterious Vapours to the Stomach, irritate the languid Spirits, produce Spasms, and an Hiccup. But notwithstanding its almost divine Energy, I have not always found it sufficient for subduing this last-mentioned Symptom. The Dose is five Spoonfuls every three Hours. *Fuller's Pharmacop.*

PRESAGES FROM HICCUPS.

The Event of a Disease may be prognosticated from a Hiccup, though, indeed, it comes under the general Notion of Convulsions, being a Kind of Convulsion of the Stomach, as we are taught by *Galen* in his Comment on 5 *Apb. 3.* And the same Author, in his Comment on the Book of *Hippocrates de Rat. Viâ. in Morb. Acut.* calls the Hiccup a convulsive Motion; and more expressly to the Purpose in his Commentary on the sixth Book of the *Aphorisms*, he tells us, "That though we may be allow'd to call a Hiccup a Convulsion of the Stomach, when we would describe its Nature, it would, perhaps, be better not to call it by that Name, but rather a Motion of the same Kind as Vomiting, only more, intense and violent: For the Stomach, while it labours to expel its Contents, is excited to two Kinds of Motions, the most violent of which is a Hiccup; the other is Vomiting, in which latter it endeavour

endeavours to expel what is contained in the wide and open Capacity of the Stomach, but in the Hiccup only what molests the Mouth of that Part." Hence it appears, that an Hiccup is an expulsive Motion of the Stomach, endeavouring to discharge itself of some offensive Matter. We may then very properly call a Hiccup a Convulsion of the Stomach, but of such a Kind of Motion as is observed in epileptic Patients, whose Brain is injured, or rather with *Galen Com. in Lib. de R. V. J. A.* a Sort of convulsive Motion. These Motions, according to *Hippocrates*, 6 *Aph.* 39. are excited either by a Repletion or Inanition of the nervous Parts, and particularly, of the Mouth of the Stomach. A Repletion happens from an Excess in Eating or Drinking, from a Redundance of Humours, a Phlegmon, or Flatulences. A Dryness or Inanition, is caused by a burning Heat, all immoderate Evacuations, Purgations, Watchings, Fastings, and the like. That a Hiccup is excited by the same Cause as a true Convulsion, we may infer from *Hippocrates*, where he speaks of a true Convulsion of the Stomach, proceeding from one or other of these Causes. A Hiccup often happens from a biting Sensation in the Mouth of the Stomach, which excites Motions that many justly enough call convulsive, and is occasioned by all such Things as either oppress the Stomach by their Redundance, or injure it by some offensive Quality. For when the Stomach is loaded with a Redundance of Humours, or Foods of bad Juices, or is vellicated by some acrimonious Matter, or distended with Flatulences, or irritated by Heat or Cold, or any other Quality, or suffers through Dryness, or is agitated in a Manner not unlike Convulsions, it endeavours to expel what offends it. To this Purpose we find *Galen* expressing himself, *Lib. 8. de Comp. Med. Cap. 8.* "Thus, he says, a Hiccup sometimes happens either from a Coldness or Repletion of the Stomach, or from a Vellication of acrimonious Humors, or such as are endued with some medicinal Quality." And a little after, "a Hiccup may be occasioned by some acrimonious or serous Humours, or some Medicine vellicating the Stomach, which being expelled by Vomiting, the Hiccup immediately ceases." Marty after taking the Medicine composed of the three Species of Pepper, and drinking Wine immediately upon it, are molested with a Hiccup, of which Number I myself am one; and every Body knows that some Persons are subject to be taken with a Hiccup after Foods of a stimulating Quality, which, upon vomiting, immediately ceases; sometimes a Hiccup is occasioned by a Rigor of the Mouth of the Stomach. Children are very subject to the Hiccup, from a Corruption of the Aliment in the Stomach, and from a Coldness of the Part. Hiccups in Fevers are sometimes occasioned by a dangerous Inflammation of the Stomach, Brain, small Intestine, or Liver, from a Compression of the Mouth of the Stomach, from a Tumefaction of the concave Part of the Liver, a Communication of the burning Heat of that Part, or the Flux of an acrimonious Humour from the inflamed Part upon the Mouth of the Stomach and vellicating it, or some acrid Exhalation irritating the same. But let this suffice for the Causes of a Hiccup and let us now consider the Prognostics which may be drawn from it.

A Hiccup then is only not to be dreaded, when it happens without a Fever, or any other Disease, and is occasioned by Wine, or Foods, or even by some acrimonious, cold, hot, or corrupted cold or hot Humour. In Fevers they are always dangerous, as well as Convulsions, and most of all when succeeded by a Fever. Some Fevers are called Singultuous, because the Patient is almost continually molested with the Hiccup, which increases and remits with the Fever, which, for that Reason, is called by the Greeks *σινγυλτικός*, *Lingodis* [from *σινγυλ*, the Hiccup]; mentioned by *Hippocrates*, *de R. V. J. A.* And *Galen*, in his Comment thereon tells us, that a Fever takes the Name of Singultuous from the Hiccup, which continually attends it, and is exasperated, together with the Disease, through the whole Stage of the Disorder; but Hiccups are most to be dreaded when they proceed from an Inflammation of the Stomach, small Intestine, or Liver. *Celsus* tells us, that a frequent Hiccup indicates an Inflammation of the Liver; a Hiccup, however, does not simply proceed from an Inflammation of the Liver, but from an extraordinary Inflammation of that Part, as *Galen* observes, in his Comment on 5 *Aph.* 3. tho' *Hippocrates*, in that Aphorism, says absolutely, "That the Hiccup succeeds an Inflammation of the Liver." The Hiccup then, under an Inflammation of the Liver, is generally mortal, and the same is true of an Inflammation of the Brain or Stomach, and especially when it comes after vomiting, to which Purpose *Hippocrates*, 7 *Aph.* 3. says, that after Vomiting, the Hiccup and Redness of the Eyes are bad Signs. *Galen* says of the Hiccup, that it is the same Disorder with respect to the Stomach, that a Convulsion is to

the Muscles, and that sometimes it affects the whole Stomach, sometimes its Mouth, and the Oesophagus, which are molested with Humours; and if these can be discharged by Vomiting, the Patient is immediately freed from the Hiccup; but if this has no Effect, it shews either that the Brain, the Original of the Nerves, or the Stomach, labour under a considerable Inflammation. A Hiccup, therefore, which comes after vomiting, is generally pernicious, and most of all in the Iliac Passion, according to that of *Hippocrates*, 7 *Aph.* 10. "The Ileus, succeeded by Vomiting, Hiccup, or Convulsion, is of bad Prognostication." And *Galen*, in his Comment thereon, says, that the Patients, in that Disorder, do not always vomit, but only when it proves mortal, and if they are vehemently affected, the Excrements ascend, and a Hiccup is excited. In acute Fevers, then a Hiccup succeeding Vomiting, and especially that of a bad Kind, is to be esteemed mortal. An Instance of this we find in *Hippocrates*, 3. *Epid.* of a Woman, who, on the twelfth Day of her Illness, vomited much black, fetid Matter, and was extremely molested with the Hiccup and a Thirst, and died the next Day. We may well then venture to pronounce all Hiccups, especially if frequent and troublesome, in acute Fevers, mortal, and most of all, if consequent upon a bad Kind of Vomiting, I mean that wherein fetid, black, virulent, or sincere Humours are discharged; justly, therefore, in *Coac.* is a Hiccup condemned, which follows a Vomiting of sincere Matters. An Hiccup, consequent upon immoderate Evacuations, or Purgations, is generally mortal, as proceeding from a Vellication of the nervous Parts of the Stomach, occasioned through Dryness. Hence *Hippocrates*, 5 *Aph.* 3. pronounces a Hiccup or Convulsion, succeeding a copious Hæmorrhage, a bad Sign; and in the following Aphorism he says, that the same Symptoms supervening upon an immoderate Purgation, are bad Prognostics. The most fatal of all Hiccups, is what is consequent upon an immoderate Purgation, where the Body is naturally weak; agreeably to these of *Hippocrates*, 7 *Aph.* 41. where we are told, that a Hiccup coming after an immoderate Purgation, is no good Sign; and the like may be said of a Hiccup, excited by a Tumor or Inflammation of the Liver under the Jaundice, according to that in *Coac.* 470. where it is said, "They who are affected with the Jaundice, and a Hebetude of the Senses, if a Hiccup supervene, fall into a Looseness, or perhaps labour under a Constipation of the Belly, and become of a greenish yellow Aspect." A Hiccup is not consequent upon every Affection of the Liver, but when that Part is highly inflamed, or the whole Stomach is oppressed or irritated by a Redundance of Bile, or labours under a violent Inflammation, the Hiccup is exasperated to a high Degree. To confirm, however, our Predictions of the fatal Event of a Hiccup, we ought to take into our Consideration other pernicious Signs, both preceding and consequent to that Disorder, which is never mortal, but in Conjunction with other destructive Symptoms, appearing either before, or attendant upon it. To this Purpose we are told by the Author of the *Prorrhetica*, "That an Aphony, attended with Hiccups, is a very bad Sign;" and *Coac. Prasag.* "That a Lassitude, with a Hiccup and a Stupor, portend a bad Event. Other very bad concomitant Signs, are cold Sweat, an invincible Coldness of the extreme Parts in a burning Fever, no Thirst, a Loathing of Food, copious Sweats, without an Intermission of the Fever, Blood falling by Drops from the Nose, with many other Signs of the like Nature, which you will find mentioned in the History of the Woman who lay ill in Childbed, 3. *Epid. Sect. 2. Ægr.* 12. *Prosper Alpinus de Prasag. Vit. & Mort.*

Euriximachus, according to *Plato*, says, there are three Ways of curing the Hiccup; to hold ones Breath some time; to wash the Throat with Water; and to sneeze.

Alexander Trallian says, That any Surprize, or Intenseness of Thought (as counting of Money) will immediately remove a Hiccup.

SINOPICA RUBRICA. See RUBRICA SINOPICA.

SINOPIS. The same as RUBRICA SINOPICA.

SINUS. In Anatomy, the *Vagina* is called the *Sinus Muliebris*, or *Sinus Pudoris*; and certain Cavities in the *Dura Mater*, are called the *Sinuses* of the *Dura Mater*. See CAPUT. A Sinus of a Bone, is a Cavity which receives the Head of another Bone. In Surgery, a *Sinus* is a Collection of Matter, with a small Orifice for the Discharge thereof.

SION. See SIVM.

SJOUANNA *Amelodi*, H. M. *Frutex Indicus pentapetalos Gemina Bacca, Calyce, excepta*. It is an umbelliferous and bacciferous Shrub, growing in the East Indies. The Fruit comes forth in the lower Branches, while the upper ones are adorned with Buds and Flowers, and the whole Umbella, with its Buds, Flowers and Fruit seen altogether, afford a most pleasant Sight.

The Virtues are only in the Root, which is effectual against the Poison of Serpents and Scorpions. *Raii Hist. Plant.*

SIPHAC. The *Peritonæum*.

SIPHILIS. The Pox.

SIPHITA PARVA, in *Paracelsus*, is the *Chorea Sancti Viti*, St. Vitus's Dance. *Siphita Stricta*, in the same Author, is Walking in the Sleep.

SIRA. Orpiment. *Rulandus*.

SIRACOSTUM, or ALSIRACOSTUM. The Name of a Medicine, recommended by *Mesue*, in acute Fevers.

SIRÆUM. *disaus*. The same as SAPA, or any sweet Decoction.

SIRENES. See DRACUNCULI.

SIRIASIS. The Name of a Distemper to which Children are subject, which consists in an Inflammation of the Brain, and its Membranes, attended with a Depressure of the *Fontanella*; a Cavity of the Eyes; a burning Fever; a Paleness, and Dryness of the whole Body; and an utter Prostration of Appetite. *Castellus*.

SIRICON DE PLUMBO, is explained by *Rulandus*, *Cinis Plumbi*.

SIRINGA. Calx. *Rulandus*.

SIRONES. The same as SIRENES.

SIRYPUS. See SYRUPUS.

SIRSEN. A *Pbrenitis*.

SIRZA. An Eschar. *Rulandus*.

SISARUM.

The Characters are;

The Roots are like the *Napus*, and hang in great Numbers to one Head. The Leaves are pinnated, grow to a Rib, and end in an odd Lobe; the Seeds are narrow and striated.

Boerhaave mentions but one Sort of *Sisarum*; which is, *Sisarum Germanorum*. C. B. P. 155. *Tourn. Inst.* 309. *Boerb. Ind. A.* 54. *Sifer*. Offic. *Sifer vulgare*, Park. *Theat.* 945. *Sisarum* *Raii Hist.* 1. 442. Ger. 871. *Emac.* 1026. Park. *Parad.* 506. *Sisarum multis*, J. B. 3. 153. SKIRRET.

The Root of the Skirret is branched into many long, glandulous Parts, of a whitish Colour, and a pleasant sweet Taste when boiled. The Stalk arises to be three or four Foot high, thick, and channelled; clothed with long pinnated Leaves, composed of three or five long, sharp-pointed Pinnæ, serrated about the Edges, two opposite, the odd one at the End, being roundest and largest. The Flowers grow in Umbels, being small and five-leaved. The Seed is somewhat like Parsley-Seed, but larger. It is planted in Gardens, and flowers in June.

The Roots only are used, and that but seldom in the Shops, being eaten at the Table like Parsneps, which they excell in Sweetness of Taste, though somewhat windy. They are accounted nourishing and provocative, are diuretic and good for the Stone. *Miller's Bot. Off.*

The Root is of culinary rather than officinal Use, and is of a bitterish and somewhat astringent Taste. It is good for the Stomach, excites an Appetite, is diuretic and lithoritriptic; affords good Nourishment, is easy of Digestion, and esteem'd a specific Antidote against Quicksilver. *Dale from Schroder.*

Cordus takes it to be the wholfomest of all esculent Roots. *Dodonæus* says they are moderately hot and moist; are easy of Digestion, and not flow of Passage; are moderately nutritive, and of no bad Juice: It is, however, flatulent, whence it provokes Lust. *Raii Hist. Plant.*

Scarce any Root has a sweeter Taste than that of a Skirret; and *Pliny* tells us, that the Emperor *Tiberius* exacted it of the Germans by way of Tribute. It is of excellent Virtues, and very proper for those who spit Blood or make bloody Urine, if they confine themselves to eat no other Root but this boiled in Milk, Whey, or Fleth-Broth; for by such means they would procure a due Laxness of the Belly, and a Removal of the Disorder. It is recommended, also, for the Strangury and Tenesmus, and is esteemed a very good Remedy against a Dysentery and Fluxes of the Belly. The Root boiled as aforesaid, then bruised, and taken in the Morning before the Patient rises, is very good in a Phthisis, or great Extenuation of the Body; as it is, also, in all pectoral Disorders. *Hist. Plant. Ascript. Boerhaave.*

SISARUM SYRIACUM. A Name for the *Tordylium*; *Orientalis*; *Secacul Arabum dictum Rauwolfio*.

SISER. The same as SISARUM.

SISON. A Name for the *Sium*; *aromaticum*; *Sison Officinarium*. See AMOMUM.

SISYMBRIUM.

The Characters are;

It has a thin Pod, the Valves not bursting, nor wreathed into a spiral Form, nor forcibly discharging the Seeds; it has also a singular Appearance, the Leaves being jagged or cut into Pinnæ.

Boerhaave mentions thirteen Sorts of *Sisymbrium*, which are,

1. *Sisymbrium*; *Pyrenaicum*; *latifolium*; *purpurascens* flore. T. 226. *Nasturtium Pyrenaicum, aquaticum*, Pon. Bat.

2. *Sisymbrium*; *aquaticum*. *Tourn. Inst.* 226. *Boerb. Ind. A.* 2. 15. *Nasturtium aquaticum*, Offic. *Nasturtium aquaticum vulgare*, Park. *Theat.* 1239. *Raii Hist.* 1. 816. *Nasturtium aquaticum supinum*, C. B. P. 104. *Nasturtium Cardamine, sive Nasturtium aquaticum*, J. B. 2. 884. *Raii Synop.* 3. 300. WATER CRESSES.

The Roots of Water-Cresses consist of a great Number of white Strings, fixed in the Earth under the Water, from which arise many pinnated Leaves, of six Pair of blunt-pointed long Pinnæ, with an odd one at the End, larger than the rest, a little waved about the Edges, many times of a dull green Colour. The Stalk grows to be about a Foot high, hollow and channelled, having smaller Leaves growing at the Joints. The Flowers grow in Tufts of small four-leaved white Flowers, flowering gradually, so that the Stalk, with the Seed-Vessels, run up into a long Spike. They are round and slender, full of very small red Seed. It grows in Ditches and Rills of Water, and flowers in June. The Leaves are only used.

They consist of fine volatile Parts, and are warming and opening, and of great Service against the Scurvy, and all its Symptoms, being one of the Plants whose Juice, mixed with that of Scurvy-Grass, and other Herbs of the like Nature, is given against all scorbutic Affections. They are, likewise, good for the Stone, Gravel, Dropsy and Jaundice, and are frequently eaten as Sallad in the Spring. *Miller's Bot. Off.*

This Plant is acrid, and gives no Tincture of red to the blue Paper. It contains a Salt pretty much resembling the *Oxyal Diaphoreticum Angeli Salæ*, which is an alkaline Salt, over saturated with Acid. Besides this Plant, there is in the Water-Cresses a little Sal Ammoniac and Sulphur, and a great deal of Earth. For,

By the Chymical Analysis we obtain from this Plant a great deal of Acid and Alkali, a little urinous Spirit and Sulphur, and a pretty deal of Earth. It is aperitive, diuretic, and antiscorbutic. They boil a Handful of it in lean Broth of Cray-Fish Soup. These Broths purify the Blood, and very much relieve those that are dropical, scorbutic, or hypochondriac. The Juice, Extract, and urinous Spirit of this Plant have the same Virtues. They affirm that this Juice takes away the Polypus of the Nose, and makes it fall off, if it be often washed with it. *Martyn's Tournefort.*

3. *Sisymbrium*; *Orientalis*; *facie Barbarea*; *folio Plantagini*. T. Cor. 16.

4. *Sisymbrium*; *Eruca folio glabro*; *flore luteo*. See BARBAREA.

5. *Sisymbrium*; *Eruca folio glabro*; *minus*; & *præcoctus*. T. 226. *Eruca latifolia, lutea, seu Barbarea minor*. M. H. 2. 230.

6. *Sisymbrium*; *Eruca folio glabro*; *minus*; *folio eleganter variegati*.

7. *Sisymbrium*; *aquaticum*; *Raphani folio*; *siliqua brevior*. T. 226. *Raphanus aquaticus, alter*. C. B. P. Edit. 1. 97. Prodr. 38. *Rapistrum aquaticum*, Tab. Ic. 408.

8. *Sisymbrium*; *aquaticum*; *foliis in profundas lacinias divisis*; *siliqua breviori*. *Tourn. Inst.* 226. *Boerb. Ind. A.* 2. 16. *Raphanus aquaticus*, Offic. *Raii Hist.* 1. 818. Ger. 187. *Emac.* 240. Park. *Theat.* 1228. *Raphanus aquaticus foliis in profundas lacinias divisis*, C. B. P. 97. Prodr. 3. 8. *Raii Synop.* 3. 301. *Raphanus aquaticus Tabernemontani*. J. B. 857. *Armoracia foliis laciniatis*, Volck. WATER-RADDISH.

It grows in marshy Ditches, and flowers in June and July. It is supposed by some to agree in Virtues with the Horse-Raddish.

9. *Sisymbrium*; *palustre*; *repens*; *folio nasturtii*. T. 226. *Eruca palustris, & nasturtii folio, siliqua oblonga*. C. B. P. 98.

10. *Sisymbrium*; *annuum*; *folio absmithii minoris*. *Tourn. Inst.* 226. *Boerb. Ind. A.* 2. 16. *Sophia Chirurgerum*, Offic. Ger. 910. *Emac.* 1068. Park. *Theat.* 830. *Erysimum Sophia dictum*, *Raii Hist.* 1. 812. *Synop.* 3. 298. *Nasturtium sylvestris tenuissime divisum*, C. B. P. 105. *Scirpium Germanicum sive Sophia quibusdam*, J. B. 2. 886. *Accipitrina Romæ & Loniceri*, Rup. Flor. Jen. 64. *Thalictrum Dodonæi*, Lued. 1146. *Cardamine sylvestris tenuissime divisus foliis*. H. Monsp. FLIX-WEED.

Flixweed has a white, hard, woody Root, full of small Fibres at the Bottom, perishing after having ripened Seed. The Stalks arise to be about two Foot high, more or less, beset with many long, winged, and very finely and neatly divided green Leaves, pretty much resembling those of the true Roman Wormwood, beset with very short fine Hairs. The Flowers grow at the End of the Branches, being small, yellow,

low, and four-leaved, and are succeeded by very slender Seed-Vessels, about an Inch or thereabouts in Length, full of very small reddish Seed. It grows frequently in sandy Ground, and amongst rubbish, and flowers in June.

The Seed is the only Part used; and 'tis said, that the Decoction of it unbruised is a certain Remedy for the bloody Flux; but it will not have the same Effect, if the Seed be bruised. It is, likewise, commended for the Stone and Gravel. *Miller's Bot. Off.*

It has a Taste a little astringent, but acrid, and something like that of Mustard. It gives a faint red Colour to the blue Paper. The Sal Ammoniac predominates in this Plant, being mixed with a great deal of Sulphur and terrestrial Parts; so that it is vulnerary, deterfive and febrifugous.

Casparinus says, that its Seed kills Worms. *Tragus* allows that it stops the Dyentery, and all Sorts of Fluxes. They give a Dram of it in Pottage or Wine for a Looseness. The Water in which the Plant has been macerated cold, has the same Virtues. The Juice, Conserve, or Extract of the Leaves and Flowers, are good for spitting Blood, the Fluor Albus, and immoderate Fluxes of the Piles and Terms. Externally applied, it cures Wounds, and cleanses Ulcers. They sell the Seed at Paris under the Name of *Talitron*, which comes from *Thaliotrum*; for *Dodonæus* has given it that Name. *Martyn's Tournefort.*

11. *Sisymbrium*; annuum; folio absinthii minoris latiore. *Nasturtium sylvestre, tenuissimè divisum, folio latiore.* C. B. P. Var. 105.

12. *Sisymbrium*; minus; *Erucae* folio glabro, nigro, crasso, lucido. *Barbarea, minor, nigro, crasso, lucido, folio.*

13. *Sisymbrium*; palustre; minus; siliqua asperâ. T. 226. *Sinapi parvum, siliqua asperâ,* C. B. P. 99. Prodr. 41. *Erysimum annuum, minus, siliqua asperâ.* Vaill. Boerb. Ind. Alt. Plant.

The second Species is a medicinal Plant, and has the Smell and Taste of *Eruca*, or Rocket, accompanied with a Bitterness universally grateful; whence it is of Use in those scorbutic Affections in which *Cochlearia* and *Nasturtium* are proper, for which Purposes it is used in Salads. It cures all Diseases proceeding from a Viscidity and Ropiness of Blood. The Juice taken in the Morning for Months together, is an excellent Remedy for scorbutic Ulcers. It has the Virtues of the *Cochlearia*, tho' a much less Root, and, also, the Taste of that Plant, but is less acrimonious, and has very salutary Qualities, (especially the seventh Species) which have been observed before of the *Erysimum* and *Eruca*. The tenth is the most effectual of them all, in deterring malignant Ulcers, and depurating sanious ones, and for consolidating them, especially if used internally as well as externally. Hence it has the Title of *Chirurgorum Sapientia*, for it is of a saponaceous as well as astringent Quality; and being applied to a Wound, conglutinates it without a Suppuration: It, also, provokes Urine, and is of Service in the Stone and Dropsy. *Hist. Plant. Acript. Boerhaave.*

SISYRRHINCHIUM. Offic. *Sisyrrhinchium Theophrasti*, Raii Hist. 2. 1167. *Sisyrrhinchium minus angustifolium*, C. B. P. 41. *Crocus Italicus parvo flore, radice rostratâ*, Elem. Bot. 290. *Bulbocodium Crocifolium flore parvo, violaceo*, Tourn. Coroll. 50. **SPANISH-NUT.**

It grows in the Kingdoms of *Valencia* and *Murcia* in Spain, and flowers in March. The Root is said by the Inhabitants, where it is a Native, to be good for the Gripes; but the Body must be exercised with Dancing after taking it.

SITANIUS. The same as **SETANIOS**.

SITIOLOGICE. That Part of Medicine which treats of Aliments; from *σιτος*, Aliment, and *λέγω*, to speak.

SITION. *σιτιον*. Aliment in general; or Bread made of Wheat in particular.

SITIS. Thirst. This is excited either by a Defect of a due Quantity of Moisture in the Body; from a Thickness and Immeability of the Humours; from a redundant Heat; from a muriatic, ammoniacal, alkaline, aromatic, oleous and rancid Acrimony; or from Poisons.

It is worthy of Remark, that Thirst seems to be a kind of Instinct, which directs a Person to drink Fluids, at the same time when the State of his Body requires Dilution. Thus after Eating, a Thirst is excited, as a sort of Notice, that the Food wants something to dilute it. When the Humours of the Body are thick, viscid, and unfit for Circulation, Thirst gives a sort of Warning of the Condition of the Fluids, and a Persuasive to mend their Defects, by diluting them, and rendering them more thin, and fit for their due Distribution.

In feverish Disorders, Thirst seldom fails of putting the Patient in Mind, that it is necessary to temperate his Heat by aqueous and acefcent Liquors. In like manner, if any kind of Acrimony is offensive in any Part of the Body, Thirst gives notice of the Danger, and indicates the Remedy.

I am sensible, that the Thirst generally observed in Dropsies, may be esteemed a false Guide, and a Persuasive to drink, at a time that it is pernicious; but it must be considered, that the stagnating Waters in this Distemper putrify and contract an Acrimony, which is well corrected by drinking proper Liquors in due Quantities.

A Thirst arising from a Dryness of the whole Body is allayed by the liberal and long-continued drinking of warm, aqueous, and farinaceous Liquors, rendered grateful by the Admixture of a small Quantity of some proper Acid. Thin Decoctions of Barley, Oats, and Bread; Whey, Milk, and Water, Posset-Drink, and a thin unsalted Decoction of Veal, without its Fat, are beneficial. Among fermented Liquors, small Beer, though not that Kind impregnated with Aromatics, is serviceable. Baths, Fomentations, and Clysters, are, also, useful in this Case.

A Thirst arising from a Dryness of particular Parts, such as the Mouth, the Tongue, the Fauces, or Oesophagus, is allayed:

1mo. By the Use of the Things above recommended.

2do. By often washing and gargarising the Mouth with the same Things.

3tio. By opening the salival Glands and Ducts, by means of Epithems and Fomentations, consisting of laxative, moistening and aperient Ingredients. In this Case, Oxycrate with Crums of Bread is of singular Use.

A Thirst arising from an acrid lixivial Salt, or from an acrid aromatic Salt, is removed by the Things already mentioned, as being of a diluting Nature; but especially if acid and nitrous Substances are mixed with them. Hence we know how a Thirst, arising from a muriatic Salt, is to be allayed, since it only calls for aqueous Liquors.

But a Thirst arising from a Matter unfit for passing thro' the Vessels, is only to be removed by diluting and resolvent Liquors. *Boerhaav. Institut.*

SITOS. *σιτος*. Wheat, or any fumentaceous Grain, of which Bread is made; or Bread. In *Hippocrates* it frequently imports solid Aliment, in Contra-distinction from forbile Aliment; or Aliment in general; and sometimes the Recrements of the Aliment contained in the intestinal Tube.

SITOSPELTUM. *σιτοσπελτον*. A Name for the *ÆGYLOPS*, a Species of Grass. *Gorræus.*

SITTA. *σίττα*. The Name of a Bird, a Species of *Pye*.

SIUM.

The Characters are;

The Root is like that of a Colewort, fibrous and ligneous. The Leaves are pinnated, growing by Pairs to one Rib, and ending in an odd one. The Petals of the Flowers are bifid; and the Seeds are roundish, gibbous and striated.

Boerhaave mentions six Sorts of *Sium*, which are;

1. *Sium*; latifolium. C. B. P. 154. *Tourn. Inst.* 308. *Boerb. Ind. A.* 55. *Sium*, Offic. *Sium majus*, Ger. 200. *Sium majus latifolium*, Ger. Emac. 256. Raii Hist. 1. 443. *Sium maximum latifolium*, J. B. 3. 175. *Sium Dioscoridis frue Passinaca aquatica major*, Park. Theat. 1240. *Sium latifolium foliis variis*, Raii Synop. 3. 211. **WATER-PARS-NEP.**

It grows in Rivers and marshy Places, flowering in July. The Leaves eaten either crude, or boiled, are said to break and expel the Stone; to excite Urine and the Menes; to promote the Expulsion of the Fœtus; and to be good in a Dysentery. *Dioscorides*, L. 2. C. 154.

2. *Sium*; *Erucae* folio. C. B. P. 154. *Sium aquaticum, rugosis foliis, multifidis, trifidis, & dentatis*. M. U. 12. Ic. T. 5. *Sium aquaticum, foliis multifidis, longis & serratis*. M. H. 3. 283. *Sium alterum*, Dod. p. 589. *Cicuta, aquatica, Gesneri*. J. B. 3. 175. *Cicuta maximâ*; H. Eyft. Vern. O. 7. F. 2. Fig. 2. *Herba venenosa*, Lob.

Our *Oenanthe Cicuta facie, succo viroso*, which *Wepper* has described by the Name of *Cicuta Aquatica*, and of the dismal Effects of which in some Children, who by Mistake eat of it, he has wrote a large Treatise, was very probably the *Cicuta* so much in use of old, especially at *Athens*, for Killing. At least the Violence of this makes it a much sifter Instrument of Death than the common Hemlock, which is not by far so malignant a Quality.

Though we must withal allow differing Climates very considerably to heighten or abate the Virtues of Plants. And it is not altogether improbable, that the Poison with which the *Athenians* took away the Lives of Malefactors, was an inspissated Juice compounded of that of *Cicuta* and other corrosive Herbs.

But be this as it will, the Alterations which *Wepper* observed the Roots of *Oenanthe* to make in the Body, were a violent Pain and Heat in the Stomach, terrible Convulsions, with the Loss of all the Senses, Distortion of the Eyes, and flowing of the Blood out of the Ears, the Mouth so fast shut that no Art could open it, Efforts to vomit, but nothing thrown

thrown up, frequent Hiccups, with a great Distention and Swelling, especially at the Pit of the Stomach; and when Death had concluded the Tragedy, a continued Running of green Froth at the Mouth.

Stalpart Vander Wiel gives the like Account of two Persons killed at the *Hague* by the same Roots.

In a Dog, who, for Experiment's sake, died by this Poison, the Stomach, when opened, was found quite constricted, and shut up at both Orifices, its inward Surface red, with livid Spots here and there; the Intestines were empty; only the Rectum contained a little greenish Mucus.

Thus it appears that this Plant consists of hot, acrid, and corrosive Parts, which by rarifying the Juices of the Stomach, and wounding its nervous Membranes, are the Cause of all those Disorders which immediately follow.

For upon the Sense of a violent Irritation and Pain, the Fluid of the Nerves is presently in large Quantities determined to the Part affected; and this, if the Stimulus be not over-great, will be only to such a degree as is sufficient, by contracting the Fibres of the Stomach and Muscles of the Abdomen, to throw off the Cause of the disagreeable Sensation; but the uneasy Twitching being too terrible to be borne, the Mind, by a kind of Surprise, with Haste and Fury, as it were, commands the Spirits thither; thus the Business is over-done, and the Action of the Fibres becomes so strong, that the Orifices of the Stomach are quite closed; so that instead of discharging the noxious Matter, the Torment is made greater, and the whole Oeconomy put into Confusion.

This forcible Contraction of the Muscles was the Reason that one of the Children which *Wepfer* saw, made Urine in the Midst of the Agony, to the Height of five or six Foot, with a Strength and Violence surprising to the Spectators.

Nor is it any Wonder, if in these Circumstances all Sense be lost, Blood gush out at the Ears, Nostrils, &c. the Parts being all torn and broke by the Violence of the Convulsions, which though they began in the Muscles of the Belly, must at last prevail in the Members too, till the whole Fabric is shocked and overturned, and some of the corrosive Salts, perhaps getting into the Blood, and by the Rarefaction of it diffusing the Vessels, the membranous Coats of which being already over-stretched, will the more easily give way and let out their Fluid.

The Case of *Aconitum* is much the same; this is our *Napellus* or *Monks-hood*; and its Effects so nearly agree with those now related of *Oenanthe*, that I shall not need to recite them; the Experiments of *Wepfer* are full and convincing. And indeed as all the Histories which this same Author has so carefully given us of Trials made with several vegetable Poisons, *Salanum*, *Nux Vomica*, *Coculus Indicus*, and the like, on different Creatures, put it out of all doubt that the common Mischief of these is a Twitching and Inflammation of the Stomach; so it appears from hence that virulent Plants, although they may be distinguished even from one another by particular Virtues, do, however, kill by a like Operation and Force, which differs principally in Degree from that of noxious Minerals.

And therefore, in order to know what the specific Qualities of any such Herbs are, they must be given only in very small Doses; and then perhaps it would appear, that they are not made (as some imagine) to be deliterious and destructive, but for very good and beneficial Uses; as we particularly experience in the Case of Opium.

Nor is it at all strange that the Symptoms from a vegetable, and from a mineral Virulency, should be so different, although of the same Kind, and only of unequal Force; for the more solid Parts of Minerals, eroding the Coats of the Stomach, induce a perfect Mortification and Gangrene; and thus do their Work at once; whereas the weaker Salts of Plants can make but a slighter Excoriation, upon the painful Sense of which those Agonies and Convulsions that follow, rather gradually exhaust the Strength; and thus the Animal is not killed so speedily, nor with the same Appearances.

Upon this Score, tho' mineral Poisons do not pass the *Prima Via*, vegetable ones in some Cases possibly may; just as we find those Medicines which have a great Degree of Irritation presently to induce a Vomiting; whereas the same Twitching, a little weakened, suffers them to pass into the Intestines, and work downwards by Stools.

By this we may, perhaps, give some guess at the Nature of those Poisons, with which they tell us the Natives in some Parts of *Africa* and *India* are so expert at Killing, that they can do it in a longer or shorter time as they please. These are most probably either the Fruits or the inspissated Juices of corrosive Plants, which inflaming the Bowels, may cause little Ulcers there, whose fatal Consequences, we know, may very well be flow and lingering.

This I am the rather induced to believe, because an ingenious Surgeon, who lived in *Guinea*, told me, that the Anti-

dote by which the Negroes would sometimes cure those who were poisoned, was the Leaf of an Herb, which purged both upwards and downwards. For by these means the Stomach might be cleared from the adhering corrosive Parts of the Venom. Yet I can hardly think it possible at the same time, that they should be able, by varying the Composition or Quantity of the Dose, to ascertain the Time in which it will kill, to a Week, Month, and the like; nor indeed have I ever met with any Person who could attest this to be Matter of Fact. Though repeated Trials and Observations may help one well practised in such Tricks to give notable Conjectures in this Point.

The Ancients, indeed, pretended much the same thing with their *Aconitum*, of which they seem to have made a kind of Secret and Mystery, as we learn from *Theophrastus*, who says, *the ordering of this Poison was different, according as it was designed to kill in two, three Months, or a Year*. But this he relates only as a common Tale or Opinion, and not as a Story to which he himself gave any manner of Credit.

It is very plain, that the common Cure of all Poisons of this kind, must be by freeing the Stomach, as soon as possible, from the corrosive vellicating Particles, and defending the Membranes from their Acrimony, by such Things as are of a smooth, oily, and lubricating Substance. *Mead on Poisons*.

3. Sium; five Apium palustre; foliis oblongis. See *BERULA*.

4. Sium; medium; ad alas floridum. *M. U.* 63. *Apium, palustre, minus cauliculis procumbentibus, ad alas floridum.* *H. L.*

5. Sium; arvense five segetum. *Tourn. Inst.* 308. *Raii Synop.* 3. 211. *Boerb. Ind. A.* 55. *Selinum segetale*, *Offic. Park. Theat.* 932. *Selinum Sii foliis*, *Ger. Emac.* 1018. *Raii Hist.* 1. 443. **HONE-WORT.**

This Plant grows amongst Corn in moist Soils. The expressed Juice mixed with Ale, and taken every Morning fasting, is said to cure Tumors of the Cheeks. The Juice of one Handful of the Herb, is to be taken in half a Pint of Ale. *Raii Hist. Plant.*

6. Sium; aromaticum; Sison Officinarum. See *AMOMUM*.

Boerhaave says, that notwithstanding the Virtues ascribed to the first Species, he never durst use it, on account of the Resemblance it bears to the second Species, which is the famous *Cienta Aquatica*, of which *Wepfer* wrote an entire Treatise. This second Species has a thick bulbous Root, of a sweet Taste, but is one of the greatest Poisons known; for if taken into the Stomach, it excites horrid Convulsions, which soon prove mortal, unless discharged from the Stomach by Vomit. The Method of Cure is, to pour down large Quantities of warm Oil, with Water, and a little Honey, and by this means to excite Vomiting, that the Poison may be discharged from the Stomach. Under the Article *CICUTA*, I have referred the *Cicuta Aquatica* by Mistake to *PHELLEDRIUM*.

SMALTUM. Smalt. This is a chymical Preparation of a blue Colour, used by Painters and Enamellers, but of no Use in Medicine. It is commonly called Stone, or *Powder Blue*. It is made of *Cobalt*, Pot-ash, and Powder of Flint-Stones. The Manner of preparing it is described in the *Philosophical Transactions*, by *Dr. Krieg*, and by *Joh. Henry Linck* of *Leipsic*, in the same Work.

SMARAGDINUM EMPLASTRUM. The Name of a Plaster described by *Celsus*, *L. 5. C.* 19.

SMARAGDUS. *Offic. Boet.* 195. *Calc. Mus.* 212. *Geoff. Prælect.* 80. *Schrod.* 331. *Kentm.* 47. *De Laet.* 33. *Aldrov. Mus. Metall.* 973. *Charlt. Foss.* 38. *Smaragdus à nonnullis Prasimus*, *Worm.* 105. *Mont. Exot.* 14. **THE SMARAGD OR EMERALD.**

The Emerald is a green, diaphanous, shining Gem, very pleasant to the Sight, but excessively brittle, which has given occasion to many Stories. It is divided into Oriental and Occidental. The Oriental is the best in all Respects. The other, which comes from *Peru*, is not near so bright, and besides, has generally some foul Spots. There is a third kind of Emerald, or *Pseudo-Smaragdus*, found in the Mountains of *Switzerland* and *Auvergne*, which is extremely tender, and of the palest Green.

Fragments of Emerald thrown upon a clear Fire, emit a fine Flame, and totally lose their Colour, which is a Proof sufficient that this Gem contains some Sulphur of Copper. Besides the superstitious Uses ascribed to it, it is said to stop Fluxes of all kinds. It makes Part of the *Electuarium de Gemmis*, and *Confectio de Hyacintho*, together with the other precious Fragments. *Geoffrey*.

SMARIS. *Offic. Rondel. de Pisc.* 1. 140. *Bellon. de Aquat.* 226. *Gefin. de Aquat.* 522. *Aldrov. de Pisc.* 227. *Raii*

Raii Ichth. 319. Ejusd. Synop. Pisc. 136. Jonl. de Pisc. 55. Charlt. Pisc. 36. **THE WHITE CACKEREL.**

This is a Fish found in the *Mediterranean Sea*. The Head of this Fish salted and burnt, is said to repress the tumid Lips of Ulcers; to restrain phagedænic Ulcers; and consume Corns, and those Excrescences called *Thymi*. The salted Flesh is said to be a good Application in Case of the Sting of a Scorpion, or the Bite of a mad Dog.

SMECTIS. *σμεκτίς*. A Name for the **CIMOLIA TERRA**.

SMEGMA. *σμήγμα*. Soap.

SMELE. *σμήλη*. This is explained by *Gorræus*, a dry Powder of any kind sprinkled upon the Skin, with a View of deterring or cleaning it.

SMERILLUS. The same as **SMYRIS**.

SMILAX.

The Characters are;

It has the Appearance of a scandent Plant, with Claspers; or Tendrils. The Stalks are spinous, and the Flowers poly-petalous and rosaceous. The Berry is soft, roundish, and full of an oval Seed.

Boerhaave mentions four Sorts of *Smilax*, which are:

1. *Smilax aspera*; fructu rubente. *C. B. P.* 296. *Tourn. Inst.* 564. *Boerb. Ind. A.* 2. 60. *Smilax aspera*, Offic. *Ger.* 709. *Emac.* 859. *J. B.* 2. 115. *Smilax aspera fructu rubro*, *Park. Theat.* 173. *Raii Hist.* 1. 655. **ROUGH BIND-WEED.**

This Plant is cultivated in Gardens, and flowers in Summer. The Leaves, Tendrils, Root, and Berries are used in Medicine, which are said to evacuate noxious Humours by Sweat, and Transpiration; to cure Disorders of the Skin; to expel Poison; and ease Pains of the Joints. It is a *Succedaneum* for *Sarsaparilla*; and is celebrated for curing Venereal Disorders, taken either in Decoction, or Powder.

2. *Smilax*; *aspera*; minus spinosa; fructu nigro. *C. B. P.* 236.

3. *Smilax*; *aspera*; *Indiæ Occidentalis*. *C. B. P.* 296.

4. *Smilax*; *Orientalis*; sarmentis aculeatis; excelsas arbores scandentibus; foliis non spinosis. *T. C.* 45. *Boerb. Ind. Alt. Plant.*

Boerhaave takes Notice of some other Plants under the Name of *Smilax*, to which he gives the following Characters.

The Root is perennial and creeping; the Flowers are naked, hexapetalous, furnished with six broad and thick Stamina, and disposed in Spikes. The Ovary in the Bottom of the Flower is of a spherical Form, furnished with a short Tube, and becomes a Berry containing a single Stone.

1. *Smilax*; *aspera*; *racemosa*; *Polygonati folio*. *T.* 645. *Polygonatum racemosum*, *Corn.* 36. *Lilium convallium*, *Virginianum*, *Polygonati foliis racemosum*.

2. *Smilax*; *unifolia*; *humillima*. *Tourn. Inst.* 654. *Boerb. Ind. A.* 2. 64. *Monophyllum*, Offic. *Ger.* 330. *Emac.* 409. *Raii Hist.* 1. 668. *Monophyllum*, *frve unifolium*, *Park. Theat.* 505. *Unifolium*, *frve Ophrys unifolia*, *J. B.* 3. 534. *Lilium convallium minus*, *C. B. P.* 304. **ONE BLADE.**

This Plant grows in Woods and Thickets, and flowers in May and June. The Flower is used, which is esteemed alexipharmic and vulnerary.

SMILAX DALECHAMPII. A Name for the *Ilex*; *folio rotundiori*, *molli*, *modiceque sinuato*; *frve Smilax Theophrasti*.

SMILAX HORTENSIS. A Name for the *Phaseolus vulgaris*.

SMILAX HORTENSIS MINOR. A Name for the *Phaseolus hortensis minor*.

SMILAX LÆVIS MAJOR. A Name for the *Convulvulus*; *vulgaris*; *major*; *albus*.

SMILAX LÆVIS MINOR. A Name for the *Convulvulus*; *minor*; *arvensis*; *flore roseo*.

SMILE. *σμήλη*. A crooked Incision Knife, with two Edges. *Gorræus*.

SMILIMUM EMPLASTRUM. See **ABSCESSUS**.

SMIRIS. See **SMYRIS**.

SMODICON. *σμοδικόν*. A Remedy for Sugillations; from *σμοδική*, a Sugillation.

SMYRIS et **SMERILLUS**, Offic. *Smiris*, *Mer.* Pin. *Boet.* 591. *Worm.* 65. *Aldrov. Mus. Metall.* 653. *Charlt. Foss.* 27. **EMERY.**

Smyris, *Smyrillus*, or *Emery* of the Shops, *σμύρις* of the Greeks, *Smergium* of *Serapion*, *Sumbagedi* of the *Arabians*, is a ferruginous, heavy, metallic Substance, of a Colour inclining to black, and so hard that Lapidaries use it in cutting and polishing their Diamonds, and Smiths to polish their Iron and Steel.

Emery is of three Kinds; the common, which is blackish, and very much used, is found in many Parts of *Europe*, especially in an Island on the Coast of *Tuscany*, and in *Guernsey* in the *British Channel*. The second is a hard uneven Sort of a

reddish Colour, like Bloodstone or Oker, but does not stain the Hands. This is, by some, reckoned among the Bloodstones. The third is of a blackish red Colour, streaked with gold-coloured Veins. It is found in the Gold-Mines of *Peru*, and really contains Gold. This Kind is thought by Chymists to be a Gold-Ore, or rather a Sort of immature or imperfect Gold; and therefore they esteem it very much, and extract a Tincture from it with Spirit of Sea-Salt, with which they fix Mercury in an Instant, and give this Substance the Name of the miraculous Precipitate, because they fancy they shall at length attain the true Art of making Gold by Means thereof.

Emery is recommended by *Dioscorides* and *Galen* as a Dentifrice; but it corrodes the Teeth too much, and insensibly wears them away. It is not now of any other Use in Physick. *Geoffroy*.

SMYRNA. *σμύρνα*. Myrrh.

SMYRNIUM.

The Characters are;

The Leaves are large, various, and sometimes perfoliated, or perforated by the Stalk; the Seeds are thick, hemispherical, lunated, gibbous; channelled and black.

Boerhaave mentions three Sorts of *Smyrniun*, which are;

1. *Smyrniun*: *Raii Synop.* 3. 208. *Tourn. Inst.* 316. *Boerb. Ind. A.* 54. *Hippofelinum* & *Smyrniun*, Offic. *Hippofelinum*, *Ger.* 866. *quoad descript.* *Emac.* 1019. *Raii Hist.* 1. 437. *Hippofelinum*, *frve Smyrniun vulgare*, *Park. Theat.* 930. *Hippofelinum Theophrasti*, *vel Smyrniun Dioscoridis*, *C. B. P.* 154. *Macerone quibusdam Smyrniun*, *semine magno*, *nigro*, *J. B.* 3. 126. *Olusatrum quibusdam*. **ALEXANDERS.**

Alexanders has many large winged Leaves, of a yellowish green Colour, much larger than Smallage, or else pretty much resembling it. The Stalks grow to be three or four Foot high, channel'd or furrowed, having the like; but smaller; Leaves growing on them, and on their Tops pretty large Umbels of small five-leaved white Flowers, succeeded by large oblong corner'd black Seed. The Root is large and branched; blackish on the Outside, and white within. The whole Plant has a strong warm Taste. It grows upon the Rocks by the Seaside, and flowers in June. It is usually kept in Gardens for Use.

This is an Herb more used in the Kitchen than in Apothecaries Shops, being eat now as a Salad among other Herbs; or else boiled and eaten with Salt Meat. It is accounted to be of the Nature of Parsley or Smallage; but stronger, and therefore may be serviceable in opening Obstructions of the Liver and Spleen, to provoke Urine and the Catamenia, and to help the Dropsy and Jaundice. *Miller's Bot. Off.*

It is aperient, diuretic, and sudorific; excites the menstrual Discharge, and promotes a difficult Birth; it is good for the Colic, Asthma, and Ischiadic Pains. *Hist. Plant. Boerhaavio ascript.*

2. *Smyrniun*; *peregrinum*; *rotundo folio*. *C. C. P.* 154.

3. *Smyrniun*; *peregrinum*; *folio oblongo*. *C. B. P.* 154. *Boerb. Ind. Alt. Plant.*

SODA. An Head-ach. Sometimes, according to *Blancard*, it imports a Heat of the Stomach. *Soda Subethica*, is a soporiferous Pain of the Head. *Castellus* from *Bonetus*.

SODA, is, also, the lixivial Salt of **KALI**.

SOIA. See **PHASEOLUS**.

SOL. The Sun, in Chemistry; is the Character for Gold. See **AURUM**.

In the *Collectanea Chymica Leidensia*, there are several Preparations of Gold described, which are not used in the present Pharmacy.

SOLANIFOLIA. A Name for the *Circæa*; *Lutetiana*; and for the *Circæa*; *minima*.

SOLANO-CONGENER. See **BELLADONNA**.

SOLANOIDES. Bastard Nightshade.

The Characters are;

It hath a rose-shaped Flower, consisting of five Leaves, whose Pointal afterwards becomes a roundish Fruit, having one hard Seed, which is covered with a thin Pulp, so as to have the Appearance of a Berry.

Miller mentions two Sorts of *Solanoides*, which are;

1. *Solanoides Americana*; *Circæa foliis canescentibus*. *Tourn.*

2. *Solanoides Americana Circæa*; *foliis glabris*. *Tourn.*

These Plants are Natives of the warmer Parts of *America*; from whence their Seeds have been brought into *Europe*; and the Plants are now become pretty common in the Gardens of the Curious.

The Fruit of these Plants afford a fine red Colour, when bruised; but it soon fades on Paper, which renders it worth little. If a Quantity of these Fruit is squeezed into a

Glass

Glass of fair Water; so as to colour the Water; of a deep red, and a Stem of Flowers of the Tuberosa put into the Glass, it will in one Night imbibe so much of the Liquor as to variegate the Flowers with a Rose Colour. *Miller's Dictionary*.

SOLANUM.

The Characters are;

It has the Flower of the Alkekengi; the Calyx is monophyllous, quinquefid, stellated, and not vesicary. The Fruit is soft, succulent, of an oval or globular Figure, and full of Seeds, which are generally flat.

Boerhaave mentions four and twenty Sorts of *Solanum*; which are,

1. *Solanum*; scandens; vel *Dulcamara*. See AMARA-DULCIS.

2. *Solanum*; scandens; vel *Dulcamara*; flore albo. *C. B. P.* 167.

3. *Solanum*; scandens; vel *Dulcamara*; foliis ex albo variegatis. *M. H. B.* 194.

4. *Solanum*; officinarum; acinis nigricantibus. *C. B. P.* 166. *Tourn. Inst.* 148. *Boerb. Ind. A.* 2. 67. *Solanum vulgare*, *Park. Theat.* 346. *Raii Hist.* 1. 672. *Synop.* 3. 265. *Solanum hortense*, *Ger.* 268. *Emac.* 339. *Solanum hortense*, *five vulgare*, *J. B.* 3. 608. *Nilentsunda*, *Hort. Mal. Part.* 10. p. 145. *T.* 73. *Aguara-quiyà*, *Pison.* 224. NIGHT-SHADE.

Cordus and *J. Baubine* have taken the Flower of this Plant to be pentapetalous; whereas it is certainly monopetalous. It is commonly believed that the Seed of the Nightshade, with black Fruit, produces those which have a red and yellow Fruit. But besides that Experience shews the contrary, these Species are distinguished by other more particular Circumstances, as will appear by their Descriptions.

The Nightshade, with black Fruit, has a Root half a Foot long, three or four Lines thick at the Neck, waving, whitish, fibrous and hairy; the Stalk, which is full of Pith, rises about a Foot and a half high, three Lines thick, greenish, rough, and angular, divided commonly at the Distance of nine or ten Inches, into several Branches, stretching out upon the Sides, and often bending downward; garnished with Leaves growing alternately, which beginning with a Tail half an Inch long, increase to an Inch and a half in Breadth, and two Inches long; they are pointed, waved rather than notched, dark, green, smooth, and shining; the Pedicle lengthens itself into a Rib; the Waves of which bend themselves about till they are lost in the Extremities of the Leaves. Those which grow upon the Divisions of the Branches, are smaller, rounder, and more pointed at the Top, where the Sprigs are set with two or three little Threads.

The Flowers do not usually grow out of the Bosoms of the Leaves, as in most other Plants, but out of the Branches themselves, a little below the Leaves. These Flowers grow together from five to eight, upon a Stalk an Inch and a half long, divided into slender Pedicles, four or five Lines long. Each Flower is white, monopetalous, of the Shape of a Balloon, three Lines or three and a half in Diameter, perforated at the Bottom, where it is yellowish, and, as it were, terminated in a Ring; divided from the middle into five Segments, long, pointed and disposed in Form of a Star. From the Sides of the Bottom of the Flower arise short Chives, charged each with a yellow Summit, dusky, narrow, a Line and a half long. All these Summits join together, and hide the Bottom of the Pointal, the Basis whereof is almost round, pale green; jointed in the Hole of the Flower, and fixed in the Bottom of the Empalement; this Empalement is a little greenish Funnel, cut into five obtuse Points. When the Flower is gone, the Pointal becomes a spherical Fruit, pretty hard, at first of an Olive-green, afterwards black, about four Lines Diameter, full of a limpid Juice, and several whitish Seeds, a Line long, flat, rounded, bordered with a small greenish Skin, easily separated from it, disposed in a Ring about the Placenta, which is in the middle of the Fruit, and distributes the Nourishment to all the Seeds.

The Root is in a manner insipid; the Leaves have an herby Taste, a little saltish; the Fruit is something sharp and winy; the whole Plant has a narcotic Odour, but not so strong as in the other Species.

It flowers in *July*, *August*, and *September*; the Fruit is ripe in *September* and *October*.

The Leaves give but a faint Tincture of red to the blue Paper; but the ripe Fruit gives it a very deep one; which gives us Reason to conjecture, that the Sal Ammoniac in this Plant, is tempered in the Leaves by a considerable Quantity of fetid Oil and Earth; but that the acid Part of this Salt is very much disengaged in the ripe Fruit; so that we must make choice of the Parts of this Plant, as different Occasions may require. The Berries, for Example, are more

cooling, but yet more repellent than the Leaves, which lenify by resolving, cleansing, and absorbing.

By the Chymical Analysis they yield a great deal of volatile concrete Salt.

Nightshade is used to allay Inflammations, to soften and relax the Fibres which undergo too violent a Tension. They apply the bruised Herb to the Piles, or bath the Parts, with the Juice a little warmed. They work this Juice for some time in a leaden Mortar, to anoint the Cancer with. The same Juice quickened with a sixth Part of Spirit of Wine, well deslegmated, is very good for the St. Anthony's Fire, Tetters, Pustules, Pimples, and all the Diseases of the Skin. The Nightshade is used in the Ointment of Poplar, and all anodyne Cataplasms. *Casalspinus* affirms, that they give the Water, or the Juice, to drink in the Inflammation of the Ventricle, and Heat of Urine; he says, that three Ounces of the same Water, taken with an equal Quantity of Wormwood Water, evacuates by Sweat. Nevertheless, the internal Use of this Plant is very much suspected. *Tragus* says, that it kills Hogs, and advises not to use the Water of it internally, till it has been distilled two or three Years. *Martyn's Tournefort*.

5. *Solanum*; officinarum; acinis Puniceis. *C. B. P.* 166.

6. *Solanum*; officinarum; acinis ex luteo virescentibus.

7. *Solanum*; officinarum; folio laciniato Stramonii, flore parvo; albo; acinis nigris.

8. *Solanum*; lanuginosum; hortensi simile. *Raii H.* 672.

9. *Solanum*; tuberosum; esculentum. See BATTATA VIRGINIANA.

10. *Solanum*; pomiferum; frutescens; Africanum; spinosum; flore Borriginis; foliis profundè laciniatis.

11. *Solanum*; pomiferum; frutescens; Africanum; spinosum, flore Borriginis; folio pallidius virescente, subtus tomentoso.

12. *Solanum*; pomiferum; frutescens; flore Borriginis; folio tomentoso; incano; solo caule spinoso.

13. *Solanum*; incanum; Chinense; minus spinosum; floribus parvis, umbellatis. *Pluk. Almag.* 351.

14. *Solanum*; fruticosum; bacciferum. See AMOMUM PLINII.

15. *Solanum*; lignosum; Africanum; sempervirens; Laurinis foliis. *H. A.* 2. 191.

16. *Solanum*; Africanum; lignosum; folio; atroviridi; angustis; oblongo, obtuso.

17. *Solanum*; Guineense; fructu magno instar Cerasi, nigerrimo, umbellato.

18. *Solanum*; Americanum; caule & pedunculo nigro; & folio Acanthi, spinosis.

19. *Solanum*; Americanum; caule pedunculo; folio Malvæ, tomentosis, & spinis albis donatis; fructu luteo.

20. *Solanum*; spinosum; fructu rotundo. *C. B. P.* 167. *Pomum Hierachuntanum*. *Imperat.* 665. *Mala insana*, nigra. *Rauwolf. Lugd. Append.*

21. *Solanum*; fruticosum; Indicum; fructu rubro. *T.* 149. *Cherubunda*. *H. Mal.* 2. 67. *Scheruschunda*. *1c. Tab.* 36.

22. *Solanum*; Africanum; spinosum; fructu canescente, undulato. *Triumfett. Prælus.* 49.

23. *Solanum*; pomiferum; non spinosum; fructu duro. *Vaill.*

24. *Solanum*; spinosum; incanum; foliis sinuatis; flore Borriginis; fructu luteo; ovuli Gallinacei magnitudine & formâ. *Triumf. Boerb. Ind. Alt. Plant.*

The first and second Species are called *Dulcisamara*, or *Dulcamara*, (*Bitter-sweet*) because if you chew a Bit of them newly crompt, it diffuses a Bitterness over all the Mouth, and soon after a Honey-like Sweetness. The Juice of this Plant is very penetrating, saponaceous and detergent; whence it is proper in Wounds where Blood is extravasated and grumous. It is, also, diuretic, expelling Gravel from the Kidneys; and sudorific, for which Reason Physicians advise a very strong Decoction of the tender Branches to be drank in a Phthisis, where Attenuants and Cleansers are required; but where there is an excessive Thinness of Blood, which manifests itself by natural Sweats, it is prejudicial. It is a very serviceable Plant in Inflammations, and too great a Tenseness of the Fibres, and the bruised Leaves are good in the Hæmorrhoids: The Juice is very good in a Cancer, to wash the same; and with rectify'd Spirit of Wine, is proper in an Erysipelas, and all cutaneous Diseases. It has the Virtues of Liquorice, and the Decoction of it is highly serviceable in all Disorders from Obstructions, for it is detergent and aperient, and is commended in all pectoral Distempers, Ulcers, external or internal, the Scurvy, and Lues Venera. It is very diuretic, and no Plant is more proper for a Camp, where the Soldiers have received any internal or external Hurt. Outwardly, it is useful in the Gout to ease the Pains. Physicians

ficians highly extol the outward Use of this Plant, and, I think, with good Reason: They take the bruised Leaves, and expressing the Juice, mix it with Ointment of Roses, and apply it to the Head in a Phrensy, as a Refrigerent and Anodyne, whence the Juice is said to be an Antiphlogistic. The Leaves bruised with Salt, or Nitre, are proper in Inflammations, Gangrenes, and Suppurations. The Plant taken inwardly, is said to mitigate unnatural Heat, to refrigerate, and comfort the internal Parts. But as many Children in the Country are seiz'd with Convulsions, and destroy'd by the Use of it, which, also, proves mortal to Poultry, as we are assur'd by the Peasants, this Plant is to be suspected, as well as its Berries. The Leaves bruised are fit to be externally applied in Inflammations of the Hemorrhoids. The seventh and eighth are not so soon to be trusted. The ninth has Tubera for Roots, and was first discovered in America, where it is commended as excellent Aliment; but if too freely eaten, they are suffocating. The Tubera roasted under the Ashes, are very wholesome Aliment, and are said to be provocative. The fourteenth is thought to be the *Solanum* of the Antients, and the Apples are said to be of a refrigerating Quality; but I can say nothing of their Virtue, for want of Experience. The seventeenth is very poisonous, for its Berries cause Death, almost without any visible Symptoms. *Hist. Plant. ascript. Boerhaave.*

Solani Species, Fockii Fockii dicta javanensisbus Bontii.

By the Leaves, Flowers and Fruit, it is certain, that this Plant is a Species of *Solanum*, only the Fruit is much larger than that of our *Solanum*, as exceeding sometimes the Length of a Cubit, as thick as a Man's Arm, and of so smooth and polish'd a Rind, as to represent a Man's Face like a Mirror. It is full of minute Seeds, like that of the common *Solanum*. The Fruits in these Countries (*Java*, and the neighbouring Islands) are not only esculent, but of a very delicious Savour, if boiled with Wine and Pepper, and have the same Taste as the Stool of an Artichoke. They are of good Nutrimnt, and of a diuretic Quality, for which Reason they are very serviceable in the Stone of the Bladder, and Affections of the Kidneys.

There is a wild Species of this Plant, which bears a perfectly spherical Fruit, and of a yellow Colour when ripe (the Garden Sort being purple or white like Hail) and of a bitter Taste, so as none but the wild Boars and Rhinoceroses will eat it. *Raii Hist. Plant.*

Solanum vesicarium Indicum. C. B. Solanum sive Halicacabum Indicum. J. B. Halicacabum Indicum rectum. Park. Camaru Basilienibus. Marggr.

This Plant has a pretty thick, and, according to *Parkinson*, a firm, erect, angulous and nodous Stalk, of the Height of a Cubit, or two, spreading into many Branches, adorn'd with Leaves somewhat larger than those of the common *Halicacabum*, jagged, and of a smutty green Colour. The Flowers grow single from the Divarications of the Branches, and the Bosom of the Leaves, and are of a pale yellow Colour, like those of the common *Solanum*. The Bladders, or Fruit, are equal to those of the *Halicacabum*, with a Stone so large, as sometimes to burst the Bladder into four Parts. The whole Plant is insipid, but exudes a mucilaginous Juice at the Joints, of the strong Smell of the *Lycopersicon*. *Raii Hist. Plant. ex Parkinson.* I find no Virtue ascribed to it.

SOLANUM is also a Name for several Sorts of *Alkekengi*, *Jalapa*, *Lycopersicon*, and *Stramonium*.

SOLANUM BARBADENSE. A Name for the *Phytolacca*; *Americana*; *fructu minori*.

SOLANUM MELANOCERASOS. See **BELLA DONNA**.

SOLANUM POMIFERUM. A Name for the *Melangea*, *fructu oblongo violaceo*; and for the *Melangea*, *fructu oblongo albo*.

SOLANUM QUADRIFOLIUM. A Name for the *Herba Paris*.

SOLANUM RACEMOSUM & Virginianum. Names for the *Phytolacca Americana*; *fructu majori*.

SOLARIS HERBA, is the **HELIOTROPIUM**.

SOLATER, or **SOLATUR.** Quicksilver. *Rulandus*.

SOLDANELLA.

The Characters are;

The Root is perennial; the Leaves are stiff, and less than those of *Asarabacca*. The Flower is Bell-shaped, and frimbriated; and the Fruit is cylindrical, and gaping at the Top.

Boerhaave mentions but one Sort of *Soldanella*, which is, 1. *Soldanella*; *Alpina*; *rotundifolia*. *C. B. P. 295. Tourn. Inst. 82. Boerb. Ind. A. 202. Soldanella Alpina*, *Ger. 690. Soldanella Alpina rotundifolia*, *C. B. P. 295. Tourn. Inst. 82. Soldanella montana quibusdam*, *J. B. 3. 817. MOUNTAIN BINDWEED.*

It grows on the Alps, flowers in *July*, and the Herb is reckon'd by *Monti* among *Vulneraries*.

SOLDURA. The Faces of alkaline Salts. *Libavius*.

SOLEA. The Sole-Fish.

There are but few Fishes which have so excellent a Taste, and are at the same Time so wholesome as the Sole. This Fish is of different Bignesses and Kinds.

It is tender, short, firm, having but little viscus, and gross Juices, and contains a just Proportion of oily and volatile saline Particles, which makes it have so agreeable a Taste, and render it nourishing, productive of good Juice, and easy of Digestion. The Head of this Fish being dried and reduced to Powder, is reckoned good for the Stone, Gravel, and Scurvy. It produces no ill Effects, if it be not immoderately used.

Buglossus is another Latin Name for it from *Βούγλωσσος*, from *Bēs*, an Ox, and *γλίσσα*, a Tongue, because in Form it resembles a Near's Tongue. *Lemery on Foods.*

SOLELASAR. An alkaline Salt.

SOLEN. *σολήν.* A hollow chirurgical Instrument, in which fractur'd Limbs were plac'd. It is, also, the Name of an oblong Sea Shell-Fish, of which Naturalists take Notice of two Species.

SOLENARIUM. *σολενάριον.* A channell'd chirurgical Instrument, in which the Penis was laid, as a fractur'd Limb in the *Solen*.

SOLEUS.

This is a large, fleshy, flat Muscle, nearly of an oval Figure, and thicker in the Middle than at the Edges. It has its Name from its supposed Likeness to a Sole. It is situated on the Backside of the Leg, lower down than the *Gastrocnemii*, by which it is covered; and these three Muscles form the Calf of the Leg.

It is fixed above, partly to the Tibia, and partly to the Fibula. It is fixed to above one Third of the upper Part of the Backside of the Fibula, and a little to the articular Ligament of the Head of this Bone. It is, also, fixed to the Backside of the Tibia, from the oblique Line or Impression which terminates the Insertion of the *Popliteus*, down to the Middle of the internal Angle of the Bone; afterwards, leaving these two Bones, it ends in a broad, strong Tendon, which, together with that of the *Gastrocnemii*, forms what is call'd *Tendo Achillis*. This strong Tendon contracts a little in its Passage to the *Os Calcis*, and then expanding a little, it is inserted obliquely in the Backside of the Bone, all the Way to the Tuberosity. The outer, or posterior Fibres of this large Tendon, are the longest; the inner, or anterior Fibres, shortest; and the rest are longer or shorter, in Proportion to their Nearness to these two Portions.

The fleshy Body of the *Soleus* seems to consist of two Planes of Fibres at least, that on the Backside of the Muscle being the most simple; and the other, or that next the Bone, being penniform.

This Muscle, and the two *Gastrocnemii*, form what Anatomists call a true Triceps.

The *Gastrocnemii* and *Soleus* make a Kind of Triceps, and by their common Tendon extend the Foot, and keep it extended against the strongest Resistance. It is by their Means that we raise the whole Body, even with an additional Burthen, when we stand a Tip-toes, and that we walk, run, and jump. The Length of the posterior Portion of the *Os Calcis* gives them a great Advantage in acting, by removing the Line of their Direction from the Axis of Motion.

The Motions of the Foot perform'd by these Muscles, may be referred to the first two Kinds of Levers. When we stand a Tip-toes, the Foot represents a Lever of the second Kind, the Fulcrum being then at one End, the Power at the other, and the Weight between them: And we have a Lever of the first Kind, when the Leg being fixed, we endeavour to overcome any moveable Resistance with the Toes, or whenever we move the Foot held off the Ground.

These Muscles not only extend the Foot on the Leg, but, also, the Leg on the Foot, as appears evidently when after a moderate Genuflexion, we raise our Bodies; for then the Foot remains fix'd, while these Muscles extend the Leg; and it is here to be observed, that this Genuflexion is not made by the Action of any Flexors, but only by the Relaxation of the proper Extensors.

The *Gastrocnemii*, by their Insertion in the *Os Femoris*, may in great Efforts move the Leg on the Thigh, and the Thigh on the Leg, as Assistants to the *Biceps*, *Semi-Membranosus*, *Semi-Tendinosus*, *Gracilis Internus*, and *Sartorius*. In these Motions the superior Extremities of the *Gastrocnemii* cross under the lower Extremities of the Muscles last named. The fleshy Fibres of the *Gastrocnemii* are very long, and there is a great Distance between their two Insertions; and,

on this Account, these Muscles are better fitted for large Degrees of Motion than for Strength.

The *Soleus*, by the Multitude of its fleshy Fibres, and its penniform Structure, is more proper for strong than large Motions, and seems principally to sustain the *Gastrocnemii* in the Motions begun by them. The tendinous Portions of this Muscle, and of the *Gastrocnemii*, though they form a strong Tendon altogether, seem nevertheless to slide a little upon each other in the different Flexions and Extensions of the Foot. *Winslow's Anatomy.*

SOLIDAGO. A Name for the *Doria*; *quæ Jacobæa*; *Alpina*; *foliis longioribus*; *ferratis.*

SOLIUM. The Bathing Vessel in the ancient Baths.

SOLIUM is, also, a Name for one Species of flat Worm, for there are two Sorts of *Tenias*; one properly so call'd, that neither moves, nor has any form'd Head; the other call'd *Solium*, from its being the only one of its Species in the Body, which moves, and has a very regular round Head, resembling a Wart.

SOLOMA. Silver; that is, Silver of the Chymists. *Rulandus.*

SOLSEQUIUM. Sulphur.

SOLVAS. An obscure Word in *Paracelsus*, importing something which dissolves Bole, but does not explain what.

SOLUTIO. Solution. This imports the Termination of a Disease; an Inflammation, for Example, by Resolution.

Chymical Solution is explain'd under the Article **MENSTRUUM**. Solution of the Belly, is rendering it laxative.

It has been a constant and received Opinion among the Professors of the Art of Chymistry, and still prevails among them, that the Solution of Bodies, which is of excellent Use in Chymistry, is effected principally by Means of the Pores of those Bodies. Solid Bodies, they say, on account of the different Structure and Connexion of the Parts of which they consist, are furnished with Variety of Pores and Passages, through which the smallest Particles of the Menstruum find an Entrance, and, by insinuating themselves into the Interstices, dissolve the Connexion. These Pores, they imagine to be of different Magnitude and Figure, and to belong to fluid as well as solid Bodies, and to admit none but congruous Particles, like to those of which the Dissolvent is composed; whence they conclude, that different Bodies require different Menstruums.

But, however subtle and ingenious that Opinion may appear, in point of Invention, or how specious soever in the Eye of Reason, we doubt not, upon a thorough Examination and deeper Insight into the Matter, to shew, that it is built upon a very weak and slippery Foundation, which we demonstrate in the following Manner.

First, then, we freely grant, that in all hard and compact Bodies there are some Pores or Cavities, not of the same, but different Figures, Part of which admit the Aereo-ethereal Fluid, while into others, from whom that Fluid is expelled or excluded, some other convenient aqueous or spirituous Liquid may find an Entrance. This Difference of Pores in Bodies is, also, the Cause of their specific Gravity, or that some are heavier or lighter than others. But, however, we ought to understand, that if the Pores or Interstices between the Parts of solid Bodies are possessed by Fluids, we are not so much to regard the Figure of those Pores, as their Diameter, whether it be larger or narrower; for it is known from Mechanics, that a Fluid enters Pores, of whatever Figure they are, if it be so qualified as to meet with no Obstruction on account of their Diameter. And, therefore, though we do not absolutely deny, that there are such Pores in solid Bodies, yet no Reason obliges us to grant the same in Fluids. For, though in solid Bodies the Parts more firmly cohere, and are at Rest among themselves; yet it is otherwise in Fluids whose Parts are agitated by the Interfluent Ether with a constant and continual Motion, and are perpetually changing their Situation. Since, therefore, it is impossible so much as to conceive any constant Disposition of Pores in a Fluid, it is evident, that the different Arrangement of their Parts has nothing to do in Solutions; for when a Liquid occupies the Pores of a Solid, it leaves it in a more light and subtile fluid State than when it enter'd. But the Case is otherwise in Fluids, for these, when the Ether is expelled, which impels Fluids to continual Motion, are deprived of all Motion, and necessarily concrete into a Solid. Thus Water, when the subtile ethereal Matter is expressed by the incumbent very cold Air, congeals into a hard and compact Substance. To this it must be added, that Fluids, when they admit a large Quantity of Ether, affect a large Space, as it happens when they are heated, whereas Solids are not affected in the same Manner.

Besides, since Fire liquifies Metals and Stones, Mercury softens and amalgamates Metal, one Ounce of Acid dis-

solves the like Quantity of alkaline Salt, and one Ounce of highly rectify'd Spirit of Wine receives one Ounce of pure distill'd Oil, for instance, Oil of Cloves, of Lavender, or Camphire, I see not how this Reception of Solids into the Pores of a Fluid can any way take Place; for the Pores of the dissolvent Menstruum cannot be greater than, or equal to, the whole Body.

Nor can we by any Means comprehend how Copper put into a Solution of Silver, or Iron into a Solution of Copper, can cause a Precipitation in these Solutions, because these solid Bodies can by no Means enter the Pores of the Menstruum: Nor can it be explain'd from this Hypothesis why highly rectify'd Spirit of Wine pour'd on saturated Spirit of Sal Ammoniac should precipitate its volatile Salt, or why Water should precipitate a Solution of Camphire in Spirit of Wine.

Some there are who press'd with these Difficulties, take another Method of Explication, and alledge the Similitude of Parts between the Dissolvent and the Body to be dissolved. But neither will this Hypothesis put the Matter beyond all Doubt, since we observe that heterogeneous, or quite dissimilar Bodies easily unite with one another, and dissolve one another more readily than homogeneous Bodies use to do; for every one knows, that all Acids very readily dissolve Salt, or alkaline Bodies; that Water admits Earth, as we see, for Instance, in a Decoction of Quick-lime; that insipid Water receives all Kinds of Salts, and that alkaline Menstruums are well fitted for dissolving Sulphurs.

Nothing, then, remains but to search after some other, and these true and genuine, Causes of Solutions, which are affected by Menstruums. And the most probable Account which can be given of the Matter and the most easy to be conceived seems to us to be, that we should suppose the Fluid, in putting the Parts of the Dissolvent in Motion, to hurry them along with itself in the same Motion of Fluidity, and by this Means unite itself with them. Thus we see that Water puts all Kinds of Salts into a like Motion of Fluidity, and so unites itself.

Moreover, all distilled Oils, all resinous Balsamics, are dissolved by a sulphureous, highly rectify'd Spirit of Wine, and by that Means are incorporated together. And Solutions are generally made when the active Principle, especially the saline, intimately unites itself with the Dissolvent in such a Manner, that both together constitute a third, that is, a neutral Salt; which done, this very neutral Salt, by an easy Compliance with the Motion of the Water, is itself readily dissolved. Thus menstuous Acids, which are nothing but a Solution of an acid Salt into a Phlegm, while they dissolve alkaline Substances, whether earthy or saline, pass into a neutral Salt, which, after the Manner of all Salts, liquifies into a Phlegm. In the same Manner Metals, when dissolved by menstuous Acids, as Aqua-Fortis, or Aqua-Regis, while these acid Salts associate with the metalline Particles, pass into a third Kind of Salt, which appears after an Evaporation of the Menstruum, and is readily dissolved in the Water contained in the Menstruum.

From all these Experiments it appears, that a Menstruum which cannot be united with the Dissolvent, can effect no Solution. Thus highly rectify'd Spirit of Wine cannot be united with common Salt, because the inflammable Sulphur refuses a Conjunction with this Kind of Salt; and hence it is that common Salt, as well as other Salts, cannot be dissolv'd by this highly rectify'd Spirit. For a like Reason, oleous and alkaline Menstruums dissolve not Metals, because neither the Sal Alkali, nor the Oil, can insinuate themselves into an intimate Union of the Parts which constitute the Metals, and not at all because they are contrary to one another in their Pores and the Figure of their Parts; on the contrary, highly rectify'd Spirit of Wine very readily unites with distilled Oils and Resins, which are only a more subtile Kind of Oil, coagulated by an Acid, because they meet together in a friendly Manner, and thus Water with Water, and Water with Ice, readily mix together.

As, therefore, a Solution is effected by an Union of the Dissolvent and the Thing to be dissolved, so when this Union is again destroyed, and the Dissolvent forsakes the Thing dissolved, or one of them is separated from another, the Fluidity itself ceases, and the dissolved Substance is separated from the Menstruum, which Action the Chymists call *Precipitation*. It is a great Error, therefore, to imagine that Precipitation happens because the Pores of the Menstruum, which contained the Thing dissolved, are occupy'd by some other Matter, whence there must of necessity be an Expulsion of the Parts of the dissolved Body from the Pores of the Menstruum. It might be more truly said, that Precipitation is no other than a new Solution, or a new Union of the Menstruum with another Body, I mean while the precipi-

tating Matter unites more closely with that Menstruum with which the Body was before united.

The Reason why the Menstruum, with which the Body was before united, applies itself to a new and even precipitating Body, and unites itself with it, seems to be, that the Menstruum, more readily and freely incorporates with the Precipitant, than with the former Body, on Account of the greater Agreement of Parts, which is a Point that deserves Confirmation by Experiments. Thus Copper put in a Solution of Silver made by Aqua-fortis, causes it to subside; and Iron in a Solution of Copper, made in the like Manner by Aqua-fortis, soon precipitates the Copper; and Zinc, whenever added to a Solution of Iron by Aqua-fortis, immediately causes the Iron to subside to the Bottom; and if you have a Mind again to precipitate the Zinc, it may very well be done by throwing in some Salt of Tartar.

The Reason to be given for these different Precipitations is as follows: Because the acid Salt of the Nitre, which is in the Aqua-fortis, is better qualified to associate with the Salt of Tartar than with the Zinc, hence it lets the Zinc subside; and because the acid Salt of the Nitre will much more easily incorporate with Zinc than with Iron, hence the Iron is precipitated; and again, because the same acid Salt more readily unites with Iron than Copper, therefore Iron put into a Solution of Copper, causes it to sink to the Bottom; and thus it is in other Instances. And it is besides worth our Observation, that an Acid more violently precipitates such Bodies, which have been dissolved in a more subtle Acid. Thus Spirit of Vitriol, poured on Solutions of alkaline, earthy Bodies, such as Mother of Pearl, Corals, Crabs Eyes, and Egg-shells, dissolved in Vinegar, suddenly precipitates them to the Bottom. The Reason is obvious, and is because a stronger Acid more intimately unites with terrestrial alkaline Particles, than does a milder one, whence this latter being left to itself, very speedily sinks and subsides. And therefore, whenever Spirit of Vitriol is poured on Sugar of Lead, which is a Salt prepared with Lead and distilled Vinegar, there happens in like Manner a Precipitation of the Lead; but when these are distilled, then the Spirit of the distilled Vinegar, and not the Spirit of Vitriol, ascends and is distilled, the Spirit of Vitriol being left in the Bottom, united with the saturnine Body; and the same Thing happens in those other Solutions of alkaline Substances made with Vinegar, which have been already mentioned.

Moreover, Water precipitates Solutions of resinous Bodies made with highly rectified Spirit of Wine, not because this Spirit enters the Pores of the Water, but because it more easily and freely unites with Water than with Resins. The same highly rectified Spirit of Wine precipitates the volatile Salt from the Spirit of Sal-ammoniac, which is prepared with Water. In short, a Solution of Salt of Tartar precipitates a Solution of Pearls, or of Crabs Eyes made with Vinegar, because the Salt of Tartar more easily and readily unites with these Acids than with these earthy Bodies; whence also an Addition of Crabs Eyes to the Solution of Salt of Tartar will not destroy the Union. It is a known Experiment also, that common Salt cast into a Solution of Silver by Aqua-fortis, precipitates it into a white Magistery, for scarce any other Reason, than that the highly penetrating Acid of the Nitre incorporates with the Earth of the common Salt, which is of an alkaline Nature, abandoning the Silver with which it was united.

From all these Experiments which have been produced, it abundantly appears that *Syncretism* and *Diacrisis*, or *Union* and *Separation*, are the greatest Instruments and most simple Operations of Nature, for the performing so many and so great Effects, since neither Nutrition, Generation, Virtue, Accretion, Mutation of Form or Texture, Solution nor Coagulation, can be understood or explained without them. And hence we may be convinced, also, that the Doctrines of Pores and Particles of various Figures to which the Chymists and Naturalists betake themselves for Refuge, when pressed with Difficulties, is of no Service, as having no good Foundation in the Nature of the Thing itself; and that many and great Phenomena of Nature may far more easily, and with much less Perplexity, be explained and illustrated by the two fundamental Points of *Union* and *Separation*. F. Hoffman, *Observ. Physico-Chym.*

SOLUTIVA. Laxatives.

SOMNAMBULO. A Person who walks in his Sleep.

SOMNIFERA. Medicines which induce Sleep.

SOMNIUM. A Dream or Vision. See **INSOMNIUM**.

Pythagoras taught that the Air was inhabited by the Souls of Demons or Heroes, and that these Beings send to Mankind Dreams, Signs and Diseases, and also to Beasts.

The Ancients were strongly possessed with an Opinion,

that their Gods communicated to the Sick in Dreams, Remedies for their Distempers.

Galen says, that once, when he had a fixed Pain in the Part where the Diaphragm is attach'd to the Liver, he dreamed that *Æsculapius* advised him to open the Artery betwixt the Thumb and the second Finger of the Right Hand; which he did, and found himself immediately cured.

Plutarch Synop. 9. 10. examines into the Reasons why autumnal Dreams are more uncertain than others.

Phayllus, General of the *Phocians*, in the War betwixt them and the *Thebans*, dreamed that he was like the Statue of a consumptive Person, dedicated by *Hippocrates* at *Delphi*, and soon after died consumptive.

SOMNOLENTIA. Sleepiness. See **LETHARGUS**.

SOMNUS. Sleep. See **OPIMUM**; and **LETHARGUS**.

All Bodies, by their Actions upon one another, and by the Action of the circumambient Bodies, are liable to be impaired and wasted; and all animal Bodies, from an active and Self-moving Principle within them, as well as from the Rubs of Bodies without them, are constantly throwing off some of their superfluous and decayed Parts; so that animal Bodies are in a perpetual Flux. To restore this Decay and Wasting of animal Bodies, Nature has wisely made alternate Periods of Labour and Rest, Sleeping and Watching, necessary to our Being; the one for the active Employments of Life, to provide for and take in the Materials of our Nourishment; the other to apply those Materials to the proper wasted Parts, and to supply the Expences of Living. And it seems as improper, in the Order of Nature, to disturb the animal Functions in the Time of Sleep, by any other Employment, than that of the secondary Concoctions (as they are called) that is, the applying the Nourishment to the decayed Parts, to recruit the Blood, perfect the Secretions, and to lay up plenty of Spirits, or (to speak more philosophically) to restore the weakened Tone of nervous Fibres; that is, in short, to restore the Decays of Watching and Action: This, I say, is as improper, as it would be (were it possible) to eat or drink, or make Provision for the Necessities of Life, in the Time of Sleeping. Hence is evident, the Absurdity of heavy, various and luxurious Suppers, or of going to Rest till many Hours after such a Meal, which must otherwise break in upon the Order of Nature, and the due and appointed Times of Sleeping and Watching. Wherefore, I advise the *Valétudinary*, the *Studious*, and the *Contemplative*, either to make no Suppers, or only of vegetable Food; and to take a due Time for Watching after them.

There is nothing more certain, than that (abstracting from acute Cases) our Sleep is sound, sweet and refreshing, according as the alimentary Organs are easy, quiet, and clean. If any one, not suffering under any Disease, is disturbed in his Sleep, 'tis certain his Stomach is filled with Food or Crudities; or his Guts filled with Wind, Choler, or superfluous Chyle: And those restless Nights, and the Difficulty of going to sleep, which are generally ascribed to the Vapours, are entirely owing to these Causes, tho' they be not so strong as to become sensible; for then Pain is added to Watching, and they are felt. And upon Complaints of such restless Nights, I never once failed, upon Enquiry, of finding the true Cause in the Diet of the preceding Day, or of some few Days before; and constantly have discovered, that some Error in Eating and Drinking, either in Quantity or Quality, has produced them. I have been astonished to see hypochondriacal and hysterical People, restless all Night, tossing and tumbling till towards the Morning, then dropping asleep till late Hours, awake heavy, oppressed and unrefreshed, complain of being hag-ridden, tired and wearied, as if they had been whipp'd, spurred, lashed, and beaten, through all the Watches of the Night; rise with foul Mouths and white Tongues, Belchings, Yawnings, Coughing, Spitting, or Reaching and Heaving, without Appetite, Spirits or Life, all the Day-time, begin to live and breathe, become chearful and hungry, about ten, eleven, or twelve o'Clock at Night, eat a hearty, various, and luxurious Supper, drink a Cheeruping Cup of the best, become as merry as Crickets, and long to sit up later, at last, tumble to bed, and repeat the same Farce over again. The Reason of all this Complaint is the Load on the Stomach, that will not suffer them to rest till it is got off. The sharp and crude Humours twitching and twinging the nervous Fibres, and Coats of the Bowels, become like so many Needles and Pins constantly running through them, tho' not always with sensible Pain; the unconcocted Chyle stopping or circulating slowly, first in the Bowels, then in the smallest Vessels, begets these Convulsions, Flatus, Night-mares, and Oppressions of Spirits. So that the secondary Digestions are not over till next Evening, (hence their Want of Appetite :) And when these are finished, their Stomachs come, and their Spirits

Spirits flow; and thus the perpetual Round is carried on. Did they but follow the Dictates of Nature, go to Bed for some Days with a light Vegetable, or no Supper at all, and bear the Inconveniencies thence arising, their Appetites would come in due Season, and they would quickly find the Truth of the Aphorism of the *Schola Salernitana*.

Somnus ut fit levis, fit tibi cæna brevis.

The Seasons for Sleeping and Watchings, which Nature seems to point out to us, at least in these our Climates near the Tropics, are the Vicissitudes of Day and Night. Those Damps, Vapours and Exhalations, that are drawn up into the higher Regions, and are so rarefied by the Heat and Action of the Sun, as to become innocent, or very weak in the Day-time, are condensed, sink low, near the Surface of the Earth, and are perpetually dropping down in the Night-season, and consequently must be injurious to these tender Persons, that unnaturally watch in that Season, and must necessarily obstruct the Perspiration, which the Activity of Watching, and the Motion of Labour promotes. Our Bodies suck and draw into them the good and bad Qualities of the circumambient Air, through the Mouths of all the perspiratory Ducts of the Skin. And were we to view an animal Body with a proper Glass, it would appear with an Atmosphere quite round it, like the Steam of a Boiling Pot. Now we may easily conceive what Injury a Constitution may receive, not only by stopping such a perpetual Discharge of Superfluities, but also by forcing into the Habit, by the Air's Weight and Pressure, those noxious Fumes and Vapours, that are perpetually falling near the Surface of the Earth in the Night-time. Your true Topers are so sensible of this, that, by Observation, they have gathered it to be more safe for their Health, and better for prolonging their Lives, to get drunk betimes and go to Bed, than to sit up and be sober.

On the contrary, the Heat of the Sun in the Day-time, by its Action on human Bodies, the very Light, and free Air, and the Motions of Things about us, disturbing the Quiet of the Air, must necessarily disorder the equable Course of the Perspiration, the Tenor of the secondary Concoctions, and the Tranquillity of the Spirits, so necessary to Rest and Quiet. So that nothing seems more directly pointed out to us by Nature, than the Day for Labour, and the Night for Rest: And this without taking in the Consideration of the Necessity of the Sun's Light for the Ends of Labour, and providing the Necessaries of Life. Some Animals that are exceeding tender, are directed by Nature to alternate Periods of Watching and Rest, not twice in twenty four Hours, but twice in the Year, as Summer and Winter; such as Swallows, Bats, and many Sorts of Insects, who sleep all the Winter, and watch all the Summer. So consistent is Nature, in appointing the brightest and most enlightened Parts of our Lives for Action, and the darkest and most inclement for Rest. Not but that robust Constitutions (as well as Animals fitted by Nature for different Ways of Living) may, by Custom, get the better of these natural Appointments: But I write for the Valetudinary, the Studious and the Contemplative.

I advise all such, if they would preserve their Health, and lengthen out their Days, to avoid, as much as is possible, Evening Dews, Nocturnal Studies, and unseasonable Watching; in Summer to go to Bed with the Sun, and in Winter to rise, at least, by Break of Day. Those who live temperately, will necessarily sleep but little: But to recompense that, their Sleep will be much more found, refreshing, and fruitful of Cheerfulness and free Spirits, than that of those who live more freely. For, as I have before said, the Quantity of Sleep will always be in Proportion to the Quantity of Eating and Drinking. Valetudinary, Studious, and Contemplative People, ought to go to Bed by eight, nine, or ten, at farthest; and rise by four, five, or six, by which they will have eight Hours a-bed, and that is sufficient for any Person, not under an acute, or the sharp Fits of a chronical Distemper.

Nothing can be more prejudicial to tender Constitutions, studious and contemplative Persons, than lying long a-bed, or lolling and soaking in Sheets, any Time after one is distinctly awake, or has slept a due and reasonable Time. It necessarily thickens the Juices, enervates the Solids, and weakens the Constitution. A free open Air is a Kind of a cold Bath, especially after rising out of a warm Bed; and consequently, makes the Circulation brisker and more complete, and braces up the Solids, which lying a-bed dissolves and soaks in Moisture. The erect Posture, and the Activity of Watching, make the Perspiration more plentiful, and the gross Evacuations more readily thrown off. This is evident from the Appetite and Hunger those that rise early feel

beyond that which they get by lying long a-bed. Add to all these the Influence of the fresh, benign, Morning Air, the retreating of all the noxious Damps and Vapours of the Night, together with the Clouds and Heaviness that are thrown upon the Brain from Sleep; and lastly, that Cheerfulness and Alacrity which is felt by the Approach or Presence of that glorious Luminary the Sun, which adds a new Force to the Heart, and a Spur to the Spirits.

All Nations and Ages have agreed, that the Morning Season is the proper Time for speculative Studies, and those Employments that most require the Faculties of the Mind. For then the Stock of the Spirits is undiminished, and in its greatest Plenty, the Head is clear and serene, the Passions are quieted and forgot, the Anxiety and Inquietude that the Digestions beget in the nervous System, in the most tender Constitutions, and the Hurry the Spirits are under after the great Meal, are settled and wrought off. I should advise, therefore, those who are of a weak relaxed State of Nerves, who are subject to hypochondriacal or hysterical Disorders, whose Professions lead them to much Use of their intellectual Faculties, or who would indulge speculative Studies, to go early to Bed, and to rise betimes, to employ their Morning Hours in these Exercises till eleven o'Clock, then to take some agreeable Breakfast of vegetable Food; to go on with their Studies and Professions till three, four, or five, as their Spirits will hold out, and then to take their great Meal of Animal Food; all the rest of the Day to throw off all Study and Thought, divert themselves agreeably in some innocent Amusement, with some gentle bodily Exercise; and as soon as the Digestion is over, to require and provide for going to Bed, without any further Supplies, except it be a Glass of fair Water, or warm Sack-Whey. But the Aged and Sickly must go sooner to Bed and lie longer, because Age and Sickness break Rest, and the stiffened and hardened Limbs of the Ancient become more pliant and relaxed by much Sleep, a supine Posture, and the Warmth of the Bed.

RULES FOR HEALTH AND LONG LIFE, DRAWN FROM SLEEP AND WATCHING.

1. The Valetudinary, the Sedentary, and the Studious, should eat very light, or no Suppers; if any it ought to be vegetable Food; neither ought they to go soon to Bed, after any Supper whatsoever.
2. Going to Bed on a full Stomach, and Wind and Crudities somewhere in the alimentary Passages, is the Cause of the want of due Rest, which is found and refreshing always in Proportion to the Emptiness and Cleanness of these Passages; and their Vacation from their proper Office of Digestion; and this is the Cause of the Want of kindly and refreshing Rest, in hypochondriacal and hysterical People.
3. Watching by Night, and Sleeping by Day, is of the most pernicious Consequence to Health and long Life, and plainly contrary to the Indications of Nature and the Constitutions of our Bodies.
4. The Valetudinary, Sedentary, and Studious, ought carefully to avoid Evening Dews, Nocturnal Studies, and uneasy Watching, go to Bed by eight, nine, or ten, and rise proportionally by four, five, or six, unless actually under a Fit of Sickness.
5. Nothing is more prejudicial to tender Constitutions, than lying long a-bed, indulging a lethargic and drowsy Sleep, or lolling or loitering awake, as appears by their Heaviness, and Want of Appetite upon doing so; and their good Stomachs, Cheerfulness, and Freedom of Spirits, when they rise early.

Chryse on Health.
In another Treatise the above-quoted Author thus speaks with respect to Sleep.

Sleep I conceive to be caused by the Disability and Incapacity of the bodily Organs to continue and perpetuate the active, rational and voluntary Functions. Without Repair, Nutrition, and Winding up, they grow languid and unelastic. When by Labour, or the common Expence of Living, the Organs are relaxed and debilitated, there must be an alternate Cessation to repair and refit them, which is called Sleep; and accordingly we find the animal Body shortened and compressed by its own Weight, by Action, and by the Loss of its Spring against Night, and lengthened and extended again in the Morning. What hinders Sleep is the continual Action of an internal Fluid, Wind or Flammence, acting on the internal Membranes (of which the Bowels principally consist) pricking and stimulating them, and forcing them into Action; and by the Recoil or elastic Sharpness of this internal *Aura* or *Flatus*, producing wild Cogitation, or irregular intellectual Operations. Hence it is that the Body is restless; and often there is an Endeavour to gulp, expel and throw up this Wind;

Wind; that Medicines that force the Perspiration, as Opates, Eastern Gums, animal Salts and Spirits, Aromatics, Cordials, and Diaphoretics, procure Sleep; and a Dose of the Gum Pills, with an Aloetic, will give a good Night, as it drives out the perspirable Matter every Way; and Cyder, and any flatulent Food (as green Pease) will hinder it. Dreaming is but partial sleeping, for Sleep admits of all the Degrees of Quantity there are between sound undreaming Sleep and perfect healthy Waking, all the Degrees and Terms that are between a given Quantity and nothing; and accordingly Labour, Fatigue, light Food, gentle Evacuations of all Kinds, will procure, in some Degree, undreaming Sleep; and the more rank, high, and poignant the Aliment, the more painful and terrifying will be our Dreams; as, on the other hand, the more mild, soft and light our Food is, the more pleasant and gentle will be our Dreams, if otherwise healthy. And old Persons, weak and sickly Constitutions, and People under acute and chronical Distempers, especially those that are called nervous and cephalic, have the wildest, most inconsistent and painful Dreams, and the most imperfect Sleep, and sometimes no Sleep at all, which is one of their greatest Miseries. I should philosophically define Sleep, a Disability or Incapacity of the material Organs, from Exinanition, Use and Expence, to continue easily much longer the intellectual Functions and voluntary Motions, without a new Repair and Winding up, in the same Manner as Hunger is caused; and Dreaming to be only partial and imperfect Waking, by a perpetual Irritation from Flatulence and obstructed Perspiration, on the internal Nerves and Membranes, or from Pain; and Waking to be the perfect and pleasant Pliancy of the intellectual and animal Organs, to obey the Impulse of the self-motive, self-active Spirit; and that in this immaterial Agent there is a lower, and more ordinary and weaker Effect and Energy (or a contractile and expansive Energy) by which the animal Functions are perpetuated without Interruption; and a higher and more intense and voluntary Degree of Agency, by which Waking, and the intellectual Operations are performed; and it is this, that in a sound Sleep, and in a Deliquium, is suspended, and in Death both, without a new Vehicle.

OF PROGNOSTICS FROM SLEEP IN DISEASES.

All Sleep from which the Patient awakes not at all, or not without Difficulty, but labours under an extraordinary Drowsiness, or Propension to Sleep, is of a lethargic Kind, of which Nature is a *Coma* or *Cataphora*, a *Carus*, a *Catoche* or *Catalepsis*, and *Veternus* or *Lethargy*. For our Instruction in forming Prognostics from these disorderly Kinds of Sleep, as well as from what is natural, we are to premise some Things which may be of Use to us in acquiring a just Knowledge of those soporiferous Affections. And here, first, we shall divide Sleep into natural and unnatural. Natural Sleep, according to the *Definitiones Medicæ* ascribed to *Galen*, is a Retreat, or Recourse of the Soul from its Boundaries to its Original, according to the Course of Nature; or it is a Rest and Cessation from animal Actions. In this Sleep, the natural Heat, which was fatigued and exhausted with Labour and Watching, retires into the Viscera, and there receiving fresh Recruits from the copious Humid residing in those Parts, breaks forth with renewed Force, and rouses the Subject from Sleep. In Conformity to this Sentiment, we are told by *Hippocrates*, 6 *Epid. Sect. 4. Aph. 12.* "That in Watching the external Parts are evidently hotter, and the internal colder; but that the Reverse happens in Sleep." And *Sect. 5. Aph. 28.* he observes, "That in Sleep the Blood retires more to the inward Parts." *Galen* makes the same Observation in his Comment, when he says, "That a Person, while awake, has his exterior Parts hottest, and the interior coldest, and that the Reverse happens to him in Sleep." And a little after, in Confirmation of the Judgment of *Hippocrates*, he adds, that in Sleep the Blood, and with it the natural Heat, retires to the inward Parts; and, in Waking, is diffused on the Parts towards the Superficies. By this inward Recession of the natural Heat, and the consequent Refrigeration of the exterior Parts, all the Actions and Operations of the Senses are suppressed and lie dormant, the Passages of the Nerves through which the Heat is diffused outwardly, and the animal Faculties exert themselves, being obstructed by the Cold, whence, as *Galen* observes, there follows a Cessation of all the Actions of the Soul. This, then, is natural Sleep, which, as we said, is occasioned by a Retirement of the natural Heat, exhausted by Watching, to the Viscera, in order to be recruited. Hence it is that Sleep becomes customary after Meals, and, what is, also, a particular Cause of Sleep, that at such a Time a Mul-

titude of gross and humid Vapours ascending to the Head, obstruct the Passages of the Brain, by which Means the Heat is repressed and inclosed within, and rendered incapable of diffusing itself, in order to awaken the Subject, before it has accomplished an Extenuation and Excussion of those Vapours. We conclude, then, that natural Sleep is occasioned either by a Retirement of the natural Heat, dried up and exhausted by Watching, and standing in Want of the Humid to the Viscera, in order to be recruited, or from Vapours arising from the Food, and obstructing the Passages of the Brain. This last Sleep, indeed, is by some esteemed a Kind of unnatural Sleep, and it is plainly so, and so much the more, when those Vapours are more copious, as we may observe in drunken Persons, who sleep long and profoundly, from an Oppletion of the Brain with Vapours, generated by an excessive Quantity of Wine. With Relation to this Subject, we are told by *Hippocrates*, 5 *Aph. 5.* "That if a drunken Person loses his Voice on a sudden, he dies in Convulsions, unless he be seized with a Fever, or recovers his Voice at the Time when a Crapula generally terminates;" for, in such a Case, if the Wine and its Vapours be not digested and diffused by the Heat, they induce a Suffocation. Hence he had Reason to intimate, that Persons in such a Condition are relieved by the Accession of a Fever, because the febrile Heat, which is far more efficacious than the natural, digests the Vapours of the Wine.

This, then, is one of the unnatural Kinds of Sleep which Physicians call by various Names, according to the Diversity of their Causes, tho' they all come under the general Appellation of *Lethargic*. This Affection is incapable of exerting itself outwardly, but remains latent and confined within, either on Account of the Multitude of Humidities which oppress the Brain, or the Cold alone, or on both Accounts, or from mere Weakness.

That Kind of unnatural Sleep which affects the Patient in a Lethargy, is properly called *veternus*; another Kind is what the *Greeks* call *καρὺς*, a *Carus*, and the *Arabians* *Subeth*. Besides, there are other Kinds, which take the Names of *Catoche* or *Catalepsis*, or, as it is generally termed *Congelatio*, "a Congelation," and a *Coma* or *Cataphora*; all these are Species of unnatural Sleep, whose nature is to be examined, in order to enable us to form Predictions from them.

First, then, we will suppose that all who are affected with an unnatural Sleep, are said to be *comatous*, or *veternus* (*Lethargic*). *Galen* in 3 *Epid. Com. 1. T. 7.* calls them *comatous*, who have a strong Inclination or a Propension to Sleep. He calls it a *Propension to Sleep*, when the Patients are unable to watch, or remain with their Eyes open, but keep them winking or twinkling. And in his Comment on 2 *Aph. 3.* he calls a *Coma* a long Sleep, from which it is difficult to awake; and this Difficulty of Awakening, is what distinguishes this Affection from a long natural Sleep, as the same Author observes, *Com. in 2. Aph. 1.* where he says, "That many are deceived, who persuade themselves that *comatous* Affections begin with a long Sleep; for we have said enough to convince them, that they cannot be called a *Coma*, before they come in Conjunction with a Difficulty of Awakening, and that a Sleep, which exceeds the natural Bounds in respect of Time, but is not attended with a Difficulty of Awakening, is rightly called, a long Sleep." We bestow therefore the Epithet of *comatous* or *lethargic* on a Sleep from which it is difficult to rouse the Patient, or such a Propension to Sleep, as keeps him with his Eyes not indeed open, but winking, and desiring to shut his Eye-lids in Hopes of Sleeping. [See the Article *COMA*.]

The Species of a *lethargic* or *veternus* Sleep, are distinguished, in that some imply no more than a *Propension to Sleep*, of which Nature are what we call a *Coma*, *Cataphora*, and a *Marcor* (preternatural Drowsiness); others include in their Notion not only a *Propension to Sleep*, but a violent Drowsiness, and an almost invincible Necessity of sleeping, as is observed in a *Lethargy*. Others again import besides, a *Congelatio* or *Deprehensio*, affecting all the Parts of the Body, which Disorder is called by the *Greeks* *Catoche* and *Catalepsis*. And, in the last Place, there are others which, together with a Difficulty of awaking, and an almost invincible Necessity of sleeping, include a Deprivation of all Sense and Motion, as well as Reason, as in that lethargic Affection which the *Greeks* call *Καρος*, and the *Arabians* *Subeth*.

These lethargic Sleeps admit, also, of another Distinction, for some of them are simple and exquisitely such; others mixed with Watchings. In this respect a *Coma* is distinguish'd into what is simply so called, and into what the *Greeks* call *καὶμα ἀγρυπνίας*, "A wakeful *Coma*;" as they, also, call the former, *καὶμα ὕπνου*, "A sleepy *Coma*." Thus we call an Affection compounded of a Lethargy and a Frenzy, by the Name

Name of *Typhmania*, in which the Patients sleep, wake, and are delirious; of such a Disorder are we to understand *Hippocrates*, 3 *Epid. Sect. 3.* where he says, "That of those who laboured under Phrenesies, none was outrageous, as it generally happens in such Cases, but sunk away under the Weight and Oppression of a malignant kind of *Torpor* and *Cataphora*."

Having premised these Things concerning the Differences of a *lethargic Sleep*, we proceed to enquire into the Causes. *Galen*, in 3 *Epid. Com. 1. T. 7.* assigns four Causes of a *Coma* or *Cataphora*. The first is an extraordinary Humectation of the Part which is the Fountain of Sensation, (and in which *Aristotle* has rightly demonstrated that *Sleep* is produced) as it sometimes happens in Drunkenness. The second is only cold, as when it is occasioned from the Use of Narcotics. But this Cold either affects the first Original, or results from a Consumption of the natural Heat by an immoderate flameous Heat; the Consequence of which is mortal. The third Cause consists of a Complication of Heat and Moisture, from whose Concurrence, also, proceed what we call a *Comatous Sleep*. The fourth and last is a Decay of Strength; and this is the Cause of that kind of *Coma* which is observed in dying Persons, who, on account of Weakness, are not able to keep their Eye-lids open; and it is peculiar to Persons in this Circumstance, that after they have shut their Eyes, they take little or no Sleep, but lie waking, and yet have not the Power to lift up their Eye-lids. *Galen*, in 2 *Aph. 3. et de Lec. Affect. Lib. 3. Cap. 3. et de Prasag. ex Pulsibus, Lib. 4. Cap. 8.* and in many other Places, teaches that the proper Sign of Dryness is Wakefulness, of Humidity profound Sleep, and of Coldness Dotage, accompanied, also, with a profound Sleep, as appears from the Use of Narcotics. From a Humidity of the Brain, attended with a Refrigeration, proceeds a *lethargic Sleep*, and the Consequence of a Coldness and Dryness of that Part is a *Catalepsis*, that is, a *Deprehensio* [See that Article] or *Congelatio*, under which Disorder the Patients are not comatous, but keep their Eyes fixed and staring, without ever closing them.

These, then, are all the Causes which *Galen* assigns of simple or exquisite soporiferous Affections; but when these Disorders are of a complicated Nature, as for instance, when a Person under a *Coma* continues waking, and even appears delirious, there must, of Necessity, be a complicated Cause. We have observed, that there is a sleepy and a wakeful *Coma*; the Cause of the first we have already assigned, the other happens, according to *Galen*, on 2 *Aph. 1.* and *Lib. 4. de Prasag. ex Puls. Cap. 8.* when the Brain is oppressed with Heat as well as Humidities, in the same manner as when from a Mixture of hot and pituitous Humours in the Brain, there arises that Affection compounded of a Phrenzy and Lethargy, which the Greeks call *τυφμανια*, *Typhmania*, of which we have spoken before; and supposed to be the Case of those described by *Hippocrates*, 3 *Epid. Sect. 3.* who died under a violent *Cataphora*, after labouring for a long time under a continual *Coma* of the wakeful kind. *Galen*, in his Comment, tells us, that a wakeful *Coma* proceeds from a Putrefaction of cold Humours in the Brain; for a *Coma* proceeds from Humidity; and a Delirium from an Acrimony excited by Putrefaction.

We proceed from the Causes of the various kinds of *Sleep* to the *Prognostics* which may be drawn from them, beginning with the Natural. Now as all unnatural *Sleep* is bad, so, on the other hand, all natural *Sleep* is good and beneficial; since, as *Galen* says, *Com. in 6 Epid. Sect. 4. T. 12.* it concocts the Humours, by virtue of the Heat retiring to the inward Parts; and, as he tells us, *de Caus. Puls. Lib. 3. Cap. 9.* by the Increase of the internal Heat, the Concoctions in the Veins and Arteries, and in the whole Animal, are highly promoted. For this Reason *Sleep* is to be avoided in the Beginning of internal Inflammations, as attracting the Matter to the inward Parts and Viscera; unless, as the same Author observes, *Com. in 4 Aph. 67.* it may be thought to prove more beneficial by concocting the Humours, than pernicious on that other Account. *Sleep* is beneficial in the Decline of a Disease, otherwise it proves mortal, as may be inferred from *Galen*, *Com. in 2 Aph. 2.* *Sleep* is known to be good and salutary, by its mitigating the Inflammation, Fever, Pain, or Delirium, which it effects whenever it concocts the morbid Matter. To this Purpose is that of *Hippocrates*, 2 *Aph.* "Sleep which increases the Pain and Uneasiness in a Disease, is mortal; but Sleep which gives some Relief is not mortal;" Nay, is rather good and serviceable in the Decline of Inflammations, Pains and Fevers; and, in short, is always salutary, as indicating a Concoction and Digestion of the Humours by the Heat, agreeably to that of *Hippocrates* in the second Aphorism of the same Book, where he says, "When *Sleep* composes a Delirium, it is a good Sign." And *Galen*, in his Comment, approves that *Sleep* which mitigates an Inflammation, Fever, Pain and

Delirium. *Sleep* is known to be good, when it appears to be profound and not turbulent; for such *Sleep*, as you read *Coac. 152.* indicates a firm Crisis. But the best kind of *Sleep* is what succeeds long Watching, and which appears to be sweet to the Patient, tho' it be of long Continuance. *Galen*, in 1 *Prorrhetic.* speaks of some who after three or four Days waking, slept a whole Day and Night, and found great Relief from it; such long *Sleep* usually proves of great Benefit to Children, and is commended in them.

We have said enough with respect to the Indications and Prognostics to be drawn from natural *Sleep*, and proceed to treat of the unnatural kinds of *Sleep*. And first we read, *Coac. 178. τὸ κατὰ φύσιν πρὸς τὴν κακίαν*, "A carous Disposition is on all accounts bad." For tho' in drunken Persons, as some say, *Sleep* is neither to be absolutely commended nor condemned, yet several have been known, who after a Day and Nights profound Sleep under a Debauch, have never awaked. Very justly, therefore, was it pronounced by *Hippocrates*, of such Persons, 5 *Aph. 5.* that if they be suddenly seized with an Aphony, they die in Convulsions, unless relieved by a Fever, or recover their Voice at the usual Time when a *Crapula* is solved.

But can there be any good Indication produced from comatous Sleeps? Most certainly, since they are frequently Fore-runners of such Crises as are form'd by Hæmorrhages at the Nose, or from the Parotides, the Blood ascending to the Head. But then this favourable Judgment must be confirm'd by Signs of Concoction in the Excrements, and by other critical Signs; with relation to which it is said, 1 *Prorrhetic. 168.* "That a *Coma* and Deafness attending a Cephalalgia, end in an Eruption of an Abscess behind the Ears." And *T. 169.* "A Tension of the Hypochondrium, with a *Coma*, Restlessness, and a Cephalalgia, terminate in the Parotides."

With relation to bad kinds of *Sleep*, all which exceed the Bounds of Nature are supposed to be such, according to *Hippocrates*, 2 *Aph. 3.* where he says, "That both *Sleep* and Watching, if they exceed the Bounds of Nature, are bad." But with respect to *Sleep*, we are to have a special Regard to Custom, which is a second Nature. Bad, also, is all *Sleep* from which the Patient receives no Benefit, and much more that *Sleep* which leaves him in a worse State than before, for such, 2 *Aph. 1.* is pronounced mortal; and *Galen*, in his Comment thereon, tells us, "That as *Sleep* in the Decline of a Disease is of great Service, if it relieves the sick; so if it renders his State rather worse, it proves mortal." In the same Place he teaches, that *Sleep* is hurtful in Fevers, when neither the Fever nor its Symptoms are diminished, but increased or exasperated by it; or new Symptoms, as Pains and a Delirium, are excited; or when the Patient, who was delirious before his *Sleep*, perseveres in his Delirium after it; or if the *Sleep* degenerates into a *Coma*, from which it is impossible, or, at least, difficult, to rouse him. All these Aggravations proceed from the Malignity of the Humours, which being left unconcocted by the natural Heat, recur upon the Viscera, and oppress those Parts, as the above-said Author there shews.

A *Coma* in the Beginning of Diseases, as it is usually occasioned by a Redundance of Humidity oppressing and moistening the Brain, can be an Indication of no other than a severe and dangerous Distemper, since it is a manifest Sign; that the Brain begins to be injured by so great a Multitude of Humours, and if attended with some other pernicious Symptoms, proves mortal. Thus it happened in the Case of the Wife of *Olympiades*, 7 *Epid. T. 49.* who on the fifth Day being seized with a *Coma*, was insensible to Endeavours used to rouse her, and recovered not the Use of her Speech, which she had lost, nor was any way relieved, but drew her Breath in a sublime Way, [See PNEUMO.] through her Nostrils; all which concomitant Symptoms portended a fatal Event to the *Coma*. A *Coma*, also, appearing not in the Beginning, but at the Height of a very hot and severe Distemper, is no less fatal than if it were excited by a Decay of Strength. An Instance of this Nature we have in *Hermocrates*, 3 *Epid. Sect. 1. Aeg. 2.* on whom *Galen* thus comments: "The *Coma* which seized *Hermocrates* on the eleventh Day, was induced either by an extraordinary Refrigeration of the Brain, or an Imbecility of the Faculty; but from which soever of them it proceeds, it is extremely pernicious: For we have demonstrated, that Coldnesses consequent on hot and dry Disorders are incurable; but what is occasioned by Weakness, signifies that Death is very near at hand." We have already observed, that this kind of *Coma* may be known by *Galen's* Description of it, *Com. 1. in 3 Epid. T. 7.* "The Patients, he says, after they have shut their Eyes, have little or no Sleep, but lie waking, tho' unable to raise their Eye-lids." Again that *Coma* is no less mortal, as *Galen*, *Com. 1. in Prognost.* in which the Patients lie with

their Eyes staring, and never shut them, a Symptom common to those who are affected with a *Congelatio*, or *Deprehensio*. Of this Sort of *Coma*, *Galen* discourses in the Place above-quoted, in the following manner: "We ought to regard," he says, the Suspicion, as *Galen* says, of the Eyes in Sleep; "for if any Part of the White of the Eye appears when the Eyelids are shut, and the same is not occasioned by a Flux of the Belly, or taking a Medicine, or the usual Custom of the Patient in sleeping, it is a pernicious Sign, and highly destructive, as indicating an Extinction of the Faculty which moves the Eye-lids." An instance to this Purpose we have in the Wife of *Theodorus*, 7 *Epid. T.* 27. of whom *Hippocrates* observes, that "Her Eyes were sunk down, and rested mostly on the lower Eye-lid, with a fixed and stupid Look, and the Whites appearing pale and discoloured, and like those of dead Persons." Such is the Aspect of those who are affected with a *Congelatio*, which Disorder is by the Greeks called *Catache* or *Catochus*, and *Catalepsis*; and the Patients by *Galen* on the *Prorrhetica*, those under a *Catochus*. Of those the Author of the *Prorrhet.* 96. speaks, where he says, that "A *Catochus* and an *Aphony*, attended with an *Eclipsis* (or "an universal Faintness and Feebleness) are pernicious."

But we may be instructed to pass our Judgment upon a *Coma*, not only from the Variety of its Causes, but from other Symptoms which precede, attend, or are consequent upon it. In the first Place, from preceding Signs, as, for instance, when a *Coma* succeeds long Watching, proceeding from a very hot and dry Cause; in this Case it is deadly, as we observed in another Place, where we shewed that a Coldness consequent upon hot and dry Diseases, is mortal. For this reason, all Physicians regard a Lethargy, which succeeds a Phrensy, as a most fatal Disorder. A *Coma*, therefore, which comes upon the Patient after long Watching, except it be critical, is pernicious. In the same manner is a *Coma* to be esteemed good or bad, from the good or bad Signs which accompany it; for with other bad Symptoms it must necessarily be bad and dangerous: But when the Patient lies under a *Coma*, and at the same time continues waking, which indicates no small Degree of Malignity in the Distemper, it forebodes a difficult or dubious Crisis: And thus it is, also, when the *Coma* is attended with a Delirium. According to the Observation of *Hippocrates*, 3 *Epid. Sect. 3. Stat. Pest.* and in particular Instances, whose Cases are related in the same Book, severe and dangerous Symptoms attending a *Coma*, render it a very dangerous Disorder. Thus the Author of 1 *Prorrhet.* 89. "A *Coma* with a Distortion of the Eye is bad." And *Coac.* 180. "They who, in the Beginning of a Disease are comatously affected, and sweat a thin Matter, and discharge a concocted Urine; who labour under a burning Heat, succeeded by Refrigerations without a Crisis, the Heat returning after short Intervals, and who become torpid, comatous and convulsive, are in a dangerous State." And no wonder, since there is a Complication of so many formidable and deadly Symptoms. And in the following Text we read, "that comatous Sleep and extraordinary Refrigerations of the Body are mortal." But this is to be understood of a burning Fever, in which the Patients burn inwardly, and shiver with Cold outwardly; and in such Disorders a *Coma* is always destructive. In the last Place, it may very well be known what a *Coma* portends, from the Signs which appear after it; for it appears to be critical when followed by some good Excretion or Evacuation. But it seems proper to a *Coma* to portend the critical Appearance of the Parotides. Thus we read, *Coac.* 185. "That they who are oppressed with a *Coma*, Nausea, and Pain of the Hypochondria, and spit little and frequently, may expect Abscesses behind the Ears; or perhaps the *Coma* may be attended with a convulsive Disposition." Sometimes a *Coma* is the Forerunner of a Flux of the Belly. Thus we read in the same Treatise, *T.* 182. "That they who labour under a *Coma*, attended with a Lassitude and Deafness, are relieved by a critical Flux of the Belly, discharging itself in red Stools." But the Author of 1 *Prorrhet.* 1. 1. which is repeated, *Coac.* 179. tells us, "That a Diffillation of Blood from the Nose, under a *Coma*, is a mortal Sign." Of the same Signification, also, are all bad Evacuations and bad Symptoms appearing after a *Coma*, as portending a hard and dangerous Crisis. Thus for Instance, if a *Coma* be succeeded by Convulsions, a Delirium, Aphony, Anxiety, violent Pains of the Viscera, or other bad Symptoms, they are so far from being good Prognostics, that they portend a fatal Event. *Prosper Alpinus de Praesag. Vit. & Mort. Egrot.*

SONATH. The Name of a Remedy extolled by *Paracelsus*, as excellent in Apoplexies.

SONCHITES. A Name for the *Hieracium*. Hawk-Weed.

SONCHUS.

The Characters are;

The Stalks are tender and fistulous; the Heads are large; the Calyx is contracted into a Cone, when the Flowers fall off; the Seeds are either small, long and narrow; or larger and sulcated, or rough as if granulated.

Boerhaave mentions fifteen Sorts of *Sonchus*, which are;

1. *Sonchus*; asper; arborecens. *C. B. P.* 124. *Edit.* 2. *Hieracium*; arborecens; palustre. *C. B. P.* 127. *Edit.* 1.
2. *Sonchus*; repens; multis *Hieracium majus*. *J. B.* 2. 1017. *Raii Hist.* 1. 226. *Synop.* 71. *Tourn. Inst.* 474. *Boerhaave, Ind. A.* 84. *Hieracium*, Offic. *Hieracium majus folio Sonchi, vel Hieracium Sonchites*, *C. B. P.* 126. *Sonchus arborecens*, *Ger.* 231. *Emac.* 294. *Hieracium majus Dioscoridis*, *Ger. Emac.* 296. *Hieracium majus Sonchites*, *Park.* 788.

THE GREATER HAWK-WEED.

It is found in the Fields, and flowers in July. The Leaves are said to be cooling, and moderately astringent, and to be good in Inflammations. The Herb, together with the Root, is said to be a good Topic for the Sting of a Scorpion. *Dale. Dioscorides.*

3. *Sonchus*; Niliacus; gigas; *Lippii*.
4. *Sonchus*; asper; non laciniatus. *C. B. P.* 123. *M. H.* 3. 360.
5. *Sonchus*; asper; laciniatus & non laciniatus. *Park.* 804. *C. B. P.* 124. *Boerb. Ind. A.* 85. *Raii Hist.* 1. 223. *Synop.* 70. *Sonchus asper*, Offic. *Ger.* 229. *Sonchus asperior*, *Ger. Emac.* 291. *Sonchus asper laciniatus folio dentis Leonis*, *Tourn. Inst.* 474. *Sonchus laciniatus spinosus*, *J. B.* 2. 1016.

PRICKLY SOW-THISTLE.

This Sow-Thistle has a hollow, angular, channel'd Stalk, about two Foot high, having the lower Leaves long, stiff, and pretty much cut in, or indented about the Edge, every indenting ending in a Prickle; those which grow on the Stalks, do, as it were, encompass it with two roundish Auricles, and are less jagged than those below. The Flowers grow several together on the Tops of the Stalk, in Shape like Dandelion, but much less, and of a paler yellow Colour, the under Part of the Petala being tinged with Purple; they are set in longish scaly Calyces, and turn into Down, enclosing long thin flattish Seeds; the Root is thick, long and whitish; and the whole Plant, upon breaking, yields a milky bitter Juice. It grows every where upon Banks, and by Way-sides, and flowers in May and June. The Leaves are used. *Miller's Bot. Off.*

6. *Sonchus*; laevis; laciniatus; latifolius. *C. B. P.* 124. *Tourn. Inst.* 474. *Boerb. Ind. A.* 85. *Sonchus laevis*, Offic. *Ger.* 229. *Emac.* 292. *Park.* 805. *Raii Hist.* 1. 222. *Synop.* 70. *Sonchus laciniatus non spinosus*, *J. B.* 1015.

SMOOTH SOW-THISTLE.

The smooth Sow-Thistle has hollow-channel'd Stalks, like the rough, and grows as tall; the Leaves are smooth, and free from Prickles. Those next the Stalk are cut like Dandelion into several Segments, that at the End being largest; those which grow on the Stalk seem to encompass it, and have fewer Incisions, being somewhat triangular and pointed at the End. The Flowers, Seed and Root, are much alike. This grows in the same Places with the former, and is no less frequent.

The Leaves of both the last Sorts are of the same Nature with Dandelion, being aperitive and diuretic; and good for the Gravel and Stoppage of Urine, some People boil the Leaves in Posset-Drink, and give it in Fevers. The young Shoots are eaten by some People among Sallads like Lettice. They are but seldom used in the Shops. *Miller's Bot. Off.*

It has a herby saltish Taste, a little bitter, and gives a pretty deep Tincture of Red to the blue Paper. It contains a Salt, in some measure like that called *Oxyfal Diaphoreticum* by *Angelus Sala*; but in the Sow-Thistle this Salt is dissolved in a great deal of Phlegm, and united with a great deal of Sulphur. The Sal Ammoniac is found there in a very small Quantity; for,

By chymical Analysis, it yields but a little urinous Spirit, and no volatile concrete Salt; thus the Sow-Thistle is a Dissolver a little moderated; the Decoction is given to drink, to allay the Heat of the lower Belly; it facilitates the Circulation of the Humors in this Part, and removes the Obstructions, by which they stagnate. *Martyn's Tournesfort.*

7. *Sonchus*; laevis; laciniatus; latifolius; flore niveo. *C. B. P.* 124.
8. *Sonchus*; muralis; cymis hirsutis. *H. C. Suppl.*
9. *Sonchus*; angustifolius; maritimus. *C. B. Prodr.* 61.
10. *Sonchus*; asper; laciniatus; Creticus. *C. B. P.* 124. *Prodr.* 60. *Hieracium majus, folio Sonchi, semine incurvo*. *C. B. P.* 127. *Chondrilla Cretica, nomine missa, semine crispo*. *J. B.* 1022.

11. Sonchus; Turgitanus; Papaveris hortensis folio. *Flor.*
2. 27. *Chandrilla Turgitana, floribus luteis, papaveris hortensis folio.* H. L. 657.

12. Sonchus; lævis; angustifolius. C. B. P. 124. *Sonchis affinis, Terracrepola.* J. B. 2. 1018. *Chandrillis quadam affinis, lacinolata, an Trinciata,* J. B. 2. 1021. *Hieracium annuum, foliis imis angustioribus, lacinatis, caulescentibus, glaucis & integris.* M. H. 3. 67.

13. Sonchus; chondrilloides; altissimus; folio oblongo, nitido, flore luteo magno, radice repente.

14. Sonchus; lævis in plurimas, tenuissimas lacinias divisus. C. B. P. 124. *Prodr.* 61. *Chondrilla lutea,* J. B. 1029.

15. Sonchus; lævis, in plurimas, tenuissimas, angustissimasque lacinias divisus. *Cimel. Reg. Vaill. Boerh. Ind. Alt. Plant.*

SONDARI. H. M. The Name of an East Indian Shrub, called *Frutex Indicus Baccifer, floribus umbellatis, fructu tetracocco.* It is of no Use in Medicine. *Raii Hist. Plant.*

SOPHERA. A Name for the Senna; *orientalis; fruticosa; Sophera dicta.*

SOPHIA CHIRURGURUM. A Name for the *Sisymbrium; annuum; Absinthii minoris folio.*

SOPHISTÆ, *οπισθεντες ιεροι.* These are described by Hippocrates, as Physicians guilty of Arrogance and Insolence to others, on a Presumption of their superior Knowledge; whereas in fact they are guilty of the most notorious Errors, and excessively ignorant.

SOPHISTICATIO. Adulteration.

SOPHRONESTERES. The *Dentes Sapientiæ.* See DENS.

SOPIENTIA. Medicines productive of Sleep, or Ease from Pain. See ANODYNA, NARCOTICA, and OPIUM.

SOPIO. An old Name for Opium. *Rhodii Lexicon Scribonianum.*

SOPOR. The same as CAROS, or COMA.

SOPORARIÆ ARTERIÆ. The Carotid Arteries.

SOPORIFERA. Medicines inducing Sleep.

SORA. The same as ESSERE.

SORBET. The same as SERBET.

SORBTIO. Sorbile Aliment.

SORBUS.

The Characters are;

It resembles the Pear and Cratægus in all Respects, except that the Leaves are pinnated as in the *Fraxinus.*

Boerhaave mentions two Sorts of *Sorbus*, which are;

1. *Sorbus; sativa.* C. B. P. 415. *Boerh. Ind. A. 2. 248. Tourn. Inst. 633. Sorbus, Offic. Ger. 1287. Emac. 1471. Raii Hist. 1. 1456. Synop. 3. 452. J. B. 57. Sorbus legitima, Park. Theat. 1420. THE SERVICE-TREE.*

This grows to be a pretty large Tree, whose Branches are clothed with winged Leaves, something like those of the Ash-tree, consisting of seven or nine serrated Pinnæ, each Leaf terminating in an odd one. It has several Clusters of five leaved white Flowers, which are followed by Fruit of the Shape and Bigness of a small Pear, growing several together on Foot-Stalks, an Inch long; they are of a greenish Colour, with a Mixture of Red, as it has been more or less exposed to the Sun; of a rough, austere, choaky Taste; but when ripe or mellow, sweet and pleasant. It is found wild in some Parts of England, as in *Staffordshire* and *Cornwall*, flowering in May, but the Fruit is not ripe till November. The Fruit is used.

It is reckoned to be very restraining and useful for all Kinds of Fluxes; but when ripe, not altogether so binding. The Fruit is seldom or never to be met with in our Markets; and therefore, for a Succedaneum, we use the *Sorbus Tormalis.* *Miller's Bot. Off.*

2. *Sorbus; aucuparia.* J. B. 1. 62. *Tourn. Inst. 634. Boerh. Ind. A. 2. 248. Ornus, Offic. Ornus sive Fraxinus sylvestris, Park. Theat. 1419. Sorbus sylvestris, sive Fraxinus Bubula, Ger. 1290. Emac. 1473. Sorbus sylvestris, foliis domesticæ similis, C. B. P. 415. Raii Hist. 2. 1457. Synop. 3. 452. THE QUICKEN-TREE.*

This Tree grows in mountainous and moist Places; it flowers in May, and produces ripe Fruit in September. The Fruit is said to be a very good Hydragogue, and excellent for the Scurvy. The Liquor which distils from a Wound made in this Tree, is recommended as an excellent Antiscorbutic, and as a good Remedy for Disorders of the Spleen.

SORDES AURIUM. Ear-Wax.

SORDES ULCECUM. The sordid Matter in foul and ill-digested Ulcers.

SOREX. See MUS MAJOR.

SORGHUM. A Name for the *Milium; arundinaceum; suberosundo semine; Sorgho nominata.*

SORNI. Mars; that is, Iron. *Turba Philosophorum.*

SORY, *σῶρι, or σῶρι.* See CHALCITIS.

SOSTRATI VINCULUM. A Species of Bandage described by *Galen*, in his Treatise of Bandages.

SOTEIRA, *σῶτειρα.* The Name of an Antidote described by *Paulus Ægineta.*

SOTIRELLA. The Name of a Medicine in the Form of 2 hard Mass, consisting of Opium and some other Narcotics, with Nutmeg, Saffron, Camphire, and Soot. It is described in the *Augustan Dispensatory*, and is directed to be put into hollow Teeth.

SOTIRELLA PARVA, is another medicinal Mass, composed of much the same Ingredients; of the same Use; and described in the same Dispensatory.

SOTSITSOU. A Name in *Boerhaave's Index Alter. Plantarum*, for the *Palma; Japonica; spinosis pediculis; Polypodii folio.*

SPADAM. The Name for a Species of Sword-Fish, neither used in Food or Physic. *Lemery des Drogues.*

SPADON, *σπάδων.* A Spasm.

SPAGIRIA, or SPAGIRICA ARS. Chymistry, or Alchymy.

SPALAX, *σπαλάξ.* The Animal called a Mole.

SPALT, according to *Lemery*, is a stinty heavy Stone, which is used by the Founders in fusing their Metals. It is esteemed deterfive and desiccative, externally applied.

SPANNA, for Hispana, Spanish. In *Scribonius Largus*, No. 256. the *Pix Spana*, Spanish Pitch, is an Ingredient in a *Malagma*, there directed. The same Epithet is applied to Wine, Oil, Pitch, Alum and Opium, by various Authors.

SPANACHIA, according to *Blancard*, is the same as *Spinachia*, Spinnage.

SPANDARAPUM. The same as SPARADRAPUM. *Castellus*, from *Schenckius*.

SPANOPOGONES, *σπανοπόγωνες*, from *σπανος*, thin, and *πόγων*, the Beard. Persons whose Beards are thin, or whose Hairs fall off from their Chins, are thus called.

SPARA. A whimsical Term in *Paracelsus*, to which it is not easy to affix any Meaning. It is thus defined, *Spara Vis Mineralis ex Illech. primæ Substantiæ ex primo ente, est pars prima ex quatuor elementatis. Elementata ista sunt Mineralia majora. Paracelsus.*

SPARADRAPUM. A Sort of Cerecloth, called, also, *Tela Gualteri.*

Take of the *Diapalma* Plaister, and Diachylon with the Gums, each one Pound; Cerufs, half a Pound; Root of Orris, finely powder'd, an Ounce and half: Melt these together, and whilst they are in Fusion, dip therein soft worn-out Linen-Rags, so that they may be covered with the Plaister on each side; then take them out, spread them, and let them dry, and render the Surfaces smooth with a Knife or *Spatula*. The principal Uses of these are for Issues. *Lemery Pharmacop. Univerf.*

There are two other Forms of Sparadraps in the old College Dispensatory; as the *Sparadrap* for Issues.

Take of Wax, half a Pound, Red Lead and Turpentine, each four Ounces; Cinnabar, and the Roots of Florentine Orris powder'd, each one Ounce; Musc, four Grains: Mix, and use as above.

Take Oil of Roses, half a Pound; Sheeps Suet, four Ounces; Wax, ten Ounces; Litharge, Refin of the Pine, Frankincense, and Mastich, each two Ounces; Armenian Bole, and volatile Meal, each an Ounce: Make a Plaister to be used as the preceding.

The last is, in the Old College Dispensatory, called *Tela Gualteri.*

SPARAGMOS, *σπαράγμις.* A Convulsion.

SPARAGUS. The same as ASPARAGUS.

SPARALLIUM. An uterine Clyster. *Rulandus.*

SPAREDIA. In *Paracelsus*, is a Ligature anointed over with the White of an Egg.

SPARGANIUM.

The Characters are;

The Flowers are male, polypetalous, herbaceous, furnished with a vast Number of Stamina, and are closely connected to the Stalk in the Form of a Globe. The Ovaries grow on the same Stalk below the above-mentioned masculine Flowers, and are crooked small Tubes like Pods, which, when ripe, become osseous, unilocular, or bilocular *Capsula*, filled with a farinaceous Nucleus. These Ovaries are, also, collated into Globes like Knots.

Boerhaave mentions two Sorts of *Sparganium*, which are;

1. *Sparganium; ramosum, Ger. Emac. 45. C. B. P. 15. Theat. 28. Park. Theat. 1205. Raii Hist. 2. 1311. Synop. 3. 437. Tourn. Inst. 531. Boerh. Ind. A. 2. 168. Sparganium, Offic.*

Offic. Sparganium quibusdam, J. B. 2. 541. **BRANCHED BUR-REED.**

It grows on the Banks of Rivers, and in marshy Places, flowering in July. The Root is recommended by *Diocorides* as excellent against the Poison of Serpents, taken in Wine.

2. *Sparganium*; non ramosum. C. B. P. 15. *Theat.* 231. *Platanaria altera*, Dod. p. 60r. *Boerb. Ind. Alt. Plant.*

SPARGANOSIS, *σπαργάνωσις*. A Milk Tumor in the Breasts. *Galen.*

SPARSI MORBI. Scatter'd Diseases. The same as Sporadic Diseases.

SPARTIUM. The Broom-Tree.

The Characters are;

It hath a pupillaceous Flower, whose Pointal, which rises from the Flower cup, afterwards becomes a short, roundish, swelling Pod, containing, for the most part, one Kidney-shaped Seed in each.

Boerhaave mentions three Sorts of *Spartium*, which are;

1. *Spartium*; alterum; monospermum; semine Rani simili. C. B. P. 396. *Genista Hispanica, floribus luteis parvis, monospermas, semine Rani simili.*

2. *Spartium*; tertium; flore albo. C. B. P. 396. *Genista Hispanica, floribus candidis.*

3. *Spartium*; orientale; siliqua compressa, glabra & annulata. T. Cor. 44. *Boerb. Ind. Alt. Plant.*

SPARTIUM is, also, a Name for several Sorts of **GENISTA** and **SECALE**.

SPARUS, *σπαργος*. The Name of a Fish found near the Sea-shore, somewhat like a Guilt-Head.

SPASMA, *σπασμα*, from *σπένω*, to draw. A Divulsion or Distension of the nervous Fibres of a Muscle without Laceration, or a Wound. See **CONTUSA**.

SPASMODES, *σπασμῶδης*. Spasmodic, or convulsive; from *σπασμῶς*, a Convulsion.

SPASMODICUS. The same as **SPASMODES**.

SPASMOLOGIA. A Treatise or Dissertation on Spasms or Convulsions.

SPASMOTICUS. The same as **SPASMODICUS** and **SPASMODES**.

SPASMUS. A Convulsion, or Spasm.

No Disorder is more terrible to human Nature, or complicated with more dreadful Symptoms, than Convulsions, which are preternatural and violent Contractions of the nervous, membranous and muscular Parts, especially of the Trunk and Limbs, arising from a spasmodic Stricture of the Membranes surrounding the spinal Marrow, and the Nerves distributed from it, and an impetuous Influx of the nervous Fluid into the Organs of Motion.

Hence appears the Difference between Convulsions and an Epilepsy; for as the primary Cause of the latter is situated in the *Pia* and *Dura Mater*, those nervous Membranes which cover the Brain and the other Parts of the Head; so, on the contrary, the Cause of Convulsions is principally to be sought for in those Membranes which surround the spinal Marrow, and the Nerves distributed from it. The Symptoms, also, of those two Disorders are different, though most of them, on account of the intimate Consent of these nervous Membranes, are found to have a great Affinity with each other: For in an Epilepsy the Patient is afflicted with an Alienation of Mind; a Depravation of the internal as well as the external Senses; a foaming of the Mouth; a clenching of the Thumbs in the Fingers; and a Forgetfulness of every Thing that happens during the Fit. But these are Symptoms different from those of Convulsions, in which there is neither an Alienation of Mind, a foaming at the Mouth, nor a clenching of the Thumbs; and if these Symptoms happen during Convulsions, they constitute the Disorder of the convulsive epileptic kind.

Convulsions, like other spasmodic Disorders, principally exert their Tyranny upon the nervous, fibrous, and membranous Parts; and as these are copiously interwoven with other muscular, glandular, cartilaginous and bony Parts, they, also, draw them into Consent, and excite violent Commotions in them. And though these violent Commotions principally affect the external Parts and Limbs, yet they sometimes penetrate to the internal Viscera, and excite terrible Disorders in them.

Convulsions attack the miserable Patients in various manners; for in some they happen suddenly, without any Signs of the approaching Disorder; whilst in others they may be foreseen by some Signs: The most considerable of which are, a Refrigeration of the Extremities, especially of the Feet; or a Sense of Formication, which, also, seizes the Os Coxygis, and like a cold Vapour ascends through the Spine of the Back. The left Hypochondrium is affected with tensive and flatulent Pains, and the Patient is so obstinately costive, that neither the Flatulences nor Excrements can be discharged, whilst the

smallest Clyster-Pipe cannot be introduced into the Anus; or if it is otherwise, the Clysters and Suppositories are, by the Force of the Spasms, thrown up by Vomit along with the Excrements: The Bladder is so strongly constricted, that either none, or a very limpid and white Urine is discharged: In other Patients Convulsions are preceded by Oscitations, Pandiculations, Tremors of the whole Body; Anxieties of the Præcordia; an unequal, hard, and contracted Pulse; Cardialgias; Nauseas; Vomittings; Palpitations of the Heart; a Difficulty of Deglutition; Pains of the Head and Teeth; a Ringing of the Ears, and a Vertigo.

During the convulsive Paroxysm, the Limbs are surprisingly agitated, drawn in different Directions, distended, tossed, contorted and incurvated. Sometimes the Arms are so retorted towards the Back, that the Patient seems to sit upon them: At other times they in vain beat the passive Air: At other Times the Legs are drawn into various Directions: Sometimes they stamp and strike the Earth hard: Sometimes the Spine of the Back is incurvated, so as to form an Arch, whilst the Breast is raised: And at other times the whole Body is stiff and immoveable, as a Stone. These Agitations seize many in the very Posture in which they are, without throwing them on the Ground; whilst others, like epileptic Patients, fall suddenly down; weep, laugh, grind their Teeth, gape, hang out their Tongues, and are vertiginous. As the Gestures and Motions of convulsive Patients are very various, as we find in *M. N. C. An.* 6. *Obs.* 23. *Dec. an.* 9. *Obs.* 64. *Dec.* 2. *an.* 3. *Obs.* 77. *an.* 7. *Obs.* 135. and *Horstii Epistol.* 'tis still far more surprising, that such Patients should frequently speak Languages they never learn'd, and like Prophets predict future Events; for which Reason they were by the Ancients accounted Demoniacs, as we are informed by *Forestus*, in *Obs. Med. Lib.* 10. *Obs.* 56. *Schol.*

After the Paroxysm many Patients retain an incredible Languor of the whole Body and Feet; many fall into Deliriums, and a profound Sleep; and in others the Disorder is terminated by Eructations, an Explosion of Flatulences, Vomiting, and a copious Discharge of Lymph. Convulsions are frequently succeeded by an Evacuation of Mucus or Blood from the Nostrils, Uterus, or hæmorrhoidal Veins. In some, also, the Paroxysm is terminated by crying, and in numberless different manners. The Sleep of convulsive Patients is generally turbulent, and full of Dread and Terror; their Appetite unstable, and their Bodies costive; they sweat with Difficulty, and are subject to the Influence of various Passions of the Mind. The Paroxysms are sometimes longer, and sometimes shorter; and happen sometimes at longer and at other times shorter Intervals, tho' for the most Part they strictly observe the Variations of the Moon. I have known Patients in whom they have duly happened at a particular Time of the Year for a few Months, and have afterwards entirely ceased. In Women they either precede or accompany the Eruption of the Menstrues; and are more frequent and violent after high Feeding. They are, also, easily excited by the slightest Causes, especially by the Passions of the Mind.

Those are most subject to Convulsions whose nervous Systems are either naturally, or by any other Cause, weak; especially if their Juices are impure. Hence Convulsions are not only hereditary, but, also, sometimes handed to very remote Generations; especially if the Parents have been hypochondriac, hysteric, arthritic, subject to the Hemorrhoids, or if the Mother, when pregnant, has been inclined to violent Passions: For this Reason, Children and young Persons are more subject to Convulsions than Adults, and Women than Men. Persons of a delicate Turn of Mind, an acute Genius, and those of choleric Temperaments, are, also, more liable to them than others.

Having given the History of Convulsions, we now come to consider their Pathology. The proximate Cause, therefore, of Convulsions, is a strong and violent Stricture of the Membranes surrounding the spinal Marrow, and of the nervous Parts distributed thence. Hence 'tis obvious, that in Convulsions those Parts are only agitated, which receive their Nerves from the spinal Marrow. But since these Membranes have an intimate Communion with the Meninges of the Brain, of which they are Productions, it is easy to conceive why convulsive Motions are frequently complicated with those of the epileptic Kind, into which they, also, often degenerate.

That these Things may be the more clearly perceived, 'tis to be observed, that the spinal Marrow, like the Brain, is composed of a white, medullary, and cineritious Substance, and is continuous to the Brain. See *Hippocrates, L. de Carnibus Sect.* 3. *Galen, L. 12. de usu Partium, Cap.* 15. and *Veslingius, in Anat. Cap.* 14. This spinal Marrow is covered with one common membranous Covering, which adheres to the Spondyls of the Vertebrae; and with three proper Membranes, the innermost and second of which are Productions

from the Pia Mater, and the third from the Dura Mater. This spinal Marrow is lodg'd in the Cavities of the Vertebrae, and, according to *Vieussens*, in *Neurograph. Lib. 2. Cap. 1.* is furnished both with arterial and venous Blood-Vessels distributed through its Substance; for it receives arterial Ramifications from the vertebral Arteries, and the Trunk of the Aorta Descendens, from which the returning Blood is discharg'd through the small Veins, first into the venous Sinuses of the Vertebrae, the Veins of the Vertebrae, the *Vena Sine Pari*, other small Veins, and at last into the Vena Cava Ascendens. See *Vieussens* in the Work above quoted, *Tab. 18. Fig. 1. 2. and 3.* The principal Function of the spinal Marrow seems to be, to distribute from it various Nerves, of which there are thirty Pairs, and two spinal Nerves, by *Willis* call'd the accessory Nerves, which are distributed to the *Par Vagum*. See the same Author, *Tab. 19. Fig. 11.* These Nerves are first distributed to the Muscles of the fore and back Parts of the Neck, of the Back, Breast, superior and inferior Limbs, to the Motion of which they are subservient; then they are distributed through the internal Viscera of the Breast and Abdomen, constitute the Membranes in them, and lastly send off various considerable Ramifications to the external Muscles of the Face and Head, and contribute greatly to the Motion of these Parts.

Whoever duly compares what has been said with all the Symptoms of the Disorder, will easily discover a rational Connexion between them, and be able to assign the mechanical Cause of Convulsions. But 'tis to be observ'd, that this convulsive Irritation of the Parts may happen in a double Manner; for either the Membranes of the spinal Marrow are primarily irritated, convuls'd, and draw other Parts with which they are connected into consent; or some of these Parts are first spasmodically affected, and communicate the Convulsion to the spinal Marrow, from which it is propagated to other Parts. Hence we shall call the former of these Convulsions Idiopathic, and the latter Sympathetic.

Among the mediate Causes which dispose to this Constriction of the spinal Marrow, the most considerable are violent Passions, than which nothing is more effectual both for inducing and supporting Convulsions, especially if the Patient is expos'd to external Cold, or commits any Error in Regimen. *Henricus ab Heer*, in *Obs. 24.* gives us a memorable Instance of violent Convulsions produced by a sudden Consternation of Mind, occasioned by a Reflexion upon Fornication before committed. And nothing is more frequent than for Persons, especially such as are young, to be seized with Convulsions by Frights, or excessive Passion. Immoderate or premature Venery are, also, of great Efficacy in exciting Convulsions; for which Reason Cotion is call'd by Physicians, a slight Epilepsy.

Among the material Causes of Convulsions, we may justly reckon a peccant State of the Juices, and especially a certain, acrid, saline, and scorbutic Dyscrasy of them. Hence Convulsions are frequently produced by a Retropulsion of the Gout, arthritic Disorders, the Itch and Purples; and the Convulsions are again mitigated upon the Erruption of the peccant Matter. But as nothing more contributes to the Impurity of the Humours, than the Redundance or Spissitude of them, especially if the natural Excretions by Sweat or Stool, or the Hemorrhoids, or Meneses, are diminished or suppressed. Hence 'tis obvious, why hysteric and hypochondriac Patients, and those afflicted with an Obstruction of the Meneses or Hemorrhoids, are most subject to Convulsions. Hence 'tis frequently observed, that Girls before the Erruption of their Meneses, are often afflicted with Convulsions, which often cease upon the Appearance of that Evacuation.

If we enquire into those nervous Parts from which the convulsive Strictures are generally propagated to the Membranes of the spinal Marrow, the most considerable of them are found to be the Stomach and Intestines, the Vellications of which prove the Cause of Convulsions through the whole nervous System; for these Parts, by Means of their nerveo-membranous Structure, are very susceptible of irregular Motions, and are greatly affected by the slightest Cause. But since the Stomach receives its Nerves first from the right and left external Ramifications of the eighth Pair, and likewise from the Nerves arising from the first and second Vertebrae of the Back, and running off to the costal Ramification; and since the Intestines receive their nervous Branches from the internal Ramification of the eighth Pair, which concurs with the Intercoastal, and forms the mesenteric Plexus, the Reason is obvious, why the Strictures of these Parts are easily propagated to the Membranes of the spinal Marrow, and the whole nervous System.

Hence no Species of Convulsions are more frequent than those which have their primary Seat in the Duodenum, in which acid and viscid Crudities mixing with the Bile and pancreatic Juice, quickly acquire an acrid and almost cau-

sic Nature. Thus in *M. N. C. Dec. 3. an. 3. Obs. 138.* we have a memorable Account of a Catalepsis, accompanied with violent Symptoms, the Cause of which was lodg'd in the *Prima Via*. Hence, also, acrid, caustic, and poisonous Substances, by corroding the Membranes, excite universal Convulsions. Thus in *M. N. C. Dec. 3. an. 4. Obs. 30.* there is an Instance in which universal Convulsions were produced by drinking Wineedulcorated with Litharge. And 'tis sufficiently known, that acrid Purgatives have often produc'd the same Effect. All these will the more easily and infallibly happen, if a scorbutic Disposition of the Patient concurs. Hence in *M. N. C. Obs. 77. Dec. 2. An. 3.* we have an Account of violent epileptic Convulsions arising from the imprudent Injection of an acrid Clyster in scorbutic Pains of the Belly.

This is, also, confirmed by various Observations of impartial Authors, in which 'tis evinced, that Worms in the Intestines have produced surprizing ambulatory and rotatory Convulsions, especially in Children. Memorable Instances of this Kind are found in *Georgius Horstius Epist. Medicin. Sect. 3. M. N. C. Dec. 1. An. 6. Obs. 187.* and *Dec. 3. An. 3. Obs. 99.* and *Ferrius in Obs. Med. L. 10. Obs. 117.* If we enquire into the Causes of these Convulsions, we shall find, that they not only consist in Corrosions and Vellications of the Intestines, which happen to Children, but that they are, also, produc'd in Adults, by dead Worms in the Intestines, which diffuse a putredinous Vapour, which insinuates itself into the nervous System. Hence, in Cases of this Kind, the Breath is often fetid and cadaverous.

But since the urinary Bladder and Uterus receive their nervous Ramifications from the lowest Branches of the internal eighth Pair, and from some Ramifications arising from the Os Sacrum, 'tis easy to conceive why Vellications, Spasms, and Wounds of these Parts terminate in Convulsions. Thus, according to *Ettmüller*, in *Coll. Praet. p. 2. Tom. 1.* there are numberless Instances of Convulsions produced by a Suppression of Urine. 'Tis, also, frequently observ'd, that Women in Labour are seiz'd with peculiar convulsive Motions of the Limbs, when the Spasms of the Uterus ascend and affect the Nerves of the spinal Marrow. Hence the Hands and Neck are often agitated from one Side to another, the Breast is elevated, the Members and whole Body tremble; and unless those Spasms are allay'd and again deriv'd downwards, in order to expel the Foetus, they often prove prejudicial, and even mortal, both to the Mother and Infant; for though 'tis certain, that there can be no Delivery without spasmodic and convulsive Motions, yet 'tis to be observ'd, that their Seat ought to be principally in the Uterus, Os Sacrum, and adjacent Muscles. But when from various Causes they are propagated to the superior Parts, and invade the superior Part of the spinal Marrow, they excite various and terrible Symptoms.

External Wounds of the spinal Marrow, and other remote nervous Parts, also, produce violent Convulsions. Every Surgeon knows, that Fractures and Luxations of the Vertebrae, where bony Splints prick the spinal Marrow, excite Convulsions: And every one knows, that Wounds of the nervous Parts, or of a single Nerve, by Venesection, for Instance, or any Puncture, Vellication, or any Cause whatever, produce violent Convulsions. *Rhodus* in *Obs. Cent. 1. Obs. 32.* and *50.* gives us Instances of Convulsions produced by a Puncture of a Nerve in the Hand. *Forestus* in *Obs. Lib. 10. Obs. 118. 119.* informs us, that Convulsions were produced by the pricking of a Nerve in Venesection. And in *Obs. 120.* he informs us, that the like Effects was produced by a Wound. And *Rhodus*, in the Part above quoted, informs us, that violent Convulsions have sometimes been produc'd by an incautious Pairing of the Nails. Hence Punctures, Wounds, and Injuries of some of the external Parts of the Head and Muscles, are found to terminate in Convulsions, which I have seen excited by a Wound of the temporal Muscle. Nor is this to be wonder'd at, since, according to *Vieussens* in *Neurograph. Tab. 24.* from the second vertebral Nerve, some Ramifications distributed upwards through the external Ear enter various Muscles of the Face.

The same is, also, the Reason of the Convulsions produced by the Stings of various Animals. In *M. N. C. Dec. 1. An. 9. Obs. 65.* we have an Account of a surprizing Species of Convulsions produced by the Bite of a large Fly. Many skilful Physicians have given us Instances of intense Pains of the Limbs, Agitations, and Incurvations of the Back, and Tossings, accompanied with a disordered Fancy, produc'd by the Bites and Stings of enraged Animals. Hence 'tis obvious, that the Matter is very small and pernicious, which excites such Tumults and irregular Motions in the whole nervous System.

Though

Though Convulsions are very terrible, yet they are not suddenly mortal. When they are recent, the Patient young, and the Constitution sound, an easy and short Cure is to be hop'd for: But if they arise from a Suppression of the Menfes or Hemorrhoids, they are removed by recalling these Evacuations. But when the Humours are thick and impure, the Excretions suppress'd, the Constitution delicate, the Patient advanced in Years, and the Disease hereditary, and of long standing, the Cure is very difficult; for then the Fluids are not only peccant, but, also, the solid nervous Parts, in which the acrid exhal'd Matter is impacted and radicated. Besides, the Nerves when greatly distended with violent Convulsions, instead of the subtile, ethereal, nervous Fluid, are fill'd with a gross Vapour, and for that Reason not without great Difficulty reduc'd to their natural State. Hence, also, we are to account for the surprizing Strength of Persons under convulsive Paroxysms. Convulsions, also, frequently degenerate into a true Epilepsy, or a hypochondriac Melancholy, especially when a bad Regimen, or a preposterous Cure concur. Lastly, those who die of Convulsions are taken off by an Apoplexy. Hence on dissecting the Carcasses of these who have died of Convulsions, the Vessels of the Brain have been found infarcted and distended with stagnant Blood; or Extravasations of Blood have been found here and there in the Ventricles of the Brain, and in the spinal Marrow.

In the Cure of convulsive Motions, three Intensions are to be principally pursued; the first of which is, to correct the material Causes which support the Disorder, prepare them for an Elimination, and commodiously evacuate them. The second is, to sooth and allay the violent and irregular Commotions of the nervous Parts. And, thirdly, to corroborate the nervous System, in order to prevent a Relapse, which frequently happens. But the Patient, especially if the Disorder is inveterate, is above all things to be exhorted to Patience under the Cure for some Time; nor is the Cure to be obtain'd by a great Variety of drastic Remedies, but rather by mild Medicines, and such as are friendly to Nature; these, with the Assistance of Patience and a sufficient Time, will accomplish the Cure.

With respect to the Cure in general, 'tis to be observ'd, that if the Disorder, according to *Hippocrates*, arises from a Redundance of Humours; or if the Quantity of Blood is too great; or if it is thick, and the Pulse large, and especially if the Habit is sanguineous, we are to begin the Cure with Venesection either in the Foot or Arm; and these Venesections are to be repeated twice, thrice, or oftener, according to the Degree of the Plethora; or Scarifications may be interpos'd; but Venesection is more expedient after, than during the Paroxysm; for by bleeding in the Paroxysm, I have frequently observ'd violent and long protracted Symptoms produced.

I have, also, very rarely observ'd convulsive Motions remov'd without the Observation of a proper Regimen. Hence in inveterate Convulsions it is expedient to change the Air and Soil, especially if dank and moist, and to reside in a serene and mild Air; to travel and use frequent Exercise; proper Aliments, of a soft Texture and easy Digestion, are to be chosen; but all hot, spirituous, vinous, and Malt Liquors are to be carefully avoided. The Patient is, for ordinary Drink, to use Decoctions of the Root of Viper's Grass and Shavings of Hartshorn, or Whey, or the *Selteran* cold Springs. Baths for the Feet, prepared of River-water, Bran, and Chamomile Flowers are, also, to be us'd; and the Patient is to immerse his Legs pretty far into them when they are considerably tepid, before going to Bed, after which he is to procure a gentle Sweat; for these Measures have a singular Efficacy in promoting the Circulation of the Humours, and allaying the spasmodic Strictures.

But no Attempts towards a Cure are to be made, unless the Body is soluble; for which Reason, if the Patient is costive, we may exhibit a proper Dose of the *Pilula Balsamica*, or Infusions and Potions prepared with Manna, or Manna us'd instead of Sugar in some warm Infusion; or if the Patient is entirely costive, emollient and oleous Clysters are to be injected till the Body is duly soluble. But when 'tis certain that the Fomes of the Disorder is lodg'd in the *Primæ Viæ*, 'tis expedient, especially about the Changes of the Moon, to exhibit an Emetic in Conjunction with a Laxative, for which Purpose two or three Grains of emetic Tartar may be mixed with a Decoction prepared of one Ounce of Manna, that thus there may be a sufficient Evacuation of the peccant Humours both by Vomit and Stool.

Among the most simple and dietetic Medicines which are generally of great Service in convulsive Disorders, we may justly reckon large Draughts of cold and simple Water, by which Means I have seen the most violent Convulsions remov'd; for common Water, in consequence of its Levity and Fluidity, enters the capillary Vessels of the human Body,

renders the Blood more fluid, corroborates the Parts, involves the acrid and sulphureous Humours and Vapours, and by exciting a gentle Sweat, eliminates them from the Body. Hence the proper and moderate Use of temperate, cold, and hot Springs, seems to be of singular Efficacy in convulsive Disorders.

But if Convulsions, especially about the State of Puberty or Youth, arise from excessive Venery, Anger, or any other Commotions of Mind, the Patient is carefully to abstain from every thing capable of producing a Commotion and Orgasm in the Fluids, or exciting the Solids to preternatural Motions and violent Strictures, such as Aromatics, acrid Purgatives, Emetics, all hot and spirituous Substances, violent Exercises of Body and Mind. On the contrary, greater Confidence is to be repos'd in Diuretics, emollient, demulcent, and nutritive Substances. Hence Cows Milk, that of Asses, or Whey, as, also, Baths of sweet Water mix'd with Milk, are of singular Service. Gelatinous, nutritive Broths, are, also, of great Service; and for ordinary Drink, the Patient is to use weak Chocolate, or Decoctions prepared of the Roots of Vipers-Grass, Barley, the Shavings of Hartshorn and Ivory, and the Flesh of Vipers. To these we are to add such Remedies as allay spasmodic Motions, together with Anodynes and Specifics, which are hereafter mentioned.

When Convulsions arise from Worms, these are to be kill'd and expell'd from the Body: But 'tis to be observ'd, that in this Case all Anthelmintics and Specifics are not equally proper; since the Preparations of Garlick, Vitriol, Copper, Aloes, drastic Purgatives, and Mercurials destroy Worms, they are nevertheless unfriendly to the nervous Parts when rashly exhibited. It is more expedient to attempt the Cure by external Remedies, such as Clysters of Milk, those prepared of sweet and oleous Substances, and Liniments of a purgative Quality, such as the Ointment of Sow-Bread, externally applied to the Navel and Abdomen. The Anthelmintics given internally ought to possess a corroborative and nervous Quality, such as Worm-seed, either reduc'd to Powder or an aqueous Essence, or Mercurius Dulcis mix'd with two Parts of medicinal Cinnabar, and reduc'd to the Form of Pills, with Extract of Tansy, Rhubarb, and the lesser Centaury. Other peccant, bilious, viscid, and acrid Sordes of the *Primæ Viæ*, are to be treated with inciding, resolvent, absorbent, digestive Medicines, such as correct Acrimony, and gentle Evacuants, either of the emetic or laxative Kind. If acrid Purgatives, or Things of a caustic or poisonous Quality have excited the Convulsions, the *Spicula* of these Substances are to be sheath'd up by pinguous, oleous, mucilaginous Substances, and Preparations of Milk.

If Convulsions are supported by a Suppression of the Menfes, we are by no Means to recal that Evacuation by Emmenagogues, and other hot Medicines generally exhibited for that Purpose. In such a Case, 'tis more expedient to restore the free Circulation of the Humours by the Use of Baths of natural and medicinal Waters, by prudent Venesection, by bathing the Feet with tepid Liquors, by balsamic Pills, by warm Infusions of the Leaves of Baum and the Lime-Tree, and by correcting Powders. Then the irregular Motions of the solid Parts are to be allay'd by Antispasmodics and Anodynes, such as the anodyne Liquor mix'd with Essence of Castor, which is an excellent Medicine; then the weaken'd Parts are to be corroborated. When Convulsions arise from a Suppression or Diminution of the *Menfes*, besides the above specified Remedies and Venesection, the Application of Leeches to the *Anus* is of singular Service.

It frequently happens, that the Retropulsion of Sweats, of ulcerous Excretions, of the Itch, Purples or Gout, induces Convulsions. In this Case, the acrimonious Sordes of the *Primæ Viæ* are to be corrected, and the spasmodic Strictures allay'd by absorbent Powders prepar'd of Crabs Eyes, the *Pulvis Marchionis*, prepar'd Amber, Cinnabar, Nitre, diaphoretic Antimony, and the Extracts of Saffron and Castor. In the Evening the Patient may take the anodyne Liquor, with a small Dose of *Bussins's* bezoardic Spirit, and the Spirit of Castor, or antispasmodic Pills prepar'd thus:

Take of the Extracts of Yarrow, and of the Flowers of Chamomile, and the Herb Carduus Benedictus, each one Dram; of *Venice* Treacle, Amber, and Cinnabar, each half a Dram; of Saffron, twelve Grains; and Oil of Chamomile, eight Drops; form them into Pills, with which Laxatives are to be frequently interpos'd.

Then Asses Milk mixed with the *Selteran* cold Springs are to be drank, or Whey, both of which are to be persisted in for some Weeks, interposing, at proper Intervals, Manna in conjunction with Cream of Tartar.

If, when by these Means, the material and especially the grosser Causes are removed, convulsive Motions should still remain, they are to be treated with such Medicines as allay exorbitant Motions, and with Specifics opposite to the subtle sulphureous Vapour which is impacted in the Nerves, and is the principal Support of the Disorder. To this Class principally belong antispasmodic and antiepileptic Specifics, taken from the animal Kingdom; for these, by their Fragrance immediately perceived by the Smell, are opposite to the fetid Vapours which support the Convulsions, and by a specific Virtue subdue them. The most considerable of this Kind, are the Shavings of the Sea-horse's Teeth, of Ivory, of the Bone found in the Head of the Sea-cow, of the Elk's Hoof, and of the human Cranium, as also human Blood and Secundines dried, the Viscera of Vipers and Serpents, together with their Hearts, Galls, and Liver; the Ankle Bones of Hares dried and pulverized, the Water of Swallows with Castor, but especially the Powder of Earth-worms. No less efficacious are some Medicines drawn from the vegetable and mineral Kingdoms, among which are the Coals of the Lime-tree pounded, the Extract of Saffron, the Flowers and Roots of Piony and wild Poppies, as also Medicinal Cinnabar. This Intention is, also, answered by Sedatives and Anodynes, such as the anodyne Liquor mixed with Essence of Castor, the Pilula de Cynoglossio mixed with *Aurum Fulminans* and Cinnabar, and the *Pilula Wildegansii*, which, when the grosser Matter is removed, excellently check habitual convulsive Motions. And lastly, Corroboratives are to be used, in order to answer the third Intention of Cure.

Nor are we to neglect external Remedies, among which we may reckon Ointments and Liniments applied to the Nape of the Neck, and Spine of the Back. The Ingredients of these may be that of human Fat, Badgers, Bears, the Mountain Mouse, the Beaver, and Vipers. With these Fats we are to mix the distilled Oils of Rue, Lavander, Marjoram, Rosemary, Nutmeg, and, in order to render them more penetrating, a few Drops of the Spirit of volatile Sal ammoniac. But 'tis to be observed, that the distilled Oils are to be omitted in Patients who cannot bear them, and only the Fats and mucilaginous Substances used. No Medicine is preferable to Baths of fresh Water used about the Time of the Invasion. By these let a gentle Sweat be provoked, Nature being either spontaneously inclined to it, or, if not, by an Infusion of the Flowers of the Lime-tree, which are of singular Efficacy, of Cowslips, St. John's-wort, and Valerian Root, by which means, violent Paroxysms are frequently prevented.

When in Convulsions arising from Worms, Mercurius Dulcis is exhibited with a purgative, 'tis to be observed, that before the Use of this Medicine, or other Anthelmintics, mucilaginous Demulcents, such as a few Spoonfuls of the Oil of Sweet-almonds, are to be exhibited; or let Milk be drank immediately before or after, in order to allay the Strictures of the Intestines.

Tho' Venesection is often beneficial in convulsive Disorders, especially where there is a Plethora, a Spissitude or Dyterasy of the Humours, a Suppression of the Menes or Hemorrhoids, or when the Head is violently affected, yet we are not to take away a large Quantity of Blood at one Time, nor to use Venesection promiscuously; for as the Disorder, when often recurring, more frequently proceeds from a Defect than a Redundance of laudable Blood, it easily happens, that by immoderate Venesection the Strength is impaired, the Stomach weakened, Perspiration retarded, and in Patients not manifestly plethoric, more Harm than Good done. Nor is Venesection to be performed on the Side affected, nor during the Equinoxes, but about fourteen Days before or after them; because at these Times the Paroxysms, during which nothing is to be attempted, are generally more violent than at other Seasons.

When a Suppression of the Hemorrhoids supports Convulsions, and a gentle Tumor and Obstruction of the Vessels are already formed, after other proper Measures, I know no more efficacious Medicine than Chalybeats. Hence the following vinous Infusion is of singular Service.

Take of the Roots of Zedoary and Succory, each half an Ounce; of the Tops of the Lesser Centaury, and the Flowers of Clary, each four Pugils; of recent Citron Peel, half an Ounce; of Currans, two Ounces; and of Rhenish Wine one Quart; mix all together, digest over a gentle Fire, and keep for Use.

In convulsive Disorders no Medicines are more prejudicial than such as throw the Humours into violent Commotions, to which they are at these Times too much subject. Hence we are carefully to abstain from all hot spirituous volatile Substances, hot Tinctures and Essences, crude Astringents and

Narcotics, which not only recal the Paroxysms, but also render the Disorder worse and more obstinate.

We are not rashly and immediately to have Recourse to Baths, which are not to be used, so long as the Patient is plethoric, or the *Duodenum* full of Sordes; for in such Cases, 'tis to be feared that the malignant Matter, being put in Agitation by the Baths, should be diffused thro' the whole Body. The same Caution is to be observed with respect to a Milk-Diet, instead of which bilious Patients ought to use Whey; nor is a Milk-Diet to be used at all, unless the *Prima Via* and Viscera are found and free from Sordes. A Course of Milk is most safely begun about the Middle or End of the Spring.

The Body in convulsive Disorders ought always to be kept soluble, since we observe them to be most violent when the Patient is costive. This Intention is best answered by mild laxative Preparations of Rhubarb, Raisins and Manna, Clysters, and an emollient Diet. Tho' Liniments are of singular Efficacy in soothing and relaxing Spasms, yet they are more properly used when the Paroxysm begins to remit, than at its Height, especially if the Patient has previously used the Bath.

Antiepileptic Specifics and spirituous Corroboratives are by no Means to be exhibited in the Beginning of the Disorder, and not till after the material and gross Cause is removed; for when this Cause is removed, convulsive Motions frequently cease; without the Assistance of Specifics, whose Efficacy is found to be greatest in Convulsions arising from Commotions of Mind, especially if the Viscera are found. Thus I knew a young Man, who for sixteen Years had laboured under violent epileptic Fits, happily cured by my antiepileptic Powder, after having previously taken a Vomit.

The Return of Convulsions is best prevented by a due Use of the Non-naturals. Let the Patient, for Instance, live in a pure, serene and temperate Air. And as *Hippocrates*, in *Secl. 2. Aph. 45.* affirms, that in young Persons, Convulsions are cured by Change of Air, so the Patient is to be persuaded to remove from marshy, cold, and moist Places, infected with a thick and coarse Air, to higher, dryer and more healthy Parts. The Patient must not lie on the moist Ground, nor walk long in a bad Air, in the Night-time, or when the Sun shines excessively hot. Let his Food be of easy Digestion, and for ordinary Drink, let him use cold or medicated Water, or warm Infusions. He ought to preserve a serene Mind, abstain from immoderate Venery, use Exercise, take a good deal of Sleep, preserve his Body soluble, and, lest a Redundance of Blood should happen, use proper Venesections or Scarifications. *Frederic Hoffman.*

SPASNIA. A violent lancinating Pain in the Muscles of the Thorax during Coughing. *Castellus* from *Mercurialis*.

SPATHA. *σπάθα*. This sometimes imports a Rib, or a Scapula; but it is generally used to express a *Spatula*, an Instrument well known in Apothecaries Shops. *Spatha*, in *Celsus*, *L. 7. C. 10.* is a Sort of Incision Knife, the Shape of which *Heister* thinks is not known. *Celsus*, speaking of a *Polypus* in the Nose, says it must be loosened from the Bone by a sharp Iron Instrument, *in modum Spathæ factis*, shap'd lik'd a Sword; for *Spatha*, *σπάθα*, signifies, properly, a Sort of Sword; whence all the other Things which are thus called, borrow the Name on account of their Similitude. *Spatha*, *σπάθα*, is, also, the external Covering of the Fruit of the Palm.

SPATHESTER. *σπάθιστρον*. from *σπάω*, to draw. A Chirurgical Instrument, contrived for drawing the Prepuce over the Glans, when too short to cover it.

SPATHOMELE. *σπαθομήλη*. A *Spatula*.

SPATILE. *σπάσιλον*. A liquid Stool.

SPATULA. An Instrument for mixing and spreading Plaisters, and for many other Uses.

SPATULA FÆTIDA. See **XYRIS**.

SPAUL. Blood. *Rulandus*.

SPECARIUM. The same as **LAPIS SPECULARIS**.

SPECIES, in Pharmacy, is a Powder.

The Species usually prepared are the following.

Species Diambra cum & sine Odoratis. See **DIAMERÆ SPECIES**.

Species DIANTHUS. See **DIANTHON**.

Species DIATRAGACANTHI FRIGIDI. See **DIATRAGACANTHI FRIGIDÆ SPECIES**.

Species DIATRILOŃN PIPEREOŃN. See **DIATRION PIPEREOŃN SPECIES**.

Species HIERÆ PICRÆ. See **HIERA**.

Besides the foregoing Species, *Schroder* mentions the following:

Species Dianifu.

contra Apoplexiam.

Aromaticæ Caryophyllatæ cum & sine ambra & Moscho.

Aromaticæ Rosatæ cum & sine Ambra & Moscho.

Species

Species *Diacalaminthæ*.
Cephalicæ.
Diacinnamomi.
Diacorallii.
Confectionis Cordialis.
Cordiales cum & sine Ambra & Moscho.
Diacubebæ.
Diacurcuma five Diacrocæ.
Diagalanga.
de Gemmis calidæ, cum & sine Ambra & Moscho.
de Gemmis frigidæ.
Ducis five Electuarii Ducis.
de Hyacintho.
Diahyssopi.
Imperatoris.
Diaireos Salom.
Simplex.
Usitatæ.
Justini five Electuarii Justini.
Dialacca.
Lætificantes Galen. cum & sine Ambra & Moscho.
Lætificantes Rhafis.
Liberantes, confectionis liberant.
Lithontribon.
Diamargariton calidæ Avicen.
Diamargariton frigidæ Nicolai.
Diamoschu Amaræ.
dulcis cum & sine Ambra & Moscho.
Diapenidion.
contra Pestem, Ferdinandi Imper.
Diapleres archonticon, cum & sine Moscho.
Diapœonias, cum & sine Ambra & Moscho, Cord.
Benedictæ Laxativæ.
Diacarthamu.
Caryocostini.
Episcopi, five Elefcophi.
de Succo Rosarum.
Diaturbith cum Rhubarbaro.
Diapraffiu Nicolai.
Electuarii Resumptivi.
Diarrhodon Abbatis, cum & sine Moscho.
Rosatæ novellæ.
Diaspoliticon.
Diatrion Santalon.
Diathamaron, cum & sine Moscho.
Diatrogacanthæ calidæ.
ad Vermes, Confectio ad Vermes.
Dia-Xyloaloes, cum & sine Ambra & Moscho.
Dia Zingiberis.

SPECIFICA. Specifics.

Since 'tis certain from Experience, that some Medicines have a Kind of peculiar and specific Efficacy in the Cure of particular Disorders, and are for that Reason preferable to others, I shall consider some of those Medicines, which, from long Experience, I have found in a singular Manner beneficial in the Cure of certain Diseases. But by *Specifics* I do not, with the common Herd of Physicians, mean such Medicines as infallibly and in all Patients produce salutary Effects, and never frustrate the Hopes of him who prescribed them. For such Medicines are no where to be found, because the Operations and Effects of Remedies are not formally inherent in them, but depend upon the mutual Action and Re-action of the Medicine upon the Body, and of the Body upon the Medicine; for all Medicines act not only according to their own Sphere of Activity, but also according to the Constitution of the Patient, so that the same Medicine, exhibited to ten different Persons labouring under the same Disorder, produces different Effects in each.

The high Pretences, therefore, to Panaceas, Arcanums and Specifics, against particular Disorders, are false and ill-grounded, since by Specifics we ought to mean no more than such Medicines as are more efficacious and infallible than others in the Cure of particular Disorders; for some Medicines contain Elements or Principles every one of which contributes to remove the Cause of the Disorder; so that the Compound, or Medicine itself, answers various Intentions of Cure at once. Thus Rhubarb is preferable to all other Laxatives in the Cure of Diarrhæas, because it not only evacuates, but also by its balsamic Bitterness, blunts and corrects the acid and caustic Humours, and when the Purging is over, corroborates the relaxed Tone of the Viscera by its earthy, subastringent Particles. Thus, also, in Diseases of the Breast, and Coughs proceeding from Disorders of the Stomach, in order to cleanse the Primæ Viæ, Manna is preferable to all other Laxatives on account of its Sweetness, which obtunds and corrects the corrosive, acid, and acrid Humours. Other Remedies are, also, called Specifics, because their Virtues and Power of producing certain Effects in particular Diseases, have been discovered and confirmed by

long Experience. Hence the *Peruvian Bark* is a Specific for stopping the Paroxysms of Intermittents, Opium for alleviating Pain, and Mercurials for curing the Lues Venerea. Some Remedies are called Specifics, because they are more friendly than others to the Parts affected, and by their Virtue have a particular Influence upon them. Thus the Nerves, together with the nervous and membranous Parts, are happily affected by Medicines abounding with a subtle, aromatic and fragrant Oil, whereas bad Effects are produced in them by Narcotics, Opiates and Astringents. The Stomach is delighted with Acids, by Means of which Appetite and Digestion are promoted, but the Bronchia of the Lungs are injured and stimulated to Spasms by them. Cantharides, and Insects abounding with a volatile caustic Salt, neither affect the Stomach nor Intestines, but the urinary Ducts of the Kidneys, the Ureters, Bladder and Urethra, are vellicated and agitated with spasmodic Strictures by them.

Thus we are to form our Judgments of the Virtues of Specifics, which ought to be frequently used and greatly esteemed by Physicians. But we shall now consider what Specifics are appropriated and adapted to particular Disorders. With regard then to intermittent Fevers, and especially, in order to check their Paroxysms, the *Peruvian Bark* is greatly celebrated, because, besides its astringent Quality, and that by which it stops febrile Motions, which it has in common with many other Medicines, such as Preparations of Vitriol and Allum, the Roots of Tormentil and Bistort, it is, also, in Consequence of its bitter, balsamic Principle, possessed of a singular Efficacy for correcting the morbid Matter, and corroborating the languid Solids. This Bark may be exhibited in Substance, reduced to an Electuary or Essence, or, which is best of all, infused and gently boiled in *Rhenish Wine*. Among the Specifics, also, for Intermittents are generally reckoned the Flowers of common Chamomile, so much extolled by *Baglivi*, because both on Account of their Bitterness, Oil, and antispasmodic Virtue, they are highly efficacious in Fevers, and by their gentle Astringency, restore the Tone of the Solids. But if Intermittents are highly obstinate, which is generally owing to an Obstruction of the Pancreas, this Obstruction is by nothing more efficaciously removed than by *Mercurius Dulcis*, Medicinal Regulus of Antimony, and antimonial Sulphur corrected, and prudently exhibited.

In Quartans, the most celebrated Specific is the Essence of Rhubarb and Gentian, prepared with the Lixivium of the Salt of Tartar, and the urinous Spirit of Sal Ammoniac; for in Quartans, the Liver, and its Vessels, are full of gross Blood, the biliary Ducts infarcted with a thick and tough Bile, and the *Primæ Viæ* overloaded with acid Crudities: Hence this Medicine, because it corrects and sweetens the acid Humours, resolves and attenuates the stagnant Blood and lentescent Bile, restores a due balsamic Quality to the Bile, and purges gently, is preferable to all others. But when Quartans are so inveterate and obstinate as to elude the Force of all other Medicines, *Mercurius Dulcis*, or diaphoretic Mercury duly prepared, are highly efficacious; as also, the *Antiquarium of Riverius*, which is possessed of the same Virtue with Mercury. And tho' the Mercurials exhibited should excite a Salivation, yet it is not to be dreaded as dangerous, since frequently the Fever ceases whilst it succeeds.

All Inflammations, which are always accompanied with a Fever and Danger, and generally happen in the Nerveo-membranous Parts, such as the Pleura and Bronchia of the Lungs, are by a certain Specific Virtue cured by purified Nitre, mixed with a small Quantity of Camphire, by Demulcents, gentle Anodynes, Emulives, and fixed Diaphoretics. In extinguishing all febrile Heats, Nitre is preferable to all other Things, because, besides that Virtue by which it fixes and abates the intestine Motion of the sulphureous Parts of the Blood, it resolves and attenuates the thick Blood and Lymph lodged in the narrow Vessels, and at the same time moistens and relaxes the tense and rigid Fibres, and consequently exerts an antispasmodic Virtue.

When there is a malignant Disposition of the Humours, or such a State of the Juices as is prone to Putrefaction, or when by Contagion, such Miasmata are conveyed into the Body as are fit to induce such a putrid Corruption of the Juices both in acute and chronical Disorders, I find nothing more effectual than Camphire, especially when exhibited in Conjunction with Nitre; for the Camphire, by its balsamic Quality, preserves the due Crasis and Mixture of the Blood, diminishes the Force of the Ferment, and by augmenting Perspiration, without exciting an excessive Heat of the Blood, excellently promotes the Elimination of the Sordes, through the Pores of the Skin. But if the Fever or Inflammation are of the malignant Kind, Camphire is never to be exhibited alone, but always mixed with Nitre. In order to restore Strength, which is greatly impaired in almost all Diseases, and especially those of the malignant Kind, I know no more efficacious

efficacious Remedy than Citron Peel, on Account of the Oil which it contains ; as also, Cinnamon, and a weak Water distilled from it, with the fragrant Juices of Straw-berries, Rasp-berries, and Cherries. When the Fever is absent, Oil of Cinnamon, and an Elæosaccharum prepared of it, are of singular Use in restoring the Strength. In a Plague, the most malignant of all Disorders, the best Specific is Vinegar, either simple, or prepared with Alexeterial and Cordial Roots. The Juice of Lemons and Citrons, and the Syrup of Citron Juice, mixed with Oil of Cedar, as Acids, powerfully resist Putrefaction, the Source and Support of which is an exalted alcalino-sulphureous Principle tending to a corruptive Dissolution of the Humours, and a Destruction of their due Mixture.

We now come to treat of Pains, which, if they arise from spasmodic Strictures, such as the Cardialgia, the Colic and the Stone, are most surprizingly relieved by my anodyne mineral Liquor, which is not only possessed of a gently anodyne and discutient, but also of a corroborative Quality not to be found in other Sedatives. When Flatulences become stagnant, and so pent up as to distend the nervous Coats of the Stomach and Intestines with violent Gripings, I have found no more powerful Specific for their Discussion than Orange Peel, Camomile Flowers, Caraway and Cumin ; because, on account of the subtile vaporous Oil they contain, they are anodyne and mitigating, and by their bitter, aromatic, acrid and fragrant Principle, corroborative, and proper to restore the Tone of the Parts. By which Means the Crudities, which are the Cause and Fomes of the Flatulences, are afterwards commodiously eliminated.

Nor are there Specifics wanting for other Disorders. Thus scorbutic and rheumatic Pains of the Limbs, and a wandering Gout, are greatly alleviated by Earth-worms, the Juice or Powder of them, especially, when mixed with Absorbents, Cinnabar and Nitre, and long and copiously used with Asses Milk or Whey. I have, also, seen long continued rheumatic Pains and Contractions of the Limbs, cured by gradually exhibiting the Powder of crude Antimony from about ten Grains to half a Dram. Let this Medicine be taken daily, interposing a mild Decoction of the temperate Woods. Asses Milk, according to *Pliny* and *Dioscorides*, was by the Ancients looked upon as a Specific for the Gout, and frequently used ; and such gouty Patients are also surprizingly relieved by Decoctions of the Roots of Mugwort, Vipers Grass, Sassa-parilla, China-root, Liquorish, Polypody and Hermodactyles, liberally and for a considerable Time used. In a Tooth-ach, an Ounce of Elder Rob drank in Broth, in order to promote a Diaphoresis, and some of the same Rob dissolved in Ale, with which the Mouth is to be frequently washed, affords infallible and present Ease to the Patient.

Hypochondriac and hysteric Disorders have a great Affinity, and principally exert their Violence by inflating and spasmodically constricting the Intestines, by which Means they draw the whole nervous System into Consent. These Disorders have, however, their peculiar Specifics, by which they are allayed, the most considerable of which are hot and cold medicinal Waters, Baths, proper Exercise, fetid Gums and Medicines, such as Asa Fœtida, Sagapnum, Opoponax and Castor, which when exhibited alone in the Form of Pills, or rather with Purgatives, such as corrected Aloes, or the Extracts of Rhubarb and black Hellebore, or mixed with Myrrh and Saffron, and frequently tho' moderately used, surprizingly allay the Spasms, corroborate the Tone of the nervous Parts, and colliquate and gently evacuate the viscid Humours.

In Disorders of the Head, and especially of the Nerves, which proceed from a Weakness of the Brain, and a languid feeble State of the whole nervous System, such as an Hemiplegy, a Palsy, a Diminution of the Senses, a Torpor and Stupor of the animal Functions, a Difficulty of Hearing, a Ringing of the Ears, a Syncope, a Vertigo, a Weakness of the Stomach and Intestines, as also a Diarrhœa and Vomiting, I have found no more infallible and instantaneous Specific than my Balsam of Life, prepared of genuine cephalic and aromatic Oils, and used both internally and externally.

Besides, for Madness, whether of the furious or melancholic Kind, not only Venesection, but, also, the Use of hot and cold medicinal Waters and Emetics are celebrated as Specifics. The Ancients, and *Hippocrates* himself, for this Purpose principally used white Hellebore, the Virulence of which, according to *Prosper Alpinus*, in *Med. Method.* they corrected by Boiling it with Oil or Oxymel, and giving the Patient a large Quantity of Milk before its Exhibition. But this Practice is now obsolete, perhaps, because the Moderns are ignorant of the Method of collecting and exhibiting Hellebore. See *Schulzei Dissert. de Helleborismis veterum*. Nor is it to be doubted but Hellebore is a Specific in Deliriums and Madness, especially if its Operation is assisted by Venesection and Baths of sweet Water, which are beneficial in all Disorders of this

Kind. But in Madness arising rather from the Exorbitance of Passion, than an Obstruction of the Hypochondria, Asses Milk, Nitre, and Asses Blood dried and reduced to a Powder, are excellent Demulcents, greatly allay the excessive Strictures of the nervous Fibres, and in the Beginning of the Disorder, produce happy Effects, especially if the Patient changes his Climate, and avoids every Occasion of Passion.

The more terrible and frightful an Epilepsy is, the more sollicitous Physicians have been about Remedies to remove it ; and certainly there are many Specifics extolled for this Purpose ; but I believe none are better, or more infallible, than the Powder of Earth-Worms, Cinnabar, the Powder of human Secundines, the Shavings of the human Cranium, the Elks Hoof, and human Skin. But as these are proper in an idiopathic and chronical Epilepsy, so in that of the symptomatic Kind, nothing is more efficacious than my anodyne Mineral Liquor, which greatly alleviates epileptic Fits.

When in an Asthma the vesicular and vascular Compages of the Lungs is obstructed, and infarcted with a viscid Phlegm, Gum Ammoniac, Saffron, Peruvian Balsam, and Opoponax, either reduced to Pills, or made into an Essence with Tincture of Tartar, are of all others the best Specifics : But when the Lungs are affected with any Phthisical Disorder, the best Specific is Asses Milk, either alone or mixed with the *Selteran* Waters, which are highly beneficial in Disorders of the Lungs. This Intention is, also, answered by pure distilled Sulphur, especially if dissolved with the Fat of Animals, such as Human Fat, or the recent Fat of a Dog ; as, also, with Sperma Ceti, adding, in order to corroborate the Stomach, a few Drops of the Balsam of Capivi, or of the Oils of Sassafras Wood and Fennel ; for such is the Nature of Sulphur, that it not only strengthens the languid Parts, but, also, dissolves and discusses the viscid Juices, by which means it is highly beneficial in Disorders of the Lungs, such as Exulcerations, Tubercles, and Vomica, arising from a Stagnation and Condensation of a viscid, caseous, and mucilaginous Humour precipitated from the Chyle.

Besides a Phthisis, Dropsies are reckoned among the most dangerous and hardly curable Diseases. But if they admit of a Cure, Elaterum was by the Ancients extolled as a Specific for this purpose ; because, when duly exhibited, it carries the Waters off both by Vomit and Stool. And if the Body is duly prepared, the Humors render'd fluid, and Emollients exhibited both before and during its Use, it is of all other Medicines the most efficacious. But as the Waters are, also, evacuated by Urine, this Intention, if the Waters are disposed for such an Excretion, is excellently answered by the Powder of Cantharides, mixed with Salt of Tartar, adding, in order to prevent any Inflammation, a few Grains of depurated Nitre, and one Grain of Camphire. The Jaundice is also, frequently, a very obstinate Disease ; but besides Emetics which act powerfully on the biliary Ducts, Rhubarb, the Roots of Turmeric and Madder, especially if boiled in Water and Wine with the Addition of Nitre and Salt of Tartar, are found very efficacious in this Disorder ; an Infusion of the middle Bark of Elder, unless the Patient is too much weakened, is, also, useful, by colliquating the viscid Bile, and expelling the small-Stones from the biliary Ducts.

In a calculous State of the Kidneys, the best Specific is an Infusion of the Tops of Yarrow long and frequently used. Nor is a singular and specific Virtue to be denied to dried Strawberries, Winter-Cherries, Hounds-Tongue, Carrot-Seeds, and especially the Bark of the Egyptian Thorn-Root, if either infused in Water or taken in weak Geneva ; for in these Substances there is a traumatic, gently balsamic, and subastringent Quality, by which they corroborate the weakened Tone of the renal Duct, and conglutinate and cure the exulcerated, and, in some measure, dissolved Substance of the Kidneys. Bitter Almonds, on account of their anodyne Oil, and Oil of sweet Almonds, are excellent demulcent and mitigating Medicines under the Paroxysm.

The Diseases peculiar to Women from some Disorder of the Uterus, especially an irregular State of the *Menses* or *Lechia*, are most commodiously treated with corrected Aloes, Myrrh, Saffron, Amber, round Birthwort duly reduced into Pills ; for which reason the *Pilula Berberiana*, and others composed in the same manner, have acquired so great a Character. In Men the Irregularities of the hæmorrhoidal Discharge are corrected by Manna and an Infusion of the Tops of Yarrow, because this Plant contains a subtile Oil, which alleviates Spasms, and with respect to its Smell, Taste, and especially its bluish Colour, greatly resembles the Oil of Camomile.

A Dysentery, which is contagious, weakens the Patient by numberless Stools, and often proves mortal, is not removed by Medicines appropriated to ordinary Fluxes, but by certain Specifics peculiar to itself. Thus 'tis certain from Experience, that Ipecacuanha is of all other Medicines the most powerful

ful Antidysenteric, if exhibited once, twice, or thrice, in due Doses, in the Beginning of the Disorder. Then afterwards other Things capable of obtunding Acrimony, mild Diaphoretics and Correctors internally and externally, as also Rhubarb as the best Laxative are to be used; but the Cascarella Bark is the best Specific for corroborating the flaccid Fibres of the Intestines, and checking their irregular Motions.

Terrible Symptoms are sometimes excited by Worms in the Intestines, for the Extirpation of which there are various Specifics, by the Greeks called Anthelmintics. And though there are numberless Medicines extolled for this purpose, they are not all equally efficacious, the best, however, are *Asa foetida* and *Sagapenum*, especially when reduced to the Form of Pills, with Purgatives, such as *Mercurius Dulcis* and Extract of Rhubarb. Only 'tis to be observed that both before and after the Exhibition of such Pills, the Patient is to take a few Spoonfuls of the Oil of Olives or sweet Almonds, which, like all other oleous Substances, are highly offensive to the Worms, and sooth the intestinal Fibres spasmodically affected by the Corrosion of the Worms, whose Discharge by Stool they procure; for *Asa foetida* and *Sagapenum*, by their ungrateful Smell, kill the Worms as effectually as we know from Experience Garlick does. The Seeds, also, of Worm-seeds, and the Herb Tansey, are successfully exhibited against Worms, but they operate in no other manner than by resisting the putridinous Colluvies, which impairs the Strength, and induces a slow Heat and Languor; whilst, at the same time, by corroborating the Tone of the Intestines, they facilitate the Expulsion of the Worms.

Violent Hemorrhages, from whatever Part, require speedy Relief, and efficacious Remedies, lest terrible Symptoms should ensue. In Cases, therefore, of this Nature, nothing is more efficacious than Nitre dissolved in common Water, and successively applied; and in order to prevent a fresh Hemorrhage, the Powder of the Tooth of the Sea-horse is to be frequently used. Six or eight Grains of the *Pilula de Cynoglossa* may, also, be exhibited with Success; and the Oil and Seeds of Henbane, by their narcotic Quality, obtund the exquisite Sense of the Solids, and by that means hinder the Spasms from solliciting the Blood to a certain Part, where it might be discharged. In seminal Fluxes, especially of the virulent Kind, there is not a more powerful Specific than Venice Turpentine, and its ætherial Oil; or in their stead, the Balsam of Capivi, or that of Mecha, which, after the Use of Purgatives, especially of the mercurial kind, produce excellent Effects, either with or without Camphire, if exhibited either in an Emulsion of the four cold Seeds, Milk or Whey.

In no Disorder is the Impurity of the Humours greater than in the Scurvy, which is principally endemial, arises from bad Aliments, a cold and moist Air, and is increased by a sedentary Life, and especially by Grief. But a long Course of Experience has found the most powerful Specifics for this Disorder to be Marsh-Mallows, Scurvy-Grass, Beccabunga, Cresses and wild Raddish-Root; the Effects of which will be more conspicuous and infallible if their expressed Juices are drank with sweet Whey or Goats-Milk, and the Patient's Body duly prepared for such a Course. But in inveterate Scurvies, accompanied with Pains, I have known singular Relief afforded, by drinking for some time a Decoction of Pine Cones, with an Addition of the Marrow taken from the Bones of Beef and Veal.

A Lues Venerea can hardly be totally exterminated from its latent Recesses, without the Assistance of Specifics, the most powerful of which are Quicksilver, Guajacum and its Bark, and duly prepared Antimony; for there is not in the whole *Materia Medica* a Medicine which so powerfully moves the whole Mass of Lymph and Humours, and excites so copious a Discharge of the Saliva, which is frequently continued for some Weeks, as Mercury, which when conveyed into the Body, by the specific Gravity of its Molecules, which is greater than that of the human Juices, penetrates into the internal Parts of the Body; and passing with Force thro' the smallest Ducts, removes Obstructions in them. It, also, totally changes the Crasis of the Fluids, and, by a certain intestine Motion, induces, as it were, a putridinous Colluviation of them, and by this means, tho' not without some Trouble and Danger, removes the Lues Venerea and other obstinate chronical Disorders arising from an Impurity of the Serum. The softest Mercurial used for exciting a Salivation is *Mercurius Dulcis*, joined with Absorbents, and exhibited for some Days, ascending gradually from five to twelve Grains, till the Saliva begins to flow copiously, and observing at the same time a proper dietetic Regimen. Guajacum, by the subtle, acrid and resinous Salt with which it impregnates the Water in which it is boiled, vellicates the Fibres and Coats of the Vessels, and increases the Circulation of the whole Mass of Humours and Lymph, by which means the viscid Juices are resolved, and the Obstructions removed.

For a malignant Leprosy, Herpes, Itch, and other Defecations and Exulcerations of the Skin, the best Specifics are Preparations and Decoctions of Vipers, Antimony, and especially its diaphoretic Sulphur. The *Plica Polonica*, stopping or preposterously cut off, produces violent Symptoms, for removing which no better Specific is as yet found than a Decoction of the Herb and Seeds of Club-moss, with which the Head is to be often washed; for, by this means, the viscid excrementitious Serum, so much indisposing the Brain and Head, is safely eliminated through the Hairs and Pores of the Skin with which the Cranium is covered. If the Eyes are afflicted with a saltish Defluxion, accompanied with Redness, as in an Epiphora, and if, especially in the Night-time, the Eyelids are conglutinated by a viscid Humor, a Grain of white Vitriol, mixed with fresh Butter, and put upon the larger Orbit of the Eye, affords surprising Relief, and quickly removes the Disorder. Pellicles of the Eyes, intercepting Sight, are quickly removed by dropping the recent Fat of Vipers into the Eye, and a beginning *Gutta Serena* is excellently discussed by Sulphur of Antimony taken internally.

When any Parts are afflicted with Contractions or Rigidity, nothing affords more instantaneous Relief, than frequently putting them into recently opened, and as yet warm Animals, by which mild oleous and natural Warmth, the tense and rigid Fibres are excellently relaxed. When after a Fall, or a violent Contusion or Blow on the external Parts, Stagnations and Concretions of the Blood and Humors produce various untoward Symptoms, a Decoction or Infusion of German Leopards-Bane almost compleats the Cure, on account of its singular inciding, resolvent and discutient Quality.

When treating of Specifics, we must mention Asses Milk, so much extolled by the Antients as highly conducive to Health and Longevity. But with respect to this, the Reader may consult the Article LAC, and *Patinus*, in *Tom. 2. Epistolar.*

These are the most select and approved Specifics in all the *Materia Medica*. But 'tis to be observed, that they are not possessed of absolute, but of relative Virtues, and that their Success depends upon certain limited Conditions and Circumstances, which ought to be duly adverted to in using them. Besides, tho' these Remedies are of singular Use when rightly used, they are, nevertheless, of no manner of service, unless the Body is properly prepared for them, and the Obstacles which might impair or hinder their Operation removed. Thus when there is a Redundance of Blood, and the *Primæ Viæ* are overcharged with Sordes, Venesection must be used, and the Stomach and Intestines freed from the Load of crude, bilious, and excrementitious Sordes, before Specifics can be of any Service.

Nor is it to be thought that when Specifics are used, there is no Necessity for other external and internal Medicines, capable of correcting and evacuating the peccant Humours: For Specifics do not so much affect the peccant Matter as the Motion of the Solids and Fluids, which they assist by reducing it to its natural State; and this they perform best when after the material mortific Causes are removed, and the peccant State of the Humours corrected by Medicines of a temperating, resolvent, discutient, and deobstruent Quality, they are exhibited in a due Dose, at a proper Season, and in a laudable manner. In a particular manner, we are to take Care that the *Primæ Viæ* be free from impure and viscid Juices, by which the Force of the Medicine is greatly obtunded, or totally suffocated: Whereas, when these are cleansed, the Texture of the Medicine remains entire, and produces its desired Effect on the nervous Substance of the Stomach and Intestines; as is obvious with respect to Emetics, Purgatives, Opiates, Analeptics, and all other Substances, small Quantities of which produce considerable Effects.

Lastly, with respect to Specifics, the Physician ought to know not only the Time and Dose in which they are to be exhibited, but, also, how long they are to be used, and what Regimen and Method of Living is most proper for the Patient; for that Method of Cure which consists only in the Prudence and Judgment of the Physician, and his diligent Attention and Observation of the Constitution of the Patient, is of so great Importance to the desired Effect, that it is preferable to the Use of Specifics alone: And without such an Observation and Attention to the State and Constitution of the Patient, he will find the best of Medicines fail, and cannot properly be said to understand his Profession. He who duly considers what has been said, will see how far Art is necessary for the Cure of Diseases. *Frederic Hoffman.*

SPECILLUM. A Probe. *Specilla*, also, sometimes imports Pledgets, or Tents.

SPECULARIS LAPIS. Offic. Boet. 397. Kentm. 26. Mont. Exot. 14. Schrod. 356. Worm. Mus. 56. *Lapis specularis*

cularis Neatericis, Charlt. Foss. 23. *Glacies Mariae*, seu *Lapis Specularius*, Koning. MUSCOVY-GLASS.

It is a foffile Stone, refembling Crystal, transparent, and dividible into very thin *Laminae*. It is erroneously fupposed, fays the learned *P. Amman*, to be the *Glacies Mariae*, [the Virgin *Mary's* Looking-Glaf] as it was formerly believed to be the *Apbrofeline*, or *Selenites*: For both Opinions are fabulous; the first, becaufe it is uncertain whether the Virgin *Mary* ever made use of fuch a Glaf; and the laft, becaufe it neither contains the Image of the Moon, nor increafes or decreafes as that Planet does. We have it imported from *Muscovy*, *Spain*, and other Parts; and it is of Ufe in Surgery, in the Cure of fordid Ulcers. It is of Service, alfo, in difficult Labour, and is an Arcanum againft the Epilepfy; and is, alfo, reckoned among Cosmetics.

SPECULUM. A Probe; or an Instrument for dilating the natural Passages, or Cavities. Thus there are the *Speculum Ani*, represented Tab. 55. Fig. 15. The *Speculum Oculi*, Tab. 38. Fig. 15. and 16. The *Speculum Oris*, Tab. 41. Fig. 11. and 12. And the *Speculum Uteri*, of which there are many Sorts described by Authors.

The *Tunica Aranea* of the Eye is called *Speculum*. *Speculum Citrinum* is yellow Arfenic; *Speculum Album*, white Arfenic.

SPECULUM INDICUM, is Filings of Iron. *Rulandus*.

SPELTA. See *ZEA*.

SPELTRUM. Speltre; the Name by which Mechanics call Zink. See *ZINCHUM*.

SPERAGUS. According to *Blancard*, the same as *ASPARAGUS*.

SPERGULA. A Name for feveral Species of *ALSINE*, which fee.

SPERMA CETI. *Parmacitty*. See *BALÆNA*.

The *Emplastrum de Spermate Ceti* is thus prepared:

Take of White Wax, four Ounces; *Sperma Ceti*, two Ounces; Galbanum diffolved in Vinegar, ftrained and boiled, an Ounce. Mix and make a Plaifter, according to Art.

This Plaifter is esteemed an Emollient, and is much recommended as an Application to the Breasts, to prevent their growing hard, and the Milk from coagulating therein. It is, alfo, faid to be good for ftrumous Swellings.

SPERMATICOS. *σπερματικός*. Spermatic. An Epithet for the Organs of Generation, and the refpective Parts thereof.

SPERMATOCELE. A Species of *Hernia*, confifting in a Tumor of the Spermatic Veffels; a Diforder frequently confequent to a humoral *Hernia*, or venereal Swelling of the Testicles.

SPERMATOPÆA. Medicines which increafe the Seminal Juices.

SPERNIOLA, or **SPERNIOLUM.** Frogs Spawn. *Rulandus*.

SPHACELUS, in Botany, is a Name for the *Scordium Alterum*; five *saliva Agrestis*.

SPHACELUS. *σφακελος*, or *σφακελισμός*. A Sphacelation. See *GANGRÆNA*.

The Terms *σφακελος*, *σφακελισμός*, *σφακελίζω*, *σφακελίζομαι*, have various Significations in *Hippocrates*; sometimes they mean a Sideration and Corruption peculiarly of a Bone, as 7 *Aph.* 79. and in feveral Places, and *Lib. de Traët.* where we read, for instance, *ἐν τῷ κέντρῳ σφακελισμὸς τὸ ὅτι τὸ τῆς πτέρης*, "and thus the Bone of the Heel is in danger of Sideration." They bear the same Sense in many Places of the Book *de Artic.* And this Exposition of the Words is warranted by *Galen*, who, in his Comment on 7 *Aph.* 50. fays, *τὸ σφακελίζω μὴ αἷς πολλὰκις ἔρχεται ἐν τῷ περὶ ἀρθρῶν καὶ ἀρθρῶν ἐπὶ τῷ διαφθίσεσθαι τὸτομα φέρον*, "the Word *σφακελίζω* [to be afflicted with a Sphacelus] is often used in the Books *de Fraët.* and *de Artic.* "for *διαφθίσεσθαι* [to be corrupted.]" *Celsus* uses the Verb *vitiari* in the same Sense concerning a Bone; for instance, *Lib. 8. Cap. 9.* where we read, *Omnia mora vitanda erit, ne Os infra vitiatur*, "All Delays are to be avoided, leaft the Bone underneath fhould be corrupted." But these Words are fpoken, alfo, in general, of the Sideration and Corruption of any Part, whether Flefh, Nerves, or Bones, as *Galen* writes in many Places, and efpecially, *Com. 2. in Lib. de Fraët.* where he fays, *τὸ ὅτι τῆς ὀστέας ἐκείνης μὲν φθόρος, &c.* "The Antients call the Corruption of the whole Substance of any Part a Sphacelus; but to exprefs a Corruption of the fleshy Parts, they use other Words; for which reason he (*Hippocrates*) usually calls the Flefh, in fuch a Cafe, *σάπρις*, μὴ δὲ σαπρὴν, *σπερματικός*. [*Sapran*, *Mydofan*, *Sepomenen*, Words importing Putrefaction] and by other like Names; but when he fpeaks of a Corruption of the whole Substance of the

Bone, he uses the Word *σφακελος*, which Affection is occasioned by a Conversion of the adjacent Flefh into virious Ichos [or Sanies] which by their Irrigation corrupt the Bone." The same Author, *Lib. de Tumor.* has these Words, "I call, fays he, by the Name *σφακελος*, every Corruption of the solid Parts, as well what happens to the Bones as to the Flefh and Veffels;" and he there makes a Gangrene a Species of *Sphacelus*. Agreeable hereto, *σφακελος*, in *Exeg.* is expounded *ὅτι πᾶσα καὶ ὁ αἷς γίγνεται τρέπον*, "every Corruption, after what manner foever it happens." The same Author, *Comm. in 7 Aphorism.* 50. exprefly tells us, that *σφακελος* is sometimes taken for a Sideration or Corruption of a Part which tends to Destruction, but is not yet a confirmed Gangrene; and more he fays to the same purpose, *Com. 4. in Lib. de Art.* where, tho' he distinguishes a *Sphacelus* from a Gangrene, yet, becaufe of their Vicinity, he acknowledges the Words are sometimes erroneously used by Physicians. In this universal Sense, I think, is to be understood the *σφακελος ἱερφακίς*, "the Sphacelus of the Brain," *Lib. 2. de Morb.* the *σφακελισμός ἱερφακίς*, in the second and third Book, and the *σφακελίζομαι ὁ ἱερφακίς*, *Lib. 2.* in two Places; and *σφακελίζομαι ἱερφακίς*, in the same Book; *σφακελος τὸ ἱερφακίς*, *Lib. de Aer. Aqu. & Loc.* *ἐκείνου σφακελισμὸς ὁ ἱερφακίς*, 7 *Aph.* 50. and *ἱερφακίς σφακελισμός*, *Coac.* 187. So that a *σφακελος*, Sphacelus, of the Brain is fo called, when the Brain, from any Cause whatsoever, is fo far corrupted as to be in danger of a Sphacelus. And by *κεφαλῆς σφακελος*, 7 *Epid.* we are to understand an Inflammation of the Head, or fuch a Diforder as threatens a Sphacelus, or a very intense Pain of the Head which naturally tends to the Destruction of the Patient in an acute Fever. Thus again is the *σφακελισμός ἱερφακίς*, of *Archigenes* expounded by *Galen*, *Lib. 2. de Loc. Affet.* of those who have fo intense a Pain, or fo violent an Inflammation on one Side of the Head, as to be in imminent Danger of a Sphacelus. Agreeably to this Sense, *Hefychius* expounds *σφακελος* by *ἄμετρος ἔδωρ*, "an immoderate Pain;" and *Varinus* expounds *σφακελίζω* by *ἀλγὺν μετὰ σπασμῷ*, "to be affected with convulsive Pains." *Pliny*, alfo, *Lib. 17. Cap. 24.* expounds the *σφακελισμός* of the Trees in *Theophrastus*, *Hift. Plant. Lib. 4. Cap. 16.* by *Dolor Membrorum*, "a Pain in the Members," or Branches; and *σφακελίζω*, in *Hefychius*, is *ἐδνῆσαι καὶ ἀλγῆσαι*, [Verbs importing Pain.] These various Senses of the Word *σφακελος* were known to *Galen*, as appears, *Lib. 2. de Loc. Affet.* where he fays, "All are not agreed as to the Signification of this Word *σφακελος*; for some understand by it a violent Pain, others an Inflammation in fo high a Degree as to create Danger of a Corruption of the Part, which some call a Gangrene. Some call a Corruption of the Part itself *σφακελος*; others *σπασμός* [a Convulsion]; others, again, give the Name of *σπασμός*; not to Corruption in general, but only to what proceeds from an Inflammation of nervous Bodies. Some understand it not of a *σπασμός* actually present, but what is expected from the Greatness of the Inflammation; some call it a strong Tension, others a Putrefaction. The *σφακελισμός* *νῆρος καὶ ὀστέας*, "Sphacelismus of the Nerve and Bone," in Wounds, *Prorrh.* 2. seems to be expreffed in *Celsus*, *Lib. 5. Cap. 26.* by *Nervi Resolutio*, "a Resolution of the Nerves." In much the same Sense are we to understand *ὁδὸς σφακελισμός*, "a Sphacelism of a Tooth," *Coac.* 236. *σφακελισμός* *τῆς γνάθου*, "a Sphacelism of the Cheek," *Lib. 5. Epist.* *σφακελισμός* *στομάχου*, "a Sphacelism of the Jaw," from a Tubercle and Abscess, 7 *Epid.* and *ὀσχεὶς ἱερφακίς*, "the Os Ichium was affected with a Sphacelus," from a Luxation, "that is, dead and withered," 5 *Epid.* ὁ πῦρ *ἱερφακίς*, "the Foot was affected with a Sphacelus;" and *πῦρ σφακελισμός*, "a Sphacelism of the Cubit," from a Fall, *Lib. eodem.* There is alfo a *σφακελος* which proceeds from an Inflammation of the Part, *Lib. de Ulcer.* We are told, alfo, by *Galen*, *Com. 4. in Lib. de Art.* and *Com. in 7 Aph.* 50. that *σφακελος* is taken for an incipient Gangrene; in which Sense is to be understood that Passage, 1 *Epid.* *ὅσα σφακελίζω ἀπολαβῆσα τῆς φρένας ἐκείνου καὶ ἱερῆσαι*, "Where Things tend to a Sphacelus, the Veffels are to be cut, a Wound made, and the Cure thus effected." Here the Author plainly gives Directions how to manage an incipient Corruption, or a Gangrene not yet confirmed.

SPHACERUS. *σφακερος*, in *Galen's Exegesis*, is a Word afcribed to *Hippocrates*, for which he quotes a Passage in the Additions to the Book *de Cap. Vulner.* but observes, at the same time, that most Copies read *σφακελος*. *Fæsius* here reads *σφακελος* for *σφακερος*, and fo the Passage quoted will read *κεφαλὴν δὲ καὶ σφακελος τὸ ἦν*, "If there be a Pain of the Head, and a Sphacelus;" whence he infers, that the Word *σφακερος*, in the *Exegesis*, is put for *σφακελος*. What Additions there were to the Book *de Cap. Vulner.* in *Galen's* Time, is not easy to be known; at present there are none remaining but those which relate to the Book *de Aer.* *Lois & Aquis.*

SPHÆNOIDES OS. The Sphænoide, or Cuneiform Bone; from *σφαῖρα*, a Wedge. See **CAPUT**.

SPHÆNOPALATINUS. The Name of a Muscle of the **UVULA**, which see.

SPHÆRION. *σφαῖρα*. A Pill.

SPHÆRISTICA, *five Pila Ludus*, is a Species of gymnastic Exercises performed with a Ball. Of the *Sphæristica*, there were four Kinds in Use among the *Greeks*, which were those with the *little Ball*, the *great Ball*, the *empty Ball*, and the *Corycus*; which last *Mercurialis* reckons among the *Balls*, tho' *Galen*, *Oribasius*, and *Paulus* make it a distinct Thing, because it was, as he says, a *Ball*, or at least something like it, as will appear from the Description below.

The Exercise with the *Ball*, says *Oribasius* from *Antyllus*, induces a greater Promptness to Motion, and strengthens the vital Actions. Of the Exercise with the *little Ball* there were three Kinds: The first was with a *Ball* of a very small Size, in which the Parties held their Bodies very erect, and played with their Hands at a very near distance. This Exercise was very beneficial to the Legs, which were kept very much upon the Stretch all the Time; it was, also, good for the Back, the short Ribs, and Arms, and rendered the Flesh solid.

The second *Ludus parvæ Pila* was with a *Ball* a little bigger than the former; in this they intermingled Arms, but kept off with their Bodies, held their Heads erect, and mov'd in various manners, to this Side, or to that Side, according to the Direction of the *Ball*. This, says *Oribasius*, is the best and most salutary Exercise performed with the *Ball*, rendering the Body not only healthy and prompt to Motion, but robust and vigorous, giving a Person a firm Look, and not loading the Head.

The third Exercise of this Nature, was with a *Ball* of a larger Size than the two former. In this one Party stood while the other moved; the first gave the *Ball* a violent Stroke, which sent it to a great Distance, in which Action there accrues some Benefit to the Arms and Eyes, while the other Party, who is in Motion, is the better for it, not only in the fore-mentioned Respects, but, also, in his Legs on account of Running, and in the Spine of the Back, because of the Inflexions he makes while he runs. And these are the three Exercises with the *little Ball*.

The Exercise with the *great Ball* differed from the former, not only with respect to the Size of the *Ball*, but the Position of the Hands; for all the former were played or performed with the Hands always below the Shoulders, but in this they held their Hands above their Heads, and sometimes moved on Tiptoe, that they might reach the higher; and sometimes vaulted, that they might catch the *Ball* when it flew over their Heads. This Exercise procured Firmness to the whole Body, and was particularly good for the Body, as it drew the Humours downwards. But if the *Ball* be of above a moderate Size, as some there are which require both Hands to throw them, it strengthens, indeed, the Arms in discharging it; but then it gives severe Strokes, and is improper for those who are sick, or upon the Recovery; and not good for Persons in Health.

This Account of the *Ludus parvæ & magnæ Pila*, or the Exercises of the *little* and *great Ball* is found in *Oribasius*, *Med. Col. Lib. 6. Cap. 32.* taken from *Antyllus*. In the *Ludus parvæ Pila* the Philosophers *Epigenes* and *Ctesibius* of *Chalkis*, are said to have excelled: And besides the three Kinds above described, *Pollux* mentions the *Aporraxis* and *Urania*, in which they reclined their Bodies, and threw the *Ball* directly upwards, and intercepted its falling to the Ground.

Among the Kinds of *Parvæ Pila*, *Mercurialis* reckons, also, what, in *Athenæus*, is called *ἀγρᾶν*, *Harpastum*, and *πένινδα*, both because the *Harpastum* is described by *Galen*, in his Book *de Ludis parvæ Pila*, among other Plays of that Kind, and because *Clemens Alexandrinus* makes the *Péninda*, which *Pollux* makes to be the same with the *ἀγρᾶν*, a kind of Play with the *parvæ Pila*. Of the Nature of this Exercise, see below.

As to the *empty Ball*, we have no clear Notion of it, says *Mercurialis*; but if we may be allowed to conjecture from the Words of *Antyllus*, in the Chapter of *Oribasius* above quoted, we may suppose it to be like the rest, sewed up with Leather, but full of nothing but Air or Wind; whereas the others were stuffed with Feathers, or some other Matter. Thus *Mercurialis*; to which we may add from *Antyllus*, that the *empty Ball* was, also, called a *Follicle*, and gave the Party as much Exercise of Motion and Running as the third kind of *Ludus parvæ Pila*, to those who played the moving Part, but was unfizeable and clumsy, and difficult to be managed.

The *Corycus*, and the manner of Exercise with it, is described by *Oribasius* from *Antyllus*, as *Mercurialis* took it from a Copy in the *Vatican Library*, in the following manner:

"The *Corycus* for weak Bodies, who chuse that Exercise, is stuffed with Figs or Floor, but for those of a robust Habit with Sand. The Size of it is accommodated to the Age and Strength; and it is hung to the Roof of the *Gymnasium*, with its Bottom as high above the Floor, as is the Navel of the Person who is to exercise it. The Party takes the *Corycus* in both Hands, and heaves and shoves it, first gently, afterwards with greater Force, so as to follow it when it recedes, and to give way when it returns, as being compelled by its Violence, till at length he discharges it out of his Hands with a Spring, that it may recur with the more Violence on the opposed Body. At last, after many Recourses, he restores it by Degrees to its first Situation and Rest, obviating its Returns, and breaking the Shock sometimes with the Hands protended, sometimes with the Hands upon the Breast, and sometimes with the Breast alone, the Hands being cast behind the Back." From this Passage of *Antyllus* we have good Reason to conjecture, that the *Corycus* was spherical, or at least of a roundish Figure; for if it had been angular, it could not have thus struck upon the Breast and Hands without hurting those Parts. What follows is from *Mercurialis*.

There were, also, four kinds of *Balls* in Use among the *Latins*, which they called the *Follis*, the *Trigonalis*, the *Paganica*, and the *Harpastus*, which some will have to be all comprehended by *Cælius Aurelianus* under the Name of *Italica Sphæra*.

The *Follis* was a great *Ball* made of Leather, and full of nothing but Wind; if it were of a larger Size, it was impelled with the Arm, and was then sometimes simply called *Pila*; and from the Figures in some Coins of the Emperor *Gordian* the third, we may conjecture that every one of the Players had his own *Pila*. If the *Ball*, or *Pila*, were of a lesser Size, it was thrown out of the Hand, and was called a *Follis pugillaris*, as in that of *Plautus's Rudens*, *Extemplo hercle ego te Follem pugillatorium faciam*. And I believe it was sometimes called *Folliculus*, as by *Suetonius* in the Life of *Augustus*, who, he says, took great Delight in playing with it.

The *Pila Trigonalis* was a *little Ball*, and had its Name, as some think, from the Place where it was used, which they suppose to be triangular, but more probably from the Number, Figure, and Situation of the Players. This was sometimes simply called *Follis*, as in that of *Martial*.

Non Pila, non Follis, non te Paganica Thermis
Præparat — — — — —

Non Harpasta vagus pulverulenta rapis.

For if there are only four Kinds of the *Pila*, and the other three are named, the *Pila trigonalis* must here come under the simple Denomination of *Pila*. And I suppose *Celsus* to speak in the same manner, where he says, *Ab alvo citata vexatis Pilam, et reliqua superiores Partes exercitia convenire*. "For those who are molested with a Looseness, the *Pila*, and other Diversions which exercise the upper Parts, are proper." For in this Play the lower Parts remained at rest, while the upper Parts were in continual Agitation, the Players, as we gather from *Martial*, being placed in a triangular Situation, in such a manner as to receive the *Ball* sometimes from the Right, and sometimes from the Left, and always to preserve it from falling to the Ground.

The *Pila Paganica* was so called because it was very common, and used in the Country-Villages called *Pagi*, or in the *Pagi* of the City, which, according to *Dionysius Halicarnassus*, was formerly divided into four Tribes, which were, also, called *Pagi*, and the Inhabitants *Pagani*. This *Pila* was made of Leather, stuffed with Feathers, broader than the *Trigonalis*, and harder than the *Follis*. That this, among the rest, was used in the *Gymnasium*, appears from the Verses of *Martial*, and it was the Custom of the *Romans*, immediately after exercising themselves with the *Pila*, to go into the Bath.

The fourth and last *Pila* of the *Latins* was the *Harpastum*, which from the Name seems to be the same as the *ἀγρᾶν* of the *Greeks* beforementioned. This was a *Ball* which they snatched or wrested one from another; but the Size or Materials are unknown; only it appears from *Athenæus* to have been of a round Figure, though it was probably of Leather like the rest, the Descriptions of all which are omitted by Authors because they were known to every Body in their Time. *Galen*, however, who gives the best Account of it, in his Book before-mentioned, shews it to be a *little Ball*, and not one of a middle Size, as some will have it; whence the Play now called *Foot-Ball*, tho' in some Particulars it resembles that with the *Harpastum*, yet differs from it in the Size of the *Balls*, our *Foot-ball* much exceeding the

Harpastum of the Ancients in Bigness. The Exercise of the *Harpastum* appears, from the before-cited Verse of *Martial*, and other Passages, to have been very laborious and quite improper for Women; and therefore I used to wonder why *Caelius Aurelianus* advises the Nurses of epileptic Children to exercise themselves at playing with the *Sphæra*, or at some kind of Dancing, unless we suppose him to mean by the *Sphæra* the same as the *Follis*, which was used by Children, as well as infirm and aged Persons, as appears from the following Verse of *Martial*.

Folle decet pueros ludere. Folle senes.

Besides what has been said of the good Effects of the Exercise of the *Pila*, we may observe that *Galen* and *Paulus* reckon the Use of the *Parva Pila* among those Kinds of quick Motion, which are not attended with Violence, but have a Virtue of attenuating gross Particles. And I suppose, that *Trallian* had the Play with the *Pila Magna* in view, when, in the Cure of the *Priapismus*, he recommends the Exercise of the *Sphæra*, by which the peccant Matter is diverted to different Parts, and the flatulent Spirit is digested. *Aretæus* was of opinion that the Exercise both of the little and great Ball were bad for vertiginous Persons, because the Circumvolutions and Strainings of the Head and Eyes were subject to produce a Vertigo. *Paulus* reckons that of the *Corycus* among quick Exercises, which having a Virtue, as we said, of attenuating gross Particles, *Caelius Aurelianus* had very good reason to prescribe the Exercise which the Greeks, as he says, call *Corycomachia*, in a *Polysarchia*, or too corpulent a Habit of Body; and *Hippocrates*, *Lib. 2. de Diæt.* that the *Corycomachia*, and the *Chronomia*, will have the same Effects as the *Acrocheiria* [a Sort of Wrestling at Arms-length.] *Antyllus* supposes the Exercise of the *Corycus* to render the Body muscous and robust, and to be adapted to the whole Body, and to all Parts of the Viscera, on account of the Blows to which it exposes the Party. *Aretæus*, also, recommends the *Corycobolia* in an *Elephantiasis*. But if we consider the Blows which are usually received from the *Corycus* on the Breast, we shall be convinced that it must be dangerous for those who are of an infirm Breast to use that Exercise, and that it may possibly produce a Rupture of the Vessels of the Thorax.

Having thus spoken of the good or bad Effects of the Use of the several Kinds of the *Grecian Pila* with respect to Health, we proceed to the like Consideration of the *Latin* or *Roman Pila*, as distinguished into its several Kinds, which, as we have observed, were equal in Number to those of the other. And, in the first place, the Use of the *Follis* exercises the whole Body, and in a particular manner, when it is struck, the Arms and the Back; and strengthens those Parts; for which reason, I suppose, *Caelius Aurelianus* intends this Kind of *Pila*, when he advises epileptic Persons to exercise their Shoulders in playing with the *Sphæra*. When this Sort of Ball is thrown with the Hand, that Part indeed receives most Benefit; but, upon the whole, this kind of Exercise is good for the Viscera, and is of admirable Use in the Expulsion of Stones and Gravel from the Bladder and Kidneys. And therefore *Augustus*, I suppose, who was much subject to these Disorders, used to divert himself, as we are told by *Suetonius*, with the Exercise of the *Folliculus*; which, as it principally employs the superior Parts, is very judiciously advised by *Celsus*, to those who labour under a Flux in the Belly, or a Trembling of the Body. I imagine, also, this kind of Exercise to be meant by *Pliny the Younger*, when, in one of his Epistles, giving an Account of the manner of Living, and of the Regimen observed by *Spurina*, a very prudent Man, and very studious of his Health, he observes, that he exercised his Body with the *Pila*, and with that kind of Exercise used *cum Senectute pugnare*, "to struggle with old Age." So that there is a great deal of Truth in that Verse of *Martial* above quoted.

The *Pila trigenalis*, which was small, and answered to the third Species of the *Parva Pila* described by *Antyllus*, as before mentioned, produced the same Effects as that did; but in a particular manner, it exagitated and exercised the Eyes, which were always necessarily upon the Stretch, and turned sometimes this way, sometimes that way, now upwards, then downwards, but perpetually in Motion. *Horace*, therefore, had reason to say that this Kind of Exercise was bad for a Lippitude, as in the following Verse.

Namque Pila Lippis damnosum & ludere crudis.

It is certain that a Lippitude, or a lachrymous Disposition of the Eyes, are exasperated by the least Motion, but Rest comforts and refreshes them; and the same may be said with respect to those who are molested with Crudities; for it is a general Rule, "That no Exercise is to be undertaken before

"the Food be perfectly digested." But as for those who are molested with Flatulences in the Belly and Stomach, or Pains proceeding from Cold, the Exercise of the *Pila* is so far from being prejudicial, that it proves of very great Benefit, by heating them, and powerfully dissolving those Flatulences. *Caelius Aurelianus*, therefore, deserves Praise, for particularly recommending, among other Exercises, the Use of the *Pila* for the Cholic; and for the same Reason has *Celsus* commended it as proper for those who are of a weak Stomach.

The *Pila Paganica*, on account of its Breadth and Hardness, was difficult to be manag'd, and therefore more proper for Peasants, and those of hard and robust Bodies, than for Citizens, and such as are not inur'd to Labour. And it would be thought utterly unfit in these present Times, for old Men and Children, and those of a valetudinary Disposition of Body, to exercise themselves with this Kind of *Pila*.

The Use of the *Harpastum* is to be reckon'd among quick and violent Exercises, on which Account it may be said to attenuate, expel Excrements, increase Heat, strengthen the Body, and particularly the Arms and Shoulders: "And while they encounter together as *Galen de Ludo parvæ Pila* describes it) and strive to hinder one another, that the Person placed in the Middle might not receive the Ball, there arises a great and mighty Struggle, with much Collaring and Wrestling, by the first of which the Head and Neck, and by the other, the Sides, Thorax, and Belly, from such a Multitude of Liftings, Depressions, Throwings off, and Pushes with the Head, and other Ways of taking hold in use among Wrestlers, are extremely fatigued: The Loins, also, and the Legs, in such Kinds of Exercises are stretched in an extraordinary Manner." We may conclude, therefore, that as the *Harpastum* confirms more and more those who are found and robust, so it is very prejudicial to those who have a weak Head, or infirm Neck, some Defect in the Thorax, or have their Kidneys or Loins overheated. *Mercurialis de Arte Gymastica*.

SPHÆROCEPHALUS. The Name of a Species of *Carduus*, with round Heads, call'd *Carduus Erioccephalus*.

SPHÆROMATA. σφαῖρματα Carnous, round Protuberances of the Buttocks.

SPHAGE. σφαγή. The anterior Part of the Neck, or Throat. Hence,

SPHAGITIDES, The Jugular Veins.

SPHAGNUM. A Species of Mofs. See the Explication of botanick Terms, under the Article BOTANY.

SPHATULA FŒTIDA. The same as **SPATULA FŒTIDA**.

SPHENDAMNOS, according to *Blancard*, is a Name for the Maple.

SPHENDONE. σφινδων. A Sling, or a Bandage resembling a Sling; or a Woman's Girdle. *Galen. Exeges.*

SPHINCTER. A Name appropriated to many Muscles, which close the natural Passages. Thus there is the

SPHINCTER ANI. This is a large, thick, fleshy Muscle, encompassing the Anus; its Figure and Series of Fibres externally, immediately under the Skin, incline to an oblong Oval; it is connected forwards to the *Accelerator Urinæ*, backwards to the *Os Coccygis*: As it is continued farther upon the Body of the *Intestinum Rectum*, its Fibres are circular for near two Inches in Breadth. It is much larger in Man than in other Animals, in whom, by Reason of the erect Position of the Body, there is greater Force required to retain the Fæces, which is the Office of this Muscle. See *Tab. 14. Fig. 1. 5.* See **COELIA**.

The **SPHINCTER GULÆ**, is the **OESOPHAGÆUS**.

The **SPHINCTER LABIORUM**, is the same as the *Constrictor Labiorum*. See **CAPUT**.

SPHINCTER VAGINÆ. This lies immediately under the Clitoris, encompassing the Vagina with circular Fibres, three Fingers in Breadth: In some Subjects, it scarcely appears fleshy.

This acting not only strengthens the Vagina, but thereby, also, it hinders the Blood, in its Return from the Plexus Retiformis of the Pudendum, by compressing some of its subjacent Veins which pass underneath, by which Means the Labia became distended, and the Vagina contracted.

SPINCTER VESICÆ.

Fallepius observes, that the Anatomists of his Age had not well describ'd this Muscle in placing it below the Prostate, in which Case, as he alledges, the Semen in the venereal Act could not be emitted without the Urine; which Observation latter Authors have not taken Notice of, either through Inadvertency in Dissection, or being imposed on by Part of the *Levator Ani*, which remained on the Prostate, which *Riolanus* calls the *Sphincter Externus*. It is seated in the upper Part of the Neck of the Bladder, immediately above the *Glandula*

Glandula Prostata, where (as *Fallopian* says) you must not expect to find an entire Muscle and Substance distinct from the Substance of the Canal, like that of the Anus, but the more fleshy Part of the Neck of the Bladder, composed of many transverse Fibres, whose Contraction hinders the involuntary Egress of the Urine.

To discover these transverse Fibres, our Author advises to immerge the Bladder in scalding Water after Inflammation, the external right Fibres being removed, these will appear underneath.

SPHINGONTA. *σφινγόντα*. Astringent or obstruent Medicines.

SPHONDYLIS. The Name of an Insect about the Size of one's little Finger, with a red Head, white Body, and eight Feet. It is boil'd for medicinal Uses in Oil or Wine, and is esteem'd resolvent, good to fortify the Nerves, to dissipate rheumatic Humours, and is applied to Fractures. *Lemery des Drogues*.

SPHONDYLUM.

The Characters are ;

It has a long perennial Root ; the Leaves are very large, variously jagged, and cut into large Lobes. The Petals of the Flowers are bifid, horned, and the outer Petal larger than the rest. The seed is large, flat, oval, with an Apex emarginated, or sloping inwardly ; it is, also, striated, generally deposits its Invelucrum, or Husk, and is mark'd with black Streaks on the Superficies.

Boerhaave mentions six Sorts of *Sphondylium*, which are ;

1. *Sphondylium* ; vulgare ; hirsutum. *C. B. P.* 157. *Tourn. Inst.* 320. *Boerb. Ind. A.* 66. *Sphondylium*, *Offic. Ger. Quoad descript.* 856. *Emac.* 1009. *Raii Hist.* 1. 408. *Synop.* 3. 205. *Sphondylium vulgare*, *Park. Theat.* 953. *Sphondylium quibusdam, five Branca Ursina Germanica*, *I. B.* 3. 160. **COW PARSNEP.**

It grows on Meadows and the Borders of Fields, and flowers in July. The Seed is commended by *Dr. Willis, de Morb. Convuls.* from *Joannes Anglicus*, as of excellent Service in hysteric Paroxysms. It is reckon'd by *Buxbaum* and *Schröder* one of the five emollient Herbs. *Dale*.

The Virtues ascribed by *Dioscorides* and *Pliny* to the *Sphondylium* seem not to belong to this Plant, whence it is justly doubted whether it be the true and genuine *Sphondylium* of the Antients, though the Description of the *Sphondylium* in *Dioscorides* pretty well agrees with it.

The Root, according to *Tragus*, has the Virtue of mollifying and repressing Tumors, particularly those of the Matrix, Liver and Spleen. The Surgeons use the expressed Juice of this Herb in emollient Ointments. *Fuchs* ascribes the same Virtues to the Root as to that of the *Acanthus Verus*, which is of a drying and somewhat inciding Quality : But *Gesner*, with whom agrees *C. Hoffman*, says it is very far from having the Virtues of the *Acanthus Verus*. *Schröder* says it is of principal Use in Clysters, and other Purgatives, under what Form soever, but generally in Cataplasms. The Inhabitants of *Poland* and *Lithuania*, as *Dodonæus* relates, boil the Leaves and Seeds of *Sphondylium* in Water, and of the same, with an Addition of Ferment, make a Drink called *Parst*, which serves the Poor instead of Beer. The Leaves of *Sphondylium* are very grateful Food to Rabbits. *Raii Hist. Plant.*

The *Sphondylium* has Leaves resembling, in some Measure, those of the Plane-Tree, and shaped much like those of the *Panax*. The Stalks rise to the Height of a Cubit, or more, and are like those of Fennel. The Seed on the Top is like that of *Seseli*, double, but broader, whiter, and more chaffy, and of a strong Smell. The Flowers are white, and so is the Root, and like a Radish. It grows in marshy and watry Places.

The Seed purges pituitous Humours by Stool, and cures those who labour under Disorders of the Liver, the Jaundice, Orthopnæa, Epilepsy and Hysterics. Used in a Suffumigation, it rouses those who are seiz'd with a Cataphora. The Oil is proper in an Embrocation for the Head under a Phrensy, Lethargy, or Head-ach. Applied with Rue, it stops the spreading of a Herpes. The Root is exhibited in the Jaundice, and Disorders of the Liver ; scraped and thrust into Fistula's, it consumes Callosities therein. The Juice of the recent Flowers is good for ulcerated and purulent Ears. It is prepared by Insolation, like other Juice, and then reposit. *Dioscorides, Lib. 3. Cap. 90.*

Pliny gives the same Description and Virtues of the *Sphondylium*, or, as he has it, *Sphondylium*, with *Dioscorides*, whom he seems, in this and other Particulars of the *Materia Medica*, to agree.

2. *Sphondylium* ; maximum ; Transilvanicum ; Ricini folio. *Panaces Heracleum*. *Matth.* 544.

3. *Sphondylium* ; hirsutum ; folio angustiore, minutius laciniato ; caule atropurpureo ; flore rubello.

4. *Sphondylium* ; majus ; five *Panax Heracleum quibusdam*. *J. B.* 3. 2. 161. *Panax, Sphondylii folio, five Heracleum*, *C. B. P.* 157.

5. *Sphondylium* ; hirsutum ; foliis angustioribus. *C. B. P.* 157. *Prodr.* 83.

6. *Sphondylium* ; Alpinum ; glabrum. *C. B. P.* 157. *Prodr.* 83. *J. B.* 3. 163. *Boerb. Ind. Alt. Plant.*

It is called *Sphondylium*, because it has an unpleasant Smell, like the Animalcule, or Insect called *Sphondylis*.

It is of an acrimonious Quality, like the *Ferula* and *Thapsia*, and not receiv'd in Medicine, though it be look'd upon in the Country as an Emollient. The Plant, however, is said to be very good in Clysters and Cataplasms, and to be of service in the Epilepsy. A Decoction of the Leaves or Roots is good for the Hysterics. *Hist. Plant. ascript. Boerhaave*.

SPHONDYLUS. The Name of a Stone, found in the Head of the *MUGIL*.

SPHYGMICA. That Part of Medicine which treats of Pulses, from *σφύγμις*, a Pulse.

SPHYRA. *σφύρα*. The Ankle.

SPHYRÆNA. *σφύρα*. The Name of a long, thin Fish, with a pointed Nose like a Beak.

SPICA. A Spike. See the Explication of botanic Terms under **BOTANY**.

SPICA NARDI. See **NARDUS INDICA**.

SPICA TRIFOLIA. A Name for the *Melilotus* ; *Cretica humillima* ; *humifusa* ; *flore albo, magno*.

SPICA VULGARIS. A Name for the *Lavandula* ; *angustifolia*, and, also, for the *Lavandula* ; *angustifolia* ; *flore albo*.

SPICA, in Surgery, is a Species of Bandage. See **FASCIA**.

SPICATUM. An Epithet for a precious Ointment mention'd frequently by *Galen*, and much us'd by the Rich and Luxurious.

SPINA. The *Spine* is that long Pile of Bones reaching from the *Condylode* Processes of the *Occiput*, to the Extremity of the Rump. It somewhat resembles two unequal Pyramids, whose Bases are common, or joined together. The Spine is not however strait, but has four or five remarkable crooked Turns ; for in descending from its superior Part, it is made to advance forwards by the Force of the Muscles, which pull the Head and superior *Vertebra* back, being greater than the contracting Power of the Flexors, and thereby it supports the *Oesophagus*, and Vessels of the Head. Its Middle gives Way backwards to the Heart and Lungs, then it is again bended forwards, to support the *Viscera* of the *Abdomen* ; afterwards a second Time turns back for the Enlargement of the *Pelvis* ; and, lastly, is reflected forwards for sustaining the last great Gut. We should however observe, that notwithstanding this crooked Figure of the Spine, it is so contrived, that the Centre of Gravity of all that Part of it which sustains any considerable Weight, falls on the Middle of the common Base.

The *Spine* is commonly divided into *true* and *false Vertebra*, the former constituting the superior long Pyramid with its Base inferior, while the *false Vertebra* make the inferior shorter Pyramid, whose Base is superior.

True Vertebra are the twenty-four superior Bones of the *Spine*, on which the several Motions of the Trunk of our Bodies are performed, from which Use they have justly got their Name.

Each of these *Vertebra* is composed of its Body and Processes.

The Body is the thick, spongy, anterior Part, which is convex before, concave backwards, horizontal and plain in most of them above and below ; their anterior and posterior Surfaces having several remarkable Holes made in their thin external Plate, both for the firmer Connexion of the Ligaments, and for the Passage of Vessels into their cellular Substance.

Between these Bodies of each two adjoining *Vertebra*, a Substance between the Nature of Ligament and Cartilage is interposed ; which is composed of concentric curve Fibres, the exterior of which are the most solid and hardest, while those in the Centre are very soft and full of a glairy Liquor, and therefore this Substance was not improperly called by the Ancients *Ligamentum mucosum* : This is firmly fixed to the horizontal Surfaces of the Bodies of the *Vertebra*, and therefore not only allows these Bones to recede from each other, and to be prest closer together without breaking, but serves to connect them, in which it is assisted by a strong membranous Ligament, which lines all their concave Surface, and by still a stronger Ligament that covers all their anterior convex Surface. This last it is, that *Blancard* assures us he discovered to consist of two Rows of tendinous

Fibres, decussating each other in Form of X, so as to be alternately disposed through all the *Vertebrae*, that is, the first, third, fifth, and seventh, should be similar, and the second, fourth, sixth, and eighth, distinct from the first Class, but alike among themselves.

We may lay down as a general Rule, notwithstanding some Exceptions, that the *Bodies* of the *Vertebrae* are smaller and more solid above, but as we reckon downwards, appear larger and more spongy, and that the Cartilages between them are thick, and the surrounding Ligaments strong in Proportion to the Largeness of the *Vertebrae*, and to the Quantity of Motion they are to perform: By which Disposition the greater Weight is supported on the broadest best secured Base, and the Middle of our Body is allowed a large and secure Motion, which is of considerable Benefit to us.

From each Side of the Body of each *Vertebra*, a bony Bridge is produced backwards and to a Side; from the posterior Extremity of which, one slanting Process rises, and another descends; the smooth, and what is generally the flattest Side of each of these four Processes, which are called the *oblique*, is covered with a smooth Cartilage, and the two inferior oblique Processes of each *Vertebra* are fitted to, and articulated with the two superior or ascending oblique Processes of the *Vertebra* below.

From between the superior and inferior oblique Process of each Side, the *Vertebra* is stretched out laterally in Form of a Process, that is universally named *Transverse*.

From the posterior Roots of the two oblique and of the transverse Process of each Side, a broad oblique bony Plate is extended backwards, where these meet the seventh and last Process of the *Vertebra* takes its Rise and stands out backwards; this being generally sharp-pointed and narrow-edged, has therefore been called *Spinal Process*, from which this whole Chain of Bones has got its Name.

Besides the common Ligament which lines all the interior Surface of these Processes, as well as of the Bodies, there are particular Ligaments that connect the Processes of each two contiguous *Vertebrae*.

The Substance of the Processes is considerably stronger and firmer than that of the Bodies of the *Vertebrae*, having a thicker external Plate, and without so many large Holes made in it.

The seven Processes considered conjunctly, as forming the posterior Shares of the *Vertebrae*, are hollow at their anterior middle Part; which Concavity, joined with that at the posterior Part of the Bodies, makes one great *Foramen*, which answers to such another in the *Vertebra* above and below: Therefore the *Foramina* of all the *Vertebrae* taken together, form a long great Conduit, which is widened or straitened in Proportion to the Size of the *Medulla spinalis* which it contains.

In the lateral Bridges, which join the Bodies to the Processes of each *Vertebra*, a semicircular Notch is observable both above and below; which, exactly corresponding with others in the contiguous Bones, when the *Vertebrae* are joined, form a round Hole in each Side, between each two *Vertebrae*, through which the Nerves that proceed from the *Medulla spinalis* and the Blood-vessels pass.

The Articulations then of these true *Vertebrae* are plainly double; for their Bodies are joined by *Synchondrosis*, and their oblique Processes are articulated by the third Sort of *Ginglymus*. Hence it is evident that their Centre of Motion is altered in different Positions of the Trunk: For when we bow forwards, the superior moved Part bears entirely on the Bodies of the *Vertebrae*; if we bend back, the oblique Processes support the Weight; if we recline to one Side, we rest upon the oblique Processes of that Side and Part of the Bodies; if we stand erect, all the Bodies and oblique Processes have their Share in our Support.

Hence it follows: 1. That because the Joints, of which the Spine is composed, are so numerous, the *Medulla spinalis*, Nerves, and Blood-vessels, are not subject to such Compression and Overstretching in the Motion of the Trunk of the Body, as they would be otherwise; since several *Vertebrae* must be concerned in every Motion of the Spine, and therefore a very small Curvature is made at the Conjunction of any two *Vertebrae*. 2. That an erect Posture is the surest and firmest, because the Surface of Contact of the *Fulcra* is largest, and the Weight is most perpendicular to them. 3. That the Muscles which move the Spine act with greater Force in bringing the Trunk to an erect Posture than in drawing it to any other: For in bending forwards, back, or to a Side, the Muscles which perform any of these Actions are nearer the Centres of Motion; consequently the Lever, with which they act, is shorter than when the Centre of Motion is on the Part of the *Vertebra* opposite to that where these Muscles are inserted, which is the Case in raising the Trunk. This is extremely necessary, since in the Deflexions of the Spine

from a perpendicular Bearing, the Weight of the Body soon inclines it which Way we design; whereas in raising us erect, this great Weight must be more than counteracted. 4. In calculating the Force exerted by the Muscles which move the Spine, we should, with *Borelli* and *Parent*, always make Allowance for the Action of the Cartilages between the *Vertebrae*, which must, in every Motion from an erect Posture, be stretched in one Side, and compressed on the other, to both which they will resist; whereas, in raising the Trunk, these Cartilages will assist by their springy Force. 5. We are hence naturally led into the Reason of the *Phænomenon* observed by *Mr. Wasse*, that our Height of Stature is increased in the Morning, and diminished at Night: For the intermediate Cartilages of the *Vertebrae* pressed all Day long by the Weight of our Body, in the Evening become more compact and thin; but when in the Night they are relieved from this Pressure, they again expand themselves to their former Thickness; and seeing the Bulk of any Part must vary according to the different Distension or Repletion of the Vessels composing it, we may understand how we become taller after a plentiful Meal, and decrease after Fasting or Evacuations, which Difference the *Abbé Fontenu* has proved to depend mostly, if not solely, on the different Thickness of these Cartilages. 6. From the different Articulations of the Bodies and oblique Processes of the *Vertebrae*, and the different Strength of the Ligaments, it is plain that they are formed so as to allow a much larger Motion forwards than backwards; this last being of much less Use, and might be dangerous by overstretching the large Blood-vessels that are contiguous to the Bodies of the *Vertebrae*.

The *Vertebrae* at the ordinary Time of Birth consist of three bony Pieces, connected by Cartilages; that is, the Body, which is not fully ossified; and a long curved Bone of each Side, on which we see a little Share of the bony Bridge, the oblique Processes complete, the beginning transverse Processes, and the oblique Plate, but no spinal Process; so that the Teguments might be in no Danger of being hurt by the sharp Extremities of these spinal Processes, as they would be, if there were any such sharp bony Processes, while a Child is in the bended Posture it remains in in the Womb, nor by the Pressure which it undergoes in the Birth.

From this general Mechanism of the Spine, an Account is easily deduced of all the different preternatural Curvatures the Spine is capable of: For if one or more *Vertebrae* are of unequal Thickness in opposite Sides, the Spine must be reclined over to the thinner Side; which now sustaining the greatest Share of the Weight, must still be more compressed, consequently hindered from extending itself in Proportion to the other Side, which, being too much freed of its Burden, has Liberty to enjoy a luxuriant Growth. The Causes, on which such an Inequality of Thickness in different Sides of the *Vertebrae* depend, may vary: For either it may be owing to an Overdistension of the Vessels of one Side, and from thence a preternatural Increase of the Thickness of that Part; or, which more commonly is the Case, it may proceed from an Obstruction of the Vessels, by which the Application of proper Nourishment to the bony Substance is hindered, whether that Obstruction depends on the faulty Disposition of the Vessels or Fluids, or if it is produced by an unequal mechanical Pressure, occasioned by a paralytic Weakness of the Muscles and Ligaments, or by a spasmodic Overaction of the Muscles on any Side of the Spine, or by a Person's continuing long, or putting themselves frequently into any particular Posture, declining from the erect Posture: In all these Cases, one common Effect will follow, that is, the *Vertebrae* turn thick on the Side where the Vessels are free, and remain thin on the other Side where the Vessels are straitened or obstructed. Whenever any morbid Curvature is thus made, almost necessarily a second Turn, but in an opposite Direction to the former, must be formed. Both because the Muscles on the convex Side of the Spine being stretched, must have a stronger natural Contraction to draw the Parts to which their Extremities are fixed, and that the Patient will make Efforts to keep the Center of Gravity of his Body perpendicular to its Base, that the Muscles may be relieved from a constant violent contractile State, which always creates Uneasiness and Pain.

When once we understand how these crooked Spines are produced, there will be little Difficulty in forming a just Prognosis of our Patient's Disease, and a proper Method of Cure may be contrived, which must vary as to the internal Medicines, according to the different Causes on which the Disease depends; but one general Indication must be pursued by Surgeons, which is to counteract the bending Force, by increasing the Compression on the convex Part of the Curvature, and diminishing it on the concave Side. The Manner of executing which in particular Cases must be very different, and requires a very particular Examination of the Circumstances both of the Disease and Patient. In many such Cases

I have found some simple Directions as to Postures in which the Patients Body should be kept, of very great Advantage.

Hence also it is easy to deduce the Reason of old People generally bowing forwards, and at last being incapable to raise their Spine erect; since the Cartilages shrivel in becoming more solid: And as this must happen most and soonest where these Gristles are least stretched and extended, therefore this Curvature is generally first most remarkable in the *Vertebrae* of their Back, or they become round-shoulder'd.

Tho' the true *Vertebrae* agree in the general Structure which I have hitherto described, yet because of several Specialties proper to a particular Number, they are commonly divided into three Classes, that is, *Cervical*, *Dorsal* and *Lumbar*.

The *Cervical* are the seven superior *Vertebrae*; which are easily distinguished from the rest by these Marks. They are all, except the first, of near an equal Breadth. Their Bodies are smaller and more solid than any others, and flattened on the Fore-part, to make Place to the *Oesophagus*; or rather this flat Figure is owing to the Pressure of that Pipe, and to the Action of the *longi Colli* and anterior *recti* Muscles. The posterior Surface, which is also flat, is generally rough, or has small Processes rising from it, where the Ligaments are fixed. The superior Surface of the Bodies of each *Vertebra* is made hollow, by a slanting thin Process being raised on each Side; and the inferior Surface is also excavated, but in a different Manner from the former; for the posterior Edge is raised a little, and the anterior is produced a considerable Way. Whence we see how the Cartilages between those Bones will be more firmly connected, and the Articulation of any two *Vertebrae* will be more secure.

The Cartilages between these *Vertebrae* are thicker, especially in respect of their Bulk, than those belonging to the *Vertebrae* of the Thorax, because of the larger Motion that is allowed here; and they are thickest at their Fore-part, which is one Reason of the *Vertebrae* advancing forward as they descend.

The oblique Processes of these Bones of the Neck more justly deserve that Name than those of any other *Vertebrae*. They are situated slanting, the superior Processes having their smooth, and almost flat Surfaces, facing obliquely backwards and upwards, and the inferior oblique Processes, with these Surfaces, facing obliquely forwards and downwards.

The transverse Processes of these *Vertebrae* are framed in a different Way from those of any other Bones of the Spine: For besides the common Process rising from between the oblique Processes of each Side, there is a second that comes out from the Side of the Body of the *Vertebrae*; and the two, after leaving a circular Hole for the Passage of the cervical Artery and Vein, being united, are considerably hollowed at their upper Part, with rising Sides to protect the Nerves that pass in the Hollow; and at last each Side terminates in a tuberculous Point, for the Insertion of Muscles.

The spinal Processes of these cervical Bones stand pretty strait backwards, are shorter than those of any other *Vertebrae*; and are forked or double at their Extremity; and hence allow a more convenient Insertion to the Muscles, and a larger Motion backwards.

The Holes between the bony cross Bridges, for the Passage of the Nerves from the *Medulla spinalis*, have their largest Share formed in the lowest of the two *Vertebrae*, to which they are common.

The Substance of the cervical *Vertebrae*, especially of their Bodies, is not so porous or tender as of the other two Classes.

So far the cervical *Vertebrae* agree in their general Characteristics, but still have some particular Differences, which oblige us to consider them separately.

The first, from its Use of supporting the globular Head, has got the Name of *Atlas*; and by several Authors is called *Epistrophea*, from the Motion it performs on the second.

The *Atlas*, contrary to all the other *Vertebrae* of the Spine, has no Body; but instead of it there is a bony Arch; in the anterior convex Part of which, a small Rising appears, where the *Musculi longi colli* are inserted; and on each Side of this Protuberance a small Cavity may be observed, where the *Recti interni minores*, commonly (tho' wrongly) ascribed to *Cowper*, take their Rise. The superior and inferior Parts of the Arch are rough and unequal, where the Ligaments that connect this *Vertebra* to the *Os occipitis* and second *Vertebra* are fixed. The posterior Part of the Arch is concave, smooth, and covered with a Cartilage in a recent Subject, to receive the Tooth-like Process of the second *Vertebra*. This Hollow makes the Passage for the *Medulla spinalis* seem much larger in this *Vertebra* than in any other. On each Side of this Concavity a small rough Sinuosity may be remarked, where the Ligaments going to the Sides of the Tooth-like Process of the following *Vertebra* are fastened; and on each Side a small rough Protuberance and Depression is observable, where the transverse Ligament, which secures the Tooth-like

Process in the Sinuosity, is fixed, and hinders that Process to injure the *Medulla spinalis* in the Flexions of the Head.

The *Atlas* has no more spinal Process than Body; but instead of it there is a large bony Arch, that the Muscles which pass over this *Vertebra* at that Place, might not be hurt in extending the Head back. On the posterior and superior Part of this Arch there are two Depressions, where the *Recti posteriores minores* take their Rise; and at the inferior Part are two other Sinuosities, into which the Ligaments which connect this Bone to the following are fixed.

The superior oblique Processes of this *Atlas* are large and hollow, rising more in their external than internal Brim; by which their Articulations with the *Condylode* Processes of the *Os occipitis* are firmer; for, as I remarked from *Galen*, in the Description of these *Condyles*, they cannot slip to either Side; and then this Protuberance serves to defend the *Fossa* or Channel formed behind the external and posterior Part of each of them, in which the vertebral Arteries make the circular Turn, as they are about to enter the great *Foramen* of the occipital Bone, and where the tenth Pair of Nerves go out. The inferior oblique Processes are large, extended from within outwards and downwards, and are slightly hollowed: So that this first *Vertebra*, contrary to the other six, receives the Bones with which it is articulated both above and below.

The transverse Processes are not much hollowed or forked, but are longer and larger than of any other *Vertebra* of the Neck, to serve for the Origin and Insertion of several Muscles. Those of the Muscles fixed to the transverse Processes that serve to move this *Vertebra* on the second, gain a considerable Lever to act with, by the Distance which each of these long Processes make from the Axis of Revolution.

The *Condyles* of the *Os occipitis* move forwards and backwards in the superior oblique Processes of this *Vertebra*, by means of their double *Arthrodia*, which makes the third Species of *Ginglymus*; but very little Motion can here be allowed to either Side, and there must be still less circular Motion, which the Head obtains principally by the Circumvolution of the *Atlas* on the second *Vertebra*.

In new born Children this *Vertebra* has only the two lateral Pieces ossified, the anterior Arch, which it has instead of a Body, being cartilaginous.

The second *Vertebra* of the Neck is called *Dentata*, from the Tooth-like Process on the superior Part of its Body. Some Authors call it *Epistrophea*; but improperly, since this Designation is only applicable to the first, which moves on this as on an Axis.

The Body of this *Vertebra* is somewhat of a pyramidal Figure, the inferior Part being large, and produced, especially at its Foreside, to enter into a Hollow of the *Vertebra* below; while the superior Part has a square Process, with a small Point standing out from it. This it is that is imagined to resemble a Tooth, and has given Name to the *Vertebra*. The anterior Surface of this Process is cylindrical, smooth, and covered with a Cartilage, where it plays in the Hollow of the anterior Arch of the first *Vertebra*. The posterior Surface is much the same Way disposed, for moving on the cross Ligament, which is cartilaginous in the Middle. From the Sides of the *Processus dentatus*, the Ligaments go off to fix it to the first *Vertebra*; and from its Point a strong one is sent out to the *Os occipitis*. Immediately below the two lateral Ligaments, a Sinuosity may be observed on each Side, where the first vertebral Nerves escape.

The superior oblique Processes of this *Vertebra dentata* are large, very near in a horizontal Position, and slightly convex, to be adapted to the inferior Processes of the first *Vertebra*. A moveable Cartilage is said by some Authors to be interposed between these oblique Processes of the first and second *Vertebra*; but I could never find it. The inferior oblique Processes of this *Vertebra dentata* answer exactly to the Description given of those common to all the cervical *Vertebrae*.

The transverse Processes differ from those of the other cervical *Vertebrae* in this, that they are shorter, very little hollowed at their superior Part, and not forked at their Extremities; and that the Canals through which the cervical Arteries pass, are about the middle Substance of the Process reflected outwards, so as the Course of these Vessels may be directed towards the transverse Processes of the first *Vertebra*; which are further produced, and therefore make a Turn of the Arteries necessary: But if this had been any where in such a moveable Part as the Neck is, and the Artery not defended by a Bone, and fixed to that Bone, scarce a Motion could be performed without the utmost Hazard of Compression, and a Stop put to the Course of the Liquids, with all the Train of its ill Consequences. Hence we observe this same Mechanism several Times made Use of, when there is any Occasion for a sudden Curvature of a large Artery. This is the third remarkable Instance of it we have seen: The first was the Passage of the *Carotides* through the *Ossa temporum*

rum; and the second was that lately described in the vertebral Arteries, turning round the oblique Processes of the first Vertebra, to come at the great *Foramen ossis occipitis*.

The spinal Process of this *Vertebra dentata* is thick, strong and short, to give sufficient Origin to the *Musculi recti majores*, and *obliqui inferiores* and to prevent the Contusion of these Muscles in pulling the Head back.

This second *Vertebra* consists at the Birth of four bony Processes; for besides the three which I already mentioned as common to all the Vertebrae, the Tooth-like Process of this Bone is begun to be ossified in its Middle, and is joined as an Appendix to the Body of the Bone. Whence we may deduce one good Reason, why Midwives ought to apply Stay-bands to keep the Heads of new-born Children from falling too far backwards, till the Muscles attain Strength enough to be able to prevent that dangerous Motion.

When we are acquainted with the Structure and Articulation of the first and second Vertebrae, and know exactly the Strength and Connexion of their Ligaments, there is no Difficulty in understanding the Motions that are performed upon or by the first, tho' this Subject was formerly Matter of hot Dispute among some of the greatest Masters of Anatomy. 'Tis none of my Purpose at present to enter upon a Detail of the Reasons advanced by either Party, but to explain the Fact as any one may see it who will remove the Muscles, which in a recent Subject hinder the View of these two Joints, and then will turn the Head into all the different Positions it is capable of. This done, he will observe the Head to move forwards and back on the first *Vertebra*, as was already said; while this *Atlas* performs the *Circumgyration* upon the second *Vertebra*, the inferior oblique Processes of the first *Vertebra* shuffling easily in a circular way on the superior oblique Processes of the second, and its Body or anterior Arch having a Rotation on the Tooth-like Process, by which the perpendicular Ligament that is sent from the Point of the Tooth-like Process to the occipital Bone is twisted; while the lateral Ligaments that fix the *Processus dentatus* to the Sides of the first *Vertebra* are very differently affected, for the one upon the Side towards which the Face is turned by the *Circumgyration* is much shortened and lax, while the opposite one is stretched and made tense, and yielding at last no more, prevents the Head from turning any further round on this *Axis*, so that these lateral Ligaments are the proper *Moderators* of the *Circumgyration* of the Head here, which must be larger or smaller as these Ligaments are stronger or longer, and more or less capable of being stretched. Besides this Revolution on this *Axis*, the first *Vertebra* can move a small Way to either Side, but is prevented from moving backwards and forwards, by the anterior Arch of the first *Vertebra*, and by the cross Ligament which is closely applied to the Tooth-like Process. The Motion forwards here would have been of very bad Consequence, as it would have brought the Beginning of the *Medulla spinalis* upon the Point of the Tooth-like Process.

The rotatory Motion of the Head is of great Use to us on many Accounts, by allowing us so quickly to apply our Organs of Sense to Objects, and the *Axis* of Rotation was altogether proper to be here; for if it had been at a greater Distance from the Head, the Weight of the Head, if it had at any time been removed from a perpendicular Bearing to the small very moveable Joint, and thereby had acquired a long Lever, would, at every Turn inconsiderately performed, have broke the Ligaments to Pieces; or these Ligaments must have been formed much stronger than could well have been connected to such small Bones: Neither could this circular Motion be performed without Danger on the first *Vertebra*, because the immoveable Part of the *Medulla oblongata* is so near, as at each large Turn the Beginning of the *Medulla spinalis* would have been in Danger of twisting, and suffering by the Compression this would make on its tender Fibrils. On the whole, we may be convinced, that the quick circular Motion of our Head is of good Use to us; and that this second *Vertebra* of the Neck is altogether proper, both by its Structure and Situation, for being the *Axis* on which that Motion is to be performed.

But then I must take notice that the lateral, or the *Moderator* Ligaments, confine the Motion of this Joint so much, that tho' it may serve us in several Occasions, yet we often require to turn our Faces so far round as this Joint could never allow, without the greatest Danger of immediately twisting the spinal Marrow too much, and also of the oblique Processes of the *Vertebra* being luxated; therefore, in the large Turns of our Face backwards, we increase the Rotation by a little Assistance from each of the Vertebrae of the Neck, from the Vertebrae of the Loins, and from most of the Joints of the lower Extremities. This Combination of a great many Joints towards the Performance of one Motion, is also to be observed in several other Parts of the

Body; notwithstanding such Motions being generally said to be performed by some one Joint only.

The third *Vertebra* of the Neck is by some called *Axis*; but this Name is given without any Reason to this third *Vertebra*, while it might be applied very properly to the second. This third and the three below have nothing particular in their Structure, but all their Parts come under the general Descriptions formerly given, each of them being larger as they descend.

The seventh *Vertebra* of the Neck comes near to the Form of those of the Back, having the upper and lower Surfaces of its Body less hollow than the others, the oblique Processes are more perpendicular, neither spinal nor transverse Processes are forked. This seventh and the sixth *Vertebrae* of the Neck have the Hole in each of their transverse Processes more frequently divided by a small cross Bridge, that goes between the cervical Vein and Artery, than any other *Vertebrae*.

The twelve *Dorsal* may be distinguished from the other *Vertebrae* of the Spine, by these proper Characteristics. Their Bodies are of a middle Size, betwixt those of the Neck and Loins; are more convex before than either of the other two Sorts, and flattened laterally by the Pressure of the Ribs, which are inserted into small Cavities formed in their Sides. This Flattening on their Sides, which makes the Figure of these *Vertebrae* near an half Oval, is of good Use, as it affords a firmer Articulation to the Ribs, allows the *Trachea arteria* to divide at a smaller Angle, and the other large Vessels to run secure from the Action of the vital Organs. The posterior Part of these Bodies is more concave than in any of the other two Classes. Their superior Surfaces are all horizontal, with their Edges tipped with *Epiphyses*, which *Fallopian* alleges are only some Parts of the intervening Ligaments become bony. The Cartilages interposed between the Bodies of these *Vertebrae* are thinner than in any other of the true *Vertebrae*, and contribute to the Concavity of the Spine here at its Fore-part, by their being thinnest near the anterior Edge of the *Vertebrae*.

The oblique Processes are placed almost perpendicular, the superior slanting very little forwards, and the inferior as much back. Neither they, nor the oblique Processes of the Bones of the Neck, have as much Convexity or Concavity as is worth remarking. At their Roots a small Roughness is observable, where the Ligaments that surround their Articulations are inserted; and on the posterior Surface of the Bone, between the Processes of opposite Sides, several sharp little Processes stand out, where strong Ligaments are fix'd.

The transverse Processes of the *dorsal Vertebrae* are long, thicker at their Extremity than in the Middle, and turned obliquely backwards, which may be owing to the Pressure of the Ribs, the Tubercles of which are inserted into a Depression near the Extremity of these Processes.

The spinal Processes are long, small-pointed, and run sloping down; and at the superior Part of their posterior Surface, a small Ridge rises, which is received by a small Channel in the anterior Surface of the spinal Process immediately above, which is connected to it by a Ligament. Hence little Motion can be allowed of here, lest the Heart and Lungs should be disturbed in their Actions.

The Conduit of the *Medulla spinalis* is more circular, but corresponding to the Figure of that Cord, smaller here than in any other *Vertebrae*; and a larger Share of the Holes in the bony Bridges, for the Transmission of the Nerves, is formed in the superior than in the inferior *Vertebrae*.

The Bodies of the four superior *dorsal Vertebrae* deviate from the Rule of the *Vertebrae* becoming still larger as they descend, for the first of these four is the largest, and the other three inferior gradually become smaller, to allow the *Trachea* and large Vessels to divide at smaller Angles.

The two uppermost *Vertebrae* of the Back, instead of being very prominent forwards, are flattened by the Action of the *Musculi longi colli* and *recti majores*.

The proportional Magnitude of the two little Depressions in the Body of each *Vertebra* for receiving the Heads of the Ribs, seems to vary in respect to each other, in this manner; the Depression on the superior Edge of each *Vertebra*, decreases as far down as the fourth, and always after that increases.

The transverse Processes are longer in each lower *Vertebra* to the seventh or eighth, with their smooth Surfaces, for the Tubercles of the Ribs; facing gradually more downwards; but afterwards as they descend become shorter, and the smooth Surfaces are directed more upwards.

The spinal Processes of the *Vertebrae* of the Back become gradually longer and more slanting from the first, as far down as the eighth or ninth *Vertebra*, from which they manifestly turn shorter and more erect.

The first *Vertebra*, besides an oblong Hollow in its inferior Edge, that affixes in forming the Cavity wherein the second Rib is received, has the whole Cavity for the Head of the first Rib formed in it.

The second has the Name of *Axillary*, without any Thing particular in the Structure of it.

The eleventh often has the whole Cavity for the eleventh Rib in its Body, and wants the smooth Surfaces on each transverse Process.

The twelfth always receives the whole Head of the last Rib, and has no smooth Surface on its transverse Processes, which are very short. The smooth Surfaces of its inferior oblique Processes face outwards as the *Lumbar* do. And indeed we may say in general, that the superior *Vertebrae* of the Back come nearer the Resemblance of those of the Neck, while the inferior are liker the *Lumbar*.

The inferior and last Class of the true *Vertebrae* is the *Lumbar*, which five Bones may be distinguished from any others by these Marks; 1. Their Bodies, though of a circular Form at their anterior Part, are somewhat oblong from one Side to the other, which may be occasioned by the Pressure of the large Vessels, and of the *Viscera* contiguous to that Fore-part. The *Epiphyses* on their Edges are larger, and therefore the superior and inferior Surfaces of their Bodies are more concave than in the *Vertebrae* of the Back. 2. The Cartilages between these *Vertebrae* are much the thickest of any, and render the Spine convex within the *Abdomen*; by their greatest Thickness being anterior. 3. The oblique Processes are strong and deep, those in opposite Sides being almost placed in parallel Planes, the superior, which are concave, facing inwards; and the convex inferior ones outwards, and therefore these *Vertebrae* do plainly receive each other above, and are received below, which is not so evident in the other two Classes already described. 4. Their transverse Processes are small, long, and near erect, for allowing a large Motion to each Bone, and sufficient Insertion to Muscles, and for supporting and defending the internal Parts. 5. Betwixt the Roots of the superior oblique and transverse Processes, a small Protuberance may be observed, where some of the Muscles that raise the Trunk of the Body are inserted. 6. Their spinal Processes are strong, strait, and horizontal, with broad flat Sides, and a narrow Edge above and below, this last being depressed on each Side by Muscles. And at the Root of these Edges, we see rough Surfaces for fixing the Ligaments. 7. The large Canal for the *Medulla spinalis* is rather larger here than in the Back. 8. The Holes for the Passage of the Nerves are more equally formed out of both the contiguous *Vertebrae* than in others, but the superior furnishes however the larger Share of it.

Both transverse and spinal Processes of the middlemost *Vertebra* of the Loins are longest and thickest, and on each Side of that they decrease, so that these Processes of the first and fifth are the least, which is very necessary, especially as to the transverse Processes of these two *Vertebrae*, lest if they had been long, they had struck on the Ribs or *Ossa Ilium* or bruised the interposed Muscles in the Deflexions of the Spine to a Side.

The *Epiphyses* round the the Edges of the Bodies of these *Vertebrae* are most raised in the two lowest, and consequently make them appear hollower in the Middle, than the others are.

The Body of the fifth *Vertebra* is rather thinner than that of the fourth. The spinal Process of this fifth is smaller, and the oblique Processes face more backwards and forwards, than in any other *Lumbar Vertebra*.

From the whole, we may deduce the Uses of the true *Vertebrae* in these few general Heads. To give us an erect Posture; to allow a sufficient and secure Motion to the Head, Neck, and Trunk of the Body on all necessary Occasions; and to support and defend the *Viscera* and other soft Parts.

After considering the Structure of the particular *Vertebrae*, and their mutual Connexion, we may observe in each a solicitous Care taken that they shall with great Difficulty be disjoined; for their Bodies enter either so into each other, as to prevent their being displaced any how, as in the *Vertebrae* of the Neck; or these Bodies are prop'd on all Sides, as these of the Back are by the Ribs; or their Surfaces of Contact are so broad, and the Ligaments so strong and firmly connected, as to render the Separation almost impracticable, as in the Loins; while the Depth and Articulation of the oblique Processes are exactly proportioned to the Quantity of Motion the other Parts of the Bone will allow, or the Muscles can perform: Yet as these oblique Processes are small, and therefore not capable of so secure a Conjunction as the larger Bodies, they may sooner yield to a disjoining Force; but then their Dislocation is not of near so bad a Consequence; for by

their being displaced, the Muscles, Ligaments, and *Medulla Spinalis*, are indeed stretched; whereas, when the Body of the *Vertebra* is removed out of its Place, the *Medulla Spinalis* must be completely compressed, or intirely destroyed.

The *Falſe Vertebrae* compose the under Pyramid of the Spine. They are distinguished from the former justly enough by this Epithet of *Falſe*; because tho' each Bone resembles the true *Vertebrae* in Figure, yet none of them partake of their Use of serving in the Motion of the Trunk of the Body, all of them being intimately united, except at one Part where there is a moveable Joint; whence the common Division of these false *Vertebrae* into two Bones, *Os Sacrum* and *Coccygis*. See *Coccyx*, and *SACRUM Os*. *Monro's Osteology*.

The Cartilages of all the *Vertebrae* in general, are of two Kinds; one proper to each *Vertebra*, the other common to the two *Vertebrae* that lie next each other: The first I term Cartilages of Articulation, the others, Cartilages of Symphysis.

The proper articular Cartilages of each *Vertebra* of the whole Spine, are those four which cover the Surfaces of the four small articular Apophyses. In the natural State they are very white and smooth, and much thicker than in dry Bones. Their Circumference is the same with that of the articulated Sides of the Apophyses, except in those Places where there are small superficial Notches. In the first *Vertebra* of the Neck, and *Vertebrae* of the Loins, these Cartilages are thicker than in the rest.

The two inferior articular Cartilages of the first *Vertebra*, and the two superior Cartilages of the second, seem to be disproportionate, tho' not so much as in dry Bones; and in some Subjects we find moveable or inter-articular Cartilages between the Apophyses of these two *Vertebrae*.

The first *Vertebra* of the Neck has a small cartilaginous Incrustation in the Middle of the concave Side of its anterior Arch, answering to another on the Fore-side of the odontoid Apophysis of the second *Vertebra*; so that these two *Vertebrae* have five articular Cartilages each, besides the inter-articular ones already mentioned.

The *Vertebrae* of the Back, besides the four Cartilages of their small Apophyses, have others which do not belong to their Articulations with one another, that is, those that cover the lateral Fossulae in the Bodies of these *Vertebrae*, and the Fossulae of their transverse Apophyses, by both which they are articulated with the Ribs.

The Cartilages of Symphysis lie between the Bodies of the *Vertebrae*, one of them being contained between, and closely joined to the lower Surface of the Body of one *Vertebra*, and to the upper Surface of that next under the former; the Breadth and Circumference of them answering exactly to that of the Surfaces to which they are connected; but their Height or Thickness is different in each Class of the *Vertebrae*. In the *Vertebrae* of the Loins they are a quarter or third Part of an Inch in Thickness, according to the Stature of the Subject. In those of the Neck, they are not so thick, and the thinnest of all are those of the *Vertebrae* of the Back.

These Cartilages are not of an equal Thickness in all their Parts. Those of the Neck and Loins appear to be thickest on the Fore-side, and those of the Back rather thickest on the Backside; but these Differences are most remarkable in the *Vertebrae* that lie near the Middle of each Class.

The internal Structure of these Cartilages is different from that of all the other Cartilages of the Body; and indeed they resemble the rest in nothing but Whiteness and Elasticity. When we view their Circumferences only, they seem to be one uniform Mass, as the others generally are; but when they are divided by an Incision parallel to the Surface of the *Vertebra* to which they are joined, we see that they are made up of a great Number of cartilaginous concentric Rings contained within each other, a small Distance being left between them. They are closest and thinnest near the Centre, and about the Middle seem to degenerate into another softer kind of Substance.

These Rings do not form an entire Circumference, being turned inward on the Backside, answerably to the posterior Slope in the Body of each *Vertebra*. They lie horizontally, one Edge being fixed to the lower Side of one *Vertebra*, and the other to the upper Side of the *Vertebra* next below the former. The Interstices between the Rings are filled with a mucilaginous Substance, less fluid than that of the Joints; and their Breadth or Height is proportionable to the Distance of the *Vertebrae* between which they lie.

Each cartilaginous Lamina taken separately, is very pliable according to its Length; but taken altogether, they are not so easily bent, partly because of their circular Figure, and partly

partly because of their Proximity and Multiplicity. They yield, however, in the Inflections of the Spine, and their external Surface, which, in the ordinary Situation of the Spine, is even with the Surface of the Vertebrae, becomes prominent, or jets out on that Side towards which the Inflection is made, the Cartilages being then compressed by the Vertebrae.

They likewise yield on all Sides without any Inflection of the Spine, to the Weight of the Head and upper Extremities; but this is done by very small and imperceptible Degrees, and most of all, when the upper Parts of the Body are loaded with any exterior Weight.

They restore themselves afterwards merely by being freed from Compression; so that a Man is really taller after lying some time, than after he has walked or carried a Burden for a great while: The most natural and simple Reason that can be given for the different Heights of the same Persons at different Times, first observed in *England*, and afterwards confirmed by M. *Morand*, a Member of the Royal Academy of Sciences; being the different State of the inter-vertebral Cartilages.

The inter-vertebral Cartilages of the Neck, lying for the most part between the convex Side of one Vertebra, and the concave Side of another, are of a greater Extent in proportion to the Size of these Vertebrae than those of the Back and Loins. Without the Convexity and Hollowness in these Vertebrae, which are the least of all, the Cartilages could not have been made large enough to be able to resist Strains and great Motions.

The Vertebrae are strongly connected to each other by three Kinds of Ligaments. Each Vertebra is connected to that above and below it, by a great Number of very short and strong Ligaments, which cross each other obliquely, and are fixed round the Edges of the Body of each Vertebra.

These crucial Ligaments cover the Circumference of the inter-vertebral Cartilages, and adhere closely to them. They seem to be looser in the cervical and lumbar Vertebrae than in those of the Back, and by that means yield to the Cartilages in the different Inflections of the Spine already mentioned.

The Bodies of all the Vertebrae from the second of the Neck to the Os Sacrum, are covered by ligamentary half Vaginae on the convex Side, in which these Vaginae are fixed, surrounding all the crucial Ligaments, and made up of ligamentary Fasciculi and Filaments, partly oblique, but mostly longitudinal.

All the Vertebrae are likewise strongly connected by a ligamentary Tube, which lines the inner Surface of the medullary Canal from the occipital Hole, to the Os Sacrum, representing a kind of long flexible Funnel, its Cavity at the upper Part being equal to that of the occipital Foramen, and ending in a small Point at the Os Sacrum.

This Ligament is made up of several Strata of longitudinal and oblique Fibres interwoven together, adhering closely to the Inside of the great Foramen in each Vertebra, by a great Number of Filaments detached from it to the porous Substance of the Vertebra.

The first Vertebra is not only fixed to the Os Occipitis by a Portion of this ligamentary Funnel, but, also, by a distinct and very strong ligamentary Covering, which surrounds and adheres very closely to that Portion of the Funnel. This Covering is fixed above, round the great occipital Foramen, where it begins to adhere to the Funnel, and below, quite round the Circumference of the first Vertebra. The second Vertebra has two Ligaments peculiar to it, one which connects the Apophysis Dentiformis to the Os Occipitis; and another transverse, which confines this Apophysis within the anterior Portion of the Cavity of the first Vertebra. The first may be termed the Occipital, and the second, the transverse Ligament of the odontoid Apophysis.

The occipital Ligament is very strong and thick, and adheres in a very singular manner to the three Planes of the Apex of the Apophysis, and is afterwards divided into two or three Portions which are fixed in the like manner, in the anterior Edge of the great occipital Foramen, and in the Inequalities of the Apophysis Basilaris near that Hole.

The transverse Ligament may be said more justly to belong to the first Vertebra, both Ends of it being inserted in the lateral Impressions of the inner Surface of that Vertebra; but is ranked among the Ligaments of the second Vertebra, because of its Use, and because of the Insertion of its middle Portion.

This thick Ligament is stretched from one Side of the inner Surface of the first Vertebra to the second about the Middle of the Foreside, its Texture is very close, and it is fixed by this Portion in the Back-Part of the Apophysis Dentiformis; and sometimes it seems to have additional Fasciculi, which adhere by one End to both Extremities, and by the other to each Side of the Apophysis.

Along the whole bony Canal of the Spine, between the Basis of each spinal Apophysis, lies a flat and very elastic Ligament, of a yellowish Colour, which fills up the posterior great Noches of the Vertebrae adhering to their Edges, and likewise to the neighbouring Portions of the Funnel or great ligamentary Tube.

Between the Extremities or Apices of the spinal Apophysis, we find small ligamentary Ropes which run from one Spine to that next it, and which are really double, though they seem to be single in the Vertebrae of the Back and Loins. In the Vertebrae of the Neck they are fixed separately to the forked Extremities of the Spines.

Between all the spinal Apophyses, from their Apices to the Middle of the Bases, lies a ligamentary Membrane going between each two Apophyses, and thereby distinguishing the Right Side of the Vertebra from the Left. There is a Ligament of the same kind between the transverse Apophyses.

These are inter-muscular Ligaments, or ligamentary Septa, which divide the Muscles of one Side from those of the other. The first Kind may be termed *Inter-Spinales*, and the other *Inter-Transversales*.

The articular Ligaments of the Spina Dorsi, are those which tie the glenoid Cavities of the first Vertebra to the Condyles of the Os Occipitis; those that join the cartilaginous Surface of the Apophysis Dentiformis, to the anterior Cavity of the first Vertebra; and those by which all the oblique or articular Apophyses are connected together.

These are all small, short, strong ligamentary Fasciculi, fixed by both Extremities, round the cartilaginous Surfaces of the Apophyses, surrounding very closely all the capsular Ligaments of these Articulations.

The vertebral Ligaments of the Ribs, or these which connect the Ribs to the Bodies, and transverse Apophyses of the Vertebra of the Back, are of the same kind, being inserted round the cartilaginous Fossulae, in the Body and Apophyses of each Vertebra.

Besides all these Ligaments of the Spina Dorsi, there is one which goes in form of a Membrane, from the Os Occipitis, all the Way to the last two Vertebrae of the Neck. It is broad at the upper Part, and from thence diminishes gradually, by its upper broad Extremity; it is fixed along the occipital Spine, and by one Edge, in the posterior Tubercle of the first Vertebra, between the two spinal Furcae of the following Vertebrae, and in the Apices of the spinal Apophyses of the lowest Vertebrae; but the other Edge is loose. This is a true inter-muscular Ligament, and I give it the Name of *Ligamentum Cervicale Posterius*.

There are two lateral Ligaments of the same Kind fixed to the transverse Apophyses of the Vertebrae of the Neck.

THE MUSCLES OF THE SPINE.

The Muscles which lie along the Spine, the greatest Part whereof serve for the Motions of the Neck, Back and Loins, have, by the greatest Anatomists, been thought very difficult to be well dissected and clearly described, especially those of the Back. All these Muscles are very complex, interwoven with each other, and multiplied in various Manners; so that it becomes necessary either to make their Number much greater than that of the Vertebrae, or to reduce them to a small Number of long Muscles intersected at different Places.

Steno, in order to facilitate the Knowledge, Dissection and Description of these Muscles, thought proper to rank them in the following manner. By Vertebral Muscles he understands those which are fixed in the Vertebrae alone; and he distinguishes them all into *Recti* and *Obliqui*. The *Recti* are those which run parallel to the Medulla Spinalis, or whose Direction is longitudinal. The *Obliqui* are those which run obliquely between the spinal and transverse Apophyses.

He divides the *Recti* into Middle and Lateral; the middle *Recti* are those which are fixed to the Spinal Apophyses; the lateral, those fixed to the transverse Apophyses.

He moreover divides all these Muscles into Simple and Compound; the Simple being those which are fixed in two Vertebrae only; the Compound, those fixed in are more than two.

The *Obliqui*, according to him, are of two Kinds; some run up from the transverse to the spinal Apophyses, approaching each other; and some run up from the spinal to the transverse Apophyses, diverging from each other. The first Sort he terms *ad medium vergentes*; the second, *a medio recedentes*. These Terms are borrowed from Optics; and accordingly these two Kinds of Muscles might be named converging and diverging Muscles. Lastly, he adds, that several Muscles of the first kind go from one transverse to several spinal

spinal Apophyses, and from several transverse to one spinal Apophysis.

According to this Account of the Vertebral Muscles, the ancient Terms *Spinales Transversales* and *Semi-spinales*, may still be applied to them, understanding by *Spinales* those Muscles which are wholly fixed in the spinal Apophysis; by *Transversales*, those which are wholly fixed in the transverse Apophyses; and by *Semi-spinales*, those which are fixed in the spinal Apophysis by one Extremity only. At present the two Kinds of oblique vertebral Muscles are better expressed by the two compound Terms *Transverso-Spinales* and *Spino-Transversales*.

It is, however, necessary to retain the general Names of *Vertebrales Recti*, and *Vertebrales Obliqui*, because though the Terms already mentioned agree very well to the posterior Obliqui, they cannot be applied to the anterior Obliqui, one End of which is fixed not in the spinal Apophysis, but in the Bodies of the Vertebrae.

The small simple Muscles which go between two Vertebrae, may be termed *Vertebrales Minores*; and the large compound Muscles that reach several Vertebrae, *Vertebrales Majores*; both Sorts being afterwards divided into *Spinales* and *Transversales Majores* and *Minores*. The small Muscles are likewise called *Inter-spinales* and *Inter-transversales*; and as there are some small oblique Muscles that cannot be said to reach either the transverse or spinal Apophyses, these may be termed simply *Inter-vertebrales*.

The *Transverso-Spinales* that go from several transverse to one spinal Apophysis, are disposed in this manner: The Portion that comes from the most distant transverse Apophysis, is inserted in the Extremity of the spinal Apophysis, the Portion from the next transverse Apophysis is inserted more laterally; and the same Rule holds in all the other Portions, except in that which comes from the transverse Apophysis, which is nearest the spinal Apophysis.

This last Portion is not fixed in the spinal Apophysis, but rather in its Root or Basis, and likewise very near the Basis of the transverse Apophysis; so that it is more properly *Inter-vertebralis* than *Transverso-spinalis*. Thus in the *Transverso-spinales*, that go from the ninth, eighth, seventh and sixth transverse Apophyses of the Back, to the fifth spinal Apophysis of the same Class, we find that the last and smallest is fixed in the Basis of the sixth Transverse and of the fifth spinal Apophysis.

The *Transverso-Spinales* which go from one transverse to several spinal Apophyses, are disposed in this manner. The Portion that goes from the Basis, or near the Basis of the transverse Apophysis, is fixed either in or near the Basis of the spinal Apophysis immediately above it. The next Portion which is more distant from the Basis of the transverse Apophysis, runs up beyond the next spinal Apophysis, and is inserted in that above it, a little further from the Basis.

The other Portions observe the same Order, that which comes from the Apex of the transverse Apophysis, being inserted in the Apex of the most distant spinal Apophysis. From this Disposition we see, that the most superior vertebral Muscles which go from one transverse to several spinal Apophyses, are the most inferior of those which go from several transverse to one spinal Apophysis.

It must be observed, that in speaking of the oblique vertebral Muscles, I consider their Direction from below upward, and not from above downward; because the inferior Vertebrae commonly support those above them, except when a Person stands upon his Head, with his Feet erect, in which Case the superior Vertebrae sustain the inferior.

We ought likewise to remark, that in speaking of these Muscles the Term *Transversalis* is more proper than *Transversus*, which last points out a certain Direction very different from that which these Muscles have; whereas the other marks the Relation which they have to the transverse Apophyses.

Besides the Vertebral Muscles properly so called, several other Muscles, not inserted wholly in the Vertebrae, serve to move them. Some of the Ancients called these *Semi Spinales*, to distinguish them from those they termed *Spinales*, which included all the vertebral Muscles; and therefore as we have termed these *Vertebrales*, the other may be named *Semi Vertebrales*.

Among the *Vertebrales* properly so called, some from their Insertions seem to be common to the Neck and the Back, some to the Back and Loins; but for Distinction Sake, I reckon among those of the Neck, not only the Muscles entirely fixed in the Vertebrae thereof, but, also, those whose superior Insertion is in the seventh Vertebra of the Neck, though all their other Insertions be in those of the Back; and I observe the same Method with respect to the Loins.

All these Muscles vary very much in their Insertions and reciprocal Communications; by which last they are often so much confounded together, that it is a very difficult Matter to distinguish them for those who are not previously acquainted

with them. In general, they are more easily distinguished in Children than in Adults, and in Adults than in very aged Persons.

The Muscles which move the *Vertebrae* of the Neck, are, by *Winslow*, reduc'd to twelve, six on each Side, which are,

1. The *Longus Colli*.
2. *Transversalis Colli Major*.
3. *Transversalis Gracilis*, five *Collateralis Colli*.
4. *Semi-Spinalis*, five *Transverso-Spinalis Colli*.
5. *Spinalis Colli parvi*, five *Inter Spinales*.
6. *Transversales Colli minores* five, *Inter Transversales*.

See a Description of these Muscles, under the respective Articles of their Names.

The *Spinales Minores*, and *Transversales Minores*, are here reckoned collectively; for if we take them separately, there are six or seven of each Sort on each Side of the Neck; neither is the Number of them always the same. The *Transversalis Gracilis* has often been looked upon as a Portion of that long muscular Mass termed *Longissimus Dorsi*. It has likewise been taken by some for the *Cervicalis Descendens* of *Diemerbreck*; and by others it has been called *Accessorius Stenonis*.

We ought likewise to reckon among the Muscles of the Neck, the *OBLIQUUS MAJOR*, and *RECTUS MINOR*; which see under their Names.

The Muscles which move the Vertebrae of the Back and Loins would amount to a much greater Number, and be much more difficult to conceive, than those of the Neck, were they to be reckoned separately as vertebral, or semi-vertebral Muscles. It is therefore proper to reduce them to a collective Number, which may conveniently enough be fixed to twenty-four, twelve on each Side, that is,

1. *Sacro Lumbaris*.
2. *Longissimus Dorsi*.
3. *Spinalis Dorsi Major*.
4. *Spinales Dorsi Minores*.
5. *Transversalis Dorsi Major*.
6. *Transversales Dorsi Minores*.
7. *Semi Spinalis*, five *Transverso Spinalis Dorsi*.
8. *Semi Spinalis*, five *Transverso Spinalis Lumborum Sacro Veterum*.

- 9, 10. *Spinales & Transversales Lumborum*.
11. *Quadratus Lumborum*, five *Lumbaris Externus*.
12. *Coccygai*.

The Vertebrae of the Back, and especially those of the Loins may likewise be moved by the Muscles of the Abdomen. The inferior Portion of the *Longus Colli* may contribute something to the Motion of the upper Vertebrae of the Back; the *Psoas* to that of the Vertebrae of the Loins, and the *Gluteus Maximus* to that of the *Os Coccygis*.

The Descriptions and Uses of these Muscles may be found under their respective Names, except those of the Muscles of the *Os Coccygis*, which are omitted under the Article *Coccyx*.

These are small, thin, radiated Muscles, lying on the inner or concave Side of the *Os Sacrum*, and neighbouring Parts of the Pelvis: They are four in number, two on each Side, whereof one is placed more forward, the other more backward; for which Reason the first may be termed *Coccygæus anterior*, five *Ischio-Coccygæus*; the other *Coccygæus posterior*, five *Sacro-Coccygæus*.

The *Coccygæus anterior* is fixed by a broad Insertion in the anterior Portion of the small transverse Ligament at the upper Part of the Foreman Ovale of the *Os Innominatum*, which is no more than a particular Fold of the great transverse Ligament of the Pelvis: From thence it runs between this great Ligament and the *Musculus Obturator Internus*, with which it is often confounded by Anatomists; and contracting in Breadth, it is inserted in the lower Part of the *Os Coccygis*.

The *Coccygæus posterior*, or *Sacro-Coccygæus*, is fixed to the inner or concave Edge of the two first Vertebrae of the *Os Sacrum* to the inner and lower Edge of the *Ligamentum Sacro-Sciaticum*, and to the Spine of the *Os Ischium*: From thence contracting in Breadth, it is inserted in the Inside of the *Os Coccygis* above the former Muscle. *Winslow*.

SPINA ACIDA. See BERBERIS.

SPINA ACUTA. A Name for the *Mespilus*; *Apii folio*; *syvestris*; *spinosa*; five *Oxyacantha*; and, also, for the *Mespilus*; *spinosa*; *Pyri folio*.

SPINA ALBA. A Name for the *Mespilus*; *Apii folio*; *syvestris spinosa*, five *Oxyacantha*; and, also, for the *Echinops*, *folio Acanthi aculeati tenuiter laciniato, flore albo*.

SPINA ARABICA. Offic. *Carduus spinosissimus sphaerocephalus rigidis aculeis armata*. C. B. 385. *Carduus spinosissimus sphaerocephalus, Cardui Arabici nomine missus*, Park. Theat. 978. ARABIAN THISTLE.

It is easily naturaliz'd in Gardens, and flowers in Summer. The Root and Leaves are used.

The *Spina Arabica* seems to be of a like Nature with the *Spina Alba*, for it is astringent, and good for the Fluor Uterinus, Vomiting of Blood, and other Kinds of Fluxes, as is the *Spina Alba* beforementioned. *Discozides Lib. 3. Cap. 15.*

The *Spina Arabica* of *Discozides* is to be reckon'd among ambiguous Plants, and no Wonder, since all that he says of it is, that it appears to be of the Nature of the *Spina Alba*; which is so obscure an Expression, that it has been almost impossible for any one to untie this Gordian Knot. *C. Baubine*, and after him *Parkinson*, affirm it to be the Plant which, on their Authority, I have here mention'd; but *Casalspinus* and *Anguillara* have refer'd it to the *Carduus tomentosus Adversariorum*.

SPINA CERVINA. See } RHAMNUS CATHARTICUS.
SPINA INFECTORIA. See } TICUS.

SPINA LUTEA. A Name for the *Scolymus*; *chrysanthemum*.

SPINA SOLSTITIALIS. A Name in *Boerhaave* for several Sorts of *Jacea*.

SPINA SOLUTIVA. See RHAMNUS CATHARTICUS.

SPINA TOMENTOSA. A Name for the *Carduus tomentosus*; *acanthi folio*, *angustiore*.

SPINA VENTOSA. The Name of a Disorder of the Bones. See Os.

SPINACHIA.

The Characters are;

The Root is annual; the Flowers apetalous, staminous, seated at the Wings of the Leaves, consisting of a quadrifid Calyx and Stamina, on a separate, or male Plant. The Ovary is a Capsule, either turbinate, horned, or angulated, furnished with hairy Tubes, and contains a turbinate Seed on the female Plant.

Boerhaave mentions four Sorts of *Spinachia*, which are;

1. *Spinachia*; vulgaris; capsulâ feminis aculeata. *Tourn. Inst. 533. Boerb. Ind. A. 2. 103. Spinachia. Offic. Ger. 260. Emac. 330. Raii Hist. 1. 162. Spinachia sive Olus Hispanicum. Park. Parad. 496. Spinachia femina. J. B. 2. 963. Lathum hortense, seu Spinachia femine spinosa. C. B. P. 114. SPINACHE.*

Spinache has a long whitish Root, from which springs several pretty broad, sharp-pointed Leaves, hollowed in next the Stalk, and in Shape somewhat like *Aron*; but they are more wrinkled, and covered with an unctious Measiness. The Stalk is fat and succulent, growing to be about two Foot high, having the like but smaller Leaves growing on it, with several Spikes of green herbaceous Flowers, and after them come large prickly Seed. It is sown yearly in Gardens.

It is more used for Food than Medicine, being a good boiled Salad, and much eaten in the Spring, being useful to temper the Heat and Sharpness of the Humours. It is cooling and moistning, diuretic, and renders the Body soluble. *Milner's Bot. Off.*

Spinache, which is now so celebrated and useful a Green, seems unmention'd and unknown to the Antients. It is so called by the Moderns, from its spinous Seed, though there is, also, a Species of it which bears Seed which is smooth. We are not certain where it grows spontaneously, but it is probably of *Spanish* Original, since some call it *Olus Hispanicum*; but it refuses no Soil or Climate, and is in Use in almost all Parts of *Europe*. It is boiled without Water, for it affords Liquor enough in the Dressing to boil itself without the Help of any other.

Among all culinary Greens, says *Tragus*, *Spinache* is, in my Opinion, the most laudable and grateful, whence it may be eaten in almost all Kinds of Diseases. It is very serviceable in feverish Disorders, and is proper for old Persons who are subject to Costiveness: In the first, by allaying the Heat, though it be even of a hectic Quality; and for aged Persons, by lubricating the Belly, which is much better than by always stimulating it to Excretion by Cathartics and Suppositories. It is cooling and moistening, by its nitrous Quality, mollifies the Belly, cures Roughness of the *Apera Arteria*, and is good for a dry Cough. It easily creates a Nausea, unless it be seasoned with Ginger or the like. The Juice and distill'd Water mitigate the Heat and gnawing Pain of the Stomach, and are said to procure Milk. Externally, it is apply'd by way of Cataplasm to the Stomach and Liver, in order to remove a Pain and Inflammation. *Raii Hist. Plant.*

2. *Spinachia vulgaris*; sterilis. *T. 533. Lathum, hortense, seu Spinachia sterilis. C. B. P. 115.*

3. *Spinachia*; vulgaris; capsulâ feminis non aculeatâ. *T. 533. Lathum, hortense, seu Spinachia femine non spinosa. C. B. P. 115.*

4. *Spinachia*; Cretica; supina; capsulâ feminis aculeatâ, *T. 533. Beta, Cretica, femine spinose. J. B. 2. 963. Lathum Creticum ejusdem. Ibid. Boerb. Ind. Alt. Plant.*

Spinache is mollifying, but not nourishing; for if one eat a Pound of it, he voids it all again by Stool, for the Juice goes all off in Concoction, and spends itself in loosening the Belly. The fresh Herb affords a thick, but very wholesome Juice, which mitigates the Asperity of the Lungs, and is of Service in Inflammations of the Intestines. *Hist. Plant. ascript. Boerhaave.*

SPINALIS MEDULLA. The Spinal Marrow. See CEREBRUM.

SPINALIS. Spinal; belonging to the Spine. This is an Epithet of certain Apophyses of the Vertebra of the Spine; and of several Muscles. Thus there are the

SPINALIS COLLI MINORES. See INTERSPINALES.

SPINALIS DORSI MAJOR.

This is a pretty long and slender Muscle, lying upon the lateral Part of the Extremities of the spinal Apophyses of the Back.

It is composed of several muscular Fasciculi of different Lengths, which crossing each other, are inserted laterally by small Tendons in the spinal Apophyses from the second, third, or fourth Vertebra of the Back, and sometimes, though seldom, from the last of the Neck or the first of the Back; all the Way to the first or second Vertebra of the Loins, with several irregular Decussations, which vary in different Subjects.

The longest Fasciculi are a little incurvated, because they inclose the rest, which are gradually disposed between the long ones and the spinal Apophyses, so that this Muscle, which terminates by both Extremities in Points, is of some considerable Breadth in the Middle.

It communicates by some Fibres with the *Longissimus Dorsi* and *Semi Spinalis* or *Transverso-Spinalis*; and it sends off Fasciculi to several transverse Apophyses of the Back, from the fourth to the eleventh.

It is commonly named *Semi-Spinalis*, but very improperly.

SPINALES DORSI MINORES.

These Muscles are of two Kinds; some go laterally from the Extremity of one spinal Apophysis to another, being often mixed with the short Fasciculi of the *Spinalis Major*: The rest lie directly between the Extremities of two neighbouring spinal Apophyses, being separated from their Fellows on the other Side by the spinal Ligament: They are smaller and thinner than those of the Neck, and are properly enough termed *Inter-spinales*.

All the *Spinales* and *Transversales* of the Back and Loins belonging to the Class of the *Vertebrales Recti*, the *Spinales* to the middle Muscles, and the *Transversales* to the lateral, are principally useful to assist, moderate and maintain the Motions of Extension and lateral Inflection, whether simple and direct, or oblique and compound; much in the same Manner as is done by the like Muscles of the Neck.

The *Spinales Majores* and *Transversales Majores* have this peculiar to them, that their fleshy Portions not lying in a strait Line between their Insertions, they may perform not only direct Motions when they act in even Numbers, but, also, oblique Motions, when the Numbers of each Side are unequal. The small *Spinales* and *Transversales* being confined between two neighbouring Vertebrae, cannot co-operate but in direct Extensions and Inflections.

SPINALES ET TRANSVERSALES LUMBORUM.

There are some Fasciculi which run up from the superior false Spines of the *Os Sacrum* to the lower spinal Apophyses of the Loins, which may be looked upon as so many *Spinales Lumborum Majores*. There are likewise some *Spinales Minores* between the spinal Apophyses of the Loins, and *Transversales Minores* between the transverse Apophyses, which are sometimes of a considerable Breadth. *Winslow's Anatomy.*

SPINUS ALBUS. A Name for the *Mespilus*; *Apia folio*; *silvestris*; *Spinosa*; *sive Oxycamba*.

SPINUS; or *Ligurinus* of *Jonston*, is a little Bird, of the Size of a Goldfinch, generally of a yellow and black Colour. Its Beak is of a moderate Length, slender, and pointed. It feeds upon Seeds, and is found in warm Countries. It builds its Nest in mountainous Woods, and sings very agreeably. It contains a large Quantity of volatile Salt, and, when eaten, is reckon'd good for the Epilepsy.

SPIPOLA. The Name of a small Bird, of which *Aldrovandus* reckons several Species.

SPIRACULA. The Pores of the Skin.

SPIRÆA.

The Characters are ;

The Calyx is monophyllous, quinquefid, and stellated ; the Flowers rosaceous and pentapetalous ; the Petals growing out of the interior Margin of the Calyx, at the Interstices of the Segments ; the Stamina are very numerous. The Ovary in the Bottom of the Calyx becomes a Fruit composed of five Pods, each growing on its Placentula, and full of an oblong Seed.

Boerhaave mentions four Sorts of *Spiræa*, which are ;

1. *Spiræa* ; *Salicis folio*. Tourn. *Infl.* 618. Boerb. *Ind.* A. 2. 238. *Spiræa* ; Offic. Raii *Hist.* 2. 1699. *Spiræa Theophrasti forte Clusio*. J. B. 1. 559. Park. *Theat.* 1437. *Frutex spicatus foliis salignis serratis*. C. B. P. 475.

SPIKED WILLOW.

It is cultivated in Gardens, flowers in July, and the Seed is ripe in August. The Part of Use in Medicine is the Seed, which is of an astringent Quality.

2. *Spiræa* ; *Opuli folio*. T. 618. *Anonymos, Ribesii foliis* Icon. Roberti. *Eunymus Virginiana, Ribesii folio capsulis eleganter bulatis*. H. A. 1. 169. See ANONYMOS RIBESII FOLIIS.

3. *Spiræa* ; *Hyperici folio, non crenato*. T. 618. *Prunus sylvestris affinis Canadensis*. C. B. P. App. 517. *Hypericum, frutescens, Canadense*. Robin.

4. *Spiræa* ; *Africana ; odorata ; foliis pilosis*. Commel. *Rar.* 3. Boerb. *Ind.* *Alt. Plant.*

SPIRITUS. Spirit. Any fine volatile Substances, which exhale from Bodies in a given Degree of Heat, are called Spirits : Hence, by a Sort of imaginary Analogy, upon a Supposition of their extreme Fineness and Volatility, the nervous Fluid has had the Name of *Spiritus*, Spirits appropriated to it. Upon the nicest Scrutiny, it appears, that the cortical Substance of the Brain is a Collection of extremely minute Glands, from whence distinct medullary Fibres arise, which by their Union form the *Medulla Oblongata* ; that a vast Quantity of pure, fine, arterial Blood is convey'd to the Brain ; that a large Quantity of a very thin Fluid is found in the medullary Part of the Brain when cut, which in Disorders of the Head, and nervous System, is often found to be more copious ; and that the Blood convey'd to the Head, is afterwards returned by the Veins to the Sinuses, thence to the Jugular Veins, and by these to the Heart. This Structure renders it highly probable, that the cortical Substance of the Brain consists of minute Glands, which secrete a very fine Fluid, to be convey'd by the medullary Fibres to the *Medulla Oblongata*, whence, and from the spinal Marrow (a Continuation thereof) all the Nerves of the Body arise.

It is, farther, remarkable, that all the Nerves consist of the same medullary Substance, inclos'd in a Coat borrow'd from the *Pia Mater*, and another from the *Dura Mater* ; that if the *Medulla* of the *Cerebrum*, or *Cerebellum*, is any Way injur'd by a Wound, Compressure, Putrefaction, or Corrosion, every Action of the Body depending upon the Nerves which arise from those Parts, immediately ceases, though the Nerve itself remains intire ; that the Nerves, notwithstanding their Laxity, Incurvation, and winding Progress, very readily convey Sense and Motion to all the Parts of the Body ; that if any of the Nerves are divided, or compress'd, all Sensation and Motion betwixt the Division or Ligature, and Part to which that Nerve is distributed, immediately ceases, though it remains in the Parts betwixt the Division or Ligature, and the Origin of the Nerve. Hence 'tis evident, that Sensation and Motion are convey'd to all the Parts by Means of the Nerves : And it is concluded, though not with an equal Degree of Certainty, that the Animal Spirits are the Instruments of Sensation and Motion.

This is all that is certainly known of these Spirits, which are distinguish'd into Natural, Vital, and Animal. The Natural are said to preside over the Digestion of the Aliment, and Elaboration of the Chyle, or the natural Actions : The Vital over the Motion of the Lungs, and Heart, or vital Actions : And the Animal, over the animal Actions, as Sensation, voluntary Motion, &c.

Upon so precarious an Hypothesis, as that of the real Existence of these Spirits, many elaborate Theories have been form'd, which have introduc'd a great deal of Error, Confusion, and bad Practice. Thus Morton speaks much about something deleterious conceal'd in the animal Spirits, which, according to his System, must be drove out by warm Cordials ; a Practice which has destroy'd more Lives than War, Pestilence, and Famine. And thus Willis amuses us with a *Pblegosis*, or Inflammation of the animal Spirits, with no great Degree of Information to his Readers.

Dr. Cheyne, a Gentleman who had Candour enough to own the Errors of his Profession, and Spirit enough to think for himself, thus treats of the animal Spirits.

The Doctrine of Spirits, to explain the animal Functions and their Diseases, has been so readily and universally received from the Day of the Arabian Physicians (and higher) down to our present Times, that scarce one (except here and there a Heretic of late) has called this Catholic Doctrine in question. And those, 'who perhaps had Courage or Curiosity enough to doubt of, or examine the Matter, either out of Laziness, or to avoid a tedious Way of expressing themselves, have implicitly gone into the common Dialect, which is now very convenient. The System first was but rude and imperfect, but having been adopted by Philosophers and Mathematicians, as well as Physicians, they have brought it to a more consistent and less absurd Theory. Borelli gave it a great Countenance, by receiving it to explain Muscular Motion, in his Book *de Motu Animalium*. Willis gave it all the Advantages of Eloquence and Metaphor. John Bernoulli has added to it a kind of Geometry and Calculation. And last of all, Monsieur des Molières, in the *Memoirs de l'Academie Royal* for 1724, has added Plainness, and some Conformity to the natural Appearances, and taken off most of the common Objections. I shall not tire myself nor the Reader, by detailing the System at length, nor the several Steps by which it has been reformed and amended. Goelike, Professor at Frankfurt, in a small Treatise, has solidly exposed and ridiculed it, as far as Borelli went, or the precedent or co-temporary Physicians : And Dr. Pemberton has, I believe, geometrically shewn the Insufficiency of what Bernoulli has advanced to mend the Matter, in his Preface to Mr. Cowper's Book on the Muscles. I shall therefore only suggest some general Reflexions, which perhaps equally distress this System, however improved or amended.

I will not urge, that the best Eyes or Senses, however assisted, have not hitherto been able to discover any Cavity in the Substance of the Nerves, or in the small Filaments into which they are divided ; that, on the contrary, as far as *Leeuwenhoek*, doubtless the best Observer, or others who have examined the Matter with great Accuracy, could perceive, they appear solid, transparent, and with broken Reflections, even when dry, like crack'd Glass, Wire, Horn, or any other solid Substance, without any apparent Cavity. Nor that by compressing them by Ligatures, stopping the Influx, or by stroaking and milching their Lengths, are any Appearances to be observed like those in other Vessels, which we know carry Fluids in them, more than must necessarily happen from compressing the small Arteries that go along by them. It is true, that by stopping and tying the Trunks of the greater Nerves, the Muscle itself will turn paralytic and motionless, but it will equally do so, upon intercepting the Motion or Influx of the Blood, which concludes nothing but this, that these Nerves are necessary towards the Action of the Muscles, whether from their carrying a Fluid, or from their own tonic Nature, their internal Configuration, or any other Manner they may act, is not thereby determined. And if Probabilities could any Way influence a Fact, they must lie on the other Side of the Question, since that thin and soft Liquor, which seems only fit to keep them moist and lax, rather derogates from the Existence of any spirituous Fluid in them, proper for the intended End. Nor, thirdly, will I urge against it Dr. Glisson's Experiment, of putting the Arm of a strong, brawny Porter into a large Tube full of Water, and fixing it close to his Shoulder, that the Water might not get out, but ascend into a small conical Tube, passing out of the Side of the larger one ; whereby he found, that upon the strongest Action of the Muscles, the Water subsided and fell in the small Tube, and rose again upon their ceasing to act ; from whence he concludes, that muscular Motion is not performed by the Inflation or Swelling of the Muscles, but that, on the contrary, when they are moved, they are contracted into a lesser Figure, and more compact Substance, or are hardened ; which would scarcely happen, if any Matter, how subtle so ever, flowed in the Nerves, and thereby was added to the Substance of the Muscles : For since the Impenetrability of Matter is demonstrable, the least such an Addition could effect, was, that tho' the Fluid, by its Subtlety, would not sensibly increase the Bulk, yet surely it could not lessen it. I say, I shall not urge these obvious Objections against this Doctrine ; because, tho' I think they cannot be solidly answered, yet they may be evaded ; but shall proceed to offer a few Considerations, which I think equally distress it, in all the Improvements that have been made on it.

Some have imagined the Nature of this Fluid of animal Spirits, to have some Resemblance with that of Light, (the most subtle, active, and penetrating Fluid apparent in this our System) which would make them quickly penetrate, fly through, tear, break, and consume their rare and tender Prisons, which could be of no more Use to them, to determine them to regular and uniform Motions, than Glass Tubes are to Light. And were they like urinous or inflammable

flammable Spirits, yet neither would such slender Prisons contain them any Time, or convey them uniformly for regular Purposes. And lastly, if they were like Water or aqueous Fluids, they could neither have Activity nor Subtlety sufficient to solve the Appearances, nor could they move with Velocity enough to answer the Purposes of Volition, Sensation, and voluntary or involuntary Motions, under that more gross and sluggish Form, and would even then ouze through their containing Tubes.

In a Word, give them what Nature you will, they will never answer the animal Functions and Appearances. For suppose them to have any Resemblance to the other Fluids in our System, if extremely volatile and active, they would fly away, and tear, in a very short time, their containing Tubes, and Canals of the Nerves, and could not receive regular Determinations from them; and yet such they must be, to answer the Ends of Volition and Sensation: And if they were grosser, denser, and less refined, they would not answer quick and sudden Motion and its Cessation. And they can never be supposed to be extremely active and volatile, and gross and thick at the same Time. We find in Dropsies, that a grosser Fluid than they can be supposed to be, will ouze in great Quantities through Vessels of as close a Texture as theirs, not to mention the sudden Effects of all Kinds of Spirits (taken inwardly) upon the Nerves, which from this Appearance must even be supposed to penetrate the Substance of these Nerves, and yet the nervous Fluid must be, at least, as subtle and penetrating as they.

Quick and instantaneous, strong and violent Motions, (increased by adding great Weights, as we know by Experience) seem absolutely to have determined the Nature of animal Spirits, to that of the most active and volatile Kind of Fluids imaginable, because none else is capable of so quick and strong Actions, in order to determine the instantaneous Obedience of the Muscles to the Orders of the Will: And such strong, violent, and quick Motions, must necessarily make a great Waste and Expence of these animal Spirits, so as to require a constant Supply of such fine and subtle Parts from the Food: And yet we find, that aqueous, vegetable, and earthy Substances only, make up most of the Nourishment of those who have the best and strongest Spirits, and live in a constant Course of such Action; and the animal Heat employed to generate them, rises no higher than that of Vegetation or Incubation only, which is not sufficient for any other Kinds of Spirits, inflammatory or urinous. But how any Fluids at all, of what Kind soever, can be supposed or imagined to go backwards and forwards in the same indivisible Instant almost, (to convey Pain, for Example, to the sentient Principle, and muscular Action at the same Instant, to shut the Eyes upon Appearances of Danger, or to actuate all the Muscles necessary for running away under a Panic, and a thousand other Instances that may be given) seems very hard to explain from the known Nature of Fluids.

The Existence of animal Spirits has been principally contrived to solve the Appearances of nervous Distempers, as Obstructions of the Nerves, or their Incapacity to act under some Circumstances. Now, if these Appearances can be accounted for, more conformably to the Analogy of Nature, without this Supposition than by it, then the Dispute will be at an End, and they useless. As to the Obstructions of the Nerves, since they are plainly cylindrical (or nearly such) it does not seem agreeable to Mechanism, that any Fluid should readily be obstructed in them. For whatever Fluid, of whatever Nature, can enter the one Extremity in the Brain, will move on by the same Impulse to the other. For Example, a Ball of the same or less Diameter than the Cavity of a cylindrical Tube, will move on (by the Force first impressed) from one End to the other, without Stop or Hindrance from the Tube; and the same may be concluded of any Fluid; which makes Obstructions pretty unaccountable in cylindrical Tubes. Besides, it is no small Prejudice against any Fluids moving in the nervous Fibres, even that their Figure is cylindrical; for we see in all Tubes that contain Fluids (as the Veins, Arteries, and Lympheducts) to accelerate the Motion of the Fluid, their internal Figure is conical, or tapering or nearly so, which readily accounts for the Obstructions in these last mentioned Vessels; and it is not improbable that Nature, which is always similar or consistent with itself, had the Nerves been designed to carry a Fluid, would have hollowed them in this Form. And on the contrary, the frequent Obstructions that happen in those Vessels, which are of this mentioned conical Figure, and the Hardness of such Obstructions, may be sufficient to account for the Obstructions of the Nerves themselves. From all which we may, I think, pretty firmly conclude, that the Notion of animal Spirits is of the same Leaven with the substantial Forms of *Aristotle*, and the celestial System of *Ptolemy*.

Perhaps there may be in Nature material Systems of Fluids of several Degrees of Rarity and Subtlety, even indefinitely many and different. What makes it not impossible that there may be more such Systems of subtle elastic Fluids, than that mentioned *Æther* described by Sir *Isaac Newton*, is, that the Elasticity, Attraction, and other Qualities of this *Newtonian* *Æther*, must necessarily be caused by some other more æthereal and subtle Fluid, else we must admit Elasticity, Attraction and Activity in the Particles constituting this *Newtonian* *Æther* without a Cause; or we must suppose these Qualities innate to them, and to have been impressed on them immediately by the first and supreme Cause. And thus we are necessarily thrown into one or other of the two Horns of this Dilemma, either to admit of Fluids descending in infinitum, in Tenuity and Subtlety, to produce Elasticity and Attraction, or allow Particles of Matter impressed with these Qualities in their Creation immediately by the Supreme Being. It is true, this *Newtonian* *Æther* advances us one Step further into the Nature of Things; but here we must necessarily stop, the Works of God appearing literally inscrutable to Perfection. A few of the first Steps we may go in this infinite Progression, but in all the Works of God there is a *ne plus ultra*; perhaps it may be in the inanimate material System of Things, as it is most certainly in the Animal Kingdom, that Nature and its Author, to distinguish itself from finite Mechanism, always operates by Systems and Organs in Number even infinite, if not infinite in the highest Sense, yet certainly indefinite or infinite in a relative Sense, and in regard to a finite Capacity; and thus he leaves Images and Signatures of himself on all his Works, as is manifest in Quantity, Time, and Motion; and their Signs or Characters, infinite Divisibility, infinite Progressions, Eternity, Series's and Fluxions. Mercury is grosser or denser than Water, Water than Air, Air than Light, Light than *Æther*; and how far further Nature may go in descending in Tenuity, Subtlety, and refining of other Systems of Fluids, none alive can certainly tell. This is a Conjecture of the Analogy of Things, the infinite Divisibility, or Increase of Matter, from finite, till it becomes infinitely great or small, at least, as to our Conceptions, Nature's never passing from positive to negative Quantities, till it goes through the Medium of Nothing, or infinitely small of the same Denomination; its never passing from Motion to Rest, but through infinitely small Motion: In a Word, its never acting in generals, by Starts, Jumps, or unequal Steps; I say, all these Hints seem to point out something like this. From all which, and a great deal more might be urged, it may not be improbable, that as in Quantity there is one or more means between the least and the greatest; so in Substances of all kinds, there may be Intermediates between pure, immaterial Spirit and gross Matter, and that this intermediate, material Substance, may make the Cement between the human Soul and Body, and may be the Instrument or Medium of all its Actions and Functions, where material Organs are not manifest: And may possibly be the Cause of the other secret and inscrutable Mysteries of Nature, and the same (for ought I know) with Sir *Isaac Newton's* infinitely fine and elastic Fluid or Spirit; for since he has not, I believe none else will take upon him to determine its Specific Nature, or indeed, whether it actually be or not: The innumerable Appearances seem to imply some such Thing.

To conclude this dark Subject of Animal Spirits, if they must be supposed, we may affirm they cannot be of the Nature of any Fluid we have a Notion of, from what we see or know. Indeed, the large Size, the wonderful Texture, and the great Care and Security Nature has employed about the Brain, makes it probable it has been designed for the noblest Uses, that is, to be the Temple or Sensorium of the sentient and intelligent Principle. And its Resemblances, in many Circumstances, to the other Glands, which certainly separate Liquors, makes it not impossible that it may have Uses analogous to these. But how to assign them, explain, or accord them with what has been suggested above, I know not. May not the sentient Principle have its Seat in some Place in the Brain, where the Nerves terminate, like the Musician shut up in his Organ Room? May not the infinite Windings, Convulsions, and Complications of the Beginning of the Nerves which constitute the Brain, serve to determine their particular Tone, Tension, and consequently the intestine Vibrations of their Parts? May they not have interwoven Blood-Vessels and Glands to separate a milky Liquor; to soften, moisten, and continue their Elasticity, and innate mechanic Powers through the whole nervous Systems? And, also, to keep them in a proper Condition to play off the Vibrations, Tremors and Undulations made on them by Bodies, or their Effluvia? May not these Vibrations be propagated through their Lengths, by a subtle, spirituous, and infinitely

infinitely elastic Fluid, which is the Medium of the intelligent Principle? As Sound is conveyed through Air to the Tympanum, and by it to this Medium or Æther, and from the Medium to the intelligent Principle, and as Sight is performed through or by Light; and is not the Analogy of Nature and Things thus in some measure preserved? I own it is much easier to confute than establish; and I should not be very sanguine about the Non-Existence of Animal Spirits, but that I have observed the Dwelling so much upon them has led Physicians too much to neglect the mending the Juices, the opening Obstructions, and the strengthening the Solids, wherein only the proper and solid Cure of nervous Distempers consists; and apply to Volatiles, Fetids, and Stimulants; which, at best, are but a Reprieve, and is not unlike blowing up the Fire, but at the same time forcing it to spend faster, and go out sooner; for Volatiles, Aromatics, and Cordials, are much of one and the same Nature, and all but Whips, Spurs, and pointed Instruments to drive on the resty and unwilling Jade. *Cheyne's English Malady.*

Upon the whole, it should seem, that whoever lays any Stress upon the precarious Doctrine of Animal Spirits, in accounting for Distempers, or investigating Remedies, is either weak enough to be imposed upon himself, or malicious enough to amuse others.

SPIRITUS RECTOR. The prevailing, or ruling Spirit of Vegetables. This resides in the Oil of Plants, and is extremely volatile, being inimitable by Art, and imparting that Smell and Taste to every individual Plant, which is peculiar to it, and to be found in no other.

In Pharmacy, there are many Liquors which go by the Name of Spirits, the principal of which are the following.

SPIRITUS ACETI. Spirit of Vinegar. See **ACETUM.**
SPIRITUS ALKERMES.

Take Spirit of Cinnamon, Citrons, black Cherries, and Rosemary, of each four Ounces; Juice of Chermes, two Ounces; Sugar, two Ounces. Mix all well together, and let them stand to settle a proper Time; decant off clear by Inclination, and filter the Remainder. To the whole add ten Leaves of beaten Gold, broke small, and keep for Use.

This is a mighty grateful Cordial, and by the Virtues of its respective Ingredients, cannot but be good in all Intentions where the Spirits are to be raised, and the Nerves strengthened; and from the Chermes it is supposed to be particularly useful in assisting Delivery. It may be taken at Discretion.

SPIRITUS ANTI-EPILEPTICUS PUERORUM.

An anti-epileptic Spirit for Children.

Take Flowers of Lavender, Rosemary, Marjoram, Sage, of each two Handfuls; Castor, two Ounces; Camphire, three Ounces; Spirit of Wine, three Pints; Sal Ammoniac, four Ounces; Salt of Tartar, three Ounces; and simple Lavender Water, enough to cover the Ingredients. Then, after a Digestion of three or four Days, draw off one Pound and a half or two Pounds by a Retort, in which drop Oil of Rue, thirty Drops; Amber, twenty Drops; Oil of Mace and Juniper, of each forty Drops, and they will perfectly dissolve in it.

This is taken out of the *Collectanea Chymica Leydensia*, where it stands prodigiously recommended for all spasmodic Affections, and whatsoever appears with Convulsions of the Nerves, and particularly in those of Children. The Ingredients sufficiently demonstrate its Properties that way, and it is very convenient for taking; tho' if the chymical Oils were omitted it would be better, and not much the worse in Efficacy: For the other Ingredients pretty well fate it, inso-much as to turn an aqueous Vehicle it is dropt into milky. It may be given from two to twenty Drops in any proper Liquor, and repeated according to the Urgency of the Symptoms.

SPIRITUS AURANTIORUM.

Spirit of Oranges.

Take Orange-Peels, fresh and clear'd from the White, one Pound; Proof Spirit, two Gallons. Draw off, in an Alembic, one Gallon and a half, and dulcify it with fine Loaf-Sugar at Pleasure.

This makes an excellent pleasant Dram, and can hardly be exceeded by any Thing, if a few fresh Orange Flowers be

strew'd upon its Surface afterwards. The last Running makes a good Carminative; and if no such Use takes it off in the Shop before, it will be worth keeping to throw into the Still at the next making of the Spirit. After the same manner are to be made the Spirit of Citrons, Lemons, or any Thing of the like Kind; and their Flavour will be greatly heightened with the least Touch imaginable of Ambergrease.

SPIRITUS BENZOINI. See **BENZOINUM.**

SPIRITUS CASTOREI. See **CASTOR.**

SPIRITUS CERASORUM NIGRORUM.

Spirit of black Cherries.

Take any Quantity of the Cherries, and bruise them, so as to break all the Stones and Kernels; then let them stand till they ferment, and draw off what is spirituous by an Alembic.

The Dose is from two Drams to one Ounce.

SPIRITUS COCHLEARIE.

Spirit of Scurvy-Grass.

Take of Garden Scurvy-Grass in Flower (or fresh and newly gathered at any other Time) twenty Pounds; bruise it grossly, and put it into a Copper-Still finned within; put to it of the Grounds of Ale, three Gallons, with one Pint of new Yeast; stir them well together; lute on the Head, and kindle a little Small-Coal under it, to give just a fermenting Warmth; let it stand twenty-four Hours, and then give Fire to distil the Spirit. That which comes first is the best, and must be kept by itself; the other Running will serve for more Grass, in the Room of common Water, another Time.

The great Quickness and Volatility of the Herb seems so little to want any of this Help, that it is to be feared it is the worse for it; for let the Head be ever so close luted, some will make its Escape. Therefore we take the following to be much the better Way.

Take the same Quantity of Scurvy-Grass, and put to it of common Proof Brandy, two Gallons; a gentle Fire will bring over the Spirit, which may be drawn to near the Quantity of Spirit of Wine put in.

This will be strongly impregnated with the volatile Parts of the Grass, and keep much longer than the other; the Pungency of the Grass being naturally kept alive, as it were, in this Spirit, which of itself would either find an Escape, or die and flatten, as it will do in Time, with all the Contrivances that can be invented to prevent it. If two or three Pound of Horse-Radish be added to it, it will be much the better. This is given in all scorbutic Cafes in common Liquors, from twenty to one hundred Drops; and possesses the principal Virtues of the Herb itself in Substance.

SPIRITUS COCHLEARIE AUREUS.

Golden Spirit of Scurvy-Grass.

Take of the foregoing Spirit, one Pound; and dissolve in it of Resin of Jalap, or Scammony, or Gamboge, one Ounce. If there be any Sediment, decant the tinged Spirit off carefully from it.

This is kept up in great Esteem amongst the common People, by the great Pretensions of several Venders of it; but it is an indifferent and useless Medicine, unless to athlectic Constitutions, and is very unfit to answer the Expectations its Name raises. Its Dose is from twenty to sixty Drops.

SPIRITUS CORNU CERVI. See **ALCALI** and **CERVUS.**

SPIRITUS CROCI. See **CROCUS.**

SPIRITUS JUNIPERI.

Spirit of Juniper.

This is made as that of the Oranges; two Pounds being allowed to one Gallon of Spirit of Wine. The poor and common People have it in a great Esteem, but theirs is made with the worst of Spirits, inso-much that it passes by the Name of the Beggar's Cordial, and is most commonly called Gin.

Spirit of Lavender.

The Manner of making this, from the College Dispensatory, is already described under the Article LAVENDULA, which see. But Boerhaave orders it to be prepared in the following manner.

Take six Ounces of fresh and ripe Lavender-Flowers, gathered in a warm clear Afternoon, and twelve Pounds of common Spirit of Wine, and distilled by the Rules of the Art, in the Alembic and Worm, till the Liquor begins to come over milky. What arises first, is a limpid Spirit impregnated with the Taste and Odour of the Plant, and must be kept separate. A thick white Liquor will now begin to follow; a Pint whereof is to be collected and kept apart, there will remain behind a brownish black Liquor, together with the Flowers, but not much of the manifest Virtue thereof. The first Liquor is called the Spirit, and the second the Water of Lavender.

Take three Ounces of the like Flowers, and pour the former Spirit and Water upon them, and distil as before. Keep the pure limpid Spirit separate, under the Title of the double Spirit of Lavender, but draw off none of the white Water, for fear of Burning. A Quart of fresh Water may, however, be poured into the Still, and then a Pint drawn over, which will serve in other the like Distillations. In the same manner, two Ounces of recent Flowers may be distilled with the preceding double Spirit, and the Water be afterwards obtained; by which means the Spirit will be so much the richer in the native Spirit of the Lavender. Water is here added, lest the Flowers, added after the first Distillation, should become dry, and burn, whilst the last Spirit was running off, and by repeating the Distillation with fresh Flowers every time, the Spirit thus becomes excellent. The same Operation may be performed, tho' slower, in a Glass-Body or Retort, with little Trouble, and without Foulness. And thus I have often carried these Spirits to the highest Perfection. And this Operation is universal for obtaining all the Spirits from odoriferous, aromatical Flowers; the principal whereof are Garden-Cloves, Saffron, Jafmin, Lavender, Lilies, Marum, Orange-Flowers, and Rosemary Flowers, but a principal Spirit of this Kind is that of Rosemary every where celebrated, and too much used under the Name of *Hungary Water*.

R E M A R K S.

It is easy to perceive that the essential Oil of the Flowers is here raised in the Distillation; and along with this Oil the Spirit of Wine rises almost pure, like Alcohol; and therefore this Spirit dissolves the Spirit of Lavender, and the Oil that rises with it: But after the Alcohol is drawn off, and the Water begins to follow, then the ascending Oil turns the Water milky. Whence is easily understood how these Spirits are procured by Art, and exalted at the Pleasure of the Artist.

SPIRITUS MELLIS.

Spirit of Honey.

Mix one Pound of Honey with three Pounds of clean Sand, and put it into a Retort in a Sand-Furnace; make a Fire of the first Degree for two Hours; increase it to the second for two Hours more, and so go on to the third; where let it remain till no more Fumes nor Drops will fall: There will then come over an empyreumatical Spirit and Oil: Put them both into a Cucurbit, and with a Fire of the first Degree draw off the insipid Water, and the second will raise the Spirit.

This is a Spirit only in the same Sense that other Acids are; for this is an Acid, and will dissolve Coral or Pearl, as distilled Vinegar. It is affirmed to be good to make the Hair grow, and used so much for that Purpose, by rubbing any bald Place with it, that it is to be met with almost in every Shop, altho' it is of no Value for any one thing else.

SPIRITUS, SAL VOLATILE, ET OLEUM
MILLEPEDUM.*Spirit, Volatile Salt, and Oil of Hog-Lice.*

Put any Quantity of Millepedes into a long-bodied Retort, so that it be not above half full; place it in a

Sand-Furnace, lute on its Receiver, and give it the first Degree of Fire till the Retort is thoroughly hot; then increase the Fire to the second, in which keep it two or three Hours, according to the Quantity of Millepedes made use of, and some Liquor will drop into the Receiver, and the volatile Salt will begin to rise; increase it to the third and fourth Degree, then cease and take off the Receiver, when it is cool, where there will be a Spirit, and Oil, and a Salt, which must be separated and rectified apart, or put altogether into a long-neck'd Matrass, luting on a Head and Receiver, and separate the Salt by Sublimation, as that of Vipers.

The volatile Salt is the only Part this Process produces that is of Value; and this has the Virtues of the Millepedes in Substance, and is good for all the Purposes of the *Vinum Millepedum*. Its Dose is from four to sixteen Grains in a Bolus, which is the best Form for its Administration.

SPIRITUS NITRI. See NITRUM.

SPIRITUS NITRI BEZOARTICUS. See BEZOARTICUM MINERALE.

SPIRITUS NITRI DULCIS. See NITRUM.

SPIRITUS NITRI CUM OLEO VITRIOLI. See NITRUM.

SPIRITUS SACCHARI.

Spirit of Sugar.

To one Pound of powder'd Sugar put three Pounds of Fullers-Earth also in Powder, or in its Room so much Sand clean washed; place a Receiver half full of the Mixture in a Sand-Furnace, and give it Fire of the first Degree for two Hours; then increase it to the second for two Hours more; proceed to the third, where keep it till no Fumes appear in the Receiver. Then let all cool, and in the Receiver there will be found a fetid Oil and Spirit, which separate as usual. Put the Spirit into a Retort or Cucurbit; set to it a Receiver unluted; make Fire of the first Degree, and there keep it till the Drops have a little Acidity; put away the Phlegm, lute on the Receiver, increase the Fire to the second Degree, where keep it till all is come off.

This will dissolve Pearl or Coral, and is also accounted a good Medicine in the Stone and Gravel in the Bladder or Kidneys; but it is hardly made or prescribed. The Dose is from ten to fifty Drops. There is another Spirit of Sugar, which the Chymists call Compound, that has half as much Sal Ammoniac as Sugar. It makes a finer and still more aperient Spirit, but is not used.

SPIRITUS SACCHARI ARDENS.

A burning Spirit of Sugar.

Take of coarse Sugar or Molasses, any Quantity at pleasure, in proportion to the Still; put to it ten or twelve times its Weight of Water; and let them stand a sufficient time to ferment: As soon as the Fermentation is over, put the Liquor into a Copper-Still with its Refrigeratory, and give it gradual Fire till it begins to drop. Observe so to manage the Fire, that the Spirit come from the Mouth of the Worm in a small Thread, and so continue till it runs insipid; then let out the Fire, and rectify the Spirit by a second Distillation, either in a Glass Body or Head; or if the Quantity be great, in a Copper-Vessel, observing to separate the Spirit from the Phlegm, as in the first Distillation, which may be further rectified till it will burn all away, and then it is called Alcohol.

This is of the same Use as the Spirit of Wine, and is much preferable to our Malt Spirits, both for Softness and Flavour, and is exceeded by none but that of the Grape.

SPIRITUS SALIS. See SAL.

SPIRITUS SALIS AMMONIACI. See AMMONIACUM.

SPIRITUS SALIS AMMONIACI SUCCINATUS. See AMMONIACUM.

SPIRITUS SALIS DULCIS. See SAL.

SPIRITUS SALIS MARTIS.

Spirit of the Salt of Iron.

Put into a Retort of Stone, or of Glass, covered with Clay, eight Ounces of the Salt of Iron, made with Oil of Vitriol, and Spirit of Wine; place the same in a Refrigeratory,

verberatory, cover the Junctures exactly with Clay, and make a small Fire of the first Degree, in order to heat the Vessel gently: Augment the Fire to the second Degree; when nothing more comes over, augment the Fire to the third Degree; and white Vapours will arise, so as to fill the Receiver: Continue this Fire till these Vapours clear up; then augment it to the fourth Degree, and continue the same till nothing more comes out from the Retort. The Operation ordinarily lasts twelve Hours. Let the Vessels cool, and take the Clay from them, and there will come out of the Receiver a very strong Smell of Sulphur; and one shall find there five Ounces and five Drams of a clear Spirit, having an acid Taste almost like the ordinary Spirit of Vitriol, but more stiptic, and participating much of the Spirit of Steel. Keep it in a Glass Bottle well stoppt.

The Author of it says, the Iron will not rise so well without a Mixture of Spirit of Wine in its Preparation; but it is the Degree of Fire to which such Rise is rather to be attributed. It may be given from four Drops to twelve in any convenient Liquor.

SPIRITUS SALIS CUM OLEO VITRIOLI. See **SAL.**

SPIRITUS SALIS VOLATILIS OLEOSUS. See **AMMONIACUM.**

SPIRITUS SAMBUCL

Spirit of Elder.

Ferment any Quantity of the Berries, and draw off the Spirit by an Alembic.

After the same manner is to be obtained the Spirit of any Fruit or vegetable Substance. The last Spirit is commended for possessing the Virtues of the Elder in internal Uses, and is applied outwardly as the *Spiritus Cerasorum Nigrorum*. The Dose is one, two, or more Spoonfuls.

SPIRITUS SAPONIS.

Spirit of Soap.

Cut into small Pieces sixteen Ounces of *Alicant* Soap, and soften it in an Earthen Vessel by a gentle Fire, and mix in it seven or eight Ounces of Clay-Powder: Put the Mixture in a Retort big enough that one third Part may remain empty; place the same in a Furnace of Reverberation, adopt a Recipient, lute the Joints exactly, and make a little Fire in the Furnace to the third Degree; and continue doing so till nothing more distills. Separate the Vessels when cooled, and pour the whole contained in the Recipient into a Funnel furnished with grey Paper, and there will come out a watery and clear Liquor, which is yellowish and of a bitter Taste; which may be called the Spirit of Soap, of which there will be six Ounces.

I do not know that this has been made in our Shops, but it seems naturally suited for so many Purposes of Moment, as to deserve Recommendation; for it cannot but be very opening and resolute, both inwardly and outwardly applied; and seems admirably calculated for Embrocations, with other suitable Ingredients, against arthritic and such like obstinate Pains. I cannot, also, but think it efficacious in the Jaundice, Scrophulas, and the like glandulous Foulnesses; as also, a good Menstruum for Opium, to make a liquid Laudanum with.

SPIRITUS TARTARI.

Spirit of Tartar.

Take of the pure Crystals of Tartar four Pounds; distil in a Retort with a large Receiver, increasing the Fire by Degrees till the Fumes altogether disappear. There will come out a Phlegm, a Spirit, and an Oil: After the last of these is separated, put the other into a Glass Cucurbit, and rectify in a Sand-Heat two or three times over, drawing off every time not above a third Part. Of the Remainder may be made a Salt of Tartar by Calcination; from whence, also, may be obtained an Oil of Tartar by Fusion.

The Spirit is extremely aperitive; but to make it yet more so, to three Parts of the Oil and Spirit which were procured by Distillation, put one Part of *Spiritus Nitri Dulcis*; shake them well in the Receiver, and put them carefully into a clean Glass Retort, which set in a Sand Furnace; fit and lute on a Receiver, and give it a Fire of the first Degree, till the Lute

be dry; then advance to the second, in which will come over a penetrating and grateful Spirit, which is a most powerful Diaphoretic, and also affits by Urine. It is given from two Scruples to two Drams, in any proper Vehicle, in the most obstinate chronic Diseases.

AQUA SEU SPIRITUS THERIACALIS CAMPHORATUS, CROLLII.

Take of Theriaca Andromachi, five Ounces; choice Myrrh, two Ounces and a half; Oriental Saffron, half an Ounce; Camphire, two Drams: Mix them, and pour thereto ten Ounces of rectify'd Spirit of Wine. Put them in a Cucurbit, and place thereon an Alembic will closed, and let them stand in a warm Place for four and twenty Days; after which distil them in *Balneo Mariae*, by which means you will obtain a fine Spirit, which you must pour again upon the Dregs; digest them in the Cucurbit, and distil them over again, and repeat it the third Time.

R E M A R K S.

The Myrrh must be grossly pulverized, and put together with the Saffron into a Glass Cucurbit; the Camphire and Theriaca must be dissolved in Spirit of Wine, and this Solution poured into a Cucurbit, which must be carefully cover'd, and set in a warm Place, where the Matter must be suffered to digest for twenty four Days; after which you must adapt a Head and Receiver to the Cucurbit, exactly luting the Junctures, and distil off the Liquor in *Balneo Mariae*. You are to pour back the distilled Spirit on the Dregs in the Cucurbit; and after a Digestion of four and twenty Hours, distil as before; and the same Distillation, or Cohobation, must be repeated the third Time, and the distilled Water or Spirit reserved in a Bottle well stopped.

It provokes Sweat, and represses Vapours; resists Poison, and the Malignity of Humours, and is of Service in pestilential Seasons. The Dose is from one to two Drams.

The Author directs a long Digestion of the Ingredients, and several Cohobations, the better to exalt and separate all the volatile Parts in the Distillation. But it is to be feared, that in those repeated Cohobations the most subtle of these Particles will be dissipated, either through the Pores of the Glass, or through the Junctures, let them be never so well luted. I should rather think, therefore, that one Distillation was enough, after a Digestion of four and twenty Days, so long a Time being sufficient to render it easy for the Dissolvent to dissolve, and exalt all the Ingredients which enter that Composition, and so much the more as those Principles are almost wholly sulphureous and volatile. *Lemery Pharmacopée universelle.*

Heister in many Places bestows great Encomiums on the *Spiritus Vini Theriacalis*, (by which, I presume, he means the Medicine here described) and speaks of it as an external Remedy of great Efficacy in Gangrenes, Whitlows, and several other Chirurgical Cases.

SPIRITUS VENERIS.

Spirit of Copper.

This is an acid Liquor drawn from the Crystals of Copper by Distillation, and may be prepared in the following manner.

Fill two Thirds of a Glass Retort with Crystals of Copper, prepared with distilled Vinegar. Put your Retort in Sand, adapt a large Receiver, and lute the Junctures. Use at first a gentle Fire, in order to raise by Distillation a small Quantity of insipid Water. This Water will be followed by a volatile Spirit. Then augment the Fire by Degrees, and the Head of the Retort will be filled with white Clouds. Towards the End of the Process surround the Retort with Live-Coals, in order to make the last Spirit, which is the strongest, come over. When the Clouds disappear, and the Receiver is cold, suffer the Fire to go out, unlute the Junctures, and pour all that is contained in the Receiver into a Glass Alembic, in order to distil it to Dryness with a Sand Heat; and this will be the rectified Spirit of Copper.

This Medicine is used against Apoplexies, Palsies, Epilepsies, and other Disorders of the Brain. Seven or eight Drops of it are to be taken in any proper Liquor. It dissolves Pearls, Corals, and other Substances of a like Nature.

There remains in the Bottom of the Retort a black Matter, which may be again converted into Copper, by fusing it in a Crucible, with the Addition of a little Saltpetre and Tartar. *Lemery Cours de Chymie.*

SPIRI-

SPIRITUS VINI. See ALCOHOL.
 SPIRITUS VINI CAMPHORATUS. See CAMPHORA.
 SPIRITUS VINI RECTIFICATUS. See ALCOHOL.

SPIRITUS VINI TARTARIZATUS.

Tartarized Spirit of Wine.

Take Salt of Tartar, two or three times coagulated and dissolved, one Pound; give it a strong Fusion in a Crucible, for two Hours; powder it in a warm Mortar, and whilst warm put it into a Matrafs to four Pints of rectified Spirit of Wine: Shake them well together, and place them in a Sand-Furnace; lute the Juncures of the Head and Receiver; give Fire to such a Degree, as may make the Drops succeed each other very quickly, and continue it till all the Spirit is come over.

This Spirit volatilizes and carries over some Part of the Salt of Tartar along with it; which is demonstrable by the Salt sustaining the Loss of, at least, one Ounce of its Weight. And by this Operation the Spirit of Wine obtains a more agreeable Scent and Taste than before, and is, also, more subtle and penetrating.

Another Way.

Take the Salt of Tartar left in the Bottom of the Matrafs in the foregoing Operation, dissolve it in pure rectified distilled Vinegar; filter the Dissolution, and coagulate the Salt, which dissolve again in more distilled Vinegar; filter and coagulate as before. Repeat this Operation so often, that no black Fæces remain, and that the distilled Vinegar comes off as strong as it was put upon the Salt. And then is the Salt prepared, which some call volatile Salt of Tartar.

If a farther Exaltation of this Salt is required, take of the foregoing Salt of Tartar four Ounces, and put to it of the Spirit of Wine one Pound, which will readily dissolve it. Let the Dissolution stand quiet for three or four Hours, and decant it gently from the Fæces; draw off the Spirit of Wine in a gentle Sand-Heat in a Retort: Dissolve the Salt again in the same Spirit of Wine, and repeat the Operation till no Fæces remain: Return the Salt again into the Spirit of Wine, in which it will totally dissolve.

This is the true tartarized Spirit of Wine, with which Mr. George Wilson says he used to extract the Tincture and anodyne Sulphurs of Metals, and unite them with vegetable fixed, and animal volatile Alkalies; and he farther owns it to be the principal Ingredient in the anti-rheumatic Tincture (of which he does not give the Recipe) that cured him of a violent Rheumatism, which afflicted him three Years successively; and that he was not only freed from those acute Pains which attend the Distemper, but then continued without any Return, which was about fifteen Years after. Nor are its Virtues (he continues to inform us) confined to that Disease only; for the Gout, Scurvy, Dropsy, Jaundice, Colic, Green-Sickness, and Stone in the Bladder or Kidneys, give way to it. Its Dose (that is of this Spirit) is from fifty Drops to two Drams, diluted in Wine and Water, or both mixed.

SPIRITUS VITRIOLI. See VITRIOLUM.

SPIRITUS VITRIOLI DULCIS. See VITRIOLUM.

SPISSAMENTUM. The same as STYMA; which see.

SPITHAMA. σπιθαμή. A Measure of Length, called a Span, which is usually said to be twelve Fingers Breadth, or as much as from the End of the Thumb to the End of the little Finger, when extended.

SPLANCHNICA. σπλάνχνα, from σπλάνν. An Entrail or Bowel. Medicines appropriated to the Diseases of the Bowels or Viscera.

SPLEN. The Spleen. See LIEN.

SPLENECTOMIA. An Excision of the Spleen.

SPLENETICA. Remedies for Disorders of the Spleen.

SPLÉNIA. Compresses.

In dressing Wounds, after the Plaister and other Necessaries, it is usual to apply Compresses, which are made of clean soft old Linen, four, six, or eight times doubled. They were called *Splénia* by the ancient Physicians, because of the frequent Resemblance of their Figure to that of the Spleen; and they are called Compresses, because they serve to keep the Plaister and other Dressings firm. Compresses are also often applied without Plaisters, sometimes dry and sometimes moistened with Waters, Spirits, &c. of different Kinds and Qualities, according to the Nature of the Disorder.

The Figure and Size of Compresses are different, according to the different Parts of the Body to which they are applied. Sometimes they are square, as in Tab. 23. N^o. 12. oblong, as in N^o. 13. triangular, as in N^o. 14. crucial, as in N^o. 15. According to their Situation, also, they are called right,

oblique, and transverse, and sometimes angular, when they surround the Arm or Leg. Some are shaped like an Asterisk or Star, as in N^o. 16. Some are cut either on one Side or both Sides, as far as the Middle, see N^o. 17, 18. Some are hexagonal, like N^o. 19. and others are globular, like a Ball, which are placed under the Arm-pits, in Luxations of the Shoulder-bone, see N^o. 20. Some are small and square, like N^o. 21. which are used in stopping Hæmorrhages from wounded Blood-vessels; others are slender, as N^o. 22. and are useful in Sutures of Wounds and Ligatures of the Arteries. Those which are designed for covering Plaisters, ought to be made broader than the Plaisters.

The principal Intentions of Compresses are, 1. To cherish the natural Heat of the Part affected, and keep out the Cold. 2. To secure the Dressings under them. 3. To convey liquid Remedies to the Parts wounded, or otherwise disordered, and to contain them longer on the Part. 4. To fill up any Inequalities or Depressions about the wounded Part, that the Dressings may be kept firm, especially in Fractures. 5. To prevent the Skin from being irritated by the Stricture of Bandages, which might occasion troublesome Itchings, and even Pain. *Heister's Surgery.*

SPLENICA. Medicines appropriated to Disorders of the Spleen.

SPLENISCOS. σπληνισκος. A Compress.

SPLENITIS. σπληνίτις. An Inflammation, or Tumor of the Spleen. *Splenitis* is, also, a Name for a Vein in the Left-Hand, the same as the *Salvatella*, which in the Right-Hand is called *Jecoraria*.

SPLENIUM. The same as the *Asplenium*, or *Ceterach*.

SPLENIUS MUSCULUS. See MASTOIDÆUS SUPERIOR.

SPLIT. A Name for the *Fumaria lutea*.

SPODIACON. σποδιακόν, from σποδός, *Athes*. The Name of a Collyrium, described by *Paulus Ægineta*, and thus called, because it was of an Ash Colour.

SPODITES. σποδίτης. An Epithet for Bread, importing its having been baked under the Embers. — *Galen. Exiges*.

SPODIUM. See CADMIA.

SPODOS. σποδός. The same as Spodium. Properly it signifies Ashes.

SPOLIATORIUM. The same as APODYTERIUM.

SPONDYLIIUM. See SPHONDYLIIUM.

SPONDYLOS. σπώδυλος. The second Vertebra of the Neck, or a Vertebra in general.

SPONDYLOLITHOS. A Sort of Stone found in the Country of *Tirol*, resembling the Vertebra of a small Animal.

SPONGIA.

The Characters are;

It is a thin, bibulous, and strangely implicated Substance, generally softer than the *Keratophytus*.

Boerhaave mentions seventeen Sorts of *Spongia*; which are;

1. *Spongia*; ad usum præstantissima; foraminibus exiguis pervia. *T. 575.*

2. *Spongia*; compressa, magna. *C. B. P. 368.*

3. *Spongia*; globosa. *C. B. P. 368. Imp. 635. Tourm. Inf. 575. J. B. 3. 816. Raii Hist. 1. 80. Boerh. Ind. A. 8. Spongia marina alba. Ger. 1383. Emac. 1577. Spongia marina usualis, Park. 1303. SPONGE.*

The Sponge is an imperfect Plant, or Sea Vegetable growing under Water at the Bottom of the Sea, upon the Rocks and Stones, of a kind of woolly or hairy Substance, of a springy Nature, full of a great Number of small Cavities, light and porous.

Sponges uncalcined, are never used inwardly, being accounted of a poisonous Nature, swelling up the Stomach, and not digesting; they are used by Surgeons in Embrocations, and to stop Bleeding. *Miller's Bot. Off.*

Of Sponges, those which are full of fine Perforations, some call male Sponges, and of these the hardest *Tragi*; those which are of a contrary Disposition to the before-mentioned, they call female Sponges; they are burnt like the *Alcyonium*.

Sponges, while new and not pinguious, are vulnerary, and repress Tumors; applied with Water or Posca, they conglutinate recent Wounds, and with boil'd Honey heal old Sinuses. Old Sponges have no such Effect, tho' they serve to separate and widen the Lips of Ulcers and Calluses when ready to close, by being tied up dry in a Linen Rag, and intruded after the Manner of Lint. New Sponges applied, dry rheumatic and cancerous old Ulcers, and repress Hæmorrhages. Burnt with Vinegar they are serviceable in a dry Lippitude, and where Abstersgents or Astringents are required; but for Ophthalmic Remedies they do best washed. Burnt with Pitch, they are good for an Hæmorrhage. Those which are softest are whitened in the hot Season by irrigating them with the Spume of the Salt, which sticks to the Rocks, and then expelling them

them in the Sun, in doing which we must be careful to turn the hollow Part upwards, and that by which they were cut off downwards. If the Weather be fair, they may be exposed by Moon-light, being irrigated with the Spume of Salt, or with Sea-water; and Spunges so exposed become whitest of all. *Dioscorides, Lib. 5. Cap. 138.*

A burnt Sponge is of an acrimonious and digestive Faculty. Impregnated with Bitumen, and used while it is on Fire in order to be dried, it stops an Hæmorrhage from a Wound. If Bitumen be wanting, Pitch may serve. A new Sponge is manifestly drying, for if you apply it to a Wound either with Water, Posca, or Wine, it will prove as good an Agglutinant as those Medicines which are applied for stopping an Hæmorrhage. *Oribas. de Virt. Simpl. Lib. 2. Cap. 1.*

The Use of a Sponge is in deterring Sordes, Sanies, Blood, Pus, or Medicines themselves from the Body, or in relieving the same under a biting or itching Sensation. But for the Face we use a Sponge in order to revive and raise the Spirits when sunk, as in a Lipothymy, for which Purpose we apply a Sponge, dipt in the Summer in cold Water, but in the Winter in what is Milkwarm. But we must be cautious in such Cases, and not make the Application in the Beginning or Increase of the Fit, but in the State or Decline thereof; for in the Beginning we make Use of odoriferous Things. *Archigenes* for a burning Fever, when near its Height, would have us apply the Sponge not only to the Face, but also to the Breast. *Actius, Tetrab. 1. Serm. 3. Cap. 170.*

4. Spongia; cinerea; cava; vaginam referens.

5. Spongia; Americana; compressa; spinosa; echinata; eleganter punctata.

6. Spongia; Americana; infundibulum referens; spinosa; echinata; eleganter punctata.

7. Spongia; flava; Priapeia; cava; mirabilis.

8. Spongia; flava; cava; cylindrica durior.

9. Spongia; fusca; cava; conica; tuberculosa; ingens.

10. Spongia; ramosa. *C. B. P. 368. Conserua marinae* genus. *Lob. Ic. 257.*

11. Spongia; ramosissima; oculata.

12. Spongia; ramosa; fluviatilis Newtoni. *Raii H. 8.*

13. Spongia; dura; ambarum griseum penitus referens.

14. Spongia; ingens; anomala; Pelvim referens.

15. Spongia; dura; ramosa; nigra; suberis instar.

16. Spongia; ramosa; fistulosa; millepora.

17. Spongia; pulcherrima; reticulata; fistulosa; lacunata. *Boerh. Ind. Alt. Plant.*

Sponge is a soft, light, porous Plant, resembling a Fungus, and adhering to the Rocks in the Sea. Almost all Spunges are brought from the *Mediterranean* Sea. Spunges are of Use for enlarging Wounds when too small, and being burnt, afford an excellent Powder for cleaning the Teeth. There are sometimes found in Spunges some very small Corpuscles, which, by the Help of a Microscope, appear to be small *Conchæ*, which being reduced into Powder, are said to be good for the Sand and Gravel in the Kidneys, and the Scrophula, and also for Worms in Children. All these being burnt together, afford a very absorbent Powder, and emit a Smell like that of burnt Horn. *Hist. Plant. ascript. Boerhaave.*

Sponge is a very remarkable Plant, because when subjected to Distillation, it affords an urinous Spirit, exactly resembling that procured from animal Substances. Calcined Sponge is celebrated for its Virtues in curing the King's Evil, and not without Reason; for 'tis certain that in this Distemper many remarkable Cures have been performed by it.

SPONGIÆ LAPIS. *Offic. Lapis Spongiae, Boet. 407. De Laet. 135. Schrod. 357. Worm. 54. Charlt. Foss. 23. Lapides in Spongiis, Matth. 1390. Spongites, Aldrov. Mus. Metall. 671. SPUNGE STONE.*

It is a Stone quite friable, concreted in a Sponge, and of a white or grey Colour. It is an Attenuant without any remarkable Heat, and is good to break the Stone in the Kidneys and Bladder, and also to discuss strumous Swellings.

The Stones found in Spunges being taken in Wine, are good to break the Stone in the Bladder. *Dioscorides, Lib. 5. Cap. 163.*

SPONGIOLI. Small Mushrooms which are produced in the Spring, and are esteemed, of all others, the best.

SPONGION. *σπγγιον.* The Name of an Epithem, and of a Malagma, described by *Paulus Aegineta*, thus called, because said to imbibe hydropic Humours like a Sponge.

SPONGIOSUM OS. A Name for the *Os Ethmoides*, or *Cribiforme* of the Head. See **CAPUT.**

SPONGOS. *σπγγος.* A Sponge.

SPONSUS. Mercury. *Rulandus.*

SPONTUM. Ashes wetted with Water, and used in the Depuration of Gold or Silver.

SPORADES. *σποράδες.* An Epithet for Diseases, importing *interspersed* or *disseminated*. Sporadic Diseases are such as seize particular Persons at any Time or Season, or in any

Place; whereas epidemical Diseases are peculiar to certain Times or Seasons, and endemial to particular Places. The Word is derived from *σπείρω*, to sow, or scatter.

SPORADICI MORBI. Sporadic Diseases. See **SPORADES.**

SPORETOS. *σπορέτος.* The Beginning of Winter, or latter End of Autumn, in which the Seed of Winter-Corn is sown.

SPOROS. *σπός.* The seminal Fluid.

SPUMA. Froth or Foam. *Spuma Argenti* is Litharge. See **LITHARGYRUS.** *Spuma* in Chymistry, is Ashes. *Spuma Maris*, is the *Halcyonium*.

Spuma Nitri, is the *Apronitrum*. *Spuma trium Draconum*, is Butter of Antimony.

SPURIUS. Illegitimate. This is applied as an Epithet to various Diseases. The Ribs, also, which do not reach to the Sternum, are called *Spurious Ribs*.

SPUTAMEN. The same as **SPUTUM.**

SPUTUM. Prognostics from Spit, or Excretions by Spitting.

Tho' the Name *Sputum*, Spit, be given by Physicians to whatever comes from the Mouth, except what is discharged by Vomiting, in which Sense it comprehends all Excretions by Screation or Hawking, simple Spitting and Coughing, yet the Word is more properly applied by them to the Matter excreted by means of a Cough, and under this Acceptation we shall now consider it with respect to the Signs on which we may ground our Predictions concerning the Death or Recovery of the Patient.

The Matter discharged by Coughing, provided it be simple, and not in the least mixed with other Humours, is a mucous, pituitous Excrement distilled from the Lungs. Sometimes indeed bilious, or merely purulent Substances are discharged, but these are the Effects of very bad Disorders. Now these Excretions by Means of a Cough, to which, as was said, we shall give the Name of *Spit*, are, as *Galen* tells us, Indications of the Affections of the Lungs, Thorax, *Aspera Arteria* and Throat, and, in short, of all the Organs of Respiration. And they differ from one another in Substance, Figure, Colour, Quantity, Simplicities and Mixture, Smell, Taste, Facility of Screation, an in Alleviation or Aggravation of the Pain and Cough. In respect of Substance, they are either thin or thick, viscid or not viscid; in regard to the Figure, they are called smooth, equal, round, spumous, bloody and purulent; as to Colour, they are said to be white, pale, yellow, russet, red, green, livid, black, and sometimes particoloured; in Quantity, they amount to much, or little or nothing; in respect to Simplicities and Mixture, they are either merely simple, or more or less mixed; as to their Smell, they are either said to have an ill Smell, or to have no ill Smell; in Taste they take the Epithets of insipid, sweet, salt, bitter and acrid; as to Facility or Difficulty of Excretion, we say they are easily, or with Difficulty, or by no means dischargeable by Coughing; they are also either such as mitigate or increase the Pain and Cough; and, to seek for no more Distinctions, are either concocted, or crude and malignant.

The Causes of all these different Excretions by Coughing, are to be known and understood; and, first, as to *thin* and *liquid Spit*, its Thinness proceeds, according to *Galen* on the sixth of the *Epidemics*, from the weak Heat of the Brain, which is incapable of concocting the aqueous Excrement, as are also the Lungs on the same Account, or a Defect of Heat sufficient to thicken the Humour. This Sort of *Spit*, in a Pleurisy, he makes the Beginning of Concoction, as the thick *Spit* is a Sign of perfect Concoction; for *Spit*, in its State of Maturation, grows thicker and thicker.

Spit becomes moderately viscid, when the thin or liquid Parts are thoroughly concocted, but an extraordinary Viscidity indicates an intense Heat resolving the Humid, by which Means, the Phlegm being agitated by a high Degree of Heat, thickens and becomes viscid. Such a Viscidity of the *Spit* is very pernicious in pleuritic and pulmonic Disorders, because it adheres so firmly to the Parts as hardly to be disengaged, and oftentimes, by obstructing the small Arteries of the Lungs, induces a Suffocation, of which *Galen, Lib. 4. de Loc. Affect. Cap. 6.* gives an Instance in *Antipater*, a Roman Physician. For in a Pleurisy, or Peripneumony, and even in an Asthma, what cannot be thrown off induces a Stertor and Ebullition, and is frequently the Cause of Suffocation or an Empyema. But a watery and fluid Phlegm, which is void of the least Viscidity, is a Sign of a weak Heat, which is incapable of confining the thin Humidity.

A *smooth* and *equal Spit* indicates the Phlegm to be not only of one simple Substance, but that it is equally agitated in all Parts by the Heat; as one unequal and variously figured, indicates the contrary.

Spumous, or frothy Spit, in which the Spume continues for a considerable Time, is from a pituitous and viscid Substance, agitated with a great Degree of Heat; *Spit* remarkably spumous is justly condemned by *Galen*, *Lib. de totius Morbi Temp.* This Sort of *Spit* may proceed also from a flatulent Spirit mixed with the Phlegm, or some other Humour, as it happens when the excrementitious Parts discharged from the Lungs are mixed with a great Quantity of Air. In this respect we are told by *Paulus*, that spumous *Spit* is frequently discharged from the Throat, because it is a Part concerned in Respiration. In a Pleurisy and Peripneumony what is expectorated by Coughing appears spumous, not from a flatulent Spirit, but an igneous Heat contracted by the affected Parts. Under these Disorders, if spumous Blood appear among the *Spit*, it shews the Substance of the Lungs to be injured, as we are taught by *Galen*; and it appears from *Hippocrates*, 5 *Aph.* 13. that the spitting of spumous Blood is a certain Sign of an Ulceration in the Substance of the Lungs.

Spit of a round Figure expectorated by Coughing, is from a thick and tenacious Humour collected in the Fibres of the Lungs, and agitated by an extraordinary Degree of Heat, according to the Sentiments of *Galen*, *Com. in 6 Epid.* to which we add, that it takes this round Form, because the glutinous Humour contained in the Aspera Arteria, assumes the same Figure with that Part, which is globous, as having its interior Cavity turned orbicularly. I have observed this Sort of *Spit* in some Persons who were free from a Fever, and for a very long Time seemed to be no way indisposed, but at last died all of them of Consumptions. Round *Spit*, according to *Hippocrates*, 6 *Epid. Sect. 3. Aph. 27.* and *Sect. 6. Aph. 21.* indicates a Delirium, perhaps from the Heat signified by it, which, as *Galen* says, *de loc. Affect. Lib. 4. Cap. 8.* fills the Head, but it can never by itself, and alone, portend a Delirium.

Of much the same Kind with round *Spit*, is *Spit* in the Figure of Hailstones; this was observed by *Galen*, of a certain Person who could not avoid falling into a deep Consumption.

Bloody Spit is from an Extravasation of Blood, occasioned sometimes by an Aperture of the Mouths of the Veins, which the *Greeks* call *Anastomosis*; an Effusion of this Kind is not attended with Pain, Inflammation or Fever, and the Blood is thin and watery, and much in Quantity, if proceeding from large Veins, and but little, if issuing from smaller Vessels. Sometimes the Extravasation and consequent Hæmoptoe is caused by an Erosion of the Vessels, called *Diabrosis* and *Anabrosis*, which Affection is indicated by a troublesome Cough without a manifest Cause. The Blood in the Beginning is but little in Quantity, and is evacuated at Intervals, tho' sometimes, when the Erosion is considerable, or affects the larger Vessels, there is a copious Efflux. In the third and last Place, the Hæmoptoe may be occasioned by a Rupture of the Veins, which Affection is called a *Perirrhesis*, and is indicated by a Pain, especially if the Flux proceed from a Rupture of the Vessels about the Thorax or Lungs near a Membrane, and the Blood is also much in Quantity, if the Rupture be occasioned by a Redundance of Humours, violent Motion, Clamor, a Fall, a Blow, or the like. *Bloody Spit* then you see, is occasioned by an Aperture, Corrosion, or Rupture of the Veins. But in a Pleurisy this Kind of *Spit* shews that Nature attempts the Concoction of the morbid Matter by gently attenuating the same, whence the Passages being dilated for the Exhalation of the Vapours, the thinner Part, and what is next to the Vapours, takes Occasion from the Laxness of the Pores to slip through them into the internal and neighbouring Spaces, from which, by the Rise of a Cough, and Expectoration of *Spit*, an incipient Concoction is indicated. This kind of bloody *Spit* is mixed with Phlegm, and is incident to those Pleurisies which *Galen*, *Com. 3. in 6 Epid.* pronounces of the mildest Sort. But very bloody *Spit* in pleuritic Disorders, is utterly condemned by the Author of *Coac.* 390, because it is much the same as if pure Blood were expectorated, and indicates another kind of Disorder, which is either a *Diabrosis* of some of the Vessels by an acrimonious and corroding Bile attenuating the Blood, and opening the Veins; or a *Rhexis*, that is, a Rupture from a violent Compression of the Thorax, which proved ineffectual in discharging the Contents of the Phlegmon.

Purulent after bloody *Spit* indicates an approaching Pthitis, 7 *Aph.* 15, 16. but in a Pleurisy and Peripneumony it is a Sign of a Suppuration and Empyema, whence proceeds a Consumption; for if the peccant Matter be not removed in fourteen Days, it either destroys the Patient by Suffocation, or becomes more putrid, and is converted into Pus, the Signs of which are a Horror, either recent or increased, or violent Fever, and a Weight or Load. Agreeable to this are the Sentiments of *Hippocrates*, 2 *Aph.* 47. where he says, "That

"Pains and Fevers happen more about the Time of the Generation of Pus, than after it is generated."

With respect to the Colours of the *Spit*, or Matter excreted by Coughing, it appears white when it is either pituitous or purulent. White *Spit* from Phlegm, in pituitous Diseases, is of Service; in bilious Disorders, it is not only of no Benefit, but a bad Sign, as indicating that nothing of the Matter which causes the Distemper, for Instance a Pleurisy, is discharged. Of white *Spit* from Pus we have spoken just now.

Yellow, pale, and black *Spit*, are from Bile of the same Colours impregnating the same. *Com. 4. in 6 Epid. T. 4.* The same Author, *Lib. 2. de Loc. Affect. Cap. 9.* comprehends the Colours of *Spit*, with their various Causes, in the following Passage: "We have already shewn, he says, that all Inflammations proceed from a Conflux of Blood; wherefore if the Blood be bilious, the *Spit* will be yellow, or pale; if pituitous and spumous, the *Spit* will be white; if the Blood be melancholic, the *Spit* will be either black or livid; if none of these Humours affect the Blood, the *Spit* will be red. In Pleurisies, the *Spit* is frequently observ'd to have more of a bilious Hue; in a Peripneumony it has usually more of a phlegmatic Cast."

Party-colour'd *Spit*, according to *Galen*, indicates a Variety of Affections, and consequently a difficult and hazardous Distemper.

Much *Spit* indicates a Multitude of Humours, and if expectorated with Ease, and white and thick, shews the Phlegmon to be concocted and subdu'd. If it be much and purulent, and the Pus therein be white, smooth, equal, and not fibred, it signifies that the suppurated Phlegmon will be ended by an Excretion of the Pus. Much bilious, green, livid and black *Spit*, shews the Disease to be very crude and malignant, and very difficult to be subdu'd by Nature.

Spit little in Quantity with respect to the Disease, tho' concocted, is of no Service, and therefore justly to be dreaded in a Peripneumony, as we are taught by the Author of the *Coac.* 416. and find confirm'd by an Instance in *Hippocrates*, 7 *Epid. T. 58.* of the Wife of *Euxenus*.

No *Spit* at all excreted in pleuritic and peripneumonic Disorders is highly dangerous, especially when the Patient has not the Benefit of Expectoration either in the Progress or Beginning of the Disorder. Not to spit in a Pleurisy is of the same Signification as aqueous Urine in other Fevers, indicating the extraordinary crude State of the Disease, as *Galen* tells us, *Lib. 1. de Crisibus, Cap. 18.* The same Author, *Com. in 1 Aph. 12.* says, that want of spitting shews the Inflammation or Phlegmon to be difficult of Concoction, and of long Continuance. And, *Lib. de Constitut. Art. Medend. Cap. 16.* he says, that to spit nothing is pernicious, partly because it signifies that the Matter is as it were bound up in the Phlegmon, and partly in that the inward Parts are universally corrupted by its Detention. Hence the Author of the *Coac.* 381. justly pronounces dry Pleurisies, in which nothing is discharged by spitting, very dangerous. And *Galen*, *Lib. 2. de Crisibus, Cap. 10.* expresses himself to the same Purpose, as follows: "When the Disorder, he says, is exquisitely strait, and binds up, as it were, in itself the whole Flux [Confluence of Humours] it produces deadly Distempers, which are called *ἄπυσι* (*Aptysi*) spittleless." And *Lib. de Totius Morbi Temp. Cap. 16.* he positively determines, that want of spitting, attended with great Pain and a Difficulty of Respiration, is mortal.

It is no less fatal under the same Disorders for spitting to be suppressed for no manifest Reason, as the same Author observes, *Lib. de Constit. Art. Med.* for such a Suppression, he says, *Com. 2. in Prognost.* is owing either to the Thickness and Viscidity of the Humour, or to the Laxness of the Membrane which incloses the Lungs; or, lastly, to the Weakness of the Faculty in the Patient. To the same Purpose the Author of *Prorrhet.* 97. tells us, that "They who are affected with a Pain of the Side attended with bilious Spittings, if these cease for no Reason, are seized with Madness." Here *Galen*, in his Comment on the Place, writes, that "This is not always the Consequence, but only when there is a Translation of the bilious Humour to the Head." In a Tabes and Suppuration there is nothing worse than a Suppression of *Spit*; in the latter Case it signifies a Pthitis or Death, and in the former it portends a fatal Event. *Galen*, in 7 *Aph.* 16. says, that consumptive Persons live under their Extenuation as long as they can cleanse and free their Lungs by coughing; but when the Pus remains within, the Passages for Respiration being by that Means obstructed, the Patient is suffocated on a sudden. To the same Purpose we are told by *Hippocrates*, 7 *Aph.* 16. that "Upon spitting of Pus comes a Pthitis; and when the

"Spit is retained, the Patients die." An Excretion, also, which is weak and fruitless, and is not projected by the Lungs, but on Account of an excessive Plenitude rattles in the Throat, shews either the Redundance and Viscidity of the Humours, or the Weakness of the Faculty.

In a Pleurisy, Peripneumony, Empyema, and Tabes, for the Patient to be able to spit out readily and freely, is a very good Sign, as we are told by *Galen, Lib. de Constitut. Art. de Medend.* This in a Pleurisy and Peripneumony, shews that Nature has begun her Work of Concoction, and that the Spit has no bad Quality; and in a Suppuration it gives Hopes that the Pus may this Way be evacuated, and a Phthisis prevented. Of such Sputum we find *Hippocrates* speaking in *Prognostic.* where he says, "That in all Pains and Disorders about the Lungs and Sides, a prompt and easy Excretion is required." For this shews both the Strength of the vital Faculty, and, also, of the animal Faculty in the Brain, and that Nature's Instruments, the Muscles, are no way incommoded in Respiration by an Obstruction or Compression of the Passages; and, also, that the Matter is neither so viscid as not to be separated from the Parts, nor too thick nor too thin to be raised.

Pure, or simple and unmixed Spit, except such as is merely pituitous, is occasion'd, as we are told by *Galen, Lib. de Humoribus*, from a Consumption of all the aqueous Humidities by a flameous Heat, whence it shews an internal Burning of the Parts, and that the Disease is of a very difficult and dangerous Nature, because such Spit is of a malignant Quality, and can hardly be expectorated. *Hippocrates* in his *Prognostics* condemns pure or simple yellow Spit, but most of all black Spit when pure.

Spit appears mix'd with an aqueous Humid, when either the humid Parts are not consumed by the febrile Heat, or there is a Redundance of the pituitous Humour.

What we call various or Party-colour'd Spit, appears mix'd with a Variety of Humours; and this is much worse than the former, as indicating a Complication of Disorders.

Fetid Spit, by its ill Smell, denotes a considerable Putrefaction in the Humour of which it is composed. For this Reason *Galen, Lib. de Tot. Morb. Tempor.* highly condemns very fetid Spit in a Pleurisy and Peripneumony: And *Hippocrates, Coac. 406. 409.* pronounces it mortal in an Empyema.

Insipid Spit is occasioned by crude Phlegm, sweet Spit by Phlegm concocted, bloody Spit by concocted Phlegm mixed with Blood. Salt Spit is from salt Phlegm, which acquires its Saltiness from an excessive Agitation and Aflation by Heat, and, also, according to the Sentiments of the Arabian Physicians, from torrid Vapours, or a Mixture of bilious Humours. Acrimonious and bitter Spit is from yellow, russet and æruginous Bile; acid Spit from a melancholic Humour.

Spit, by which a Mitigation of Pain is occasion'd, is esteemed very salutary, because it indicates a due Evacuation of the Humours, according to that of *Hippocrates, 1 Aph. 25.* "When Things are evacuated which require Evacuation, it conduces to Health." And, as he says in another Place, 2 *Aph. 2.* "That Sleep which removes a Delirium is good, but the contrary bad;" thus it happens in Affections of the Pleura and Lungs, that where Spit causes no Alleviation of the Pain, it is of no Service, but of worse Consequence when the Pain increases by it: For Spit which gives no Relief to the Patient under his Pain and Anxiety, though in itself of no bad Quality, prognosticates a Suppuration, according to *Hippocrates* in the following Passage of his *Prognostics*: "Whenever a Pain in those Parts is not removed either by Expectoration, or Evacuation of the Belly by Stool, or Venesection, or Medicines, or Diet, the Disorder tends to a Suppuration." And to the same Purpose he says just before, "That all Excretions which remove not the Pain are bad; but the worst of all are the black, whereas those by which the Pain is alleviated are of the best Kind."

In the same Manner, Spit by which the Cough ceases is a very good Prognostic, because it indicates that the Humour which is the Cause of the Cough and Inflammation, discharges itself the most commodious Way. Spit and Excretions which, on the contrary, excite much Coughing, are pernicious; for the Humour, either through the Depravity of the Matter detained in the Lungs, or the Weakness of the Organ, or of the Faculty, or its own Thickness, is with great Difficulty raised, and is sometimes intercluded in a narrow Passage, in such a Manner, as to occasion Suffocation. Sometimes it contracts such a Degree of Viscidity, as not to be separable from the Parts to which it adheres; and oftentimes when it is raised into the Tubes of the Lungs, is there detained, and adheres to them like Glue. Thin Spit, on account of its Diffuence and Inco-

herence, is no less difficult to be expectorated. By all these Kinds of Spit then, or Excretions, much Coughing is excited, which, on the contrary, is restrained by Spit of a moderate Consistence; and not too viscid or too thin. For such Reasons *Hippocrates*, in his *Prognostics*, utterly condemns all Expectoration of Spit which provoke much Coughing.

Concocted Spit in a Pleurisy or Peripneumony, is white, light; neither too thick nor too thin, as *Galen* says; *Com. 2. in Prognost.* which is easily discharg'd by Screation, and is of equal Consistence; this is from Nature having got the better of the Distemper.

In a Suppuration, *Hippocrates Prognostic.* requires Spit which is white, pure, and free from Fetidness. And in the same Treatise he commends such Spit as is mixed with yellow Bile, especially in Pleurisies, as indicating that a great Part of the Matter which caused the Inflammation discharges itself in a due Manner. On the contrary, thin Spit, or what is too thick, or too thin, or too viscid, is of a crude Substance, and shews that Nature has not as yet concocted anything.

Of a malignant Kind are the purely yellow, russet, green, livid, black, party-colour'd, highly fetid Spit, with such as increases the Pain and Cough, or is attended with a great Difficulty of Respiration. And so much for the Causes of the different Kinds of Respiration; we shall now treat of the salutary Kinds of Spit.

Of the good Kinds of Spit, which are Prognostics of Recovery.

In speaking of the good Kinds of Spit, we shall first observe how they ought to be when the Subject is or is not molested with a Fever, Cough, Difficulty of Respiration, or a Pain: Secondly, what Kind of Spit is requir'd in a Pleurisy and Peripneumony: And, thirdly, what is to be desir'd in an Empyema, or Suppuration.

First then, in Affections of the Thorax, without an Inflammation or Fever, the best Spit is what is white, smooth, equal, moderately thick, with a slight Degree of Viscidity; ting'd with no bad Colour, that is to say, yellow, pale, russet, green, livid or black; for Spit ting'd with Colours, and especially yellow, is utterly condemned by *Galen, Lib. 4. de Loc. Affect. Cap. 8.* That Spit is, also, well circumstanced which is easily excreted, without much Coughing, and which, also, restrains a Cough, and gives Relief under a Difficulty of Respiration.

In a Pleurisy and Peripneumony, the Spit is esteem'd salutary which resembles that of Persons in Health, as we are assured by *Galen, de Crisibus, Lib. 1. Cap. 7.* for it is not possible that, when the Parts of the Thorax and Lungs are very much injur'd, the Spit should be like that of sound Persons, but there must of Necessity be a Difference. Now Spit which resembles that of healthy Persons, is never discharg'd but in the State of the Disease, at which Time there is a perfect Concoction. Hence *Galen, in 1 Aph. 12.* says, that concocted Spit is white, smooth, equal, neither too thick nor too thin, and which is easily and readily excreted. The same Author, in 6 *Epid.* tells us, that in a Pleurisy and Peripneumony, which are of a favourable Kind, the Patients have some Discharge of Spit at the Beginning of the Distemper, and that this Discharge indicates that the Concoction is begun, and that if the Matter discharged be thin, it is a Sign of a moderate Concoction, if thick, of a perfect one. And *Com. in 1 Aph.* he says, that for the Sick in those Disorders not to spit, indicates a very crude State of the Disease; to spit something, but of a thin Consistence, shews the Concoction is begun; for the Spit afterwards to become thicker, indicates a greater Concoction; and when it comes thick, as was said, white, smooth, equal, and is easily discharged, it indicates a perfect Concoction. The best Spit, therefore, has these Qualities; and such was that observ'd by *Hippocrates of Anaxion, on the twenty-seventh Day, 3 Epid. Sect. 3. Ægr. 8.*

But this, perhaps, may be liable to Objections; if it be just what *Hippocrates* says, *Lib. Prognost.* where we read, in such Cases, "The Spit should appear deeply tinged with yellow Bile." And a little after it is said, "That an Excretion of yellow Spit, not mixed with much Blood, in the Beginning of a Peripneumony, is very salutary." To the same Purpose we are told by the Author of *Coac. 386.* "That in pleuritic Pains it is good for the Spit to be coloured," and *ibid. 390.* "That in all Pleurisies and Peripneumonies it is best when the Spit is easily and readily discharged, and has a yellow Mixture." Hence it follows, that not only white Spit is good, but, also, if yellow, bloody, and pale Matter be mixed with the same.

This indeed is very true, but not in the State or Height of the Disease, but in the Beginning or Increase of the same; for which no other Reason is to be given, than that these Kinds of *Spit* shew the Inflammation to proceed from yellow Bile and Blood, which, as *Galen* shews, is less dangerous than such as are excited by other Humours, and, also, discharges some of the Matter which is the Cause of the Inflammation; so that these Kinds of *Spit* discharg'd in the Beginning or Increase of the forementioned Disorders are not unserviceable. But if such *Spit* happens later, it is less safe, and shews that the Disease will be slow in Concoction, *Coac.* 385. 390. or of long Continuance, and not void of Danger. It is not, however, mortal, but only foreshews a long Disease; nor yet useless, as was said, because it signifies that some Part of the Humour which is the Cause of the Inflammation is evacuated, and, also, that the Inflammation itself is not of a malignant Nature, but milder, and less dangerous than when it proceeds from other Humours. Hence it appears, that neither green, nor black, nor party-colour'd *Spit* is good, since it signifies that the Inflammation is excited by very depraved Juices, and consequently that green and black *Spit* is more depraved than the yellow and bloody.

That is to be esteemed good *Spit*, also, which, besides the foremention'd Characters, has moreover this, that it is easily and freely discharged, according to that of *Hippocrates*, *Lib. Prognost.* where it is said, "That in all Disorders affecting the Parts about the Ribs and Lungs, it is requir'd that an Excretion of the *Spit* be soon and readily perform'd." It is early and seasonable enough, when it happens within the third and fourth Day; and if it be, also, of a good Kind, it is a Sign that the Disease will be short and favourable, as we are assur'd by *Galen*, *Com. 3. in Aph.* and *Lib. 1. de Crisibus*, and *Com. 3. in 6 Epid.*

Spit much in Quantity, and concocted, on a critical Day is a very good Sign, and one of those which are critically determining; and if it removes the Pain, Cough, and Fever, there will be no Necessity of any other Sign to pronounce it very good and critical. We have an Instance to this Purpose, *3 Epid. Sect. 3. Aeg. 8. in Anaxion*, of whom it is said, "That on the seventeenth Day he began to spit a little concocted Matter, and found some Relief; on the twenty-seventh the Fever returned, he cough'd, and expectorated plenty of concocted Matter, his Urine had a large, white Hypostasis, his Thirst went off, and he fell into a Sleep."

We may add to what has been mention'd, that this *Spit* is very good and salutary, when it appears in Conjunction with some other good Evacuation.

In Suppurations, also, the *Spit* is to have the same Qualifications as are mention'd in the aforesaid Disorders, and are requir'd by *Hippocrates*, *Lib. Prognost.* where he says, that "The best *Spit* is white, smooth, of one Colour, free from Phlegm, and expectorated without Pain, or violent Coughing." To which we may add, that it is copious, and removes the Fever, Thirst, Cough, and bad Respiration.

Of bad SPIT, which is a Prognostic of a fatal Event.

We shall here, first, enumerate the bad Kinds of *Spit*, which portend a fatal Event to those who labour under no Disease, beginning with the *pituitous*.

A pituitous Matter, or *Spit*, which has for a long Time distilled from the Lungs, and is in Substance immoderately thin or thick, or viscid, much in Quantity, of a round Figure; or of a saltish or acrimonious Taste, are generally very much suspected. *Spit* very thin excites a very troublesome Cough; and the thick, by obstructing the Passages of Respiration, endangers a Suffocation; as does, also, the viscid, by long adhering to the Bronchia of the Lungs. A saltish or acrimonious *Spit*, by corroding the Arteries, paves the Way to a Hæmoptoe, and from thence to spitting of Pus, and so at last to a *Phthisis*. Round *Spit*, which has been shewn before to proceed from a thick and tenacious Phlegm, agitated by excessive Heat, always renders a Person very subject to a *Phthisis*, as appears from the beforemention'd Instances recorded by *Galen*.

Bilious *Spit*, also, is condemn'd by *Galen*, especially in such as are suspected to be consumptive. This Kind of *Spit* is known by the Colour, which is either yellow, pale, or ruflet; and by the Taste, which is acrid or bitter. Those Colours, especially the yellow and the pale, are evident Characters of bitter Bile, as we are assur'd by *Galen*, *Lib. 2. de Loc. Affect. Cap. 10.* By the Colours, then, we manifestly discover when *Spit* is of a bilious Kind; but we are not so certain with regard to the Taste, which may be blunted and obscured by a Mixture of Phlegm. Hence Physicians, otherwise very skillful, sometimes happen to be deceived in not discovering the bilious Humour concealed within the

the Lungs, because the *Spit*, tho' appearing of a yellow, pale, or ruflet Colour, is not observed by them to have the least Taste of Acrimony or Bitterness, when all the while the Lungs are corroded, and the *Spit* at length by this means is rendered bloody, or purulent, whence proceeds a *Phthisis*. We have Instances to this Purpose related by *Galen*, *de Locis Affect. Lib. 4.* "A certain Person, he says, on a sudden, spit out a Humour very much resembling liquid Bile in Colour, which was between yellow and pale, but of no acrid Taste; after that he continued to spit up a greater Quantity every Day, till at length a slow Fever coming upon him he began to decline, and expectorated purulent Matter, and continued so to do for the Space of four Months, when he brought up Blood with the Pus, and the Fever with the *Phthisis* increased, together with the spitting of Pus, of which he expectorated a vast Quantity. The Fever still increasing, and the Strength at last being exhausted, the Patient dy'd under all the Marks of a Consumption. I knew one who laboured under much the same Disorder for six Months, and another who lingered a long Time. The first of these Patients, with whom I was concerned, seem'd at first to be free from any Distemper, but was at last affected in a most miserable manner. The second of these Patients, whom also I attended, I endeavoured to relieve by immediate Remedies, as knowing his Disorder from the Beginning, and much more that of the third Person, who applied himself to me. But tho' I endeavoured with much Application of Thought, to effect the Cure of these Disorders, yet neither of the Persons, in the Circumstances before-mentioned, nor any one since them, could be recovered; for when they were very near their End, they spit out putrid Pieces of their very Lungs."

It seems strange that such a kind of *Spit*, when free from Bitterness and Acrimony, should corrupt the Lungs; but it is still more surprising, how the Lungs can be infected by *Spit*, which appears to be pituitous, and is free from any thing of an acrimonious, salt or bitter Taste. To account for this latter Circumstance, it must be supposed, either that all the bilious and acrimonious Humour lies concealed within the Lungs, and by adhering to their Bronchia corrodes them; or that the Phlegm, by Putrefaction, acquires an Acrimony, by which it is rendered capable of corroding and putrefying the Lungs; in the same manner, perhaps, as when the Air, being infected with a phthical Contagion, or rendered highly acrimonious, infects the Lungs of those who live and breathe in it. But how comes it to pass, when the *Spit* appears yellow or pale, but has nothing in its Taste of Acrimony, Saltiness or Bitterness, the Subject should fall into a Consumption? The Reason of this is, because by the Mixture of the pituitous Humour in them, the Taste is more easily concealed and disguised than the Colour, and that a most acrimonious and highly putrid Humour, by its Diffillation upon the Lungs, corrodes them: Or, it must be said, that the Appearance of this same yellow and pale *Spit* is a Sign of a Collection of much bilious Humour within the Lungs, by which they are putrefy'd and corroded, and the Patient brought into a Consumption.

Black and melancholic *Spit* is of a very bad kind, as appears from *Galen*, *Lib. de Constit. Art. Med. Cap. 16.* where he writes, that a melancholic Humour, when predominant, is very pernicious, both on account of its very bad Qualities, and that it is highly corrosive, difficult of Concoction, and not easy to be expelled; and, also, because it indicates an extraordinary Heat, which is necessary for its Generation and Assation. *Spit* of this Kind is frequently succeeded by Bloody *Spit*, which is more to be dreaded by Persons in Health than under a Pleurisy, agreeably to that of *Hippocrates*, *4 Aph. 25.* "Blood of any kind discharged upwards is bad." In such *Spit* Blood thrown up by a Cough is always to be dreaded, tho' it be not constantly succeeded by a mortal Distemper, especially if it distills from the Head upon the Fauces, and is thence discharged by Help of a Cough, as I experienced in myself, when after a quartan Fever I threw up a great Quantity of Blood by Coughing, which was a critical Excretion, and removed the Fever. But whenever it is not the Matter of a Diffillation from the Head, but proceeds from the Breast and Lungs, it induces Danger of a *Phthisis*. *Galen*, indeed, *Lib. 5. Meth. Med.* writes, that he recovered a Roman Matron and a young Man of an Hæmoptoe, and all others who applied to him for the same Disorder, on the first Day of their Illness; but as for those who delayed it for some Days, or till a Phlegmon had seized them in such a manner as to render their Urine like that of feverish Persons, he never knew one of them perfectly cured. Justly, therefore, is spitting of Pus, after spitting of Blood, pronounced by *Hippocrates*, *7 Aph. 15.* a bad Sign: And *Galen*, in his Comment, truly says, that all spitting of Blood is not malignant, but such as is succeeded by Pus, for this induces

induces a Phthisis, according to 7 *Aph.* 16. which says, "After spitting of Pus comes a Phthisis." We have just Reason, therefore, to conclude, that bloody *Spit* expectorated from the Breast and Lungs, and succeeded by a Discharge of Pus, is a mortal Prognostic.

All copious Discharges of *Spit*, also, which no way relieve the Patient, nor alleviate the Pain, Cough, or Difficulty of Respiration, are always useless, and portend a bad Event. And these are the bad Kinds of *Spit* in the Subjects before-mentioned.

In Persons under a Pleurisy or Peripneumony, *Spit* very thin, or very thick, or viscid after the Beginning or first Days of the Disorder; also *Spit* which is spumous, round, copious but useless, scanty or none; *Spit* suppressed, frequent, white, yellow, pale, ruflet, green, æruginous, porraceous, of a deep yellow, livid, black, parti-coloured, fetid, pure or unmix'd, excreted with great Difficulty, or with a Stertor and Rattling in the Throat, and such as no way mitigates the Pain, Cough, and Difficulty of Respiration, are all condemned; but the worst of all, and most destructive, is what excites and exasperates the Cough, Pain, Difficulty of Respiration, and Fever.

Spit very thin, or very thick and viscid, which Kinds indicate the Disease to be considerably crude, if they happen in the Beginning, are esteemed not wholly unserviceable, since they give Hopes that they may be concocted in Time; but if they appear afterwards, that is to say, after many Days, and are not concocted, they are very bad Signs. *Spit* very spumous is also condemned, and more particularly the unmixed, bilious, ruflet, green, livid and black; for these Kinds, as we have shewn, proceed from an immoderate Burning, or colliquative Heat.

Whitish *Spit*, and what is spumous, consisting of Phlegm agitated by Flatulences, as in the Case when the pituitous Matter in its Passage from the Lungs becomes spumescient by contracting much Air, are not so dangerous. In a Peripneumony the Blood which is discharged by Spitting is generally spumous. The Author of the *Coac.* 408. says, "That in a Pain of the Right Hypochondrium, the spumous Blood discharged by spitting flows from the Liver, and the Patient generally dies."

Spit of a round Figure is very much condemned, because it is a Sign of an immoderate internal Heat, by which the Humour is dried; the same *Spit*, perhaps on account of a Repletion of the Head by the same inward Heat, is said by *Hippocrates*, 6 *Epid.* Sect. 3. *Aph.* 27. and Sect. 6. *Aph.* 21. to portend a Delirium. The Author of the *Coac.* 390. condemns round *Spit*, as pernicious in a Pleurisy; but *Hippocrates*, *Lib. Prognost.* says more justly, "That round white *Spit*, in pleuritic Disorders, is of no Service to the Patient."

Much *Spit* of a bad kind portends a great deal of Danger, especially if it appears on a critical Day, and no way relieves the Patient; for it is to be esteemed one of the critical Signs which determine nothing.

Spit little in Quantity is no less condemned, as being insufficient to purge off the Humour which is the Cause of the Inflammation; but most of all is it to be dreaded, when it is not only scanty but crude, and excreted with much Difficulty. Of Patients under this Circumstance we find *Hippocrates* speaking, 1 *Epid.* Sect. 1. "They expectorated, he says, by Coughing, a dense, concocted Matter, little in Quantity, which they brought up by Degrees, and with much Difficulty; but in those who laboured under the most violent Symptoms, the *Spit* had no Signs of Concoction, but was perpetually crude."

Under a Pleurisy not to spit at all is of no less fatal Signification, as indicating the Disease to be in a highly crude State: See the Quotations from *Galen* to this Purpose before, under the Causes of no *Spit*. This Absence of *Spit*, then, must of Necessity shew the Matter of the Disorder to be difficult of Concoction, and consequently portend the long Continuance of the Inflammation, as we are told by *Galen*, *Com. 1. in Aph.* 10. For the same Reason the Author of the *Coac.* 381. says, "That dry Pleurifies, in which nothing is evacuated by Spitting, are very dangerous."

Bilious *Spit*, in the same Disorders, suppressed without Reason, after it had at first appeared, portends a Delirium, according to the Author of 1 *Proorrh.* 97. and is said by *Galen*, *Lib. de Const. Art. Med. Cap.* 16. to be a Sign of approaching Death; consumptive People, also, live as long as they can bring up their *Spit*, but when that is retained they die. 7 *Aph.* 26.

Frequent *Spit*, but not discharged by Coughing, if attended with any other phrenetical Sign, indicates a Phrensy, according to the Author of 1 *Proorrh.* 6. And a little after the same Author, *T.* 12. utterly condemns frequent Spitting in Fevers; and indeed justly, because, as *Galen* expresses it, it

is a Sign of a disordered Brain, which suffers under a Repletion. Again, 1 *Proorrh.* 31. this frequent Spitting, attended with a Perfrigeration, is said to be the Forerunner of black Vomiting, which is a most pernicious Symptom.

White, pituitous *Spit*, in bilious Diseases, is of no Service to the Patient, according to *Hippocrates in Prognostic.* where it said, "That white, glutinous and round *Spit*, is of no Benefit;" and for a good Reason, as indicating that nothing of the Humour, which is the Cause of the Inflammation, is discharged, which in Inflammations from Bile is none of the least pernicious Signs. Some Years ago there raged at *Bassano* and *Morostica* a pestilential Pleurisy, which proved mortal in four, or at the most in seven Days. Under this Disorder whatever was excreted by Spitting, was of a white pituitous Substance, which a certain Physician not well versed in *Galen's* Doctrine, took for a good Sign, and always had good Hopes of the Patient. But he still found himself deceived, as not knowing that those white pituitous Spittings were an Indication that the morbid Matter of the Inflammation was not thereby evacuated, and consequently that the Disease was highly crude and pernicious. This is confirmed by an Instance in *Hippocrates*, 7 *Epid.* *T.* 58. of the Wife of *Euxenus*, who had a Cough, and spit up a white, thinnish Matter, and but little at a Time, and dy'd at last of a Pleurisy.

Yellow and pale *Spit*, also what is bloody, not well mixed, if they are first discharged after the Beginning, or first State of the Disorder, indicate the same to be difficult of Concoction, of long Continuance, and therefore by no means void of Danger. On the contrary, if they appear in the Beginning, they shew that the Disease will have an easy Solution, as we observed before. Of the yellow and ruflet kinds of *Spit* it is observed in the *Prognostics*, that if they happen a considerable Time after the Beginning of the Disease, they are very bad; or, as it is expressed a little after, if they appear not till the seventh Day, or later, they are less secure.

Pale, ruflet, green, deep red, livid and black *Spit*, are of the same Prognostication; green and æruginous *Spit* indicate much Heat and Aduftion, with Plenty of æruginous Bile. *Hippocrates*, in the *Prognostics*, utterly condemns the deep green *Spit*, as *Galen*, *Lib. de tot. Morb. Temp.* does the deep red, as highly pernicious.

Livid *Spit* is still more dangerous, as proceeding from a Redundance of black Bile, or Extinction of the natural Heat, and is therefore justly condemned by the Author of the *Coac.* 390, if appearing in the Beginning of a Disease.

Spit of a black Colour is the most pernicious and fatal of all the Kinds, because it proceeds, as we have already observed from *Galen*, *Lib. 1. de Crisibus*, from a vehement Affection, or an universal Refrigeration, on account of the Extinction of the natural Heat. Justly, therefore, does he make it an Indication of a most formidable Disease, and *Lib. 1. de Cris.* a Prognostic of Death. The Author of the *Coac.* 390, 407. tells us, that they who throw up a black Matter by Vomiting are in a dangerous State. *Hippocrates*, *Lib. 3. de Morb.* says, that those who cast up black Clots of Blood by Coughing, die on the seventh Day.

Spit of various Colours seems to be no less destructive, as it indicates a Multiplicity of Disorders; for which Reason *Hippocrates* pronounces this kind of *Spit*, attending an acute Pain, mortal.

Spit simple or unmixed is always condemned, for good *Spit* ought to be of a mixed kind; and the contrary to this is bad, but especially the pure and undiluted, as proceeding from a Consumption of all the ferous Humidity by the Heat.

We conclude, then, that in Pleurifies and Peripneumonies, *Spit* of a yellow Colour, simple or unmixed, ruflet, æruginous; *Spit* of a deep red, or livid, but most of all black, and pure or undiluted, are of bad Prognostication, and are condemned as such by *Hippocrates*, in his Book of *Prognostics*; for they are too sure Indications of a desperate Disease.

Fetid *Spit* is, also, constantly condemned in acute Diseases, because it is an Indication of an extraordinary Putrefaction. *Hippocrates*, 5 *Aph.* 11. makes the ill Smell of the *Spit* a distinguishing Character of Persons in a Consumption, and also a mortal Symptom.

Spit discharged with much Difficulty by Secrecion has been censured as bad, agreeably to the Observation of *Hippocrates*, 1 *Epid.* Sect. 1. before quoted.

Spit which rattles in the Throat, and induces a *Cerchnos* or Stertor, is no less to be condemned; of such we find *Hippocrates*, in *Prognost.* thus pronouncing: "Bad, also, says he, is the *Spit* which cannot be worked off, or ejected by the Lungs, but fills and rattles, or bubbles in the Throat."

In the same List of the bad Kinds of *Spit* are to be reckoned those which are so far from mitigating, that they increase

and exasperate the Cough, according to the Book of *Prognostics*, which passes the same Censure on those which mitigate not a Pain. These, however, are not sufficient for a Prediction, unless accompanied with other Signs, which, as *Galen* says, are accurately to be considered.

Other Kinds of bad Spit are such as (tho' frequent and troublesome) neither remove a Difficulty of Respiration, nor a Cough, nor a Fever.

Lastly, a Discharge of Spit on a critical Day, after which the Patient finds himself in a worse State than before, if accompanied with some other bad Sign, is succeeded by inevitable Death.

And these are the kinds of Spit which are to be condemned in a Pleurisy and Peripneumony. See PHTHISIS. *Prosper Alpinus de Presag. Vit. & Mort.*

SPYRAS, or SPYRATHOS. σπυράς, or σπυράθος. The Dung of Goats in small round Balls. Goats Tricklings. *Hippocrates* advises to use these by way of Suffumigation in Disorders of the Uterus.

SQUALOR. See AUCHMOS.

SQUALUS. The Name of a Fish mentioned by *Aldrovandus*.

SQUAMA AERIS. See AEs.

SQUAMARIA, & SQUAMATA. Offic. *Orobanch radice dentata major*, C. B. P. 88. *Raii Hist.* 2. 1220. *Orobanch radice dentata*, sive *Dentaria Major Matthioli*, Park. Theat. 1363. *Dentaria major Matthioli*, Ger. 1387. Emac. 1585. *Anablatum Cordi*, sive *Aphyllon*, J. B. 2. 783. *Raii Synop.* 3. 288. TOOTH-WORT.

It grows on the shady Banks of Hedges, and flowers in April.

Tooth-wort is consolidating, conglutinating, and good in Hernias, Wounds, and various Affections proceeding from Fluxions.

SQUAMOSA SUTURA. The squamose Suture of the Skull.

SQUATINA. Offic. *Aldrov. de Pisc.* 471. *Salv. de Aquat.* 152. *Rondel. de Pisc.* 1. 367. *Bellon. de Aquat.* 78. *Raii Ichth.* 79. *Ejuld. Synop. Pisc.* 26. *Charlt. Pisc.* 12. *Gefn. de Aquat.* 809. *Jonf. de Pisc.* 23. *Mer. Pin.* 186. THE KING-STONE, OR MONK-FISH.

It is taken in the *British* and other Seas. The Eggs, Skin and Ashes, are used. The dried Eggs are found to be very serviceable in stopping a Looseness, by the Experience of the Fishermen, who use it for all manner of Fluxes of the Belly. *Rondel.* Of the Skin is prepared an excellent Smegma for the Psora and Scabies, and the Ashes are effectual against the Alopecia and Achors. *Aldrovand.*

The Skin of this Fish is recommended, by *Galen*, for rubbing Parts affected with an Alopecia.

SQUILLA, in Botany, is the same as SCILLA; which see.

SQUILLA, Offic. *Squilla gibba*, Schonef. Ichth. 72. *Rondel. de Pisc.* 1. 549. *Squilla parva*, Mer. Pin. 192. *Squilla gibba Rondeletii*, *Aldrov. de Exang.* 150. THE SHRIMP.

It is taken in the Sea, and agrees in Virtues with the *Asacus*, Lobster.

SQUILLINUM, AZIZA. Horse-Dung. *Rulandus*.

SQUINANATHIA. A barbarous Word importing a Quinsey.

SQUINANTHUM. The same as SCHÆNANTHUM.

SRINT. The Hungarian Name for any inflammatory Tumor in the Mouth, Throat, or Anus.

STAC. Coagulation, or Congelation. *Rulandus*.

STACHYS.

The Characters are;

The Leaves, Stalks and Branches are hairy, hoary, and covered with a very soft Down. The Galea is fornicated, or arched, erect, and somewhat bifid; the Beard trifid, the middle Segment large and pendulous. The Flowers are disposed of at first in thick Whorles, but towards the Top in Spikes.

Boerhaave mentions thirteen Sorts of *Stachys*, which are;

1. *Stachys*; major; Germanica. C. B. P. 236. *Sideritis*, *Heraclea Discoloridis*, Col. Phytob. 1. 31.

2. *Stachys*; major; Germanica; folio angustiore, Flor. 2. 66.

3. *Stachys*; Cretica; pro Pseudo-Stachyde L. in Prodromo describitur. C. B. P. 236. Prodr. 113.

4. *Stachys*; Alpina; magna; flore ex albo rufescente. Pseudo-Stachys Alpina, C. B. P. 236. Prodr. 113.

5. *Stachys*; Creticæ similis; flore purpureo triplo majore.

6. *Stachys*; minor; Italica. C. B. P. 236. *Tourn. Inst.* 186. *Boerb. Ind. A.* 154. *Stachys*, Offic. Ger. 563. Emac.

695. *Raii Hist.* 1. 554. *Stachys Discoloridis*, Park. Theat. 47. BASE HORE-HOUND.

The *Stachys* is a shrubby Plant, resembling *Marrubium*, but somewhat longer, and producing numerous rare, hard, and somewhat hairy Leaves, white, and of a pleasant Smell, with several Stalks, which shoot up from one Root, and are whiter than those of *Marrubium*; it grows in mountainous and rugged Places. *Stachys* is of an acrimonious and heating Quality; for which reason a Decoction of the Leaves being drank, provokes the Menfes, and expels the Secundines. *Discoloridis*, Lib. 3. Cap. 120.

It is cultivated with us in Gardens, and flowers in June.

7. *Stachys*; verticillata; odora; *Betonice foliis pallidis*. H. C. 2.

8. *Stachys*; Canariensis; frutescens; Verbaci folio. T. 186. *Salvia sylvestris*; amplissimis *Verbascifoliis*; groveolens, flore albo, parvo, Canariensis, Pluk. Almag. & Phytogr. T. 322.

9. *Stachys*; hormini folio obscure virenti; flore ferrugineo; M. H. Bloef. 198.

10. *Stachys*; spinosa; Cretica. C. B. P. 236. *Gaidarothymum*. Alpin. Exot. 86.

11. *Stachys*; orientalis; altissima; foetidissima. T. Cor. 12.

12. *Stachys*; alba; latifolia; major.

13. *Stachys*; Cretica; latifolia; T. 186. *Boerb. Ind. Alt. Plant.*

All these Species of *Stachys* have a very strong and rank Smell; whence they are good in hysteric, apoplectic, and epileptic Disorders. *Hist. Plant. ascript. Boerb.*

STACTE. See MYRRHA. In another sense it imports a Lixivium distilling from Ashes; or it signifies Brine.

STACTICON. στακτικόν. The Name of a Collyrium in *Scribonius Largus*, N° 34. and in *Paulus Aegineta*, L. 7. C. 16.

STADIEUS. σταδίων. A Person who walks a Stadium. *Galen. Exegef.*

STAIS. σάις. Meal moistened with Water, and kneaded with the Hands; or it signifies Fat or Suet.

STAGIUM. The same as Sextula, the sixth Part of an Ounce, that is, four Scruples.

STAGMA. A Liquor exposed to Distillation. *Blancard.*

STAGNEA VASA. Vessels tinned on the Inside; or incrufted, or lined, in order the better to preserve their Contents. *Scribonius Largus.*

STAGONIAS. σταγίαι, from σταῖς, to distil. An Epithet for that Species of Male Frankincense which is in small round Lumps, like Drops.

STALAGMA. A distilled Liquor. *Blancard.*

STALAGMOS. σταλαγμός. A Distillation from the Head.

STALTICA. σάλτικα, from σάλαι, to contract. Repellents; or Medicines which render the Lips of Wounds even.

STAMINA. See the Explication of Terms under the Article BOTANY.

STAMNOS. στάμνος. An Urn, or Basin for holding Water.

STANNAR. The Mother of Metals, or the occult Fume of which Metals are generated. *Rulandus.*

STANNUM. Tin. See JUPITER.

STAPES. The Name of a Bone in the internal Ear. See AURIS.

STAPHIS. A Raisin.

STAPHISAGRIA. Staves-acre. A Name for the *Delphinium*; *Platani folio*; *Staphisagria dicta*.

STAPHYLE. σταφύλη. A Grape. Or a Disorder of the Uvula, which consists in an Extenuation of its superior Part, and a Tumor of the inferior; whence it depends in the shape of a Grape. The Uvula, or Gargareon, is, also, thus called.

STAPHYLEPARTES. σταφύλεπαρτες. A Chirurgical Instrument for elevating the Uvula, mentioned by *Paulus Aegineta*, L. 3. C. 16.

STAPHYLINUS. A Name for the *Daucus Vulgaris*.

STAPHYLIS. σταφύλις. In *Moschion, de Morbis Mulierum*, C. 116. this is a sort of Cup for feeding Children, contrived with an Orifice resembling a Nipple, or a Grape.

STAPHYLODENDRON.

The Characters are;

The Calyx is pentaphylloidal, caducous and expanded; the Flower rosaceous, pentapetalous, erect, as it were, in the Figure of a Bell, and furnished with five Stamina. The Ovary, in the Bottom of the Calyx, is furnished with two Tubes, and becomes a membranaceous Fruit inflated like a Bladder, and divided into Capsules full of stony Seeds.

Boerhaave mentions four Sorts of *Staphylodendron*, which are;

1. *Staphylo dendron*, *Offic. J. B. 1. 247. Raii Hist. 2. 1681. Synop. 3. 468. Tourn. Inst. 616. Boerb. Ind. A. 2. 235. Pistacia sylvestris*, C. B. P. 401. *Nux Vescaria*, Ger. 1249. Emac. 1437. Park. Theat. 1417. THE BLADDER NUT-TREE.

It is sometimes found in Hedges, flowers in May, and the Nuts are ripe in Autumn. The Nuts are by some supposed to have the same Virtues with Pistachios.

Ray says, that he knows no Use of them in Medicine, but that they serve the poorer sort of People in many Places instead of Beads, to number their Prayers. *Raii Hist. Plant.*

2. *Staphylo dendron*; *Virginianum*; *trifoliatum*. H. L. *Pistacia sylvestris*, *trifolia*, *Virginianensis*. H. R. Par.

3. *Staphylo dendron*; *Africanum*; *folio singulari*, *lucido*, *Par. Bat.*

4. *Staphylo dendron*; *Africanum*; *folio lanuginoso Rosmarini lationi*. *Boerb. Ind. Alt. Plant.*

It has its Name from *σταφύλη*, (*Staphyle*) a Grape, and *δένδρον*, (*Dendron*) a Tree; because its Fruit grows in Clusters.

Scaliger says that the Nuts are eatable, and that he has often eat them instead of Pistachios. From the Seeds is expressed an Oil of a resolvent Virtue. *Hist. Plant. ascript. Boerb.*

STAPHYLOMA. A Disorder of the Eye. See OCULUS.

STARAPHAXAT. A restraining Medicine, or one which restrains Fluxions. *Rulandus.*

STASIS. *στάσις*. A Stagnation.

STATER. *στατήρ*. A Weight equal to four Drams.

STATHEUSIS. *σταθεύσις*, or *σταθυσίς*, from *σταίω*, to roast by a slow Fire. A gentle or imperfect roasting, or toasting.

STATICA. The same as STALTICA.

STATICE.

The Characters are ;

The Root is fibrous and perennial, the Leaves grassy, and the Stalk naked. The Calyx being squamous, membranaceous, and consisting of a Multiplicity of Series of Squamæ, is common. The Floscules are polypetalous, resembling Clove-Gilly Flowers, each seated in its proper Calycle, which is shaped like a Funnel, monophyllous, and deeply cut into Segments. These Floscules are collected in great Numbers together into one floriferous globular Head, surrounded by that one common squamous Calyx before described. The Ovary proceeding from the Center of the Calycle consists of five Eggs, which grow together in a Circle round the Basis of the Placenta, and are each furnished with a long Tube.

Boerhaave mentions four Sorts of *Statice*, which are ;

Statice, *Lugdun.* 1190. *Scabiosa montana*, *globoso flore*, *gramineis foliis*, *latioribus*. *Caryophyllus montanus*, *major*, *flore globoso*, C. B. P. 211. *Græmen Polyanthemum*, *majus*. *Dod. p. 564. Armeria*, *montanus*, *tenuifolius*, *major*. *Clus. H. 287. Limonium majus*, *flore globoso*. M. H. 3. 600.

2. *Statice*; *foliis angustioribus*; *flore rubro*. *Scabiosa montana*, *globoso flore*, *gramineis foliis angustioribus*, *flore rubro*. H. L.

3. *Statice*; *foliis angustioribus*; *flore albo*, *Scabiosa montana*, *globoso flore*, *gramineis foliis angustioribus*, *flore albo*. H. L.

4. *Statice*; *montana*; *minima*. T. 341. *Scabiosa montana*, *globoso flore*, *gramineis foliis angustissimis*, *minima*. H. L. *Caryophyllus montanus*, *minimus*, *flore globoso*. H. R. Par. *Armeria montanus*, *tenuifolius*, *minor*. *Clus. H. 287. Limonium minimum*, *vulgatius*, *flore globoso*, M. H. 3. 601. *Boerb. Ind. Alt. Plant.*

Dodonæus pretends that the *Statice* is of no Use in Medicine, but that the Flowers are beautiful enough in Garlands. But *Dalechampius* assures us, that the whole Plant is of an astringent Taste, and is of surprising Virtue in drying up and repressing the Eruptions of Humors, being either bruised and applied, or the Juice of it drank; that it cures the Dysentery, an excessive Flux of the Menfes, Bleeding at the Nose, and spitting of Blood; that it is also a Vulnerary, and cicatrises malignant Ulcers.

It is astringent, whence it is of Use in immoderate Fluxes, and may be of service in Disorders proceeding from a Laxness of Fibres, and where the Humors are too fluid, and disposed to Eruptions. *Hist. Plant. ascript. Boerhaave.*

STATIONARIÆ FEBRES. Stationary Fevers.

There are certain general Constitutions of Years, which owe their Origin neither to Heat, Cold, Dryness, nor Moisture, but rather depend upon a certain secret and inexplicable Alteration in the Bowels of the Earth, whence the Air becomes impregnated with such Kinds of Effluvia as subject the human Body to particular Distempers, so long as that Kind of Constitution prevails, which, after a certain Course of Years, declines, and gives way to another. Each of these general Constitutions is attended with its own proper and peculiar Kind of Fever, which never appears in any other; and

therefore I call this Kind of Fevers Stationary. *Sydenham.*

STATIVA. The same as STALTICA.

STATUS. The Constitution, or State of any thing, and in this sense it is the same as CATASTASIS. It, also, imports the same as ACME.

STAXIS. *στάσις*, or *ἀπὸστάσις*, from *στάω*, to distil. A Discharge of Blood from the Nose by Drops. This is the general signification of the Word *στάσις*, in *Hippocrates*, tho' sometimes he adds *ἐκ τῆς ἰνῆς*, or *ἀπὸ τῆς ἰνῆς*, "from the Nostrils."

A *Staxis*, in the Doctrine of *Crises*, is justly condemned as indicating a Weakness and Decay of Strength in Nature. Thus, 1 *Prorrh.* it is said, *ἐνδεκαήμεροι στάσις δύσκολος*, "Distillations of Blood from the Nose on the eleventh Day are bad," where *Galen* on the Place condemns all such Distillations. The same is repeated, *Coac. 336.* And *Coac. 57.* we are told that *στάσις ἰσχυρὰ κακὰ*, "small Distillations of Blood from the Nose are bad;" particularly in Pleurisy and Phrenzies. Such Distillations are condemned as very bad Signs, *Coac. 405. 227. 1 Prorrh.* 1. On the contrary, free and copious Discharges of Blood from the Nose are, in the Doctrine of Signs and Crises, esteemed a Solution of the Disease, according to that in 1 *Epid. Sect. 1.* where we read that *ἀμφοτέρωθεν ἰσχυρὰ, &c.* "copious Hæmorrhages from the Nose for the most part relieved the Patients." And not only small and sparing Eruptions of Blood from the Nostrils, which stop within their due Measure, but all weak, small and imperfect Excretions, whether by Urine, Vomit or Stool, are condemned as bad Prognostics, *Coac. 400.* and the Judgment there passed upon them is confirmed by Matter of Fact in many Cases recorded in the *Epidemics.*

STEAR. *στάγ*, in *Hippocrates*, sometimes signifies simply Fat, as in many Places of the Books *de Morbis Mulieb.* Sometimes it signifies not only Fat, but Leaven or Dough, or Paste, in the same sense as *στάς*, *Stais*. Thus (*Lib. 1. περὶ γυναικ.*) *ταῖς ἐπὶ ὡς ὅτι στάγ γαστρίαι*, "Boil them till they become like a Lump of Dough;" which is repeated in Words to the same Effect, *Lib. περὶ γυναικ. φύς.* And *Dioscorides*, *Lib. 2. Cap. 202.* *στάς δὲ ἡ πηλὴ πεινυλάσσεται*, "It is wrapped up in Paste or Clay," where tho' the printed Editions read the Word *σταίσι*, yet that the ancient Reading ought not to be changed, appears from *Pliny*, *L. 20. C. 9.* who seems to have read *στάσι*, and to have mistranslated it *Adeps*, where he says, *Coquitur plurimis modis; in olla quæ conjiciatur in Clibanum aut Furnum, vel Adipe aut Luto illita.* "It is prepared many Ways, either by baking it in a Pot, or dawbing it over with Fat or Clay." Again, *Dioscorides*, *Lib. 5. Cap. 99.* says of *Stibium*, *στάσις δὲ στάσις πεινυλάσσεται, &c.* "It is wrapped up in Paste, and so roasted under the Coals." Where *Pliny* again, *Lib. 33. Cap. 6.* translates the Word by *Adeps*. *Galen*, *Lib. 2. & 5. de C. M. S. L.* uses the Words *στάσις* and *στασίον* in the same sense; I mean, as signifying Paste or Dough, or some such Composition; and *Hesychius* expounds *στάγ* by *λίπος*, *ζύμη*, "Fat, Leaven." *Fœsius.*

STEATOCELE. From *στάγ*, Suet, and *κῆλη*, a Hernia. A Species of Hernia, caused by a Collection of a Substance in the Scrotum, resembling Suet.

STEATOMA. *στάτωμα*, from *στάγ*, Suet. A Species of Tumor, containing in a Cystis, or Bag, a Substance resembling Suet. In the *Definitiones* ascribed to *Galen*, *Steatoma* is described, a preternatural Increase of Fat.

STEGNOSIS. Confipation, Condensation or Obstruction.

STEGNOTICA. *στεγνωτικά*. Astringents, from *στεγνίω*, to brace up.

STELÆUS. *στελαεύς*. The Handle of an Instrument. *Hippocrates.*

STELECHIEA. *στελεχίαια*, from the preceding Word. An Epithet for the *Vena Portæ*. *Galen.*

STELECHITES. The Name of a Stone found in some Parts of Germany, about the Size of a Finger, of the same Nature as the BELEMNITES. It is esteemed desiccative, and good to clean the Teeth, as a Dentifrice.

STELENCHIS, or STLENCHIS. *στελεγχίς*, or *στελεγγίς*. A Strigil, an Instrument used in the ancient Baths to rub off Sweat.

STELLA. A Star. See ASTRONOMIA.

STELLA MARINA. The Star-Fish, a Sort of Sea Insect, of which there are many Species. They are esteemed opening, if taken by way of Decoction; and their Smoke when burned, is said to cure the Epilepsy.

STELLA OCCIDENS, is *Sal Ammoniac.*

STELLA TERRÆ, is Talc.

STELLARIA AQUATICA. Water Star-Wort, or star-headed Water Chickweed. *Raii Hist. Plant.*

STELLARIS LAPIS. See ASTROITES.

STELLIO. A small Species of Lizard, or Eft, marked upon the Back with Spots resembling Stars. The Bite of this Animal is said to inspissate the Humours, and stupify the Senses; to remedy which, Venice Treacle and volatile Salts

are recommended. The Flesh is said to excite Sweat, and resist Poison. *Lemery des Drogues.*

STELLIO ADUSTA, is Cinnabar. *Rulandus.*

STEMA. *στέμα.* The Penis. *Ruffus Ephesus.*

STEMPHYLA. *στέφυλα.* The Husks of Vines; or the Mass remaining after the Wine is pressed out of the Grapes. Sometimes this Word is applied to the Recrements of Olives, after the Oil is pressed out.

STEMPHYLITES. *στέφυλιτες.* A Sort of Wine; the same as LORA.

STENYGROCHORIE. *στυγροχόρις*, so *Galen* reads the Word, *Lib. de Artic.* whereas all the Copies have it *στυγροχόρις*, (*Stenschorie.*) The Word seems derived from the Verb *στυγροχόρις* (*Stenygrochōsai*), which *Galen*, in his *Exegesis*, expounds by *στυγροχόρις* (*Stenosai*), to straiten; and adds that some will have it to import a straitening, obstructing the Passages of the Humours, and drying them up. This Sense agrees with *Erotian*, who makes *στυγροχόρις* to mean the same as *ἀντοστερωσάιν* *ἢ* *πυκνῶσαι* *τοὺς* *τῶν* *ἰσθμῶν* *ἢ* *ἢ* *ὄγκους* *ἔστι*, "To straiten and block up a Place in which is some Humidity." Those Expositions have certainly a Relation to the first Aphorism of the second Section of the sixth of the Epidemics, and prove the Word *στυγροχόρις* to be compounded of *στυγροχόρις*, narrow, and *ὄγκος*, moist. *Galen*, however, in his Comment on this Aphorism, denies this, and asserts that the second Syllable is attenuated and not aspirated, because the Word *ὄγκος* is not contained in it; and that the Word *στυγροχόρις*, with the *Ionians*, signifies no more nor less than *στυγροχόρις*, which he proves by the Authority of *Simonides*, who has *μῆνός* *στυγροχόρις* *συμπυκνῶν* *ἢ* *ἀντοστερωσῶν*, "Meeting alone in a narrow Path," which Quotation is very corruptly read, *Com. 1. in Lib. de Artic.* where, on the Word *στυγροχόρις*, *Galen* approves of the same Etymology, as not deriving from *στυγροχόρις*, and *ὄγκος*, and *χώρα* (*Chora*, a Place) but from *στυγροχόρις*, which signifies no more than *στυγροχόρις*; so that *στυγροχόρις* is no more than *στυγροχόρις*, and this no more than *στυγροχόρις*, Narrowness. Hence it appears, as was observed in the Beginning, that for *στυγροχόρις*, as it is generally read, *Galen* reads *στυγροχόρις*. The Verb *στυγροχόρις* is by the same Author, *Com. 1. in 6 Epid.* expounded by *πυκνῶσαι*, to condense, and *στυγροχόρις*, to straiten; since it is opposed to *εὐρύναι*, to dilate. And by the Doctrine of *Hippocrates*, Things dilated are to be closed by Astriction and Refrigeration.

STEPHANILÆUS. *στέφανιλος*, Coronary. See CORONARIA, and CORONALIS.

STERA. A barbarous Word, signifying the Uterus, by Corruption for *στέρας*.

STERCUMEZEFF, or STERCORUMECEFF. Litharge. *Rulandus. Johnson.*

STERCUS. Dung. See FIMUS.

STERGETHRON. A Name for the larger Aizoon, Houfleeck.

STERILITAS. See BALSAMICA.

STERIPHNOS. The same as STRUPHNOS.

STERNO-COSTALES, *vulgo Triangulares Sterni.*

These are five Pairs of fleshy Planes disposed more or less obliquely on each Side the Sternum, on the Inside of the Cartilages of the second, third, fourth, fifth and sixth true Ribs.

They are inserted by one Extremity in the Edges of the Inside of all the lower half of the Sternum. From thence the first Muscle on each Side runs up obliquely, and is fixed in the Cartilages of the second Rib. The second runs less obliquely to its Insertion in the Cartilage of the third Rib. The rest are inserted, in the same manner, in the Cartilages of the following Ribs; their Obliquity decreasing, and their Length increasing in Proportion as they are situated lower down; so that the lowest is almost transverse.

This last Muscle, which is fixed by one Extremity in the Cartilage of the sixth true Rib near the Bone, and seems to pass the *Appendix Ensisformis*, immediately above the Insertion of the Diaphragm in that Appendix, and to join the Muscle on the other Side. The superior Portions of the transverse Muscles of the Abdomen, united with the lowest *Sterno Costales* have nearly the same Appearance, so that these might be reckoned to belong to the *Transversales*, did not the Insertion of the Diaphragm come between them.

The Insertions and Direction of the *Sterno Costales* being carefully examined, it will be found that their Use is to depress the cartilaginous Portions, and anterior Extremities of the Ribs, especially the superior Ribs, except the first; and at the same time to draw the Cartilages of the inferior Ribs near the Sternum, by Reason of the Curvature. They may therefore very well be called *Depressores Costarum* as the *Supra Costales* are named *Levatores*. *Winslow's Anatomy.*

STERNO-HYOIDEÆUS, *frve Sterno-Cleido-Hyoideus.*

This is a long, thin, flat Muscle, broader at the lower than at the upper Part, and sinuated, together with its Fellow, on

the Foreside of the Throat, from whence some have very improperly termed it *Sterno Mastoidæus*.

It is fixed by its lower Extremity in the superior and lateral Part of the inner posterior Side of the Sternum, in the posterior Part of the sternal Extremity of the Clavicula, in the transverse Ligament which connects these two Bones, and in the inner or back-side of the Cartilage of the first Rib. All these other Insertions are more considerable than that in the Sternum, which is sometimes scarce perceivable.

From thence it runs upon the Foreside of the *Aspera Arteria*, joined to its Fellow by a Membrane, which forms a sort of *Linea alba*, and is inserted laterally in the lower Edge of the Basis of the *Os Hyoides*.

There is sometimes a transverse tendinous Line, about the Middle of the Backside of this Muscle.

The *Sterno-Hyoidei* draw the *Os Hyoides* directly downward, and serve to counterbalance the different Motions of the *Stylo-Hyoidei*, *Omo-Hyoidei*, and *Genio-Hyoidei*. They may in some Cases be assisted by the *Sterno-Thyroidæi* and *Thyro-Hyoidei*. *Winslow's Anat.*

STERNO-MASTOIDÆUS. See MASTOIDÆUS ANTERIOR.

STERNO-THYROIDÆI. See LARYNX.

STERNUM. See THORAX.

STERNUTAMENTUM, signifies the same as STERNUTATIO; or as STERNUTATORIUM.

STERNUTATIO. Sternutation, or Sneezing. A Branch of the fifth Pair of Nerves united with those of the sixth Pair, is distributed in the Cavities of the Head, lined by the pituitary Membrane; and when any Part of this Nerve is irritated to a certain Degree, the Intercostal Nerve, and the *Par Vagus*, are drawn into consent, in such a Manner, that the Muscles subservient to Respiration, suffer a Kind of Convulsion, and the Air is expelled the Lungs with Violence, and acting upon all the Parts of the pituitary Membrane, absterges, and brings away the Mucus there secreted; and besides, this excites all the Actions which depends upon the Brain, sometimes to such a Degree as to become fatal, tho' often salutary when the Faculties are languid, or the Mucus indurated upon the pituitary Membrane, as it frequently happens after a Night's Rest. See CAPUT.

STERNUTATORIUM. A Sternutatory, or Medicine which excites Sneezing. Snuff is the most common Sternutatory; but any Thing which will stimulate the Nerves mentioned under STERNUTATIO, to a sufficient Degree, will excite Sneezing.

STERNUTATORIUM CUM EUPHORBIO.

A Sternutatory with Euphorbium.

Take Powder of Euphorbium, half a Scruple; white Wine an Ounce; Spirit of Scurvy-grass, two Drams; Oil of Marjoram, two Drops; shake all together.

This with the Euphorbium is too sharp and violent to be trusted therein to snuff up; and therefore 'tis best to dip a little Cotton, and just thrust it into the Nostrils. *Ludovici* is so timorous, as to order but half a Dram in half a Pint of Water, to be boiled and strained, and even then to be used but very sparingly.

STERNUTATORIUM CUM MARJORANA.

A Sternutatory with Marjoram.

Take of an Infusion of Marjoram made like Tea, one Ounce; dissolve in it Salt of Vitriol ten Grains, and put it in a Glass for Use.

This is directed and much recommended by *Ettmuller*, and it may be made stronger or weaker, by a greater or lesser Quantity of Water, as is found needful. But of all the Medicines to this Purpose the following is preferable.

STERNUTATORIUM CUM SALE VOLATILE OLEOSO.

A Sternutatory with Sal Volatile.

Take *Sal Volatile Oleosum*, two Drams; Spirit of Lavender, twenty Drops; Damask Rose-Water, or Orange Flower-Water, half an Ounce; mix.

This is both mild and grateful, and very refreshing to the Head, as well as a gentle Provoker of what is secreted by the Nose.

STER-

STERNUTATORIUM CUM SUCCIS.

A Sternutatory with Juices.

Take Leaves of Honeyfuckle, four Handfuls; Primrose, three Handfuls; Betony, two Handfuls; Marjoram, one Handful; bruise them all together, and press out their Juice.

This is much milder than either that with Euphorbium or Turpeth Mineral, and may be used in any Disorders and Stoppages of the Head, either by snuffing a little out of the Hollow of the Hand, or blowing it up the Nostrils with a Quill, and these liquid Snuffs have this Advantage over Powder, that they do not clog up and heat the Nose.

STERNUTATORIUM CUM TURPETHO MINERALI.

A Sternutatory with Turpeth Mineral.

Take Turpeth Mineral, half a Scruple; Powder of Liquorice, half a Dram; Nutmeg, one Scruple; Oil of Rosemary, two Drops; mix together.

This is very powerful in all such Illnesses of the Head as proceed from tough viscid Matter sticking upon the Glands and Sinuses, and have been of long Continuance, and obstinate; for it brings it away in such Plenty, that 'tis almost like a Salivation; but it is subject to make the Nose sore, and therefore the Nostrils should be rubbed sometimes with a little Oil of Almonds, or warm Milk.

STERTOR. A Snoring; or what the Vulgar call a Rattling in the Throat; a fatal Symptom in Apoplexies, and many other Distempers. See RHENCHOS.

STILÆ. *σταλα*. SEA PEBBLES. *Galen. Exeges.*

STIBI. *στιβι*. The same as STIBIUM.

STIBIALIA. Antimonial Medicines.

STIBIUM. Antimony. See ANTIMONIUM.

STICA, according to *Blancard*, are external Astringents, as Bole, and Dragons Blood.

STICHOS. *συχος*. The Name of an Arteriacal, or pectoral Confection, the principal Ingredient in which is *Marrubium Horehound*, described by *Galen, Lib. 7. de Comp. M. S. Loc. C. 2.*

STICTICUM EMPLASTRUM. An Adhesive Plaister.

STIGMATA. The Marks of Blows, Bruises, Wounds, or Burns.

STILBOMA. *στίλβωμα*, from *στίλβω*, to shine, a general Term for any Cosmetic used to procure a shining Countenance. *Castellus.*

STILBUS. Antimony. *Rulandus.*

STILISCUS, the same as *Scalmus*, or *Priapiscus*. *Oribas. de Machin.* See PRIAPISCUS.

STILLA. A Drop.

STILLATICUS, the same as DISTILLATUS, distilled, an Epithet of Liquors passed through an Alembic. *Castellus.*

STILLICIDIUM has two Significations, one *pathologic*, in which Sense it is the same as STRANGURIA, which see; the other *pharmaceutic*, in which it signifies an Instillation of Liquor upon some Part of the Body, being much the same as Embrocation. *Castellus.*

STIMMI. *στίμμι*. Antimony. *Dioscorides.*

STIMULANS. *στίμμι*, stimulating, the same as *pungens*, pungent, is an Epithet applied to a Kind of Pain, *Galen in 6 Aph. 5.* The Words *stimulans* and *stimulus*, are, also, applied to some of the more active Kinds of Medicines, which are added to those which are slower, in order to quicken their Operation. *Castellus.*

STINCUS, as *Fuchs* observes, *Not. in Myreps. Antid. 69.* is a corrupt Word for *Scincus*, taken from a Manuscript Copy which has *σίνγα*, *Stinga*, for *σύνγα*, *Scinga*, which Corruption, he says, is still retained in the Shops to this very Day, where instead of *Scincus*, they say *Stincus*.

STIPATIO. The same as *Constipatio*, or STREGNOSIS; which see.

STIPES. That Part of a Plant which is between the Root and the Branches, the Trunk, Stem or Stalk. *Blancard.*

STIPHROS. *στίφρος*. The same as STRYPHNOS; which see.

STIPTE, *Stipteria*, are corruptly read for *Stypte*, *Stypteria*. *Alum.* We meet also with *Striptica* for *Styptica*. *Castellus.*

STIPULÆ, according to *Blancard*, are the Leaves which surround the Stalk in Corn.

STLENGIS. *στίλγης*. The same as STRIGIL or STRIGILIS, which see.

STOEBE. A Name for several Sorts of JACEA.

STOEBE *Plantaginis Folio.* See CATANANCE.
STOECHAS.

The Characters are;

The Galea is erect and bifid, the Beard trifid, and the Flower appears quinquefid. The Spikes of the Flowers are thick, squamated, and crowned at Top with small, coloured Leaves.

Boerhaave mentions three Sorts of *Stæchas*, which are;

1. *Stæchas*; *purpurea*. *C. B. P. 216. Tourn. Inst. 201. Boerb. Ind. A. 153. Stæchas Arabica*, *Offic. Stæchas Arabica vulgo dicta*, *J. B. 3. 277. Raii Hist. 1. 514. Stæchas vulgaris*, *Park. 67. Stæchas sive Spica Hertulana*, *Ger. 469. Emac. 585. FRENCH LAVENDER.*

This beautiful Shrub grows three or four Foot high, clothed with long hoary Leaves less than those of common Lavender, two at a Joint, with smaller coming forth among them, the Stalks are square, bare of Leaves to the Top, on which grow thick, round scaly Spikes, or Heads of Purple, galeated Flowers; set in hairy Calyces. On the Top of the Spikes grow two or three slender Purple Leaves, the Seed is small and round, four succeeding each Flower; the Root is thick and woody, and much branched; the Leaves and Flowers have a strong aromatic Scent. It grows naturally in the southern Parts of *France* and in *Spain*. It took its Name, according to *Dioscorides*, from the *Stæchades* Island in the *Mediterranean* Sea, not far from *Marjeilles*. It is planted with us in Gardens, where it is easily increased, and bears our severest Winters with moderate Shelter; and pity it is not more propagated, the fresh Heads being certainly of greater Virtue and Efficacy than those which comes from abroad, there being not fresh Importations in many Years. It flowers in *June*, and its Heads ought to be gathered when they are firm and hard, which is about the latter End of *July*. The Flowers are only used.

They are cordial and cephalic, strengthening the *Genus Nervosum*, and are useful for Apoplexies, Palsies, and all Kinds of Convulsions; they are opening and attenuating, promote the *Catamenia*, resist Poisons, and the Bites of venomous Creatures. They are an Ingredient in the *Theriaca* and *Mithridate*. *Miller's Bot. Off.*

Stæchas is absterging, attenuant and aperitive; its principal Uses are in Affections of the Head and Nerves, as the *Vertigo*, *Apoplexy*, *Palsy* and *Lethargy*. In Diseases of the Breast it has the same Effects as *Hyssop*; it also provokes Urine and the *Menses*, resists Poisons, and gives Relief under hypochondriac Disorders. Outwardly it is used in Lotions of the Head, Suffumigations, and other Ways. *Mesue* is very prolix in describing its Virtues; there are three Preparations of its Syrup in Use, the Simple, and Compound, and that of *Fernelius*. They are all esteemed cephalic, and used with good Success in cold Affections of the nervous Parts. *Mesue* writes that *Stæchas* purges Phlegm and Melancholy; but because it is slow and weak in Operation, he orders an Addition of a sixth Part of common Salt, *Sal Gemmæ*, black *Myrobalans*, or *Cepula*. He also advises Persons of a bilious Constitution to abstain from it, for which Reason, perhaps, says *C. Hoffman*, it is grown out of Use. *Raii Hist. Plant. p. 514.*

2. *Stæchas*; *folio verrato*. *C. B. P. 216. Lavandula, foliis crenatis*. *T. 198.*

3. *Stæchas*; *cauliculus non foliatis*, *C. B. P. 216. Boerb. Ind. Alt. Plant. Vol. 1. p. 153.*

The first Species is called *Stæchas Arabica*, not because it grows in *Arabia*, but because of the high Commendations given it by the *Arabian* Physicians. *Stæchas* is somewhat of a ranker Quality than *Lavender*; in other respects it has the same Virtues, and is recommended for the same Diseases; hence a Syrup of *Stæchas* is so much commended by the *Arabian* Physicians, that they prescribe no cephalic Medicine in which this is not an Ingredient. But the common Preparations of this Syrup is good for nothing, because the Virtue is lost in the Boiling. The Conserve therefore, or the distilled Water, or only a simple Decoction, taken inwardly, are of excellent Virtue. Bruised, and the Juice expressed without Exhalation, there is no better Medicine for strengthening the Brain. The Plant has a very pleasant and fragrant Smell, and is anti-hysterical, attenuant, diaphoretic, detergent and inciding. Hence it is of Service in Obstructions of the *Menses*, Retention of Urine, Head ach and Melancholy, resolves coagulated Blood, but excites Catarrhs. It is reckoned of excellent Use for freeing the Lungs of acrimonious Humours, and kills Worms. Outwardly it is a very good Emollient in a Hardness of the Uterus, and to strengthen the Head in an Apoplexy. *Hist. Plant. ascript. Boerhaave.*

STOECHAS CITRINA. A Name for several Sorts of *HELICHRYSUM*.

Besides the foregoing Species of *Stæchas*, *Dale* mentions the following.

[* M m m]

STOECHAS

STOECHAS CITRINA GERMANICA, Offic. *Stoechas citrina Germanica latifolia*. J. B. 3. 153. Raii Hist. 1. 281. *Elichrysium seu Stoechas citrina latifolia*, C. B. P. 264. Tourn. Inst. 453. *Amaranthus luteus latifolius*, Ger. Emac. 646. *Gnophalium luteum*, Volck. 193. GERMAN GOLD-LOCKS.

It is cultivated in Gardens, and flowers in May. The Flowers, which are the Part used in Medicine, are of Service in Obstructions of the Liver and Spleen, and provoke Urine and the Menes; they resolve coagulated Blood, dry up Rheums, and expel Worms.

Tragus says, that the Flowers of *Amarantus* (so he calls this Plant) are of a hot Nature, which is known by their Taste and Smell. Boiled in Wine and taken they expel Worms of the Belly, which *Tragus* says is verified by his own Experience. Taken in the same Manner, they provoke Sweat, and therefore he esteems them effectual in Obstructions of the Liver, Spleen, Kidneys and Bladder. A Lye made of the Flowers cures scald Heads, and kills Lice, and put among Clothes preserves them from Moths. The Decoction thereof in Water being used by Way of Vaporation or Fomentation, mollifies the Hardness and Swelling of the Matrix. Some use the Flowers, as *Breynius* says, with good Success in the Jaundice. Raii Hist. Plant.

STOIBES, *στίβος καρπός*, "the Fruit of the Stoebe," in *Galen*, *Exegesis*, is expounded by *τὸ ὑπὸ τοῦ στίβου*, "the Seed of the Hippophaes." But *Foessius* thinks we should read *στίβος* and *ὑπὸ τοῦ στίβου*, and that they have a Relation to that Passage, *Lib. 2. περὶ γυναικ.* where a Cataplasm of the Seed of the *Stybe*, or the Bramble boiled in Water and Oil, is directed to be applied to the Breasts, in order to mollify their Asperities. But there we read *στίβος*, as *Galen* also in his *Exegesis* says, that the *Hippophaes* is called also *στίβος*, *Stybus*. Now the *στίβος*, *Stoebe*, is an Herb fit for making green Beds or Banks on which to sit or repose, and may serve instead of Flocks to stuff Beds or Couches, and is called by some *Phleas*, according to *Pliny*, *Lib. 21. Cap. 15.* from *Theophrast. Hist. Plant. Lib. 6. Cap. 1.* *Hesychius* writes *στίβος*, and expounds it by *ἵδρος χόρτο*, "a Kind of Stubble." Some read in *Galen* *στίβος* for *στίβος*, and *στίβος* for *στίβος*. It is also written, *στίβος*, *Lib. περὶ γυν. φύσ.*

STOLIDES, *στίλιδες*. Wrinkles in the Forehead.

STOLONES. The Suckers of Plants.

STOMACACE, from *στόμα*, the Mouth, and *κακός*, Evil. A Symptom of the Scurvy, consisting in a Fœtor of the Mouth, and an Erosion and spontaneous Hæmorrhage of the Gums.

STOMACHICA.

The Stomach has the leading Part both in Pleasure and Pain, for by its commodious Vicinity to the Heart it has the principal Share in contributing to the Strength of the Body, and by its sympathizing with the Soul, has a mighty Influence towards the Exaltation or Depression of the Spirits. From Pleasure proceed a good Concoction, a lively Colour, and fleshy Habit of the Body; from Pain or Uneasiness the contrary to these, and sometimes a Dejection of Mind, the Stomach receiving no Aliment, or Melancholy, with an Aversion to all Food.

A Disorder of this Part [the *Stomachica Passio*] is attended with a Hatred and Aversion to all Food, not only when it is offered, but when out of Sight; for the Patient recalls the Idea of it to Mind, accompanied with a Nausea, Anxiety, Redundance of Humidities, Cardialgia, an Effusion of the Saliva, and sometimes Vomiting: And tho' the Body suffers, and the Belly be empty, he bears the Pain of Fasting better than that of Eating; and if he finds it necessary to eat, he is forced to endure a Pain much worse than that of Hunger. It is very troublesome to him to chew his Meat, and much more irksome to swallow it; besides, he has an Aversion to common and wholesome Food, and longs for what is absurd and contrary to common Use. Nature with him is perverted, he is tired with every Thing, and hates and shuns his very Food. He is molested with a Pain between the Shoulders, which is increased after Eating and Deglutition, Restlessness, Anxiety, Dimness of Sight, Noise in the Ears, Heaviness of the Head, Numbness and Palsy of the Limbs, a Palpitation of the Hypochondria, and fancies that the Spine of his Back moves towards his Legs. Whether standing or lying, he seems to be agitated and moved this Way and that Way, like a Reed or a Tree by the Blasts of Winds. He spits a cold watery Phlegm, and if abounding with Bile in a bilious Constitution [*χολὰ ὑπερβαίνει*] is subject to a Scotomia. He is free from a Thirst, tho' after Eating he seems to desire Drink, continues waking tho' sluggish and drowsy, like those who labour under a Coma, is lean, pale, feeble, faint, spiritless, timid, silent, yet soon angry, very much molested with black Bile, and sometimes falls into Fits of Melancholy.

The Influence of these Symptoms being communicated by the Stomach to the Soul, a Disease must necessarily arise, but Men, through Ignorance of the sympathizing Parts, from whose Consent proceed the most severe and dangerous Disorders, ascribe the Cause of the Disease (merely) to the Stomach. What confirms my Assertion is the Contiguity of the Heart, the Original of all the Faculties; for the Heart is seated in the Midst between the Lungs, to the Middle of these is the Stomach connected, and this with the others to the Spine of the Back. From this Vicinity of the Heart proceed the Cardialgia, Fainting, and melancholy Disorders.

The Cause of this Disease, among a thousand others, is more especially a Discharge of Pus from the Belly upon the Stomach. This Disorder is also incident to those who through Necessity are forced to live on thin and hard Diet, and to such, also, as spend their Time in Study, and learned and laborious Researches, who are smitten with the Charms of divine Knowledge, and deprive themselves of due Rest and Food, neglecting the Care of themselves, and thinking nothing worthy of their Regard but a wise Saying, or a wise Action. These hard Students and Contemplators despise a Fulness and Variety of Meats, abstaining from Food and Sleep, and satisfying their Thirst with Water. Instead of a soft Bed, they lie on the Ground, without any Covering but the common Canopy of the Sky, and go muffled up in a thin and Threadbare Cloak, coveting no Riches nor Possessions but the invaluable Acquisition of divine Wisdom and Knowledge, which comprehends all that deserves to be called good in their Esteem. When they find it necessary to eat, they are contented with what is cheap and common, and use it not for the sake of satiating an Appetite, but for the Sustainment of Life. They indulge not themselves in drinking of Wine, or cheerful Conversation, in Tours or Promenades, but neglect the due Exercise as well as Clothing of the Body. Whither will not a Love of Learning divert a Person, and draw him aside? It seduces him from his Country, Parents, Brothers, and Sisters, and even from himself, and his own Life. Thus the poor Student becomes extenuated, looks ill-coloured, and old while young, is silent, thoughtful, never laughs, but is constantly severe and stern in his Behaviour. The Stomach is affected with Loathing, or is soon satiated with such cheap and ordinary Food as comes first to hand, being unaccustomed to Varieties, and of a dull Appetite to all Manner of Meats, and offended by any unusual Food, the taking of which is immediately succeeded by a general Loathing.

This Disorder of the Stomach is a chronic Affection, and different from a Phlegmon, Fluxes, Cardiogmus, and Pain of the Stomach.

The Stomachic Passion is most common in Summer, at which Season there is a Weakness of Digestion, Appetite, and all the Faculties. The Time of Life most subject to it is old Age, which, on account of its Vicinity to Death, is but too liable to a Failure of Appetite, even without a Disease. *Arætaus de Caus. & Sign. diutin. Morb. Lib. 2. Cap. 6.*

The Stomachic Passion takes its Name from the Part affected, the Stomach; but not every Disorder complained of in that Part is without further Consideration to be called the Passion of the Stomach, unless it be attended with the Concurrency and Continuance of many Symptoms together, and becomes of the Nature of chronic Distempers with repeated Exacerbations and Remissions. A Number of Physicians have prescribed singly for the Cure of this and that particular Symptom of the Disease, sometimes treating of the Hardness of the Stomach, sometimes of its Ventosity, of the Rheumatism in particular of the Stomach, and so of its Weakness, its Loathing and Aversion to Food, and the rest. *Themison*, in his first *Book of chronical Diseases*, calls a Solution of the Parts about the Stomach by the Name of Rheumatism. In his second Book he gives it the Appellation of Ventosity. *Thessalus* in his second *Book of Diætics* treats distinctly of the Cure of a Solution, and of an Inflation of the Stomach. Our Design is to speak of them all under one general Head, in which we shall reduce Ventosity or Hardness from an Inflammation, under Diseases of Stricture, and a Loathing or Abhorrence of Food, and a Corruption of the same, a Disorder of an ambiguous Nature under the two principal Diseases.

The antecedent Causes of the Stomachic Passion, besides those which it has in common with other Distempers, are, more particularly a continual Indigestion or Vomiting after Eating, a taking Cold, Sorrow, also, and taking a strange and nauseous Draught of Physic.

The Symptoms attending this Disease in the Time of the Fit are, a Fainting, a cold Numbness of the Joints, or a Heat more piercing than the natural, diffusing itself through all the Members, and most sensible in the Palms of the Hands, with a dewy Sweat, a Restlessness, Jactation, and Anxiety, a Lowness of Spirits, and Dependancy of Mind, a Change of Colour,

Colour, a small, swift, and weak Pulse, a Wasting of the Body, or, on the contrary, an immoderate Appetite, with a Corruption of the Food, which acquires an acid, unfavoury or nidorous Quality. Sometimes the Patient lies speechless, and grinds or clenches his Teeth; there is always a Cold in the Head, with a Ringing in the Ears. Sometimes, also, there is an insatiable Thirst, and when the Inflammation is at the Height in the Time of the Fit, a Dryness of the Mouth, and a leaping under the Region of the Præcordia; there is, also, a Pain in the same Parts, or between the Scapulæ, which extends itself further, if the Inflammation happens to be more diffused, with a Difficulty of Deglutition, and a Strangulation, which has induced some leading Men of our Sentiments, in their Books of Epistles, to call this Kind of Symptom a *Stomachic Quinsy*.

A *Hardness* of the Stomach, without Heat or Pain, is attended with other common Symptoms, and besides with a ligneous Sensation of the same Parts, and especially between the Shoulders, if the Stomach be wholly dry'd. If there be only a Dryness of its upper Part, there will be a Difficulty of Deglutition till what is received arrives at the Bottom of the Stomach; or if the Dryness or Hardness affect its Bottom, which the *Greeks* call *Basis* (*Basis*) Deglutition will be easy; but when it is perfected, will be succeeded by a Sense of Weight, with a Hardness, and a visible Tumor in the interior Parts of the Præcordia.

A *Ventosity* of the Stomach is attended by a Tension together with an Inflation. There is a Repletion of the Head, from a Retention of Flatuosities, with continual Eructations, which manifests itself by a Sense of Heaviness of that Part, which is increased after taking Food, at which Time there is a Sound, also, of the Liquids in the interior Parts, as of a Bladder half full, the Wind rushing through the empty Spaces, till the Parts are relieved from this Tension, and relaxed by the Benefit of Eructations. If the Intestines be, also, inflated, there follows a Rumbling of their interior Parts, which the *Greeks* call *Βορβορυγμὸς* (*Borborygmus*.) A *Solution* of the Stomach, which they call *Rheumatismus*, [a Rheumatism] is succeeded by a Flux of the Saliva, and sometimes by a continual Spitting, and a nauseous Humectation of the Mouth, with a biting Sensation in the inward Parts. Some, in this Circumstance, vomit up vast Quantities of a gross, tenacious, or a bilious and porraceous Humor, or some other Substance of the same Colours. If the *Solution* be *occuli*, which the *Greeks* call *ἀδνος* (*Adelos*) or the Signs are not apparent, which the *Greeks* call *λογοθεορέτα* (*Logothœreta*) there follows a Weakness of the Pulse, with a Sense of Trembling and Pendulousness of the Stomach, a Faintness and Swooning, which the *Greeks* call *λιποθυμία* (*Lipothymia*). This Symptom is removed for the present by taking some Food, and the Patient finds himself refreshed, though but for a while, for he relapses into his former Fainting-Fit, and is in the same Circumstances as in the last Paroxysm; so that unless he receives speedy Recruits of Aliment he falls away as dead. Hence we are told by the Antients, that Numbers under this Disorder have continued eating and drinking for a whole Day and Night without ceasing. And *Aesclepiades* relates, that a Servant of *Praxagoras* eat every Day three Loaves, each of two Pounds in Weight, and after he had eaten them was no otherwise affected than if he had taken nothing. And this last Character distinguishes the fore-mentioned Disorder from a *Phagedæna*; for in this latter the Food received is not digested, nor continues in the Stomach, but is expelled thence by Vomiting. *Cælius Aurelianus* *Morb. Chron. Lib. 3. Cap. 2.*

THE CURE.

In other Diseases, after the Cure, there remains nothing to confirm the Health and strengthen the Body, but a proper Regimen with a good Concoction. To *Stomachic* Patients alone a Regimen proves of no Service, or prejudicial, for want of rightly digesting his Aliments. I shall, therefore, briefly give Directions in using proper Means for promoting a due Concoction in such Subjects. For Gestation, Walking, with other Exercises of the Body and of the Voice, may procure an Appetite, and subdue a Loathing or Inappetence of the Stomach, but prove insufficient to remove a long and habitual Indigestion, and to render a lean and extenuated Body carnosous, and of a good Habit. The Sick in such Cases are more to be indulg'd than other Patients, and to be managed in the nicest Manner: The Physician, also, is to comply with their Desires, provided they extend not to something which would prove very prejudicial to them; for this is the best Way you can take, if they cannot be

persuaded into a Liking of what would be most proper and beneficial.

Medicines to be taken inwardly are the Juice of Worm-wood, Unguentum Nardinum, Theriaca, the Seeds of Parsley, Ginger, Pepper, and Sefeli; these promote Concoction. Outwardly, to the Sternum may be apply'd an astrigent Epithem, compos'd of Nard, Mastich, Aloes, Acacia, and Juice of Quinces. Another of the like Nature may be prepared of the Pulp of Apples bruised with Dates. Besides these Remedies, others may be used, which I have prescribed for the Cure of a Thirst in a Diabetes. The same Remedies, indeed, which are proper in this Disorder, would excite a Thirst in a Diabetes; but in Stomachics, the Tone of the Stomach is not at all disposed to render the Patient thirsty. *Aræteus de Curat. Chron. Morb. Lib. 2. Cap. 6.*

STOMACHICA:

Stomachic Corroboratives, or such as strengthen the Tone of the Stomach and Intestines, among which are *Carminatives*, as the Roots of Galangals, red Gentian, Zedoary, Pimpinella, Calamus Aromaticus, and Arum; Of Barks and Rinds, those of Canella Alba, Sassafras, Citrons, *Seville* and *China* Oranges, the Cortex Africanus, the Cortex Winteranus, Cascarilla; Of Spices, Pepper, Ginger, Cloves, Cinnamon, Cardamums and Mace. Other Things of this Nature are, among Simples, as *Roman* and common Chamomile, Wormwood, Mint, Carduus Benedictus, and the four Carminative Seeds; Of Preparations, the Oil of Cedar, Oil of Oranges by Expression, Oils of common Chamomile, Daucus Cre-ticus, Anisum Stellatum, Cumin, Caraway, Mint and Wormwood, with the Spirit of Salt and sweet Nitre. Among Compounds are the Sal Volatile *Sylvii*, our stomachic Elixir, and that of *Michaeli*, the carminative Essence of *Wedelius*, the stomachic Powder of *Birkmannus*, the Essence of Orange-Peel, with sweet Spirit of Nitre, Tincture of Tartar, Oils of Oranges prepared by Expression, the compound Essence of Wormwood of *Conordingius*, the carminative Water of *Dornerellius*, and the Spiritus de Tribus.

Though many cephalic and nervine Remedies are, also, of excellent Service in Diseases of the Stomach and Intestines, especially such as proceed from a Weakness or Decay of their Tone, there are yet other Medicines which, with Regard to the particular Kind of Disorder, are accommodated, as it were, by a specific Virtue to the Distempers of those Parts. Thus, for Example, under a Weakness of Appetite, from a Congestion of viscid and acid Crudities in the Stomach, besides Bitters, such as the Root of red Gentian, the Herbs Wormwood, and Carduus Benedictus, and the several Sorts of Spices; the Roots, also, of Galangal and Pimpinella, the Canella Alba, Pepper, Ginger, and Arum, are of especial Service. For a Nausea, Vomiting and Inversion of the Stomach, the most present and effectual Remedies are Mint, its spirituous Water, and Oil carefully distilled; Mastich, and its Spirit, with what is prepared of *Peruvian* Balsam, and Salt of Tartar, and our mineral anodyne Liquor. Against the Cardialgia, Colic, and Gripes, the speediest and best adapted Remedies are fresh Orange Peel, and the Essence of the same duly extracted, the Water and Oil of *Ethiopian* Cumin, the genuine Oil of the Flower of common Chamomile, with the sweet Spirit of Nitre. To correct an excessive Lubricity of the Intestines, and restrain a Looseness, the Cascarilla is endu'd with a peculiar Virtue. Under Inflation of the Intestines, the most effectual Medicines to expel the Flatules are the carminative Water of *Dornerellius*, the carminative Essence of *Wedelius*, the Spiritus de Tribus incorporated with the sweet Spirit of Nitre, the Essence and Water of Zedoary, and Cardamoms, with the genuine Oils of Caraway and Cumin. *Frederic Hoffman.*

STOMACHOTROTOS, from *σῆμαχος*, the Stomach, and *τρυπαχον*, to wound, wounded in the Stomach.

STOMACHUS, *σῆμαχος*, has many and various Significations with the ancient Physicians. Properly, it signifies a narrow Neck like an Isthmus placed before any considerable Cavity resembling a Belly; and this was what the Antients meant by the Word. The Name was afterwards translated to signify the *Oesophagus*, or *Gula*, the Gullet; and since that, to denote the Mouth of the Stomach, which the Antients call *καρδία* (*Cardia*). This last Sense was impos'd upon the Word in *Galen's* Time, as he informs us in the Beginning of his fourth Book *de Usu Partium*. The same Author, *Lib. 5. de Loc. Affect. Cap. 5.* tells us, that Writers since the Time of *Aristotle* usually give the Name of *Stomachus* to the Part between the Fauces and the Mouth of the Stomach, which the Antients called *Oesophagus*, and those in his Time, *Gula*, "the Gullet;" but that *Aristotle* always called this Part by its ancient Name: Thus

Tully

Tull. Lib. 1. *de Nat. Deorum*, makes the *Stomachus* adhere to the Roots of the Tongue, whither the Food is first transmitted from the Mouth, with the Assistance of the Motion and Agitation of the Tongue, and through which it is impelled downwards. *Celsus*, also, Lib. 4. Cap. 1. et 3. takes the *Stomachus* for the *Gula*, when he says, that it is situated under the Fauces, and receives the Food; though the same Author seems to use the Word improperly for the lower Part of the Stomach, when he makes the *Stomachus* the Beginning of the Intestines, and describes it as a nervous Part beginning from the seventh Vertebra of the Spine, and join'd to the Stomach about the *Præcordia*. Lib. 4. Cap. 1. And *Pliny* Lib. 11. Cap. 37. calls the upper Part of the *Gula*, or Gullet, the *Fauces*, and the other Part the *Stomachus*, which Appellation, also, was not unknown to the Antients, as appears from *Homer*. Il. 7. vers. 292. *καὶ ἀπὸ στομάχου ἀπὸν τὰ μὲν ἰδίῃ χάρμῃ*. "And cut the Throats (*Stomachi*) of the "Lambs, &c." To proceed, *Galen* in many Places writes, that *Stomachus* was a Name for the Mouth of the Stomach; and Lib. 4. Cap. 5. *de Loc. Affect.* he says, that the Antients call'd the Mouth of the *Stomachus* *καρδία*; the Appellation being given it from some Symptoms which it seemed to induce; but in his Time it was call'd *Stomachus*, by a wrong Use of the Word, as he writes, *Com. ad 7 Aph.* 56. where he says, that in his Time not only the common People but the most eminent Physicians call the Mouth of the Stomach, by an Abuse of the Word, *Stomachus*. To the same Purpose he writes in many other Places, and particularly Lib. 2. *τὴν καλὰ τὴν*. he says, that *Stomachus* is the Name by which *Archigenes* calls the Mouth of the Stomach, and is the usual Appellation bestow'd on it by the Physicians, who use the Phrase *Stomachica Syncopa* (to signify a Syncope proceeding from an Affection of that Part) and call some *Stomachici* from a Disorder in that Part, and particularly those who have an Oppression at the Mouth of the Stomach, as he writes in the Beginning of Lib. 8. *καλὰ τὴν*.

Hippocrates, Lib. *περὶ ἀεισπύου*, and Lib. *περὶ καρδίας*, calls the *Oesophagus*, or *Gula*, *στόμαχος*, which was the usual Name the Antients had for it. *Stomachus* was, also, us'd among the *Latins* to signify the same as *Gula*, or the Canal subjacent to the *Fauces* at the Root of the Tongue, which transmitted the Meat and Drink to the Stomach, as we are assured by *Gellius*, Lib. 17. Cap. 11. Thus, according to the Opinion of *Erasistratus*, *στόμαχος καρδίας*, in *Hippocrates*, will signify that narrow Pipe, or Neck of the Stomach prefix'd to its Cavity, from that antient and proper Signification of *στόμαχος*, observ'd in the Beginning, in which Sense it is very often used by *Hippocrates*. For Instance, *στόμαχος κιστῆρος*, is expounded in *Erotian* to be the Neck of the Bladder, and *τῆς μήτρας στόμαχος*, the Neck of the Womb.

STOMARGUS. *στόμαργος*. *Galen*, in his *Exegesis*, writes, that *Dioscorides* reads *στόμαργος* in the second of the *Epidemics*, and understands it *τὸ λαλῶντος μανικῶς*, of one who talks madly. Others, he says, read *στόμαργος*, and make it a proper Name.

STOMATICA. *στοματικά*, from *στόμα*, the Mouth. Remedies for Disorders of the Mouth, and *Fauces*.

STOMOMA. *στόμαμα*. Purified Iron, that is, Steel.

STOMOMANICON. *στομομανικόν*. A Name for the Muscle call'd otherwise *Platysma Myoides*.

STOPAROLA. The Name of a small Bird mention'd by *Aldrovandus*.

STORAN. See **STYRAX**.

STORYNE. *στορύν*. An Instrument us'd by the Antients for drawing Blood from the Nose, as we learn from *Aretæus*, *de Curat. Diuturn. Morb. L. 1. C. 1.* As this Author but just mentions it, and I don't know that it is taken Notice of by any other, I cannot describe it.

STRABISMUS, STRABILISMUS, or STRABOSITAS. A Distortion of the Eye, or squinting. See **Oculus**.

STRAMONIUM.

The Characters are;

The Root is annual; the Leaves are alternate, and sinuated at the Edges; the Calyx is pentagonal, and tubulated. The Flower is monopetalous, Funnel-shaped, quinquefid, and open. The Ovary in the Bottom of the Calyx becomes a prickly, roundish Fruit, divided by a decussated, or cruciform Partition, into four Cells, containing many Kidney-shaped Seeds.

Beerhaave mentions six Sorts of *Stramonium*, which are;
1. *Stramonium*; fructu spinoso, rotundo; flore albo simpliciter. T. 118. *Solanum*, *Pomo-spinoso, rotundo, longo flore*. C. B. P. 168. *Datura Turcanum*. H. Eyft. Aut. O. 2. F. 12. F. 1.

2. *Stramonium*; fructu spinoso, oblongo; caule, & flore, violaceo. *Boerb. Ind. A.* 261. *Stramonium*, Offic. *Stramonium majus album*, Park. Parad. 360. *Raii Hist.* 1. 748. *Stramonium spinosum*, Ger. 277. *Emac.* 348. *Stramenica fructu spinoso oblongo flore albo*. Tourn. Inst. 119. *Stramonium altera major, sive Datura quibusdam*, J. B. 3. 624. *Solanum foetidum pmo spinoso, oblongo*, C. B. P. 168. **THORN APPLE.**

The common Thorn-Apple has a white, thick, woody Root, pretty much branched, and full of Fibres, from which arises a thick, round, hollow Stalk, two or three Foot high, divided at the Top into several Branches, and clothed with large Leaves, waved and sinuated about the Edges, in Shape like the common Night-shade, but much larger, of an ugly foetid Smell. The Flowers are long, white, hollow Tubes, dilated at the Ends into large pentangular Brims, each Angle ending in a long *Ligula*: They stand in loose, green, five-cornered Calyces, and are succeeded by large Seed-Vessels, near as big as a Walnut, covered all over with long, thick, upright Thorns; and as they ripen, they separate into four Parts, shewing the flat, black, and somewhat rough Seed. It is sown in Gardens, and is sometimes found wild among Rubbish, and flowers in July.

The Leaves are accounted cooling, and good for Burns, Scalds, and Inflammations in any Part. The Seed is narcotic and soporiferous, and rarely used. *Miller's Bot. Off.*

3. *Stramonium ferox*. *Boerb. Ind.* 261. *Tourn. Inst.* 119. *Datura*, Offic. *Solanum foetidum Pomo grandiore, Aculeis donato*, *Raii Hist.* 1. 748. **DUTROY.**

The Seed of *Stramonium* pulveriz'd and drank disorders the Senses, and induces a Delirium, which lasts twenty-four Hours, whence, as we are told by *Garcias*, it is us'd by Thieves to mix with the Food of those whom they design to rob. And *Acosta* tells us, that it is customary with lewd Women to give half an Ounce of the Powder to their Gallants, in Wine, or any other Liquor they like best. He who is so unfortunate as to take it remains for a long Time like one without Reason, either laughing, weeping, or sleeping, and sometimes talking, and giving rational Answers as if he were in his right Senses, though the contrary be true, for he neither knows whom he talks with, nor remembers a Word of what has been said after he comes to himself. Some of these Women are so experienc'd in administering this Medicine, and know how to temper it in such a Manner, that its Effects shall last for a certain Time, or for as many Hours as they please. There are some Physicians among the Pagans, who use the Seed to provoke Urine; their Method is first to exhibit some Emetic, then inject an acrimonious Clyster, and apply strong Ligatures to the Arms and Legs, and rub them very well, and sometimes to apply Cupping-Glasses to them: If these have no Effect, they find it necessary to open a Vein in the great Toe.

As the Pagan Physicians, as well as the Christian Natives, abhor the Use of Venesection and Cupping-Glasses, they do nothing but provoke Vomiting, and apply strong Ligatures and Frictions. If these will not answer the Intention, they prescribe a Bath of warm Water to provoke Sweat. After vomiting they exhibit a Draught of Wine mixed with Pepper and Cinnamon. A Dram of the Root taken in Wine induces a profound Sleep and strange Dreams full of surprizing and extravagant Images. The Seeds macerated a Night in Vinegar, then carefully powder'd, are good to anoint a miliary Herpes, and spreading Erysipelas. An Ointment prepared of the Juice of the Leaves with Swines Fat is a most approved Remedy for a Burn by Fire or scalding Water. *Raii Hist. Plant.*

4. *Stramonium*; fructu spinoso, rotundo; flore violaceo, duplici, triplicive. T. 119.

5. *Stramonium*; *Americanum*; minus; *Alkekengifolio*.

6. *Stramonium*; folio *Hyoscyami*; flore toto candido; fructu propendente, rotundo, spinis innoxiiis ornato. *Datura, folio Hyoscyami latissimo, flore toto candido, fructu propendente, rotundo, copiosissimis, & longissimis, spinis, fere innoxiiis, munito, semine pallido*. H. Mauroc. *Boerb. Ind. Alt. Plant.*

The Leaves, Roots, Flowers, and Seeds of *Stramonium* taken inwardly, induce a Sapor, if used in great Quantity. The very Smell thereof causes Ebriety. A large Dose destroys the Memory of all things past. The Whores in *Java* use it when they are hir'd by People of Quality; the Women, also, give it to their Husbands, who become delirious afterwards; they will, also, take it themselves in the Presence of their Husbands out of Wantonness. Too large a Dose induces Stupidity, Faintness, and at last Death. The Plant induces a strange Kind of Madness, or Drunkenness: They who take it, make Answers with their Eyes open, but remember nothing, nor concern themselves in the least about any

any thing. For this Reason the *Indian Princes* make use of it to render their Rivals stupid, and consequently incapable of Government, in which Condition they suffer them to live and shew themselves to the People. These Effects are caused by the Drink called *Datyra*, which is composed of Opium, Stramonium, and Hyoscyamus. This Drink has no Taste nor Smell, yet the Diseases proceeding from it are incurable. *Garcias*, indeed, speaks of a Remedy, which is immediately to take a Vomit with a large Quantity of Salt and Vinegar; this in some measure cures, but they never recover their Strength of Brain. See *Bernier's Travels thro' the Dominions of the Great Mogul*. This Plant taken in a small Quantity causes Sleepiness, in a large Dose Madness, Convulsions, cold Sweats, and at last Death. Outwardly, in the Form of a Cataplasm, it is of Service in an Erysipelas, Convulsions, inveterate Ulcers, and all kinds of Inflammations, but is never to be used internally. *Hist. Plant. Ascript. Boerhaave.*

STRANGALIDES. στρεγγαλίδες. Hard Tumors in the Breasts from concremented Milk.

STRANGULATIO. Strangulation; a Sensation of Suffocation in hysteric Disorders.

STRANGURIA. στρεγγυρία, from στρέω, a Drop, and βουρα, Urine. A Strangury; that is, a Discharge of Urine by Drops, attended with Pain. See **CALCULUS**, **CATHETER**, **CATHETERISMUS**, **GONORRHEA**, and **RENES**.

STRATIFICATIO. Stratification; that is, the laying different Substances upon each other; *Stratum super stratum*; Layer upon Layer.

STRATIOTES. Offic. *Stratiotes Egyptia*, J. B. 3. 787. Raii *Hist.* 2. 1384. *Stratiotes aquatica vera Dioscoridis & Egyptiaca*, Park. Theat. 1249. *Lenticula palustris Egyptiaca*, five *Stratiotes aquatica folii sedo majore latioribus*, C. B. P. 362. *Hay alem el masvi*, id est, *Stratiotes*, Alpin. *Egypt.* 2. 51. **WATER SEA-GREEN.**

It grows in the Canals derived from the Nile near *Damiata* in *Egypt*, and swims on the Water like the *Lenticula Palustris*; has no Stalk, but has Leaves resembling those of the *Cynoglossum*, somewhat short, broad, thick, hard, hairy and whitish; to these Leaves, instead of Roots, hangs a little thin Sort of Down. From its Resemblance to the greater *Sedum* or *Sea-green*, they call it *Hay alem el masvi*, that is, *Water-Sea-green*. It has no Smell but what it has from the Water, but has a dry and astringent Taste like *Acacia*, and is found by Experience to be good for the same Diseases as *Plantain*. Hence the Countrywomen, whom they call *Bedovi*, use the Decoction or Juice, or take a Dram of the Powder every Day, to stop an Hemorrhage of the Uterus; and the Peasants apply the bruised Leaves to Wounds, with surprising Success. I suppose this to be the true *Stratiotes* of the Ancients, of which *Dioscorides* gives the following Description: "The *Stratiotes*, which grows upon the Water, and which some call the *River Stratiotes*, the *Egyptians* *Tibus*, the *Magi* the Blood of *Ælarus*, swims upon the Waters, and lives without a Root, whence it has its Name. It is like the *Sempervivum*, only has a larger Leaf." That Author ascribes to it the same Virtues for which the *Egyptians* now use it; so that there can be no doubt but this is the true *Stratiotes*. The same is more clearly demonstrated by *Pliny*, in the following Words: "The *Stratiotes* is a Plant in much Esteem among the *Greeks*, but it grows only in *Egypt* among the Inundations, being like the *Aizoon*, only its Leaves larger." *Prosper Alpinus, de Plant. Egypt.*

STRATIOTICON. στρεπτιον, or **STRATIOTÆ COLLYRIUM**. The Name of a Collyrium described by *Scribonius Largus*, No. 33. and *Paulus Ægineta*. L. 3. C. 22.

STRATUM SUPER STRATUM. See **STRATIFICATIO**.

STREMMMA. στρέμμα, from στρέφω, to turn. A Strain, or, as it is usually called, a Sprain, of the nervous and membranous Parts about a Joint.

STREPITOSUS. The Name of a flatulent Disorder common in those Parts of the Alps which belong to the House of *Austria*, in which the Face, Neck, and Arms, are so distended with Flatulences, as to make a Noise, when struck, like a dry Bladder half distended with Wind. *Castellus* from *P. de Serbait. Med. Septentr.*

STRIATA CORPORA. Two Protuberances of the Brain, upon the Crura of the *Medulla Oblongata*. See **CEREBRUM**.

STRIBILIGO. A cutaneous Efflorescence. *Helmont. Tumul. Pestis.*

STRICTOR. The same as *Sphincter*.

STRICTUM, in *Scribonius Largus*, No. 45. is Dense.

STRICTURA. Stricture, Rigidity. I have made several References to this Article in the Course of this Work, at that Time intending to explain the Doctrine of Disease

from Stricture or Rigidity here; but as I afterwards judged it more proper to be inserted under the Article **FIBRA**, the Reader must have the Trouble of consulting that. See, also, in the Preface, the Methodic System.

STRSDOR DENTSUM. A Grinding of the Teeth.

Prosper Alpinus, in his *Treatise de Præfag. Vit. et Mort. Ægrot.* tells us, that a *Stridor Dentium*, which he calls a Convulsion of the Teeth, has been frequently observed by him to be a mortal Symptom; and he confirms his Observation by the Authority of *Hippocrates*, 1 *Prorrhet.* 48. and in the Book of the *Prognostics*, where it is said, that "the Grinding of the Teeth in Fevers, where a Person has not been accustomed to do the same from his Childhood, portend Madness and Death; and if it be attended with a Delirium, is so much the more dangerous and fatal." And *Galen* commenting thereon says, "That a Grinding of the Teeth, when the Patient has not been used to it from the Beginning, indicates an approaching Delirium; but if you perceive the Patient to labour under both Symptoms, that is, to grind his Teeth, and to be under a Delirium, you may conclude him to be near Death." We read the same Prognostics from a *Stridor Dentium*, 1 *Prorrhet.* 48. And we have it confirmed by an Instance which *Hippocrates* gives us, 7 *Epid.* T. 20. in the Person who lay sick in the House of *Metron*, who, the Day before he died, was affected with this Contrition or Grinding of the Teeth, among other mortal Symptoms. We may conclude, therefore, that a *Stridor Dentium*, in acute Diseases, portends nothing but Death. *Prosper Alpinus.*

STRIGENSIS TERRA. See **TERRA SILESIACA**.

STRIGIL, STRIGILIS, was an Instrument in Use among the Ancients in their Baths and some gymnastic Exercises, and served to absterge Sweat and Sordes from the Body. Persons who intended to bathe or use some Exercise, when they came into the Gymnasium, put off their Clothes in the Apodyterium [see the Article]; after which some of them, especially such as designed to box or wrestle, went into the *Alipterium*, where they were anointed, and thence proceeded to the Place where the Dust was, with which they were sprinkled as they passed along, and then entered on their several Exercises; which being finished, they returned to the *Alipterium*, and had the Strigments and Sordes absterged from their Bodies by the *Alipta* [see the Article] with Iron *Strigil*; and as they consisted of a Mixture of Oil, Dust and Sweat, they were preserved for medicinal Uses, and called by the *Attics* *Conisalus*, *κοισαλεις*, and by others *Patos*, *πάτος*, as appears from *Dioscorides*, *Pliny*, *Galen*, and *Aetius*; tho' *Avicenna*, in his second Book, mentions the dry Sweat of Wrestlers, which I suppose to be such as had no Mixture of Oil or Dust. And tho' *Strigils* were used in Bathing in *Galen's* Time, they were generally Sponges, or made of Linnen, and not always common, but every one carried with him his own *Strigil*, especially those who had an Aversion to Instruments which were of common Use. *Strigils* were of Iron, Gold, Silver, Horn, Ivory or Brass, and were of a crooked Shape, like a Gardiner's Pruning Knife, as appears from ancient Monuments, and that Verse of *Martial*.

Pergamus hoc mist curvo distringere Ferro.

STRIGMENTUM, στρίγμα, *στρίγμα*, the Strigments, Filth, or Sordes, absterged from the Skin in Baths, and Places of public Exercises, or from the Walls or Statues belonging to those public Places. Hence *Strigments* are of three Kinds, first of the Baths, consisting of the Sweat, Oil, and Sordes collected in those Places; secondly, of the *Palastra*, consisting of the same Things, with an Addition of Dust, collected partly by Insersion after anointing with Oil, and partly in the Colluctation of the Combatants offensively, and insidiously throwing Dust upon each other, besides what was raised by conflicting. The third Kind was obtained by Abrasion from the Walls and Statues belonging to the *Gymnasium*; and these Strigments, or Sordes, consisted in a great measure of Oil, (the same with which the Combatants were anointed) with a Mixture of Particles of that particular Substance to which it adhered, and consequently some Communication of its Virtues; as, for instance, what was scraped off from Copper Statues had a Mixture of the Substance and Virtues of *Ærugo*.

Archigenes in *Galen*, Lib. 3. κατὰ τὸν, uses Strigments with Lime for discussing the Parotides; and uses, also, for the same Purpose an Application of Nitre, with a third Part of *Rubrica Sinopica*, and with *Unguentum Cyprinum*, reduced to a strigmentitious Consistence.

Strigments absterged in the Baths are of a heating, mollifying, and discutient Quality; and therefore proper to anoint the *Rhagades* and *Condylomata* affecting the Anus.

The strigmentitious Sordes of the *Palæstra*, which have a Mixture of Dust, discuss Collections of Matter about the Joints; and, being applied hot by way of Fomentation, or in a Malagma, give Relief under the Pain of the Sciatica.

The Strigments which are scraped off from the Walls and Statues belonging to the *Gymnasia* [public Places of Exercise] are heating, and discuss Tumors which are difficult of Maturation, and are proper for Abrasions, and Ulcers in old Persons. *Dioscorides, Lib. 2. Cap. 34, 35, 36.*

STRINGENS. Astringent.

STRIX. The Screech-Owl, a Bird described by *Aldrovand.*

This nocturnal Bird is a Species of Owl, and as large as an ordinary Hen. It lives in mountainous and maritime Places, near the Folds in which the Goats are kept, because it is fond of their Milk, and sucks them when it can have any Opportunity of doing so. It contains a large Quantity of volatile Salt and Oil. Its Flesh, when dried and reduced to a Powder, is proper for the Cure of Palsies and Quinsies. The Dose is from half a Dram to one Dram. Its Fat, when externally applied, is emollient, resolvent, and proper for corroborating the Nerves. Its Gall is detensive, and proper for removing Specks of the Eyes. *Lemery des Drogues.*

STRÖBILE. στρεβλῖν, from στρέβω, to turn. An intort-ed Pledget of Linnen.

STROBILITES. στρεβλῖτης. An Epithet for Wine impregnated with Pine-Cones. *Dioscorides, L. 5. C. 44.*

STROBILUS. στρόβιλος. An Artichoke. But *Strobilus*, also, signifies a Pine-Cone; and in *Dioscorides*, as *Marcellus Virgil* renders him, a Pine-Kernel.

Pine-Kernels cleaned and eaten; or taken in *Passum* with Cucumber-Seeds, provoke Urine, and correct the Acrimony of Humours infecting the Kidneys and Bladder. They, also, give Relief under the gnawing Pains of the Stomach, being taken in the Juice of Purslain; they strengthen a weak Body, and correct the corrupted Humours. The whole *Strobili*, or Pine-Cones, gathered fresh from the Tree, then bruised and boiled in *Passum*, are three Cyathi of the Liquor, if taken every Day, are good for inveterate Coughs, and *Phthisis*. *Dioscorides, Lib. 1. Cap. 88.*

STROMBITES. A Stone in Form of that sort of Shell-Fish, called *Strombos*.

STROMBOS. στρόμβος. A Periwinkle, or any Species of turbinated Shell-fish, from στρέβω, to turn.

STROPHOI. στρόφοι. Gripes of the Intestines.

STRUMA. See *SCROPHULA*.

STRUTHIO. Offic. *Schrod. 5. 323. Charlt. Exer. 79. Struthio-Camelus*, Will. Ornith. 100. Raii Ornith. 144. E. juss. Synop. A. 36. Schw. A. 350. Aldrov. Ornith. 1. 587. Gesn. de Avib. 670. Jonf. de Avib. 35. Bellon. des Oyse, 232. **THE OSTRICH.**

The Parts of this Animal used in Medicine are the Coat of the *Craw*, the Fat, and the Eggs. The inner Coat of the *Craw* corroborates the Stomach, and dissolves Stones in a surprising manner. The Fat is agreeable to the nervous Parts, mollifies the Hardness of the Spleen, and mitigates nephritic Pains, the Parts being anointed therewith. The Eggs burnt and triturated in Vinegar cure the Impetigo.

STRUTHIO-CAMELUS. The same with the preceding. It is also called *AFRA*.

STRUTHIOFERA. A Species of *Filix*, so called because its Leaves resemble the *STRUTHIO*.

STRUTHIOMELA, STRUTHIA. A small Species of Quinces, more odoriferous, and of a sweeter and less astringent Juice than the common sort. *Plin. Lib. 15. Cap. 11. Oribaf. Med. Col. Lib. 2. Cap. 50.*

STRYCHNODENDRON. Raii. A Name for the *Solanum fruticosum bacciferum*.

STRYCHNOS, STRYCHNON, στρυχνος, στρυχνον, in *Dioscorides*, is the *Solanum*.

STRYPHNOS. στρυφνος. The same as *ACERBUS*, which see.

STULTITIA. μωρία. See *MOROSIS*.

STUPEFACIENS. See *NARCOTICA*.

STUPHA. The same as *Balneum Laconicum*, or a Vapor-Bath. See *BALNEUM*.

STUPIO. Stannum, or Tin. *Rulandus*.

STUPOR. νύκνη, νύκνησις. A Stupor, or Numbness.

STUPOR DENTIUM. An Affection of the Teeth; for which see *DENS*.

STUPPA, STUPA. A Stupe, in Surgery, is a Piece of Cloth dipt in some proper Liquor, and applied to an affected Part. *Blancard.* Or, as *Castellus* describes it, it is a Linnen or Hempen Bag used by the Surgeons in stopping a Cavity, and, also, in Epithems to the Forehead, Nucha, and other Parts, and in Fractures.

STURIO. Offic. *Schrod. 5. 333. Aldrov. de Pisc. 517. Bellon. de Aquat. 101. Gesn. de Aquat. 931. Jonf. de Pisc. 75. Raii Ichth. 239. E. juss. Synop. Pisc. 112. Acipenser, Rondel. de Pisc. 1. 410. Charlt. de Pisc. 34. Acipenser, sive*

Sturia, *Schonf. Ichth. 9. Acipenser, Sturio*, Mer. Pin. 188. *Sturio, sive S. latus*, Sale de Aquat. 113. **THE STURGEON.**

It is a Native of the Sea, but for the most part an Inhabitant of Rivers. The Parts in Use are the Bones and the *Caviar*, which is a Mass resembling green *Hamburg Soap*, both in Colour and Substance, and is exported in great Quantities from *Russia* to *Italy* and other Countries. The Way of preparing it is thus related by *Gesner*: They take the Eggs of the Sturgeon, and first cleansing them from the Nerves which are therein, wash them in Vinegar or White Wine, and spread them upon a Table to dry. This done, they put them into a Vessel, and cover them with Salt, then break them abroad with the Hand, not using an Instrument, and afterwards put them into a Bag of a rare Texture, that the Humor may run through. When this is done they put it into a Pot with a Hole in the Bottom, by which the remaining Humor, if any, may be evacuated, and after well pressing and covering it close, set it aside for Use.

The Bones are commended in the wandering Gout, and are exhibited in the Pain of the Colic. The *Caviar* is nourishing, increases the Semen, and excites Lust. *Dale.*

Sturgeon is a large Fish that lives both in the Sea and fresh Water; it has an excellent Taste, and grows fat in the Rivers, and more delicious than if it had continued always in the Sea; it usually weighs a hundred Pounds, but sometimes double. This Fish is able to strike a Man down with its Tail, and it will frequently break the Nets in which it is taken. In Ponds they cannot live long; and as it has no Teeth, it cannot feed upon Fish, but subsists upon the Filth and Froth of the Sea.

Sturgeon was much esteemed by the antient Romans, and the Belly is reckoned best. It contains much Oil and volatile Salt, and yields a nourishing and solid Food, because of its thick and gross Juices. It is, also, hard, toughish, fat, and difficult of Digestion; and therefore it is injurious to weak and tender Persons, and those who are sick or recovering from Illnesses. As Sturgeon is fat, it relaxes the Fibres of the Stomach and Bowels, and renders the Body a little soluble. The Bones of this Fish, taken to the Quantity of a Dram, are looked upon to be opening, good for Rheumatisms and the Gravel; they extract what is called Mouth or Water-Glue from it, which is not so soon dissolved as the common sort, but produces the same Effects. *Lemery on Foods.*

STURNUS. Offic. *Bellon. des Oyse, 321. Gesn. de Avib. 677. Charlt. Exer. 90. Jonf. de Avib. 96. Schw. A. 351. Will. Ornith. 144. Raii Ornith. 196. E. juss. Synop. A. 67. Sturnus vulgaris*, Aldrov. Ornith. 2. 632. Mer. Pin. 177. **THE STARE, OR STARLING.**

It makes its Nest about Towers, and the Tops of Houses. Its Dung is esteemed a Cosmetic, and is said by *Galen* to cure the *Alphi*, *Pani*, *Impetigo*, and *Morphew*.

STYGIA. An Epithet of caustic or corrosive Waters, and particularly *Aqua Regia. Castellus.*

STYLISCUS. στυλίσκος. See *PRIAPISCUS*.

STYLOCERATOHYOIDÆUS See *STYLOHYOIDÆUS*.

STYLO-CHONDRO-HYOIDÆUS. So *Douglas* names one of the Muscles called *Stylohyoidæus*, because it is inserted into the cartilaginous Appendix of the *Os Hyoides*.

STYLO-GLOSSI. See *LINGUA*.

STYLO-HYOIDÆUS. This is a small Muscle lying obliquely between the *Apophysis Styloides* and *Os Hyoides*.

It is fixed laterally by one Extremity to the Root or Basis of the *Apophysis Styloides*, and by the other to the *Os Hyoides*, at the Place where the Basis and Cornu unite; and also to the Cornu itself, from whence it has been called *Stylo-Cerato Hyoidæus*.

The fleshy Fibres of this Extremity, are often parted, and inclose the middle Tendon of the *Digastricus. Winslow.*

The *Stylo-Hyoidæi* move the *Os Hyoides* upward and backward in a middle Direction between those in which they lie; and they draw it more upward and backward when they act freely, that is, without being checked or confined by other Muscles. When one acts more than the other, the Bone is moved obliquely. *Winslow's Anatomy, Sect. 3. No. 1145.*

STYLOIDES Processus, sive Apophysis. See *CAPUT*.

STYLO-PHARYNGÆUS. The Name of a Muscle belonging to the *PHARYNX*; which see.

STYLOS. στυλός. A Probe, of which various Sorts are used in Surgery.

STYMMATA, στυμματα, from στυψω, to astringe or inspissate, in Latin *Spissamenta*, Spissaments, are the Name which the Antients had for their most solid and substantial Ointments, and, also, for such Things as gave a Spissitude and Solidity to their Ointments. These latter *Stymmata* were some sweet-scented Simples, such as *Costus*, *Nardus*, *Amara-cus*, *Amomum*, and *Mint*; which being mixed in the Com-position

position of Ointments, communicated to them a Fragrance, and preserved them from Corruption, as *Galen* says, *de C. M. S. L. Lib. 3. Cap. 1. Stymmata* differ from *Hedysmata*, in that these latter are liquid. *Stymmata*, then, seem to be properly such Things as not only communicate a Fragrance, but exercise their astringent Quality in such a manner as to preserve the Ointment, with which they are mixed, from Corruption. Thus *Ætius*, *Tetrab. 3. Serm. 1. Cap. 49.* in the Composition of a Troche, directs *Stymmata*, or Spissaments of a Decoction of the Bramble, Myrtle, Pomegranate Flowers, the Root of the Capparis, with the Leaves of the Willow, and other Things of that Nature. A little after, in the same Chapter, he directs dry Spissaments pulverized; also Pomegranate Flowers, Galli, Malicorium, Myrtle, Lentisk, and other things of the like astringent Quality. For the same Purposes, the *Stymmata*, in the Oil of Roses, are Lentisk, Calamus, and Aspalathus, as we are informed by *Dioscorides*.

STYPTERIA, *στυπτήρια*, from *σῑψω*, to astringe, Alum. See ALUMEN.

STYPTICA, from *σῑψω*, to astringe. Styptics, or Medicines, which stop Hæmorrhages. When a considerable Hæmorrhage is stoppt by Absorbents or Styptics, it is always produced by means of a Clot of Blood secured by Compression, so that the Orifice of the Vessel is stoppt. This Clot generally consists of two Parts, the one without and the other within the Vessel; that without is formed by the last flowing Blood, which, in coagulating, incorporates itself with the Lint, Moss or Powders, used for stopping the Blood. The other Part of the Clot within the Vessel, is only that Portion of the Blood which was ready to be discharged when the Vessel was stoppt. These two Parts are often but one continued Clot; that without the Vessel performs the Office of a Covering, whilst that within it serves as a kind of Stopper. Both contribute to the stopping of the Blood by the Solidity they acquire in Coagulation, and their future Adherence the one with the internal Part of the Vessels, and the other with its external Orifice.

When Styptics or Escarotics are used, the Clot is sooner formed, than when Absorbents or simple Astringents are only employed. The Clot in the former Case possesses a larger Space in the Cavity of the Vessel, which makes the Stopper more deep. The Covering or external Portion of the Clot is also thicker, because at the same time the Styptics and Escarotics coagulate the Blood, they also burn a Portion of the Vessel and adjacent Flesh, which incorporating with the coagulated Blood, form together a thicker and more extensive Covering. *Mem. de l'Acad. Royale, An. 1731. Mr. Petit.*

Alcohol, or pure Spirit of Wine, is the most usual, and, perhaps, the best Styptic; and is the Basis of most of the celebrated *Arcana* for stopping Hæmorrhages. *Boerhaave* says, it becomes an immediate Styptic, as it prevents Putrefaction, and occasions a thin but very solid Eschar. For if Pledgits be dipp'd in pure Alcohol made hot, and applied to a bleeding Wound, if it be closely compressed upon the Part, and covered with a Piece of Bladder, lightly besmeared with Oil, and kept on with a proper Bandage, the Hæmorrhage presently ceases, and the whole Dressing may continue unremoved for three Days, in which Time the Vessels are usually closed, and strangely contracted and consolidated by means of the Alcohol. So far *Boerhaave*.

HELVETIUS'S STYPTIC.

The Method of curing fresh Wounds in a few Days without Suppuration, where neither Nerves, large Vessels, Bones, or any of the Viscera were concerned, has been long ago observed. *Purman*, a famous Surgeon of *Breslaw*, in his *Chirurgia Curiosa*, tells us of a Mountebank, who gave himself thirteen Wounds, by Incision, in the upper Part of his Left-arm, and thereupon applied his Nastrum, and with the Help of a good Roller was cured in two Days Time.

Next he mentions a martial Styptic, which stopped Bleeding incomparably, and healed fresh Wounds (as he says) in two Days, especially if the Patient took withal a few Drops inwardly. This has, also, been mentioned by *Blegny* near thirty Years ago.

When I came into *France*, I found that many little Trials were made there, also, with a Styptic Ball, mixed with *French Brandy*, by striking a Cock through the Head, opening the Crural Artery of a Dog; or chopping off a Dog's Leg, &c. But I found that it did not amount to any Thing of Consequence; yet I have still a Ball, made above twenty Years ago of Filings of Iron and an equal Quantity of Tartar, mixed well with *French Brandy* upon a Marble; this, with some Alteration, was afterwards published by the famous *Helvetius*, Physician to *Levis XIV.* of *France*, in a Book called, *Recueil des Methodes pour le Guérison de diverses Ma-*

ladies; which was reprinted in *Holland* in the Year 1710. This Preparation was then sold by *Pierre Rottermund*, Apothecary at the *Hague* in *Holland*.

The Recipe for his Medicinal Ball I have translated, and it is as follows:

Take four Pounds of the Filings of Steel, and eight Pounds of Tartar, well powdered; mix these well together, and put them in a new earthen Pot, and pour thereon as much *French Brandy* as will make it into a Poultefs. Let this stand fermenting in a Cellar for four Days, and stir it between whiles. Then put it in *Balneo Mariae*, and distil it according to Art with a moderate Fire, to draw off the Brandy. When you find that nothing but the Phlegm comes off, take it from the Fire, and take out the Mass, stamp it very fine that not the least Lump may remain; then mix it again, as before, with a sufficient Quantity of Brandy, and put it into the Cellar to ferment, as before, and then distil it a second Time. This Operation may be reiterated seven or eight Times, but the last Time mix your Mass well upon a Marble, and form it into two Ounce Balls. One of these Balls is steeped in a Pint of good *French Brandy*, a little warmed, and hung only in it by a Wire, till the Brandy has received the Colour of the Ball. But if you are in great Haste, then grate a sufficient Quantity of the Ball in some Brandy, stir it well, and you may use it that very Instant.

No doubt but the Author thought, by often grinding, fermenting and distilling this Mass, to communicate and subtilize its Particles, so as to make it more fit to contract the Fibres and Vessels of a Wound, and to prevent Stagnations of the Fluids, both within and without, upon Contusions; but the Success did not answer, and therefore it was laid aside. Neither did *Helvetius* ever recommend it as an universal Styptic, astringent, or consolidating Medicine, but merely in fresh Wounds, and that only for a first Dressing, and where People lived at a Distance, and could not get immediately Assistance from a Surgeon. Besides, he makes several Exceptions where it should not be used, and in general advises where Chalybeate Medicines may be made Use of according to Experiments.

But last Year a Balsamic Styptic was published by one *Dr. Eaton*, good to stop all Manner of Bleeding without or within, and that without any Manner of Exceptions. This made me desirous to see it, and soon after I had an Opportunity to examine it: I found presently that this was the same old Medicine, which was got hither also, after other Countries had discarded it. But I neglected it that Time as not worth my Notice, till I saw lately a Treatise of Consumptions published by *Sir Richard Blackmore*, giving it the greatest Encomium that ever was given to any Invention whatsoever. For, says he, *Dr. Eaton's Balsamic Styptic bids fair for the Credit of a certain Remedy in stopping of Blood outwardly or inwardly, where the Crasis of the Blood is not entirely ruined, and will be of more Service to Mankind than all the Discoveries made by Galenical Compounders of Drugs, and systematical Methodists.*

Finding this Remedy recommended in so extraordinary a manner by so eminent a Physician, I began now to think that possibly I might have been mistaken, and therefore desired *Mr. Winterbottom*, an Apothecary in *Bow-Lane*, immediately to prepare the Recipe, as described by *Helvetius*. When this was ready, I sent for a Bottle of *Dr. Eaton's Styptic*, and tried them both with Galls before several Gentlemen; the Tincture was the same, a deep Purple. I then precipitated the Contents with Old Hock, and found the precipitated Matter to be the same in both. Not contented with my own Enquiry, I sent several small Quantities to others, and went myself to *Mr. Godfrey* the Chymist. They all told me, that there was no Difference betwixt them. I tried several ways to find out its balsamic Quality, from whence it has its Name, but found none. Then I confessed it surprized me, that a Man who had a Mind to vend a Thing as a Secret, had not done so much as to alter it either in Taste, Smell, or Colour, and yet this might very well have been done, without robbing it of its Virtue in the least.

My next Business was to try these two upon the crural Artery. Having got a good middle-sized Dog, *Mr. Ranby* laid the Artery bare, and opened it with a Lancet the lengthwise of the Artery, for near half an Inch. The old Trick used to be to cut the Artery crossways, and there was no Necessity of a Styptic at all, nor indeed here neither. But at first *Helvetius's* Tincture was applied, and stopped the Bleeding; then we opened the Artery again, and tried *Dr. Eaton's* with the same Success. I then had the Artery open-

ed in the other Thigh, and tried it only with *French Brandy*, which I found did as the other two. I opened the Artery again, and had dissolved in *French Brandy* a little *Sal Martis* and *Saccharum Saturni*, and applied that, and it answered in the same manner. This made me immediately conjecture, that there was but little Virtue in either of them, but only that the Brandy by its great Heat did merely contract the Fibres of the Artery, which, no doubt, might be a little assisted by the Chalybs; but this could not be much. I then reflected upon the Smallness of the Crural Artery in a Dog, and that it was no more to be compared to the crural Artery of a Man, than a Cock's Head to a Man's Head, and that a little Pledgit of Lint might have stopped the Blood without more to do, as well as the Temporal Artery, when opened with a Lancet, which we did, and the Pledgit of Lint stopped it. We then untied the Dog, and sent him going, who ran directly home. The Mistress of the House tore off the Pledgits, and had the Dog well washed with Butter and Beer warmed, she not knowing what had been done to him; upon which the Dog fell a bleeding again, tho' not much, and the Blood stopped of itself. Thus far as to its outward Use, and I could wish it were as harmless within. If only, according to *Helvetius*, it had been ordered to have been taken inwardly in fresh Wounds and Contusions, one might have let it pass; but when, without Exception, Dr. *Eaton* recommends it, as also even Sir *Richard*, in all outward Bleedings, I then thought it high time to make some Animadversions upon it. For Sir *Richard* himself says, in his Treatise of Consumptions, p. 99 and 101, that in spitting of Blood there is an Orgasm or stimulating Ferment: What is this but a Feverish Indisposition? And is there any Hæmorrhage without it? Now if so, will not Brandy and Chalybeats heighten this? which by their Heat and Stimuli brace and irritate the Fibres, and accelerate the Blood's Motion. And will not then the Blood take up more Room, and press harder against the Sides of the Vessels, and whatsoever opposes it? Is not this the Way to make an Orgasm, and cause an Hæmorrhage?

Dr. *Eaton* tells us himself, in his Book, p. 57, That it did very much overheat a Gentlewoman, and that her Bleeding still continued after the taking of it, and she might have perished, if a Surgeon had not given her a cooling and astringent Apozeme. And but just before, p. 47, he complains of a Physician, that was not willing that his Patient should take it, who had a hectic Fever upon her, because he was afraid that it was too hot.

Since the former Trials, on the 10th of June last, I desired Mr. *Ranby* to open the carotide Artery of a Dog, thinking that this Artery might give me more Satisfaction than the crural Arteries had done, to try the styptic Quality of the Tinctures of *Helvetius* and *Eaton*. Having laid bare the Jugular Vein, divided, and tied it, that its Bleeding might not hinder us from finding the carotide Artery, we were obliged to cut some of the Muscles through likewise, till, with some Difficulty, we found the Artery, which being opened with a Lancet, the Blood spouting forth, I applied to it *Helvetius's* Tincture, upon which the Blood stopped. I took it off in less than a Minute, and made it bleed again, but it bled but little, and then I applied Dr. *Eaton's* Styptic; we filled up the Wound with Lint, and stitched up the Integuments, then untied the Dog, and let him run down Stairs; where, after some Time I saw him again, and found he had bled a good deal, and was still bleeding. I was very well satisfied, that he would not bleed to Death, the Artery being so very small; and if he had had nothing but Lint upon it, it would have done as well. It must be observed, that the carotide Arteries are largest in Proportion in human Bodies, and that this Artery of the Dog was but little bigger than the crural Arteries of the former Dog. This shews that the styptic Quality of these Tinctures is very inconsiderable; and that *Helvetius's* Tincture is rather better than Dr. *Eaton's*, if there is any Difference, tho' I believe it proceeded from the Brandy, for my Brandy was stronger than Dr. *Eaton's*. I enquired for the Dog next Morning, and found him alive and well, only hanging his Head on one Side, which proceeded from the cutting through of the Muscles. Dr. *Sprengel*, *Philosophical Transactions abridged*, Vol. 8.

A RESTRINGENT PREPARATION OF IRON, SOLD BY THE NAME OF COLBATCH'S STYPTIC POWDER.

Take any Quantity of Filings of Iron, and pour upon them Spirit of Salt to the Height of three or four Fingers above them; let them stand in a gentle Digestion till the Fermentation is over, and the Spirit of Salt is become sweet; then pour off that Liquid, and evaporate it in an Iron Glass Vessel until half is consumed; at which time put to it an equal Quantity of *Saccharum*

Saturni, and evaporate to a dry Powder. If upon its first becoming dry, the Operation be stopt, it has exactly the Appearance of *Colbatch's Powder*; but if it be continued longer, and the Heat raised, it will turn red. It must be kept close stopt from Air.

If this is not kept close stopt, it will imbibe the Air, and flow so as to lose its Efficacy. I have been informed from very good Hands, that this is the Styptic with which there was so much Noise made some time ago, by the Author of *Novum Lumen Chirurgicum*, and for the Sale of which a Patent was procured; only in that was used Oil of Vitriol, instead of the Spirit of Salt in this: but that Difference is insignificant. This is a Preparation of *Maet's*, once Professor at *Leyden*, and is in the *Collectanea Chymica Leydensis*; how much soever some have pretended to make a Secret of it since. It is commended as a Restringent in most Kinds of Fluxes inwardly, and particularly Hæmorrhages. The Dose is from four to twelve Grains, and is conveniently given in any Forms, but Powders or Pills.

EXPERIMENTS MADE WITH MR. COL- BATCH'S STYPTIC, BY MR. WILLIAM COUPER.

I. A large Dog being provided, an Aperture was made through the common Integuments of his Abdomen, whence the small Guts were extruded. After an Incision made in one of them according to its Length, they were again reduced; the Wound in the Abdomen being stitched up, a Solution of this Powder was applied; the Dog continued without any ill Symptoms, and became perfectly well in a few Days after. The like Experiments I have made on another Dog, who in like manner recovered without the Appearance of any Medicine.

II. The Leg of a Dog was amputated three Inches above the Patella; the Expence of Blood from the Arteries was great, which did partly proceed from Unaptness of the Applications which were prepared; but after two or three Attempts, the Flux of Blood was stopped, and such a Bandage made use of, as was necessary only to keep on the Dressings. The Dog continued without any considerable Flux of Blood, and the next Day he was found on his three Legs.

III. The diseased Arm of a Man in St. *Bartholemew's* Hospital, was amputated above the Elbow; but for a Quarter of an Hour's Time many successful Applications of this Styptic were made, and at length a small Tent, dipped in the Powder itself, inserted into the Extremity of the bleeding Artery, before the Flux of Blood would admit the Application of Bandage. Five Hours after, a fresh Flux of Blood appeared, and strict Bandage was applied. The same Morning the abovementioned Amputation was made, a Boy about twelve or fourteen Years of Age, had his Leg also taken off below the Knee, to whose Stump divers successful Applications of this Styptic were also made, before it was bound up; and in less than an Hour after, a fresh Flux of Blood happened, and strict Bandage was added. Some Hours after these Operations, both these Patients suffered extravagant Pains. Three Days after, the Applications were taken off; and had any Person, a Stranger to what had been done, seen the Stumps, he would have supposed nothing less than an actual Caustery had been applied, as could have occasioned such large Eschars, and so horrid an Appearance; which did sufficiently denote this vulnerary Powder to be a violent Caustic.

Trials of Styptics on the Bodies of Quadrupedes have been commonly practised, to commend them to the Public; but it is not without Cause that Pretenders to such Remedies have made choice of younger Animals, as Dogs, Calves, and the like, for that purpose. But since the only Standard of their Use is their Success on the Human Body, we ought to make our Experiments on those Animals, whose Magnitude and Age bear a Proportion to it. For nothing is more obvious in wounding the Arteries of living Animals, than that the Protrusion of their Blood bears a Proportion to their Bulk; and in Dissection, the Arteries of the Fœtus are remarkably thinner than those of an Adult; and those of aged Bodies grow still thicker, and frequently become cartilaginous, and at length entirely bony. Mr. *Cowper*, *Philosophical Transactions abridged*, Vol. 3.

STYPTICUM REGALE.

The Royal Styptic.

Upon the sympathetic Powder four Ounces, infuse of good Oil of Vitriol half an Ounce; stir them well in a Glass-Mortar,

Mortar, with a Pestle of the same, and let them stand twenty four Hours on warm Sand, in a wide mouth'd Glas; grind this Mixture again with a little Spirit of Wine, and put it into a Matrafs; pour upon it more Spirit of Wine, to make that already used a Pint. Lute it well, and let it stand forty eight Hours in Digestion, often shaking it: Then let it stand to cool and settle, and decant the Spirit of Wine, which keep well stopp'd. Remove the Cucurbit or Matrafs into a Sand Furnace; lute on its Head and Receiver, and drive over the Helm all that will rise by the third Degree of Fire, which also keep by itself: Let all cool, and take out what is left at the Bottom; powder it, and put it into a Cucurbit, and pour upon it distill'd Rain-water, one Pint; set it on warm Sand for forty eight Hours, and shake it often; then let it settle, decant and keep it for Use.

The impregnated Spirit and Water may be used apart or mixed; and if the Mixture be desired stronger, there may be put to it some of the acid Spirit drawn off, after the Spirit of Wine was decanted: But equal Parts of the impregnated Spirit of Wine and Water, evaporated to a Dryness, make the best Styptic of all. This is commended for a very powerful Styptic, and to be one of the best Vulneraries in the World, in curing all fresh Wounds by the first Intention (as is boasted so much of by *Colbatch's* Grand Styptic) that is, without Suppuration and Digestion.

STYRACINUM OLEUM. Oil of STYRAX, made by boiling a Sextans of Styra in a Sextary of the best Olive Oil. *Actius Tetrabib. l. Serm. i.*

STYRAX.

The Characters are;

The Leaves are roundish, the Calyx is dentated and am-pullous. The Flower is monopetalous, tubulated in the lower Part, and multifid in the upper, with its Lobes expanded in Form of a Star. The Ovary in the Centre of the dentated, multifid Calyx, becomes a roundish, fleshy Fruit, generally inclosing one or two Stones, which contain a Kernel.

Boerhaave mentions but one Sort of *Styrax*, which is, *Styrax*; folio Mali Cotonei, *C. B. P. 452. Tourn. Inst. 598. Boerh. Ind. A. 2. 218. Styrax*, Offic. *Styrax Arbor*, Ger. 1342. *Emac. 1526. J. B. l. 341. Raii Hist. 2. 1680. Styrax arbor vulgaris*, Park. Theat. 1530. THE STORAX TREE.

It grows in *Italy* and other Countries. The Part used in Medicine is the Refin, of which there are two Sorts to be had at the Shops, the dry and the liquid. The dry *Storax* of the Shops, *Styrax Calamita*, *Rand. Ind. 87. Mont. Exot. 11.* is a fat resinous Substance, of a yellow Colour, inclining to red, concreted into Grains of various Bignesses, of a resinous, and somewhat acrid Taste, a very fragrant Smell, and flowing spontaneously from the Trunk of the Tree.

Observe, here, first, that our Apothecaries and Druggists sell in their Shops a most impure *Magma*, mixed with various heterogeneous Bodies, as Chaff, Hairs, Bran and Saw-dust (which perhaps gave Occasion for the *Styrax rubra nonnullis*) for *Styrax Calamita*. Secondly, we meet with Prescriptions in which the *Storax Calamita* and *rubra* are ordered distinctly. Now what is the Meaning of *Nicolaus* in making such a Distinction, there are different Opinions. Some by the *Styrax rubra* understand the *Thymiana*, others the best Sort of *Styrax*, which runs into Grains; and others again will have it to be nothing but the *Styrax* grown red with Age. The learned *Commelin* writes, that there are two Sorts of *Refin*, the dry and the liquid; the dry is sold in the Shops under two different Names, the *Styrax Calamita* and the *Styrax rubra*, which differ only in Purity. And *Hoffman*, (with whose Opinion we agree) tells us they are the same Gum, but different in Purity; for the *Calamita* also participates something of a Redness. But when we find in Medicinal Prescriptions the *Styrax Calamita*, we are to understand it of the *Styrax* in Grains; or of what is cleansed from Impurities; but by the *Styrax rubra* that most impure *Magma* of *Styrax* which is commonly sold in our Shops. Chuse what is fat, viscous, consisting of pale reddish Fragments, of a lasting Smell, and which yields a mel-leous Liquor when it is worked.

The *Storax liquida*, Offic. **LIQUID STORAX**, is a pinguious Liquor, of a melleous and tenacious Substance, of a brown Colour, or brown inclining to red, of a strong Smell, and flows from the Bark of the Tree. It heats, dries, mol-lifies and digests, and is very serviceable in Disorders of the Brain and Nerves, and cures Coughs, Catarrhs, Hoarseness, and the like.

There are also great Disputes among Authors about the *Styrax Liquida*. Some will have it to be the same as *Stacte*, that is, stillatitious Myrrh, which appears to be a Mistake in that the Tears of Myrrh, on account of the Similitude of

Substance, will dissolve in any aqueous Liquor, whereas the *Styrax Liquida*, like other Refins, will dissolve in none but fat and oleous Liquors. Others affirm it to be a factitious Substance, prepared of a Solution of *Styrax Calamita*, in Oil and Wine, boiled with a Mixture of *Venice Turpentine*. When this Decoction is grown thoroughly cold, the *Styrax Liquida* is said to separate, and fall to the Bottom, sending up a more liquid and oleous Substance to the Superficies. Some will have it made by Expression, and others assert it an Oil expressed from the Kernels of a Tree whence the *Storax* flows; some, again will have it made by a Decoction of the Bark or Wood of the *Styrax*, others of liquid Amber. *Hoffman* asserts, that the *Styrax Calamita* and *Liquida* are the same Gum, and different only in Purity, so that the *Liquid* is the best. But what is sold for *Liquid Styrax* in our Shops is a Substance merely factitious, as I am assured by several Apothecaries in *London*. The *Storax liquida vera* is a Kind of Bird-lime prepared of the Bark of the *Rosa Mallos*, boiled in Sea-water, as I am assured by *M. Petiver*, in the *Philosoph. Transact. N^o. 313*. What Sort of a Tree the *Rosa Mallos* is, and to what Genus to be reduced, is quite unknown to me, and therefore I can only add, that it grows in *Cebro* an Island in the upper *Red-Sea*, not far from *Cadesch*, which is three Days Journey from the Port of *Suet*. Whether *Cattar-mija* be a Name given by the *Turks* and *Arabians* to the Tree, or the Birdlime made of its Bark, is a Thing uncertain. This Birdlime is brought to *Judda*, and from thence in the Months of *June* or *July* to *Mocha*, where in Proportion to its Goodness it is sold from sixty to one hundred and twenty Dollars a Vessel, which weighs one hundred and twenty Pounds. The best is what has the least Mixture of Dirt or Dust, with which it is very often soiled, but very easily purified from them by the Help of Sea-water. *Dale*.

The *Storax-tree* has a Trunk like that of a Quince-tree, but has a whiter Bark; the Leaf, also, resembles the Leaf of that Tree, only is less and roundish, or ending in a blunt Point, covered with a hoary Down underneath, but green and smooth above. The Flowers on the young Sprays are like those of the Orange-tree, white, and several joined together, consisting of several Petals, and sweet-scented. The Fruit is of the Size of a Filberd, hoary, callous, of a brown Colour and bitterish Taste, opening into three or four carinated Figures, and discovering a ligneous Stone, of the Colour of Box, which contains sometimes but one Kernel, channel'd with four Furrows, sometimes a double angulous Kernel, and sometimes a third. I suppose this, says *Ray*, to be accidental, for naturally one Stone includes only one Kernel. The internal Substance of this Kernel is unpleasant to the Taste. It grows plentifully in the Hedges and Woods in the Country about *Rome*.

The dry *Styrax*, called the *Styrax Calamita* of the Shops, has its Name from the *Calami*, or Canes, in which, as we are told by *Galen*, it was formerly brought from *Pamphylia*: It is a gummy and resinous Juice of the Tree before describ'd, concreted, dry, and of a very sweet Smell.

It was for a very good Reason that the *Styrax* was imported in Canes, since *Parkinson* found by his own Experience, that the pure Gum of *Styrax*, after he had by Art and the Help of a Press alone, rendered it depurated and fluid, did not only penetrate the Joints and Commissures of the Vessels, but the very Wood itself in the Summer Time, and flowed out, so that he was obliged to keep it in a Glas Vessel well stopp'd; but the Spaces between the Joints of Canes have no Chinks nor Commissures, and therefore are the better adapted for containing so scented and subtle a Gum. It may be observed, that the *Styrax-Tree* in *Italy* produces but a small Quantity of Tear, which is the Case of many other Trees in that Country, which in a very hot Climate abound with Plenty of Juice. *Raii Hist. Plant.*

There are several gummy Substances, which are the Produces of this Tree: The first is the *Styrax Rubra*, "red *Styrax*," or, as some call it, *Thus Judæorum*, "the Jews Frankincense," because they suppose it to be the Resin which the wise Men offer'd to our Saviour. This is a reddish, or yellowish Substance, extracted from the Tree by Incision. A second Sort is the *Styrax Calamita*, so called because it was transported in *Calami*, or Canes of Reeds, to preserve its Odour: This *Styrax* is reddish on the Outside, and white within, and of a very pleasant, aromatic Smell. The third Kind is the *Styrax Liquida*, "liquid *Styrax*," which is an oily, viscous Matter, of the Consistence of an Ointment, of a greyish Colour, and aromatic Smell. Some extract an Oil from the Nuts, which is called *Styrax Liquida*.

The Virtues are the same as in *Turpentine*, only a little more effectual, as it is more fragrant: It is of Service in raising the Spirits, as, also, against Coughs, and Colds in the

Head, being used by Way of Suffumigation: It is, also, useful in mollifying the Nerves and Tendons, and dissolving scirrhus Tumors. *Hist. Plant. ascript. Boerhaave.*

SUBACTIO. The working of any medicinal Ingredients, either with the Hands, as in making Plaisters, or with a Pestle in a Mortar.

SUBALARIS VENA. The Auxiliary Vein.

SUBBUTEO. The Name of a Bird, resembling the Bittern, but less.

SUBCARTILAGINEUM. The same as **HYPOCHONDRIUM.**

SUBCLAVIA VASA. The subclavian Vessels; that is, the Arteries and Veins which are situated under the Clavicles.

SUBCLAVIUS MUSCULUS. The subclavian Muscle. This is a small oblong Muscle lying between the Clavicle and first Rib. It is fixed by one End in all the middle lower Portion of the Clavicle, at the Distance of about an Inch from each Extremity; and by the other, in the Cartilage and a small Part of the Bone of the first Rib. It seems, also, to adhere to the Extremity of the Clavicle next the Sternum, by a Kind of broad, thin Ligament.

The *Subclavius* can have no other ordinary Use, but to bring down the Clavicle, after it has been raised together with the *Acromion*, by the Action of the *Trapezius* and *Serratus Major*. It may, also, hinder not only the *Clavicle* in which it is inserted, but, also, the *Acromion* from rising, especially when assisted by the *Pectoralis minor*, *Rhomboides*, and *Angularis*.

When we stand, or sit, the Weight of the Arm alone seems to be sufficient to bring down the *Clavicle*, when raised; and therefore in this Case there would be no Occasion for the *Subclavius* to act upon the Clavicle, nor for the *Pectoralis minor*, *Rhomboides*, and *Angularis* to act upon the *Acromion*. But when we lie, or are situated in any other Manner, the Weight of the Arm has no such Effect; and in these Cases, these four Muscles become more or less necessary.

The *Subclavius* therefore is a proper Depressor of the *Clavicle*; and an Assistant Depressor of the *Acromion*, or of the Shoulder in general, together with the *Pectoralis minor*, *Rhomboides*, and *Angularis*, all which in their Turns assist the *Subclavius* in its Action on the *Clavicle*.

I cannot conceive what has led several great Anatomists to rank this among the Muscles of Respiration, since it is inserted not only in the Bone, but in the Cartilage of the first Rib; since this Cartilage is not articulated with the Sternum, but joined to it as immovably as to the Bone of the Rib by its other Extremity; and lastly, since this Cartilage is much shorter, much broader, and much less pliable than the Cartilages of all the other Ribs of equal Thickness. *Winslow's Anatomy.*

SUB-COSTALES.

These are fleshy Planes, of different Breadths and every thin, situated more or less obliquely on the Insides of the Ribs near their bony Angles, and running in the same Direction with the external Intercostals.

They are fixed by both Extremities in the Ribs; the inferior Extremity being always at a greater Distance from the Vertebrae, than the superior and several Ribs lying between the two Insertions.

These Muscles are more sensible in the lower Ribs than in the upper, and they adhere closely to the Ribs that lie between their Insertions.

The *Sub-Costales* having the superior Extremities of their Fibres much more distant from the vertebral Articulations of the Ribs, than the lower Extremities, it follows, that they can more easily move the upper than the lower Ribs, and consequently that they are Assistants to the *Sterno-Costales*. *Winslow's Anatomy.*

SUBDITA, or SUBDITITIA. Medicines which are introduc'd into any of the natural Orifices, as Pessaries, and Suppositories.

SUBDUCTIO ALVI, is purging the Belly, or procuring Stools.

SUBER.

The Characters are;

It is in all Respects like the *Nex*, except in its Bark, which thick, spongy, and light.

Boerhaave mentions but one Sort of *Suber*, which is,

Suber; latifolium; perpetuo virens. C. B. P. 424.

Tourn. Inst. 584. Boerb. Ind. A. 2. 178. Sußer, Offic.

Suber latifolium, J. B. 1. 2. 103. Raii Hist. 2. 1393.

Ger. 1163. Emac. 1347. Park. Theat. 1397. THE

CORK TREE.

The Cork-tree is a Kind of ever-green Oak, of a thicker and firmer Texture, green above, and whitish underneath, not cut into so many Segments; in some Leaves smooth, and

in others only a little indented about the Edges; the Acorns are smaller than those which grow on the common Oak, for generally two together upon one short firm Stalk; the Bark of the Trunk is rough, and of a great Thickness, which, if not taken off in its stated Time, will burst of itself, and come off, the young Bark appearing of a reddish Colour; they separate it by making a long incision from the Head to the Root of the Tree, which they take Care to do in dry settled Weather, for the young, tender Bark is liable to be destroyed, and the Trees killed by Rain. The Cork-tree grows in the southern Parts of *France*, and *Spain*, and *Italy*.

Cork is said to be restraining, and good for all Kinds of Fluxes; the same is said of its Ashes, or burnt Cork. *Mil-ler's Bot. Off.*

The Bark bruised and drank in warm Water, stops an Hæmorrhage; the Ashes of it burnt have the same Effect. *Raii Hist. Plant.*

The Fruit is astringent, and serviceable in the flatulent Colic; the Bark is detergent and astringent, and useful in Hæmorrhages, and a Diarrhæa; and burnt to Ashes, is resolvent and demulcent in the Hæmorrhoids. *Hist. Plant. ascript. Boerhaave.*

SUBETH. The Arabic Name for a CARUS.

SUBETH SAHARA. The Arabic Name for a COMA VIGIL.

SUBFASCIATIO. The same as **HYPODESMIS.** See **HYPODESMIS**, and **EPIDESMOS.**

SUBFRONTALIS SUTURA. The Suture by which the *Os Frontis* is connected with the Bones of the superior Jaw.

SUBHUMERATIO. The same as **CATOMISMUS.**

SUBINTRANTES FEBRES, are Fevers in which one Paroxysm begins, before the preceding ends.

SUBLIGAMEN. The same as **HYPODESMIS.**

SUBLIGAMENTUM. The same as **ENÆOREMA.**

SUBLIMATIO. Sublimation.

Sublimation differs little from Distillation, excepting that in Distillation the fluid Parts of Bodies only are raised, and in Sublimation the solid and dry Parts. The Matter to be distilled may be either solid or fluid; but Sublimation is concerned only in solid Substances.

Another Difference is, that Rarefaction, which is of great Use in Distillation, has little or no Efficacy in Sublimation; for the Substances which are to be sublimed, being solid, are incapable of Rarefaction, and can only be raised by Impulse. It may not, however, be improper to inquire into the Reason of such a Diversity in the Elevation of Bodies; why some ascend with a gentle Heat, and others are not to be raised with the most vehement Degree of Fire.

Fixed Bodies are such as abide the Fire; volatile, such as not being able to endure the Fire, are raised by the Force of its Heat. We will therefore begin with the first, and explain the Manner how in volatile Substances, which seem to be of the same Nature, there happens so great a Variety and Difference in their Elevation.

The Cause of this Elevation and Ascent in the Particles of Bodies, is to be ascribed to the Fire, not only on Account of its Impulse, but of another Property. The Fire insinuates itself into all the Interstices of these Bodies, and thus breaks the Cohesion of their Parts, so that they are at last divided into very small Particles, if not the most minute to which Art can reduce them. Particles thus separated lose much of their Gravity, for the Gravity of the same Particle decreases in the same Proportion as the Cube of its Diameter is lessened. Suppose, therefore, a Body whose Diameter is 12, and its Gravity 12: If then its Diameter be made less by 1, the Gravity of that Body will be only $9\frac{1}{4}$ or thereabouts. For 1331, which is the Cube of the last Diameter, bears the same Proportion to $9\frac{1}{4}$, which 1728, the Cube of the first Diameter, does to 12, the Gravity of the Body. But if the Diameter be reduced to 10, the Gravity will but just exceed 6; and if it be diminish'd half, that is to 6, then the Gravity will be less than 2; so that very minute Corpuscles, when their Diameter is lessen'd in the utmost Degree, have scarce any Gravity at all. Therefore, when once they are thus divided, they are very easily sublimed.

But besides the Decrease of Gravity, there is another Result from this Division of the Particles of Bodies, which conduces very much to hasten the Ascent, and that is, the Variety of their Surfaces. For, the Surface of a Body decreases, in a very different Manner from its Gravity, only as the Square of the Diameter is lessened. Now, the Gravity decreases in such a Series as is expressed by the Numbers 1728, 1331, 1000, but the Diminution of the Surface will observe this Proportion, 144, 121, 100. And when upon reducing the Diameter to 6, the Gravity will be less than 2, and the Surface will still amount to 36. So that though the Gravity of a Particle be so lessen'd, as to be reduc'd almost to nothing,

thing, yet there will be Surface enough left, which will serve to raise it. This Argument, which has been explained by Calculation, may be demonstrated, as it were, to Sense, by the following Experiment. If Water be poured upon the Filings of Iron, and a little Oil of Vitriol dropped upon it, a Fermentation will presently arise, and the Globules of the Air, in striving to disengage and extricate themselves, will carry up with them some of the Particles of Iron to the Surface of the Water. This can happen upon no other Account, but that the Proportion of Gravity in the Filings of Iron is very small in respect to the Largeness of their Surface; and therefore Iron is forced upwards by a Body, which is a great deal specifically lighter than itself. But how much this must contribute to a more quick Ascent, will be much more evident to the Senses from the Sublimation of Camphire, Benjamin, and Arsenic; whose Particles, as they cohere but loosely, are for that Reason diffused into a larger Surface; upon which Account they are more easily sublimed than any other Substance; and, upon Account of their Surface, will even ascend sooner than some Fluids. So Flower of Sulphur rises sooner than the lightest Oil. By this Contrivance of Nature, that the Gravity of Bodies decreases in a triplicate, but their Surface in a duplicate Proportion of their Diameters, it happens that Bodies, which have a very different Gravity, may be raised with the same Force. Thus the Salts of animal Substances, as of Hartshorn, human Blood, Vipers, and the like, being composed of very minute Corpuscles, as is found by Experience in distilling them, easily ascend, because the Surface in them is not lessened so much as the Gravity. And the Salts of Vegetables, though of a more close Texture, are, by reason of their large Surfaces, without much Difficulty raised. The Corpuscles, also, of Minerals and Metals, though very compact and heavy, in some Measure yield to the Fire, and are capable of being sublimed. In all these Instances, the Breadth of the Surface, which exposes the Particles more to the Impetus of the Fire, is the Reason why they are raised with as much Ease as if their Gravity had been lessened by diminishing their Surface. So that Particles, though ever so different in Weight, may be equally raised by the same Degree of Heat, if the Proportion of their Gravity be reciprocal to that of their Surfaces. From what has been thus explained, may easily be deduced the Reason of all that Variety observed in the Volatility of Bodies. With regard to Fixation, as it proceeds from contrary Causes, it wants little Explanation; for he that thoroughly understands why some Substances can be sublimed, must, at the same Time, apprehend why others cannot. *Quincy.*

SUBLIMATORIUM. A subliming Vessel.

SUBLIMIS MUSCULUS. A Name for the *PERFORATUS Dignitorum*.

SUBLIMITORIUM. The same as *HYPALIPTRON*. *Coffellus.*

SUBLINGUALES GLANDULÆ. The sublingual Glands.

SUBLINGUALIA. Medicines lay'd under the Tongue, in order to dissolve there, and cure a Cough, or *Branchocelle*, or mend a fetid Breath.

SUBLUXATIO. An incompleat Luxation.

SUBMERSIO. Drowning. See the Operation of *Bronchotomy* under the Article *ANGINA*.

That in populous Towns, and even in less considerable Places situated on the Banks of Rivers, some Persons have almost every Year the Misfortune to be drown'd, is a Truth not to be call'd in Question; but it is not equally known and believ'd, that many Persons taken out of the Water without any Appearance of Life, would be rescu'd from approaching Death, if, for a sufficient Time, the proper Means of Relief were afforded.

After some short Attempts, we continue to esteem as dead, those in whom all Appearance of Life seems to be extinguish'd, especially if they have remained for a considerable Time, a few Hours for Instance, in the Water, in which Case no Measures are taken for their Recovery. Histories, however, related by Authors worthy of Credit, sufficiently evince, that the Lives of Men, who for several Hours have been not only in, but under Water, have been preserv'd, and that sometimes two Hours have elaps'd before there appeared any Sign that they were not really dead. The steep and dangerous Banks of some deep Lakes of *Switzerland* frequently occasion dismal Accidents of this Nature. The good Success of the Measures us'd for restoring such Persons, sometimes sooner, and sometimes later, have been publish'd in the *Swiss Mercury*, and these Measures we shall here enumerate, since it is to be wish'd that they were universally known, that they could be put in Practice on all Occasions that require them, and that in putting them in

Practice, the World might discover Measures still more efficacious and infallible.

Formerly it was thought the best and most expedient thing that could be done for the Recovery of the drown'd Person, to hang him up by the Heels: But since, from the Dissections made by skilful Anatomists, 'tis certain, that drown'd Persons have generally less Water in their Stomachs, than if they had voluntarily drank a considerable Quantity, it does not seem expedient to put the drown'd Person in a Position which would prove uneasy as soon as the Humours of the Body should resume their ordinary Motion. It may however happen, that the Person may have swallowed too much Water, and in order to know whether he has or not, and to make him vomit it up if he has, 'tis proper to put him into a Tun, open at both Ends, and which for some Time is to be roll'd backwards and forwards in different Directions. He may, also, be excited to vomit the Water by frequently introducing into the Oesophagus the bearded End of a Feather.

After taking off the Cloths of the drown'd Person, instead of letting him lie stretch'd and naked on the Shore, which is too often the Practice, we ought, with the utmost Expedition, to shelter him from the Impressions of the cold Air, and begin to warm him by wrapping him up with Cloths and Coverings.

In order to warm him the more effectually, he is afterwards to be put into a Bed, the Cloths of which are pretty warm, applying, also, frequently to his Body hot Napkins and Cloths.

There are Instances of drown'd Persons, on whom the Influences of a hot and scorching Sun, to which they have been expos'd, have produc'd the same happy Effects which the warm Cloths have upon others. Some have been warm'd in hot Baths, but these are not on all Occasions to be had.

The great Intention to be pursued is, to put the solid Parts of the Machine in Action, that thus they may restore the Motion of the Fluids. In order to answer this Intention, the drown'd Person is not to be left in Bed in a State of Rest, but agitated in an hundred different Manners, turn'd from one Position to another, lifted up and let fall, and shak'd in various Directions in the Arms of Persons of Strength sufficient for that Purpose.

Spirituos Liquors ought, also, to be poured into his Mouth, and where these cannot be had, 'tis customary to pour warm Urine into it, which has been observ'd to produce happy Effects. Some prescribe a Decoction of Pepper and Vinegar, to be us'd as a Gargarism.

We must, also, attempt to irritate the internal Fibres of the Nose, either by volatile Spirits, and the Liquors us'd in apoplectic Cases, or, by tickling the Nerves distributed to the Nostrils by the bearded Part of a Feather, or by blowing into the Nostrils through a Quill, Snuff, or some more powerful Sternutatory.

One of the Measures taken with such drown'd Persons as have been restored to Life, has been by Means of a Quill, or small Pipe, to blow warm Air into their Mouths, that thus it might be convey'd into their Intestines, into which it has, also, been successfully introduc'd by Means of a pair of Bellows. For this Purpose we may, also, use a Syringe, which might perhaps be still employ'd to better Purpose, in injecting warm Clysters capable of irritating the Intestines, and producing more considerable Effects than the Air generally convey'd to them.

But, perhaps, the most efficacious Method that can be taken with a drowned Person, is, by Means of a proper Pipe, to blow the Smoke of Tobacco into his Intestines. There have been several Instances at once of the speedy and happy Effects of this Smoke on drowned Persons.

None of all these Measures specified ought to be neglected, since they may possibly concur to produce an happy and salutary Effect; but they will prove most successful, when taken under the Management and Inspection of a judicious Physician. If a Surgeon can be had, Venesection is by no Means to be neglected, and perhaps it is most commodiously instituted in the Jugular Vein; for in drown'd Persons, as well as in those that are hang'd or seiz'd with an apoplectic Fit, the Veins of the Neck are too much distended and choak'd with Blood. Now if these Veins can happily be in some Measure emptied, they will be in a more proper Condition to act upon the Fluid they contain, and which, in order to restore the Patient, they ought to put in Motion.

When these Measures prove unsuccessful, the Surgeon's last Recourse is to *Bronchotomy*, or opening the *Arteria Trachea*; for perhaps the Air entering freely into the Lungs, through the Aperture made in the Canal through which they receiv'd it in their natural State, and the warm Air which

may be blown through this Aperture, will restore the Playing of the Lungs, and all the Motions of the Breast.

But we must carefully advise all those who shall employ themselves in the humane and beneficent Office of restoring drown'd Persons, not to be discourag'd if the first Appearances do not answer their Expectations; for 'tis certain from Experience, that some drown'd Persons have not begun to discover any Signs of Life, till they have been tossed about and tormented for more than two Hours. Besides, the Man who has succeeded in restoring to Life a Person whose Death, without his Assistance, was certain, is sufficiently rewarded for his Pains by the Success; and if his Pains and Diligence should fail of their desired Effects, he will still receive an exalted Pleasure from a Reflection on his having acted with the most noble and generous Views. *Brubier.*

SUBMISSIO, sometimes signifies a Remission; sometimes it imports the same as *Systole*, with respect to the Arteries, that is, their Contraction.

SUBOPLITEUS MUSCULUS. The same as *POP-LITEUS*.

SUBPURGATIO. A slight, or gentle Purgation.

SUBSCAPULARIS MUSCULUS.

This Muscle is of the same Breadth and Length with the *Scapula* of which it occupies all the inner or concave Side, and from this Situation it has its Name. It is thick, and made up of several penniform Portions, nearly in the same Manner with the *Deltoides*.

It is fixed in the internal Labium of the whole Basis, and in almost the whole internal Surface of the *Scapula*, its fleshy Portions lying in the Intervals between the bony Lines when these are found. Near the Neck they leave the Bone, and form a very broad Tendon, which is inserted in the Surface of the small Tuberosity of the Head of the *Os Humeri*, close by the bony Channel. The lower Edge of this Tendon, probably sends off the ligamentary *Frænum* mentioned in the Description of the *Latissimus Dorsi*, *Teres Major*, and *Coraco Brachialis*.

This Muscle covers immediately the *Serratus Major*, being in a Manner inclosed between it and the *Scapula*. The upper Edge of its Tendon is joined to the lower Edge of that of the *Supra-Spinatus*, except at the upper Part of the bony Channel, where they give Passage to one Tendon of the *Biceps*. It likewise adheres to the capsular Ligament. The Tendons of the *Supra-Spinatus*, *Infra-Spinatus*, *Teres Minor*, and *Subscapularis*, being all joined by their Edges, form a Sort of Cap, which covers the upper Part of the Head of the *Os Humeri*.

The Use commonly ascribed to the *Subscapularis*, of pressing the Arm against the Ribs, from which it has the Name of *Porte-feuille* in French, is without Foundation. When the Arm hangs down in its natural Situation, this Muscle may turn it round its Axis, from without forward, as it happens when in this Situation we beat the Breast with the Fore-arm bent; and it likewise strongly assists the *Latissimus Dorsi*, when we turn the Hand behind the Back.

When the Arm being raised, we move it backward, as in giving a back Stroke with the Elbow or Fist, the *Subscapularis* hinders the Head of the *Os Humeri* from being luxated forward; for which Purpose it is well fitted both by its Structure and Number of its Fibres, this Motion being sometimes performed with great Violence.

It may likewise, by Means of the Nearness and lateral Union of its Tendon with that of the *Supra-Spinatus*, assist that Muscle in keeping the Head of the *Os Humeri* in the Glenoid Cavity, when the other Extremity of the Bone is raised. *Winslow's Anatomy.*

SUBSIDENTIA. The Sediment, or *Hypostasis* in Urine.

SUBSTILLUM SANGUINIS. A dropping of Blood from the Nose.

SUBSULTIO. A Palpitation.

SUBSULTUS. An involuntary twitching, or spasmodic Contraction of the muscular Parts.

SUBVERSIO STOMACHI. A Subversion of the Stomach is a violent Vomiting, when what should pass into, or through the Intestines, is discharged by the Mouth.

SUBVOLA. The Part of the Hand otherwise called *HYPOTHENAR*, which see.

SUCCAGO. The inspissated Juice of any Plant. A *Rob* or Jelly.

SUCCEDANEUM. Any Drug, or Medicine, substituted for another.

SUCCENTURIATI RENES. Two glandulous Bodies situated near the Kidneys, called also, *Glandula Renales*, or *Capsula Atrabiliaræ*.

SUCCENTURIATUS MUSCULUS. A Name for the *Pyramidalis*. See *ABDOMEN*.

SUCCIDA LANA. Greasy Wool, that is, Wool impregnated with the Sweat of the Sheep.

SUCCINGENS MEMBRANA. The Diaphragm.

SUCCINUM. Amber. See *AMBERA*.

SUCCISA. A Name for several Species of *SCABIOSA*.

SUCCOLATA. Chocolate.

SUCCOTRINA ALOES. Aloes of *Succotra*, esteem'd the best Species. See *ALOES*.

SUCCUBUS. A Species of Night Mare. See *EPHIALTES*.

SUCU. The Name of a Chinese Species of Apple.

SUDAMINA. The same as *HIDROA*.

SUDOR. Sweat.

Under the Skin, above the Fat, are disposed all over the Body what we call the *Miliary Glands*, which are closely united, each Gland furnished with an Artery, Vein and Nerve, and produce an excretory Duct or Vessel, which passes through a Perforation in the *Reticular Body*, and discharges through a wide Orifice, the Sweat under the Epidermis. These Ducts are cover'd with a hollow, and raised Valve, of a round Figure, and seated under the Skin; its Use is to transmit or restrain the Humour. This excretory Duct is the principal Organ of *Sweat*, in Conjunction with the *VASCULA Ruycheiana*.

The *Sweat*, thus secreted, varies according to the Differences of Air, Soil, Sex, Age, Temperament, Emunctories, Diet, Way of Living, and Time of Concoction, almost in the same Manner as does the Urine.

Sweat is seldom or never observ'd in a sound Body, unless from an Error in the Non-naturals; in its primary Effects it is always hurtful; by Accident it sometimes proves beneficial.

Perpiration according to SANCTORIUS.

There are, besides the excretory Vessels above described, under the Scales of the Epidermis, exhaling Vessels, which open obliquely, and are of such exquisite Subtlety, that *Leeuwenhoek* computes that a hundred twenty-five Thousand of them will take up no more Space than a common Grain of Sand. Through these Vessels perpetually transpires a very subtle Humour, from all Points of the Body, which has the Name of *Sanctoriana Perspiratio*, from *Sanctorius*, who has the Glory of being the Discoverer and Perfector of this important Doctrine in Medicine.

The Exhalation of this Humor is from the whole external Epidermis, and also from the Cuticula of the Mouth, Nostrils, Fauces, Larynx, Lungs, Oesophagus, Stomach, Intestines, Bladder and Uterus. Hence in Quantity it exceeds the Sum of all other Excretions; for in the Air of *Italy*, the Vigour of Age, easy Circumstances of Life, and moderate Eating and Drinking, the Quantity exhaled through the external Skin, and by the Mouth and Nostrils, amounts to five Eights of the Aliments received.

When this *Exhalation* or *Perpiration* is highly subtle, equable and undisturbed, in Quantity copious, and is augmented after Sleep, it is at once a Sign and a principal Means of perfect Health.

A Deviation, or Alteration, in any Manner, from the Qualification just required in *Perpiration*, is the first and most certain Forerunner of some Disorder, and perhaps the Cause of it.

Perpiration is effected, preserved, increased and restored by a robust State of the Viscera, Vessels and Fibres, by Exercise and Motion to the Degree of an incipient, gentle Sweat, by the moderate Exercise of Venery, excited by the Health and Strength of the Body, and not by the Advice and Instigation of the Mind, by a Sleep of seven or eight Hours, with the Body well cover'd, but not oppressed under a Load of Clothes; by moderate Cheerfulness, Youth, solid but light Aliments, fermented, not fat, and season'd very slightly with Spices, and by pure, serene, dry, weighty and cold Air.

The Contraries to all these Requisites beforemention'd, as well as an Augmentation of all the other Excretions, diminish, obstruct and deprave the Action of *Perpiration*.

Hence we learn the Matter, Cause, Effects, Necessity and Uses of this *Perpiration*; that it is especially serviceable to Flexibility, Softness, and Restoration of lost Substance, and principally that the humid and quick nervous Papillæ might be fit for the Impression of Objects, and transmitting the Effects of that Impression.

It appears also that when Sweat is increased, and its Vessels enlarged, that *Perpiration* is of Necessity diminished, and its Vessels compressed.

And that with violent Motion, and excessive Heat, this *Perpiration* is turned into Sweating; but that with gentle Motion and a moderate Degree of Heat, it is very much promoted.

That nothing more conduces to a free *Perpiration* than gentle and long continued Friction.

That

That long and copious Sweats highly check and weaken it, and that such Sweats are constantly and necessarily Attendant on weak, wasting, consumptive, fainting and dying Persons.

Questions to be solved on this Head are;

Why immediately after Eating, and also a long Time after the same, *Perspiration* in a healthy Person is diminished?

Why *Perspiration* is greatest in the fifth and the twelfth Hours after Eating?

Whence it comes to pass that riding on Horse-back, or Gestation in a Coach, or Ship, but especially violent Motion on the Ice, or in the Snow, so highly promote *Perspiration*?

SUDOR ANGLICUS. The Sweating Sickness.

This Disorder is so call'd from the Island in which it first appeared, in 1483. among the Soldiers of *Henry VII.* when he landed at *Milford Haven* in *Wales*, whence it spread itself and rag'd in *London*, from the 21st of *September* till the End of *October*. In the same City it returned five Times, and always in the Summer: First in 1485; then in 1506. Afterwards in 1517, when it was so violent as to take off the Patient in three Hours, and so universal as to attack People of all Ages and Conditions; so that half of the Inhabitants of several Towns in *England* fell Victims to its irresistible Fury. It appear'd the fourth Time in 1548, when it generally prov'd mortal in six Hours; and then it appear'd in 1529, at which Time alone it spread itself to the *Netherlands* and *Germany*; in the latter of which it prov'd very fatal. The last Return of it in *London*, was in 1551, when it rag'd with such Fury, as in one Day to take off 120 of the Inhabitants of *Westminster*. At *Shrewsbury*, the Residence of the celebrated *Caius* or *Kaye*, from whom this Account of the Disorder is taken, it rag'd with such Inclemency as almost to depopulate that whole Quarter of the Country, cutting off some when travelling on the Road, and others when at home minding the Concerns of their Families. Some when awake, and others when fast asleep; so that in large Families few remained free from the Disorder; in such as were less numerous generally none; and among those, who were seiz'd with it, some died in a Moment, and others one, two, three, four, or more Hours after they began to sweat. So that those who were brisk and healthy at Dinner, were often dead before Supper; but none who surviv'd the Disease were ever out of Danger, till 24 Hours after its first Attack. From such Beginnings it increased so much, and spread so far, as to strike Terror into the Inhabitants of all *England*; and had this unlucky Circumstance, peculiar to itself, that Flight, which in other contagious Disorders is the best Method of Prevention, was of no Use; for not only such of the Natives of *England* as left the Towns, and betook themselves to the Fields, but, also, those who retir'd to *France*, *Holland* and *Scotland*, were equally subjected to it as if they had taken no Precaution; whilst, what is equally, or still more surprizing, Foreigners residing in *England* were not attack'd by it.

It seiz'd different Patients in different Manners; for in some it first appeared with a Pain in the Neck, Scapulae, Legs or Arms; whilst others perceived only a Kind of warm Vapour or Flatulence running through these Parts. And these Symptoms were suddenly succeeded by a profuse Sweat, which the Patients could not account for. The internal Parts became first warm, and were soon after seiz'd with an incredible Heat, which thence diffus'd itself to the Extremities of the Body. An intolerable Thirst, Restlessness and Indisposition of the Heart, Liver and Stomach, were the next Symptoms, which were succeeded by an excessive Head-ach, a Delirium, in which the Patient was very trifling and talkative, and after these a Kind of Extenuation of the Body, and an irresistible Necessity of Sleeping.

In some the Sweat stopp'd in the Beginning, and their Limbs became moderately cool. But this Evacuation being afterwards promoted, the Matter of it was of a disagreeable Smell, of different Colours, according to the Nature of the Patients Humours; sometimes more and sometimes less in Quantity, and of a pretty thick Consistence. Some were seiz'd with a *Nausea*, and others with a Vomiting; but these Symptoms happen'd almost only to such as had overloaded their Stomachs with Aliments. All without Exception were afflicted with a difficult and frequent Respiration. The Urine had nothing preternatural, except that it was of a thicker Consistence, and ting'd with a fainter Colour than usual. The Pulse was also more quick and frequent than in a natural State. In those, however, who breath'd the least corrupted Air, and of the best Constitutions, the Disease was more mild and temperate, being generally accompanied with no worse Symptoms than a preternatural Heat and Sweat.

From the Symptoms now enumerated, *Kaye* defines this Disorder to be a diary Fever of the pestilential and contagi-

ous Kind, and to support his Definition reasons in the following Manner.

The profuse Sweat is, in this as well as in other Fevers, produc'd as a Symptom by the excessive Agony and Heat of the Patient; for as they who work hard have the Whole of their Bodies cover'd with Sweat, so those who labour under violent internal Disorders are subject to copious Sweats, which are the Instruments Nature uses, in order to carry off the Cause of the Disease. If she is vigorous enough to produce this Effect, the Patient is preserv'd; but if she is too faint and languid, he falls a Victim to the superior Force of his Disease; for if this Sweat flows spontaneously, and is duly carried on, it is of the salutary and beneficial Kind; but if it is totally check'd, or too much diminished, it is either mortal, or highly dangerous; for the Truth of which the Author appeals to the Experience of his Countrymen.

The learned and ingenious Author next proceeds to shew;

1. Why this Fever is of diary Kind.

2. From what Causes it proceeds, &c.

3. Why the Inhabitants of *Britain* alone are subject to it.

The First he accounts for from the particular Nature of the Poison which, he says, is of the putrid Kind. The Second he explains from the Situation and Air of *Britain*; which last is subject to be impregnated with noxious Exhalations, proper to produce Diseases of the putrid Kind. And the Third he Accounts for from a particular Fitness and Disposition in *English* Constitutions, to receive and be acted upon by this Poison. But as the learned Disquisitions of the Author, on these Points, would swell the Article too much, and are not very satisfactory, we shall proceed to give the Method he prescribes, both for the Prevention and Cure of this Disorder.

For preventing this Disease, then, he orders Temperance, and the Choice of salutary Aliments, and Drinks. No crude Pot-herbs nor Sallads are to be used, because they may have received a noxious Quality from the Air; or if they are us'd, they are to be previously wash'd with warm Water. The following Powder is to be sprinkled on the Aliments.

Take of Mace and Cloves each two Parts, of Zedoary and Dittany Root each one Part; of all the Sanders each half a Part, of red Coral and red Roses each one Part; of Cinnamon three Parts, of Pearles one Part, and of Sugar a sufficient Quantity. Beat all and reduce to a fine Powder.

The Air is, also, to be render'd as pure as possible, by removing those Things which can corrupt it; such as Carcases of Animals, stagnant Waters, and other Things of a like Nature, and by correcting and altering its peccant Quality, by Means of constant Fires, especially in the Morning and Evening; and by burning in the Room fragrant Substances. When we go abroad, which should be as rarely as possible, we should carry in our Hand a Preparation to smell to, which he orders be made in the following Manner.

Take of the *Nux Unguentaria*, Mace, Cloves, Saffron, Cinnamon, and Chian Mastick well triturated, each one Part and an half, of Storax two Parts and an half, of Ladanum four Parts, with a few Grains of Amber and Musk, dissolve in aromatic Wine, and make into a proper Consistence for a Paste, to be smell'd to.

The Steam of Scordium or Vervain, receiv'd into the Mouth before going abroad, is an excellent Preservative against this Disease; as also holding continually in the Mouth a Piece of Zedoary or Elicampane Root, macerated for a Night in Vinegar of Roses.

No one must go abroad fasting, for at that Time the Body is more subject to Infection than at others. 'Tis, therefore, proper to take, before going out of the House, a proper Quantity of *Theriaca*, either by itself, or in a Glass of distill'd Water of Sorrel, or Scabious. The Troches of Vipers, and several other Things of a like Nature, are, also, proper for the same Purpose; but the most efficacious Preservative is by the Author said to be the following.

Take of Sorrel, red Roses, yellow Sanders, Spikenard, Cinnamon, Saffron, and Citron Seeds each one Part, of *Armenian* Bole one Part and an half, of seal'd Earth half a Part, of prepar'd Pearles half a Part, with the Addition of some Leaf-Gold, all which are to be triturated, and taken in a small Quantity of Vinegar.

In plethoric Persons the Quantity of Humours are to be diminish'd by Abstinence, or by Venesection, and other Evacuations, as the State of the Person shall require.

After the Sweating Sickness has seiz'd a Patient, the best Method to be pursued is to promote the Sweating for a due Time; for by this Means alone the Disorder is remov'd. For this Purpose the Patient is to be kept warm, and due Care is to be taken, that he does not, thro' Ignorance or Restlessness, expose any Part of his Body to the open Air. The Patient must be attended, and have his Sweat continued for twenty-four Hours, because at that Time the Disease generally terminates in an happy Manner. During all this Time, the Patient must abstain from all Aliments, and from Drink of every Kind for at least five Hours, unless the Patient's Strength is so exhausted, as to call for a supply of them, which, however, can hardly happen in so short a Time. If the Sweat does not flow spontaneously, Frictions with moderately warm Cloths may be us'd, taking Care to prevent the Access of the Cold; and if by this Means he sweats, we are to abstain from other Methods; but if none of these will do, sudorific Potions are to be us'd. Sleep is to be prevented, by calling on the Patient with a shrill Voice, and pulling him till both the Desire and Necessity of sleeping are remov'd. After the Patient is recovered, he is not too soon to go abroad, nor expose himself to the open Air, by doing which many have been taken off by an incurable Flux. *Caius de Ephemer. Britannica.*

SUDORIFERA. The same as **SUDORIFICA.**

SUDORIFICA. Sudorifics; Medicines which excite Sweat. See **DIAPHORETICA.**

SUFFERSURÆ. Pustulous Eruptions, which break out upon Children, on Account of Heat. *Forestus.*

SUFFIMENTUM. A Suffumigation. This differs from odoriferous Substances, because the latter diffuse their Odour without the Assistance of Fire; whereas the former does not exert its Influence without the mediate or immediate Action of Fire.

There are two Kinds of Suffumigations, one subservient to Pleasure, and another contributing to Health; both of them are either dry or moist. The Suffumigation for Pleasure is, also, call'd *θυμίαμα* ; whereas that for Health is more properly call'd a Vapour or Steam.

That subservient to Pleasure, and the Purposes of Luxury, is made up of fragrant and sweet-scented Substances, and may be us'd either in the Form of a Powder, Troches, or medicated Candles. The first of which may be prepared of Storax, Benjamin, the Root Acorus, Zylaloes, Marjoram Leaves, Orange and Lemon Peel, Mace, Cloves, Cinnamon, Camphire, Amber, Musk, and Civet, in due Quantities, reduc'd to a Powder. The second may consist of the said Powder put in melted Gum Tragacanth, and made up with some proper Water: And the third may be prepared of the odoriferous Gum melted, with an Addition of the above-mention'd Powder, Gum Tragacanth, or Ladanum melted, and a proper Quantity of Musk, or Amber. Though this Species of Suffumigation is principally intended for Pleasure, yet as it consists of cephalic and cordial Ingredients, it must necessarily contribute to corroborate the Brain, recruit the Spirits, and prevent their assuming a malignant Quality. The moist Suffumigation for Pleasure consists of Storax and Benjamin; or if you please, a small Quantity of the above-mention'd Powder dissolv'd in some odorous Water, such as that of Roses.

The Suffumigation contributing to Health, is either corroborative, and consists almost of the same Ingredients with that for Pleasure, or it is alterative, dries the Brain, purges the Lungs, provokes the Menfes, and prevents a Suffocation. The dry Species of this Suffumigation is prepared of sweet-scented Substances, such as Ladanum, Storax, and Benjamin, and sometimes of Galbanum, Asa-Fœtida, and Castor, which are highly beneficial in several Disorders of the Uterus. This, also, may be exhibited either in the Form of a Powder, consisting of the above-mention'd Ingredients, or in the Form of Troches, prepared as above. A Suffumigation of this Kind is, also, sometimes made by throwing Tobacco alone on the Coals, and collecting the Steam in a Funnel, or some proper Instrument; this powerfully purges the Brain, and frees the Breast from pituitous and bilious Excrements. This Species of Suffumigation is us'd either for corroborating or altering, for drying the Brain, removing Catarrhs, and Phlegm generated in the Breast in various Disorders. Suffumigations of Tobacco, Colt's-Foot, and Sulphur are beneficial for drying Ulcers of the Lungs, and for several other Disorders of the same Kind. The moist Suffumigation for Health, consists either of some simple Liquor, such as Vinegar, Wine, Aqua Vitæ, or Rose-water; but in hard, oedematous Tumors to be discuss'd, the Fire-Stone, or a Brick ignited, are to be put into the Vinegar, and the Steam received; this is, also, frequently done in

the Plague: Or the moist Suffumigation for Health may consist of a Decoction of proper Ingredients. This Preparation is principally us'd in Disorders of the Uterus, in stopping or promoting the Menfes, in Dysenteries, Disorders of the Anus, Ears and Eyes. This Species of Suffumigation is us'd for drying, constricting, relaxing, softening, discussing and opening. *Morelli de Formul. Remedior.*

SUFFIMENTUM CATARRHALE.

A Fume for a Catarrh.

Take Olibanum, Amber, Benjamin, Storax, Gum Guaiacum, and Balsam of Tolu, of each two Scruples; make all into a gross Powder to burn.

Where the Desfluxion is very thin, and has much of its Cause in the Laxity of the Glands, such Means may do Service by constringing the Parts, and repelling the Flux, inasmuch that it may be thrown off by other more proper Outlets; but where there is an Asthma, and very weak Lungs, there is great Reason to fear Mischief; because checking the Rheum will thicken it, and make it pass with greater Difficulty through the pulmonary Vessels, when, in the Course of Circulation, it comes thither. The following, therefore, may be less inconvenient, though this may, also, be used in the same Manner, to burn upon Coals, only receiving the Steams with a Cap before it is put on, especially at Night going to Bed.

Take of Gum Guaiacum, Gum Juniper, Mastich, Myrrh, each a Dram; Cloves, two Drams; Balsam of Peru, sixteen Drops: Make them into a coarse Powder.

Filling a thick Cap frequently with the Steam of this burnt upon Coals, may, with sometime using, strengthen the Fibres, and particularly the Glands about the Head; whereby they will not be subject to those Suffusions of Lymph, which ought to be remanded by other Secretions, and principally by Urine.

SUFFIMENTUM HYSTERICUM.

An Hysteric Fume.

Take of Asa-Fœtida, one Ounce; best White-Wine-Vinegar, a Pound; boil them in a Pot with a narrow Mouth, and let the Patient hold her Head over it, with her Mouth open.

This is an untoward Application, and seems justifiable only in Cases where other Means cannot be used; though in some Kind of hysteric Convulsions, Steams this way received up the Nose have very sudden and remarkable Effects.

SUFFIMENTUM ODORIFERUM.

A sweet-scented Fume.

Take of Benjamin, one Ounce; Storax, half an Ounce; Labdanum, two Drams; Musk and Amber-grease, each five Grains: Make them into a fine Powder, to mix with Wax for Candles.

The Scent of this burnt in Places suspected of Contagion, or infected with any noisome Steams, is not only pleasant but beneficial. They are likewise very agreeable to light Pipes with.

ANOTHER.

Take of Cypress Roots, and Calamus Aromaticus, each one Ounce; Rosemary, one Handful; Storax, and Benjamin, each two Drams; Frankincense, two Ounces: Make all together into gross Powder to burn.

This is useful to take away the ill Scent of a Room, from what Cause soever it be; and in a Time of pestilential Contagion, would be beneficial to burn for an Hour or two every Morning in all the Rooms of an House, or some convenient Place, where the Whole may be filled with its Steams. And, by this Caution, many Families who lived in London during the last great Plague, escaped being hurt by it.

SUFFIMEN-

SUFFIMENTUM AD PROBIDENTIAM ANI.

A Fume against the falling down of the Fundament.

Take of Frankincense, Mastich, Amber, and Cloves, each a Dram; Red-Rose Leaves, and Balaustines, each two Drams: Make them into a gross Powder.

This is to be burnt upon a Chaffindish of Coals under a Chair, with a Hole in it, over which the Patient is to sit with the Part bare, after the Gut is thrust up; and by such Means continued, will the Sphincter at last get Strength enough to keep it up without any such Help. In a Tenesmus it is, also, of Use.

SUFFIMENTUM AD PROCIDENTIAM UTERI.

A Fume against the falling down of the Womb.

Take of Myrrh, Mastich, Cinnamon, and Spikenard, each a Dram; Mint, and red Roses, each two Drams; Cloves, Zedoary, and Pimento, each half a Dram: Make them into a gross Powder to burn.

This is to be used as the preceding, and in the same Weakness it is, also, good; as that is of Service in this. These are very easy Remedies, and might be beneficial in many uterine Weaknesses, where Persons are too squeamish or Prejudiced to take necessary Medicines another Way. Fumes from hot, aromatic Liquors, which are sometimes directed to the same Purposes, are hardly so efficacious as those which arise from the burning, dry Ingredients; because their Moisture prevents their being so immediately restraining.

SUFFITUS. The same as SUFFIMENTUM.

SUFFO. This is explain'd by *Rulandus* and *Johnson*, *Paris Porcinus*.

SUFFOCATIO UTERINA. A Strangulation of the Uterus, an hysterical Symptom. See HYSTERICA.

SUFFRUTICES, in Botany, are Under-Shrubs, or small Shrubs, with ligneous Branches, and small Leaves.

SUFFUMIGATIO. The same as SUFFIMENTUM.

SUFFUSIO. A Cataract. See CATARACTA.

SUFFUSIO AURIGINOSA. A Jaundice.

SUFUFF. Compound Powders, in the Shops call'd *Species*. *Castellus*, from *Libanius*.

SUGILLATIO. Sugillation. See the Article CONTUSIO, for the Difference betwixt a Sugillation and *Ecchymosis*.

SUGITIVA. Medicines which consume the Serofities of hydropical Persons. *Castellus*.

SULPHUR.

The Sulphur of the Shops, called *Sais* in *Greek*, because used in all expiatory and other sacred Rites, is a mineral, concreted Juice, solid, dry, friable, fusible by Fire, and very easily inflammable. The Flame it emits is blue, and the Smell of burning Sulphur is strong, subtle, acid, and very prejudicial to the Lungs.

Sulphur is of various Kinds; it is, in the first Place, divided into *εστωπος*, or native Sulphur, which has never been exposed to the Fire; and *πυροπυρετος*, or factitious Sulphur, prepared by Fire. It is either of a yellow, yellowish, Ash, or light Colour, and either pure or impure in Substance.

Native Sulphur, termed *Sulphur Vivum* in *Latin*, is of two Kinds; one pellucid, and shining like Gold, and either of a citrine or greenish Colour. This is found about the gold Mines in *Peru*, *Switzerland*, and many other Places. The other is opaque, found either in hard, solid, shining, greenish, or yellow Lumps, or in form of a clayish Glebe, of a light Ash Colour, or yellow. This Kind is dug near all the burning Mountains; near some sulphureous Springs, and in several other Places of *Europe* and *America*.

Factitious Sulphur is prepared in different Manners: In some Places it is obtained by boiling of Water; and at *Buda* in *Hungary*, according to *Agricola*, it is evaporated along with the Water of the mineral Springs, and concretes in the Covering, or Dome of these Fountains, like Flower of Brimstone, and is gathered from thence, once every Year, with great Care. It is, also, extracted from a Sort of Ash-coloured, argillaceous Earth. Thus in some Places of *Italy* there are Mines, out of which a fat, white, argillaceous Earth is dug, mixed with some blackish Veins; and this Earth being put into very capacious earthen Vessels, and distill'd, the melted Sulphur runs out at the Rostrum of the Alembic into a Receiver, where it soon concretes into large Lumps. After the Distillation is over, a red Earth remains, which is thrown away as useless. Sulphur is, also, often ex-

tracted from a Kind of *Pyrites*, especially near *Liege*, where there is a Kind of *Pyrites* like Lead Ore, which being dug up, is broken into small Pieces, and then thrown into very large Crucibles, or rather earthen Cucurbits of a quadrilateral Figure, with a narrow Orifice: These Vessels are placed in proper Furnaces, in an inclined Position, where by the Sulphur contained in these Stones, being melted by the Fire, runs into Leaden Vessels filled to a certain Height with Water, where it concretes immediately; the Substance which remains in the Cucurbit containing a large Portion of Vitriol. If by this first Operation, the Sulphur be not sufficiently pure and clean, it is melted a second Time in Iron Vessels, and boiled with the Addition of a certain Quantity of Linseed Oil; afterwards it is made up, either in large Lumps, or is thrown into hollow Cylinders of Iron, rubbed over with Oil on the Inside, and so is formed into Rolls.

Sulphur so prepared is called common Brimstone, or common Sulphur, and is of two Kinds, yellow, or greenish; which last is preferred for the Extraction of Oils or Sulphurs from other Bodies, as containing the greatest Quantity of vitriolic Salt. Common Sulphur melts by Fire, is easily inflammable, emitting a fine blue Flame, with acid Effluvia, which affecting the Nostrils and Lungs, excite Coughing: An electrical Quality is likewise observed in it. It is not soluble by Acids, but very readily by alkaline or oily Substances. When fired in the open Air, it flies almost all away, a small Portion of a Kind of metallic Earth only remaining: But if the Vapours that ascend from burning Sulphur be collected with Care, it becomes an acid Liquor, of the same Nature with Spirit of Vitriol, without any apparent Mixture of oily or bituminous Parts: But if Sulphur be distilled in an Alembic, or any other close Vessel, the Vapour does not then turn to a Substance of a different Kind, but concretes in form of a yellow, sooty Dust, called Flowers of Sulphur, which is of the same Nature as it was before Distillation. *Geoffroy*.

THE EXAMINATION OF SULPHUR.

Perfect Sulphur is found in the Mines, under very different Forms; sometimes smooth and yellow; sometimes yellow and almost transparent, like Amber; sometimes red, and almost transparent, like a Ruby; but more frequently of an opaque, grey Colour. Any of these Sorts being put into a Crucible, easily melt in the Fire, and so long appear transparently red; but when cold, they again become opaque. Sulphur, as soon as melted, readily takes Flame upon the Admission of the external Air, and burns blue; the Vapour whereof, being received with the Breath into the Lungs, proves suffocating to all Animals. It entirely burns away, or scarce leaves any Faeces behind: If kept melting in the Fire without burning, it discharges a strong-smelling Acid, but not suffocating Vapour. As soon as melted, some Part of it goes into the Air; and if long kept fused, without burning it, it all gradually becomes volatile, and vanishes. When cold, it is extremely brittle; and when melted by Heat, it seems viscous, like Pitch; and in neither Form will mix with Water. It will never dissolve in Alcohol alone; if its Powder be mixed with any Acids or Alkali, it gives not the least Signs of Ebullition, or Effervescence; so that it has not thus the Effect of an Acid or an Alkali. If taken crude into the Body, by small Doses frequently repeated, it wonderfully cleanses the first Passages, at length purges strongly, and then effectually cures certain cutaneous Diseases, and such as proceed from Worms or mercurial Fumes.

REMARKS.

Hence the Nature of Sulphur may be in some Measure understood, as found naturally in the Earth. And hence it appears, why the Chymists have called it the Rosin of the Earth; for, excepting that it does not dissolve in Spirit of Wine and Alcohol, in other Respects it approaches to Rosin.

THE FLOWERS OF SULPHUR.

I. Take six Ounces of common Sulphur, put it into a Body of *Hessian* Earth, apply a capacious Glass-head, close the Juncures with a Mixture of equal Parts of Clay and Ashes, wrought up with Water; set it in a Sand-Furnace, so that the same may almost touch the lower Rim of the Glass-head; let the Pipe of the Head, and, also, the Body itself incline a little downwards, that the Moisture may run into the Receiver fixed for that Purpose; make a gradual Fire, and continue it till the Head begins to grow dark

dark with the ascending Flowers; a little Water will rise and come into the Receiver; cautiously keep up the Fire, that the Heat may not melt the Flowers in the Head, and yet be sufficient to sublime the Sulphur; continue thus for eight Hours, and at length increase the Fire, till the lower Rim of the Head grows almost so hot as to melt the Sulphur; the Sulphur will now be sublimed into a yellow, light, rarified, soft powdery Substance, called Flowers of Sulphur.

2. This Experiment is sufficient for our present Purpose; but those who make Flower of Brimstone for Sale, have entire Furnaces built for the Purpose; with two Chambers or Partitions, one containing the Sulphur to be sublimed, where the Fire is placed, and the other adjoining to it, communicating therewith, and kept cold. Both of them are exactly stopped up, to exclude the Air; and thus the Sulphur being urged in one Chamber, by the Heat of the Furnace, and render'd volatile, flies into the other which is cold, and there collects together. When the Operation is ended, and all grown cold, the Furnaces are opened, and the Flowers swept out; and thus they repeat the Operation with fresh Sulphur. And as they thus prepare the Flower of Sulphur in large Quantities, with little Labour and small Expence, hence it is usually sold but little dearer than rough Brimstone.

REMARKS.

The Sulphur by these Means is attenuated and purified; in other Respects it is not chang'd; but thus it becomes very fit for internal, medicinal Use. For when thus divided, it exerts its Virtues to greater Advantage in the Body; and thus, also, it proves fitter for external chirurgical Uses, principally when it comes to be mixed with Balsams, Liniments, and Ointments. Hence we understand its wonderful Nature; for though ever so often sublimed, it always remains the same, without being changed or mixed: It therefore can never become a Metal, or enter the Composition of Metals. This therefore is not the Sulphur of the Philosophers, nor can never be made to afford it, as being no more than an Oil mixed with an Acid. So long as the Air is excluded from this Sulphur, heated even to the Degree of Fusion, it remains unchanged by the Fire; but as soon as the free Air is admitted, it presently takes Flame, and then soon changes, and divides into separate Parts. *Paracelsus* directs these Flowers to be sublimed from the red Calx of Vitriol, and recommends them for the Cure of exulcerated Lungs. I made the Experiment, but without finding that these Flowers, which he so much commends, had greater Virtues than the common Flower of Brimstone.

THE ACID SPIRIT OF SULPHUR.

1. Chuse a cool, moist, still Day, and melt pure Flower of Brimstone, in an earthen, cylindrical Pan, three Inches deep, and as many over. When the Sulphur is thoroughly melted, but not fired, put the Vessel under a Chimney that does not smoke, but discharges all Fumes made upon the Hearth. Now light up the melted Brimstone, and immediately cover it with a glass Bell, the Center whereof is over the Center of the Flame. The Bell should first be suspended in the Vapour of hot Water, to moisten its internal Surface, and let it be so supported by Bricks, set triangularly, as not entirely to extinguish the Flame of the burning Brimstone; otherwise, the nearer it is to the Flame the better. As soon as the Flame begins to go out, let there be at hand another similar Vessel full of melted Brimstone, to be fired and applied as the former, and continue thus for a whole Day. A strong-smelling, acid Vapour, will begin to collect in the Bell, especially during the Coldness of the Night; apply a little Glass Receiver to the Bell, which is to be set so inclining, as that the Liquor may gently run out of it into the Receiver. Thus, by continuing the Operation, and increasing the Number of the Bells, there will be obtain'd a gratefully acid, ponderous, yellow, and sometimes red Liquor, that is wonderfully fixed at the Fire, so as to require almost the same Heat to raise it as Oil of Vitriol. It, also, strongly attracts Water; and therefore gradually increases its Weight in an open Glass. If all these Directions be well observed, the Operation will always succeed. The Vapour here must be carefully avoided.

2. Mr. *Homburg* finding this Method too tedious, has invented a much easier and better, whereby five Ounces may be obtain'd in twenty-four Hours. He took the most capacious Glass Receiver he could get, and cut a round Hole in the Bottom of it, eight or ten Inches wide. This is done by first finding the Centre of the Basis, by letting a Plumb-Line fall down through the Mouth of the Glass till

it touch the Bottom, and remain every way equidistant from the Sides; the Point of Contact is mark'd with a Diamond; then setting the Foot of a Pair of Compasses on that Point, and opening them to the Distance of five Inches, the Periphery of a Circle is struck with Ink. When the Line is dry it is to be cut with a Diamond, the deeper the better. Then have at hand an Iron-ring of the exact Size with the Circle drawn. When the Iron is heated, apply it to the round Line, and the Piece will fly off, and leave the Basis open. When the Bell is thus procured, paste a Slip of strong Linnen about the Neck, with a Loop-hole for a String to run thro', in order to suspend the Bell; then have ready a cylindrical earthen Pan, six Inches wide, full of pure melted Sulphur; light it, and set this Vessel upon a glazed earthen Foot, plac'd upon the rising Part in the middle of a large glazed Dish; suspend the Bell exactly over the middle of the Flame, at such a Distance as not to extinguish it. Make the Sulphur always burn equably, by adding fresh Supplies of it, and taking off the Crust with an Iron Rod, when it grows hard; so that the Distillation may thus proceed uninterrupted. The other Particulars abovementioned, of moistning the Inside of the Bell with a warm aqueous Vapour, of taking the Opportunity of a cold, moist, still Air, and of a Chimney that does not smoke, are here also to be regarded.

REMARKS.

The Sulphur sublimed into Flowers is freed from its Earth and metallic Part. When lighted after being melted, it burns only on its Surface contiguous to the Air; its blue Flame consists of Fire, or the inflammable oily Part of the Sulphur, agitated by the Fire, and a mineral Acid, which is the other constituent Part of the Sulphur, now agitated, attenuated, made caustic and volatile, by the Flame. Thus the unctuous combustible Matter is consumed by the Fire, and the ponderous Acid dissipated, which soon after condenses by its own Weight, when it gets clear of the Flame that throws it off. Hence this Vapour becomes so mortal, because the violently caustic Acid, thus strongly agitated, comes in Contact with the Nerves, which move the Muscles, that join the Interstices of the cartilaginous Rings of the Larynx, Bronchia, and Vesiculæ of the Lungs, whence it contracts them spasmodically, so as to stimulate the Lungs into a panting Endeavour to cough, while they are entirely contracted, and not suffer'd to expand by the Weight of the Air; altho' the Breast be dilated with a laborious but fruitless Endeavour. The same Vapour, shut up with fermentable Liquors, stops Fermentation; and if strongly repeated, prevents Putrefaction, in all Bodies that otherwise easily putrefy. Hence this Fume is a proper Preservative against pestilential Poison, and the Contagion that flies abroad, or remains fixed in Goods, so as to infect them.

And hence we understand why the Flame of Nitre and Sulphur put together, but principally of Gunpowder, afford a very healthy Fume in the Height of the Plague; for the explosive acid Vapour of Nitre and Sulphur corrects the Air; and the same Vapour, if received in a small close pent-up Place, kills Insects. This Spirit of Sulphur, called by the Name of *Oleum Sulphuris per Campanam*, or Oil of Sulphur by the Bell, is no other than the Oil of Vitriol, which was lodg'd in the vitriolic Pyrites; and afterwards joining with the Oil of Coals, constitutes Sulphur. This appears from all kinds of Trials, preffion, which is wanting in the Spirit of Sulphur prepared from the Flowers of Sulphur. The great *Homburg* has, with much Labour and Subtilty, computed the Quantity of this Acid contained in Sulphur, and found it to be nearly a tenth Part. And thence, perhaps, we have the Reason why Alcohol will not touch Sulphur; that is, because its Oil is saturated with Acid: And again, why a tenth Part of Alkali, mix'd with it by the Fire, occasions Alcohol to dissolve only Oil of Vitriol is suspected to contain some metallic Impolve it; because thus having Alkali to absorb the fix'd Acid, it leaves the Oil free to dissolve in the Alcohol: And again, why Sulphur resists Acids, and is not resolved thereby: Why when once dissolved with its own Acid, it admits no more: Why Metals melted or calcined with Sulphur, are corroded by it; that is, because the Acid of the Sulphur forsaking its own Oil, is strongly attracted into the Metals, and thus corrodes them into a kind of Vitriol. Hence let those less skilful Chymists grow more prudent, who endeavour to fix Sulphur; which is only a fossil Acid united with an inflammable Oil, and no longer attempt to fix metallic Mercury with it, for such heterogeneous Things cannot enter each other; nor can they give the Gravity and Solidity here so requisite, nor indeed the Simplicity or Malleability. This Spirit of Sulphur, being purified, barely by standing, then mix'd with Juleps, gives them an agreeable Acidity, and renders them a wholesome Drink in all Inflammations, and hot Diseases, attended with

with thirst and Corruption. *Helmont* says it is conducive to the Prolongation of Life.

SULPHUR DISSOLVED IN FIXED ALCALI.

Take nine Drams of pure Flower of Sulphur, melt it in a Crucible, and add two Drams of dry fixed Alkali in Powder; the Sulphur will presently begin to change of a new and particular Odour, and of a high red Colour; stir the Mixture over the Fire with a Tobacco-pipe, then, when thoroughly melted and united, pour it out upon a cold Marble. It will be a red brittle Mass, soluble in Water, and soon re-igniting in the Air; whereas the Sulphur before would neither resolve by the Action of the Air or the Water.

REMARKS.

The fixed Alkali being here actuated by the Fire, intimately unites with the melted Sulphur, attracts its Acid, and joins therewith, so that the Sulphur resolves into its two separate Principles; yet the Oil does not here remain separate, but is intimately united with the Alkali, and acid Salt, so as immediately to produce a wonderful Soap, consisting of Acid, Alkali and Oil; and therefore the Combination of the fossil Acid, Alkali and Oil, in the Composition of Sulphur, changes the Oil to another Nature; but the Acid remaining almost unchanged, comes out the same upon the Resolution: And hence we may understand the Power of fixed Alkali in Metallurgy. Sulphur is often mixed with Metals, and makes them brittle; but, if fix'd Alkali be added to them in Fusion, it takes the Sulphur into itself, from the Metal; and floating upon the Surface, as a lighter Soap, leaves the heavier Metal, now freed from its Sulphur, to fall to the Bottom, in the Form of a Regulus, whilst the Alkali has no Entrance into, or Power upon the Metal. Hence, therefore, if there be any Doubt, whether any fossil Glebe or Ore contains Sulphur, the Way is to grind and melt it with fixed Alkali, for thus the Alkali will manifest the Sulphur by the Colour and Smell produced.

SULPHUR DISSOLVED IN VOLATILE ALCALI.

Mix any strong alkaline Spirit, whether prepared from Sal Ammoniac, Harts-horn, Blood, or the like, with pure Flowers of Sulphur; distil and cohobate, by which means the Sulphur will be dissolved; or if the Mixture be long kept in a close Vessel, and frequently shook, by this Method, also, a golden Tincture may be obtain'd.

REMARKS.

This Process serves to shew the Power which volatile Alkali has upon the acid of Sulphur, and the consequent Change thereof. But whether the Tincture possesses such great medicinal Virtues, especially in Diseases of the Breast, as an eminent Chymist imagined, may be justly questioned.

THE SOLUTION OF SULPHUR IN ALCOHOL.

Take Sulphur first opened by fixed Alkali, as in the last Process but one, and whilst it remains still hot from the Fire, and consequently dry, grind it fine in a hot and dry Mortar; put it into a dry Glass, and pour pure Alcohol thereon, so as to float five Inches above it. The Alcohol thus perfectly dissolves the Sulphur, as soon as it comes in Contact with it, into a rich, gold-colour'd, unctuous Liquor, which by shaking, becomes still richer. Let the Tincture be decanted clear from its Fæces, pour fresh Alcohol upon the Remainder, and this being again tinged, separate it, and repeat the Operation, till the Alcohol becomes tinged no longer. Keep all the Tinctures mixed together; they make a Liquor that has a very particular Smell, though not ungrateful, but with some Fragrance. It is of an exceeding aromatic heating Taste, and of a corresponding medicinal Virtue; the Fæces left behind are grey-coloured, saline and earthy.

REMARKS.

Alcohol will not touch native Sulphur, though ever so long digested therewith; but as soon as the Sulphur is opened by Alkali, it is then eagerly taken up by Alcohol; so that I scarce know any quicker Solution. Hence we learn the Power that Alkalies have upon Sulphur; for procuring Entrance to Alcohol. Sure, therefore, Sulphur frequently lies concealed in many fossil Glebes, but especially in Ores; whence it happens, that a simple Tincture of Sulphur has often been sold for the most secret and valuable metallic Tincture, even to Princes; and I remember a boasted Tincture

of Gold thus put off for *Aurum potable* at a high Price. This Tincture was made by mixing Gold with crude Antimony, and the Alkali of Tartar, or *Glauber's* Alcahest, melted and stirred together; then the whole being afterwards bruised, and brought to Powder, it afforded a golden Tincture with Alcohol; but this, I say, was a mere Tincture of Sulphur; for the Gold here remains unchanged: But Antimony abounds with Sulphur, and in melting, the Alkali attracts this Sulphur, separates it from the metalline Mass, and opens it; then the Alcohol being added to the whole ground Mass, extracts only the sulphureous Part opened by the Alkali, and leaves the Gold, or metallic Part of the Antimony, perfectly untouched. This Observation is of infinite Use in examining numerous other than Tinctures; for as soon as a skilful Artist knows that fixed Alkali is employed in making them, he knows they must proceed from Sulphur; because the metallic, or as the Chymists call it, the mercurial Part, is never touch'd by vegetable Alkali. In the mean time, our Tincture of Sulphur affords a wonderful warming Medicine, that causes Eruetation, resists Acids, and cuts Phlegm; a few Drops of it being taken upon an empty Stomach, in Mead, Spanish Wine, or any proper Syrup, which it thus turns white, so as to be called the Milk of Sulphur. But I could never discover its antiphthical Virtue, as a last Refuge in ulcerated Lungs, though I have diligently sought for it; notwithstanding the great Doctor *Willis* has wonderfully recommended it in this Distemper; but I judge such Preparations should be more sparingly praised by Physicians.

THE SYRUP OF SULPHUR.

Take a Dram of Sulphur opened with Alkali; dilute it with thrice its Weight of Water, wherein it almost wholly dissolves; add to the Solution twice or thrice its Weight of Sugar, a little boiled; mix them together, and thus a kind of Syrup of Sulphur is prepared, containing the Virtue of the opened Sulphur, and may thus be conveniently employed for medicinal Uses. It is made more expeditiously by mixing the Tincture with six Times its Weight of the Syrup of Liquorish, or the like Syrup.

REMARKS.

What Opinion Physicians should have of this Composition we hinted above, in considering the Tincture of Sulphur. The Syrup is heating, drying, and stimulating, which are Properties that do not suit Coughs and Consumptions; especially where the Body is worn down, and attended with constant Sweats. But hence we advantageously learn, how wonderfully the Powers of Fossils may be concealed in almost every Thing; for if any fossil Glebe, rich in Metals and Sulphur, be first gently washed, ground to Powder, calcined with fixed Alkali; and afterwards dissolved in Water, Syrup, Wine, Alcohol, or other Liquors, the alkaline sulphureous Part easily dissolves, and lies concealed. Whence the Liquor receives some particular Virtue, which should be carefully examined before the Liquor is used internally.

SULPHUR PRODUCED FROM OIL AND ACID.

Take four Ounces of pure rectified Oil of Turpentine, put it into a Retort, and let fall thereon by a Drop at a Time, an Ounce of highly rectified Oil of Vitriol; shake the Retort, after the Addition of each Drop, that it may be thoroughly mixed. The Liquor will now heat, smoke, grow red, and exhale a variable Odour. After the whole is thoroughly mix'd, digest it for eight Days; then apply a capacious Receiver, and distil in a Sand-furnace, the Junction being well luted; a new and particular oily Liquor will come over. The Matter at the Bottom appears first like a Fluid Bitumen, but gradually thickens, and at length becomes pitchy, and bituminous; the Liquor that comes over is fetid, sulphureous and suffocating, if received into the Lungs. If the Distillation be carefully carried through with successive Degrees of Fire, there will at length arise a true Sulphur into the Neck of the Retort, as may appear from its Form and manner of burning.

REMARKS.

Hence we learn the artificial Method of preparing Bitumen and Sulphur; and that the fix'd Acid of Vitriol, Alum, and burnt Sulphur, is the incombustible Basis of Sulphur, while the other Part is the combustible pure Oil; which two, by their intimate Union, compose Sulphur. If this factitious Sulphur be burnt, its oily Part affords a Flame without Smoke; and the other Part, in the burning, affords an acid, caustic, suffocating Vapour, which is preservative and ponderous, so

as not to rise high, and if condensed by a Glass Bell, it drops down into Oil of Vitriol, exactly like that of the natural Sulphur. A pure inflammable Oil seems to be collected in Sulphur, such as can scarce be otherwise obtained; whilst the gross, unflammable, terrestrious, or other saline Matter is excluded in this Combination; no other Acid, produced by Nature or Art, will make Sulphur by mixing with Oil. The Acid of Vitriol, wherever it be, or wherever subtly concealed, joins with any inflammable Oil so as to make Sulphur. Tartar of Vitriol, *Glauber's* Sal Mirabile of Sea-Salt, and of Nitre, the Salt of Vitriol, burnt Alum, and other Bodies containing this Acid, as often as they are, by Means of it, joined with an inflammable Oil, always afford true Sulphur. Hence this Acid alone has the Property of producing Sulphur, whilst all inflammable Oils serve therewith for the same Purpose; and hence Sulphur can never be produced where this Acid did not pre-exist; whence numerous obscure Particulars may be understood in the chymical History of Fossils and Metals; and, therefore, whoever would explain them, should remember what is here delivered. To give an Example from *Becher*; Melt *Glauber's* Sal Mirabile in the Fire, throw powdered Wood-Coals thereon, a sulphureous Flame arises, and a brown Mass is left at the Bottom, which being dissolved in Water, and precipitated, a true sulphureous Matter is obtained. Here it is plain, that the Oil of Vitriol in the Sal Mirabile lays hold of the inflammable Matter in the Coal, and becomes Sulphur; therefore, in determining the Effect of any chymical Operation before hand, we must carefully examine whether any of the Matters employed, either manifestly, or secretly, contain the Oil of Vitriol, Alum, or Sulphur, and whether any inflammable Matter is, also, applied; for in this Case, the Action of Sulphur is immediately produced.

SULPHUR OBTAINED FROM ALCOHOL AND ACID.

Into a tall Glass Body put eight Ounces of Alcohol, prepared without Alkali; let fall to it, by a Drop at a Time, highly rectify'd Oil of Vitriol; shake the Glass well after each Drop, and rest a little, otherwise a great Heat, and suffocating Vapour would arise; continue thus, by Degrees, till an Ounce of the Oil of Vitriol is added. The Mixture will have the sweet Fragrance of Southern-Wood, which will spread over the whole Place, but ought to be avoided, as being suffocating; if received in a small Quantity into the Lungs, it causes a violent Cough; and if received in a large Quantity, at once, I judge it might prove mortal: The Liquor will become reddish. Let it now be gently digested, in a close Vessel, for five Days; then distil it gently in Glasses close luted; a wonderful, subtle Spirit will come over, which proves incredibly suffocating, and is so much the more dangerous, as, by its grateful Smell, it treacherously leads one to take it in freely. Continue this gentle Distillation for some Time, till the mixed Matter grows black; then the Spirit which last came over will be exceeding sweet and fragrant; and now there will begin something acid to arise, which was not in the former Liquor; then change the Receiver, still keeping a gentle, but constant Fire, that the Liquor may rise slowly; for if the Fire was to be urged too strongly, but for a Moment, the Matter would immediately swell and rarify, so as to come over at once into the Vessels, and disturb the Operation. If the Distillation be thus gently continued, there arises an aqueous, fetid Liquor, and along with it another that is ponderous, pure, limpid, and keeping separate and unmixed with the Phlegm. After all this is come over, and about one Half of the Whole, again change the Receiver, and distil by Degrees of Fire, up to the highest; a fetid Liquor will arise, that does not mix with the former ponderous Kind; at the Bottom of the Vessel remains a black, brittle and unflammable Matter, though otherwise in some Degree approaching to Sulphur; so that by these Means we have three distinct Liquors arising from this Mixture, as, also, a suffocating Vapour, and a fixed *Caput Mortuum*, of a very particular Nature, remaining behind.

REMARKS.

The strongest Fossil Acid, by thus barely mixing with the most subtle vegetable Oil, or Alcohol, causes such a violent Heat, as, if imprudently mixed, almost to take Flame, and produce a considerable Effervescence. At the Instant of mixing, there arises a sweet Odour, which diffuses itself widely; but by a long Digestion, the disagreeable Odour of Garlick is produced. The sweet suffocating Odour is attended with an Acid. Here, 1. a spirituous, fragrant, suffocating, inflammable, and tartish Liquor is separated; whereas the Oil of Vitriol was a little before so fixed, and no way fragrant. 2. There comes over a fetid, sulphureous, aqueous, uninflam-

mable, acid Liquor, though neither the Alcohol nor Oil of Vitriol contain much Water. 3. There comes over a limpid, ponderous Liquor, that smells and tastes gratefully aromatic, but will not mix with the two former, yet dissolves in Alcohol, and then extracts somewhat of a Tincture from calcined Gold, and hence is esteem'd the philosophical Oil of Vitriol. It is certainly a dulcified Oil of Vitriol, concerning which *Isaac Hollandus*, *Gesner*, *Mr. Boyle*, but particularly *Dr. Hoffman*, may be consulted. The black Fæces being diluted with Water, return almost into acid Oil of Vitriol. We have here a great many unexpected Phenomena from a simple Combination; perhaps this may be the philosophical Spirit of Wine, which, by its Fragrance, calls in the Neighbours while it is made, according to *Lilly's* Account of it. Perhaps it is the dulcified, fragrant Spirit of Vitriol of *Paracelsus*, which he esteemed powerful in the Falling Sickness; and possibly the Tincture prepared with it from Gold is a Species of *Paracelsus's* *Aurum Potabile*, digested in the Stomach of the Ostrich. Certainly this Operation may excite the truly Curious to examine with Care, whether there be any thing of these great Secrets concealed therein. We find it does not produce true Sulphur, but only certain Properties of it. *Boerhaave's* *Chymistry*.

As Sulphur cannot be resolved into its different Principles in close Vessels, the Distillation of it remained very imperfect, till *M. Homberg* completed it. His Method, as explained in the Memoirs of the Royal Academy of Sciences for the Year 1703, is this:

Take Flower of Brimstone, four Ounces; Oil of Turpentine, a Pound; digest them in a Matrafs over a Sand-heat for eight Days, till the Sulphur is dissolved, the Liquor appearing of a dark red Colour. Then, if the Solution be set in a cool Place, in a Vessel cooled by Art, about three Fourths will turn to yellowish Crystals, the other fourth Part remaining dissolved in the Liquor. The Crystals being separated from the Tincture, let a Pound of fresh Oil of Turpentine be poured upon them, and thus continue to repeat all the Parts of the Operation till the Flower of Sulphur be quite dissolved; mix all the Tinctures together, and distil them in a large Glass Retort over a gentle Fire; the greatest Part of the Oil of Turpentine will come over limpid, together with a small Portion of a whitish and very acid Liquor; but as soon as the Drops from the Neck of the Retort appear red, change the Receiver, and increase the Fire by Degrees, till nothing more will come over. Near the End of the Operation, a thick, brownish Oil will appear, mixed with a small Portion of a whitish, acid Liquor. In the Bottom of the Retort is found a black, rare, spongy Earth, or *Caput Mortuum*, in some Measure foliaceous, shining, insipid, and remaining fixed in the most vehement Degree of Fire. Let the thick, dark-coloured, and bituminous Oil be put into another Glass Retort, and when the Remains of the Oil of Turpentine, and of the white acid Liquor, are all drawn off by a very gentle Heat, red Drops will begin to rise; then immediately remove the Fire, and upon the bituminous Matter in the Retort pour rectify'd Spirit of Wine, which being drawn off again, in a gentle Heat, will have a very fetid Smell; pour fresh Spirit on the Remainder, and continue this Process till the Spirit that comes off has lost all its unpleasant Smell; and the black Matter which then remains in the Retort will Smell agreeably enough, and is the true bituminous and inflammable Part of Sulphur.

It is here to be observed, that only a certain Portion of this bituminous Substance is dissolvable in Spirit of Wine, another Part remaining which is soluble neither by that Spirit, nor by any lixivial Liquor, but only by essential distilled vegetable Oils. This indissoluble Substance is a strong Cathartic given in the Quantity of two or three Grains; but that Portion which yields to the Spirit of Wine is an excellent Balsam for the Lungs.

By this Analysis, three very different Substances are obtained from Sulphur, almost in equal Quantities, one acid, the second bituminous, and the third earthy and fixed. The acid Liquor is not different from Spirit of Vitriol, and when saturated with Salt of Tartar, is formed into Crystals like those of vitriolated Tartar. This Similitude of those two Liquors is farther confirmed by the artificial Production of Sulphur.

Dielschides informs us, that Sulphur is good in Coughs, when mixed with an Egg; and *Hippocrates* used it in hysterical Affections accompanied with Coughing, by way of Fumigation, sometimes alone, and sometimes mixed with other Substances. The internal Use of Sulphur is recommended by Physicians in Diseases of the Lungs, of which it is, by way of Eminence, termed the Balsam; because it promotes Expectoration, and clears and strengthens that Organ, and is therefore very beneficial in a Phthisis, Asthma, and Catarrh. It has in all Ages been a famous Medicine in cutaneous

neous Diseases, Scabs, and Pforæ, used inwardly or outwardly. Externally applied, it discharges hard Tumors, ripens and digests Buboes; but no Medicine prepared with Sulphur is thought to be agreeable to Women with Child, because it is ready to cause Abortion. Inwardly taken, it is laxative, and promotes insensible Perspiration, as may be perceived by the sulphureous Smell of such Persons as have taken it, and by the brownish or black Colour which it gives to the Gold or Silver they carry about them. It is therefore very quickly and readily diffused through the whole Body, and, by its balsamic Parts, it blunts and entangles the acrid Salts, with which the Fluids abound in these Diseases; and thus resolves their native, mild, soft, and oily Qualities; by which Means it readily cures small Ulcers in the Lungs and Skin.

Though Sulphur may be given inwardly, even in a gross Powder, yet it is seldom ordered without some Preparation. It may be purified different Ways; some put it into Water with melted Wax, which swims at the Top while the Sulphur falls to the Bottom; and by repeating this Mixture till the Sulphur begins to acquire a red Colour, it is then thought to be more defecated. Some boil it in Water for several Days, changing the Water every now and then, and afterwards they set it for two Hours in hot Smoke, that some Fumes may exhale, and the remaining pale yellowish Sulphur they judge to be very pure. Others make Milks and Magisteries of Sulphur, which they think much preferable to common Sulphur; but all these Preparations either change the true Nature of Sulphur, or else are of no Effect at all. The best Way to purify it, is by Sublimation, or the Reduction of it to Flowers, by which common Method it is freed from the earthy or metallic Parts that may have been mixed with it. Sulphur thus prepared may be ordered in the Diseases already mentioned, in the following Manner:

Take Flower of Brimstone, four Ounces; Sugar of Roses, one Ounce; Syrup of Maiden-Hair, a sufficient Quantity to make a soft Opiate; of which three Drams, or half an Ounce, are to be taken every Morning fasting, and every Evening, at the greatest Distance between Meals, for a long Continuance of Time, in the Scabies and Asthma.

Take Flower of Brimstone, an Ounce; white Sugar, four Ounces; Rose-Water, a sufficient Quantity: Boil them according to Art, and make them into Tablets, or Lozenges; to be taken at a great Distance from Meals, in Coughs, Consumptions, and Astmas.

Take Flower of Brimstone, two Drams; mix it well in a poched Egg, and swallow it early in the Morning fasting, and repeat it again in the Evening, for the Itch, rubbing the Body with the following Ointment:

Take the Roots of wild, sharp-pointed Dock, and Elecampane, of each two Ounces; fresh Butter, four Ounces; Flower of Brimstone, an Ounce and half: Mix them together, and make them into an Ointment.

As the powerful Acid contained in Sulphur is very prejudicial to the Lungs, Chymists, in order to make it a more safe, and equally efficacious Medicine, have endeavoured to mitigate or inviscate that acid Salt; by the Preparation called Balsam of Sulphur, for which, on any Quantity of Flower of Brimstone, they pour as much Oil of any Kind as will swim three or four Fingers Breadth above it, and then digest them in a gentle Sand-heat, till the Oil begins to look red or brown. This Liquor, when cold, is separated from the Fæces, and kept for Use. In this Manner are the different Balsams of Sulphur prepared; such as the *Balsamum Anisatum*, *Faniculatum*, *Terebinthinatum*, *Juniperisatum*, *Succinatum*, so called from the different Oils used. The Dose is from ten Drops to thirty in Astmas, immoderate Coughs, Ulcers in the Lungs, nephritic Pains, and Ulcers in the Kidneys, and Bladder. From this Balsam are prepared the balsamic Pills of *Morton*, which in flow, scorbutic, or scrophulous Phthisis, are attended with a very small Fever, if any at all; and where the expectorated Matter is glutinous, as in an Asthma, are very beneficial, both in the Beginnings and subsequent Stages of the Disease.

Take of Powder of Millepedes, three Drams; Gum Ammoniac, well purified, a Dram and an half; Benjamin Flowers, two Scruples; Extract of Saffron, and Balsam of Peru, each ten Grains; Terebinthinate Balsam of Sulphur, a sufficient Quantity: Mix and make them into Pills, which must either be gilt or rolled in

Powder of Liquorish. The Dose is fifteen or eighteen Grains, to be repeated three Times a Day, at medicinal Hours.

But the best Balsam of Sulphur that has ever been prepared, is undoubtedly that of the great *Homburg*, made by extracting a Tincture, with Spirit of Wine, from the bituminous Part of Sulphur, freed from all its acid and earthy Parts. This Tincture, evaporated over a gentle Fire to the Consistence of a Syrup, is the genuine Balsam of Sulphur; and of excellent Use, not only in Diseases of the Lungs, but in all Disorders in which the animal Functions are disturbed by acrid Salts in the Fluids. It is taken a few Drops at a Time, in any Syrup, or licked from the Palm of the Hand.

The Spirit of Sulphur is proper in burning, malignant, and pestilential Fevers. It quenches Thirst, prevents the Putrefaction of the Fluids, and calms the Effervescence of the Blood and Bile, not by coagulating the whole Mass of Fluids, as the other mineral, acid Liquors, but only by entangling the sulphureous Parts: For, according to *Borelli's* Observation, a Dram or two of Spirit of Sulphur, injected into the Jugular Vein of a Dog, did not kill the Animal; but the same Quantity of Aqua-fortis, even diluted with Water, throws a Dog into terrible Convulsions, of which he soon dies; and upon opening his Body, the whole Blood contained in the Veins and Heart is found in grumous Clots. Moreover, Spirit of Sulphur attenuates gross, viscid Humours, and thereby often removes Obstructions; whence it is recommended by some in Astmas: However, I do not think it proper in phthisical Cases, because, like other acid Liquors, it excites Coughing. It is given only in a few Drops at a Time, sufficient to give a grateful Acidity to any proper Vehicle; and by repeating this Dose at the Beginning of every Paroxysm, intermitting Fevers are often cured by it.

Spirit of Sulphur, either by itself, or mixed with Honey of Roses, cures simple Aphthæ in a very small Time, provided there be no Inflammation, by only touching these little Ulcers with the Spirit or Mixture, imbibed by a Bit of Cotton, or Linnen Rag. *Riverius* is of Opinion, that it is an excellent Remedy in putrid Fevers; and that it is found by Experience to cool, open, resist Putrefaction, prevent the Inflammability of the Fluids, and quench Thirst. But it is never to be given in Pleuritis, Peripneumonies, Spitting of Blood, Phthisis, and other Diseases of the Lungs, except the Obstruction arises from a thick, pituitous Matter, in Inflammations of the Stomach, Dysentery, bloody Urine, and Ulcers of the Kidneys and Bladder. *Geoffroy*.

SUMA. Tartar. *Rulandus*.

SUMACH. A Name for the *Rhus*; *folio Ulmi*.

SUMEN. The HYPOGASTRIUM.

SUMMITATES. The Tops of Plants.

SUPERBA. A Name for the *Caryophyllus*; *tenuifolius*; *phumarius*; *Flora pleno, purpurascens*.

SUPERBUS MUSCULUS. A Name for the *Elevator Oculi*.

SUPERCILIA. The Eye-brows.

SUPERCILIUM ACETABULI. The Margin of the ACETABULUM, which see.

SUPERCOMPOSITIVA SECTA. The Episynthetic Sect of Physicians among the Antients. See the Preface.

SUPEREXCRETIO. The same as HYPERCRISIS.

SUPERFICIES, in *Rulandus*, is the White of an Egg.

SUPERFŒTATIO. Superfœtation. See EPICYESIS.

SUPERGEMINALIS. The *Epididymis* is sometimes thus call'd.

SUPERGENUALIS. The PATELLA.

SUPERHUMERALIS. The same as EPOMIS.

SUPERIMPRÆGNATIO. The same as EPICYESIS.

SUPERLIGULA. The EPIGLOTTIS.

SUPERMONICUM. This is explain'd by *Dorneus*, *Ænigmatical*.

SUPERPURGATIO. The same as HYPERCATHARSIS, which see.

SUPERSCAPULARIS SUPERIOR. A Name for the *Musculus SUPRASPINATUS*.

SUPERSCAPULARIS INFERIOR. A Name for the *Musculus INFRASPINATUS*.

SUPERVACUATIO. The same as HYPERCRISIS.

SUPIM. The Name of a *Chinese* pomiferous Tree, of no Use in Medicine, that I know of.

SUPINATOR LONGUS, SIVE MAJOR.

This is a long, flat Muscle, lying on the external Condyle of the Os Humeri, and on the convex Side of the Radius, from one End to the other.

It is fix'd by fleshy Fibres to the external inter-muscular Ligament, and to the Crista of the external Condyle of the *Os Humeri*, for five or six Fingers Breadth above the Condyle, between the *Brachialis* and *Anconæus Externus*; from thence it runs along the whole convex Side of the Radius, and is inserted by a flat, narrow Tendon, a little above the Styloide-Apophysis in the Angle between the concave and flat Sides of the Extremity of this Bone.

The *Supinator Longus* was believed to be concerned only in the Motion of Supination, till *Heister* very justly observed that it was, also, a Flexor of the Fore-arm: And indeed, a very small Degree of Attention to its Insertions and Situation, must convince us, that it is much better fitted for this last Use than for the first; for before it can act as a Supinator, the Hand must be in the greatest Degree of Pronation; and even then, it can do little more than bring the Radius back to its natural Situation, without compleating the Supination, excepting it be by Jerks. It would, therefore, be much more properly named *Radialis Longus*, than *Supinator Longus*.

This Muscle may bend the Fore-arm, by Means of the Connexion the Radius with the Ulna, in several different Situations; that is, when the Fore-arm is fully extended, the Radius being either in a Motion of Pronation or Supination, or in a middle Situation between both.

On this Occasion it is proper to observe, that the Method of examining the Uses of the Muscles on dead Bodies, by pulling them in order to move the Bones in which they are inserted, is very uncertain, except particular Care be taken to pull them in their true natural Direction, which is often different from what it appears to be when they are dissected, by reason of the lateral Connections, and *Frena*.

Supination performed when the Fore-arm is fully extended, is commonly attributed, in part, to the Rotation of the *Os Humeri*, by Means of its Articulation with the Scapula, as if this Supination, when the Fore-arm is extended, were greater than when it is bent; whereas the Difference in Supination is really but very small, though it be very considerable in the Motions of Pronation.

SUPINATOR BREVIS, SIVE MINOR.

This is a small, thin, fleshy Muscle, surrounding a great Portion of the upper third Part of the Radius.

It is fixed by one End to the lower Part of the external Condyle of the *Os Humeri*, to the external lateral Ligament of the Joint, to the annular Ligament of the Radius, and to Part of the lateral Eminence in the Head of the Ulna.

From thence it passes obliquely over the Head of the Radius, covering some Part of it, and running down upon, and in some Measure surrounding the Neck, it turns in under the bicipital Tuberosity, and is inserted by the Side of the inter-osseous Ligament in the Inside of the superior Quarter of the Bone, and even a little lower. In some Subjects we may observe the Marks of the Passage of this Muscle over the Outside of the Bone. It makes an Angle with the *Pronator Teres*, resembling the *Roman V*.

The *Supinator Brevis* seems to have no other Use than what is expressed by its Name; and as it is a short, small Muscle, it must be very weak. Its Use is principally owing to the Obliquity of its Fibres; but still neither this nor the former Muscle would be able to perform Supination, where a great Force is required, without the Assistance of the Biceps, which is the most powerful of all the Supinators, and the principal Actor in this Motion. *Winslow's Anat.*

SUPPEDANEA, or SUPPLANTALIA. Topical Medicines apply'd to the Feet.

SUPPOSITORIUM.

A Suppository, is a Kind of medicated Cone, or Ball, which is introduced into the Anus for opening the Belly. Suppositories are usually made of Soap, Sugar, Allum, or a Piece of Tallow-Candle, about the Length of a Thumb, and the Breadth of a Finger; though they may be made smaller for Children, and sometimes a little thicker for Adults. Suppositories are sometimes compounded of Ingredients adapted to the Disease, and Circumstances of the Patient, as of Honey, Salt, Powder of Aloes, Colocynthis, and the like. If one Suppository does not occasion a Stool, it must be supplied by a stronger; and if that does not succeed, the Repetition must be continued till the Effect required is produced. They are sometimes lubricated with Oil or Butter, that they may be introduced with greater Ease. Some use a Lozenge of Sugar, or a small Piece of thin Linnen Cloth rolled up, with a little hard, salt Butter, which greatly loosens the Belly. For Ulcers of the Rectum, the best Suppositories are made of Honey of Roses, Powder of Mastich and Myrrh, or of Colophony. The stronger Suppositories, which are composed of acrid and stimulating

Ingredients, are advantageously used in promoting a difficult Birth, if the Infant be in a natural Position, and, also, for expelling the Secundines, when they are tenaciously retained in the Uterus. In exhibiting them, the Patient should be put in the same Posture as in giving a Clyster, and the Suppository must be gently thrust up the Anus with the Finger.

SUPPRESSIO. A Suppression, or Retention; it is generally us'd relative to Urine, or the *Menses*.

SUPPRESSIONIS IGNIS. A Fire of Suppression, in Chymistry, is, when the Vessel containing the Ingredients to be acted upon is covered with Sand, upon which live Coals are laid, so that the Matter contain'd in the Vessel may be acted upon both from below and above.

SUPPURANTIA. Suppurative Medicines.

SUPPURATIO.

If an Inflammation, by Neglect, too late Use, or ill Success of the Methods, directed under the Article **INFLAMMATIO**, tends to a Suppuration, and it appears so to do by the Signs there given, the Indications will be,

1. To mature the crude Humour, as soon as may be, into one similar Substance.
2. To mollify the same, with the adjacent Parts.
3. To attract it outwards.
4. To procure a Vent for the concocted Pus.
5. To mundify the Place.
6. To manage the rest of the Cure as a Wound.

An Abscess, *ἀπὸσσωσις, ἀπὸσσωμα, Abscessus*, with the ancient Physicians, had various Significations. *Hippocrates, Epidem.*

1. gives that Name to the Change of one Disease into another, when he says, *ἡ δὲ ἀλλαν πυρὶς καὶ νεκρῶσιν ἀποσώσῃ ἐκ τῆς πύλῃς ἐν τῷ σπλῆνι*; "Of other Fevers and Diseases there was a Mutation into Quartans". The Name *Abscess* was, also, given to those Efforts of human Nature, by which some noxious Matter was separated from the Blood, and either discharged from the Body, or deposited on some Part. The Antients, therefore, divided these Kinds of *Abscesses* into such as were form'd, καὶ ἐκέρχον, "by Efflux", [See *ΕΚΡΟΕ*] and those which were form'd, καὶ ἀποθήκον, "by Deposition." *Galen. 1. Com. 2. in 1 Epid.* Thus, for Example, in a Peripneumony, the Matter of the Disease is observed to find a Vent by Spitting, by a bilious Flux of the Belly, or by Plenty of thick Urine with much Sediment, and in these Circumstances there is an *Abscess* by an *Efflux*. But where there is no such Excretion, and yet from the salutary Signs which appear, we can predict the Recovery of the Patient, we are directed by *Hippocrates, Lib. Prognost.* to expect an *Abscess*, either at the Ears, or towards the inferior Parts of the Body, the Matter of the Disease being deposited in those Parts. But at present we understand by an *Abscess*, according to the common and received Sense of the Word, the Transition of an Inflammation into a Suppuration, and a Collection of Pus thence generated in some Part of the Body. In this Sense is an *Abscess* defined by *Galen, M. M. ad Glauc. Lib. 2. Cap. 21*, "An Affection in which Bodies that were before in mutual Contact, secede from one another. Hence it is necessary that some void Space should be left in the Middle, which will contain some flatulent or humid Matter, or a Mixture of both. Some Inflammations, and many erysipelatous and phlegmonoide Tumors are changed into an Abscess." For while the obstructed Extremities of the inflamed Vessels are separated by the Force of the vital Fluid, which presses on them behind, they become intermingled with the effused Humours, and being cherished by the Heat of the Place, pass into Pus, which by removing at a Distance from one another the Parts which were before contiguous, makes Room for itself. But since a true Phlegmon almost constantly resides in the Panniculus Adiposus, this Membrane, which easily gives Way, may by a Collection of Pus be sometimes distended into a very great Tumor. Now, that such a preternatural Cavity is formed by a Collection of Pus, after the Phlegmon has been suppurated, which did not exist before, is demonstrated, in that if you make an Incision with a Lancet into the inflamed Part, before the Pus be generated, there will be an Eruption either of Blood, or some thinner, Ichorous Fluid, and the whole Tumor appears solid: But if the Incision be made after Suppuration, there appears a manifest Cavity after the Effusion of the Pus, occasion'd by a Seccession of the Parts which were before contiguous.

The best Cure of an Inflammation, is undoubtedly by Resolution; but when this is out of the Power of the Physician or Surgeon to effect, as is frequently the Case, there remains nothing but Suppuration, since other Mutations or Consequences of an Inflammation, which are either a Gangrene or Scirrhus, are much worse. If, therefore, from the Signs enumerated under the Article **INFLAMMATIO**, it appears that

that the Inflammation is of such a Nature, that a Resolution cannot reasonably be expected; or though perhaps there were some Hopes in the Beginning, that the same might be effected; yet through unsuccessful Application, or Neglect, or too late Use of proper Remedies, (after the Impetus of the vital Liquid, by a continued Pressure for several Days together, has consolidated the obstructing Molecules, and rendered them quite irresoluble by expressing the most fluid Parts) all Expectations of a Resolution are absolutely vain and fruitless; the curative Indications are to be directed in such a Manner, that by forming a Suppuration as soon as possible, all the Parts, both in the Fluids and Solids, which are corrupted by the Inflammation to such a Degree that they can no longer be subservient to the Laws of Health, may be removed out of the Way; and this being effected, that afterwards the lost Substance may be restored, and the separated Particles be reunited and restored to their natural Cohesions.

1. The material Cause of the Disease, as long as it continues in such a Disposition as qualifies it for causing or increasing the Disorder, is called *crude*; but when by the vital Forces, its own Nature, or proper Medicines, it becomes changed in such a Manner as to be more conformable to the Laws of Health, and less injurious to the natural Functions, it is termed *concocted*; and that State of the Disease, in which this material Cause is so alter'd as to be less pernicious, is called *Maturation*, or *Concoction*. Now this *Crudeness* may take Place as well in the Fluids as Solids, and consequently the same may be said of *Maturation*. In a Phlegmon we bestow the Epithet *crude* on all Matter which so obstructs as to be incapable of Resolution, and every Vessel so obstructed that it cannot be open'd, comes under the same Denomination. In order, therefore, to the Restitution of Health, this obstructed Vessel, together with its contained stagnant Matter, must be separated from the other quick and pervious Vessels, and with the effused Liquids be changed into one homogeneous Humour called *Pus*. As long, therefore, as the Cohesion of the obstructed Extremity, with the other Parts of the Vessel which are pervious, remains undissolved, the vital Force acting upon the Place obstructed, causes an Increase of all the Symptoms of the Inflammation; but when a Separation is effected, and a free Passage is opened for the Humours through the dilacerated Extremity of the Vessels, it is very reasonable to conclude, that all these bad Symptoms must be very much diminished. A *Crudeness*, therefore, is known by the Increase or Height of all the Symptoms; and *Maturation*, on the contrary, by their Remission. We have an elegant Description of the whole Affair in *Celsus*, *Lib. 5. Cap. 28.* where treating of Abscesses, he says, "*Crude* is what has in it, as it were, a great Motion of the Veins, attended with a Weight, Heat, Distention, Pain, Redness and Hardness; and if the Abscess be considerably large, there is a Horror, with a slight continual Fever; but if the Suppuration be deeply seated, instead of those Symptoms which otherwise appear on the Skin, the Patient is molested with pungent Sensations. When there is a Remission of the beforemention'd Symptoms, and the Place itches, and becomes whitish, or somewhat livid, the Suppuration is matured."

2. The Hardness and Resistance of the inflamed Part proceeds from the close Compactness of the Liquids and Solids. [See INFLAMMATIO] and while these continue, the Disease is justly said to be *crude*. But *Maturation* requires a Separation of the obstructed Extremities from the other Parts of the Vessels. The more, therefore, the Parts are soften'd, and, as it were, withered, the sooner, and with the less Pain, may this Separation be effected. But if the Part be affected with a violent Phlegmon, it is generally observed, that though the Middle of the diseased Place begins to soften, all the circumjacent Parts retain their Hardness, for which Reason they are to be treated with the like Emollients, as *Celsus* advises us in the Chapter before quoted, where he says, "If the Parts about the Phlegmon are harder than ordinary, they are to be mollify'd with Fomentations of bruised Mallows, or Seed of Fenugreek, or Linseed, boiled in *Passum*."

3. If the Pus generated from the Suppuration of the inflamed Part settles about the Superficies of the Body under the Skin, there is generally a spontaneous Elevation of the Skin into a Tumor, especially if the Place be treated with mollifying and relaxing Medicines: But if the Pus should have a deeper Seat, the Danger is the greater, lest it should have Sinuses in the Panniculus Adiposus; or if it be latent in the interior Parts, it is to be feared that it will communicate a purulent Contagion to the Viscera. As soon therefore, as by the Signs described under the Article INFLAMMATIO, it appears that the Inflammation tends to a Suppu-

ration, we are to try all Methods for deriving the Pus to the exterior Parts. *Celsus*, *Lib. 4. Cap. 6.* treating of the Cure of a Pleurisy, for a violent and recent Pain commends Bleeding; but if that proves useless, or is administer'd too late, he bids us have "Recourse to Cupping or Scarification: A Sinapism, also, prepared with Vinegar, may properly be applied to the Breast, till it raises a Blister, to which a proper Medicine is to be afterwards apply'd, in order to attract the Humours to the Place." And speaking of a Peripneumony, *ibid. Cap. 7.* when arriv'd at its Height, he says, "It may be of Service to apply to the Breast Salt, pounded very small, and mix'd with Cerate, because it slightly corrodes the Skin, and diverts the Impetus of the Matter, which infects the Lungs to the exterior Parts. It may be of good Use, also, to apply a Malagma, of that Kind, which operates by Drawing." If the Pus now totally formed can be conveniently attracted to the exterior Parts, the Event of the Inflammation is not so much to be dreaded: For even in a suppurated Pleurisy, for Instance, the Patient dies either of a Suffocation from a Compression of the Lungs by the Ulcer turgid with Pus, and prominent towards the interior Parts, or of a Rupture of the same Ulcer discharging its Pus into the Cavity of the Thorax, the Consequences of which are an Empyema, Phthisis, and Death. But if the Impostume generated in the intercostal Parts tends towards the superficial Parts, and there rises into a Tumor, an Incision being made therein, and the Pus evacuated, the Patient generally recovers. With this View the ancient Physicians irritated the external Parts with stimulating Medicines, or treated them with highly mollifying Cataplasms or Fomentations, in order to divert the Impetus of the Disease towards the exterior Parts.

4. When the Extremities of the obstructed Vessels, with the stagnant Blood contained in them, by Means of Heat, a Mixture of Humours, and long Settlement in a close Place, are chang'd into a pinguious, white, and homogeneous Liquor, a matured Pus is then said to be form'd. By what Signs we may know the Presence of such a Pus, shall be declared hereafter: But when the Pus is too long confined within this close and hot Place, it grows by Degrees thinner, and at the same Time more acrimonious; and as the small resorbent Veins expand their open Orifices in all the Superficies of the Cavity in which the Pus is contained, they will absorb the same, and, by transmitting it to be mixed with the Mass of Blood, induce a purulent Cachexy, the Consequence of which may be a hectic Fever and Phthisis. Besides, the Pus being render'd more acrimonious, will much injure the whole Superficies of the Place in which it is contained; and being at the same Time attenuated, will very easily find Ways for itself into the Panniculus Adiposus, the Consequences of which are often very bad Sinuses and Fistulas, which are all owing to a Neglect of procuring in Season a proper Outlet for the concocted Pus. Hence, also, we clearly understand the Difference between the Resolution of an Inflammation, and the Cure of it by a Suppuration: For in the Resolution of the Inflammation, the Matter of the Disease is, by Means of the vital Forces and proper Remedies, alter'd in such a Manner, as to become very like what is of a laudable and wholesome Substance, and qualified for Circulation through the Vessels with the other Humours, without injuring the Functions; so that in this Case no Evacuation is required. But when by Means of Suppuration there happens a Separation of those Fluids and Solids which were corrupted by the Inflammation, they are converted into a mild Pus, though quite different from the Nature of our Humours; for which Reason, when mixed with them, it creates Disorders every where, and excites Fevers, until it be evacuated from the Body, or secreted from the Blood by a Translocation, and deposited in some Part of the Body, whence it must again be expelled before a Cure can be effected. If appears, then, that an Evacuation of the concocted Pus is required, and that in a speedy Manner, since the longer it stays, the more acrimonious it becomes. What great Mischiefs and Disorders arise from too long a Detention of Pus in an Abscess; we learn from the Observations of Physicians. A Virgin, forty Years old, had her left parotid Gland suppurated; and on the fourteenth Day of the Disease, the Abscess there generated was elevated to the Bigness of one's Fist. And though in the Beginning of the Disorder the Patient was free from a Fever, and took Care of domestic Affairs, yet at last, for want of a due and seasonable Discharge of the Pus, she was seized with a Fever, attended with very bad Symptoms, as Fainting, Nausea, Watchings, and other pernicious Concomitants, which in a few Days put an End to her Life. The Abscess, indeed, broke of itself a few Days before her Death, but little or no Pus flow'd out of it. *Hilden. Obs. Chirurg.*

Chirurg. Cent. 1. Obs. 39. A Child of three Months old had an Abscess upon its right Shoulder, and the Parents not suffering an Incision to be made in the Place, the Tumor began to subside of itself; but the Pus being reformed, was translated to the Pudenda, where it caused a mortal Gangrene of these Parts. *Ibid. Obs. 81.* Numbers of the like Observations occur in Authors, which shew how dangerous it is to suffer maturated Pus to continue long inclosed in a Vomica.

5. As long as the suppurated Place remains closed, it is called a *Closed Vomica*; but after an Outlet, whether spontaneously or by Art, is procured for the Pus, it is called an *Open Vomica*. But the whole Superficies of the Cavity which contained the Pus, was macerated in the same; whence it must of Necessity have been more or less injur'd by it, especially if the Pus were by Delay and Heat rendered considerably acrimonious. An Union, therefore, and Consolidation of the separated Parts, or a Restitution of these which are destroy'd, can never be accomplished before all that Superficies be reduced to the Condition of a pure Wound; and therefore, the half-mortify'd Extremities of the Vessels, with the half-corrupted Parts of the Panniculus Adiposus, must be separated, and every Thing else be done which is requir'd in Wounds. [See the Article VULNUS.] "Ulcers, says *Hippocrates, Lib. de Ulcer.* before they are cleansed will not unite, though their Lips are brought together; nor will they admit of a spontaneous Coalition. Ulcers, also, whose circumjacent Parts are inflamed, can never unite as long as the Inflammation continues. Or if the Parts surrounding the Ulcers appear black, or if there be any putrify'd Blood, or a *Varix* supplying an Influx of Blood into the Place, in such Cases there can be no Coalition before the circumjacent Parts of the Ulcer are made whole and sound."

6. After Depuration, the Ulcer passes into the Nature of a pure Wound, but with Loss of Substance; and therefore a Regeneration of what is lost, and a Re-union of what is separated, are next to be procured.

Maturation is effected by the Application of such Medicines as,

- I. Increase Motion in the Part affected, by cherishing, stimulating, heating, communicating Heat actually or virtually; they have the like Effect on the whole Body, exciting a slight Fever.

All Maturation of an inflammatory Crude Matter into concocted Pus, must be effected by Means of the vital Forces; for soon as these fail or languish, the Formation of Pus is observ'd to cease. And therefore *Hippocrates, Lib. de Ulcer.* enumerates among the Signs of Death the Exsiccation or Drying up an Ulcer, whether generated before, or during the Time of Sickness: And in the last Stage of a Pthisis, the Spit is diminished, and frequently even ceases, for the like Reason. Now, the vital Force is estimated by the Circulation of the Fluids through the Vessels. Since then the Extremities of the obstructed Vessels are to be separated, together with their stagnant Contents, by the Force of the Fluid pressing upon them forward, the speediest Way of effecting this must be by augmenting the Strength and Celerity of the Motion of the Fluids through the Vessels in the Part which requires Suppuration; for in that Case, the Fluid projected through the Vessels will, within a given Time, act upon the obstructed Extremities with stronger and oftener repeated Strokes, and by that Means destroy their Cohesion. Hence an increased Motion is mention'd under the Article INFLAMMATIO as one Condition requir'd to cause a Tendency in a Phlegmon to Suppuration. It is, however, to be observed, that too swift a Motion of the Liquids through the Vessels causes a sudden Rupture of the Capillaries, instead of a gradual Separation; the Consequence of which is a Gangrene, instead of a laudable Suppuration. A just Moderation, therefore, is requir'd, so as that the Motion in the Part be greater indeed than in a State of Health, and yet not excessive. Now, the Heat of the inflamed Part, if it be on the Superficies of the Body, or the Fever, in a greater or lesser Degree, if the Disease have a deeper Seat, will discover whether the Motion ought to be increased or diminished. If the Motion be too slow or languid, it is to be quicken'd and increased, either by the Application of Topics to the Parts affected, or by internal Remedies.

We have observed under INFLAMMATIO, that a Phlegmon is attended with a Fever, either universal or partial, and therefore the Motion is to be increased in the inflamed Part alone, if it be possible, or in the whole System by exciting a slight kind of Fever. Thus we see in a Pthisis, where Pus

is generated every Day, that the Patient is never free from a slow hectic Fever, which is exasperated while the Pus is generating; but diminished during the Expectoration of the same when generated; and therefore it is said by *Hippocrates*, in the Place quoted under INFLAMMATIO, "That Pains and Fevers are more incident about the Time of the Generation of Pus, than after it is generated." Things qualify'd for answering the aforesaid Intention, are the aromatic Gums, Ammoniac, Galbanum, Opopanax, and the rest; in all which there is a moderate Stimulus, and at the same time a good measure of Tenacity, by which they adhere to the Part to which they are applied. And thus by confining their very subtle Exhalations, they cherish the Part as it were in a Vapour-Bath of their own Creation; and, at the same time, by relaxing the Vessels, insinuate their stimulating Aromatic Principle; which is the Reason why such Remedies are of extraordinary Efficacy in all Inflammations, where, on account of too languid a Motion, we are apprehensive of a Scirrhus. All these Medicines, also, which thus by a gentle Stimulus excite a greater Motion in the affected Part, are at the same time virtually or potentially heating, because a greater Heat is the Consequence of an increased Motion of the Fluids through the Vessels, as is demonstrated under the Article INFLAMMATIO. Those Medicines, also, are very serviceable, which are actually hot, provided their Heat be not so intense, as by dissipating the most fluid Part, to convert the rest into a scirrhous Hardness. The best Heat then, in this Case, is of a humid kind, as when Fomentations and Cataplasms are applied wrapt up in heated woollen Cloths, or the like, by which means the affected Part is fomented and cherished with a continual tho' gentle Heat. For, "A hot Suppuratory, tho' not in all Ulcers, is a very good Sign of a safe State, for it softens the Skin, attenuates, and mitigates Pain." *Hippocrat. 5. Aph. 22.* with other good Effects. Why he says, "Not in all Ulcers," is explain'd by *Galen* in his Comment on this Aphorism, where he says that Heat is prejudicial to putrid and rheumatic Ulcers, by increasing the Putrefaction, and attracting Defluxions.

2. Maturation is promoted by the Application of such Remedies as restrain the excited Motion and Heat to the Place affected, by glutinous emplastick Substances, which prevent too great an Exhalation and Dissipation, and by Lenitives correcting an Excess of Acrimony.

The inflamed Place is always hotter than it is usually in a State of Health; and since all the Symptoms of an Inflammation are increased, when it tends to a Suppuration, the Heat must be so too before the Abscess be formed. But by an Increase of Heat the most liquid Part of our Humours is dissipated, whence it must be highly beneficial to apply such Things as cherish the Part affected by a continual Humectation, and restore what is dissipated by the increased Heat. Hence those Remedies must be of extraordinary Service, which are able to retain a large Quantity of Water, and will not easily part with it. But such is the Nature of all glutinous Things, which with Water will form themselves into a ductile Paste, as will all farinaceous Substances, and particularly the Meal of Linseed, which will absorb a vast Quantity of Water. Of Things of the like Nature are formed highly emollient Cataplasms, of which there are various *Formulae*. And if the Place which requires Suppuration be kept Night and Day well wrapt up in them after the Manner prescribed, especially if Care be taken that they may be always warm, all Inflammations which will not admit of Resolution, are generally speedily enough maturated, and converted into good Pus. And since all these Remedies have, besides their moistening Quality, an emollient Virtue, and relax the solid Parts of the Body, they must in an extraordinary measure mitigate the Pain which attends the Suppuration, and is generally pretty sharp; and besides exert their lenient Virtue, by inviscating and obtunding all manner of Acrimony; in which last respect they are of Service, because a mild Disposition of the Humours is requir'd in order to a Suppuration, as we have observ'd under INFLAMMATIO. And since there is great Danger here of a Degeneracy into a Putrefaction, on account of a Stagnation of the Fluids in the obstructed Vessels contiguous to the others, and the increased Heat, for this Reason we take care to select such Topics, as by the Heat of the Part to which they are applied are in a short time so alter'd, as to become of a Nature quite opposite to Putrefaction, or to acquire an acescent Quality. With this View our Surgeons add to their maturating Cataplasms the Meal of Rye, which very soon becomes acescent, Vinegar itself, Sorrel and the like. They, also, use to add fresh Butter, Oil of Linseed, or the like remarkably

markably soft and pinguious Substances; partly because by obstructing the Pores of the Skin, they prevent the Diffipation of the Humid; and partly, because, by these Additions, they take care that those Cataplasms shall not become too soon dry.

Suppuratives, or Remedies effecting a Maturation into Pus, are,

1. Simple aromatic Gums, such as Gum Ammoniac, Bdellium, Elemi, Galbanum, Opopanax, Sagapenum.
2. Emollients, Relaxers, Moisteners.

Formulae to these Purposes occur under the Article ABSCESSUS.

3. A third Means of promoting Maturation is, by moderating the Motion and Temperament of the whole vital Fluid, in such a manner, as that it may neither be too sluggish, nor too much exalted.

This Rule is of the greatest Importance in the Practice of Medicine, with respect to the Cure of internal as well as external Diseases. The accelerated Motion of the Humours causes a Tendency of the Phlegmon to a Suppuration; but too great a Degree of Acceleration, by suddenly destroying the very tender Texture of the capillary Vessels, produces a Gangrene; as, on the contrary, a sedate and moderate Motion is what takes place in the Resolution of an Inflammation. While there are Hopes, then, of a Resolution, the Physician makes no Scruple of checking the Impetus of the vital Liquid, by such Remedies as have been mentioned under the Article INFLAMMATIO, in order to prevent any farther Injury of the inflamed Vessels. But when he perceives by undoubted Signs that a Resolution is impracticable, he knows that a greater Degree of Motion is always requir'd than is natural in a State of Health, for separating the obstructed Extremities of the Vessels, and converting them, with the extravasated Humours, into good and laudable Pus; and is therefore sensible, that such Methods as give too great a Check to the Impetus of the Circulation may oftentimes be prejudicial. In this Case, therefore, either by means of internal Remedies; or the Application of Topics, we are to endeavour such a Regulation of the Circulation of the Humours through the Vessels, as will produce in the Place which is to be suppured a greater Heat and quicker Motion than is consistent with a State of Health, but not in so intense a Degree as by a sudden Destruction of the minute Vessels, wholly to deprive the Part of the Influx of the vital Humours, and by that means induce a Gangrene. And such a Regulation is known to be made, if the Heat in the Part inflamed exceeds that in Health, but not much; if there be a Pain, but not intense; if a moderate Pulsation may be perceived; and if the Tumor, Redness, and other Symptoms of an Inflammation increase indeed, tho' but slowly and by due Degrees. The Signs, then, which are afforded by the very Part affected, indicate whether the Motion of the vital Fluid is to be augmented or diminished. But when the Inflammation is so very considerable as to disorder the whole Body, in such a Case the Greatness of the Fever, the Thirst, with the Dryness of the Tongue, are plain Indications of what ought to be done, in order to obtain that just Regulation which is requir'd. Now there is no universal Suppurative; but different Remedies are necessary, in proportion as the Motion of the Humours is to be increased or diminished. For a hot and juvenile Constitution, a Cataplasma composed of Oatmeal, Milk and fresh Butter, will be proper to be applied to the Place which is to be suppured; for the Melancholic, Aged, and Persons of a cold Temperament, Bulbs of Onions roasted under the Ashes, Galbanum, Gum Ammoniac, and the like Stimulants are added, that by quickning, in some measure, the Motion of the Fluids, the Suppuration may succeed the better, and a Scirrhus be avoided, which otherwise often happens in such a Circumstance, if the Inflammation seizes the glandulous Parts of the Body. The same Regulations are to be observed in internal Inflammations. Thus in the Beginning of a Pleurisy, Bleeding boldly administer'd, even to Fainting, often removes the Disease; but when, for want of timely Assistance, the Physician perceives that the Cure cannot be effected by a Resolution, he knows that the only Way left for a Recovery is, by a Concoction of the morbid Matter, and an Evacuation of the same when concocted by Spitting, Urine, or other Ways, or a Conversion of it into an Abscess. But to attempt a Cure, in such a Circumstance, by Venesection, or other Evacuants, which must of Necessity highly weaken the vital Force, cannot but prove to the Detriment of the Patient, since the Case requires a moderate Fever for the Maturation of the crude inflammatory Matter.

The Use of the Decoction under the Title of *A thin aromatic Liquor to be drank warm*, found under the Article INFLAMMATIO, will answer the Intention of exciting a sufficient Motion.

4. The Intention of Maturation is answered by keeping the Place closed, till all the inflamed irrefoluble Matter be suppured; and this is a fourth Method, which, with those before prescribed, will not fail of procuring good and laudable Pus in the Part affected.

It often happens in a large Abscess, that the Middle becomes soft and yielding to the Touch, when the greatest Part of the inflamed Tumor, which lies more remote from the Center, continues hard. But because many Disorders are consequent on keeping the Place too long closed, after the Generation of the Pus, the Surgeon is therefore often intent on opening such Tumors as soon as he perceives the least Fluctuation. But all the pernicious Consequences observed to proceed from a delayed Evacuation of the Pus depend on the Putrefaction and Acrimony which it acquires by long Continuance, whence, as it increases in Quantity, it works out Passages for itself into the *Panniculus Adiposus*, and produces Sinuses and Fistulas; or being attenuated, is absorb'd by the bibulous venous Vessels, and by this means infects the Blood with a purulent Cacochymy; or, lastly, having its thinner Part diffipated, the rest is condensed, and forms scirrhus Tumors, especially about the glandulous Parts. But as long as the Place remains closed, and the Air has no Access to it, there can be no sudden Degeneracy into a Putrefaction; and while the Pus is contain'd in a Cavity whose circumambient Parts are all hard, it will not easily insinuate itself into the *Panniculus Adiposus*; nor will there be any great Fear of a Resorption of the attenuated Pus, since the arterial Vessels, which are distended by the inflammatory irrefoluble Matter, compress the adjacent Veins. Besides the very Pus itself, which is lodg'd in this half-ripen'd Abscess, affords a very good Remedy for the Resolution of the crude and hard adjacent Parts; while, by its Heat and long Residence, it induces in them a Colliquation, which Manner of Expression is used by *Hippocrates, Lib. de Cap. Vuln.* where he says, ἀνέστη γὰρ τὰς σαρκὰς τὰς φρασθείσας καὶ κοπίσας πῦρ ἡνιμενὲς ἐλάττωται, "for the contused and lacerated Flesh must of necessity be converted into Pus and consumed." For Pus generated in a Wound resolves the semilacerated Parts, and the inflamed Extremities of the Vessels, together with the contained Liquids. It appears, then, of how great Benefit it is to leave the suppuring Place close or unopened, till all the inflamed crude Matter be matured; for in so doing we imitate Nature, which best performs her Work of Suppuration, when the Place to be suppured is closed up. Thus in a recent Wound, where the Parts are divided, after the Flux of Blood is ceased, a bloody Crust is formed upon the Cavity of the Wound, and under this Covert, by a gentle Suppuration, is the Surface of the Wound depurated. Hence *Hippocrates*, who always follows Nature, has established it as a Maxim in Medicine, 6 *Epid.* "Whatever requires Concoction is to be closed up; but the contrary to this is to be kept open and dry'd."

When the Methods prescribed under these four Heads are observed, the Consequence is the Generation of a good Pus; the Qualities of a good and laudable Pus may be found under INFLAMMATIO.

Unless the Matter of the Inflammation be thus changed as is above described, the opening of the Abscess is both useless and dangerous.

If the inflammatory Tumor be opened before it comes to perfect Maturity, no Pus, but pure Blood, is discharged, as is observed under INFLAMMATIO; or if any Part of it be changed into Pus, when that is evacuated, the rest is indurated, and is with more Difficulty, and after a larger Space of Time, brought to Maturation. And besides, when an Incision is made in such Tumors while they are crude, the Pain is much sharper, and the greater the Danger of injuring the subjacent Parts. For in a mature Abscess, the collected Pus elevates the Skin above the Parts which lie under it; and therefore it may be safely opened, since the Point of the Lancet, after perforating the Skin, enters a hollow Place full of Pus; whence there can be no Danger of hurting the Vessels or muscular Fibres. For this reason, *Celsus, Lib. 7. Cap. 2.* treating of Abscesses in nervous Parts, says, "That Abscesses in other Places may be opened somewhat crude, but with respect to those among Nerves, the last Degree of Maturity is to be expected, till the Skin be extenuated, and the Pus brought near to it, that it may be the more easily come at." The same Regard is to be had of these Places where the large Blood-Vessels have their Course; as for instance, the Groin, and under the Arm-pits, where such inflammatory Tumors often occur, and require

quire Suppuration. For no prudent Artift will venture to open fuch Abfcelfes before they are perfectly ripe, fince the great Veffels, or fome confiderable Branches of them, may very eafily be injured, to the vaft Detriment of the Patient, upon fuch Incifion; and how much the Cure is retarded, and the Pain augmented, by opening a crude Abfcels, the Observations of the beft Surgeons will inform us. A Man of Quality, after a Fever, had an inflammatory Tumor under his Arm-pit, which was very painful. The Surgeon, who had the Care of it, defpifing the Advice of wifer Perfons, as foon as he perceived a flight Fluctuation in the Tumor, made a deep Incifion in it with his Lancet, which was very painful to the Patient, who received no Relief from the Difcharge of a very fmall Quantity of Pus on that Occafion, but, on the contrary, had his Fever and Inflammation increased. After long Application of the moft emollient Cataplafms, the Place was at laft healed; the Cure of which might have been accomplished in a few Days, if the Tumor had not been opened in a rash manner before perfect Maturation. *M. de la Motte*, in his *Traité Complet de Chirurgie*, Tom. I. gives feveral Inftances which confirm the Truth of this Observation. So I have fometimes feen venereal Buboës too foon lanced, for fear of a Lues, on account of the long Retention of the Pus; produce very troublefome Confequences; by which means the Cure has been protracted many Months, while the Surgeon was obliged to ufe Corroſives, to confume what the Pus, if left alone in its clofed Cavity, would moft certainly have refolved in a few Days. It is to be obſerved, however, that in Abfcelfes there often happens to be fomewhat of a Hardnefs in their outer Margin, when their other Parts are perfectly maturated. But when fuch Tumors break spontaneously, and the Pus is by that means all evacuated, thefe hard Reliques uſually waſte away and vaniſh; and therefore the Opening of fuch Tumors as thefe would have produced no bad Effects, becauſe they were already fuppurated in almoſt every Part.

A Softnefs of the Part, a Fluctuation of the Tumor when preſſed, its Whitenefs, a Remiſſion of the Pain, Heat, Rednefs, Tenſion, Pulſation and Fever, the Head or Top of the Tumor mucronated, and a Weight ſucceeding the Pain, are Indications that the Pus is maturated, and diſpoſed for Evacuation.

As it is dangerous to open the fuppurated Place before perfect Maturity; and, on the other hand, the Confequences of too long a Retention of the Pus in a cloſed Place, are many and pernicious, the greateſt Attention is due to thoſe Signs, which ſhew, that the Pus which is now formed and collected in the Abfcels, may be diſcharged with Advantage. Now theſe Signs are deduced from an Alteration of the Phænomena, in the fuppurated Part, while the irrefoluble inflammatory Matter is changing to perfect Maturity.

A Softnefs of the Part. It has been demonſtrated under the Article INFLAMMATIO, that in a Phlegmon there is great Hardnefs proceeding from a cloſe Compactnefs of the Solids and Liquids together, becauſe the condenſed Blood ſettles in the Veſſels, which remain as yet entire, tho' obſtructed. But when the diſtended Veſſels, while the Phlegmon is under Suppuration, are broken, the Liquids extravafated, and the tenderſt of the ſolid Parts ſuffer an Attrition, Reſolution and Change into Pus; the Hardnefs muſt of neceſſity be ſucceeded by a Softnefs, ſince we have now a fluid and not a hard and crude inflammatory Matter under the Skin. Bodies may; alſo, be vaſtly hard, tho' conſiſting for the moſt part of Fluids, provided they are contained in diſtinct Veſſels, and are not confluent into one Place; as we find by Apples, Pears, Turneps, and ſome other Fruits, which, tho' they contain an extraordinary Quantity of Juice, are yet oftentimes very hard; but when they are bruifed, they become a very ſoft Pulp, as they do, alſo, when placed pretty near the Fire; for then the elastic Air, latent in theſe Fruits, being rarified with the Heat, breaks the Veſſels, which cauſes an Effuſion of the Humors, by which a very hard Apple may within a Quarter of an Hour become ſo ſoft as to be almoſt fluid; and the ſame happens, if the Continuity of the Veſſels in theſe Fruits be diſſolved by means of Putrefaction.

A Fluctuation of the Tumor when preſſed. The Surgeon, in order to aſſure himſelf that the inflamed Place is equally fuppurated, uſes to apply his Fingers to the Tumor, and gently preſſes it, now on this, now on that ſide; and if while he preſſes it on one ſide, he perceives an Undulation of the contained Humour on the Side oppoſite, he ſatiſfies himſelf that the Tumor is ſufficiently maturated in all its Parts. But where ſuch a Fluctuation is not perceived, tho' it appears to be ſoft on both ſides, there may be ſtill ſome crude inflammatory Matter in the middle of the Tumor, which may prevent the Impreſſion made on one ſide from being commu-

nicated to the oppoſite Part. That there are ſuch Abfcelfes, which are in a manner divided into two, by remaining crude in the middle, while the outer Parts are maturated, we learn from ſurgical Obſervations. And the ſame was obſerved by *Hippocrates*, *Epid.* 6. where he ſays, that "Tubercles externally protuberant, elevated to a Head and ſtagnated, equally maturated, neither hard in the Extremities, bending downward, nor biſid, are of the better ſort; but the contrary to theſe are bad, and the moſt contrary worſt of all." And *Galen*, in his Comment on the Place, ſays, that "in biſid Abfcelfes, the middle is never without Fault, as being crude [*ἀνενόητος*]" "unſuppurable and hard." It is true indeed, that a mature Abfcels has this Fluctuation in common with Aneurifms, and ſome ampullous Swellings containing Humours; but an Abfcels is very well diſtinguiſhed from them, in that it is preceded by an Inflammation. It is plain enough, that the Fluctuation of a preſſed Tumor cannot well be perceived, unleſs the Tumor be eminent; for while the Abfcels is latent in the *Panniculus Adipoſus*, deeply ſituated among the Muſcles, it is not eaſily diſcovered by this Mark of Fluctuation.

Whitenefs. It has been demonſtrated under the Article INFLAMMATIO, that a Rednefs ought to accompany an Inflammation, becauſe the obſtructed and dilated Veſſels are replete with a red thick Blood. But when all that thick inflammatory Matter, together with the obſtructed Extremities, are changed into a white and equal Pus, the Cauſe of a Rednefs no longer exiſts. Beſides, while the Pus from within, and the moſt emollient Fomentations or Cataplafms from without, are macerating the Skin, it decays in a manner, and acquires a white Colour; for when a Plaſter of any ſort is applied, the Skin being under a continual Fomentation from the reflected Vapour of the exhaling Liquid, becomes thoroughly white in a few Days, and being inſenſibly waſted and extenuated, appears at length of the Colour of the ſubjacent Pus. We ſee then the Reaſons why a white Colour is juſtly reckoned a Sign of the Maturity of an Abfcels. *Celfus*, *Lib.* 5. *Cap.* 28. treating of Abfcelfes, ſays, "that ſuch as become ſofter on a ſudden, are of the moſt favourable Sort; as are thoſe which have their red Colour fading into a white; and theſe are Signs that Pus is actually forming; for a Tumor and Rednefs were long pre-exiſtent."

A Remiſſion of the Pain, Heat, Rednefs, Tenſion, Pulſation and Fever. All theſe Symptoms of an Inflammation are produced by the Blood impelled by the vital Force, and with an increased Impetus and Celerity preſſing upon the obſtructed Extremities of the Veſſels, an Account of which is found under the Article INFLAMMATIO. When, therefore, the Extremities of the Arteries, which were obſtructed are by the Suppuration, ſeparated, the Cauſe of theſe Symptoms ceases, and conſequently the Symptoms themſelves diſappear, or at leaſt are very much diminished. Hence *Hippocrates*, 2 *Aph.* 47. already quoted, juſtly obſerves that "the Pain and Fever are more intense at the Time when the Pus is generating, than when it is generated." It is, however, to be obſerved, that the Pain is ſometimes very acute, tho' the fuppurated Part be perfectly maturated, becauſe the Collection of Pus, which is every Day augmented, diſtends the incumbent Skin, and more and more dilacerates it; but this Pain has its Original, it is plain, from another Cauſe; and when the Abfcels breaks ſpontaneously, or when perforated by the Lancet, it ceases immediately. *Celfus*, therefore, in the Place before quoted, after enumerating the Symptoms by which an Abfcels is known to be crude, preſently ſubjoins, "But when theſe are remitted, and the Place itches, and appears whitith or ſomewhat livid, the Suppuration is mature." But we muſt here obſerve, that tho' the Skin, when the Abfcels is mature, be generally whitith, yet the cutaneous Veſſels are ſometimes compreſſed by the diſtending Pus to ſuch a Degree, that all vital Influx and Efflux of the Humours being quite ſuppreſſed, the Skin begins to gangrene, and acquires a ſomewhat livid Colour. The like Signs of a mature Abfcels we have in *Ægineta*, *Lib.* 4. *Cap.* 18. where, after enumerating the Signs of an inflamed Part tending to Suppuration, he tells us that "After the Abfcels is come to its Height, many of theſe Signs are mitigated, the Part is affected with a prickling kind of Itching, a Numbnefs is felt, and the Tumor riſes into a ſharp Head, which is ſoft, and yielding to the Touch, and has its Surface near the Head abraded [*ἀνενόητος*]." Here he remarks that the Skin on the mucronated Top of a mature Abfcels ſecedes *per Strata*, by a ſort of Excoriation.

The Top of the Tumor is mucronated. When the Phlegmon begins to mature by Suppuration, there is almoſt conſtantly perceived a Softnefs and Fluctuation in the Middle, tho' the exterior Parts remain ſtill hard. For ſince the moſt emollient Cataplafms are uſually applied to promote the Suppuration

ration, the relaxed Integuments in this Place will give way to the Pus as it gradually increases, and be extended beyond the equable Superficies of the Tumor, because the greater Hardness of the rest of the Parts prevents their easy Extension. For this Reason the mucronated Top of the Tumor will be eminent above the other Parts; and in this Place, the Integuments being gradually distracted and weaken'd, the Abscess will break spontaneously, or may be very safely open'd with the Lancet.

A Weight succeeding the Pain. We have already observed, that the Pain increased as long as the inflamed Part was under Suppuration; for the Extremities of the obstructed Vessels must be separated by Degrees, and, consequently, when the nervous Fibres, dispersed through the Coats of the Vessels, are just about to break, the Pain must be sharpest, but will cease after an intire Rupture. But when the Abscess is broken, there will appear a Collection of Pus without the Vessels, lodged either in a Cavity preternaturally produced, or in a natural Cavity enlarged, and this Pus with its Weight presses upon the Parts on which it settles. For a Person in Health, tho' he feels not the Weight of his own Body, yet, as soon as there is a Collection of extravasated Humours, he will immediately be sensible of their Weight. When the Vessels are broken by a violent Contusion, and there is a Collection of Blood in the *Panniculus Adiposus* under the entire Skin, the Patient presently complains of an unusual Heaviness of the Part. When the Legs are distended with an Accumulation of Serum in the Anasarca, the miserable Patients move their Limbs as if they were oppressed with Weights of Lead. But this Sense of Weight takes place only where there is a considerable Suppuration, as is easy to imagine; and in internal Diseases the principal Sign of a latent Abscess is the Sense of a dead Weight, succeeding an acute Pain in the affected Part; as it happens in a Pleurisy, Peripneumony, and the like Diseases.

If the Pus be then suffer'd to remain long in a close Place, it becomes thin and acrimonious, putrefies, increases, corrodes and consumes the neighbouring Parts; and by its Bulk, Weight and Motion, creates various kinds of Sinuses and Fistulas in different Parts, particularly very pernicious ones in the *Intestinum Rectum*; or else, the thinner Part being dissipated, the rest becomes indurated, and forms hard Tumors, especially about the Glands; or lastly, being absorbed by the lymphatic Veins, or Blood-Vessels, through their corroded Orifices, it is mix'd with the Blood, which it contaminates, and forming Collections in the Viscera, corrupts those Parts, disorders their Functions, and produces numerous Diseases, and those very severe and dangerous.

When it appears, by the Signs before enumerated, that all the inflammatory crude Matter is matured, and converted into good Pus, that Pus is as soon as possible to be evacuated; since after it is arrived at its ultimate Perfection of Whiteness, Thickness, Smoothness, Equability, and Want of Smell, it begins to degenerate, and alters every Day for the worse. For it settles without the Vessels, and is no longer subject to the Laws of Circulation, but stagnates; and through the Heat of the Place, undergoes a spontaneous Change, by which it tends to Putrefaction. For tho' in a close Place, where no Air is admitted, all animal Parts are slower of Corruption, yet they putrefy. Besides, a greater Thinness is observed to be produced in our Humours, by means of Putrefaction; for Blood discharged from the Veins immediately concretes, but when afterwards it becomes putrefy'd, it is entirely dissolved. The Bile in the Gall-bladder in sound Animals, which are at rest, is of a thick Consistence, but in putrefying dissolves into a thin Substance. For the same Reason Pus, if too long retained in a mature Abscess, loses that Unctuousity, and balsamic Viscidity, in which Respect it pretty well resembles Cream, and is changed into a thin, ichorous Fluid; and this Thinness, which increases in putrefying, is always attended with a greater Acrimony. The whole Superficies, then, of that hollow Place in which the Pus render'd thus thin and acrimonious, is contain'd, being continually soaked in a thin and corroding Ichor, the tender Extremities of the Vessels which have their open Orifices disposed on the Surface will be destroyed, and the extravasated Humours corrupted, whence the Sides of the containing Cavity being corroded, the Extent of the Abscess will be enlarged, and the Quantity of the Pus increased by the Conflux of the Humours through the corroded Vessels. Now we have numberless Instances from the most approved Authors which prove, that the solid Parts of the Body have been corroded by Pus too long suffer'd to settle, and become putrefied. We read in *Schenkius, Obs. Medic. Lib. 2.* that after an Empyema the Lungs have been consumed to such a Degree, that there have been scarce any Remains left of that noble Bowel. The same Author gives us another Example, where not only the Pericardium, but

the very Substance of the Heart itself, tho' of so solid a Contexture was corroded by the Pus. And it is a general Complaint and Observation among Surgeons, that solid Bones have been corroded, and converted into a Caries in deep Suppurations. Hence we see the Reason why *Hippoc. 7 Aph. 47.* says, that those who are affected with an Empyema, and from an Operation of Cutting or Burning have a Discharge of white and pure Pus, recover; but if the Pus be bloody, feculent, or fetid, the Patient dies. And in the next Aphorism he tells us, that those who labour under a Suppuration of the Liver, and being burnt for the same, have an Efflux of Pus resembling Amurca, or Lees of Oil, die of the Disease; for such a Pus indicates a Corrosion of the very Substance of the Viscera, the Effects of which must, of Necessity, be fatal.

Besides, since an Inflammation is generally seated in the *Panniculus Adiposus* [See INFLAMMATIO.] the Suppuration of it must have the same Situation. But the extraordinary tender Contexture of this Membrane makes it very easy to be corroded by the Pus, when grown acrimonious; and even the very Weight and Bulk of the Pus, by long Settlement, in so easily dilatable a Substance, will distend it, and work out for itself new Ways and Sinuses of a very dangerous Nature. It has been demonstrated under the Articles *CAPUT* and *THORAX*, that the Ingress of the Air into the *Panniculus Adiposus* has caused such an Inflation of it, as to distend the whole Body, whence it appears that there is a Passage from every Part of this Membrane, through almost all its Circumference. And I have observed, that when the Parotid Gland has been suppurated, for want of procuring a Vent for the collected Pus, the same has made a Passage for itself in the *Panniculus Adiposus*, descending by the Neck, Shoulder, and Arm to the Flexure of the Cubit, where it corrupted the Ligaments to such a Degree, as to cause an incurable Ankylosis. A deep Inflammation near the Joint of the Thigh was succeeded by an Abscess, and when the Pus, which lay latent under the large Muscles, could not be discharged, it made its Way downwards, and formed a sinuous Ulcer, which extended itself through the whole Length of the Thigh and Leg; and, in the End, by inducing a purulent Cacochymy, after trying in vain all manner of Remedies, proved mortal to a very hopeful young Gentleman. If it be, also, consider'd, that the Pus, which is thus collected in the *Tunica Cellulosa*, being attenuated by Heat and long Settlement, is frequently incumbent on some of the strongest Muscles, we shall easily be convinced, that when it is pressed by the Motion of these Muscles, it may be propelled through all the neighbouring Places, and by that means be the Cause of deep Sinuses, and very bad Fistulas, especially when in creeping through the *Panniculus Adiposus*, it insinuates itself into the Interstices of the Muscles. And the greater the Thickness of the *Panniculus Adiposus*, and the more numerous the Strata, or Lays, of the Muscles, incumbent on one another, the worse are the Sinuses formed by the Retention of the Pus; for which reason, in the Abdomen, because of its extraordinary Fatness, intermixed with the various Strata of the abdominal Muscles, we meet with such troublesome Sinuses and Fistulas.

But there are no worse Sinuses and Fistulas, from too long a Retention of Pus, in any Part of the Body, than about the *Intestinum Rectum*. For since that Part is appointed as a Passage for the very grossest of the Fæces, it was necessary that it should be easily distended all around its whole Compass, for which End it is surrounded with a very soft and copious Fat, whence it is that Pus, if long retained in an Abscess form'd in this Place, will be capable of producing very deep Sinuses. "For the putrid Matter [omitted] corrodes the soft Parts, says *Hippocrates, de Fistulis Cap. 1.* and as the *Intestinum Rectum* is humid, and of a soft Flesh, it feeds in it till the Tubercle be broken, and the Parts beneath towards the Anus appear putrefy'd." And if the *Intestinum Rectum* itself should happen, also, to be corroded, the Pus will be capable of diffusing itself through the cellular Membrane and mucilaginous Cavities of the *Intestinum Rectum*, and produce very tedious and troublesome Disorders, which are much increased by the Fæces defiling every thing in their Passage this Way with their Impurities. *Hippocrates*, in the Book before quoted, being apprehensive of such bad Consequences, directs us not to wait till the Tubercles in those Places be quite mature, but speedily to open them while they are yet crude.

Or else the thinner Part being dissipated, the rest becomes indurated, and forms hard Tumors, especially about the Glands.

This is sometimes, tho' not often, the Consequence of too long a Retention of Pus, especially when the Abscess is treated with very hot Remedies, without a Mixture of Emollients and Moisteners. Thus it is usual for Women to expose their suppurated Breasts to the Heat of burning Coals, to avoid the Opening of a mature Abscess by the Surgeon's Lancet. The thinnest Part of the Matter is by this means evaporated, and

the inspissated Remainder hardens into a Scirrhus, and the Patient lives for the future in continual Fear of a Cancer, which is often the Consequence. The like Hardness often remains after opening venereal Buboës before their due Maturation, or when they have been treated with too heating Remedies. Very good in such Cases is the Advice of *Galen, M. M. Lib. 14. Cap. 4.* where treating of the Cure of an Erysipelas and Phlegmon, when there was Reason to apprehend a Scirrhus consequent upon these Disorders, he says, "Whoever should attempt to evacuate them by violent drawing and discurfve Remedies, instead of endeavouring to soften and dissolve them by moistening and heating Medicines, will flatter himself for the first Days, that the Patient is in a very fair Way of Cure; but the Disease will leave Reliques which are incurable, since the thinner Parts of the morbid Matter being dissolved, what remains turns to a kind of stony Concretion." *2. Lib. 1. Cap. 1.*

Or, lastly, being absorbed by the lymphatic Veins and Blood-Vessels, through their corroded Orifices, it is mixed with the Blood, &c. It is observed under the Article VULNUS, that Pus in Wounds is generated from an Effusion of the Humours through the Extremities of the Vessels, their inspissation by their Settlement, and the Resorption or Diffipation of their most fluid Parts. For if the Wound be deterged every Hour, you will find no Pus, but only a thin Humour, which in the Space of twelve Hours will be converted into Pus. The most fluid Part of the extravasated Humours seem indeed to be rather reformed by the Mouths of the Veins, than diffipated outwards, because good Pus is seldom generated, unless the Wound be well covered with Plaisters or Ointments; and over all the Surface of the Wound are dispersed the gaping Orifices of Veins, as well as Arteries, which absorb the contiguous Humours with the same Force as the smallest Glass Tubes attract Liquors, convey them to the larger Veins, and so mix them with the Blood. By the like Method of Reasoning, Pus long retained in an Abscess will be spontaneously attenuated, and being deprived of its mild and gentle Nature, will become acrimonious; and being reformed by the contiguous Orifices of the Veins, will infect the Blood with a purulent Cacochymy, productive of a hectic Fever and Phthisis. That Pus collected in a Cavity of the Body is capable of a Resorption by the Orifices of the Veins, and by that Means of being mixed with the Blood, we are convinced by Multitudes of Instances. A Person of Quality, in a Battle, was shot through the Elbow with a leaden Bullet, by which the Bone of the Elbow was fractured, and the Consequence of the Wound was a continual Fever, attended with many very bad Symptoms, and a considerable Abscess, which occupied the Place of the Wound and the adjacent Parts. When it was agreed among the Surgeons to open the Abscess, which was now grown mature, the Patient was seized with a violent Diarrhœa, and immediately the Tumour of the wounded Part quite vanished, and a vast Quantity of Pus was observed to be evacuated by Stool. And whenever afterwards the Wound happened to swell with an Accession of new Pus, it was in like manner evacuated by a supervening Diarrhœa; and by this Means, the Wound, tho' dangerous enough, was cured. *Belleste, Chirurg. d'Hôpital.*

• A Man who had received a Wound which perforated the Abdomen, was observed by *Scultetus, Armament. Chirurg. Observ. 61.* to have his Urine mixed with a great Quantity of Pus, the Excretion of which was succeeded by a Mitigation of all the Symptoms. *Galen, de loc. affect. lib. 6. cap. 4.* observed an Imposthume of the Lungs cleansed and purged off by Urine, and another in the Thorax which had its Expurgation through the Intestines by Way of Stool. A Vomica of the Lungs, with a Distortion of the Spine, was cured by a purulent Dysentery, which lasted several Days, tho' the great Weakness of the Patient, and a Multitude of other very ill Symptoms, had defeated all Hopes of Recovery, in the Opinion of the most experienced Physicians; and, what is more surprising, the Patient, who was a young Woman, was by this Means not only rescued from imminent Danger of Death, but had the Distortion of her Spine spontaneously removed. *Memoires de l'Acad. des Sciences, An. 1731.* In the Small Pox, a Resorption of the Pus is usually observed to excite very bad Fevers; after which there is frequently a Congestion of that Pus in some Part or other of the Body, where it rises into Tumours, which opened, discharge true Pus, and sometimes degenerate into very bad Ulcers. We meet with a vast Number of Instances, in the most credible Authors, which assure us that Pus too long retained in a close Place may be absorb'd by the Veins, and mixed with the Blood, and afterwards be deposited in various Places of the Body; and at the same time it appears that the Event is very doubtful in these Cases, depending on an Uncertainty, whether this Congestion of Pus secreted from the Blood, happens to fall on this or that Part of the Body. For tho' in the Ex-

amples just related, the Pus was, very fortunately for the Patients, discharged by Stool and Urine, yet the Viscera are always in great Danger of being corrupted by some pernicious Collection of the purulent Matter, or it is to be feared that the whole Mass of Blood with which it is mixed, should be so depraved by it, as to give Occasion for the Production of incurable Diseases. For the Collection of Pus in the closed Abscess will scarce be reformed, unless it be first reduced to a considerable Degree of Thinness and Acrimony; and after it is mixed with the Blood, and flows through the Vessels, it acquires a still greater Acrimony, the Consequences of which may be very bad Fevers, Corruption of the Blood, and other Disorders without Number. From this Cause it so often happens in the Small Pox, that when the Patient is judged to be out of Danger, a high Phrenzy is on a sudden excited, and succeeded in a short time by Death, the Pus being reformed into the Blood, and its Course turned upon the Brain. We have an Instance to this Purpose in *Hippocrates, 7 Epid. Ægr. 30.* where he describes the Case of one who laboured under an internal Suppuration, and by the Signs, which were a Stertor of the Breast, and a Difficulty of Respiration, seemed to have a great Collection of Pus within. "About the sixtieth Day, he tells us, the Left Eye was blinded by a Tumour, without Pain, and not long after the Right Eye, also, was in the same Condition, and the Pupils of the Eyes became very white and dry, and in a short Time after this Blindness, not more than seven Days, the Patient died in a Stertor, and a high Delirium." In this Case it seems very likely that the reformed Pus had by an unhappy Metastasis, its Course first diverted upon the Eyes, and from thence upon the Brain, where it proved fatal. The Diseases proceeding from these purulent Collections are various, according to the different Viscera where they settle themselves, while by pressing on the Parts, and corroding them by a greater or lesser Degree of Acrimony, they either disturb, or wholly destroy their Functions. It appears, also, from the Premises, that the highest Prudence is necessary in such Cases; for an Abscess opened too soon, before all Things have acquired their due Maturity, may be very detrimental to the Patient, as has been shewn before; and again, if a Vent be not given to the mature Pus, very dangerous Disorders may possibly be the Consequence. The Signs of perfect Maturation are already given under this Article.

It is this Resorption of Pus, which proves so often fatal to those, who by the Amputation of a Limb, or Exsection of an Ancurysm, have received a large Wound, which generates every Day a great Quantity of Pus. For if the Pus, which is collected on the Surface of the Wound, be frequently deterged, the Body is deprived of almost all its Nutriment, which passes off this Way, and so the Patient wastes away in a Marasmus. On the other hand, if the Pus be left too long on the Surface of so large a Wound, it is reformed, and induces a purulent Cacochymy, with all the Mischiefs which may proceed from it, unless by drinking Decoctions of detergent Vulneraries, great Part of the Pus mixed with the Blood be evacuated. Sometimes the Patient is too weak to bear the drinking a sufficient Quantity of these Decoctions, but becomes hydropic from their Use, in which Circumstance he very seldom recovers.

By the same Methods with which Maturation is procured, are the Integuments of the suppurated Place, both above and beneath, together with the adjacent Parts, mollified, attenuated, and relaxed.

When an Inflammation cannot be cured by a kindly Resolution, Suppuration only is to be chosen, for obtaining which the six curatory Indications mentioned in the Beginning of this Article are required. For, in the first Place, the inflammatory crude Matter is to be reduced to perfect Maturation. Of this we have already treated, as also of the Signs by which we are assured that the Maturation is accomplished; and we have just now enumerated the bad Consequences which are to be dreaded, when a mature Abscess, full of good Pus, is left too long closed. The second curatory Indication was, that the Place which required Suppuration, together with the adjacent Parts, may be mollified.

An Inflammation generally affects the Membrane called *Panniculus Adiposus*, or *Tunica Cellulosa*. [See INFLAMMATIO.] The thick Skin, with the Epidermis, are incumbent on this Membrane, almost throughout the whole Surface of the Body; and they must either be perforated, or break of themselves, to give a Vent to the mature Pus; hence it appears to be highly requisite that these Integuments should be relaxed and mollified. But the same Remedies which have been already recommended for the Maturation of an inflammatory crude Matter will at the same time have the Effect here required. For all those emplastick and glutinous Substances, whose

whose Use is directed, above for Maturation, have also the Virtue of relaxing and mollifying the solid Parts of the Body. By the Application therefore of such Cataplasms or Fomentations to the suppurating Place, the Integuments are macerated, and as it were wasted away, and the Pus which acts on the internal Superficies of the Skin, at the same time soaks and macerates it on that Side, in which Effect it is also much assisted by that maturing Heat which resides in the Part under Suppuration. There seems to be nothing, then, further required, in order to answer the second curatory Indication.

The Resistance of the Integuments being diminished by the Remedies just now prescribed, the formed Pus is expelled or attracted forth by maturing Remedies.

The Pus now supposed to be formed, and lodged in a close Place, where it increases daily, and is pressed by the contiguous Parts, will, according to the common Law of all Fluids, tend to the Parts where is the least Resistance. If the Integuments then, by Application of emollient Medicines, are so debilitated, as easily to give Way to the distending Pus, this latter will elevate the Integuments, and bend its Force outwards, instead of working out for itself sinuous Ways in the Panniculus Adiposus. All those Remedies, therefore, which are employed in the Maturation of the inflammatory crude Matter, at the same time attract forth the formed Pus; for it is demonstrated under the Article OBSTRUCTION, that the Nature of Drawers, or attractive Remedies, is to diminish the Resistance in the Place, whither the Derivation is designed to be made.

Then moderately acrimonious, emollient and subpinguious Medicines, mixed together, are to be applied, that the dead and wither'd Integuments may the more easily, and without Pain, be opened,

A Passage must be procured for the Discharge of the Pus collected under the Integuments, while they are entire. A Division, therefore, must be effected of these Parts, either spontaneously and by a gradual Dilaceration from the distending Pus, or by the Surgeon's Lancet. That this Division may be performed either way with as little Pain as possible, highly emollient and subpinguious Topics are to be applied, by which the Integuments are wasted and withered to such a degree, as to be in a manner dead and insensible. When, therefore, the mature Abscess begins to gather to a Head, or becomes mucronated, it is customary with the Surgeon to anoint the Top with a Feather dipt in Basilicon, or some other very emollient Ointment, by which the Integuments in this Place may be mollified to an extraordinary Degree, and the Fibres being by this means relaxed, the Pain is diminished, [See VULNUS.] which in this prominent Part is usually pretty sharp. And sometimes these Emollients are mixed with moderately acrimonious Medicines, such as Leaven of Bread, Venice Soap, Honey, and the like, which will produce a sort of Deadness in the macerated Integuments, and facilitate their Rupture. Thus Women employed in Washing, whose Hands are all the Day long macerated in soapy Lye, have the Skin of their Fingers white and almost dead, and very subject to Excoriation. Formulæ for this purpose, of rendering the Integuments thin and less sensible, occur under the Article ABSCESSUS; which see.

The Remedies before proposed having had their due Effect, in the next Place, the Surgeon, after dexterously pressing up the Pus into the most elevated Part of the Tumor, is to enter his Incision-knife into the inferior Part of the whitest, softest, and most eminent Place, till the Pus appearing, assures him, that he has penetrated far enough; then let him enlarge the Wound upwards, by elevating the Knife, or passing the Point thereof to the opposite Side, divide the intermediate Integuments, avoiding the Fibres and Vessels; this done, let the redundant Pus be gently and successively expressed, and the Place kept guarded from the Air, and unmolested with Tents.

When the whole Compass of the suppurated Part is found to be perfectly mollified, and we are assured by all the proper Signs, that Maturation is completed; in this Circumstance, if the Integuments will not break spontaneously, a Discharge for the Pus is to be procured by Art, in order to avert those mischievous Consequences which have been mentioned. In glandulous Places, Abscesses are suffered to remain longer than in other Parts, because they are more in Danger of a Scirrhus, if any thing should perhaps remain unmaturing. Celsus, therefore, speaking of opening Abscesses, gives the following Directions, *Lib. 7. Cap. 2.* "If the Pus

"be mature, and in the Groin, or under the Arm-pits, a Section is seldom to be attempted; nor in any Place, where the Abscess is but moderate; nor where it is but superficial, or even seated in the Flesh, unless the Weakness of the Patient obliges us to hasten the Cure. In these Cases, it is sufficient to procure a spontaneous Discharge of the Pus by means of Cataplasms, for the Place which has not felt the Surgeon's Instrument, may commonly be healed without an Eschar." Here Celsus prefers a spontaneous to an artificial Opening of an Abscess, not only in glandulous, but also in other Parts, principally on account, it seems, of the Danger of Defecation by a Cicatrix. But a Wound inflicted by a Lancet, will, however, admit of a more decent Consolidation than a larger Opening and Secession of the Skin effected by a Corrosion of the contained Pus. And the Reason why Celsus often observed a deforming Cicatrix resulting from the Operation of the Lancet, plainly appears from what we read in the same Place. For where the Pus happen'd to be deeply seated, he directs the Abscess to be open'd with a red-hot Iron; and in another Case, where the Skin is extenuated to a very great Degree, he orders it to be all cut off above the Pus; and he would have the same done, if the Skin be pale, for then, he says, it is dead, and will never be of any Service, and therefore is fitter to be cut off.

In giving vent to the Collection of Pus, in a mature Abscess, Regard is to be had, as much as may be, to the Ease of the Patient, and the Security of the subjacent Parts; for no more than the common Integuments, under which the Pus is lodged, and which are elevated and distended by it, are to be divided. It is usual for the Surgeon, in this Case, very gently to press the suppurated Tumor all around, to cause the Integuments to recede as much as possible from the subjacent Parts; and since it generally happens for some Part of the Tumor to be prominent, or gather'd to a Head, as was before observ'd, the same is especially to be enter'd by the Incision-Knife, for in this Place the Integuments being much extenuated, and in a manner mortify'd, may very easily, and almost without any Pain to the Patient, be divided; especially if the Head or mucronated Top be macerated before-hand, by the Application of subpinguious and acrid Medicines, as before prescribed. The Incision is to be made, as much as conveniently may be, in the lower Part of the Tumor, that the Pus may find a Vent through the Opening, by Virtue of its own Gravity, but yet so as to consider the Situation which the affected Part will have after the Aperture. "We are to endeavour, says Celsus, in the Place before quoted, that the very Bottom of the Sinus may discharge itself, that no Humour may remain and settle within, and so corrode and create Sinuses in the sound and neighbouring Parts." But if the Apex of the mature Abscess be in a superior Place, and the Integuments appear softest and whitest, in the same part, it is better to make the Incision there than in another, tho' inferior Place, where the highly sensible and inflamed Skin cannot be divided without extreme Pain, and oftentimes very troublesome Consequences. For after the Aperture is made, the Pus which is left in the Abscess may, by changing the Situation of the Part, or by a gentle Compression with Bolsters and a proper Bandage, be prevented from working out to itself, by its own Weight, sinuous and fistulous Passages in the Panniculus Adiposus.

As soon as the Knife has penetrated the Integuments, it plunges in the Midst of the Pus, which will immediately begin to vent itself by the Sides of the Instrument, especially if the Integuments are stretched by the subjacent Pus from a gentle Compression of the contiguous Parts. Where there is a considerable Quantity of Pus, it is best to plunge the Knife to a good Depth, that afterwards with elevating its Point by a neat and equable Section, the Wound may be enlarged. And for the same Reason, if it may be done with Safety, the Instrument is pass'd through the Middle of the mucronated Head of the Abscess to the opposite Side, and then, by elevating it, the incumbent Integuments are at once divided, and a very large Opening made, which can never be the worse for the Patient: For unless the Orifice be thus made very wide, it often happens that considerable Parts of the Membrana Cellulosa, almost gangrenous, will be protruded together with the Pus, and obstruct the Opening, so as to render a new Section necessary: Besides, when the Pus is evacuated, the Integuments, which were before in a State of Tenseness, become contracted by their own proper contractile Force, and very much diminish the Aperture. It may pass for a general Rule, therefore, when an Abscess is to be opened, to make the Wound as wide as may be done without danger of hurting the subjacent Parts. But when the Pus is lodged just under the Skin, every one sees that there is no Necessity of plunging the Knife to any considerable Depth.

Sometimes

Sometimes the Pus happens to lie pretty deep, and then more Caution is required; for it would be a Disgrace to make a fruitless Incision into an Abscess, and it is often dangerous to thrust the Point of the Knife to a considerable Depth: On such Occasions, the Surgeon has a fair Opportunity of shewing his Skill and Dexterity; for unless he be well acquainted with the Situation of the Parts from Anatomy, he will always be either foolishly timorous, or rashly venture on Danger through Ignorance: For since an Inflammation has its Seat almost constantly in the *Panniculus Adiposus*, as was before observed, and there insinuates itself among the Muscles on every Side, it appears that the Pus may be very deeply lodged, though not the least Defect be observed in the Integuments. The antecedent Signs of an Inflammation, with the succeeding Indications of a Suppuration, the Fluctuation of the Pus, perceptible when the Part is pressed, will afford some Light in such obscure Cases. That celebrated Surgeon *De la Motte*, *Traité complet de Chirurgie*, Tom. I. has a remarkable Instance to this Purpose: A Woman, after the Suppression of the Lochia, had for nine Months been confin'd to her Bed, and was forced to lie with her Body incurvated in a most miserable Manner, in order to alleviate, in some Measure, her racking Pains; for she lay with her Face to her Knees, and her Heels went back towards her Buttocks, and in that Posture she continued Night and Day. As the Pain lay chiefly in the Hypogastrium, half Way between the Navel and the Pubes, the Place was very carefully examined by this excellent Surgeon, who perceived some Kind of Undulation, tho' there were no Hardness nor Tumor, nor the least Change in the Colour of the Integuments. Confirmed by long Practice in the Diagnosis of the like Disorders, he concluded that a profoundly latent Abscess was the Cause of all this Disorder, and resolved, contrary to the Opinion of four other Surgeons who before had this miserable Patient under their Care, to make an Opening in the Part, and performed the Operation with the greatest Caution, penetrating into the very Cavity of the Abdomen: Not the least Quantity of Pus, however, was discharged, though the Abdomen was compressed, the Patient held her Breath, and the Posture of the Body was changed, in order to promote an Evacuation. The honest Operator being confounded at this unfortunate Event, took his Leave, being laugh'd at by the other Surgeons, and ingeniously confesses, that he passed that Night without Sleep. The next Morning, when he came to renew the Dressing, he observed, to his great Joy, a vast Quantity of Pus discharged in the Bandage, though he knew not whence it came. The Discharge of Pus continued every Day for the Space of about six Weeks, at the End of which the Woman was perfectly recovered from so desperate a Disease, and continued to bear Children, and could walk with Ease, only a little inclining to the right Side, where the Seat of the Disorder lay. The like Case has fallen under my own Observation, where a Surgeon open'd a deep Abscess in a Woman's Breast, without the immediate Discharge of a Drop of Pus, though he entered his Incision-Knife to the Depth of an Inch, and more; but in a few Hours there was a vast spontaneous Discharge of Pus through the Wound. This is enough to convince us, that we are not to alter our Judgment with respect to the Diagnosis in such Cases on a sudden, if after just Deliberation and weighing all Things, we should at last resolve upon an Operation, and to open the affected Part; for though the Point of the Knife might not, perhaps, penetrate to the Seat of the Pus, yet the Pus may soon after, as it frequently happens, be derived, of its own Accord, to the Wound, as the Place of least Resistance.

Avoiding the Fibres and Vessels. If the Collection of Pus be lodged immediately under the Integuments, and, as *Celsus*, *Lib. 7. Cap. 2.* expresses it, be contiguous to the Skin, it is plain that there can be no Fear of hurting the Vessels or Fibres, because the Pus elevates the Skin from the subjacent Parts; nor has it hitherto appeared that a true Suppuration ever affected the Substance of the Muscles, but took up its Seat only in the *Panniculus Adiposus*. For tho' *Paulus Aegineta*, *Lib. 4. Cap. 18.* defines an "Abscess to be a Corruption and Alteration of the Flesh, or fleshy Parts, as the Muscles, Veins, and Arteries;" yet we know by daily Experience, that after the greatest Suppurations, and even Gangrenes, in which the *Panniculus Adiposus* has been consumed, the Muscles have been found very clean and entire. It is true, indeed, that surprizing Degeneracies and Alterations have been observed not only in the *Panniculus Adiposus*, but in the very Substance of the Muscles: But when the Tumors in such Cases have been open'd, there has been no Discharge of Pus, but of quite another Liquor, whence such Affections seem not properly to belong to the Class of Suppuration. We have a memorable Instance of

such a Disorder in the *Medical Essays*, Tom. 1. A Woman had a Swelling, for some Months, on the Outside of her Leg; the Tumor was prominent in the Middle, and soft, with a manifest Fluctuation, when pressed with the Fingers. When the Skin came to grow red in the Part, the Patient was in violent Pain, and had a hectic Fever, attended with nocturnal Sweats, and a Diarrhæa, which returned every third Day, with other Symptoms. It was at last resolved to open the Place, and after the Application of maturing Cataplasms for two Days, when the Integuments were much attenuated, and the Fluctuation was very plainly perceptible, the Tumor was open'd; a pretty deep Incision being made, no less than an Inch and half, not a Drop of Pus flow'd, but two or three Ounces of Mucus; and the next Day a Fungus appeared in the Wound, which being remov'd, the like grew up again; and after vast Quantities of the like Substance had been thus removed, a Probe introduced into the Place penetrated through the whole Substance of the Leg, till it touched the Skin on the opposite Part. The Woman dy'd a few Days after, and the Skin of the affected Leg was found whole; but the *Panniculus Adiposus*, together with the Muscles, was degenerated into a fungous Substance, in such a Manner, that after diligent Examination, the Muscles could not be so much as distinguish'd; and the Periosteum had every where separated itself from the affected Bones. From this Case it appears indeed, that the Muscles may by the Force of a Disease be transformed into such a deformed Mass as before related, but there was no Pus here discover'd, which is the Thing principally to be regarded. It is a Question whether *Hippocrates*, *Lib. de Articulis*, is to be understood of such Abscesses, where he says, "But, in short, all the other [Tumors] which are mucous, and discharge Mucus, as being glutinous, when touched, slip away under the Fingers to this or that Side; for which Reason the Surgeons find them deeper than they expected." He was here treating of a Fracture of the Ear, and of a Suppuration succeeding it, and advises, if an Incision be necessary, not to cut superficially, because the Pus is more deeply lodged than is commonly imagined. He had told us a little before, that Cataplasms are hurtful in Fractures of the Ears, because they excite Abscesses, with Plenty of Mucosities, and troublesome Suppurations; and then subjoins the Words quoted.

There seems, then, not to be so much Danger of injuring the Fibres in opening mature Abscesses, and consequently no Necessity of all that Care and Circumspection, so much insisted on by *Fabricius ab Aquapendente*, *de Chirurg. Operat. Cap. 107.* as necessary to be used in almost all Parts of the Body, that there may be no Incision but according to the Course of the subjacent muscular Fibres. And the same Author himself, afterwards, in the same Chapter, confesses that Persons ignorant of Anatomy are every where found, who yet are successful enough in opening Abscesses, "on Account of the Redundance of Pus, which elevates the Place, and renders the subjacent Parts safe from the cutting Instrument."

This done, let the redundant Pus be gently and successively expressed. In very large Abscesses, which contain a vast Quantity of Pus, it seems not always safe to evacuate the Pus all at one Time; for all the Parts which surround so large a Bag full of Pus, and were very much pressed before, being thus in a Moment freed from the Pressure, become very flaccid, and admit vast Quantities of Blood into their Vessels, whence less Remittances of the same are made to the Brain and Cerebellum, and Faintings, and perhaps Death itself are thence occasion'd. The same Danger attends a sudden Relief or Relaxation of the Parts from the Pressure of any other Collection of Humours. And this made *Hippocrates* say, 6 *Aph. 27.* "That Persons labouring under an Emphysema, or Dropsy, and burnt or cut for the same, die away and expire under the copious and violent Effusion of the Pus or Water." But if the Abscess be seated in such a Part of the Body, that when a proper Aperture is made for discharging the Pus, the Parts may be supported and compressed by swathing them with a Roller, the greatest Evacuations may safely be performed, as appears from the Success of that Method in evacuating the Waters of an Ascites, after the Operation of the *Paracentesis*. [See HYDROPS.] Nor will it injure the Patient to leave some part of the Pus undischarged; for the Sides or Inclosure of this hollow Bag are cherished and depurated by a good Pus, and covered with the same, as with a natural Balm, the best certainly that can be accommodated to it, the half-mortified Ends of the Vessels are separated, and all Things are disposed for an happy Consolidation, as appears more at large under the Article VULNUS, which see. It is only required, that so great a Quantity of Pus should not be left as might injure the Parts by not distending them, and create Sinules in the *Panniculus Adiposus*,

pus, which Inconveniences are well enough avoided by leaving the Aperture over, and in such a Situation that the redundant Pus may find a Vent from its own Gravity. We are, therefore, to use due Care and Caution, that the open Abscess be

Kept guarded from the Air, and unmolested with Tents. When the Abscess is open'd, though all the Pus be evacuated, yet in the Space of twenty-four Hours, and sometimes sooner, will there be a new Collection of Pus, which must in like Manner be discharged. And this was the Reason why the Surgeons, being apprehensive that the Aperture would close too soon, used to introduce Tents into it, by way of Prevention: But such Tents, being made of dry Lint, absorb the contiguous Humours, which causes them to swell; and being of a conic Figure, they are soon after squeezed out; or, if retained by the Application of Plaisters or Bandages, are dilated, and stop up the Orifice like a Cork, so preventing all Discharge of the collected Pus, and leaving it to work out for itself sinuous Ways and Cavities in the *Panniculus Adiposus*, a Membrane very capable of Dilatation. Besides, these Tents, while swelling with the absorbed Humours, insensibly widen and dilacerate the Sides of the Orifice, whence a new Pain and Inflammation are often occasion'd. It is plain, then, that the Use of Tents in these Cases is either useless or prejudicial; and even while the Dressing is renewing, and the Tent extracted, after the Pus is discharged, a very free Access is admitted for the Air into the now empty Cavity, which cannot but be very prejudicial by its Appulse to the gaping Orifices of the extremely thin and tender Vessels, as is observed under the Articles *VULNUS* and *CAPUT*.

The best Way, therefore, will be to cover the Aperture with a simple Pledget only, that the Pus may have free Liberty to discharge itself, taking due Care, also, that neither the Bandage nor Plaisters press hard upon the Orifice; on the contrary, it will be rather advisable to compress, though gently, the adjacent Parts, by a dextrous Application of Bolsters or Bandage, that the Pus may be derived towards the Orifice, which is to be kept open, and free from all Manner of Pressure. The Usefulness of Tents in open Abscesses, seems long ago called in Question by *Celsus*, *Lib. 5. Cap. 28.* where he says, "Then [after opening] if they be seated in the Groins or Armpits, they are to be dressed without Tents. In other Parts, also, if the Bottom of the Wound be but small, the Suppuration but moderate, and has not penetrated to a considerable Depth, if there be no Fever, and the Body be strong, the Use of Tents is equally superfluous. In other Cases they are to be used, though sparingly, and not unless the Ulcer be large." See more concerning the noxious Use of Tents under the Article *THORAX*.

Then let it be treated with Cleaners, Suppuratives, Digestives, Balsamics, Deterfives, and Dryers, vary'd as the present Exigence shall require, according to our Instructions under the Article *VULNUS*.

We are now to treat of those curatory Indications comprehended under the two last Numbers of the first Head of this Article, which are, to mundify the Ulcer, and reduce it to the State of a simple Wound: For the whole internal Superficies of the hollow Abscess having been macerated in the contained Pus, is generally, as was before observed, much injur'd by it. It ought, therefore, to be mundify'd, and a Separation to be made of all those Particles, both fluid and solid, which are corrupted to such a Degree as to prevent an Union of the separated Parts. But the Superficies of an Abscess is render'd most impure, when the Pus, by long Retention, has degenerated from its mild and friendly Quality; for in such a Case it frets and wastes both the incumbent Skin, and the adjacent Parts of the *Panniculus Adiposus*; and certainly, Cavities with so foul a Superficies can never be consolidated, unless they be first cleansed. This appears to be the Opinion of *Galen*, *M. M. ad Glaucom. Lib. 2. Cap. 9.* "When the Skin, he says, is so wasted by the Suppuration as to resemble Cloth worn to Rags [*ὡς παλαιὸς γυνήθας, τοῦ λυγροῦ*]; it is with Difficulty brought to a Coalition with the subjacent Bodies, and therefore the Ulcer must of Necessity be cleansed by enlarging the Vent for that Purpose." The Methods and Remedies for depurating a fœtid Ulcer, and reducing it to the Condition of a pure fresh Wound, are largely describ'd under *VULNUS*.

If the Patient be shock'd at the Sight of the Instrument, and refuses the Operation, apply a Caustic to the Part; let the Eschar be separated, by mollifying it with Butter; and let the Cure be managed as directed under the two preceding Heads.

The safest Way of opening an Abscess, is by the Incision-knife; but sometimes the Surgeon has to do with Persons of

so pusillanimous a Temper, that they are ready to faint away at the bare Mention of the Operation. In such a Circumstance, it is best to use Deceit, and dextrously to perforate the Abscess while the Patient has not the least Apprehension of it. Various Kinds of Instruments have been contrived for this Purpose: Some have concealed a small Lancet in a Ring which they wore on their Forefinger, or have cover'd the Top of a Lancet affix'd to a Plate of Metal, under a Cataplasim, or Ointment, which they have apply'd to the Part, and by gently pressing it, have effected what they design'd. More Artifices of this Kind are to be met with in *Paré, Livre 7. Chap. 10.* and others. If the necessary Aperture of a mature Abscess cannot be accomplish'd by any of these Contrivances, there remains no other Way than to apply to the mucronated Top of the Abscess what the Surgeons call a potential Caustic, of which there are several Sorts prepared in the Shops, and describ'd with their Use under the Article *CAUSTICA*. The *Lapis Infernalis*, or the common Corrosive of the Surgeons, prepared of Quick-lime and Potash, are mostly in Use. A Plaister is apply'd, which has a Perforation in the Middle answering to the Place on which the Caustic is to be laid; to this Perforation they apply the Caustic, and cover it with another Plaister, and let the Dressing remain for an Hour or two, till an Eschar of a sufficient Thickness be raised. This done, they attempt a Separation of the dead Eschar from the quick Parts, by Means of Basilicon, fresh Butter, or the like mollifying Topics; which being effected, the Pus is evacuated by the Aperture thus procured, and the Cure is performed by the Methods before prescribed. It is certain, however, that such pusillanimous Patients as require this Method of laying open an Abscess suffer much greater Pain; for the Division of a mature Abscess by the Incision-knife is performed in a Moment, but the Action of a Caustic requires an Hour, and often more; and when that is done, the Patient endures a good deal of Pain while the Eschar gradually separates from the quick Parts; and, besides, a greater Defecation, and more unsightly Cicatrix, generally result from the Application of a Caustic. *Vanfweiten, Comment. in Boerhaavii Aphorism.*

PREDICTIONS FROM A SUPPURATION OF THE LUNGS.

"Those who have a Collection of Pus, says *Galen*, *Com. 2. in Prognost.* whether within the Body, or in any Part affected with an Inflammation, and even after an Eruption, we may properly enough call *Empyi*," that is, purulent or suppurated; "but Physicians usually give that Name to those who have the Thorax or Lungs thus affected." In this Case, the Pus, after Eruption, is contained between the Thorax and Lungs; and if it be not speedily expectorated, the Patient dies of a Consumption, labouring all the Time he lives under a slow Fever, and a constant Exacerbation of the Heat and other Symptoms at Night.

The Ancients called a Collection of Pus in any Part of the Body *Empyema*; and hence suppurating Medicines were by some called *Empyemata*, by others *Diapyemata*. Some give the Name of *Empyi* to those who have Pus collected in any one of the Viscera: And others, as was said, will have that Name appropriated to such as have a Collection of Pus between the Thorax and Lungs; that is, in the Part affected with an Inflammation, and from an Effusion of the Pus within the Thorax, arises this Affection.

Pus of this Kind is generated when the Matter of the Phlegmon is not absterged, in which Case the Contents are, by the Heat, converted into Pus. And this we find expressed by *Hippocrates*, *7 Aph. 38.* where he says, that Distillations "upon the upper Belly [*ἐπὶ τῇ ἄνω κοιλίᾳ*] come to a Suppuration in twenty Days;" and more clearly to the purpose, *5 Aph. 8.* "They who labour under a Pleurisy, if there be no Repurgation of the Matter in fourteen Days, become affected with an *Empyema*." For where the Matter which causeth the Pain is not discharged by Expectoration, nor by Stool, nor Venesection, nor Diet, nor Medicine, it either turns to a Suppuration, or suffocates the Patient. And this is well expressed by *Galen* on the *Prognostics*, in the following Words: "Whoever, he says, are affected with Pains in the Thorax near the Seat of the Lungs, which will not yield to Remedies, and have no other Disorder, nor any mortal Symptom, may expect a Suppuration." When an Inflammation, therefore, becomes suppurated, and the Humors are converted into Pus, these, if not evacuated by Spitale, are, by a Rupture of the Impostume, discharged into the Cavity of the Thorax and Lungs, in which Case the Patient may truly be said to be *Empyos*; and by this Pus is he suffocated, or thrown into a Consumption; or freed from it in the Space of forty Days, by the Help of a Cough, according to *Hippocrates*, *5 Aph. 5.* where we read, "that whoever are affected with an *Empyema* after a Pleurisy, and are cleansed by Expectoration in forty Days after the Rup-

"ture, are freed from the Disease." But as *Galen* says in his Comment, "If all the Pus be not discharged by spitting in that Space of Time, it putrifies, and being putrified, corrodes the Lungs, and induces a Tabes;" which is an Extenuation of the whole Body, occasioned by those incurable Ulcers of the Lungs, in Conjunction with a slow Fever, which the *Greeks*, and particularly the *Athenians*, as *Galen* says, call by the proper Name of *Phthisis*, and *Hippocrates* *Phthisis*. When the Patient in this Case is reduced to Extremities, and the Case desperate, the Hair falls off by reason of Dryness, there is a Looseness of the Belly, occasioned by the Imbecility of the retentive Faculty, as *Galen* expresses it, and the Spit is retained; for the Patients, however extenuated, live as long as they can clear their Lungs, by Coughing and Spitting; but when these cease, and the Matter which should be expectorated remains within, the Passages for Respiration are obstructed, and the Patient is suffocated.

For the better understanding the Prognosis to be formed from a Suppuration, we are to consider, first, whether the Patient be subject to it from a Pleurisy, Peripneumony, or Quinsy; then, from what Signs we suspect a Suppuration; thirdly, when the Eruption is like to be made; and lastly, of the Signs from which we may predict the Death or Recovery of the Patient.

From what Signs we may reasonably expect a Suppuration, we are taught by *Hippocrates* in his *Prognostics*, where he says, "that Pains in those Parts (about the Region of the Lungs) which yield not to Expectoration, Purging, Phlebotomy, Diet nor Medicines, terminate, you may be certain, in a Suppuration." But because the Pain and Fever are more urgent about the Time of the Generation of Pus, than when it is actually generated, according to *Hippocrates*, 2 *Aph.* 47. it is necessary that the Symptoms should be increased in the Progress of the Suppuration. On this Subject we are directed by *Hippocrates*, in the *Prognostics*, "to consider that the Beginning of the Suppuration commences from the Day in which the Patient began to be feverish, or was seized with a Rigor, or the Time when he first said that he had a Weight instead of a Pain in the Place affected; for from such Times are we to date the Suppuration." And *Galen*, in his Comment on the Place, says, that the Signs of a Suppuration are a Gravitation or Weight, instead of the Pain, a Rigor or Horror, and a Fever, which is more urgent on the Patient than before: He adds, that besides the Sense of a Weight, there is also a Pain in the Sides, or in one Side, if the Suppuration be only in one Side; which is agreeable to the Directions of *Hippocrates*, in the Book just quoted, where he says, "If the Suppuration be only in one Side, it will be proper to turn the Patient, and learn of him whether the Pain be in one Side, and whether it be hotter than the other; and whether when he lies on the sound Side, there seems to be a Weight lying on the other; for if this be the Case, the Suppuration is on that Side, which soever it be, where the Weight is." By these Signs, then, may we discover a Suppuration, which is indicated by a Rigor or Horror, proceeding, as *Galen* says, from the Acrimony of the Pus infecting the Parts affected with the Inflammation, from the great Increase of the Fever, and the Weight in the Sides, or in one Side only, if the Collection of Pus be only in one Side; to which we may add a Sense of Heat in both Sides, or only in one, if the Pus, as we said, be collected only in one Side. And if this Pus, after its due Increase and Concoction by Nature, makes an Eruption, and is expectorated by Coughing, the *Empyos*, or Person affected with the Pus, recovers; but if the Pus can by no means be discharged, as it happens in great Weakness of the Parts, the Patient is either suffocated, or dies at last of a Consumption. Hence it is observed by *Hippocrates*, in his *Prognostics*, that this Disease is "more fatal to the Aged than to young Persons." And the Reason is, as *Galen* says, "because old Persons are weaker, and great Strength is required in order to discharge the Pus, by Coughing and Spitting; and it is necessary for Recovery, that great Quantities of Pus should be expectorated by means of a Cough." *Galen*, *Lib. 5. de Loc. affect. Cap. 3.* speaks of some *Empyos*, who spit out no less than fifteen Heminae of Pus, and recovered. So that they who expectorate freely, and in large Quantities, escape, which is imported by what we read, 5 *Aph.* 15. before quoted. But when the Pus is not discharged, on account of the Grossness and Viscidity of its Substance, the Denseness of the Membrane in which the Lungs are contained, or the Weakness of the Faculty, which Defects are known by Respiration in which the whole Thorax is elevated, without any Sign of Expectoration by Spitting. Thus we are told by *Galen*, *Lib. 4. de Loc. affect. Cap. 3.* "That the Elevation of the whole Thorax in Respiration by those who are affected with a Suppuration, on account of a Collection of Pus between the Thorax and the Lungs, proceeds from the Im-

becility of the Patient, who is too weak to discharge himself from the offensive Matter. And if he escapes Suffocation, he dies of a Tabes, under all the Symptoms described in the Beginning of this Discourse."

The Case of an *Empyos* under a Tabes, or Consumption, is thus described by *Hippocrates*, *Lib. Prognost.* "All *Empyos*, he says, are known by the following Characters; first, if there be no Intermission of the Fever, which is more gentle by Day, and more violent by Night; if copious Sweats supervene, and the Patient has a Desire to cough, but expectorates nothing worth Notice; if there be a Howness of the Eyes, a Redness of the Cheeks, a Crookedness of the Nails, a Heat especially in the Tops of the Fingers, a Tumor of the Feet, a Loss of Appetite, and an Eruption of Pustules about the Body." *Galen*, in his Commentary on this Description, tells us, "that the Fever has no Intermission, because the very solid Parts of the Body are heated, and retain a Heat somewhat like that of a continual Fever, and, after the manner of Lime, gentle to the Touch. And this Heat, which is esteemed a proper Sign of a Hectic Disposition, is increased as often as the Patient eats or drinks, as it is in Lime, by an Affusion of Water; so that the Parts feel much hotter to the outward Touch. The constant Sweats are from Weakness, and a Corruption and Diffipation of the Aliment. There is a Desire of Coughing, but nothing expectorated that deserves Notice, on account, as we said before, of the Grossness and Viscidity of the Pus, the Tenseness of the Membranes of the Lungs, or the Weakness of the Faculty. Howness of the Eyes is from Dryness, and is common to all long Fevers; Redness of the Cheeks is from Heat in the Lungs, and also from the Cough, by which the Face is heated. The Nails are incurvated, because the Flesh which should support them is consumed, and the interior Parts of the Tops of the Fingers feel hotter than the rest, as being more fleshy, and because the hectic Heat, which possesses the solid Parts, is more sensible in these Parts which abound most with Moisture. The Feet swell, because the Extinction of the natural Heat begins in these Parts, as being at the farthest Distance from its Principle or Original. The Appetite is lost from an Extinction of the Faculty; and the Eruption of Pustules is occasioned by an Effusion of the corroding Sanies from the interior Parts on the Surface of the Skin." These, then, are the Signs by which the *Empyos* are known to be in a Consumption; and though their Case be desperate, they live as long as they can excrete Pus, as we have already observed from *Hippocrates*, 7 *Aph.* 16. One thing in relation to this Spit, worthy Observation, is what *Galen*, in 3 *Epid.* affirms, that in desperate Consumptions nothing of Concoction can be perceived in it; but Spitting at last ceases, and is suppressed, a Looseness comes on, with a Swelling of the Feet, and other Symptoms, which shew the Case to be desperate.

As to the Time of Rupture of the Impostume, or Vomica, it is to be considered, first, that the Humor, which is the Cause of the Pleurisy or Peripneumony, not being evacuated or removed, putrifies, and is converted into Pus; in a short time after, that makes an Eruption, and is expectorated by Coughing; but as to the determinate Time when this Pus is effused between the Thorax and the Lungs, it happens generally in the Space of twenty Days, sometimes sooner, sometimes latter. The Thing itself, and the Signs by which it is known, are thus expressed by *Hippocrates*, *Lib. Progn.* "As to the quicker or slower Rupture of the Vomica, they are known by the following Signs: If there be a Pain from the Beginning, and the Difficulty of Respiration, together with the Cough and Screation, continue, the Rupture may be expected on the twentieth Day, or even sooner; but if the Pain be more remiss, and the other Symptoms in proportion, the Rupture will happen later; but it is necessary that a Pain, Difficulty of Respiration, and Spitting, should precede the Eruption of the Pus." From these Words *Galen* infers, that the Signs of a future Rupture, are a Pain, Difficulty of Respiration, Cough and Spitting, which, if they are continual and violent, preface a quick Eruption; if they are not so violent nor continued, the Eruption will be the slower. There is necessarily a Pain from the Pus obvolving and corroding the Part by its Acrimony, and the Cough and Screation are necessary from the thinner part of the Sanies, a corrupt Matter which lies upon and penetrates into the Part affected; there must, also, of necessity, be a Difficulty of Respiration, on account of the Condition of the whole Body, but principally from the acceding Pain.

The Cause of the Eruption is referred to the moving Force of Nature, and to the Redundance of Pus, or its depraved Quality irritating the expulsive Quality to Excretion.

The Eruption happens before the Time, that is, before the Concoction of the Pus, from a Corrosion of the Bag which contains the Pus, by a pure Bile, which is unmix'd with the Spit, and not arrived at that Mediocrity of Temperament, which is due and convenient for Nature; hence a Pain, Cough, Difficulty of Respiration, and Spitting, precede an Eruption, either from the Plenty of Pus, or the Offensiveness of the Putrefaction irritating the expulsive Faculty. Such an Eruption before Maturity, is symptomatical, and not good, but that which is made by Nature, or when the Pus is concocted, is critical and good; and the Pus discharg'd appears white, pure, equal and smooth; whereas, in an Eruption which happens before due Time, and is symptomatical, the Pus is crude, parti-colour'd, fetid and yellow, or mix'd with Bile. Of such an Eruption the Author of the *Coac.* 392. speaks, where he says, "They who expectorate purulent and bilious Spit, either separately, or mixed together, generally die on the 14th Day."

These Things being premised concerning Suppurations, we are now to enquire into the Prognostics they will afford. And, first, as to the salutary Signs in those who recover, after the Eruption of the Pus, we are directed in our Judgment by Hippocrates in the *Prognostics*, where he describes the Symptoms which promise a good Event to the Disorder. "Good Signs, he there says, are, to bear up well under the Distemper, to breathe freely, to be free from Pain, to cough up the Spit with Ease, for the Body to be soft and warm in all Places alike; not to be afflicted with a Thirst; for the Urine, Stools, Sleep, Sweat, to be regular, and all in due Order as requir'd; in such Circumstances we may venture to pronounce the Patient will not die." And a little after he says, "They who recover are generally those who get rid of the Fever the same Day that the Eruption is made; who soon recover their Appetite; and are freed from their Thirst; whose Stools are small in Quantity, and compacted; and when the Pus is white, smooth, of one Colour, free from Phlegm, and expectorated without Labour or violent Coughing. The Patient in such Circumstances is very happily and speedily freed from his Malady; and the nearer he comes up to this Character, the more likely he is to recover." The Symptoms portending Death in a Suppuration, are enumerated by the same Author in the Book before quoted, as follows: "On the contrary, (with respect to the good Signs before described) to bear up ill under the Disease; to breathe short and thick; to have no Remission of the Pain; to expectorate with Difficulty; to be very thirsty; for the Body to labour under an anomalous Fever; to have an extraordinary Heat in the Belly and Sides; for the Forehead, Hands and Feet to be cold; for the Urine, Stools, Sleep and Sweat, to be all bad and disorderly; the Patient will die under Expectoration, before the fourteenth Day, either on the ninth, or eleventh Day." And a little after the foregoing Passage, he says; "The Disease proves mortal, meaning after the Eruption, when the Fever ceases not, or if it soon recurs after a seeming Cessation; if the Patient be afflicted with a Thirst, Loss of Appetite, or a Looseness; if the Pus expectorated be of a greenish [χλωρός] Colour, a palish Green, livid, or pituitous and spumous; if these concur, the Patient will not recover." For all these kinds of Spit are condemned, *Coac.* 390. And we have Instances of their Fatality, 4 *Epid.* T. 4. in the Wife of Meander the blind Man, who immediately expectorated a greenish and purulent Matter; and in the Son of Amphiphrades, 7 *Epid.* T. 24. who discharged first a purulent and pale, and soon after a greenish Spit; and in Euryptolemus, *ibid.* T. 16. whose Spit was of a pale Colour. To the same Purpose may be apply'd that of Hippocrates, 7 *Aph.* 44. "If those who are affected with an Empyema, and suffer Burning or Cutting for the same, discharge a pure and white Pus, they escape; but if the same be bloody, feculent and fetid, they die." And so much shall suffice concerning Predictions from an Empyema, the Perusal of which may be of Service to the Student in Medicine. *Prosper Alpinus de Præfag. Vit. et Mort. Egrot.*

SUPRA COSTALES.

These Muscles are commonly called *Levatores Costarum*, which Name was first given them by Steno; but he did not pretend to have discovered them. They are irregularly triangular, and situated on the back Part of the Ribs near the Vertebrae.

Each of these Muscles is fix'd by one tendinous Extremity in the transverse Apophysis, which lies above the Articulation of each Rib, and to the neighbouring Ligament; the first being inserted in the transverse Apophysis of the last Vertebra of the Neck, and the last, in that of the eleventh Vertebra of the Back.

From thence the fleshy Fibres run down obliquely, increasing in Breadth as they descend, and are inserted in the back

Part of the Outside of the following Rib. Some of the Fibres often pass beyond that Rib, and are fixed in one or more of the Ribs below it, by several Digitations, which lie at a greater Distance from the Vertebrae, in proportion as they run lower. In the inferior Ribs these Digitations are more considerable, than in the superior. *Winslow's Anat.*

For the Uses of these Muscles, see the Article INTERCOSTALES.

SUPRASCAPULARIS MUSCULUS. The same as SUPRASPINATUS.

SUPRASPINATUS MUSCULUS.

This is a thick narrow Muscle, in some measure pennisiform, filling all the supra-spinal Cavity of the Scapula.

It is fix'd to all the posterior half of the supra-spinal Fossa, and sometimes its Insertion reaches near the Neck of the Bone. There the Fibres leave the Surface of the Bone, and being as it were supported by the fat or cellulous Substance, pass between the Acromium and Neck of the Scapula, under the Arch formed by the Acromium and Extremity of the Clavicle, and under the Ligament between the Acromium and Apophysis Coracoides; being afterwards inserted in the superior Surface of the great Tuberosity of the Head of the Os Humeri, very near the bony Channel. This Muscle is cover'd by the *Trapezius*.

The *Supra-spinatus* is commonly supposed to join with the *Deltoides*, in lifting up the Arm; this Muscle beginning that Action, and the *Deltoides* continuing it. But besides that this Muscle is very small, it seems to be too near the Articulation of the Head of the Os Humeri, to be able to raise the whole upper Extremity, which is of a considerable Weight and Length. It has, however, two other very remarkable Uses, when the Arm is raised from the Thorax to the Head by the Action of the *Deltoides*.

To understand these Uses it must be remember'd, 1. That the cartilaginous convex Part of the Head of the Os Humeri is much larger than the glenoid Cavity of the Scapula. 2. That the most superior Part of this Convexity lies out of the Cavity, when the Arm is depressed or near the Ribs. 3. That the orbicular Ligament of the Joint is very broad, being proportion'd to the Distance between the Edges of the convex Part of the Head of the Os Humeri, and of the glenoid Cavity of the Scapula; and that therefore it cannot check the Os Humeri in any of its Motions.

From thence it is plain, that the strong deltoide Muscle, in the first Instant of its Action to raise the Arm, would thrust the Head of the Os Humeri upwards out of the Cavity, if something did not supply the Place either of a bony Fulcrum or ligamentary Frænum. The Arch of the Acromium is of no Use in this Case; for the Bone must be first luxated, before it can reach so far; and the neighbouring Parts must suffer a Friction, and even a Contusion, which would be very prejudicial.

It is, also, plain, that the broad orbicular Ligament would be very subject to be entangled and bruised between the Edges of the two articulated Bones, were not this Inconveniency prevented by some means or other; because it is not elastic enough to contract of itself in proportion as these two Edges approach each other.

The *Supra-spinatus* answers both these Ends. When it contracts its Tendon, which runs over the convex Part of the Head of the Os Humeri, to be inserted in the upper Surface of the great Tuberosity, it presses very strongly on the Head of the Bone, thereby supplying the Place of a Fulcrum, and hindering the Head to rise, during the Beginning of the Action of the *Deltoides*.

I find, also, in this Muscle, a singular Contrivance to prevent the second Inconveniency. Its Tendon is a kind of Band, which adheres closely to the Outside of the orbicular Ligament; and when we examine it narrowly, we observe that several of its Fibres do not go so far as the Head of the Os Humeri, but are gradually inserted in the outer Surface of the Ligament. These tendinous Fibres are continuous with those which lie nearest the Bone or Bottom of the supra-spinal Cavity of the Scapula.

This Portion may, therefore, be reckoned a distinct Muscle belonging to the orbicular Ligament, notwithstanding of its close Union with the other Part, which is inserted in the Os Humeri. And indeed we might very justly establish a new Species of Muscles, by the Name of Articular Muscles, which belong principally to the capsular Ligaments of those Joints which have large Degrees of Motion. The Mechanism of this kind of Muscles consists in this: The Extremities of the Tendons are inserted very obliquely in the Surface of the Ligament, and the Fibres take up a great deal more Space there, than in the Body of the Tendon; and they are commonly the innermost, or deepest and shortest Portions of the ordinary Muscles inserted near the Articulations.

The Use of these Muscles, or Portions of Muscles, is to pull the orbicular Ligaments uniformly, and thereby to prevent their running into irregular Folds, and their being intangled between the two articulated Bones. *Winslow's Anat.*

SURIANA.

The Characters are;

It hath rose-shaped Flowers, consisting of several Petals, which are placed in a circular Order; from whose Empalement arises the Pointal, which afterwards becomes the Fruit, which generally consists of four Capsules, in which are included four roundish Seeds.

We know but one Species of this Plant, which is,

Suriana foliis portulacæ angustis, Plum. Nov. Gen.

This Plant was so named by Father Plumier, who discovered it in the French Settlements in America, in honour to Dr. Joseph Surian of Mâsseilles, who was a very curious Botanist.

The Seeds of this Plant were brought from Havana, by the late Dr. William Houssain, who found the Plants growing there in great Plenty on the Shore, in moist Places, where the Salt Water usually flows. It also grows plentifully in some Parts of the Island of Jamaica. *Miller's Dict.*

SURRECTORIUM. An Instrument, mention'd by Paré, for keeping the Arm, when injur'd, in an erect Situation.

SUSINUM. See **ÆGYPTIUM OLEUM**.

SUSPENDICULUM. A Name for the **CREMASTER MUSCLE**.

SUSPENSOR TESTICULI. The same as **CREMASTER**.

SUSPENSUM. The same as **ENÆOREMA**.

SUSPIRIUM. An **ASTHMA**.

SUTORIUM ATRAMENTUM. Vitriol.

SUTRATAR, in *Paracelsus*, is a splenic Medicine; or one prepared of a Spleen.

SUTURA. A Suture, in Anatomy, is a particular Articulation of the Bones of the Head. See **CAPUT**. But

SUTURA, Suture, in Surgery, is the uniting the Lips of a Wound by Sewing.

But there are two Methods of closing Wounds by Suture; one with a Needle, called the true or bloody Suture; the other with adhesive Plaisters, called the dry or false Suture. Sutures are not to be used in all Wounds indiscriminately; but, 1. Principally where the Lips of the Wound cannot be brought into Contact by the Dressing; such are transverse, oblique, and angular Wounds, when they are recent and carefully cleared of the Blood and any foreign Substance which may be lodged in them. 2. In those, also, where there is nothing contused, abraded, or cut away; unless perhaps the wounded Parts are greatly relaxed. Sutures are in such Wounds of great Advantage, not only making them soon heal, but also inducing a smaller and neater Cicatrix. The adhesive Plaister, or dry Suture, is beneficial in those Wounds which are neither very deep nor very broad, especially in the Face, tho' some prefer the Needle; but the Judgment of the Surgeon may, in this Particular, be best directed by the Nature of the Wound. For when the Lips of the Wound may be held together by a Plaister and Bandage, the Needle becomes unnecessary, which occasions more Trouble, and also new Wounds and Cicatrices. But on the other hand, when the Wound is wide and deep, so that its Lips cannot be closely retained by Plaisters and Bandages, or where the Part is nearly amputated, as in the Nose, Ears, Cheeks, Forehead, Chin, or Fingers, immediate Recourse must be had to the Needle.

It is proper to observe, 1. That when the Lips of the Wound are joined by adhesive Plaisters, the Hair must first be carefully shaved from the Part. 2. Where one Plaister is not sufficient, more may be used, or they may be applied crossways, (as in Tab. 25. Fig. 4, 5, 6.) 3. The true or bloody Suture is of two Sorts, simple or compound. The simple Sort is done with a Needle and Thread, comprehending the knotted, glovers and circumvolut Sutures, and the Suture of the Tendons. The knotted Suture is so called from the many Knots that are used in it; the Glovers Suture from its Resemblance to the Glover's Stitch; and the circumvolut Suture is so denominated, because the Lips of the Wound being transfixed by the Needle, the Thread is wound about for conjoining the Lips of the Wound more firmly; as is used in curing the Hare-lip. (See Tab. 25. Fig. 21, 22.) The Suture of the Tendons is used when the Tendons are divided. Besides, there are several other Sorts of Sutures used by ancient Surgeons, as the *Sutoria*, *Sartoria*, *Ciliana*, (See Tab. 25. Fig. 19.) and the *Clavata* made with Quills or small cylindrical Pieces of Wood; but these are long ago disused, except the *Cicatrix Clavata*, which was lately revived by Palfyn and Garengeot, with little Variation, only instead of Quills or Pieces of Wood, they recommend waxed silken Cylinders. 4. It must be remembered, that in Sutures of deep Wounds a small Tent must be left in the lower Part of the Wound, till it

be thoroughly cleansed, that the Healing may begin at the Bottom.

The Plaisters in the dry Suture must be of a sufficient Length, and shaped according to the wounded Part, so as to encompass great part of the Wound, though not entirely, lest they should retard the Circulation of the Blood, and induce Tumors and other Mischiefs. They must, also, adhere firmly, which Purpose is well answered by the Plaister of *Andreas a Cruce*, or the styptic Plaister of *Crollius*, or the Plaister of *Diachylon*, or of *Diapalma*, mixed with Turpentine, and spread on a Piece of strong Linen. The Discharge of Blood being stopp'd, and the Wound deterged, a vulnerary Balsam must be instilled into the Wound, such as the Essence of Mastich, Amber, of the Peruvian Balsam; or the *Balsamum Commendatoris*, or any balsamic Composition of the gummy kind, which soon form a kind of balsamic healing Crust, denying all Access to the Air, and promoting the Agglutination. Then apply the Plaister of a sufficient Length and Breadth, or two or more if necessary, either strait or crooked, leaving Spaces between them; first lay it warm upon one Side of the Wound, pressing it with the Palm of the Hand to make it adhere, and then press the disunited Lips of the Wound gently and equably together; and being thus joined, let them be kept firm by fixing the other End of the Plaister on the other Side of the Wound, then apply pieces of Linnen dipped in any of the Balsams above specify'd, and secure the whole with proper Compresses and Bandages.

According to *Petit's* Method the agglutinating Plaisters should have one Hole in the middle, or more, according to the Size or Figure of the Wound, (See Tab. 23. Fig. 11. and Tab. 25. Fig. 7.) that by these it may not only be discover'd, as in the former Method by the Interstices between the Plaisters, whether the Lips were properly joined, but the Wound may be daily supplied with proper Remedies. These Plaisters are applied in the same manner as the others, and must be continued on the Wound till the Part be near healed. The dry Suture may be also made in the following manner. Make two Plaisters of any of the Prescriptions abovementioned, on strong Linnen Cloth, answering to the Largeness, Depth and Width of the Wound; the deeper Wounds requiring longer, and the slighter shorter Plaisters; fasten to the Border or Edge of each piece of Linnen, three or four Tape-strings, according to the Length of the Wound, and after having warmed the Plaisters, lay one on each Side of the Wound, at the Distance of a Finger's Breadth from it, so that the Remedies may be conveniently applied, as represented in Tab. 25. Fig. 8. Then the Lips of the Wound are to be joined, and dressed as before directed; and while an Assistant carefully keeps the Lips in Contact, let the Surgeon tie the Strings of the Plaisters together, first in a single Knot; and then a slip Knot, and thus will the Lips of the Wound be kept properly united. Over each Plaister should be laid an oblong Compress, and over them a large square one, securing the whole with a proper Bandage. Next Day the Wound must be inspected; and if the Strings appear to be relaxed, they must be drawn tighter. But if they are not loosened, they ought to be left untouched; then apply a piece of Linnen, moisten'd with some Drops of a healing Balsam, and afterwards the Compresses and Bandage as before. Some, instead of Tape-strings, use Iron or Brass Hooks and Thongs, as is represented in Tab. 25. Fig. 9, 10. These Plaisters are fixed to the Lips of the Wound in the same manner as the former, and then with a Thread or Thong, passed through the opposite Hooks, they are drawn together, and the Lips of the Wound are brought into Contact. But as these latter kinds of dry Sutures require more Time and Trouble, they are, therefore, less used than the first Sort.

If the Wound be broad and deep, or transverse, as frequently happens in the Thigh, (See Tab. 24. Fig. 1. Let. H.) or in the Abdomen, in the Nates or Arms; or where a Piece hangs down from the wounded Part, as in the Forehead, Cheeks, Nose, Chin or Ears; or when the Wound is angular or crucial, as in Tab. 25. Fig. 12, 13, and 17. the true or bloody Suture is to be used. Sutures of this Kind, as we have already observed, are distinguished by simple and compound. Of the simple true Sutures, the convoluted or twisted Kind is seldom used, except in the Hare-lip; the Glovers Stitch is performed in Wounds of the Intestines; and the knotted Suture in all other Wounds, which require a true Suture. The compound Suture is so called because other Things become necessary besides a Needle and Thread.

The best Method of making the knotted or interrupted Suture (I think) is the following. Take a double Thread well waxed, or fix small Linnen Threads, and pass them through a strong crooked Needle. (See Tab. 22. Fig. T. 5.) With this Needle, pierce at once the two Lips of the Wound (which we now suppose two Inches long) about the Middle, pro-

proceeding from the exterior Part of the inferior Lip, towards the Bottom, to the interior Part of the superior Lip, so that the external Perforations, through which the Thread appears, may be about the Breadth of a Finger from the Lips of the Wound, or more or less according to the Size of the Wound. Then removing the Needle, and compressing the Lips of the Wound, tie the Ends of the Thread, first in a single Knot, and then in a slip Knot, so that the Lips of the Wound may be properly brought into Contact; then dress as in the dry Suture. If the Wound should be longer, and one Suture is not sufficient, two, three, or more may be made (See Tab. 25. Fig. 11, and 16.) in the same manner, but so as to be at the Distance of an Inch from one another. Besides, that the Wound may not be hurt by the Knots, the Threads are to be so tied, that after the first Knot, a small Compress (See Tab. 23. Fig. 22.) of Linnen or waxed Silk, may be laid on it, over which let the second Knot be tied, which must be made to slip, that it may more easily be untied and relaxed, should Pain or Inflammation happen.

In this Method we proceed, when the Wounds are oblique or transverse; but when the Wound has Angles, or is triangular, (see Tab. 25. Fig. 13.) the Suture must be first made in the Angle A. Like Sutures must, also, be made about the middle of the Sides of the Wound, as at B and C. If the Wound has two Angles, like the Greek Letter Π , as in Tab. 25. Fig. 14. which frequently happens in the Face, especially in the Forehead, then a Suture must be made at each of the Angles A A. If these are not sufficient, because of the Largeness of the Wound, two more will be necessary, about the middle of the Sides at B B, or perhaps more. When the Figure is crucial, or in the Form of the Let. X. as in Fig. 6. and 12. and its Lips cannot be brought into Contact by Plaisters, the Needle (as in Fig. 12.) must first be introduced at A, so as to come out at B; and it must again enter at C, and be brought out at D; then the Lips must be gently drawn together, and the Knot tied between A and D.

Instead of this simple Suture, some of the ancient Surgeons used the compound, or clavated Suture, called by the French *Suture enchevillée*, in large Wounds. This Suture they preferred to the others, because by them the Lips of the Wound were sometimes lacerated, which not only obstructed the Agglutination, but induced great Inconveniencies. But though the clavated Suture has been disused for several Years, and is expressly said by *Dionis* to be improper, yet some Moderns (especially *Palfyn*, in *Chirurg. Cap. 6. de Sutaris*, and *Garengot*, in *Chirurg. Cap. de Sutar. et Gastroraph.*) have again introduced it into Practice, and in various Cases preferred it to the knotted Suture; but with this Difference, that instead of two Pieces of Wood used by the Ancients, the Moderns take small Pieces of waxed Linnen or Silk rolled up like Cylinders, as long as the Wound, and about the Thickness of a Goose-quill. (See Tab. 25. Fig. 17.) By these means, the Lips of the Wound are prevented from being lacerated by the Threads; nor are they so rudely pressed as by the Pieces of Wood, which frequently excited Tumors, Pain and Inflammations. *Palfyn's* Method of performing this Operation, in deep Wounds of the muscular Parts, was thus: He took a large strong crooked Needle, in which was a strong double Thread well waxed, (as in Tab. 25. Fig. 15.) making a Noose; this Needle being passed through both Lips of the Wound, as before directed: And a second or third Needle being threaded and passed in the same manner, (see Fig. 17.) he introduc'd one Cylinder or waxed Roll, through the Nooses, as at B B; then having removed the Needles, he placed another Cylinder between the Ends of the Threads upon the other Side, and having brought the Lips of the Wound into Contact, drew the Ends of the Thread gently and equally, and tied them over the Cylinder, B B, first in a single and then in a slip Knot, as at C C C. If there be three Threads, tie the middle Thread first, and then the others.

Garengot perform'd this Suture nearly in the manner now described, but with this Difference, that instead of a double Thread, he used a peculiar Sort of Lace, made of six or eight clean white Threads, joined together and waxed, and more or less strong, according to the Largeness and Depth of the Wound; observing always so to proportion the Size of the Lace to the Needle, that it may readily follow the Needle, otherwise great Pain may be produced. When in this manner he has introduced as many Laces as may be necessary, he ties a Knot on the Extremity of each Lace, which hangs out from the upper Lip of the Wound; then he separates the Threads which compose the Lace, between the Knots and the Lip of the Wound, keeping an equal Number on each Side; and thus Nooses are made, through which the wax'd cylindrical Roll may be introduced. Then placing two Fingers on the inferior Lip of the Wound, near the Punctures of the Needle, with the other Hand he gently draws

the Laces, beginning with the Middle, if there are three, till the Lips of the Wound are exactly brought into Contact. Then separating in two Parts the Threads of each Lace, in the lower Lip of the Wound, which serve for tying the other Roll, he first made a single Knot on the middle Lace, after having carefully conjoined the Lips of the Wound; then having tied a single Knot on each of the other Laces, carefully observe that they be not made too tight, which might excite an Inflammation, and then secure all with a Slip-Knot made over each of the single Knots. Then let the Wound be treated with some vulnerary Balsam, especially the *Commanders Balsam*, applied with scraped Lint, which soon produces a kind of balsamic Crust, and by these means the Access of the Air to the Wound is prevented, and the Cure promoted. Apply also a Compress dipped in some warm, succulent, digestive Liquor, and a proper Bandage.

On the first Days, by whatever Method the Suture was performed, the Compress and Bandage must be removed with great Caution, and the State of the Wound examined. If all Circumstances appear favourable, if there be no Pain, or at least none violent, the Sutures are to be let alone for six or seven Days, or longer, and must be dressed as before, till the Wound appears to be conglutinated. If at the first Removal of the Dressings the Sutures appear too loose, the Knots must be untied, and the Threads straitened; but if the Sutures are too tight, they must be relaxed. When the Lips of the Wound appear swelled, and in some measure confused, a Suppuration must be excited with some digestive Ointment, or *Arcaus's* Balsam; and these Remedies must be continued for some Days; and thus these Disorders, or any other threatening Inconveniencies, are generally removed. But when the Inflammation appears violent, and a Fever is brought on, the Sutures should be a little relaxed, and the Wound dressed with a digestive Ointment, or *Arcaus's* Balsam; the Patient must also be blooded, the Body must be render'd soluble with Clysters, and thin aqueous Drinks are to be recommended, with other Remedies proper in an Inflammation and Fever. These Disorders being removed, the Sutures must again be gradually tightened, and the Wound dressed as above directed. But if these Remedies prove ineffectual, and the bad Symptoms not only continue, but daily increase, so as to appear dangerous, the Sutures must be cut, and the Wound treated in the same manner as if there were a Loss of Substance.

But if by these means the Wound is conglutinated, which may be known not only by the Concretion of the Lips, but also by the Laxity of the Threads, a grooved Probe must be introduced between the Lips of the Wound and the Sutures, if necessary; and the Sutures must be cut with Scissars near the Knots; then the inferior Lip of the Wound must be supported with one Hand, and taking hold of the Knot with the other, the Thread must be gently extracted. The small Wounds, occasioned by the Punctures of the Needle, may now be easily cured, by injecting into them some vulnerary Water, as the Aqua Sclopetaria, Lime-Water, or Spirit of Wine, and applying Compresses dipped in the like Liquors: But if the Wound be large, it is to be anointed with the Balsam of *Arcaus*, or another of the like Nature, and its Lips kept in Contact by an adhesive Plaister, till a firm Cicatrix be induced.

In large Wounds of the Abdomen, some Surgeons greatly prefer the quilled or clavated, to the knotted or interrupted Suture; because the Muscles of this Part are greatly agitated by Respiration, Rising, Sneezing, Coughing, and the like; by which violent Motions the small Threads have sometimes torn the Lips of the Wound, and great Mischiefs have ensued.

Garengot recommends this Suture even in Wounds that penetrate the Cavity of the Abdomen, and directs the following Method of performing it. Having threaded the Needle, delineated at Fig. 6. Tab. 27. the Surgeon takes hold of it about the Eye in his Right Hand, and introducing the Thumb of his Left Hand into the Wound, he claps the Fingers of the same Hand on the external Part of the superior Lip of the Wound, which he elevates; then he enters the Point of the Needle into the Abdomen, and passes it through the Peritonæum, Muscles, Fat and Skin, about two Finger-breadths from the Lip of the Wound. He then removes the Needle, and fixes it to the other End of the Thread. Then introducing his fore and middle Fingers into the Wound, below the inferior Lip, and keeping his Thumb on the external Part, he raises this inferior Lip, and pierces it with the Needle in the same manner as before directed. If the Wound is about four Fingers-breadth in Length, two Stitches are required, equally distant from one another, and from the Extremities of the Wound; and if the Wound be larger, more Stitches are necessary. The waxed cylindrical Rolls are to be introduced, as was already mentioned from the same Author, and the Wound dressed with *Arcaus's*

caus's Balm. The Abdomen must then be fomented with warm Oil of Roses, mixed with a little Spirit of Wine, especially about the Navel, and the Parts near the Wound; then a large Compress dipped in the same Medicine must be applied to the Part, over which may be laid another moisten'd with warm Oxycrate. These must be covered with a Piece of Flannel, soaked in an emollient Decoction, and the whole secured with the Bandage called the Napkin, which is to be hindered from slipping down by the scapular Bandage, represented in *Tab. 24. Fig. 1. C.* which ought also to descend lower than the Napkin.

When the Lips of the Wound appear to be well agglutinated, the Stitches may be cut, one after another, with Scissors, either at the same time, or on different Days, as the Circumstances indicate. Then the Threads being extracted, as we before directed, the Cure of the Wound may be completed by a vulnerary Balm and adhesive Plaisters. But particular Care must be taken not to extract the Stitches too soon, which might occasion the Lips of the Wound to burst again, and induce many Mischiefs.

See *Celsus's* Method of performing the Suture of the Abdomen, under the Article ABDOMEN.

For the Suture of the Intestines, see ABDOMEN.

For the Suture of the Hare-lip, see LABIA LEPORINA.

See the Suture for a Trichosis at the latter Part of the Article ALCALI.

THE METHOD OF PERFORMING THE SUTURE OF THE TENDONS.

This Operation is performed by modern Surgeons in the Tendons of the Hands, in order to join them when they are cut, by which the Fingers are prevented from becoming rigid or motionless. This Suture may be performed, if the Tendon be not deeply seated, but lies near the Skin; such are the Tendons of the Thumb, and Extensor-Tendons of the Fingers on the Back of the Hand; the Flexor-Tendons of the Fingers, and the Extensors and Flexors of the Hand, situated near the Carpus: Of this kind, also, in the Leg, are, the Extensors of the Tibia below the Knee, the Tendon of *Achilles* above the Heel, and the like. On the contrary, the Tendons of the Palm of the Hand are so deeply seated, and consequently the Suture is so difficult to be performed, that I never heard of one Instance of this Operation in that Part. The ancient Physicians were great Enemies to this Method of Cure, because *Hippocrates* says, "That a divided Nerve, by which he meant Tendon, can never again grow or coalesce." And indeed, the most violent Disorders are sometimes caused by a slight Puncture of a Tendon. We may conjecture that this Operation was performed in *Galen's* Time, because he advises against it; and his Opinion was followed by the Generality of Physicians; and particularly by *Ambrose Paré*. However, *Avicenna*, *Guido de Cauliaco*, *Salicetus*, *Rogierius*, *Lanfrancus*, *Brunus*, *Chalmetus*, *Andreas à Cruce*, and other ancient Surgeons, approved of this Operation; but their Successors seem either to have been ignorant of this Practice, or thought it too dangerous; till in the last Age, *Veslingius*, *Severinus*, *Felix Wurtzius*, and other celebrated Physicians, especially *Maynard* and *Bienaisius*, both of *Paris*, *Purman*, and others, revived, and successfully performed this Suture; which succeeds best when the Wound is recent; though it may be beneficially undertaken the second, third or fourth Day, or longer, after the Wound has been inflicted; and sometimes, but with greater Trouble, even after the Wound has been healed up.

Before the Operation be undertaken, let it first be considered, whether the wounded Tendon requires a Suture. Sometimes it happens that the Suture is impossible to be performed, and sometimes it is attended with great Danger. In some Cases it may be practicable, but is unnecessary, when the Cure may be completed by proper Dressings. If a considerable Part of the Tendon be cut off, and the Extremities be lost among the Muscles, so as that they cannot be brought into Contact, then it will be in vain to attempt the Suture. If the divided Extremities of the Tendon are violently contused, by which great Inflammation and Pain are induced, and the Parts be thereby hindered from uniting and healing, the Suture would rather irritate and increase these malignant Symptoms. In this Case, therefore, as *Garengot* well directs, it may be proper to promote a slight Suppuration, and the Inflammation being abated, the Suture, if necessary, may be attempted. The same Author, after *Solinguus*, observes, that the Tendons of the Extensors in the Back of the Hand, may generally be united without Suture; if the Hand be extended, and the Fingers turned backwards, that the divided Parts of the Tendon may be brought into Contact. This Method, says *Heister*, I have often successfully tried, particularly in a Youth who had all the Tendons of the Extensors of the

Fingers, upon the Metacarpus divided. In this Case therefore, as well as when the Flexors of the Fingers and Hands, or the Extensors of the Toes are wounded, the Suture appears to me superfluous, if the Parts are so bound and retained, by Splints, Compresses, and Bandage, that the divided Extremities may be kept in Contact: But when the Tendons are only punctured, or perforated by a small Instrument, or when they are not thoroughly cut, or are violently contused, if violent Symptoms, such as Convulsions, be occasioned, and if these Symptoms will not yield to proper Remedies, such as Oil of Turpentine, either alone, or mixed with a few Drops of the distilled Oil of Amber, or of Lavender, it will be necessary to divide the wounded Tendon entirely; and the Symptoms being mitigated, it may be again sew'd up.

The Suture of the Tendons may be performed in the following Manner: The Member being first bent, or extended, as the Circumstances require, the wounded Part must be carefully inspected. If the superior Part of the Tendon, as is often the Case, be drawn up by its Muscle, and concealed under the Skin, so that it cannot be brought down to be penetrated by the Needle, an Incision must be made into the Skin, and other Integuments, sufficient to discover the Tendon, which must be gently laid hold of with the Forceps, drawing it a little downwards, and then the Tendon may be united by Suture; or if the Tendon be discovered, *Garengot*, as he thinks the Treatment with the Forceps too rough, advises to draw the Tendon down, by passing a Needle and waxed Thread thro' it; but the Use of the Forceps, in this Case, occasions no bad Consequences.

There are two Methods of performing this Operation; the first with one Needle, and the second with two. With one Needle, the Operation may be thus performed: Thread a strait, small, common, round, or flat-pointed Needle, (see *Tab. 57. Fig. 2. A A*) with a slender double Silk or Linnen Thread, but strong enough, and waxed, as at *B B*; make a thick Knot at the Ends of the Thread, as at *C*, and draw the Needle with the Thread through the Middle of a Piece of Leather, as at *D*, or such as is particularly represented at *Fig. 3. A. and B*, so that the Knot may not easily slip thro' the Tendon; (see *Fig. 4. A*, or *Fig. 7. D E*) then the wounded Hand, the Back of which is in some Manner represented in *Fig. 4*, must be extended flat on a Table, or thin Board, or a Piece of thick Pasteboard, that the divided Parts of the Tendon may be more easily joined together; then opposing the Canula delineated in *Tab. 29. Fig. 6. Let. c*, or only the Point of the Forefinger to the Extremity of the Tendon which is divided, opposite to the Needle, we are to pass this Needle through the Middle of the superior Tendon about a Straw's Breadth, or two Lines, from the Extremity passing the Needle from the external to the internal Parts, as in *Tab. 57. Fig. 4. A*. After this, the Needle is, in like Manner, to be pass'd through the inferior Part of the Tendon, represented by *B*; but it must be directed from the internal to the external Parts: Then, as in the knotted Suture, applying either a small Compress, or Piece of Linnen Cloth, wrapt up, as in *Tab. 23. Fig. 22*, either with or without Wax, or a Piece of waxed Silk folded up in the same Manner, or a Piece of Leather, a simple Knot is exactly to be made above the small Compress, and then another, though a slipping and easily loos'd Knot; all the Parts of which Apparatus are in the Figure represented by the Letter *B*. Then the Wound being carefully cleansed, apply warm Oil of Turpentine, or Balm of Capivi, or some other vulnerary Balm, with Lint and Compresses, likewise using a Splint or Piece of stiff Pasteboard, shaped according to the Hand, (see *Tab. 57. Fig. 5*.) with Compresses for raising the Fingers backwards, and secure the whole with a proper Bandage. Instead of a straight Needle, the Surgeon may conveniently use a small crooked Needle, such as that represented at *Fig. 6*, which is flat about the Point *A*. If the Needle cannot be easily passed through with the naked Fingers, a Needle with a Handle may be used, as in *Tab. 27. Fig. 2, 3*. If the Wound has been inflicted some Days before, and the wounded Extremities of the Tendon appear to be indurated, which would render their Conglutination difficult, before the Ends are conjoined by the Suture, very thin Pieces should be cut off them with the Scissors; or if the Wound be mostly or entirely healed, it should again be opened by Incision, the Tendon must be carefully separated from the Parts to which it adheres, and then proceed as before directed.

Garengot imagined that he had greatly improved this Method; he strictly prohibits the laying of the Tendon bare, or bringing its Extremities into Contact with the Forceps, lest by both these Operations violent Symptoms should be excited; while, on the other Hand, the Patients are treated in a much milder and safer Manner, if the external Skin, together with the subjacent Tendon, be sew'd up, as we have already directed.

rested, and the Hand be kept extended with a proper Dressing. But that all these Measures may be the more commodiously taken, *Garengot* advises, that whilst others only use the Hands alone for this Purpose, we should employ the Instrument represented *Tab. 29. Fig. 6. L. c. thro'* which, after applying the Finger to the opposite Part of the Skin in order to secure it, we are to pass a Needle and Thread; and having passed the Needle through these Parts, we are to remove the Instrument: Then taking the Needle, we are to draw the Thread as far as is necessary, after which we are again to apply the Instrument, in order to perforate and bring into Contact the inferior Part of the Tendon in like Manner. For performing this Operation, crooked Needles are preferable to such as are strait; and plain Needles with an Edge on the interior Curve, as in *Fig. 6.* are preferable to Needles with Edges on both Sides, like the common ones represented in *Tab. 22.* by the Letters S T U; because, by the former, so many Fibres of the Tendon are not divided as by the latter. When the greatest Part of the double Thread is passed through the Integuments and Tendons, a Compress of Silk, spread with Wax, and wrapped up in a cylindrical Form, is to be fixed in this Thread as in a Loop, that it may secure the Ligature on the Lips of the Wound, as in *Tab. 57. Fig. 4. Let. C.* When the Thread is in like Manner pass'd through the inferior Part of the Tendon, and the two Parts are drawn so together as to have their Extremities laid one contiguous to the other, and a cylindrical Compress is placed between the Thread, as at D, the Whole is to be secured with two Knots, the one a single, and the other a slipping Knot. But it seems surprizing that *Vaugion, Verduc, Charriere*, and *Dionis* formerly, and, also, *Garengot*, should direct the Extremities of the Tendon to be laid one upon another, without offering any Reason for such Conduct, when it is evident, that the Agglutination must be impeded by this Method, as has been already remarked by the celebrated *Cowper*, who happily reunited the Tendon of *Achilles* without observing this Circumstance. But if the divided Parts of the Tendon are become callous by the Wound being received a considerable Time before, the above-mentioned eminent Surgeons advise the Tendon to be separated from the contiguous Parts, and the indurated Extremities to be cut off; then proceeding in the Suture as before. This Suture may, also, be conveniently performed, by applying a square Piece of Leather, as in *Fig. 3. A B*, both to the superior and inferior Part of the Wound, as is shewn in *Fig. 7.* making a Knot, with a Compress under it. The most simple Method of performing this Operation is proposed by *Dionis*: Pass a proper Needle, with a single waxed Thread, through one Extremity of the Tendon, from without inwards; then pass it through the other Extremity from within outwards; at one Stitch, and then removing the Needle, tie the Thread with a round Compress under the Knot, so that the Extremities of the wounded Tendon may be conjoined. But to this, the former Methods are generally preferred.

The Suture of the Tendons with two Needles, was, as far as I know, first described by *Nuck* thus: Thread two small common Needles with one waxed Silk Thread, sufficiently strong, but moderately thick; pass both the Needles through the upper Part of the Tendon, *Fig. 4. E.* inwardly, and through the lower Part of the other End of the Tendon, as at F, outwardly, so that both the Perforations on each Part of the Tendon should be made towards the Sides of the Tendon, and near to the divided Extremities; then, removing the Needles, tie the Ends of the Threads, putting a Piece of Leather or small cylindrical Compress under the Knot, which are to be so drawn together, that the divided Extremities may be brought into Contact. By this Method, says *Nuck*, the Extremities of the Tendon are not so liable to be lacerated as in the preceding Operations, where only one Perforation is made in each Extremity of the Tendon, and the divided Lips are more firmly kept in Contact. The Suture being thus finished, he sprinkles on the Part the Powder of boiled Turpentine, and dresses it with *Arcaus's* Balsam, or the common Digestive, taking Care so to dispose the Compresses and Splints, that the Tendon may be secured from Motion. Others prefer the former Method with one Needle, especially if the Suture is to be made in the Hand, because it may be done with more Readiness, and with less Pain and Trouble to the Patient: However, I think *Nuck's* Method is not to be entirely rejected. When there are several Tendons divided, the Suture is to be made upon each of the Tendons separately.

The Suture being finished, the Dressing must next be carefully performed. Lay in the Wound scraped Lint dipped in Oil of Turpentine, or *Peruvian* Balsam, or Balsam of Capivi, over which apply a Compress dipped in warm Spirit of Wine, and expressed. The Hand must be extended on a Piece of thick, stiff Pastebord, (see *Fig. 5.*) with Compresses placed under the Palm, to prevent the Hand or Fin-

gers from bending inwards: This Piece of Pastebord must be firmly fixed with a Bandage; the Arm must be wrapped up with Linnen Cloths moisten'd in Spirit of Wine, or warm Oxycrate. Some anoint the Arm with Oil of Earth-Worms, which is not improper. These Dressings must be repeated, till the divided Parts of the Tendon seem to coalesce, which may be known from the Laxity of the retaining Threads which must thereupon be cut, and carefully extracted: If the Pieces of Leather, Lint, or wax'd Silk, do not fall off spontaneously, they must be removed very gently. The Wound must be treated with a vulnerary Balsam, and scraped Lint, and the Hand must be kept extended on the Pastebord, by which Means the Agglutination will be promoted. *Garengot* describes a particular Machine for retaining the Hand and Arm in a convenient Posture, with the Fingers extended, and a little reflected: But though this Instrument may not be improper, the same Intention may be answer'd by the Method above directed. If any Rigidity or Distension affect the conglutinated Tendon, it will be proper to rub the Part carefully every Day with the Ointment of Marshmallows, the Oil of Worms, of *St. John's Wort*, or of Almonds, till it recovers its natural Motion. But it is surprizing, that not only the Antients, but even some of the Moderns, as *Arcaus, Marchetti, Genga, Peccatius*, and other eminent *Italians*, should reject this Method of Cure; and some scruple not to assert, that all Accounts of the Success of these Sutures ought to be reckon'd fabulous, although there are Instances of the contrary given by Authors of undoubted Credit, among whom may be consulted *Kisnerus's Dissertation de Tendinum Læsionibus, Valentini's Surgery, and Goelicke de Tendinum Affectionibus.*

The Tendons of the Legs are no less liable to be divided than those of the Arms, especially the *Tendo Achillis*, and the Tendon of the *Extensors* of the *Tibia*, immediately below the Patella. By the Tendon of *Achilles*, we mean that broad, strong Tendon which extends the Foot, and reaches from the Calf of the Leg to the Heel: Its Name is derived from the *Grecian Hero Achilles*, who, by a Wound of this Tendon, is said to have lost his Life. By a Division of this Tendon, the natural Power of moving the Foot is lost; and unless it be carefully re-united, the Lameness will continue during Life. I am not, indeed, ignorant, that *Garengot* mentions a Surgeon of *Paris* who cured a Man of a Fracture of the *Os Calcis*, by dividing the *Tendo Achillis* with the Knife, leaving it without a Suture, and taking out the Fragment of the Bone, and the Patient afterwards had no Defect in the Limb. But I am so far from recommending the Imitation of this Method, that I rather advise against it; nor can I see any Reason why, in a Fracture of the *Os Calcis* only, the Surgeon should cut the *Tendo Achillis*; neither does it appear from this Relation, whether the Author only disapproves of the Suture of this Tendon, or intirely rejects it. I wish *Garengot*, who often enlarges on Difficulties of much less Importance, had, also, explain'd this surprizing Case, if true, so as to have made it intelligible. *Borelli* relates, that a Surgeon extirpated a large Tendon of the Ankle, (I suppose the *Tendo Achillis*) corrupted with an Ulcer; and that after the Wound was healed, the Patient could walk without any Inconvenience, being supplied with a new Tendon, or some analagous Substance. The Wounds of this Tendon may be of different Kinds: If it be only punctured, perforated, or partially cut, the Patient is seized with very dangerous Symptoms, as was observed in the other Tendons; but here the Disorder is more violent, as this Tendon is larger than the others. Probably on this Account the antient Physicians reckon'd the Wounds of this Tendon, as it is the largest in the Body, mortal, or at least extremely dangerous, especially as they had heard and read that such a Wound was the Occasion of the Death of *Achilles*. The Symptoms accompanying a Tendon entirely divided, are much more mild and tolerable, and therefore, when a Puncture or partial Wound is attended with very violent Disorders, which will not yield to proper Remedies, let the Tendon be cut through, and then will the Pain and Convulsions cease; and in reuniting the Tendon by the Suture, none of these dreadful Symptoms appear. But why the accidental Puncture of a Tendon should be attended with such dangerous Consequences, and yet the Perforations made by the Needle should occasion little or no Disorder, is by no Means evident to me, though the Truth of this Fact is undoubtedly proved by Experience. For this Reason, it is not surprizing that *Paré*, who in many Cases was not so timorous, and many eminent Physicians, should be afraid to attempt this Operation: And *Veslingius*, when he had seen the Tendon of *Achilles* reunited by Suture, and that of the *Extensors* of the *Tibia* under the *Patella* performed by an *African* Surgeon, owns, that he abhorred the Rashness of such Operators, although the Success and Ease of the Cure sufficiently demonstrated the Unreasonableness of his Timidity. However, that

the *Tendo Achillis* when divided may be united, like other wounded Tendons, without a Suture, is not impossible, if the Foot can be bound up in such a Position, that the divided Extremities may be brought into Contact.

The Method of performing this Suture differs little from the Suture of the Tendons of the Hand, (see *Tab. 57. Fig. 7. and 10.*) except that the Needle should be larger and stronger, but either strait, as at *Fig. 8. Let. A.* or crooked and flat, as at *Fig. 9.* The Thread, also, is required to be stronger, as at *Fig. 8. B B.* The first Account of this Operation, so far as I know, was given us by *Veslingius*. One Instance he relates of the Suture of the Tendon of *Achilles*, and the other, which he saw in *Africa*, of that of the *Extensors of the Tibia*. It was afterwards performed by the eminent *Mr. Cowper, of London*; whose Description of this Operation, being the most particular yet published, I shall here deliver, taking Care to supply his Defects, and illustrate his Obscurities.

Mr. Cowper's Patient was about thirty Years of Age, having the *Tendo Achillis* of his left Leg cut through, about the Breadth of three Fingers above the *Os Calcis*, the superior Part being drawn up from the inferior about two Inches. (See *Fig. 10. A B.*) *Mr. Cowper* first open'd, by Incision, the Integuments *a b*, before he could have Access to the Extremities of the Tendon. This Incision *Garengot*, and some other Moderns, forbid, because from it they apprehend various Inconveniencies. But that no bad Consequences can arise from this Circumstance, is evident from the happy Conclusion of this very Case, not to mention the same Sort of Incision already recommended in treating the Tendons of the Hands. And if the Ends of the Tendon recede so far from one another as is here related, the Suture cannot be performed without such Incision. *Cowper* here used two strait, small Needles; but *Garengot* directs two very large, crooked Needles: But this Instance shews, that the Operation may be well executed with the small, strait Needles, though, perhaps, those which are crooked may be more convenient. We, also, learn from this Case, that the *Acutenaculum*, or Handle for the Needle, is not so extremely necessary as *Garengot* has represented it; for *Cowper* makes no Mention of it, and therefore it is probable he did not use it. He passes the first Needle *C* with a waxed Thread of Silk through the superior Part of the Tendon *A*, about half an Inch from the Extremity. By the *Figure* it appears that he entered the Needle on the Outside of the Tendon, guiding it to the Inner-side, though he makes no Mention of it; but the *Figure* does not exactly shew what Part of each End of the Tendon was perforated by the Needle *C*; that is, neither where it enter'd, nor where it came out, both of the superior and inferior Part of the Tendon. With another Needle *D*, and a like silken Thread, he in the same Manner pierced the superior Part of the Tendon, entering it a little lower than the first; then he passes both the Needles through the inferior Part of the Tendon *B*. The Foot was afterwards extended, and the Extremities of the divided Tendon were brought into Contact by drawing the Ends of the Threads together, which were tied so as to keep the Extremities of the Tendon in Conjunction, while the Foot was retain'd in this Position, and the Ends of the Threads were cut off. In what Manner the Ends of these Threads were tied, whether *C* with *D*, or *C* with *C*, and *D* with *D*, is not mentioned in the Relation, nor appears from the *Figure*. But from what is below observed, I am of Opinion, that *C* is tied with *C*, and *D* with *D*. The Wound was then dressed with Lint dipped in Balsam of Turpentine, and a Compress and Bandage was applied. Next, that the Foot might be retained in a proper Extension, and the Extremities of the Tendon exactly kept in Contact, a sort of Arch was made of the thickest and firmest Pastebord, which was so applied to the anterior Part of the Foot and Leg, as to keep the Foot extended and immovable, and prevent a Rupture of the Suture. He observes, that the Patient complained of severe Pain, when with the Needle he perforated the superior Part of the Tendon; but felt none when he pierced the inferior Part. Then, in order to prevent various Mischiefs, fourteen Ounces of Blood were extracted from the Arm of the Patient, who was next put to Bed, and in the Evening an Ounce of the *Syrupus e Mecconio* was exhibited to him, to compose him to Rest. Next Day the Patient was in a favourable Condition, slept well, and only complained, that in the Night he felt lancinating Pains in the Calf of his Leg when he happened to awake. The third Day, the Wound was dressed in the same Manner as the first, adding only a Fomentation of Wormwood, Sage, Rosemary, and Bay-Leaves. On the fourth Day, the Wound appeared very wet with a serous Humour called *Synovia*; on the 6th, this Matter was thicken'd, and on the 8th, still more inspissated, after which it disappeared. All this Time the two Extremities of the divided Tendon

had not at all receded, but between them appeared a white Substance, to which the Balsam of Turpentine and Tincture of Myrrh were applied. Soon after this white Substance cast off, and the two Extremities appeared covered with a fungous fleshy Substance. To the Wound were afterwards applied dry Dressings, sometimes dry Lint, and sometimes the Powder of Turpentine. On the tenth Day, one of the Threads appeared relaxed, which *Cowper* cut and extracted. Two or three Days after, the other Thread became loosen'd, which he also cut and extracted, the Foot being all the while kept extended with the Pastebord Arch. Hence it appears, that the Ends of the Thread *C C* were tied together, and likewise those at *D D*, as I above hinted, because one of the Threads became relaxed, was cut, and extracted, while the other remained tight; for had they been tied in any other manner, if one of the Threads had been cut, the other would also have been loosened. In one Circumstance *Cowper* widely differs from all others; for it does not appear by his Relation, that he used any Compresses of Leather, Cork, or of waxed Linen or Silk. He also directs how the Threads of the Suture should be extracted, a Particular which is generally overlooked by other Writers; as is the Pastebord Arch, which however is so necessary in this Case, that the Extension of the Foot cannot easily be preserv'd without it. Nor does any other Author mention the frequent Application of corrosive Medicines, to remove or diminish the spongy or luxuriant Flesh. In thirty Days the Patient was able to walk a little, though lamely. He gradually came to walk with greater Ease, and about the End of the second Month, recovered the perfect Use of his Foot. But *Paré* gives an Instance of the Tendon of *Achilles* being cut with a Sword, which not being united by Suture, was not only tedious and difficult of Cure, but after a Cicatrix was induced, it again broke as the Patient was rising out of Bed.

Veslingius gives a very imperfect Account of the Sutures which he saw of this kind: *I saw*, says he, *the Tendon of Achilles, in my Father's Ammanensis, which had been divided a little above the Os Calcis, united with some Sutures performed by Surgeons. I likewise saw the Tendon of the Extensors Tibia, in an Arabian, which had been cut with a Scymetar, transversely under the Patella, brought into Conjunction in the same manner by a Surgeon of Tunis.* From this Relation we can only learn, that more than one Suture was used, but no Mention is made of the Manner of Dressing, and Method of Cure. *Kisner*, in his Dissertation *de Tendinum Læsionibus*, has delineated another Method of performing the Suture of the Tendon of *Achilles*, which I have represented in *Tab. 57. Fig. 7.* which is so plain as to need no further Explication. But though the Generality of Authors direct to make the first Perforation in the upper Part of the Tendon, he begins with the lower at *D E*, and makes the slipping Knot on the superior Part, which others make on the inferior. But though I do not deny, that this Method proposed by *Kisner* may succeed, yet I would prefer that followed by *Cowper* and others.

The Method of performing the Suture of the Tendon of the Extensors of the Tibia, has not, I believe, been hitherto described by any Author; but I conceive it may be done in the same manner as that just described. But as this Tendon is larger than the Tendon of *Achilles*, one Puncture in each Part of the Tendon may not be sufficient; it may therefore be proper, the Leg being first extended, to use a Thread with two Needles, and to make two Perforations in each Part of the Tendon, after the Manner proposed by *Nuck*, [See *Tab. 57. Fig. 4. Lit. E F.*] which we have already given. The Wound may be afterwards treated, as we have directed in Tendons of the Hands, or according to the Method proposed by *Cowper*. The Ham must afterwards be bound up with Splints of Wood, or thick Pastebord, as in a Fracture of the Patella; so that the Knee cannot be bent, but retained in continual Extension. But by carefully observing to keep this Posture of the Leg, and treating the Wound in a proper manner, I make no doubt but this Tendon may coalesce without a Suture; because the superior Part of the divided Tendon will not shrink so much as in the Tendon of *Achilles*, on account of the Connexion of the Patella with the Tibia; and therefore the two Extremities may more easily be brought together, and retained in Contact by proper Bandages.

OF THE SUTURE OF THE LIGAMENTS.

As the Ligaments consist of a similar Substance with the Tendons, in all probability they may be successfully united by the same Method, though I know no Instance of this Operation. But in this Suture the Thread with two Needles seems to be most proper, and the Method recommended by *Garengot* for Sutures of the Tendons, which we have already given, should be observed. The Dressings and other Treat-

ment may be the same as in the preceding Cases. *Heister's Surgery.*

SYALITA. *H. M. Arbor Indica flore maximo, cui multae innascuntur Siliquae.* This is a tall Tree, forty or fifty Foot in Height, growing in *Malabar*, and bearing a most beautiful and sweet-scented Flower, succeeded by a very large Fruit resembling an Apple, and much like our subacid or vinous Apples both in Taste, Smell and Pulp, tho' somewhat too acid to be eaten as a Delicacy; it is, however, used by the Natives, especially in their Broths.

Of the Leaves of the Tree they prepare a Lixivium, which is of use in cleansing the Greasiness of the Hair, and detaching the Sordes of the Head, and also in smelting and depurating Silver. The expressed Juice of the Roots applied in Linen moistened therewith, resolves inflammatory and Oedematous Tumors. The expressed Juice of this tender Fruit, made into a Syrup with Sugar, cuts and expels Phlegm, and cures the Aphthae and Inflammations of the Fauces. The mature Fruit loosens the Belly, and frequently excites a Diarrhea. And the Bark of the Tree bruised with an Infusion of Rice, which the Natives call *Ambata-Confja*, being rubbed on the affected Part, cures the Gout. *Raii Hist. Plant. p. 1707.*

SYCAMINOS. The Mulberry.

SYCE. *συκη.* The Fig.

SYCIA, by Corruption for **SICYA**, which see.

SYCION. *συκιον.* A Decoction of dry'd Figs.

SYCITES. *συκιτης.* An Epithet for Wine impregnated with Figs.

SYCOMA. See **SYCOSIS**.

SYCOMORUS. *Offic. J. B. 1. 124. Ger. 1326. Emac. 1509. Sycomorus sive Ficus Egyptia, Park. Theat. 1492. Ficus folio Mori, fructum in caudice ferens, C. B. P. 459. Raii Hist. 2. 1439. THE EGYPTIAN SYCOMORE.*

It grows in *Egypt* and other Countries, and the Fruit and Tear are in Use. The Fruit is cooling and moistening, and relaxes the Stomach, and cures hard Tumors; the Tear resists Poisons and the Pestilence.

The Fruit of the Sycomore agrees with the Belly, but affords very little Nutriment, and is bad for the Stomach. It is supposed to be of a refrigerating and moistening Quality, and to loosen the Belly, whence it is proper to be applied with the Oil of Roses to the Stomach in feverish Disorders. *Galen* bestows very high Commendations on the Plaster *δαδονικον*, *Diafycorum*, for the Cure of a Tumor proceeding from a gross and vaporous Spirit. The Tear of the Tree has the Virtue of mollifying, conglutinating Wounds, and discussing what is difficult to be matured. It is also taken inwardly, and used outwardly in Inunctions against the Bites of Serpents, scirrhus Hardnesses of the Spleen, and Pains and Coldness of the Stomach. The Ancients prepared a Wine of the Fruit, which easily degenerated into a very sharp Vinegar. *Raii Hist. Plant.*

SYCOSIS. *συκωσις*, in Latin *Marisca*, is a Tumor in the Anus, differing from the Thymus only in Bigness. *Sykosis*, in *Celsus*, *Lib. 6. Cap. 3.* is also an Ulcer, so called, he says, by the *Greeks*, from its Resemblance to the *συκη*, or *Ficus*, because the Flesh grows up in it. He proceeds to tell us, that it is of two Kinds, one hard and round, the other moist and unequal. From the hard Ulcer, or *Sykosis*, is discharged a glutinous Substance in small Quantities; from the humid Ulcer, a larger Quantity and of an ill Smell. They both arise in those Parts which are covered with Hair; but that which is round and callous, is generally seated in the Beard; the moist Kind, for the most part, among the Hair of the Head. Thus *Celsus*.

For the Cure of both these Kinds of *Sykosis*, the same Author advises the Application of the Elaterium, or Linseed bruised and made into a Mafs with Water, or Figs boiled in Water, or the *Emplastrum Tetracharmatum* made up with Vinegar, or to rub the Place with *Terra Eretria* dissolved in Vinegar.

Sykosis, *συκωσις*, is also the same as *Sycoma*, *συκωμα*, or *Sycon*, *συκων*, which is an Eminence and Tumor of the Eyelids with an Asperity, whence the Eyelid is called *Ficosa Palpebra*. *Paulus* gives this Name to a rough Excrecence of the inner Part of the Eyelid, which increases so as to have Incisures, by which it is distinguished from a *Trachoma*, *τραχημα*. And the Author of the *Ilagoge* defines a *Sykosis* to be something like Flesh growing in the interior Part of the Eyelid, and hanging out in such a manner as to incommode the Eye in its Motion. *Aetius*, *Tetrab. 2. Serm. 3. Cap. 45.* tells us, that what we call a *Sykosis*, has high Eminences, and, as it were, Incisures.

Galen, *Com. 2. in 6 Epid.* for exulcerated Tumors and Eminences in the Eyelid, directs, first to use exasperating Medicines, and then Corrosives, that their Virtue may penetrate the deeper; and tells us, that in such Cases he has made

use of the rough Skin of a Whale, the Shell of a Sepia, and a Pumice-stone. The same Author, *Lib. 11. de Simpl. Med. Fac.* says, that they call great and considerable Asperities of the Eyelids *Sycofes*; and *Lib. 4. de C. M. S. L.* that small Asperities of the Eyelids are called *Trachomata*, but considerable ones *Sycofes*.

SYCOTA. *συκωτα*, from *συκη*, a Fig; are a delicate Sort of Food prepared of *Caryca*, which, as *Galen* says, *Com. 3. in Lib. de R. S. J. A.* on account of their Sweetness, are very grateful to the Viscera, particularly the Liver, but very hurtful in Fevers and internal Inflammations, because they are easily converted into Bile.

SYCOTON. *συκωτον*, we are told by *Aetius*, *Tetrab. 2. Serm. 2. Cap. 127.* is a Name for the Liver of a Pig fatten'd with *Caryca*.

SYDIA. Wool. *Rulandus.*

SYLETUM, is defined by *Paracelsus*, a Medicine compounded of three Salts. *De Tartaro, Tract. 2. C. 5.*

SYLO. The whole World. *Rulandus.*

SYMBOLISMUS. Means a Consent of Parts, in the Writings of some of the Chymists.

SYMOLOGICE. That Part of Pathology, which treats of the Signs or Symptoms of Diseases.

SYMPARATAXIS. *συμπαράταξις*, from *συν*, importing Conjunction or Mixture, and *παράταξις* (of *τάξις*, to order) to draw up an Army in Order of Battle, is properly a Conflict between two Armies, but is used by *Hippocrates*, *de Pristia Medicina*, to signify the Conflict or Contention between the Disease, Nature, and the Aliments.

SYMPASMA. *συμπασμα*. The same as **CATAPASMA**, or **DIAPASMA**.

SYMPATHETICUS PULVIS. The Sympathetic Powder.

Take good *English* Vitriol, such as we call Bow Copperas, purify it by two or three Dissolutions, Filtrations, and Crystallizations; set those Crystals in a clean Pan in the Sun, either in *June*, *July*, or *August*, till they are calcined to Whiteness. When one Side is calcined, turn the other, and in a few Days the Crystals will crumble into Powder; if they do not, they may be again beat and exposed to the Sun, and stirred three or four times every Day. At last beat them into a very fine Powder, and again set them in the Sun, stirring as before for two or three Days more, in which Time they will be very white; then take in the Matter while the Sun shines hot upon it, and keep it from the Air in Glasses well stop'd, and in a dry Place.

It is a mild powerful Styptic, very successfully applied in the Stopping of Blood, either at the Nose or Wounds, and will incarnate and heal up, where the Bone is not unsound. We have a great many surprising, and even romantic Stories, of its Efficacy, by some Writers in that Way, by which it has obtained its Name, and particularly by Sir *Kenelm Digby*; but the present Practice owns no such Chimæras.

Powder of Sympathy, according to Sir *Kenelm Digby*, from whose Discourse on this Subject, made before a solemn Assembly of Persons of Quality and Learned Men at *Montpellier* in *France*, the following Account is taken, is a Powder which naturally, and without any Magic, cures Wounds without touching, and even without seeing the Patient.

The Method and primitive Manner how to make use of this sympathetic Remedy, was to take only some Vitriol, and that of the common Sort, as it came from the Druggist's, without any Preparation or Addition at all, and to dissolve it in Fountain-water, or rather Rain-water, in such a Proportion, that putting therein some polished Iron, it should come out changed into the Colour of Copper. And into this Water they put a Clout or Rag, embued with the Blood of the Party hurt (the Rag being first dry); but if it was yet fresh, and moist with the reeking Blood, there was no Need but to powder it with the small Powder of the same Vitriol, in such sort that the Powder might incorporate itself, and imbibe the Blood remaining yet behind, and keep both the one and the other in a temperate Heat and Place, viz. the Powder in one's Pocket, and the Water (which admits not of this Commodity) in a Chamber where the Heat was temperate, and every time that one puts new Water of Vitriol, with fresh Powder and new Cloth, or other bloodied Stuff, the Patient should feel new Ease, as if the Wound had been then dressed with some sovereign Medicament; and for this Reason, they used to reiterate this Manner of Dressing both Evening and Morning.

But now the most part of those who make use of this Remedy of the Powder of Sympathy, do endeavour to have Vitriol of *Rome*, or of *Cyprus*, and calcine it white in the Sun.

Sun. And besides, some use to add the Gum of Traga-canth, it being easy to add unto Things already invented.

The Virtue of this Powder is confirmed, as our Author says, by one of the clearest, most perspicuous, and most averred Instances that can be, not only from the remarkable Circumstances thereof, but also for the Hands through which the whole Business passed. For all the Circumstances were examined and sounded to the Bottom by one of the greatest and most knowing Kings of his Time, King James [the First] of England, who had a particular Talent, and marvellous Sagacity, to discover natural Things; as also by his Son King Charles, and the Duke of Buckingham, their Prime Minister. And all was register'd among the Observations of the Great Chancellor Bacon, to add, by way of Appendix, to his *Natural History*. The Matter of Fact is as follows.

Mr. James Howell, well known for his publick Works, and particularly his *Dendrologics*, endeavouring to part two of his Friends engaged in a Duel, seized with his Left Hand the Hilt of the Sword of one of the Combatants, and with his Right Hand laid hold of the Blade of the other. They being transported with Fury one against the other, struggled to rid themselves of the Hindrance their Friend made, that they should not kill one another; and one of them roughly drawing the Blade of his Sword, cut to the very Bone the Nerves and Muscles of Mr. Howell's Hand; and then the other disengaging his Hilt, gave a cross Blow on his Adversary's Head, which glanced towards his Friend, who heaving up his fore Hand to save the Blow, he was wounded on the Back of his Hand, as he had been before within. The two Combatants seeing Mr. Howell's Face besmeared with Blood, by heaving up his wounded Hand, left fighting at once, and ran to embrace him, and having searched his Hurts, they bound up his Hand with one of his Garters, to close the Veins which were cut and bled abundantly. They brought him home, and sent for a Surgeon; but this being heard at Court, the King sent one of his own Surgeons; for his Majesty much affected the said Mr. Howell.

It was my Chance to be lodged hard by him, and four or five Days after, as I was making myself ready, he came to my House, and prayed me to view his Wounds; for I understand, said he, that you have extraordinary Remedies upon such Occasions, and my Surgeons are apprehensive that it might grow to a Gangrene, and so the Hand must be cut off. In effect, his Countenance discovered that he was in much Pain, which he said was insupportable, in regard of the extreme Inflammation. I told him I would willingly serve him, but if haply he knew the Manner how I would cure him, without touching or seeing him, it may be he would not expose himself to my Manner of Curing, because he would think it perhaps either ineffectual or superstitious. He replied that the wonderful Things which many have related unto me of your Way of Curing, make me nothing at all doubt of its Efficacy. I asked him then for any thing that had the Blood upon it; so he presently sent for his Garter, wherewith his Hand was first bound; and having called for a Basen of Water, as if I would wash my Hands, I took a Handful of Powder of Vitriol, which I had in my Study, and presently dissolved it. As soon as the bloody Garter was brought me, I put it within the Basen, observing in the mean while what Mr. Howell did, who stood talking with a Gentleman in a Corner of my Chamber, not regarding at all what I was doing; but he started suddenly, as if he had found some strange Alteration in himself. I asked him what he ailed. I know not what ails me, replied he; but I find that I feel no more Pain; methinks that a pleasing Kind of Freshness, as if a wet cold Napkin did spread over my Hand, has taken away the Inflammation that tormented me before. I answered, since you feel already so good an Effect of my Medicament, I advise you to cast away all your Plaisters, only keep the Wound clean, and in a moderate Temper betwixt Heat and Cold. This was presently reported to the Duke of Buckingham, and a little after to the King, who were both very curious to know the Circumstance of the Business, which was, that after Dinner I took the Garter out of the Water, and put it to dry before a great Fire. It was scarce dry, but Mr. Howell's Servant came running, that his Master felt as much Burning as ever he had done, if not more, for the Heat was such, as if his Hand were betwixt Coals of Fire. I answered, that tho' that had happened at present, yet he should find Ease in a short time, for I knew the Reason of this Accident, and I would provide accordingly, for his Master should be free from that Inflammation, it may be, before he could possibly return unto him; but in case he found no Ease, I wished him to come presently back again; if not, he might forbear coming. Thereupon he went, and at the Instant I did put again the Garter into the Water, he found

his Master without any Pain at all. To be brief, there was no Sense of Pain afterwards; but within five or six Days the Wounds were cicatrised and entirely healed.

King James, who had received a punctual Information of what had happen'd, would fain know how it was done. I readily told him what the Author, of whom I had the Secret, said to the Great Duke of Tuscany on the like Occasion. It was a religious Carmelite, who came from the Indies and Persia to Florence; he had, also, been in China, and having done many strange Cures with his Powder, after his Arrival in Tuscany, the Duke said he would be very glad to learn it of him. The Carmelite answer'd, that it was a Secret he had learnt in the Oriental Parts, and he thought there was not any Person in Europe who knew it but himself, and that it deserved not to be divulged, which could not be done if his Highness meddled with the Practice of it, because he was not likely to do it with his own Hand, but must trust a Surgeon, or some other Servant; so that, in a short Time, divers others would come to know it as well as himself. But a few Months after I had an Opportunity to do an important Curtesy to the said Friar, which induced him to discover unto me his Secret; and the same Year he returned to Persia, so that now there is no other knows this Secret in Europe but myself. The King replied, that I need not be apprehensive that he would discover any Thing, for he would not trust any Body in the World to make Experience of his Secret, but that he would do it with his own Hands, and therefore desired some of the Powder; which I deliver'd, instructing him in all the Circumstances. Whereupon his Majesty made sundry Proofs, whence he received singular Satisfaction.

In the Interim Dr. Mayern, his first Physician, wanted to discover what was done by this Secret; and at last he came to know that the King made use of Vitriol. Afterwards he accosted me, saying, he durst not demand of me the Secret, because I made some Difficulty of discovering it to the King himself; but having learnt with what Matter it was to be done, he hoped that I would communicate unto him all the Circumstances how it is to be used. I answered him, that if he had asked me before, I would have frankly told him all, for in his Hands there was no Fear that such a Secret should be prostituted. A little after the Doctor went to France, to see some fine Lands which he had purchased near Geneva, and in this Journey went to see the Duke of Mayenne, who had been his Friend and Protector, and taught him his Secret, whereof the Duke made many Experiments, which if any other than a Prince had done, that had perhaps passed for Effects of Magic and Enchantment.

After the Duke's Death, who was killed at the Siege of Montauban, his Surgeon, who waited upon him in doing Cures, sold this Secret to divers Person of Quality, who gave him considerable Sums for it, so that he became very rich thereby. The Thing being thus fallen into many Hands, remained not long a Secret, but by Degrees came to be so divulged, that now there is scarce any Country Barber but knows it.

The Author proceeds from Matter of Fact to assign Reasons, or, as he says, to make good convincing Proofs, that this *sympathetical* Cure may be done naturally. Here, tho' indeed he manages his Argument very ingeniously, and shews a great Insight into Nature for those Times, and enlivens his Discourse with many remarkable and surprising Relations; yet what he says, I doubt, will not appear demonstrative to one whose physical Notions are built upon modern Principles and Discoveries. The Powder itself, and its Effects, how well soever they seem attested, are left intirely to the Judgment of the Reader.

SYMPEPSIS. Concoction, or Digestion.

SYMPHONOS. *συνφωνος*. An Epithet for a Medicine against a Cough and Fever, recommended by Galen, L. 7. de Comp. M. S. L. Cap. 2.

SYMPHORANEUROS. A Term peculiar to Forestus, importing a severe Tremor in acute Fevers, accompanied with an Hebitation of the Senses.

SYMPHYSIS. *σύνφυσιν*, from *σύν*, with, or together, and *φύω*, to grow, in Anatomy, is a Species of Articulation. In Surgery, *Symphysis* is a Coalescence of the natural Passages, as the Anus, Vagina, Nostrils, or any other Part.

SYMPHYTUM.

The Characters are;

The Calyx is cut, even to the Base, into five long slender Segments. The Flower is monopetalous, pendulous, cylindrical, in the lower Part, and in its upper Part, which has its Margin quinquefid, resembling a Pitcher. From the interior, lower, fistulous Part of the Flowers, where it begins to be explicated, proceed five Stamina, and as many sharp, nodding Pales, placed alternately. The Seeds are smooth, shining, and resembling those of the *Lithospermum*.

Boerhaave mentions six Sorts of *Symphytum*, which are;

1. *Symphytum*; *Consolida major*; mas; flore purpureo. *Boerb. Ind. A.* 195. *C. B. P.* 259. *Symphytum*, *Consolida major*. *Offic. Tourn. Inst.* 138. *Symphytum magnum*, *J. B.* 3. 593. *Raii Synop.* 3. 230. *Symphytus majus vulgare*, *Park. Theat.* 523. *Consolida major*, *Ger.* 660. *Emac.* 806. *Raii Hist.* 1. 505. **COMFREY.**

Comfrey has a large Root, divided into many Branches, which are black, on the Outside, but white within, full of a slimy tenacious Juice. The lower Leaves are pretty large, long, narrow, and sharp-pointed, hairy and rough. The corner'd Stalks grow to be two or three Foot high, clothed with smaller Leaves, and bearing on their Tops reflected Spikes of white Flowers, opening by Degrees; each Flower being hollow and cup-fashion, cut into five blunt Segments on the Top, and set in a very hairy Calyx; in which, after the Flower is fallen, grow four rough Seeds. It grows by River Sides and watery Places, and flowers in *June*.

There is one Sort of great *Comfrey*, that bears purple Flowers; but it is not so frequently met with as that with white.

The Roots, Leaves and Flowers are used.

Comfrey is a good vulnerary Plant, having the Name of *Consolida* given it, because it consolidates Wounds. It is likewise good against inward Bruises, Spitting of Blood, and is useful against sharp corroding Humours, that cause Erosions in the Bowels. The Roots beaten to a Cataplasm, ease Pains of the Gout.

The only official Preparation from *Comfrey*, is the *Syrupus de Symphyto*. *Miller's Bot. Off.*

The Leaves of *Comfrey* are insipid, glutinous, and give a very faint Tincture of red to the blue Paper; the Roots give it a little deeper, and abound with a viscid Juice. This Plant contains a Salt very much resembling the Salt of Coral, dissolved in a very glutinous Phlegm, in which there is a little Sulphur, and a very little Sal Ammoniac: For

By the Chymical Analysis it yields several acid Liquors, a great deal of Earth, very little Sulphur, no volatile concrete Salt, but a little urinous Spirit. There is but a very small Quantity of the fix'd Salt; so that it may probably act principally by its viscid Juice, which the Fire destroys.

Dioscorides says its Roots are vulnerary; that being bruised with the Leaves of Groundsel, they assuage the Inflammation of the Piles; that their Juice is good for spitting Blood; and lastly, that being boiled with Meat, they join the Pieces together again. The Moderns agree that its Roots incrassate and lenify; they are good in Hæmorrhages and spitting of Blood, caused by acrid Salts, which render it too fluid; and, in Defluxions of the Breast, caused by saltish and corrosive Serosities. The Roots are candy'd, and Lozenges are also made of them. *Fernelius's* Syrup of *Comfrey* is very compound; so is likewise that of *Dodonæus*, but it is more lenifying.

Take two Ounces of *Comfrey* Roots; of Liquorice, one Ounce; two Handfuls of the Leaves and Roots of Colts-foot; an Ounce and an half of the Kernels of Pine-Apples; twenty Jujubes; two Drams of Mallow Seeds; two Drams of the Heads of white Poppy: Boil all this in a Pound and a half of Water; strain the Decoction thro' a Sieve; make it into a Syrup with six Ounces of Sugar, and as much *Narbonne* Honey.

The Roots of *Comfrey* bruised and applied as a Cataplasm, very much assuage the pricking of the Tendons, the Pains of the Gout, and stop spreading Ulcers. *Simon Paulli* advises not to use them alone for the Gout, for fear they should repel the Humour. He prescribes the following Cataplasm, which he had from *Semertus*, as an incomparable Remedy.

Take three Ounces of *Comfrey* Roots; two Ounces of Marsh-mallow Roots; one Ounce and a half of those of Dwarf Elder; one Handful of the Leaves of Southern Wood; two Handfuls of St. John's Wort; three Handfuls of Chamomile Flowers; four Handfuls of those of Elder; two Ounces of Fœnugreek Seed; three Ounces of Linseed; boil all together in Elder-Water, to make a Cataplasm. This Medicine is very compound. I mix some Drops of fetid Oil with the Root of *Comfrey* well bruised, and apply it to the Parts affected with the Gout. *Martyn's Tournesfort.*

Symphytum is principally used in all Sorts of Fluxes, especially of the Belly, in an Erosion of the Lungs, and a Phthisis. But I, says *Baubine*, (with whom agrees *C. Hoffman*) would not use the Root of *Comfrey* in all Kinds of Disorders of the Thorax, but only in such as proceed from a thin, subtle and hot Humour. The Flowers boiled in Red Wine, and taken twice a Day, are an excellent Remedy, according to *Camerarius*, for bloody Urine. *Parkinson* commends the

Roots cut small, then pounded and apply'd, in Pains of the Gout, and for restraining phagedenic Ulcers, and even Gangrenes. Take of the Roots of *Comfrey*, as much as you think fit, beat them in a Mortar to a Mass, which spread upon Leather, and apply to the Part affected; this Cataplasm is not only effectual for mitigating the Pain of the Gout and Sciatica, but, also, Pains of the Arms, attended with a Privation of Motion, and for some Kinds of venereal Pains, in which it has been successful, after many Embrocations used to no Purpose. Pulverise the dry'd Root of *Comfrey*, and mix the Powder with warm Spring-Water, stirring it about till you observe the Water to become ropy with the Glue or Slime of the *Comfrey*. This very simple Medicine is prefer'd by the most skilful Surgeons, as well in Hæmorrhages, as Fractures and Luxations, before many others which are more compounded. A certain Person labour'd under a malignant Ulcer, which the Surgeons pronounced a Cancer, but could not cure it. A Mountebank was consulted; he took the Root of the greater *Comfrey*, and scraping off the black outer Bark, he bruised the rest, and spreading it on a Linnen Cloth, applied the same twice every Day to the Part affected, and the Patient was cured; the Cancer, however, was but recent, and of no more than eight or ten Weeks standing. *Raii Hist. Plant.*

2. *Symphytum*; *Consolida major*; fœmina; flore albo, vel pallidè luteo. *C. B. P.* 259.

This agrees in Virtues with the former.

3. *Symphytum*; *Consolida major*; mas; flore purpureo cæruleo. *C. B. P.* 259.

4. *Symphytum*; *Consolida major*; mas; flore coccineo.

5. *Symphytum*; majus; tuberosâ radice. *C. B. P.* 259.

6. *Symphytum*; *Echii folio angustiore*; radice rubrà; flore luteo. *T.* 138. *Anchusa*, lutea, minor. *C. B. P.* 255. *Boerb. Ind. Alt. Plant.*

It is called *Symphytum* from *συνφύω* (*Symphyo*) to conglutinate, to cause a Coalition, from its well known conglutinating Quality.

The first Species has a viscous and glutinous Juice, and is of excellent Service in Wounds and malignant Ulcers, attended with Hæmorrhages, in Spitting of Blood, bloody Urine, and a Phthisis. The Root is insipid, but very demulcent, and the Juice is very good in an Hæmoptoe from an excessive Tenacity, and in Hernias. The *Syrupus de Symphyto* of *Fernelius* is good in Asperities of the Lungs, but not proper for a Cough in old Persons, for it increases it. A Cataplasm of the Roots is effectual in Punctures of the Tendons. The Herb is good in a Dysentery, and an Exulceration of the Kidneys and Bladder from Cantharides; it is exhibited like the *Althæa*, but in a smaller Dose, because of its grosser Mucosnefs. The Flowers bruised and boiled, with an Addition of Syrup of *Althæa*, make an excellent Cataplasm for consolidating recent Wounds. *Hist. Plant. Ascript. Boerb.*

SYMPHYTUM is also a Name for several Sorts of *Pulmonaria*.

SYMPHYTUM MINIMUM. See **BELLIS MINOR.** It is also a Name, in *Boerhaave*, for the *Omphalodes*; *pumila*; *verna*; *Symphyti folio*.

Besides the foregoing Sorts of *Symphytum*, *Dale* mentions the following Species;

SYMPHYTUM PETRÆUM. *Offic. Symphytum petraeum foliis Thymi.* *C. B. P.* 280. *Coris cærulea maritima*, *Ejusd. Raii Hist.* 1. 882. *Tourn. Inst.* 652. *Coris cærulea Monspeliaca*, *Ger. Emac.* 544. *Coris Monspeliensis*, *Park. Theat.* 571. *Coris Monspessulana purpurea*, *J. B.* 3. 434. **HEATH-PINE.**

It grows in maritime Places, and flowers in *May*. The Herb, which is used, is drying, astringent and conglutinant; the Plant is a Vulnerary. There are a Multitude of Plants which pass under the Name of *Symphytum Petraeum*, as *Prunella*, *Sanicula*, *Virga aurea*, *Coris Monspessulana*, *Hyssopus vulgaris*, *Polium vulgare montanum*, *Trachelia et Consolida Species aquosa*, and some others. *Dioscorides* describes the *Symphytum Petraeum* in the following manner: "It grows on the Rocks, and has Branches like *Origanum*, but small Heads, and thin Leaves like *Thymus*. The whole Plant is "ligneous, sweet-scented, of a sweet Taste, and provokes "Spittle. The Root is long, reddish, and about the Thickness of a Finger." After thoroughly considering this Description, I cannot persuade myself, that those Authors are in the right, who, with *Thalium*, take the *Symphytum Petraeum* to be the same as the *Caryophyllus Saxatilis*; or, with *Lebel*, to be a Species of *Prunella*; or, with *Tabenmontanus*, the same as *Virga aurea*. *Dale.*

Dioscorides says, that the Root boiled in Hydromel and drank, clears the Lungs of excrementitious Particles, and given in Water cures Vomiting of Blood, and nephritic Disorders. Boiled in Wine it cures the Dysentery, and the *Flux Ruber* in Women; and taken in Oxymel, it is effectual in

in Ruptures (*Ecclynoses*) and Convulsions. Chewed in the Mouth, it allays Thirst, and cures Asperities of the Fauces. Made into a Cataplasm, it conglutinates recent Wounds, and cures an *Enterocela*. *Dioscorides, Lib. 4. Cap. 9.*

SYMPLESIASMOS, συμπλεσιασμός. In Latin expressible nearly by *Conjunctio* or *Appropinquatio*; a modest Term by which the Antients expressed the Act of Coition, or Duty of Procreation. *Castellus.*

SYMPTOMA, σύμπτωμα, from σύν, importing Conjunction, and τίσις, to fall or happen; a Symptom or Accident. *Symptom* is a very noted Term in Medicine; and, according to *Galen, Lib. de Diff. Symp. Cap. 1, 2.* is taken in a large or strict Sense. In a large Acceptation, it signifies whatever preternaturally befalls a Person, whether it be a Disease, a morbid Cause, or supervening preternatural Accident. In a strict Sense, it means no more than the third or last Species; that is, the Consequences of Diseases, and of their Causes, exclusive of the Diseases and Causes themselves, and so is no other than a preternatural Affection, which follows the Disease, as the Shadow follows the Body. *Galen.*

Whatever preternatural Incident, proceeding from the Disease, as its Cause, befalls a sick Body, yet so as that it may be distinguished from the Disease itself and its proximate Cause, is called σύμπτωμα, "the Symptom" of that Disease; when it proceeds from a prior Symptom as its Cause, it is called σύμπτωμα συμπτωμάτων, "a Symptom of a Symptom." But whatever happens over and above in a Disease, and owes its Rise to a different Origin from the beforementioned, is rather called ἐπιγίγναι, (*Epigenema*) ἐπιγινόμενον, (*Epiginomenon*) and συμβεβηκός, (*Symbebecos*).

Hence it follows, that those very Symptoms first mentioned, are really Diseases in their Turn, and very different in Number, Variety, and Effects. We may, however, in Compliance with the Sentiments of the Ancients, conveniently enough reduce them, as they do, under three Heads, and make them to be either *Injuries of the natural Functions, Defaults in Retention and Excretion, or Alterations in the Qualities of the Body.* The natural Functions may be said to be injured, when they are diminished, abolished, increased beyond due Measure, or depraved; for example, the Symptoms, or Injuries of the Function which regard Appetite, are a *δισφορέα* (*Dysorexia*) "a Diminution of the Appetite to Food;" an *ἀνρεξία* (*Anorexia*) "an Abolition of the Appetite;" a *βόρυμος* (*Bulymos*) "an immoderate Appetite;" and a *χόσος, μαλακία* (*Cissa*, or *Malacia*) a "depraved Appetite, or a Desire after improper Food." The Default, or Disorders which fall under the Head of *Retention and Excretion*, are treated of in their proper Places, when they come to be consider'd as Causes of Diseases. And as to the third Head, a Quality of the Body is said to be alter'd or vitiated, when it is offensive to the outward Senses; and this is consider'd chiefly with respect to Colour and Smell; such, for Instance, as a fetid Scent, and a pale, yellow, green, livid, red or black Colour of the Skin. *Boerb. Institut.*

SYMPTOSIS, σύμπτωση, of the same Original with the preceding, is a Subsidence and Contraction of the Vessels, as it happens under Evacuations, and is opposed to *Dioncosis*, which see; and such a *Symptosis* appears not only in Evacuations and a *ρύσις* (*Rhysis*) or Flux, but, also, in a *στεγνότης* (*Stegnosis*, a Constriction or Constipation) and a Suppression of the Menes; as, on the contrary, a *Dioncosis* may proceed not only from a Suppression of the Excrements, but, also, from Fluxes and Excretions. *Symptosis* signifies, also, a sinking and Contraction of the Body and its Limbs, when oppressed with a Lassitude and Faintness; which is an Indication, according to *Hippocrates, Lib. πρὶ χυμῶν*, of the Violence and Malignity of the Disease. The Word, also, means a Sinking of the Limbs, and is joined with a *Dialysis*, a Resolution, and *Parexis*, a Remission. *Lib. 4. Epid. T. 37.* Again, by *Symptosis*, σύμπτωση, we are to understand the Subsidence and Compression of the Vessels, expressed, 1 *Aph. 2.* by *καταγγίη*, *Cataangia*. It is applied, also, to a sinking, or falling away of the Face, Eyes, and other Parts. *Foefius.*

SYNACTICOS, συνακτικός, from σύναγω, to contract, endued with a contracting Quality. *Castellus.*

SYNÆSTHESIS, συναίσθησις, from σύν, and αἴσθησις, is used for the Sense which the Patient himself has of his Distemper; for Instance, of the Tension of an inflamed Part. *Galen de M. M. Lib. 13. Cap. 1.* The Brain, also, is said to have not only an *Æsthesis*, but a *Synæsthesis*. *Castellus.*

SYNÆTION, συναΐτις, from σύν, and αἴτις, a Cause, is the same as *CONCAUSA*, which see.

SYNAGELASTICOS, συναγελαστικός, from σύν and ἀντράζω, to congregate, is an Epithet of such Fish as swim together in Shoals.

SYNAGMA, σύνζυμα, from συναγωγή, to bring together, a Concretion, Coition, Coagmentation. Thus, 6 *Epid. Sect.*

3. *Aph. 11.* τὸ μὲν ἔργον σύνζυμα παχύνει μᾶλλον, "a Concretion after making Water, is incident mostly in Children." That is; Concretion of such calcaous Matter as produces the Stone in the Bladder. *Galen* here expounds, τὸ σύνζυμα by τὴν σύνταξιν καὶ πύξιν, a Composition, and Concretion; and in his *Exegesis* he says, that "Synagma is either a Concretion, or an Enzorema, or an Hypostasis, or a Tophus, which last is probably the Meaning of the Word in 6 *Epid.*"

SYNANASTOMOSIS, συναναστόμις, a Connection of different Blood-Vessels.

SYNANCHE, συνάγχη. See *ANGINA*.

SYNARTHROSIS, συνάρθρωσις. See *ARTICULATIO*.

SYNCAMPE, συναμπετή, from κάμπτω, to bend, in *Hippocrates*, is the Joint or Flexure where the upper Part of the Arm is joined to the lower. *Castellus.*

SYNCAUSIS, σύγκαισις, from σύν, and καίω, to burn; *Lat. Combustio*, in *Hippocrates de R. V. J. A.* is apply'd to a Torrefaction of the Excrements by an internal, febrile Heat.

SYNCHONDROSIS, συγχονδρωσις, from χόνδρος, a Cartilage, is a Connexion of Bones by the Intervention of a Cartilage; thus the Ribs are connected to the Sternum, the Bodies of the Vertebrae to each other; as are, also, the Ossia Pubis.

SYNCHRISMATA, συγχρίσματα, from χρίω, to anoint, are Ointments of the Class of *Acopa*, so called by *Paulus Aegineta, Lib. 7. Cap. 15.* *Galen*, also, *de Antid. Lib. 11. Cap. 6.* among other Antidotes, mentions some Ointments, which *Aesclepiades* called *Synchrysmata*.

SYNCHYSIS, σύγχυσις, from συγχύω, to confound, a Confusion, Σύγχυσις δὲ, in 6 *Epid. Sect. 3. Aph. 1.* is a Confusion and Perturbation of all the Humours in Concoction, from the Imbecillity of the Stomach. *Synchysis*, also, in particular signifies a Disease of the Eye, consisting in a Confusion of the Humours, generally proceeding from a violent Blow, sometimes from an Inflammation of the Uvea, occasioning a Rupture of the Vessels, and an Eruption of the Humours. *Castellus.*

SYNCIPUT, corruptly for *SINCIPUT*.

SYNCLEISIS, σύγκλεισις, from σύν, and κλείω, to shut, a Conclusion, or Clofe, and apply'd to the Veins in the following Passage of *Hippocrates, Lib. de Morbo Sacro*, φλέβες εἰς αὐτὴν συνκλείουσι, καὶ συγκαλείουσιν ἔχου, ὥστε ἀποθανόντας ἢ τις πῶτος ἢ οὐρανὸς γίνεσθαι τῷ ἀνθρώπῳ: "The Veins have their Course towards it, [the Heart] and there conclude, or are closed up, so as that it is sensible of any Pain or Contraction happening to the Patient." But perhaps, as *Foefius* well observes, and the Construction seems best to warrant, the Meaning is that the Heart, of which he was speaking, ἔχου συγκαλείουσιν, "has the *Synclisis*," or contains in itself Conclusions; that is, the Extremities of these Vessels by which the Humours and Spirits are convey'd to that Part, which, by that Means, is immediately sensible of any Pain or Uneasiness incident to the whole Body.

SYNCOMISTOS, συγκαμίστος, from σύν, implying Mixture, and κομίζω, signifying, among other Senses, to have, or contain; mixed all the Parts together. Thus (*Lib. 2. πρὶ διαίτης*) συγκαμίστα, in Foods are those which are taken intire with all their Juices, in Opposition to *ξηρά* (*xera*) dry; and *συνκαμίστος ἄψτος*, is Bread made of the whole Corn. See *ARTOS*.

SYNCOPE, συγκοπή, from σύν, and κόπτω, to cut, or strike. *Swooning.*

If there be any Part of medicinal Knowledge which deserves, in a more than ordinary Measure, to be clearly explain'd and understood, it is certainly that which treats of the Forces of the human Body, and their Causes; since the whole Strength and Energy of Nature, which constitute the Soundness and Perfection of Life, with regard to the Mind as well as Body, by which Diseases are both prevented and cured, and by which Death itself is averted and delay'd, are observ'd to consist only in these Forces, which exert themselves in a certain, determinate, and efficacious Motion: For as a Person may be said to be of a robust Nature and firm Body, when, being in his perfect Health and Strength, he is not easily injur'd and incommoded by external Causes; or when he suffers Detriment from them, recovers, and is restor'd by meer Strength of Nature, without any considerable Assistance of Medicine; so, on the contrary, it is a Sign of Weakness of Nature, when any one, from a Decay, or languid State of those Forces, be render'd subject to various Disorders, and seldom emerges and recovers from them without the Help of the Physician. And, indeed, if we take a View of Diseases in their several Stages, we shall find, that all Hopes of Recovery appear to be founded only on the Strength of the Patient: for if this should happen to fail on a sudden, and for any considerable Time, it is very

very certain that Life is in Danger. Even that Malignity, which often attends Diseases, will be found to consist, for the most Part, in this Decay of the Forces; so that from this weak State there lies an easy Passage to Death, which itself is nothing but a full Cessation of the Strength on which the vital Motions depend.

Since, then, we stand in such absolute Necessity of those Forces, that without them the Physician can do nothing, either for preserving or restoring Health, I have often wondered how it comes to pass, that among so great a Multitude of good Authors, and under such Improvements in Medicine, which every Day receives new Lights, so few have attempted to set this most useful Point in Medicine in a just Light. There are, indeed, several Opinions scatter'd up and down in the Writings of Physicians concerning the Causes of the Forces, which some, who refer all the vital and mechanic Motions of the Body, both voluntary and involuntary, to some higher Principle, consider as the Effect of the Soul; others, who deduce the Strength and motive Force of the Solids, by which the Fluids are directed, from a highly moveable Matter, of an aereo-cæthereo-elastic Nature, contained in the Blood, endeavour to establish their Opinion by quite contrary Arguments. As the Subject is not yet exhausted, nor, as we imagine, well explained as it deserves by bare Authorities, and these too of opposite Sentiments, we shall crave Leave, in this present Discourse, where we shall treat of a *Syncope* and *Lipthymy*, to interpose our own Judgment, which we take to be just and right, in this Affair.

But before we enter upon a more particular Explication of this Subject, we think it proper first of all to examine what Condition of the Forces is requir'd to constitute a strong or a weak Nature. In attempting this, is to be remark'd, that though all the Functions of our Body, animal, vital, and natural, are perform'd solely by the Motion of the Solids and Fluids, we are by no Means to argue from hence, as in other corporeal Matter, or conclude from the Efficacy of the same, and the great Power of Moving, the extraordinary Firmness of the Strength, and, what depends upon it, the Soundness of the Health: For since the Structure of the human Body is, by the infinitely wise Creator contriv'd in such a Manner, that only a determinate Number and Measure of Motions are subservient to the Forces necessary for Health, it amply follows, that we are only to call that Nature robust and sound, in which we perceive no excessive nor deficient, but a moderate and equable Proportion of Motions; as, on the contrary, those Bodies are to be accounted weak which are easily excited to disorderly Motions from some slight external Cause. The Truth of this Assertion is illustrated by only considering the disorderly, and exalted even to the Degree of convulsive Agitations of the Heart, Arteries, and the rest of the Members, which, tho' they indicate an extraordinary Efficacy of Motion, can yet by no Means be taken for a salutary Measure of Strength, or such as is accommodated to the Confirmation of Health, but are rather Prognostics of an extreme Decay of the vital Forces, and oftentimes Death itself.

This premised, we proceed to consider the sudden Decay or Failure of the natural Forces, of which there are three principal Degrees: The first Degree consists in a remarkable Diminution of the Strength of the Body, and is known principally by these Signs, an extraordinary and unusual Lassitude of the Body, with an Inertness and Indisposition of the Limbs to voluntary Motions, a Torpor, or Numbness of the Senses, Loss of Appetite, Restlessness, Anxiety about the Præcordia, a weak and slow Pulse, with a Refrigeration and Heaviness of the Extremities. The next Gradation, on Account of its being a greater Defect or Failure of the Strength of the Body and Spirits, is called a *Lipthymy*, which begins with a Paleness of the Face, Lips, and Cheeks, and a Stupor of all the Senses, so that the Patient is quite insensible of what is done to him; a Sort of Dimness of Sight, also, seizes him, his Pulse beats very small, he falls to the Ground, and his extreme Parts are deprived of their natural Heat, and refrigerated. The third and last, as well as worst Degree, constitutes a *Syncope*, in which the Patient is deprived of all Manner of Strength, both of Body and Mind, and seems to be dead; for he falls to the Ground quite speechless, as if oppressed with a profound Sleep, and lies immoveable, without the Appearance of Convulsions or Tremblings; the Pulse and Respiration are intercepted, the Limbs are refrigerated, and collapsed, he has the *Facies Hippocratica*, and a copious Eruption of cold Sweat about his Temples.

After a Fit of the *Lipthymy*, or *Syncope*, has spent its Force, the Patient by Degrees recovers his Senses, fetching deep Sighs, the Motion of the Heart is restor'd, and consequently the Pulse, which before was very weak or quite insensible, beats higher and brisker; the Anxieties cease; the

Heat returns into the extreme Parts; the Face, which was contracted and pale, becomes more explicated and red; all the suppressed Functions by little and little resume their Office; and the Patient, who but the Day before was taken for dead, now seems to enjoy perfect Health; only he still complains of an extraordinary Lassitude and Imbecility of the Limbs, and of the whole Body.

Though these terrible Disorders come suddenly and unexpectedly, there are, however, some Symptoms which give Warning of their Approach: The principal of these are, a Languor of the whole Body, with an unusual Weakness, Vertigo, a Ringing in the Ears, and a sudden Change of Colour in the Face. In some the preceding Signs are Oscillations, Punctuations, and Anxieties about the Præcordia, with an unequal Pulse, and a Sense of Horripilation, attended sometimes with a Distension and Rumbling of the Abdomen from Flatulences.

From the Premises, it will not be difficult to know how to distinguish a *Syncope* and *Lipthymy* from other Disorders, and how they may and ought to be known by Physicians. For, first of all, they differ from an Epilepsy, which indeed is preceded by some slight Kinds of Faintings, which attack the Patient before his Body is agitated with convulsive Motions and Contractions, but yet fall short of a *Lipthymy*. They differ, also, from an Apoplexy, in which Disease, though under the Abolition of both the internal as well as external Senses, there still remains a pretty strong Pulse of the Arteries, with a Respiration, though very difficult, and attended with a Stertor; which are Phenomena not observable in a simple *Lipthymy*. And they are distinguish'd, in the last Place, from an hysterical Suffocation; for in this latter you may observe, indeed, an extraordinary Perturbation of the Senses, but the Fauces are at the same Time extremely straiten'd, and under a Strangulation, as it were, by a Cord; the Arteries are agitated with violent Motions; and the Face appears of a lively red; the contrary to which Symptoms happens in *Lipthymies*, as it appears when a *Syncope*, as it often happens, joins itself with an hysterical Fit; for in that Case, there is a sudden Alteration of the foremention'd Symptoms.

As to the Subjects most obnoxious to these Affections, we are taught by Experience that such Disorders are most incident to Persons of a phlegmatic and torpid Nature; or those who, on Account of a tender Contexture of the Vessels and Fibres, are of a spongy Habit of Body; full of Blood and Juices; such, also, as being tenderly educated in Idleness, are incapable of bearing Hardships, and are easily disorder'd by any slight external Cause, as by a Temperature of the Air hotter or colder than ordinary, or by Medicines, or even by Aliments, or, what is more, by an ungrateful Smell alone. And since there have been observ'd by the best of Physicians, a surprizing Harmony and Consent between the Functions of the Body and those of the Mind, we may reckon among the Number of those who are obnoxious to such Diseases, such as are prone to sudden and violent Commotions of the Mind, as Anger, Impatience, Fear, and Variety of confus'd Imaginations. Hence we see the Reason why, in respect of Age, Children and old Persons, and of Sexes, Women more than Men, are expos'd to *Syncopes* and Fainting-Fits; and most of all, Women with Child, or when waken'd with Hæmorrhages, through an immoderate Flux of the Menstrues, or Lochia, or much fatigu'd in Childbirth.

If we now proceed to examine into the Causes of these Disorders, there is no Person of competent Knowledge in Medicine, but will ascribe them to a vitious and disorderly Motion and Contexture of the Blood; for as a free and equable Influx of a sufficient Quantity of well temper'd Blood into each particular Part, and by that Means a due Distribution of the spirituous Liquid throughout the Nerves, constitutes all the Strength and Forces on which the Vigour of the Functions, whether animal or natural, intirely depend, so, on the contrary, when there is a remarkable Decay of the Strength, which manifests itself by a Diminution of all the Functions, we may very justly conclude that there is some Disorder in the arterial and nervous Fluids. We have fully demonstrated elsewhere that the Progress of all the Fluids through the Body, and their Influx into the several Parts and Organs, wholly depend on the Heart, which is the *Primum Movens*; and *Ultimum Movens*, or moves and lives first, and dies last, as being the principal Machine, which with its Motions animates all the other Parts. There can be no Doubt, then, but that the Cause of a Prostration of the Body, and a Fainting, is to be deduced from a Diminution or total Suspension of the Motions of the Heart. And we are the more confirm'd in this Persuasion, by considering that the essential and characteristic Sign of a *Syncope* and *Lipthymy*, is a very small, or no

Pulse, which is a true Indicator of the Motion of the Heart.

Since, therefore, we are oblig'd in so many Respects, if not for all Things that pass within ourselves, to the Motion of the Heart, it will be of very great Use, briefly, though accurately, to explain this Motion from its natural Causes: That the Substance of the Heart is muscular, is an Assertion not only of *Hippocrates*, who lived so many Ages ago, but of all the famous Anatomists of our Times; for if we rightly examine all the Properties which any Way belong to the Texture of a Muscle, we shall find them all in the same Manner existing in the Structure of the Heart; we may observe herein a pretty strong Tendon, which surrounds the Vessels in the Basis of the Heart, and is here, as it is in all other Muscles, the Beginning and End of Motion, and is very justly supposed to produce the *Vena Cava*, and, in an especial Manner, the Great Artery. Into this Tendon are inserted two Kinds of Fibres, dispos'd in such admirable Order, as very fitly to constitute a *Biventer* Muscle; for the exterior Fibres, which wind about the Cone in the Manner of a Screw, are inserted into the Tendon of the opposite Side; but the interior Fibres are inserted in an inverted Order. Besides these common Fibres, there are others proper to each Ventricle, of which the internal proceed in like Manner in a contrary Direction, and in the left Ventricle are more numerous and robust, for the Sake of a stronger Propulsion of the Blood over the whole Body, and to its remotest Parts; but in the right Ventricle they are fewer and more flaccid, as serving only to propel the Blood into the adjacent Lungs. The Motion of these Fibres is, also, the same with that of the Fibres of other Muscles; as is, also, their Contraction, which consists in an Abbreviation, that they may acquire as much in Breadth as they lose in Length, by which Means the Cone may always approach nearer the Base, whence a Tumor is observed not only externally, but principally in the internal Parts. Hence, when the Auricles of the Ventricles are contracted, the Sides touch one another, and so expel the contained Fluid. The Nerves, which impart Life and Vigour to all these Muscles are implanted in the Basis of the Heart, and the Roots of the Vessels, which were before observed to be Tendons of the Heart, and are Branches of the eighth and intercostal Pair; to say nothing of the coronary Veins and Arteries, which are dispers'd in great Numbers over the muscular Structure of the Heart, and greatly assist its Motion.

That the Heart moves then, we are convinc'd from its Fabric, as well as the Evidence of Sense; but there is a double Motion which belongs to it; one of Dilatation, called by the *Greeks*, *Diastole*, by which the Ventricles of the Heart are dilated, and its Fibres lengthen'd towards the Sides, to admit the Influx of the Blood from the Auricles; and the other of Constriction, or *Systole*, by which the Fibres are contracted, and the Blood, as by an hydraulic Machine, is forced into the Canals of the Arteries, and from thence into those of the Veins, and from those again into the right Auricle, by which Means Circulation is performed.

In contemplating these Subjects, there arises a Doubt of no small Moment, which is, whether the Diastole of the Heart be promoted by the plentiful Influx of the Blood distending the same. And here we are not of Opinion, that this simple and spontaneous Restitution depends only on the Blood, since it resists a strong Pressure of the Hand as much as the Systole, which we cannot imagine to be owing to the Force of the Blood, especially when we observe, that the Hearts of Fishes, after they are pulled out of their Bodies, and are empty of all Manner of Liquor, retain their Diastole, as well as Systole, for a considerable Time. It is much more probable, that the Diastole proceeds as well from the different Series of Fibres of this wonderful Muscle, as from the Influx of a very subtle, elastic Fluid, convey'd by the Nerves, and of a spirituous Blood. The Influx of a nervous Fluid into the Fibres of the Heart, is proved by that well-known Experiment of *Willis* and *Lower*, in which the Nerves in the Neck belonging to the eighth Pair being divided, and those which proceed from the intercostal Plexus, ty'd, and the Influx of the Blood into the musculous Substance of the Heart intercepted, the Heart is deprived of all Motion. So that it is very certain, that the Blood, as it endu'd with a hot, intestine Motion, and impregnated with aereo-æthereo-elastic Particles, as well as the nervous Liquid, are greatly instrumental in promoting the Act of Dilatation. And the same will be further illustrated by this Experiment, that the Pulse of the Heart in an Animal, after it has ceased, may be restored for some Moments by Means of Heat, or fomenting the Heart with hot Water.

But though what we have advanced appears so clear and evident, as not to be question'd, there are still some so incredulous as to object against our Doctrine of the Motion

of the Heart, in which we suppose it be the *first Mover*, being of Opinion, that there is in an *Embryo*, a certain *Punctum Saliens*, which is, as it were, a Rudiment of a Heart, before the Structure of the Heart is finished. But, in my Judgment we are to have very different Notions of an Animal, while yet imperfect, and under Formation, and one actually formed, and compleat in all its Parts, and produced into the World; for which Reason it can hardly be allow'd to draw Inferences from one State to another quite different; for in this little Bubble, as in a Compendium, is included that architectonic Spirit, which is of itself sufficient to communicate Motion without the Help of many Organs, and extends its Workmanship by still framing Parts without Parts on all Sides; which Actions, in a perfect Animal, are not performed without the Help of Organs.

Having thus explain'd the Structure and natural Constitution of the Heart, and inquir'd into its genuine Use and Function, it will be easy for us to attain to the Knowledge of its preternatural State, and to give clear and distinct Definitions as well of a *Syncope* as *Lipthymy*, which, by the Consent of Physicians of all Ages, depend on a depraved Motion of the Heart. A *Syncope* is a sudden Check or Stop put to the Motion of the Heart, attended with a vast Loss of Strength and Suspension of the Functions both of Body and Mind, proceeding from a vital Obstruction, or great Impediment of the Influx of a spirituous Liquid by the Nerves, and of a well-temper'd Blood through the coronary Vessels into the muscular Substance of the Heart. Nor does the Definition of that other Species of a Privation of Sense, call'd *Lipthymy*, require much Alteration from the former, as differing only in Degree from a *Syncope*, and consisting not in a total Suspension of the Motion of the Heart, but in a very weak and low Degree of the same.

These Things being premised, let us now proceed to inquire into the remote Causes which contribute towards the Production of these severe and formidable Disorders. And since the proximate Causes either of a total Interruption, or great Deficiency of the Motion of the Heart, consists in a suspended, or sparing and irregular Influx of a nervous Fluid, and laudable Blood, as sufficiently appears from what has been said, it follows, that these are the two main Points which deserve our Consideration. For, first, it is certain from general Experience, that Persons labouring under a Weakness of the Head and nervous System, and are frequently afflicted with pressive Pains, Vertigo, and Ringing in the Ears, cold Rheum, Stuffings of the Head, Dimness of Sight, and troublesome Sleep, are very subject not only to extreme Lowness of Spirits, and Loss of Strength, but, also, to Faintings and Swoonings.

But nothing in the whole Series of Causes will sooner, or in a more violent Degree induce the Distempers treated of, than vehement Perturbations of the Mind, particularly panic Terrors, Fear, and Sorrow. For tho' the vital and mechanic Motions, of which Nature are those of the Heart and Arteries, and other Canals appointed for the Secretion and Excretion of the Humours, as well as those of the Stomach and Intestines, do not directly and immediately depend on that thinking and intelligent Principle within us, which we call the *Soul*, whose Office it is rather to direct and regulate, after a Manner unknown to us, those Motions which are voluntary; yet we are convinced by the closest Observation and Experience, that from the admirable and intimate Harmony which subsists between the voluntary and involuntary Functions, that the Affections or Passions of the Mind have a surprising Force and Efficacy in disturbing and interrupting the vital Motions in our Bodies. Hence if we curiously examine the Manner of Action of a Terror, or Fright, which among all the Passions is the most destructive of the Oeconomy of the vital Motions, we shall find it to be of such a Nature, that by causing a Constriction of the external Parts, it procures an excessive Congestion of the Blood at the Heart and Vessels connected with it, the plain Consequences of which are Coldness of the extreme Parts, a prodigious Languor and Numbness of the Limbs, Anxieties of the Præcordia, Palpitation of the Heart, with a great Difficulty of Breathing, and a small and low Pulse; all which Symptoms are more certainly consequent if there be an immoderate Redundance of the Blood. Nor are the Effects of Fear, or Dread, on the Apprehension of some imminent Danger, less surprising, since, by diminishing the Influx of the nervous Liquid into the several Organs of Motion, they greatly retard the equable Progress of the Blood, and disturb the due Circulation and Distribution of its most spirituous Part, so that it is no Wonder if the Consequences are a vast Loss of Strength and sudden Failure of the vital and animal Forces; which is the more formidable in weak Subjects, or such as are already debilitated by a Disease, or some other Cause.

There are also many Circumstances belonging to what we call the *Non-Naturals*, which are assistant in promoting these Disorders. Among those, what deserves our first Notice is a bad Regimen of Diet; for as Aliments abounding with good Juices, when taken in proper Quantities, are disposed for the Generation of good and lymphatic Blood, which is the Support of the Strength; so, on the contrary, Foods, which are crude, and afford but small Nourishment, if subsisted upon for a considerable Time, by mere Want of Nutriment, highly contribute to Faintings and Lipothymies. And not only Diet, but the Temperature of the Air, is also a procaccatic Cause of these Disorders; for if the Air be too cold and humid, or too hot and sultry, and impregnated with Multitudes of impure Exhalations, it becomes very detrimental to the Strength and Vigor of the Body. With these Causes may be ranked immoderate Watchings and Labour, which, by keeping the Solids and Fluids in continual Action, cause a Dissipation of the spirituous and subtle Parts, by which means the Mass of Blood is altered from its due Temperature, and all our Functions, as we find, by daily Experience, begin to languish.

A *Lipothymy* is also frequently occasioned by a sphacelous Corruption, either internal or external, and of all things the most prejudicial to the Oeconomy of the vital Motions. The Truth of this Position will appear not only from the Consideration of malignant and contagious Diseases, as the *Petechiæ*, *Dysentery*, and pestilential Fevers, but of chronical Diseases, particularly the *Scurvy*, *Cachexy* and *Dropsy*, where, as the Corruption and Putrefaction increase, all the Forces of Nature, together with the Motions of the Heart, languish and decay. Not unlike are the Effects of Opiates and Narcotics imprudently exhibited, whose Way of Operation consists principally in mixing their sulphureous and noxious Effluvia with the Substance of the Fluids, and so contaminating those highly moveable Parts, as to render them incapable of performing their Functions according to the Laws of Nature. Besides the forementioned Causes, there is one, which is somewhat surprising; I mean, fragrant and sweet Smells. These, tho' otherwise very grateful to Nature, are yet found to be offensive and prejudicial to Women subject to *Hysterics*, or those whose Bodies are weakened by any other Disease to such a Degree, that all the Symptoms are exasperated by them, and the Patient falls down in a *Syncope*, and lies for dead. The Reason of so remarkable an Effect, as we imagine, consists in that such strong odoriferous Substances, by their vaporous Quality, suppress more and more the elastic Force of the nervous Fluid, which was before much diminished by the Violence of the preceding Distemper, in the same manner as Preparations of Castor have sometimes good, sometimes bad Effects, according to the vastly different Constitution of the nervous Juice and Fibres.

Among other Causes of these Disorders, we are not to omit Poisons with Cathartics and Emetics of a violent and caustic Quality, which, by exciting strong Spasms in the universal System of the nervous Parts, with Crispations and Contractions in the highly sensible Tube of the Intestines, intercept the equable Influx of the Blood and highly subtle Fluid into the several Parts, and thus occasion a violent and sometimes mortal *Syncope*. From the same immediate Cause it happens, that we may observe that a violent *Lipothymy*, and such as falls little short of a *Syncope*, usually succeeds such Diseases as were attended with very sharp Pains; and the same has been often known to proceed from a violent Fit of Anger; whence the ancient Physicians used to call this Species of *Syncope* by the particular Name of *Cardia*. For tho' it be the Nature of this Disorder to exert its destructive Force principally upon the biliary Ducts, it cannot be avoided, but that, on account of that remarkable Consent of Parts, which subsist between these Parts and the Stomach, Lungs and Heart, by means of the eight Pair of Nerves, and the common *Par Vagus*, all these sensible Parts will at the same time be Fellow-Sufferers, and labour under severe Spasms.

A *Lipothymy* is no less incident to Persons whose Strength has been much exhausted by immoderate Hemorrhages, or any other excessive Excretions. On this Occasion I cannot but observe, that I have several times known Persons who have indulged themselves in the immoderate Use of venereal Pleasures, contract by Degrees *Lipothymies*, and even *Synscopes*. And nothing is more frequent than, after copious Evacuations by Sweat and Stool, Phlebotomy unseasonably administered, Blood lost by Wounds, or any other excessive Profusions of the same, for the Patient to fall into Fainting-Fits, especially if proper Preservatives be not at hand. And the Reason is obvious; for since by such Accidents not only the more subtle Part of the Blood, which is the Foundation of the Strength, is exhausted, but the Quantity itself of the Fluids is diminished, it is no wonder if the Dilatation of the Heart and its Vessels, which ought to keep pace alternately

with the *Systole*, is by the same means prevented, and consequently, the Motion of the Heart itself suspended, in which consists the very Nature of a *Lipothymy*; which Disorder is, in such Cases, more frequent and incident to Persons of a tender Constitution, or who have long continued in an erect Posture, by which the Course of the Blood to the Head is much more obstructed than in other Situations.

Again, the Motion of the Heart may be weakened, and a vast Loss of Strength occasioned, by an excessive Repletion, owing to a thick and viscid Blood, which being incapable of making its Progress through the narrow Channels of the coronary Vessels, is there congested, and so diminishes the *Systole* of the Heart and its Vessels. And nothing more disposes to mortal *Synscopes* than a polypous Concretion of Humours adhering to the Cavities of the Heart, and the contiguous Vessel, as is confirmed by Multitudes of Instances. For Concretions in those Places, by their Bulk intercepting the Circulation of the Blood through the whole Body, must at last of necessity, if not removed, destroy all vital Motion.

Having thus assigned the Causes of these Disorders, we proceed to the Prognosis, and to examine the Signs from which we may be enabled to predict a good or bad Event to them. And here I would have it most carefully observed, that the Danger in such Cases is to be estimated with regard to the Diversity of the Nature, and Causes. Thus we are told by *Hippocrates*, 2 *Apb.* 41, "that they who often fall into violent Faintings without a manifest Cause, die suddenly." For in this Case, there generally is a polypous Coagulum firmly impacted in the Vessels of the Heart and Lungs, which discovers itself upon Dissection. A *Syncope*, also, is generally observed to be mortal, when it happens after a difficult Childbirth, in which the Patient has been extremely fatigued by the Unskilfulness of the Midwife, in exciting her to unreasonable Efforts for Delivery, and has suffered an immoderate Profusion of Blood from the *Uterus*. The Patient, in a *Syncope* thus contracted, lies in a copious and cold Sweat, with a Refrigeration of the extreme Parts, the Breath expired is cold, the Countenance pale, and she can by no Remedies be recalled to Life. Nor is that Species of *Syncope*, which seizes the Patient under *Hysterics* void of Danger; and we have often known Women, in such Cases, taken for dead, and committed to Burial.

An extraordinary Loss of Strength in malignant Distempers, as in high Fevers, and a Proneness in the very Beginning to Faintings, especially in an erect Posture, is a most certain Sign that Life is in danger. Nor is it of good Prognostication to be dejected in Mind, contrary to Custom, utterly to despond, and to give over all Hopes of Life, tho' the Spirits, in other respects, are calm and composed; especially if these Symptoms, in an acute Fever, are attended with a Delirium and a languid Respiration, with a remarkable Smallness, or tremulous Palpitation of the Pulse. In the confluent Small-Pox, also, if the Patient, as it frequently happens, through the intolerable Pain and Heat at the Time of Suppuration, be seized with a *Lipothymy*, and particularly in an erect Posture, he is in imminent Danger of Death; for soon after succeed Refrigerations of the whole Body, a Constriction of the Skin, a Disappearance of the Pustules, and then mortal Convulsions. A *Syncope* seizing a Person already weakened by other Causes, on occasion of a vehement Fit of Anger, or the Exhibition of a strong Cathartic or Emetic, becomes mortal, unless proper Remedies be instantly administered. The same Disorder in Children, excited by Worms lancing the nervous Coats of the Stomach, is generally mortal; and we have seen the dead Worms crawling out of the Mouth a little before the Death of the Patient.

A *Lipothymy*, or *Syncope*, attendant on hysteric and hypochondriac Cases, occasioned by a Regurgitation of the Blood to the Heart and Lungs, through an extraordinary Distension of the Stomach by Flatulences, leaves room for a Cure. And a sudden Fit of Fainting or Swooning, proceeding from some external Cause, as the immoderate Heat of a Stove or Bagnio, or Venesection too freely administered, and especially when Women or Children are the Subjects, is not so much to be dreaded. In general, it is to be observed, that the slighter the Cause of such Disorders is, the less is the Danger from them.

The Cure principally consists in answering the two following Indications: The first of these requires, that in the very Paroxysm the Motion of the Heart, which is the Fountain of all the vital Heat and Forces, may, by proper and effectual Remedies, with all possible Speed be restored.

The other directs us to make use of the first Opportunity, when the Paroxysm is past, to provide ourselves with proper Medicines for removing the Causes, and so preventing the Return of so dangerous a Disorder.

In order to answer the first Indication, let the Patient, at the Time of the Fit, be kept in a convenient Posture, not too much inclining nor erect, and in a serene, temperate, and spacious Place; and in order to provoke and recall the Influx of the Spirits, it will be proper to irritate and animate the sensible Parts with external Remedies, which are of a penetrating Quality. For this End, let there be a Superfusion of cold Water over the whole Face, let the Lips be rubbed with common Salt, and apply to the Nostrils strong Vinegar, with Balsam of Life, or English volatile Salt, which is nothing but the volatile Salt of Sal Ammoniac, impregnated with the cephalic Oils of Rue, Mint, and Lavender. It may, also, be of service to rub the Eyelids with a few Drops of some spirituous Water, particularly the Balsam of Life, and to use strong Frictions of the whole Region of the Breast, and the extreme Parts with hot Cloths, impregnated with some corroborative Water.

When the Patient, by the Use of these Remedies, begins to come to himself, it will be proper to administer some internal Medicines, in order to revive the Strength. For this purpose Wine is of excellent Service, and especially old *Rhenish*, which far exceeds all other Wines. Much Good, also, may be expected from the Use of spirituous and aromatic Waters, particularly those of Cinnamon, Lillies of the Valley, Roses, Baum, and Orange and Lemon-Peel, prepared with or without Wine.

A Physician, who intends a perfect Cure of these Disorders, and to prevent all Relapses, must first acquire a competent Knowledge of the Causes, and accommodate his Remedies to them. Thus, if a *Syncope* owes its Rise to severe Pains, or a violent Fit of Anger, in this Case mild Anodynes afford present Relief, and the more effectually, if mix'd with analeptic Waters, not too spirituous, but endued also with somewhat of an anodyne Virtue. A sovereign Remedy of this Nature is the mineral anodyne Liqueur, impregnated with some Drops of Oil of Mace, or mixed with double the Quantity of Essence of Castor. Accommodated to the same Purpose, are *Sydenham's* Laudanum, and analeptic Powders, such as the *Pulvis Marchionis*, mixed with one or two Grains of Castor or *Theriaca Caelestis*, which I have found by Experience to be very safe Remedies. If a Cardiac *Syncope* proceed from an acido-bilious Humor settled in the *Primæ Viæ*, and corroding the nervous Parts, as it frequently happens in hypochondriac Cases, there will be occasion for absorbent Powders, such as those prepared of Shells, Mother of Pearl, Coral, Crabs-Eyes, fossil Unicorn, and Mountain Cryстал, with an Addition of a few Drops of the Oil of Cedar; and, if the preternatural Heat require it, of some purified Grains of Nitre for each Dose. In an hysterical and hypochondriac *Syncope*, Clysters, and Medicines compounded of Galbanum, Castor, Asa fetida, Sagapenum and Myrrh, prudently administer'd, are all the Remedies necessary for a perfect Cure.

If a *Lipothymy* seizes the Patient under immoderate Evacuations from too potent Cathartics or Emetics, in this Case, besides Theriacals, Anodynes, and Analeptics, warm Milk, or Barley-water with Almonds, the Yolk of an Egg, and Saffron, taken in a sufficient Quantity, are of surprising Efficacy by their demulcent Virtue. And when there is reason to be apprehensive of more than ordinary Danger from a caustic Poison, the same Remedies are the most likely to afford Relief, especially if mixed with a good Quantity of expressed Oil of Almonds or Olives. In malignant Distempers, where a *Lipothymy*, and the like Symptoms, are the Effects of an occult Putrefaction, Mixtures endued with an analeptic and bezoardic Quality are most proper. Such are those compounded of the Waters of Carduus Benedictus, Scordium, Cinnamon without Wine, Roses, and common Baum; the *Mixtura Simplex*, Wine-Vinegar, and Syrup of Citron-Juice, with which may be mixed a due Proportion of the bezoardic Powder of *Sennertus*. If the Strength be exhausted by an excessive Profusion of Blood, then, besides the Use of the more temperate Analeptics, the Patient is to be comforted and refreshed with nourishing Food, which is accommodated to the supplying and restoring of the lost Juices. Such Meats as are most recommended for this purpose, are Jelly-Broths made with Veal, Beef, or an old Cock, prepared by Decoction with Shavings of Hartshorn, Slices of Lemons, a little Mace, and a small Quantity of Wine, in a covered Pot. Chocolate is also of good Service in such Cases; and, to mention no more, old and generous Wine, sparingly exhibited, will of itself contribute more than all other Remedies towards the Restoration of the Patient.

It is certainly of the greatest Importance towards a safe Management and Conduct in the Cases before us, justly to distinguish between a gravative or oppressive Laxitude, proceeding from a Fulness and Expansion of the

Humours, and a defective Weakness, occasioned by a Want of good Blood and nervous Juice; these two Circumstances are widely different with respect to their Causes, and require as different Remedies. Phlebotomy, for instance, which in the Case of a Repletion, which was first supposed, is most salutary; in the latter Circumstance, where the Blood is deficient, and therefore wants to be restored, it cannot but be highly pernicious. A just Distinction, also, is to be made between a Weakness and Loss of Strength, which owes its Origin to some Passion of the Mind, as long Sorrow, or long concealed Anger, which commonly goes by the Name of *Chagrin*, and what proceeds from some material Cause. To the first Case, moral Remedies, with every thing that contributes to render the Mind easy and chearful, are best accommodated.

As to Venesection, in particular, by way of Caution, we ought to know that when the Motion of the Heart is suppressed by an excessive Congestion of Blood, which is very often occasioned by violent Spasms of the Intestines, and there is a Turgescence of Humors in the Vessels of the superior Parts, tho' a Discharge this Way is by all means proper to be made, yet Phlebotomy is never to be administered during the Time of the Fit; for the Languor would be increased, and the Disease protracted by so doing. It is no less fruitless, as well as dangerous, under a *Lipothymy*, to pour into the Mouth spirituous Liquors, because they easily fall into the *Aspera Arteria*, and endanger Suffocation.

If a *Lipothymy* proceeds from a Suppression and Diminution of the Menstrues, we are not, but with the greatest Caution, to administer Emmenagogues, especially such as are qualified to raise impetuous Commotions, as Baths impregnated with Salt or Saffron, and other Things of that kind; for by causing a greater Rarefaction of the Humors, they increase the Disease.

A Loss of Strength from severe Distempers, when the Patient is naturally weak and infirm, generally portends a bad Event; and therefore we cannot be too speedy with our Assistance, which the sooner it comes the more seasonable it proves, according to that elegant old Proverb;

Principiis obsta, sero Medicina paratur.

“Prevent the Mischief, Physic comes too late.”

Much more Reason have we in such acute Disorders, and especially at their Height, to avoid the Use of such Medicines as by stimulating and provoking to Stool, or other Excretions, may any way disturb or irritate Nature. For by such means the Strength, which is necessary for subduing the Disease, is still more exhausted; and if this be consumed and reduced to nothing, all the Art and Skill of the Physician are vain and insignificant. I am, therefore, mightily pleased with that Golden Rule of *Fernelius*, *Lib. II. Cap. 10.* which it were to be wished were universally observed: “While the *Strength*,” he says, continues firm, and on a good Foundation, we “may boldly evacuate as much as the Disease requires; but “if the *Strength* be quite gone, or much diminished, nothing is to be attempted of that Nature.”

The Principal of those boasted Remedies which have for so many Ages been extolled even to Superstition as the highest Cordials, and specific Analeptics in all *Syncofes* and Faintings, as Pearls, Oriental Bezoar Stones, Bone of a Stag's Heart, the fine precious Stones, and others, are so far from exceeding in Virtue some other fix'd Diaphoretics and Absorbents, that they are rather to be esteemed much inferior to them. The same Judgment is to be passed on Medicines prepared of Gold; for the cordial and analeptic Quality ascribed to that Metal, is, in our Opinion, a mere Chimera, and a very remarkable Instance of the fond Credulity of the common Herd of Physicians and Patients; not to mention how incredible a Thing it is, that Gold should be reduced to mild Essences, and Quintessences by any Arts of Chymistry.

Wine, especially old *Rhenish*, which, on account of its spirituous Acid, is far preferable to other Wines, besides its internal Use before prescribed, being applied to the Nostrils, and the Region of the *Præcordia*, gives present Relief under a *Syncope*. Those Faintings, also, which are incident to tender and sensible Subjects, under the Administration of Phlebotomy, are prevented by taking a moderate Draught of Wine before the Operation.

There is even in simple cold Water seasonably exhibited a highly analeptic Virtue, especially when the Fainting, or *Lipothymy*, is occasioned by an immoderate internal or external Heat, and Rarefaction of the Blood. Of this *Celsus*, so long ago, was very sensible; and therefore, *Lib. 4. Cap. 5.* very strongly recommends cold Water for correcting the Disorders of the Stomach. And *Pliny the Younger*, who had by Nature a weak Stomach, and was much subject to inward Estu-

ations, assures us, *Lib. 6. Epist. 17.* that he had often received great Benefit from cold Water. *Frederic Hoffman.*

SYNCRIMATA. *συνκρίματα*, from *συνκρίνω*, to collect together, a Word used by *Galen, de S. F. Lib. 5. Cap. 25.* to signify the Mixtures and Concretions of simple Bodies, and the Confusion of Elements. He applies the same Word, *Lib. de diff. Morb. Cap. 5.* to the Bodies of Animals, as consisting of a Mixture of Atoms.

SYNCRISIS. *σύνκρισις*, a Concretion, Conformation, from *συνκρίνω*, which Verb is used by *Hippocrates, 6 Epid. Sect. 2. Aph. 35.* to express the Coalition or Conformation of the Male; and by *Galen, M. M. Lib. 4. Cap. 4.* where it is opposed to *διακρίσις*, "to be dissolved." *Syncrisis*, with the Chymists, is a Concretion or Coagulation, effected by a spontaneous or violent Reduction of a liquid Substance to a solid one, by a Privation of the Humid. *Castellus.*

SYNCRITICA. *συνκρίτικα*, *Syncretics*, a Name given by the Methodics to such Medicines as were of a coercive or affrignant Nature (not to Relaxants, as *Blancard* will have it) *Galen de Anat. Adm. Lib. 3. Cap. 2.* The same Author, *de M. M. Lib. 1. Cap. 2.* observes, that *Theophilus* wrote a whole Volume on *Syncretics*. See the preceding Word.

SYNCYRIA. *συνκυρία*, from *σύν*, and *κύρω*, to be, is a Chance, or casual Event; and the same as *συνκύρημα* (*Syncretema*) *Hippocrates de Præf. Med. et Lib. de Hum.*

SYNDESIS. *σύνδεσις*, from *σύν*, and *δένω*, to bind, a Binding or Straitening. Thus, *6 Epid. Sect. 3. Aph. 1.* *ἡ δὲ μάλιστα ἀραιότης ἢ κοιλότης πυκνότης, ἢ δειγνυμένη ἐκιδόσις ἢ σφικτὴν αὐξήσις*, "the Rareness of the Skin causes a Constipation of the Belly; but a Straitness (Astriction of the Pores) of the Skin causes an Increase of the Flesh."

SYNDESMO-PHARYNGÆUS (*Musculus*) a Muscle of the Pharynx. See **PHARYNX**.

SYNDESMOS. *σύνδεσμος*, from *σύν*, and *δένω*, to bind, a Ligament. See **LIGAMENTUM**.

SYNDESMOSIS. *σύνδεσμις*, a Sort of Connexion of the Bones, otherwise called **SYNNEUROSIS**, which see.

SYNDIACRISIS. A Name given to that Chymical Operation used in preparing of the diaphoretic Precipitate from the Cinnabar of *Hartman*, by a Separation of the Principles of the Cinnabar, and a new Composition. *Castellus.* See *Schroder, L. 3. C. 16.*

SYNDROME. *σύνδρομος*, from *σύν*, and *δρέμω*, to run, *Lat. Concurfus*, a Concourse. This is a Word introduced into Medicine by the Sect of the Empirics, who mean by it a Concourse of Symptoms. Thus under a Plethora, an Empiric judges Venesection necessary from a *Syndrome* of Symptoms, such as a Distention of the Vessels; a Redness and Gravity of the whole Body; an Indisposition to Motion; Tensions of the Limbs; and a Sense of an ulcerous Lassitude; besides a Life spent in Idleness, high and full Feeding, and a Suppression of wonted Excretions. This is the *plethoric Syndrome* of an Empiric; and after the same manner he forms a *Syndrome*, or Concourse of Symptoms, in a Peripneumony, Quinsey, Epilepsy, and other Diseases. *Galen* ridicules these *Syndromes*, because, he says, they happen very rarely, and also very slowly; so that should a Physician wait for a *Syndrome* of all the Symptoms he expects, he might administer his Remedies too late. *Galen, Com. 2. in 1 Prorrh. et Com. 2. in R. V. J. A. et Lib. 6. de M. M. Cap. 4.* and in other Places.

SYNDYASMOS. *συνδυασμός*, from *σύν*, and *δύω*, two, is a Word used by *Hippocrates, Lib. 2. de Morb. Mul.* to express the Commerce between the Sexes.

SYNECHES. *συνήχεις*, from *συνήχω*, to connect, hold together, continual, is an Epithet of a Sort of Fever. See **SYNOCHOS**.

SYNECTICON. *συνεκτικόν*, from the same Original as the preceding, continent, an Epithet applied to the proximate Cause of a Disease usually called *Causa continens*, also *conjuncta*, and *contentiva*; and always remains closely united with the Disease. *Castellus.* See **CAUSA**.

SYNEDREUONTA. *συνεδρεύοντα*, from *σύν*, and *ἰδρᾶ*, a Seat, *Lat. Assidentia*, assisting, attending, an Epithet bestowed on such Signs or Symptoms as accompany a Disease. See **ASSIDENS**.

SYNEILEMMENOS. *συνειλημμένος*, straiten'd, one who is coſtve or bound in his Belly. *Castellus.*

SYNDEICNYMENA. *συνδεικνύμενα*, from *σύν*, and *δεικνύω*, to shew or indicate, co-indicating, are Signs so called, which conspire with those that are proper to a Disease; for instance, the Age and Strength of the Patient, the Country, Season, Custom, and the like. *Galen, Lib. 13. de M. M. Cap. 16.*

SYNENOMENA. *συνενόμενα*, from *σύν* and *ένω*, to unite, become one, are expounded in *Galen's Exegesis* by *συνεία* (*Synonia*) co-existing; but there is a Variation in the Copies,

and many of them have it *σύννομα* (*Synnoma*) converſant together, or feeding together. *Fæsius.*

SYNEREPHES. *συνερείς*, in *Galen's Exegesis*, is expounded by *ἐνπερικλυμένη, σπασμασμένη*, envelop'd, covered, shady, opaque.

SYNERGASMA. *συνέργασμα*, from *σύν* and *ἐργάζω*, to work, operate, Co-operation. *Libavius* divides the *Synergasmata Chymica*, or chymical Co-operations into *ἐνεργητικά*, energetic, or such as are endued with an efficacious Virtue; and *παρασκευαστικά*, preparatory.

SYNERXIS. *συνέρξις*, from *σύν* and *ἐργω*, to refrain, confine, is explained in *Galen's Exegesis* by *σύνγκλισις*, **SYNCLEISIS**, which see.

SYNESTECOS. *συνεστῆκος, συνεστῆκος*, from *σύν* and *ἵστημι*, to stand; consistent, is applied by *Hippocrates*, in *Prognost. 1 Prorrh. et Coac.* to the Faces, when firm, coherent, and figur'd, in Opposition to diffuent, liquid, humid, and aqueous.

SYNIDROSIS. *συνίδρωσις*, from *σύν* and *ἰδρῶσις*, Sweating; is a Sweat in Conjunction with some other Affection, for Instance with a Factor of the *Alæ*. *Castellus* from *Nomus*.

SYNISTAMENOS. *συνίσταμενος*, consistent, the same with **SYNESTECOS**, which see.

SYNIZESIS. *συνίζησις*, from *σύν* and *ἵζωμαι*, to fit, *Lat. Conſidentia*, is the same as **APOCATASTASIS**, which see.

SYNNEUROSIS. *συννεύρωσις*, from *σύν* and *νέω*, a Nerve, is a Species of Articulation of the Bones by the Intervention of Ligaments. *Cowper.*

SYNNOMA. *σύννομα*, from *σύν* and *ένω*, to feed. See **SYNENOMENA**.

SYNOCHA. the same with **SYNECHES**, or *Febris continua*. *Blancard.* See the following Word.

SYNOCHOS. *σύνωχος*, *Lat. FEBRIS CONTINENS*.

Συνήχεις πυρετοί (Synchees Puretoi) continual Fevers, in *Hippocrates*, are such as continually molest the Patient without Remission, as we often find in the *Epidemics*, to which he sometimes adds *τὸ μὲν ὅλον ἐ διαλείποντες*, "Upon the whole not intermitting." That he might more clearly distinguish between them and intermittent Fevers. And this he does in express Words, *1 Epid. Sect. 3.* where he says, *συνήχεις, οἱ μὲν ἡμέρη ἐχρῶσι, οἱ δὲ νύκτα διαλείποντες, οἱ δὲ ἡμέρη ἐχρῶσι, οἱ δὲ νύκτα ἐχρῶσι, ἡμέρη διαλείποντες.* "There were Fevers, some continual; others moſt left the Patient by Day, and intermitted by Night; and others again were urgent in the Night, and intermittent in the Day." On this Place *Galen* thus comments: *καὶ τὸ τὸ συνήχεις ὅνομα, καὶ τὸ τὸ διαλείποντες οἱ παλαιοὶ διττῶς φησίν οἱ λέγοντες, &c.* "The Ancients seem to have used the Words *Syneches* (continual) and *Dialipon* (intermittent) in a double Sense. Sometimes they gave the Name of *Syneches* to all those Fevers which never came to an Apyrexia [perfect Cessation]; and at other times they bestowed not that Appellation on all which never come to an Apyrexia, but on those especially which undergo no Mutation till a Crisis. Thus, also, sometimes they apply the Epithet of *intermittent* to those Fevers which have a perfect Cessation, at other times to those which have no such total Cessation, but undergo considerable Mutations, in the different Parts of the Paroxysms, as in the Beginning, Increase, Height, and Remission of the same. But some of the more modern Physicians call those Fevers which undergo no remarkable Alteration, not by the Name of *Syneches*, but *Synochus*; bestowing the former Appellation only on those which never come to an Apyrexia; or perfect Cessation, but intermit after each Paroxysm, which Kind the Ancients sometimes call *Syneches* (continual), sometimes *Dialipon* (intermittent). And these are really a middle Sort between the *Syneches*, and those which have a perfect Cessation, or Apyrexia; when compared, therefore, with the *Synochus*, they may very well be called *intermittent*, but in comparison of those which have a total Cessation, they deserve the Name of *Syneches*." The same Author, *de Crif. Lib. 2. Cap. 2.* gives the Name of *Syneches* to a Fever, "which, as he says, never comes to an Apyrexia before a total Solution, tho' it has a sensible Remission."

From the Premises it appears very plainly, that *Hippocrates* and the Ancients comprehended the *Synochos* under the *Syneches*.

A Fever consisting of one Paroxysm from the Beginning to the End, and lengthened out for many Days, is by some called a *Synochus*, not indeed by a proper Greek Word, but they rather chose to commit a Solecism in Terms, than want a Name for their Idea. But the Nature of these Fevers is by no means so simple as the Idea they have formed of them, from whence they give them the Name of *Synochus*; for some of them are attended with a manifest Putrefaction; others are wholly free from it; as, for Instance, the Diary Fever. *Galen, Meth. Med. Lib. 4. Cap. 2.*

The Fever, which some of the *Greeks* call *Synochus*, σύνωχος, and the *Latins* *Febris continens*, "a continent Fever," is either attended with a Putrefaction or not; the latter is called *Febris continens non putrida*, "the continent and not putrid Fever," and has the same Signs as a putrid *Synochus*, but somewhat less evident. There are a Pain or Heaviness of the Head, with an immoderate Heat and Redness of the whole Body, and especially of the Face, accompanied with a profound Sleep; a great Pulsation of the temporal Arteries; a great, full, frequent and swift Pulse, with a Sluggishness, and a kind of Lassitude of the whole Body.

The putrid *Synochus* is known by the same Signs as the other, but these Signs are more manifest in this putrid Kind; the Heat, for instance, is more acrimonious; the Throat and Parts adjacent swell, and burn with Heat, so as to be an Impediment to the Patient's Speech; the Eyes are full of hot Tears, and sometimes the Belly swells, and sounds, when struck, like a Drum. The Pulse is great, strong, swift and frequent, as in the other *Synochus*; but in this it is also unequal, in the former not so. The Urine is thick, red, turbid, and void of Sediment. There are often exanthematous Eruptions on the Superficies of the Body, which are most commonly livid or black, and sometimes of other Colours. This Disorder generally ends on the fourth Day, and if it continually increases, may endanger Life, particularly if the Tongue be rough and black, if the Eyes avoid the Light, and if the Urine appear like black Wine. Where these Symptoms are not seen, but the Fever decreases more and more, the Patient seems to be in a safe Condition. When the Disease maintains itself in one constant State, it is safer than when it increases, tho' less favourable than when it declines; which Observation is to be made, also, in the non-putrid *Synochus*. It is to be observed, that the *Synochus* usually happens only to Persons of a temperate Constitution, of a fleshy Habit, and abounding with no bad Blood; and that the Transition is easy from a non-putrid to a putrid *Synochus*, and from this to a continual Tertian.

What the *Greeks* call *Syneches*, and we *Febris continua*, "a continual Fever," is a kind of putrid Fever resembling the putrid *Synochus* in the Continuation of the Paroxysms, but different from it in that it proceeds either from Bile or Phlegm, and has its Periods according to the Nature and Motion of these Humors, in which, tho' it does not totally cease, it yet remits, and gives the Patient Time for Refreshment; but the *Synochus* owes its Original to a putrefy'd Blood, and affords no Remission till the Time of the Crisis. To proceed, a continual Fever, is not preceded by a Rigor, Horror, or Coldness, but suddenly seizes the Patient all at once with a Heat, tho' perhaps the corrupted Humor about the Præcordia may sometimes excite a Rigor or Horror, for a short time, till it be overcome and subdued by the Fever. The Heat is always of a rough and acrimonious Quality, and especially at the Increase and Heat of the Paroxysm. The Respiration and Pulse are unequal, and in this latter the Systole is perceived to be quick, and the Diastole slow. The Pulse, also, is sometimes quick, sometimes slow, sometimes strong, at other times weak; particularly in the Beginning of the Fit, or Paroxysm, it is quick and small; in the Height thereof it is not only quick, but remarkably great. The Urine in the Beginning is thick, red and turbid, and has neither Cloud, Enæorema or Hypostasis; sometimes it is thin, but red, and not at all transparent; and all the Excretions, whether Stool, Urine or Sweat, have generally a rank and offensive Smell.

A continual Quotidian and Quartan are commonly very irregular, so as in one Day to have two or three Exacerbations, on another but one, or perhaps none at all; a continual Quartan is very rare, a continual Quotidian more frequent than the other; but the most frequent is a continual Tertian, by the *Greeks* called καυσός, (*Causus*) by us *ardens Febris*, "a burning Fever." *Lammi Med. Obs.* See PYRETOS.

SYNOCOCHÉ. συνοχώη, is expounded in *Erotian* on *Hippocrates*, by συνοχή καὶ σύνδεσις, "a continued Coherence and Concourse." The Word occurs in *Lib. de Officium Natura*, where σύνδεσις συνοχώη is the Frame or Compages of the Breast.

SYNOVIA, a Term in *Paracelsus*, which he uses sometimes in a physical Sense for the nutritious Juice appropriated to the Nourishment of any Part: Thus the nutritious Liquor in the Joints, or rather in the Nerves which supply the Joints, is called by him *Synovia*, the white Glue of the Joints, otherwise *Hydarthros*, *Melicerta*, the Ichor of the Nerves. *Synovia*, in the same Author, is used in a pathological Sense for the Gout, or the Diseases of any Part where a Corruption of the proper nutritious Juice is the Cause of the Disorder. *Helmont*, *Dornæus* and *Rulandus* describe the *Synovia* to be a pellucid Sort of Mucilage, like Sperm, or like the Liquor which distils from the Legs of a Calf, when his Feet are cut off. *Castellus*.

SYNTASIS. σύντασις, from σύν and τάω, to distend or stretch, a Distention; it is opposed to *Chalasis*, χαλᾶσις, a Relaxation, as σύντασις, *Syntactica* (*Medicamenta*) Medicines inducing a Tenseness are opposed to χαλᾶσις, *Chalactica*, relaxing Medicines. See CHALAXIS and CHALACTICON.

SYNTAXIS. σύνταξις, from σύν and τάω, to order, or regulate, in *Galen*, *Lib. de Officibus*, signifies any Order or Composition of the Bones in general, and is there divided into *Artibron* and *Symphysis*. It is otherwise, as we are told, called *Symbes*, σύνβησις, and *Homilia*, ὁμιλία.

SYNTENOSIS. A Species of *Synneurosis*, in *Spigelius*, when two Bones are connected by a Tendon, as the *Ossa Sesamoidea* to the Bones of the Toes, and the *Patella* to the *Os Femoris* and *Tibia*. *Castellus*.

SYNTEXIS. σύντηξις, from σύν and τήω, to liquefy, a Colliquation. See COLLIQUATIO.

SYNTHENA. So *Paracelsus* calls a kind of Epilepsy, or apoplectic Disorder, attended with Gripes, and a Pain of the Stomach, which is generally mortal. *Castell*.

SYNTHESIS, σύνθεσις, from σύν, together, and τίθημι, to put; Composition, in Anatomy, is the same as *Syntaxis*, which see. It is also one of the six Parts into which some divide the Art of Surgery, as we are told by *Heister*, the other five being *Diarsis*, *Exarsis*, *Apharsis*, *Prosthesis*, and *Dierthosis*; which see in their proper Places. *Synthesis* is also the Name of a Disease much like a Phthisis, in *Plinius Secundus de Re Medica*, *Lib. 2*.

SYNTHEISMUS, a Term used by some in Surgery to comprehend the four Operations in the Restitution of Fractures, which are *Extension*, *Coaptation*, *Reposition*, and *Deligation*, or Bandage.

SYNTHETOS, σύνθετος, from σύν and τίθημι, to put or place; compact, is an Epithet applied by *Hippocrates*, *Coac.* 110. to *Fæces* of a hard Consistence.

SYNTOMOS, σύντομος, from σύν and τέμνω, to cut; concise, short, quick, is sometimes, if the Word be not corrupted, put for vehement and intense. Thus πᾶσι σύντομος, *Coac.* 160. signifies violent Pain; but *Ræsius* thinks we should read σύντονος, and observes that σύντομος is often read corruptly for σύντονος, which signifies intense. The Adverb σύντομος signifies soon, speedily, shortly, for instance, 3 *Aph.* 12. καλῶς σύντομος ἀνθρώπινος, are "Defluxions which soon prove mortal."

SYNTONIA, σύντονια, from σύν and τήω, to stretch, signifies Strength and Firmness of Tone. *Galen*, *Com. 4. in Lib. de R. V. J. A.* explains σύντονια κατὰ τὰς φλέβας, "a Syntonia of the Veins," by πύκνωσις, a Denseness, or a Thickness of the Coats of the Veins, which he makes the Cause of the Stillation or Falling of Blood by Drops from the Nose; σύντονος πᾶσις, *Coac.* 160. is intense or vehement Pain.

SYNTROPHOS, σύντροφος, from σύν and τροφίω, to nourish; nourished together, is expounded by *Galen*, *Com. 2. in Lib. καὶ ἰσχυρῶς*, by ἐκείνους, familiar, accommodated, convenient. *Σύντροφος νόσος* is a Disease which is nourished and grows up with the Patient; thus, *Lib. de Morbo Sacro*, the Epilepsy is said to be ἡ νόσος ἐκ παλαιῶν σύντροφος, "a Disease nourished and growing with a Person from a Child."

SYNULOTICON, συνυλोटικόν, is the same as *Epuloticum*. *Galen de M. M. Lib. 13. Cap. 5.* See EPULOTICA.

SYNYMENSIS, in *Spigelius*, is a Species of Junction of two Bones by means of a Membrane; as, for instance, in new-born Children, the Bones of the Sinciput are connected to the *Os Frontis*.

SYPHAR. The same as EXUVIÆ, which see.

SYPHILIS. See SYPHILIS.

SYRIACON. An Epithet of an Ointment, called also *Commagenum*, or *Comagenum*. See COMMAGENUM. The *Lapis Judaicus* is also called *Syriacus*; for *Ulcus Syriacum*, see TONSILLÆ.

SYRICON, according to *Paulus Aegineta* and *Aetius*, is the same as *Sandyx*; but *Pliny* makes it a Composition of equal Parts of *Sandyx* and *Sinopsis*. It is also the Name of a Collyrium described in *Aetius*, *Tetrab. 2. Lib. 3*.

SYRINGA.

The Characters are;

The Calyx is monophyllous, and divided into four large and expanded Segments. The Flower is rosaceous and pentapetalous, or tetrapetalous, and furnished with Stamina to the Number of Sixteen. The Ovary in the Bottom of the Calyx is adorned with four erect, apiculated Tubes, and becomes a turbinate, quadricapsular Fruit, growing to the Calyx, gaping into four Parts, and pregnant with small Seeds.

Boerhaave mentions two Sorts of *Syringa*, which are;

1. *Syringa*; alba; five *Philadelphus Athenæi*. *C. B. P.* 398. *Frutex Coronarius*, *Clus. H.* 55.
2. *Syringa*; flore albo, pleno. *C. B. P.* 398. *Boerb. Ind. Ali. Plant.*

It is called *Syrinx*, from σύριξ, (*Syrinx*) a Pipe, because the Branches, when the Pith is taken out, may serve for Pipes

Pipes in Syringes; but I find no medicinal Virtues ascribed to it. *Hist. Plant. ascript. Boerb.*

SYRINGOTOMIA, *συνγυρομία*, from *σύνγυζ*, a Fistula, and *τομή*, to cut; Syringotomy, or cutting for a Fistula.

SYRINGOTOMUM, *συνγυροτόμιον*, of the same Original with the preceding, is a Surgeon's Instrument for cutting a Fistula.

SYRINGOTOMUS. The same with **SYRINGOTOMUM**.

SYRINX. See **FISTULA**.

SYRIUS. A Name for a strong cathartic Powder prepared of Scammony, being no other than an Extract, Refine, or Magistery of that Drug.

SYRMA, *συρμα*. The same as **APOSYRMA**, or **ABRASUM**, which see.

SYRMÆA, *συρμαίν η συρμαία*, as some say, is a Species of *Raphanus*, so called [from *σύνγω*, *syro*, to draw] because it was proper to provoke Vomiting; *συρμαία* was also a sort of Sweetmeat prepared of Honey and Fat, which was the Prize of a certain Game or Exercise among the *Spartans*; also a Purgative Potion composed of Salt and Water. The Scholiast on *Aristophanes*, is *ισμν*, says, that the *Syrmæa* was the Juice of a certain Herb with which the *Egyptians* used to purge themselves; and it seems to be the Juice of the *Raphanus*, which, mixed with Salt, was a common Purge among that People. *Varinus* says, that the *Syrmæa* works both by Stool and Vomit, whence comes the Word *Syrmæismus*, which signifies a moderate Purging, whether upward or downward; and *Galen* also tells us, *Com. 2. in Lib. de Artic.* that a moderate Evacuation whether by Stool or Urine, was called by the Antients *Syrmæismus*. *Erotian* on *Hippocrates* says, that the *Syrmæa* is a long sort of *Raphanus*, which with Brine was used in Food, in order to excite a kind of Purging, which they call *Syrmæismus*, by which he means Vomiting. *Paulus*, *Lib. 1. Cap. 100.* informs us from *Diocles*, that *Syrmæismus* with the Ancients signified *ἰσμεν*, *isemes*, "fasting Vomits;" that is, provoked by some Medicine taken fasting, and the Verbo *Syrmæizo* expressed the Action of using that kind of Evacuation; for which purpose he prescribes small Radishes, Nasturtium, Eruca, Mustard and Purslain, to be taken in warm Water. Some commenting on this Place observe, that *Syrmæa* signifies a Drink prepared of Water and Barley; and in *Diodorus Siculus*, Provisions for Food. Thus, *Syrmæam facere*, "to make the *Syrmæa*," is to provide Victuals. The *Syrmæa*, in *Hippocrates*, seems to be some Potion or Juice, in which he orders his Medicines to be taken; particularly, *Lib. 11. apud γυναικ.* he orders the *Conyza Odorata* to be made into a Maf with Honey and Rosin, and taken in *Vinum odoratum* or *Syrmæa*, in order to expel the Fœtus and Secundines; and in the same Book he advises *Ærugo* with Honey to be taken in *Syrmæa*. *Herodotus* in *Euterpe*, speaking of the Manners of the *Egyptians*, says, "As to their Way of Living, every Month, for three Days together, they provoke Evacuation with *Syrmæa*, *συρμαίνωσι*, taking care, by Vomiting and gentle Purges, to preserve their Health;" and describing their Manner of preserving dead Bodies, he says, "that the third Way of preparing the Bodies, and which was used by those of meaner Fortunes, was, first, to cleanse out the Belly with Percolations of *Syrmæa*, and afterwards to let it lie in Salt for seventy Days." Where by *Syrmæa*, *Hermolaus Barbarus* assures us, is meant a Species of *Raphanus*. *Foesius*.

SYRMÆSMUS. See the preceding Word.

SYRONES. See **SIRENES**.

SYRRHCEA, *συρρηχεια, η συρρηχεια*, from *σύν* and *ῥέω*, to flow, a Conflux. *Hippocrates*, *Lib. de Aliment.*

SYRUPUS. A Syrup.

As various Simples, such as Herbs, Roots, Seeds, Fruits and Flowers, together with their Juices, cannot always be had, especially in the Winter and Autumn, in order to prepare Decoctions, Infusions, and other Medicines, suited to particular Intentions; as the Virtues of these Simples cannot be long preserved; and as some Disorders are so violent and acute as not to afford Time sufficient for reducing them into various Forms, in order to extract their Qualities; so Syrups became necessary, since by means of this Formula the various Virtues of Roots and Plants might speedily, and without Delay, be used for answering different Intentions, according to the different Qualities of these Roots or Plants.

The Word *Syrup*, as is shewn under the Article **SILPHIUM**, is derived from the *Chaldean*, *Sirpi*.

Syrups were first invented by the *Arabian* Physicians, and were unknown to the ancient *Greeks*; since *Hippocrates* and *Galen* only make mention of *Oxymel* and *Mulsim*. But the *Moors*, in Imitation of the *Arabians*, enriched the pharmaceutical Part of their Medicine with various Kinds of Syrups.

A Syrup is a liquid Form of Medicine, prepared of Decoctions, Juices, or Infusions, preserved by means of Honey

or Sugar, and reduced to such a Confidence, that a Drop let fall on a Marble does not spread.

Syrups, like all other Official Preparations, may be made to answer various Intentions; and consequently may be either of a cooling, heating, drying, inciding, expectorating, incrassating, diuretic, sudorific, lithontriptic, alexiterial or corroborating Quality, according to the different Virtues of the several Ingredients of which they are prepared.

Syrups are used either alone, and without any Admixture of any other Substance; or they are dissolved and diluted in some proper Liquor.

Unmix'd Syrups, or such as are not diluted with any Liquor, cannot (before their Virtues are in a great measure lost) penetrate so far, nor act so quickly and easily on the Parts affected, or the Humours to be alter'd, as Syrups diluted to the Confidence of a Julap, which, in consequence of their destroyed Viscidity, penetrate more expeditiously, arrive at the Parts affected, and mix with the noxious Humours before their Virtues are considerably lost. Hence 'tis obvious, that either unmix'd Syrups, or such as are diluted, are to be exhibited according to the different Parts affected, the Diversity of Diseases, and the Variety of their productive Causes.

Thus undiluted Syrups are universally prescribed;

1^{mo}. For preventing and checking, by their tenacious Confidence, Defluxions on the Fauces, Lungs, and Stomach; for which Purpose they are to be long retained in the Mouth.

2^{do}. For removing Hoarseness, and the Asperity or Roughness of the *Aspera Arteria*, which Intentions they excellently answer by their tenacious Lensor. For these Purposes they are to be gradually swallowed or lick'd out of a Spoon, like a *Linctus*.

3^{io}. For Expectoration, and the Elimination of any fordid Matter collected and infarcted in the Lungs; for which Purposes they are to be licked out of a Spoon, or taken with a Piece of Stick-liquorice.

4^{to}. For alleviating Coughs; for which Purpose they are to be taken in the same Manner.

5^{to}. For Disorders of the Stomach, and Parts adjacent, to which they easily penetrate without a Vehicle.

Diluted Syrups, on the contrary, or such as are reduced to the Form of a Julap, are prescribed;

1^{mo}. For Disorders of the Liver, Spleen and Mesentery.

2^{do}. For various other Disorders, especially of the Head, Heart, Lungs, Kidneys, Bladder, Uterus and Limbs, to which the Virtues of Syrups alone can hardly, if at all, be convey'd, unless they are diluted.

Syrups are generally order'd to be diluted in some proper Liquor, adapted also to remove the particular Grievance for which the Syrup is prescribed. But the Liquors most commonly used for this Purpose, are distilled Waters, or Decoctions, which are more efficacious than Water; as also Broths prepar'd of Fowls, either alone or boiled with proper Roots and Flowers.

In determining the Doses of Syrups, we are to have a due Regard,

1^{mo}. To the Situation and Condition of the Parts affected; for if the Virtue and Efficacy of the Syrup are to be convey'd to remote and distant Parts, a proportionably large Dose is to be exhibited, otherwise little or no Effect will be perceived; because by the Length of the Passage, the Virtues of the Syrup will be greatly impair'd.

2^{do}. To the Virulence of the Disorder, and the Strength of the morbid Cause.

3^{io}. To the Age and Habit of the Patient.

4^{to}. To the Virtue and Efficacy of the Syrup itself.

5^{to}. To the Manner in which the Syrup is taken; for as large Quantities of Syrups cannot be taken at once, in order to remove several Disorders of the *Aspera Arteria* and Lungs, so the Doses are to be frequently repeated. The same Rule is, also, to be observed in the Use of such Syrups as are exhibited for extinguishing Thirst.

As for the Quantity of Liquor used in diluting Syrups, it is the same as in Julaps; only the Quantity is to be augmented when the Intention is to allay Thirst excited by Fevers and other acute Disorders, especially in the Summer Time.

The Time most proper for exhibiting Syrups, is to be estimated from the Intention of their Exhibition: Thus Syrups design'd to prepare and digest the Humours, are to be exhibited in the Morning, four or five Hours before Eating, that their Virtues may not be obtunded by Aliments lately taken, or as yet not digested.

These Directions principally belong to the Syrups of the alterant Kind; and as for those of a purgative Quality, they are to be exhibited at the same time, and with the same Precautions, as other Purges; only 'tis to be observed in general, that Syrups are better adapted to chronic than to acute Disorders. *Petr. Morell. de Formul. Remed.*

In making the Official Syrups to the best Advantage, some

some principal Qualities in the Things themselves, before such a Process is entered upon, ought to be particularly regarded. The most simple Treatment in this Form, is the dissolving Sugar enough in the Juice, or Infusion of some Things, to give it a Consistence for keeping; the Proportion required for this purpose is generally double the Quantity of Sugar to that of the Liquor; and where it is ordered with less Sugar, Boiling is required to bring it to a due Consistence.

Among the Materials thus ordered, all Acids ought to have their due Quantity of Sugar to bring them to a Consistence without Boiling; because the very Action of much Heat upon them destroys their Acidity, and makes them liable to candy; and this more particularly holds good, where a Juice hath any Fragrancy in Flavor, as that of Oranges, Lemons, Citrons, and the like; because Boiling also exhales and destroys that Fragrancy. Such Infusions, also, as give to a Syrup a desirable Colour, ought at once to be so charged with Sugar as not to require Boiling; because their Colours, by such Procedure, would be spoiled; as with the Violets, red Poppies, Cloves, and the like; none of which can bear the Fire without Detriment.

The alterant Syrops, either simple or compound, which are made from Decoctions, and take not in Sugar enough to give them a due Consistence without boiling, require Clarification most, which is commonly done with the Whites of Eggs; but this Addition to their Beauty, is an Injury to their Virtues, where any thing mucilaginous or viscid is required. But among this whole Tribe, this Caution is no where so necessary as in the *Syrupus de Meconio*. What is taken from the Poppy, and which solely gives the Virtue to this Syrup, will make a Decoction thick; and if that be taken out by Clarification, the Medicine becomes of little or no Effect; so that a certain Way to know when this may be trusted to is, by making a Draught thick and foul, and depositing a light Sediment upon Standing.

There are so many under this Title of Syrops yet retained in the Dispensatory, which are hardly ever made or prescribed, that the particular Examination of them would be a needless Trouble; and therefore it may be sufficient to observe, that these are the *Syrupus de Absinthio simplex*, justly neglected for its Nauseousness; the compound Syrup under the same Title; the *Syrupus de Artemisia*, de *Erysimo*, *Myrtinus*, de *Pomis alterans*, de *Paeonia compositus*, de *Prasso*, de *Stachade*, de *Symphyto*; and, among the Purging Syrops, the *Syrupus de Cichereo cum Rhabarbaro*, de *Pomis purgans*, and *Rosaceus solutivus cum Sena*.

Of those which are frequently in Use, the *Syrupus de Althæa* is the most considerable Compound; but if we examine the Efficacies or Fitness of the several Ingredients for this Form, we shall soon discover the Reason why it is now frequently ordered in its Decoction, to be used like a common Apozem, in large Draughts at a time; by which way it is certainly a good Emollient, and serviceable in nephritic Disorders, by lubricating the Passages; but if a Quart or two of this may safely be drank in a Day, little Consequence can be expected from what Syrup can be taken in the same time.

The same holds good in the *Syrupus Capillorum Veneris*, *Syrupus de Glycyrrhiza*, and the *Syrupus à quinque Radicibus*; for their Decoctions may be drank in large Quantities with Safety, and require to be so taken, when any thing is expected from them; so that all these Things are of use in Syrops only to sweeten Decoctions, or Juleps of like Intention; or else to make up Boluses and Electuaries into a due Consistence.

The *Syrupus de Mentha* is a Composition of some Efficacy, being a grateful Astringent. But even this ought to be trusted to only as a weak Auxiliary. The same is observable of the *Syrupus de Rosis siccis*.

The *Syrupus de Cinnamomo* may answer the Intention of a Restrictant; but its spicy and cordial Quality must necessarily be lost in the long Boiling that is required, to give it Consistence, with half a Pound of Sugar to one Pint of Water. The other Spices and Seeds directed to be made into Syrops after the same manner, are liable to the same Inconveniences; as are, also, the Syrops from the Citron, Orange, and Lemon-Peels. But all the Flavour from these Ingredients, which can be retained in a Syrup, as this Form is commonly kept in the Shops in open Pots, or those loosely covered, is soon lost by standing; so that such Things are to great Disadvantage ordered this Way. The *Syrupus Balsamicus* is liable to the same Loss, but is directed with the utmost Care, to preserve its more fragrant and volatile Parts. This last mentioned Syrup is frequently, for Cheapness, made with Storax or Benjamin, or both; the Difference being hardly discoverable, and the Fraud of no very ill Consequence.

The first Way directed to make the *Syrupus Chalybeatus* is hardly practicable, because the *Sal Martis* does not seem dis-

solvable in the compound Gentian Water; and as the *Syrupus de Pomis alterans* is scarce ever made, this Way I believe has never been tried. That with only Steel, Wine, and Sugar, is the old and common Way of making it, but it is very subject to run into Candy; as is also the *Syrupus Croci*, and any other of this Form made with a vinous Liquor, because the Sugar is not so naturally suspended in them, as in Water and the thicker Fluids; and therefore they are more ready to shoot into Crystals.

Amongst the purging Syrops, the first from Succory with Rhubarb has been formerly much esteem'd; but the whole Croud of Ingredients in it, which have been thought either Correctors or Purgers of Bile, are now known to be of so little Efficacy as to any such Purposes, that they are grown into Neglect; and that shorter Composition, which bears the Title of *Syrupus de Rhabarbaro*, is now much more valued, though the Violet Flowers, the Succory and Fennel Waters seem but very insignificant Ingredients.

The *Syrupus e Floribus malorum Persicorum*, which orders the Infusion to be five times repeated with fresh Flowers, is commonly made with one Infusion only, with just Water enough to cover and scald the Flowers; and that proves a good gentle Emetic or Purge to young Children; the other Way would certainly render it stronger; but so very few care for the Trouble, that I never yet met with any who would vouch for its being thus made. The *Syrupus rosaceus solutivus* is directed somewhat in the same manner, but a stronger Infusion of the dried Damask Roses, or the Residuum after Distillation, will make it with less Trouble and full as good, if not better, than is here ordered by frequent Infusions, or from the expressed Juice.

The Syrup of Buckthorn is of Strength sufficient to require not above two Ounces for its largest Dose, which may conveniently enough be given; but the customary Way of putting in the Spices hath been in a thin Bag, during its boiling to a Consistence; and the less time they are exposed to such Treatment the better. *Quincy's Prelections.*

The Syrops directed by the College are the following.

SYRUPUS DE ABSINTHIO SIMPLEX.

The simple Syrup of Wormwood.

Take of the clarified Juice of common Wormwood, and of clarified Sugar, of each four Pounds; and boil them together into the Consistency of a Syrup.

After the same Manner are prepared the simple Syrops of the Juice of Succory, of Ground Ivy, of Raspberries, of the outer Peel of Walnuts, of Coltsfoot; and also of other Juices that are not acid.

SYRUPUS DE ABSINTHIO COMPOSITUS.

Compound Syrup of Wormwood.

Take of common Wormwood moderately dried half a Pound, of red Rose Leaves, two Ounces; of Spike-nard, three Drams; of old strong white Wine, and Juice of Quinces, of each two Pounds and a half. Let them infuse together warm in an earthen Vessel for a whole Day, then gently boil in a Bath Heat, and strain out the Liquor; and with two Pounds of white Sugar, boil it up to the Consistence of a Syrup.

SYRUPUS ACETOSUS.

Syrup of Vinegar.

This is made by dissolving with a gentle Fire, five Pounds of Sugar in one Quart of the best White Wine Vinegar.

This is reckoned good to expectorate and cut Phlegm, and in such Intentions any other Syrup may be helpful; because the Sugar itself has a Tendency that Way.

SYRUPUS DE ALTHÆA. See ALTHÆA.

SYRUPUS DE ARTEMISIA.

Syrup of Mugwort.

Take of Mugwort, two Handfuls; of Penny-royal, Camamint, Origany, Baum, Dittany of Crete, Savine, Marjoram, the lesser Centory and Rue, of each one Handful; of Fennel, Smallage, and Parsley Roots, of each one Ounce; of Juniper Berries, of the Seeds of Lovage,

vage, Parsley, Smallage, Cubebs, and the Roots of Afanum, of each half an Ounce. Let these be cleansed, cut and bruised, as they require, and boil then in six Quarts of Water to four Quarts. To the expressed Liquor, add of Cinnamon and Spikenard, of each three Drams; of white Sugar, six Pounds; and boil up to a Syrup. *S. A.*

SYRUPUS BALSAMICUS. See **BALSAMUM TOLUTANUM.**

SYRUPUS DE BERBERIS.

Syrup of Barberries.

Take two Pints of the fine Juice of Barberries, and one Pound and a half of very fine Sugar: Boil them in an earthen glazed Vessel to the Consistence of a Syrup.

SYRUPUS CAPILLORUM VENERIS.

Syrup of Maiden Hair.

Take of Maiden Hair, five Ounces; of Liquorice Root, two Ounces: Infuse them for twenty four Hours in six Pints of hot Water; then after a gentle Boiling in a Bath Heat, press out the Liquor; and to four Pints of it clarified, put of Sugar three Pounds, and boil up to a Syrup.

SYRUPUS INFUSIONIS FLORUM CARYOPHYLLORUM. See **CARYOPHYLLUS.**

SYRUPUS CHALYBEATUS.

Syrup of Steel.

Take of the Salt of Steel, two Drams; dissolve it in one Ounce of compound Gentian Water; and add to it nine Ounces of the alterant Syrup of Apples. Or otherwise,

Take equal Quantities of Steel Wine and Sugar, and boil them into the Consistence of a Syrup.

SYRUPUS CICHOREI CUM RHABBARBARO. See **RHABBARBARUM.**

SYRUPUS DE CINNAMOMO.

Syrup of Cinnamon.

Take of the best Cinnamon a little bruised, three Ounces; infuse it for three days in a sufficient Quantity of hot Spring Water, to strain off one Pound, and put to it half a Pound of the finest Sugar; and with a gentle Heat boil it up to a Syrup.

SYRUPUS E SUCCO CITRIORUM. See **CITREUM.**

SYRUPUS CORTICORUM CITRIORUM. See **CITREUM.**

SYRUPUS CROCI. See **CROCUS.**

SYRUPUS CYDONIORUM. See **CYDONIA.**

SYRUPUS DE ERYSIMO. See **ERYSIMUM.**

SYRUPUS DE GLYCYRRHIZA.

Syrup of Liquorice.

Take of fresh Liquorice, cleansed and bruised, two Ounces; of white Maiden Hair, one Ounce, of Hyssop, half an Ounce. Pour upon these three Pints of boiling Spring Water; and after twenty-four Hours Infusion in a Bath Heat, strain out the Liquor and clarify it; and with the best Honey and fine Sugar, of each ten Ounces, boil it up to a Syrup in a Bath Heat. *S. A.*

SYRUPUS GRANATORUM.

Syrup of Pomegranates.

Take of white Sugar, one Pound and a half; of the Juice of Pomegranates made fine, one Pound. Let it be brought into a Syrup with a Bath Heat.

SYRUPUS DE MECONIO, SIVE DIACODION. See **DIACODION.**

SYRUPUS DE MENTHA.

Syrup of Mint.

Take of the Juices of sweet and sub-acid Quinces, and of the Juice of sweet and acid Pomegranates, of each one

Pound and an half; of dried Mint half a Pound; of red Roses two Ounces. Let them stand in Maceration one whole Day; then boil in a Bath Heat to a Consumption of half, strain the Liquor, and with four Pounds of Sugar make it into a Syrup.

SYRUPUS MYRTINUS.

Syrup of Myrtles.

Take of Myrtle Berries, two Ounces and an half; of the white and red Sanders, of Sumach, of Balauftines, Barberries, and red Roses, each one Ounce and a half; of Medlars sliced, one Pound, bruise as required, boil in eight Pints of Water to four Pints; and to that, when strain'd, add of the acid Juice of Quinces and Pomegranates, each six Ounces. Then with four Pounds of Sugar boil into a Syrup, adding the Juice towards the latter End.

SYRUPUS DE PÆONIA COMPOSITUS.

Compound Syrup of Peiony.

Take of fresh Piony-Roots, both the Kinds, cut into Slices; and infused a whole Day in white Wine, of each one Ounce and an half; of Contra-yerva Root, half an Ounce; of common Hartwort, six Drams; of Rosemary with its Flowers, one Handful; of Betony, Hyssop, Origany, Ground-Pine, and Rue, of each three Drams; of Aloes Wood, Cloves, and the lesser Cardamoms, of each two Drams; of Ginger and Spikenard, of each one Dram; of Stæchas and Nutmegs, of each two Drams and a half. After one Day's Infusion in six Pints of warm Spring-water, boil in a Bath-Heat to the Consumption of a third Part; and to the Liquor afterwards strained through a Flannel Bag, put four Pounds and a half of the finest Sugar, and boil up into a Syrup with a moderate Heat.

SYRUPUS DE PAPAVERE ERRATICO.

Syrup of wild Poppies.

Take of the fresh Flowers of wild Poppies two Pounds, and pour upon them two Quarts of Spring-water; the next Day press it out, and repeat the Infusion with fresh Flowers, and then make it into a Syrup in a Bath-Heat, with as much Sugar as there is of the strained Liquor.

SYRUPUS E FLORIBUS MALORUM PERSICORUM.

Syrup of Peach-Flowers.

Take Flowers of Peaches, one Pound, and pour upon them three Pints of boiling Water; after twenty four Hours steeping, press out the Liquor, and repeat the Infusion with a fresh Quantity of Flowers five times; then in the last Straining dissolve two Pounds and a half of Sugar, and boil it up to a due Consistence.

It is a pretty Puke for Children, and opens a little downwards; for which purpose it is much in Use. The Dose is from two Drams to one Ounce.

SYRUPUS DE PETO.

Syrup of Tobacco.

Take of the Juice of English Tobacco three Pounds; of simple Oxymel four Ounces; of Mead one Pint. Digest them together for four Days; then to the clear strained Liquor put two Pounds of Sugar, and make into a Syrup.

This is designed for an Emetic.

SYRUPUS DE POMIS ALTERANS.

The Alterant Syrup of Apples.

Take of the Juice of fragrant Apples four Pints; of the Leaves of Garden and wild Buglafs, and of Violet Flowers, each one Pound: Boil in a Bath-Heat, and to the clear strained Liquor put seven Pound of the finest Sugar, with one Pint of Damask Rose-water, and make into a Syrup.

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SYRU-

SYRUPUS DE POMIS PURGANS.

Purging Syrup of Apples.

Take two Pints of the Juice of fragrant Apples; of the Juices of Borrage and Bugloss, of each one Pint and a half; of the Leaves of Sena picked from the Stalks and Duft, two Ounces; of Aniseeds half an Ounce; of Saffron tied into a little Knot, one Dram. Let the Sena and Aniseeds steep in the Juices; and after that is continued twenty four Hours, and they have been just boiled together, strain out the Liquor; to which add two Pounds of white Sugar, and squeezing the Knot of Saffron frequently between whites, let it be boiled into a Syrup.

SYRUPUS DE PRASSIO.

Syrup of Hore-hound.

Take of the Leaves of fresh white Hore-hound two Ounces; of Liquorice, Polypody of the Oak, Smallage, and sweet Fennel Roots, of each an Ounce; of the Leaves of white Maiden-Hair, Origanum, Hyssop, Calamint, Thyme, Scabious, Savory, and Coltsfoot; of each six Drams; of the Seeds of Anise and Quinces, of each three Drams; of stoned Raisins two Ounces; of fat Figs, No. 10. Let these stand in a warm Digestion for a whole Day, in one Gallon of thin Mead; then boil in a Bath-Heat, and to five Pints of the Liquor strongly pressed out, and settled clear, put two Pounds of clarified Honey and as much Sugar, and boil up to a Syrup; which may be flavoured with one Ounce of Florentine Orrice-Root.

SYRUPUS DE QUINQUE RADICIBUS.

Syrup of the five aperient Roots.

Take of the Roots of Butchers-Broom, sweet Fennel, Asparagus, Parsley, and Smallage, of each two Ounces; of Spring-water three Quarts. Digest them together warm, and boil them in a Bath-Heat. To two Quarts of the Liquor strongly pressed out and clarified, put five Pounds and a half of fine Sugar, and make into a Syrup in the same Heat; adding to it at the latter End eight Ounces of Vinegar.

SYRUPUS DE RHABBARBARO.

Syrup of Rhubarb.

Take of the best Rhubarb, and of Sena Leaves, of each two Ounces and a half; of Violet Flowers one Handful; of Cinnamon one Dram and a half; of Ginger, half a Dram, of Succory, and Fennel Waters, of each four Pints. Let them steep a whole Night warm, and then boil the strained Liquor up into a Syrup with two Pounds of white Sugar towards the latter End, mixing with it two Ounces of the solutive Syrup of Roses.

SYRUPUS ROSACEUS SOLUTIVUS. See ROSA.

SYRUPUS E SUCCO ROSARUM. See ROSA.

SYRUPUS DE ROSIS SICCIS. See ROSA.

SYRUPUS DE SPINA CERVINA.

Syrup of Buckthorn.

Take of the Juice of ripe and fresh Buckthorn Berries gathered in the Month of September, two Pints; let the Fæces subside, and to the clear Liquor add of Cinnamon and Nutmegs, each three Drams; and let them stand in Maceration for the space of one whole Day; then strongly press it out, and put to it one Pound and a half of white Sugar, to be boiled up to the Consistence of a Syrup in a Bath-Heat.

SYRUPUS DE STOECHAUDE.

Syrup of Stoechas, or French Lavender.

Take of Stoechas Flowers four Ounces; of Rosemary Flowers half an Ounce; of the Herbs of Thyme, Calamint, and Origanum, each one Ounce and an half; of the Seeds of Rue, Peony, and sweet Fennel, each three Drams. Digest these for one or two Days in a suf-

ficient Quantity of hot Spring-water, to press out five Pints clear; to which add of the finest Sugar five Pounds and an half, and make into a Syrup by a Bath-Heat, according to Art. It may be aromatized with some Drops of the distilled Oil of Cinnamon.

SYRUPUS DE SYMPHYTO.

Syrup of Comfrey.

Take of the Roots and Leaves of the Greater and Lesser Comfrey, each three Handfuls; of fresh red Roses, Leaves of Betony, Plantain, Pimpernel, Knot-Grass, Scabious, and Coltsfoot, each two Handfuls; bruise them, and press out their Juice; to each Pound of which put one Pound of Sugar; in the Boiling take off what Scum rises, until it is of a due Consistence for a Syrup.

SYRUPUS VIOLARUM.

Syrup of Violets.

Take of fresh Violet Flowers clean picked one Pound, and pour upon them two Pints and an half of hot Water; cover them down close in a new earthen glazed Pot for a whole Day, and then squeeze out the Liquor with a Press; and to every Pint of it put two Pounds of fine Sugar, which dissolve in a Bath-Heat, and take off what Scum arises during its Continuance over the Fire.

SYRUPUS E SUCCO VIOLARUM.

Syrup of the Juice of Violets.

This is made with the expressed Juice and double the Quantity, at least, of Sugar melted in a gentle Bath-Heat, as directed in the preceding.

Besides these there are a great many other Syrups, perhaps not inferior in Virtues, and consequently not less useful. The following are taken from Lemery's *Pharmacopée universelle*.

SYRUPUS ANTI-ASTHMATICUS ANT. DAQUIN.

The antiasthmatic Syrup of Anthony Daquin.

Take of well-cleaned Barley, two Ounces; of the Roots of Butterbur, Elecampane, Smallage, Fennel, Liquorice, and of well-cleaned Damascus Raisins, each an Ounce and an half; of enucleated Dates, twelve; of Jujubes and Sebestens, each thirty; of the Leaves of Coltsfoot and Lungwort, of the Tops of Hyssop and white Horehound, and of true Maidenhair, each one Handful; of the Seeds of Anise, and the Cotton Bush, each half an Ounce; and of the Flowers of Coltsfoot and Catsfoot, each half an Handful; make into a Syrup.

For this Purpose, the Barley is first to be boiled in nine Pints of Water for about half an Hour, then we are to add the Roots cut into small Pieces, then the Fruits opened and cleansed, and then the Leaves, Seeds, Flowers and Liquorice bruised. When the Decoction is boiled to about a third Part, permit it to become half cool, strain it and mix the Sugar with it. Clarify the Mixture with the White of an Egg, and boil it to the Consistence of a Syrup; which, when cold, is to be rendered of an aromatic Flavour, by an Elæosaccharum prepared of six Drops of the distilled Oil of Anise, two Drops of the Oil of Cinnamon, and a sufficient Quantity of the Powder of Sugar-candy.

This Syrup incides and disengages thick Phlegm, affits Respiration, removes Obstructions of the Lungs and Diaphragm, and is beneficial against Asthmas and inveterate Coughs.

The Dose is from half an Ounce to an Ounce.

SYRUPUS ANTI-EPILEPTICUS ANT. DAQUIN.

Take of Birdlime, and the Roots and Seeds of male Piony, each two Ounces; of the Roots of the greater Valerian, Angelica, Master-wort, Illyrian Orris, and white Dittany, each one Ounce; of the Leaves of Betony and Rue, and of the Flowers of Lilly of the Valley, the Lime-tree and Lavender, each one Handful; and of the white Tartar of Montpellier, one Ounce and an half; make into a Syrup.

For which Purpose we are to choofe all the Ingredients good, and cutting them in Pieces and bruifing them, we are to put them into a large Matrafs; then we are to pour upon them of the Waters of black Cherries and Lime-tree Flowers; each three Pints; then ftopping the Matrafs clofe, we are to put it in a tepid *Balneum Mariæ*, where the Ingredients are to digeft for twenty-four Hours: Then the Water of the Bath is to be fet a boiling for two or three Hours, after which the Infufion is to be ftrained and expreffed; then four Pounds of Sugar are to be mixed with it, after which it is to be clarified with the white of an Egg, and boiled over a flow Fire, to the Confiftence of a Syrup, which, when cold, is to be rendered of an aromatic Flavour, with an Elæofaccharum, prepared of the diftilled Oils of Lavender and Cinnamon, together with a fufficient Quantity of the Powder of Sugar-candy.

This Syrup is good againft Epilepfies, Apoplexies, Palfeys, and other Diforders of the Brain.

The Dofe is from half an Ounce to an Ounce and an half.

SYRUPUS ANTINEPHRITICUS ANT. DAQUIN.

The antinephritic Syrup of Anthony Daquin.

Take of the Roots of Marfh-mallows, Reft-harrow, Strawberries, Burdock, Water Lily, and the five aperient Roots, each one Ounce and an half; of Winter-cherries and Dog-hips, each three Ounces; of the Seeds of Burdock, Gromwel, Mountain Hartwort, the four cold Seeds well cleaned, and the Kernels of Medlars and Peaches, each one Ounce; of the Leaves of Saffrafas, Burnet, Chervil, Golden-rod, Saint John's-wort, and true Maidenhair, each one Handful; and of white Tartar reduced to Powder, two Ounces; make into a Syrup in the following Manner:

Cleanfe the Roots and cut them into fmall Pieces, reduce the white Tartar to a grofs Powder; boil all together in ten Pints of the diftilled Water of Pellitory of the Wall, over a gentle Fire, for about an Hour; then add the Fruits opened, then the Kernels and Seeds bruifed, and laft of all the Leaves cut fmall. The Decoction is to be boiled into about an half; after which four Pounds of Sugar are to be added; then the Mixture is to be clarified with the white of an Egg, and boiled to the Confiftence of a Syrup, which is to be rendered of an aromatic Flavour with fix Drops of the Effence of Anife reduced to an Elæofaccharum, with about half an Ounce of the Powder of Sugar-candy.

This Syrup refolves the Stone, attenuates and climinates the Phlegm lodged in the Kidneys, Ureters and Bladder, provokes Urine, and is good for the green Sicknefs.

Its Dofe is from half an Ounce to two Ounces.

SYRUPUS ANTISCORBUTICUS ANT. DAQUIN.

The antifeorbutic Syrup of Anthony Daquin.

Take of the Roots of male Fern, Angelica, Eringo, and Horfe Radifh, each three Ounces; of Citron and Orange Peel, each two Ounces; of the Leaves of Baum, Fumitory, Spleen-wort, Scurvy-grafs, Brooklime, Water-creffes, Money-wort, and Mint, each three Handfuls; of the Seeds of Garden-creffes, *Carduus Benedictus*, and Citrons, each one Ounce; of the Flowers of Broom and Clove July-Flower, each one Handful; and of white Tartar, two Ounces; make into a Syrup in the following Manner.

Boil the Roots cut into fmall Pieces, and the Tartar reduced to a grofs Powder in nine Pints of chalybeate Water; then add, whilst the Water is ftill boiling, the Barks and Seeds bruifed, then the Herbs cut down, and laft of all the Flowers. When the Decoction is boiled in about a third Part, permit it to become half cool, then ftrain and exprefs it; add fix Pounds of the beft Sugar, clarify the Mixture with the white of an Egg, and boil it to the Confiftence of a Syrup, which, when cold, is to be rendered of an aromatic Flavour, with an Elæofaccharum prepared of the Oils of Cinnamon and Cloves, each three Drops, and a fufficient Quantity of the Powder of Sugar-candy.

This Syrup purifies the Blood, refifts the Malignity of the Humours, provokes Urine, excites the Menfes, and is of excellent Service in the Scurvy, malignant Fevers, and other Diforders, where it is neceffary to accelerate the Circulation of the Humours.

Its Dofe is from half an Ounce to an Ounce and a half.

SYRUPUS LIENTERICUS ANT. DAQUIN.

Anthony Daquin's Syrup againft the Lientery.

Take of the Tops of the greater Wormwood, and red Rose Leaves exungulated, each three Handfuls; of the Filings of Steel inclos'd in a Bag, two Ounces; of the beft Rhubarb and Bark of Citrin Myrobalans, each an Ounce and an half; of the Powder of white Tartar one Dram, and bruifed red Sanders, half a Dram; make into a Syrup in the following Manner.

Put all the Ingredients into a glafs earthen Veffel; pour upon them of the Juices of Plantain and red Roses, each two Pints; cover the Veffel, fet it on warm Afhes for twenty four Hours, then boil the Infufion gently for a Quarter of an Hour; ftrain and exprefs it, add four Pounds of Sugar, clarify with the white of an Egg, and boil to the Confiftence of a Syrup.

This Syrup ftops Fluxes, and efpecially Lienteries, corroborates the Stomach, and the other Vifcera, corrects the Acrimony of the Humours, and is good againft Hemorrhagies.

Its Dofe is from half an Ounce to an Ounce and an half.

As the primary Cause of a Lientery confifts in a Weaknefs and Relaxation of the Fibres of the Stomach, fo that it is not fufficient for concocting the Aliments, fo the Ingredients of this Syrup are very proper, fince after having gently evacuated the Humour producing fuch a Relaxation, they brace up and corroborate the Fibres of the Stomach.

SYRUPUS MAGISTRALIS ASTRINGENS, seu DYSENTERICUS.

The astringent or antidyfenteric magiftrial Syrup.

Take of the beft Rhubarb one Ounce, of Citrine Myrobalans, half an Ounce; of Pomegranate Peel and red Rose Leaves, each three Drams; make into a Syrup in the following Manner.

Cut the Rhubarb into fmall Pieces, bruife the Myrobalans and Pomegranate Peel. Let the whole infufe together warm for twenty four Hours, in three Pints of diftilled Plantain Water. Then boil the Infufion, gently ftrain and exprefs it. Mix with it four Ounces of the clarified Juice of Barberries, and two Pounds of white Sugar. Clarify the Mixture with the White of an Egg; ftrain it, and boil to the Confiftence of a Syrup.

This Syrup was fome time ago look'd on as a great Secret, but is now inferted in feveral Difpensatories, and esteem'd one of the beft of all the Syrups: For it gently evacuates bilious Humours by Stool, corroborates the Inteftines, ftops Dyfenteries and other Fluxes, and ftrengthens the Stomach.

The Dofe is from one to three Ounces. Three Spoonfuls, or an Ounce and a half, are generally taken in the Morning fafting for eight or nine Mornings.

SYRUPUS MORORUM SIMPLEX.

Simple Syrup of Mulberries.

Take of the Juice of Garden Mulberries, and of white Sugar, each two Pounds. Make into a Syrup in the following Manner. Bruife the Mulberries in a Marble Mortar, let them digeft cold for feven or eight Hours; then exprefs the Juice through a Linen Cloth, and mix it with an equal Weight of fine Sugar; after which boil to the Confiftence of a Syrup. This Preparation is in the Shops call'd *Diamorum cum Saccharo*.

It is good for Diforders of the Mouth and Throat, and an excellent Ingredient in Gargarifms. A Spoonful of it is fometimes taken with Succes againft Colds.

SYRUPUS MORORUM COMPOSITUS.

Compound Syrup of Mulberries.

Take of the Juice of Garden Mulberries, and of white Sugar, each two Pounds; of the Juice of unripe Grapes, fix Drams; of Myrrh and Saffron, each two Drams: Make into a Syrup in the following Manner. Boil the Juice of the Mulberries, the Juice of unripe Grapes, and the Sugar together. When the Syrup is half boil'd, put into it a fmall Bag with the Myrrh bruifed, and the Saffron. Boil to a due Confiftence, and when the Syrup

rup is cold, pour it into a Vessel, permitting the Bag still to remain in it.

This Syrup is good against the Quinsy, cures Ulcers of the Palate and Throat, is of a very deterfve Nature, and an excellent Ingredient in Gargarisms.

The Mulberries should not be entirely ripe, because they are then of a more deterfve Quality, than when arrived at perfect Maturity.

SYRUPUS PANCHYMAGOGUSSIVE CATHOLICUS VERNUS MEYSS.

The universal de-obstruent Syrup.

Take of the Roots of Asparagus, and recent Polipody, each two Ounces; of the Leaves of Mallows, Mercury, Monks Rhubarb, and Fumitory, each three Handfuls; of the Leaves of Lettices and Succory, each three Handfuls; of Bugloss and Borrage, each an Handful and an half; of Sorrel and Mint, of the Tops of Fennel, Thyme, and Hyssop, each one Handful; of the Tops of Rosemary, half an Handful; of the Leaves of Marigold, three Pugils; of pale Roses, thirty; and of the Leaves of Broom and Elder, each fifteen Pugils. Make into a Syrup in the following Manner. Cut and bruise all the Ingredients, put them into a glazed earthen Vessel, and pour upon them of the depurated Juices of Mercury, Fumitory, Pale Roses, and Succory, a sufficient Quantity. Boil to the Consumption of the half over a gentle Fire; so that after Expreffion, two Pints may remain; to which add two Pounds of Hony, then clarify the Mixture, and boil to the Consistence of a Syrup.

This Syrup is highly efficacious in removing all Obstructions, and purges effectually without producing Gripes. The Dose is from two to four Ounces.

SYRUPUS PLANTAGINIS.

Syrup of Plantain.

Take of recent Plantain Roots, four Ounces; of Plantain Seeds, one Ounce. Bruise and boil in two Pints of distilled Plantain Water, to the Consumption of about a third Part; and with the expreffed Liquor, mix of the Juice of Plantain two Pounds; and of white Sugar, two Pounds and a half: Clarify the Mixture with the White of an Egg, and boil to the Consistence of a Syrup.

This Syrup is proper to stop Fluxes, Hæmorrhages, and Gonorrhæas. The Dose is from half an Ounce to two Ounces.

This Syrup includes the Qualities of all the Parts of the Plantain, and is consequently the best that can possibly be prepared.

SYRUPUS RESUMPTIVUS, SIVE DE TESTUDINIBUS, MESUES.

Mesues Restorative Syrup.

Take of the Fleth of Wood Tortoises, one Pound, of River Crabs, eight Ounces; of clean Barley, Pulp of Dates, and Damascus Raisins, each two Ounces; of Jujubes and Sebestens, each twelve; of bruised Liquorice Root, one Ounce; of the Kernels of Pine and Pistachio Nuts, of the Flowers of Violets and Water Lilly, of the Seeds of the Cotton Bush, Melons, Cucumbers and Citrulls, each half an Ounce; of the Seeds of Lettuce and white Poppy, each two Drams. Boil in a sufficient Quantity of common Water, strain and exprefs. To the strained Liquor add three Pounds of Sugar. Clarify with the White of an Egg, and boil to the Consistence of a Syrup, which, when cold, is to be render'd of an aromatic Flavour, by an Elæosaccharum, prepared of

fix Drops of the distilled Oil of Anise, and about an Ounce of powder'd Sugar.

This celebrated Syrup is called Restorative, because it surprisingly recruits Persons wasted and extenuated by chronic Distempers. It is good against a Phthisis, is of a moistening Nature, and corrects the Acrimony of the Humours.

The Dose is from half an Ounce to an Ounce and an half.

This Syrup cannot be long preserved, on account of the Juices of the Fleth, which are soon corrupted, tho' boiled with Sugar; for which Reason it ought not to be prepared, till it is to be used.

SYRUPUS ROBORANS.

The corroborating Syrup.

Take of the best Rhubarb cut small, four Ounces; of bruised Myrtle Berries, and the exungulated Leaves of red Roses, each three Ounces; and of the Powder of white Tartar, one Dram.

Infuse all warm for twenty-four Hours in six Pints of Chalybeate Water. Then boil gently, strain and exprefs the Decoction; add four Pounds of Sugar; clarify the Mixture with the White of an Egg; and boil to the Consistence of a Syrup.

This Preparation corroborates the Stomach and the other Viscera, stops Fluxes and Hemorrhages.

The Dose is from half an Ounce to two Ounces. See CLARIFICATION.

SYRINCHIUM. See SISYRINCHIUM.

SYSSARCOSIS, συσσερωσις, from συν, and σαρξ, Fleth, is a Species of Articulation of the Bones by the Intervention of the Fleth; or, as *Monro* expresses it, when Muscles are stretched from one Bone to another. *Syffarcosis* is, also, a Method of curing Wounds, particularly those of the Head, where the Cranium is laid bare, and the Interstice between the Lips of the Wound too wide for a Contraction, by promoting a Growth of new Fleth, which they call a Granulation. *Paulus, Lib. 6. Cap. 63.* uses the Word to exprefs a preternatural Generation of Fleth about the Vessels and Coats of the Testes, whence proceeds a *Sarcocoele*.

SYSTASIS, συστασις, of συστήναι, to consist, Consistence. See CONSISTENTIA. In *Hippocrates* it signifies a Collection or Concretion. Thus, *Coat. 238.* συστασις ὑγρῶ περὶ τὴν ὑπερώην, "a Collection of Humor about the Palate." It is also used by the same Author, to exprefs a kind of Contraction of the Body, occasioned by some uneasy Sensation, as in *Lib. de Morb. Sacr.* ἢ τις πόνος ἢ σύστασις γίνηται τῷ ἀσθενείῳ, "if the Patient be affected with some Pain, or a *Systasis*, (a dolorific Contraction.)"

SYSTATHMOS, συσταθμός, from συν and σταθμός, a Weight, is expounded in *Galen's Exegeſis* by ἰσοσταθμός, equiponderous.

SYSTEMA, σύστημα, from συνίστημι, to consist, in 7 *Epid.* signifies the concrete Matter, or Sediment at the Bottom of the Urinal; tho' *Galen*, for σύστασις, reads σύστημα, (*Synagma*) as we find in his Comment on 6 *Epid. Sect. 3. Aph. 11.*

SYSTOLE, συστολή, from συτίλλω, to contract, a Contraction or Constriction; in Anatomy it is the Motion of the Heart and Arteries by Contraction, which is alternate and contrary to the *Diastole*. See *Cor.*

SYSTREMA, σύστημα ἢ ἐνστέμμα, from σύστροφμα, to be collected, hardened, condensed, or concreted; in *Hippocrates* signifies a Collection of Humors, hardened Concretions, Tubercles, and Tumors. Thus in the following Passage, 2 *Prorrh.* ἐνστέμματα συνήπτεσθαι μὲν ἥτοι ἐν τῷ ἰσχίῳ, "you are to examine whether there be any Concretions of Matter in the Ischium." ἐνστέμματα signifies the same as συστροφμα, (*Systrophæ*) which *Galen* expounds by φημίαι καὶ συνήπτεσθαι, "Tubercles and Hardnesses," or hard Collections and Concretions of Humors, by *Celsus* called *Humoris Coitus*. And to give but one more Instance, 7 *Epid.* we read καὶ ἐν τῷ ἐνστέμματι ἀνώδυνος, "near the Spleen was an indolent Hardness."

SYSTROPHE, συστροφή, is of the same Original and Signification with the preceding Word; which see.

T.

T. For the Signification of this Letter in the Chymical Alphabet. See ALPHABETUM CHYMICUM.
TABACUM. Tobacco. See NICOTIANA.
TABASIR. The Arabic Word for *Spodium*.

TABANUS, TABE, or ASILUS. The Gad-fly. This is a kind of an oblong, slender blackish Fly, with a Trunk of the Figure of a small Hunting-horn, and sharp-pointed, with which it pricks or stings Asses, Horses, and other Beasts, in order to extract their Blood, with which it is nourished; it has six black Feet, and flies about Roads, Forests, and Woods. There is another Species of greenish *Tabanus*, which is called *Tabanides*.

These kinds of Flies are resolute, and proper to make the Hair grow, being bruised, or pulveriz'd, and applied to the Head. *Lemery des Drogues*.

TABARZET. An Epithet for double-refin'd Sugar.

TABELLA. A Lozenge.

TABERNÆMONTANA. The Characters are;

It hath a tubulous Flower, consisting of one Leaf, which is spread open toward the Top, and divided into several Parts; from the Bottom of the Flower arises the Pointal, which afterwards becomes the Fruit, composed of two Capsules, which open lengthways, and are filled with oblong Seeds, surrounded with a thin Pulp.

Miller mentions two Species;

1. *Tabernæmontana lactescens, citrii foliis undulatis.* *Plum.* *Nov. Gen.* Milky *Tabernæmontana*, with a waved Citron-leaf.

2. *Tabernæmontana lactescens, Lauri folio, flore albo, siliquis rotundioribus.* *Hoult.* Milky *Tabernæmontana*, with a Bay-leaf, a white Flower, and rounder Pods.

The first of these Sorts is common in the Island of *Jamaica*, and in several other Places in the warm Parts of *America*, where it rises to the Height of fifteen or sixteen Feet, having a smooth strait Trunk, covered with a whitish Bark; at the Top of the Trunk come out the Branches, which are irregular, and beset with shining green Leaves; from the Foot-stalks of these Leaves are produced the Flowers, which are yellow, and extremely sweet-scented; these Flowers are succeeded by two forked Pods, in which the Seeds are contained. This Genus of Plants is nearly related to the *Nerium* or *Oleander*, and has been, by some botanical Writers, ranged under that Head; but the Seeds of this Genus have no Down adhering to them, as have those of the *Oleander*, being included in a soft, pulpy Substance. *Father Plumier* has constituted this Genus, in Honour of *Dr. James Theodore*, who was called *Tabernæmontanus*, from a Village in *Germany*, where he was born. He was one of the most knowing Botanists of his Age, and published, at *Frankfort*, a Folio in a long Form, in the Year 1590, in which are the Figures of two thousand two hundred and fifty Plants.

The second Sort was discovered at *La Vera Cruz*, by the late *Dr. William Houstoun*, who sent the Seeds into *England*, from whence several of the Plants have been raised. *Miller's Dictionary*.

TABES DORSALIS.

Hippocrates, in *Lib. 2. de Morbis*, mentions this Disorder in the following manner. "The *Tabes Dorsalis* arises from a Disorder of the Spinal Marrow, and is principally incident to Persons of a salacious Disposition, or such as are newly married. The Patients are free from a Fever, eat and digest well. The Person, labouring under this Disorder, when interrogated with respect to his State, affirms, that he perceives, as it were, Ants falling from the superior Parts of his Body, his Head, for Instance, into the Spine of the Back; and, when he discharges his Urine or Excrements, there is, at the same time, a copious Evacuation of liquid Semen, in consequence of which he is incapable of propagating his Species, answering the Purposes of Marriage, or being amus'd with Venereal Dreams; he is generally short-breath'd, and weak; especially after running, or walking up a steep Place; he perceives a Sense of Weight in his Head, and is afflicted with a ringing of his Ears. The Patient is, in Process of Time, seiz'd with various Species of violent Fevers, and at last dies of that kind of Fever call'd *Lippiria*."

According to *Salvus Diversus*, *Hippocrates* constitutes four different Kinds of *Tabes Dorsalis*: The first of which proceeds from excessive Venery, the second from a too copious Influx of the Blood into the Spinal Marrow; the third from a Driness of the Spinal Marrow; and the fourth from a Defluxion of peccant Humours upon it.

As for the first Species; in *Lib. 6. Epidem. Sect. 8. Text. 52.* we have an Instance of it, in the Case of *Grypalopax*, a Man

of twenty-five Years of Age; who not only discharg'd his Semen during Sleep, but, also, frequently in the Day-time; but, when this Patient was in the thirtieth Year of his Age, he died of a Consumption.

Hippocrates, as is obvious from his Books *de Aere, Aquis, & Locis*, & *de Genitura & Natura Pueri*, asserts that the Cause of this Disorder is, that the Semen is convey'd from the Brain, through the Spinal Marrow, to the Genitals. But, without any Dispute with respect to the Justness of this Doctrine, we can from Experience affirm, that the whole Body is wasted, and the Brain, together with the Spinal Marrow, which is only, as it were, an Elongation of it, considerably injur'd by an excessive Discharge of the Semen. Hence the Patient is render'd so weak, that a Difficulty of breathing is produc'd by any violent Exercise, such as running or walking up a steep Place. Tho', in the Beginning, this Disorder is not accompanied with a Fever, yet in Process of Time, when the vital Powers are weaken'd, a putrid Fever is brought on, which is generally of the malignant Kind, and in which the internal Parts are burnt with Heat, whilst the external Parts are excessively cold. In this Case, after the Use of universal Remedies, *Hippocrates* orders Asses Milk, and then that of Cows, for forty Days; after which he feeds the Patient with soft Aliments.

The second Species of *Tabes Dorsalis* is, when the Heat of the Spinal Marrow is impair'd, and almost extinguish'd, by a superfluous Quantity of Blood.

The third Species of *Tabes Dorsalis* is, when the Spinal Marrow becomes dry, in consequence of an Obstruction of the Vessels, thro' which the Nourishment is convey'd to it.

The fourth Species of *Tabes Dorsalis* is, when there is a Defluxion of peccant Humours upon the Spinal Marrow; an Instance of which is found in *Gulielmus Fabricius, Cent. 1. Obs. 45.*

Baldwinus Rossius in *Tract. de Scorbut. Epist. 4.* speaks of the *Tabes Dorsalis* in the following manner. "The Disease which the Greeks call *ἀσθμα*, and the Latins *Lumbago*, is familiar, and almost epidemical, to the *Hollanders*, both on account of their Aliments, and the moist and cloudy Nature of their Country; tho', in other Parts, it, also, seizes those who use immoderate Venery; for, as we are inform'd by *Hippocrates* in *Lib. 2. de Morb.* it is principally incident to married Persons, and those addicted to Venery: Whilst a large Quantity of liquid Semen is discharg'd, the Conception does not remain in the Uterus of Women, and in Men there is a copious Discharge of Semen during Sleep, whether they lie with their Wives, or not. But, in my Opinion, this Species of *Tabes Dorsalis* is not much to be dreaded, since 'tis probable, that the Disorder draws its Origin from a pituitous Matter, or Flatulencies, or a melancholic Humour, mixed with the Blood, and falling from the Head, thro' the Vessels, by way of Catarrh, upon the Spinal Marrow. For since, according to *Hippocrates*, in his Book *de Glandulis*, there are seven Kinds of Defluxions, by means of which the Brain generally frees itself from what is offensive to it, that is, by the Nostrils, the Ears, the Eyes, the Palate, and the others, thro' the Vessels, into the Spinal Marrow and Blood, 'tis necessary, the Part in which the Defluxion is, should be variously affected, according to the Quantity and Quality of the peccant Matter; for, if the excrementitious Sordes, falling from the Brain to any other Part, are but small in Quantity, and not absolutely malignant, the Disorder, and its concomitant Pain may be easily surmounted and discuss'd by Nature; but if the excrementitious Matter is peccant both in Quantity and Quality, it lays a Foundation for very terrible Symptoms. But because, omitting fix Species of these Defluxions, we only treat of that which comes from the Head, thro' the Vessels, to the Spinal Marrow, 'tis to be observ'd, that where there is a Defluxion of cold and tough Humours upon the Spine, these Humours first seize and affect the adjacent Parts, which, unless they are strong enough to subdue and dissipate the received Matter, forthwith transmit it to the subjacent, and especially the most contiguous Parts; and, as this Matter distends the whole nervous System, so it affects the whole Body with violent Pains, beginning at the Scapulae, and gradually proceeding to the Loins, and sometimes to the Os Coccydicis. The Patient afflicted with this Disorder, which is properly the *ἀσθμα* of the Greeks, and the *Lumbago* of the Latins, can hardly walk or move from one Place to another. But if, with the Moderns, we rather chuse to call it *Gutta*, because the Humours drop, as it were, from the Brain, we are more in the right, than those who apply the word *Gutta* to

"all Disorders of the Joints. The *Tabes Dorsalis* has this Circumstance in common with a Quartan Fever, that it seizes at all Seasons of the Year, tho' 'tis shorter in the Summer, longer in the Autumn, and longest of all in Winter. If an acrid and tenacious Humour falls with an Impetus from the Brain, it produces a Defluxion, not only on the Spinal Marrow, but also, on the *Acerabula* of the *Os Coccenicis*, and at last a *Tabes Dorsalis*, or a *Tabes Ossis Sacri*, as *Hippocrates* calls it, a Disorder, in which Death proves the only Blessing; because the Pain is continually more and more increased; for, as *Hippocrates*, in *Lib. de Glandulis*, informs us, this Disorder arises from a Defluxion from the Head, thro' the Vessels, upon the Spinal Marrow; after which it affects the *Os Sacrum*, to which the Marrow itself promotes a Defluxion, which is deposited on the *Acetabula* or Junctures of the Hips; and, if it produces a *Tabes*, the Patient is wasted and reduc'd to a State so miserable, that he is no longer fond of Life; for the *Scapulæ*, and both Legs, become painful; and the Patient dies at last, after long, but fruitless Attempts for a Cure. Such Patients have, also, this in common with other consumptive Persons, that the Autumn is generally most fatal to them, whereas the Spring is the most commodious Season for taking Medicines: Besides, the Driness and Ex-cenuation of the Spinal Marrow is owing to an Obstruction of the Vessels, which convey the Blood and Spirits from the Brain to the Spinal Marrow; for which Reason the Method of Cure consists in opening the Obstructions of the Vessels, and evacuating the peccant Matter. But, if the Patient is plethoric, the Humerary Vein of the Right Arm, or the Median Vein of the Left, or, if Necessary requires, the *Saphena*, is to be previously open'd; and, if the hæmorrhoidal Veins are tumid, 'tis expedient to open them, either by the Application of Leeches, or in any other manner; for, as we have before observed, the Cause of a Lumbago is generally a melancholic Humour, which, tho' apparently thicker, than that it should seem to be, commodiously transmitted to the Spine, yet certainly is so, since we daily observe, that Persons labouring under Disorders of the Spleen easily fall into a Lumbago: And *Galen*, in *Comment. 3. in Lib. 1. Protrhet. Hippocrat.* confirms this Doctrine, whilst he says, that in Pains of the Loins we are to expect an Evacuation from the hæmorrhoidal Veins, because such Pains are frequently produc'd by a Retention of the Hæmorrhoids; especially in Persons of melancholic Constitutions, or when the Remains of the Disease convey'd to these Veins cannot be discharg'd.

"After Venesection, such Decoctions as render the peccant Matter fluid, are to be us'd, and then Purgatives according to the peccant Matter; beginning with such as are mild, and always remembering, that the Head is a Part primarily affected. Then, if Necessary requires it, we are to use stronger Purgatives; for which Purpose *Hippocrates* greatly recommends his *Elaterium*. But I should rather approve of small Pills of Agaric, macerated in a due Quantity of Turpeth, and exhibited in a Decoction of Sena-leaves, with the Addition of a few Fennel-seeds, or in any other Decoction, as the Condition of the Patient shall require: After Purging 'tis expedient to use Fomentations, Frictions, and Unctions, both in order to eliminate the peccant Matter, mitigate the Pain, and corroborate the Parts affected. For the same Purpose, if Time, Place, and the Custom of the Patient, admit, Baths of sweet Water are to be us'd; or artificial Baths prepared of Vervain, Roses, Sage, Fennel-herb-frankincense, Chamomile, and Melilot. If the Patient's Body is not sufficiently soluble, *Hippocrates* orders that Effect to be produc'd by a Clyster; but when the Humour is viscid, deep-impacted, or of a stautent Quality, we are not only to use these Measures, but, also, apply Cupping-glasses, in order to attract the Matter; carefully observing that the Matter be not too copious to be evacuated by their means; for otherwise there is Danger of supplying a new Fomes to the Disease: An inciding, attenuating, and not absolutely weak Diet is to be us'd. This Disorder, like others of the articular Kind, is protracted till the twentieth, generally the fortieth Year, and sometimes beyond that Period. Let the Drink be small Wine, or Ale well boil'd. The Sleep ought to be temperate, and sufficient for the Concoction of the Aliments; for too much Sleep renders the Brain subject to Catarrhs. The Exercise ought to be moderate, and proportion'd to the Strength; but never so violent, as to create Fatigue." *Sennert. Vol. 2.*

This is a violent Disorder, little treated of by Physicians, tho' fully describ'd by *Hippocrates*, and frequently observ'd by me in the Course of my Practice. The Head of the Patient is affected with a violent and acute Pain, after which, in some Patients, as it were, Ants seem to descend from the superior Parts. The Neck and Loins, together with their Muscles, and the Articulations of the Legs, are so painful, that they cannot sometimes be bended. The Patient is costive, and the Urine with Difficulty discharg'd. But when he either goes to Stool,

or discharges his Urine, a large Quantity of liquid Semen is evacuated; which, also, happens during Sleep, when the Person lies with a Woman, or not. In Women the Conception, is not retain'd in the Uterus; by hard walking, especially up steep Places, the Body is greatly weaken'd, the Breathing becomes difficult, the Head is afflicted with a Sense of Weight, and a Ringing of the Ears is produc'd. The Patient labouring under a *Tabes Dorsalis* is free from a Fever; and, tho' he is not afflicted with the Loathing of his Food, yet he reaps no Advantage from it; but is totally consum'd. In the Beginning of the Disease, the Patient is pretty quiet and easy; but, as the Disorder proceeds, all the Symptoms are increas'd, the Legs swell, as in dropical Cases; in some, Ulcers arise on the Loins, some of which are heal'd, whilst others rise in their stead. At last, a violent Cataract arising, the Patient is render'd totally blind. This Disorder is principally incident to new-married Persons, and those who indulge themselves in excessive Venery. A *Tabes Dorsalis* has, also, by some been observ'd to intermit, and again to recur. This is observ'd to have happen'd to many Persons, by a Physician, whose own Fate I knew it to be, and who was render'd blind by the Disorder, after an Intermission for seven Years. *Lommius Medicinal. Observat.* See GONORRHOEA and FLUOR ALBUS.

OF A CONSUMPTION, FROM A GONORRHOEA, AND FLUOR ALBUS.

This Consumption seems to have been known, even to the Antients, under the Name of a *Tabes Dorsalis*, when it proceeds from a Gonorrhœa. *Galen*, also, gives the History of the Wife of *Boethius*, a certain Nobleman of Rome, who fell into a consumptive Dropsy, from the empirical Suppression of a Fluor Albus, that had flow'd in too great a Quantity, and a long time.

It is very true indeed, that a Gonorrhœa, and a Fluor Albus, that are of an ill Nature, and Venereal, (when the Impurity proceeding from that Venom has once infected the Humours) often terminate in a Consumption of the Lungs, unless they are perfectly and timely cured. I affirm, from a long Experience and Observation, that a Consumption often arises from a simple or benign Gonorrhœa, and Fluor Albus; and, therefore, this Sort, arising from the continual Subtraction of the nutritious Juice by the Seminal Glands, must be reckoned under the Head of an originary Consumption: For in a Gonorrhœa, and Fluor Albus, sometimes the Flux is so extraordinary, and continues so long, that the Mass is thereby plainly despirited, and render'd unfit for Nourishment: Whereupon the Blood, being loaded with heterogeneous and disagreeable Particles, grows hot; and at length an hectic Disposition is, by degrees, brought upon the solid Parts, and the Habit of the Body; which is the same Sort of Consumption, that we are now treating of.

The Symptoms which preface this Consumption, I have, for the most part, observ'd to be these: An hypochondriacal Oppression, Melancholy, and too much Thoughtfulness, with a Decay of Strength, and Loss of Appetite, in Men that are affected with a plentiful Gonorrhœa: But in Women, that have been long afflicted with a Fluor Albus, flowing in a great Quantity, a soft and bloated Habit of the Body, a squalid and pale Countenance, together with hysterical Fits, a remarkable Weariness, and Decay of Strength; all which Symptoms proceed from the same Cause, as from the poor despirited Nature of the Blood, caused by a want of new Chyle, whereby not only the Spirits are weakened and oppress'd, but, also, the Habit of the Body is render'd cedematous from the waterish Disposition of the Blood, as it is full of old and despirited Chyle. And, therefore, the Signs which preface this Consumption, are, hypochondriacal Oppressions, hysterical Affections, a Decay and Want of Strength, a bloated Habit of the Body, and a Want of Appetite: Which Symptoms, in Progress of Time, that is, when the Distemper comes to be confirm'd, are followed, also, by some others, as a Thirst, an hectic Disposition, Atrophy, and Wasting of the Flesh, till, at length, the Body is brought to the highest Degree of a Consumption; and that, very often, without any Cough, or any other remarkable Sign of a Consumption of the Lungs.

This Distemper is easily cured, if the antecedent Cause of it can be removed, that is, if the Gonorrhœa and Fluor Albus can be cured. But, when it comes once to be confirm'd, it is evidently incurable.

If a Physician be sent for in time, he ought to do all he can, by all proper Means, and a convenient Method, to stop the Gonorrhœa, or Fluor Albus, which are the Cause of this Consumption. This Efflux of the nutritious Juice being once stop'd by Art, we must endeavour, with all our Power, to replenish the despirited and impoverished Blood, as soon as may be, with new, oily, and benign Chyle; and, therefore, such Food as is delicious, and affords a good Juice, and is most grateful to a Patient's Palate and Stomach, must be given often in a Day, though in a little Quantity at a time. And, that this Appetite may be the more excited, let him be advis'd to be cheerful: For there is nothing that destroys the Appetite, and confirms a Consumption, more

more than Grief and Sadness. Let him, also, enjoy the Advantage of an open and benign Air, which is very beneficial to the Nerves, and, consequently, to the Appetite and Stomach: Let him, also, use Exercise every Day, and rubbing of his Body, even to the procuring of moderate Sweats, (if his Strength will bear it) that the Load of old, despirited, and unprofitable Chyle, with which the Blood-vessels, and Habit of the Body, are stuff'd, may be sweated out, to make more room for new and useful Chyle, and, consequently, for the Improvement of the Appetite in the Stomach: But he must religiously abstain from the liberal Use of Wine, and spirituous Liquors, which are subject to put the Blood, which is before become too hot, into a greater Flame. Let the Physician, also, take heed he does not prescribe any Purges, or any Medicine whatsoever, to procure any other considerable Evacuation, which may create farther Expences to Nature, when she is already weak: But if an hectic Heat, even in the least Degree, be kindled in the solid Parts, he must presently endeavour, with all his Industry, to quench this Flame by the Use of Asses Milk, a Milk Diet, and of such mineral Waters as are chalybeate. *Morton's Phthisiologia, Cap. 4.*

TABULA. A Lozenge.

TABULATUM. The same as **TABULA.**

TABUM. Gore; a thin, sanious, and putrid Humour, flowing from malignant Ulcers, or mortify'd Parts, when the vital Powers are insufficient to form good Pus, or Matter.

TACAMAHACA. Offic. C. B. P. 503. Park. Theat. 1608. Raii Hist. 2. 1846. *Tacamahaca Populo similis, fructu colore Peonia simili.* J. B. 1. 346. *Tacamahaca foliis crenatis, Sadelbouts Lignum ad ephippia conficiendum aptum.* Parad. Bat. Prod. 379. *Tecomahaca.* Hern. 55: **TACAMAHAC-TREE.**

Tacamahac flows from a large Tree as big as a Poplar, bearing Leaves like those of a Rose-tree, crenated about the Edges, consisting of sometimes five on a Stalk; the Flowers are small, growing in Clusters, of a white Colour, which are followed by triangular Seed. It grows in the *Spanish West-Indies*; there are two Sorts of Gum, one in Lumps, which is dry and resinous, crumbling at first between the Teeth, but, when chewed awhile, sticking together, made up of little yellow-redish Grains, clinging together, of a pleasant strong Smell, somewhat like Mastich; the other Sort is called *Tacamahac* in the Shell, being of one Texture, smooth, and in Colour like strained Galbanum, but lighter, of a pleasant Smell like the former.

Tacamahac is heating and drying, dissolving and ripening, though it is seldom used inwardly; it is good for the Head and Nerves, and is sometimes applied to the Temples for the Head-ach; is frequently mixed with *Galbanum*, and is applied to the Navel in Disorders of the Womb. *Miller's Bot. Off.*

This is a resinous Substance, of which there are two Kinds, one in Shells, and one in Lumps. The first is most esteemed, and is sometimes named *Tacamahaca Sublimis*. It is of a very agreeable Smell, like that of Lavender and Angelica; and is brought from *Madagascar* and *New Spain*, being the Product of a Tree named *Tacamahaca Populo similis fructu et colore Peonia*. J. B. *Tecomahaca.* *Hernand.* It is used externally in the same Intentions with the Gum Caranna, and likewise resolves Tumors, strengthens the Nerves, and cures the Head-ach, when applied in a Plaister to the Scalp. *Geoffroy.*

It is very much used by the *Indians*, in all sorts of Distempers, especially in Tumors of all kinds; for it is highly dissolvent, maturating, and discussing; it, also, removes all Pains from cold and flatulent Humors; thrown upon the Coals, or held to the Nostrils, it gives immediate Relief in Hysterics. A Plaister of it, applied to the Navel, retains the Uterus in its Place, as is known by common Experience; the more delicate sort mix it with Amber and Musk; spread upon Linen, and apply'd behind one or both Ears, or the Fumes of it attracted, it represses all manner of Defluxions from the Head. Apply'd to the Temples by way of Cerate, it restrains all sorts of Rheums or Defluxions upon the Eyes, or other Parts of the Face; and, put into an hollow parrot Tooth, it eases the Pain thereof.

A Plaister prepared of *Tacamahac*, with a third Part of *Styrax*, and a small Quantity of Amber, is an excellent Topic for the Stomach; for it strengthens that Part, provokes an Appetite, helps Concoction; and discusses Flatulencies; apply'd to the Head, it strengthens the Brain. It is of great Efficacy in the Sciatica, and all Diseases proceeding from cold or mix'd Humors. Being apply'd alone to Wounds of the Joints or Nerves, it cures them effectually; for it causes an immediate Suppuration, and prevents Spasms. I, says *Monardes*, mix it with a third Part of Wax, for the more convenient spreading. Thus far *Monardes*; to which we may add, that a Plaister of *Tacamahac*, apply'd to the Belly, is said to mitigate the Head-ach; it is, also, effectual in discussing Tumors and Hardnesses of the Spleen. *Raii Hist. Plant.*

TACEROS, *ταχερος*, imports colligated; or lean and thin, from too great a Colligation. *Moschion.*

TACHY, **TACHEOS**, *ταχύ, ταχίος*. Besides its common Signification, importing Speed and Celerity, it is sometimes used

instead of *ταχύς*, often, frequently, with quick Repetitions. Thus *Lib. de R. V. I. A. επασιλίσσις ταχέαις* are frequently or quickly repeated Perfusions; where *Galen* on the Place says, that the Antients confounded the Use of those two Words *ταχέαις* [*pycnos*] and *ταχύς* [*tachys*]; and that sometimes frequent Actions [*ταχύναι ἐπὶ ταχέαις*] are called quick [*ταχέαις*] Actions.

TACTUS. The Touch, in Midwifery, is the Exploration of the State of the *Vagina*, and Uterus, and of the Situation of the Fœtus, and whatever else is contain'd therein. *Hippocrates*, in his Treatises concerning the Diseases of Women, has been very full and exact in his Directions upon this Subject. See **OASTETRICATION**.

But *Tactus* is the Sense of Touch, in the common Acceptation of the Word. Now, in order to account for this, it must be observ'd, that soft, pulposus, medullary, nervous, and pyramidal Papillæ arise from hard subcutaneous Nerves, which, however, become soft, when stript of their exterior Membrane: Hence these Papillæ are highly sensible; they are, also, moisten'd by the perpetual Afflux of a very fine Liquor, and defended with a very slender, but solid Epidermis; and, that their Sensibility may be the better preserv'd, they lie conceal'd in Sinuses and Depressions under the Cuticula or Scarf-skin. In the Parts most immediately destined to the Purposes of Touch, such as the Tongue, the Points of the Fingers and Toes, they are contractile, and capable of being sent out again. These Papillæ are the corporeal Organ or Instrument, by the Mediation or Intervention of which, Objects handled are said to be touch'd.

'Tis remarkable, that tho', in the Surface of other Parts of the Body, these Papillæ are perpendicular, yet in the Fingers and Toes they run out longitudinally. Hence acquiring an Epidermis in these Parts, being wrapt up, as it were, in a Sheath, and depriv'd of Juice, they are condens'd into Nails, which are render'd thick by the Accession of the consolidated cutaneous Vessels, and are fit for defending the Papillæ, and preventing their Callosity.

The Sensation of Touch is, therefore, produc'd, when, applying the Point of the Finger to any Object, these Papillæ are, by the Determination of the Mind, emitted, and gently rub'd on its Surface; for by this means a certain Motion is impress'd on these Papillæ, the Effect of which, being convey'd to the Common Sensory, excites in the Mind the various Ideas of hot and cold, moist and dry, soft and hard, smooth and rough, as, also, of Figure, Motion, Rest, Distance, Titillation, Itching and Pain.

Hence we understand, why, when the Epidermis is remov'd, macerated, wash'd off, or burn'd, a Sense of Pain is excited by touching any Object: Why, when the Epidermis is thick, hard, callous, or spoil'd with a Cicatrix, the Sense of Touch is lost: What is the Cause of that disagreeable Motion excited by a Tremor, or by the Cramp-fish, and which gradually degenerates into a Stupor: Why the internal Surface of the Nails is affixed to the subjacent Skin, and at their Roots so intense a Pain is produc'd by the Application of any Object. Hence, also, we understand why the Sense of Touch is most intense and acute, where the Nails, and spiral Lines, or small Furrows, of the Epidermis are found. *Boerhaave Institut.*

TÆDÆ. See **DAIS**. Certain Pharmaceutical Compositions, intended for Suffumigations, or Pessaries, and made in the Shape of Torches, are, also, thus call'd.

TÆNLÆ. Flat-worms. See **VERMES**. Many sorts of flat Fish, of the Sole-kind, are also call'd **TÆNLÆ**.

TAGENITIS, *ταγηνίτις*, or **TEGANITIS**, *τηγανίτις*. A kind of Pancake made of Oil and Wheat-meal only.

TAGERA. *H. M. Sena spuria Malabarica* is a Plant of the *East Indies*, growing in sandy Places to the Height of three or four Feet. The Root is fibrous, woody, and blackish; the Stalks round, woody, and green: The Leaves stand on short Pedicles in two Series, by Pairs, and are of a roundish, oblong and broad Figure, with a round Edge on the fore Part, and striated towards the Pedicle, smooth, and of a dull Green; and the Flowers, in Shape and Colour, resemble those of the *Sopbera*.

The Leaves, bruised, cure the Stings of Bees, being rubbed on the Part affected. The Seeds, bruised, and mixed with Saffron, are effectual for Pustules and Ulcers; and, with the Juice of the Plant *Vetla-caitu*, heal a Paronychia. *Raii Hist. Plant.*

Wellia **TAGERA.** See **WELLIA**.

TAGETES, *African* or *French* Marigold.

The Characters are,

The Root is fibrous and annual; the Leaves resemble those of Tansey; are ferid, and cut home to the Rib; the Calyx is monophyllous and tubulated. The Beards of the Flowers are plain or fistulous, and the Seed is angulated, and furnished with a foliated Head.

Boerhaave mentions ten sorts of *Tagetes*; which are,

1. *Tagetes, maximus; rectus, flore simplici, ex luteo pallido;* J. B. 3. 160. *Tanacetum, Africanum, majus, simplici flore, pallente.* C. B. P. 133. *Caryophylli Hispanici diffi, vel Caryophylli Mexicani Planta.* *Hernand.* 154. *Chrysanthemum Africanum, erectum, Tanaceti folio, flore simplici majore.* M. H. 3. 16.

2. *Tagetes*; *maximus*; *rectus*; *flore maximo*, *multiplicato*.
 J. B. 3. 100. *Tanacetum*, *sive flos Africanus*, *major*, *flore pleno*, *aureo*. C. B. P. 132. *Chrysanthemum*, *Africanum*, *erectum*, *Tanacetii folio*, *flore pleno majore*. M. H. 3. 16. *Caryophyllus*, *Mexicanus*, *primus*. Col. 2. 47. *Cempoal xochitl*, *vel Giubna xochitl*. *Tzneyepobual*. *Caryophyllus Mexicanus*. J. Hernand. 154.

3. *Tagetes*; *Indicus*; *medius*; *flore simplici*, *luteo pallido*.
 J. B. 3. 99. *Oquichitli*, *Cotaxochitl*, *Caryophyllus Mexicanus*, II. Hernand. 155.

4. *Tagetes*; *Indicus*; *medius*; *flore luteo*, *multiplicato*.
 H. L. 587. *Tlapalte*, *Cacayatl*, *Caryophyllus Mexicanus*, III. Hernand. 155.

5. *Tagetes*; *Indicus*; *minor*; *simplici flore*; *five Caryophyllus*, *Indicus*; *five flos Africanus*. See AFRICANUS FLOS.

6. *Tagetes*; *Indicus*; *minor*; *multiplicato flore*. J. B. 3. 99. *Macuil xochitl*, *feu Maon*, *Caryophyllus Mexicanus*, IV. Hernand. 155.

7. *Tagetes*; *Indicus*; *flore simplici*, *fistuloso*. H. L. 588. *Chrysanthemum Africanum*, *erectum Tanacetii folio*, *petalis florum fistulosis*, *flore simplici*. M. H. 3. 16. *Caryophyllus Mexicanus*, *flore fistuloso*, *simplex*. Col. 2. 46. *Tanacetum*, *sive flos Mexicanus*, *flore fistuloso*, *simplici*. C. B. P. 133.

8. *Tagetes*; *Indicus*; *flore fistuloso*, *duplicato*. H. L. 588. *Caryophyllus Mexicanus*, *flore fistuloso*, *alter Polyanthos*. Col. 2. 46. *Tanacetum sive flos Mexicanus*, *flore fistuloso pleno*. C. B. P. 133. *Chrysanthemum Africanum*, *erectum*, *folio Tanacetii*, *petalis florum fistulosis*, *flore pleno*. M. H. 3. 16.

9. *Tagetes*; *Indicus*; *flore aureo*, *simplici*, *minor*. *Caryophyllus*, *Indicus*, *flore aureo*, *simplici*, *minor*. H. Æyst. Æst. o. 14. T. 1. F. 3.

10. *Tagetes*; *Indicus*; *minimus*; *flore sericeâ hirsutie obfita*.
 H. L. 587. *Tanacetum Africanum*, *minimum*, *sericea hirsutie obfita*. C. B. P. 133. *Tlapalcacatl*, *Coaxochitl*, *Caryophyllus Mexicanus*, V. Hernand. 156. *Caryophylli Hispani dicti varietas septima & octava*. Col. 2. 47. *Descr. Boerb. Ind. alt. Plant. Vol. 1.*

The *Tagetes* was first brought not out of India, but from Catalonia. The first eight Species are commended by some as very salutary Herbs, and are said to have an attenuating and aperitive Virtue. The expressed Juice of the Leaves, mixed with Wine, is recommended for a cold Stomach, and Obstructions of the Menfes, and for an intermittent Fever, a Cachexy and Dropsy; others, on the contrary, say, they are poisonous Plants. In Mauritania (Barbary) the *Tagetes* is a very good Plant against many Distempers; but Boerhaave often observes, the same Plant may be poisonous in one Country, and salutary in another. It is certain, however, that the ninth and tenth Species are mortal, if eaten; for, if Children happen only to hold the Flowers, which are, indeed, beautiful, in their Mouths, an Inflammation is excited therein, which, if communicated to the Stomach, proves mortal. For this Reason, tho' many things are said of the Virtues of the former Species, we suspend our Assent; and, indeed, there is so great a Copiousness and Variety in Botany, that we may very well be without the Use of this Plant, which Dodonæus asserts, and proves by a Multitude of Experiments, to be poisonous. *Hist. Plant. adscript. Boerhaav.*

TAL. The Dung of Peacocks; or *Alcali*. *Rulandus*.

TALAGAS. See PALMA.

TALC. Boil'd Wine. *Rulandus*.

TALCUM. Offic. Boet. 394. Geoff. Prælect. 67. Schrod. 357. De Laet. 128. Aldrov. 685. *Talcum*, *alias stella Terra*. Charit. Foff. 24. Worm. 57. *Talcus fossilis*. Calc. Mus. 458. *Stella Terra quibusdam*. TALC.

Talc is a shining, fissile Stone, easily divisible into very thin pellucid Laminæ, a little flexible. In the Fire it does not melt, is not calcined, nor does it lose its Colour. Some Talc is of a Silver Colour, called by the Chymists *Argyrolithos*; some yellow, called solar Talc; some greenish, and some black. That which is brought from Venice is reputed the best, and is of a light-green Colour. This Stone is seldom used in Physic; but is very much in Vogue as a Cosmetic, the Ladies being of Opinion that it cleanses and whitens the Skin.

It is, first of all, prepared by being reduced to an impalpable Powder; which can be done no way so readily, as by heating it red-hot several times in the Fire, and as often quenching it in cold Water; for, by this means, it may easily be levigated on a Porphyry-stone, to any Degree of Fineness, the Powder being of a shining Silver Colour, and very smooth to the Touch. Of this Powder the Women make Ointments, or Pomatums, which they use as a Wash. Some Chymists have endeavoured, by the Oil of Talc, to fix Quicksilver, and afterwards convert it into Silver; but they never considered, that what they called Oil of Talc was entirely the Product of the other Substances mixed with it. *Geoffroy.*

TALENTUM. A Talent, the greatest Weight among the Greeks. See PONDUS. It was equal to fifty-six Pounds, eleven Ounces, seventeen Grains, and $\frac{1}{2}$ Troy Weight.

TALIIR KARA. H. M. *Arbor Indica*, *spinosa*, *flore & fructu vidua*.

This is a tall Tree, with a thick whitish Trunk, and a dusky Ash-colour'd smooth Bark, and furnished with a Multitude of small Branches, which extend themselves to a wide Compass, and are arm'd with oblong, hard, and rigid Spines. The Root is whitish, cover'd with a dusky Bark, of a strong Smell; and an astringent Taste. The Leaves are green above, and greenish underneath, of an oblong Round, acuminate, slightly crenated in the Edges, thick, dense, shining, of a strong Smell, and of a rough and astringent Taste; but the tender Leaves, which come forth from the Top, are, for the most part, of a purple-red Colour. The Tree was never observ'd to bear either Flowers or Fruit; it grows in Malabar, is an Evergreen, and lives a long time.

Of the Root, boiled in Water, they prepare a Drink, which potently evacuates acid and salt Humours by Diaphoresis; and, of the Leaves fry'd in Oil with green Turmeric, they prepare a Liniment, which is much commended for removing the Scabies.

TALPA. Offic. Schrod. 5. 308. Mer. Pin. 168. Schw. Quad. 128. Aldrov. de Quad. digit. 451. Charit. Exer. 25. Gefn. de Quad. Digit. 931. Jonf. de Quad. 118. Raii Synop. A. 236. THE MOLE.

It lies in Burrows under the Earth; and the Animal itself, the Heart, and the Blood, are used in Medicine. The Ashes of the burnt Mole is good for the Leprosy, strumous Swellings, and Fistulas. Taken inwardly in Beer or Wine, it cures the wandering Gout and Scrophula. The Heart cures an Hernia, and the recent Blood cures an Alopecia, being rubbed on the Part. *Dale from Schröder.*

TALPA is, also, a Species of Tumor affecting the Head, of the atheromatous Kind. It is, according to *Blancard*, call'd sometimes TALPARIA.

TALUS. The same as ASTRAGALUS. The Ankle-bone. *Dioscorides*, L. 2. C. 62. recommends this Bone in a Swine, calcin'd, powder'd, and taken internally, for Inflammations of the Colon, and chronical griping Pains.

TAMANDUA. The Name of an American Beast, somewhat like a Fox; call'd, also, *Myrmecophagus*. The Fat is esteem'd resolvent and nervous.

TAMARATONGA. The same as CARAMBOLAS; which see.

TAMARINDI. *Tamarindi*.

The Characters are;
 The Leaves are pinnated, without an odd Lobe at the End. The Flower is tripetalous, furnished with three Stamina, and seated in a carnosus Calyx, which runs out into four long small Leaves. The Ovary, arising from the Centre of the Calyx, becomes a long, broad Pod, divided into Cells, and full of an acid Pulp, containing oval Seeds.

Boerhaave mentions but one Sort of Tamarind; which is, *Tamarindi*. J. B. 422. Boerb. Ind. alt. 2. 59. *Tamarindus*. Offic. Ger. Emac. 1607. Park. Theat. 217. Raii Hist. 2. 1748. Tourn. Inst. 660. *Tamarindus*, *Oxyphoenix*. Mont. Exot. *Tamarindi*; *Lusitanis Tamaracazecla*. Marcg. 107. *Tamarindus Derelside appellata*. Alpin. Egypt. 2. 19. 170. *Il Tamarindo*, *è Derelside de gli Egittii*. Pon. Ital. Bald. 23. *Siliqua Arabica*, *quæ Tamarindus*. C. B. P. 403. *Hijabila*, *Tamarindus*. Herm. Mus. Zeyl. 27. *Intra sive Tamarindus*. Pif. (Ed. 1658.) 157. *Balam pulli sive Maderam pulli*. Hort. Mal. 1. 39. Tab. 23. THE TAMARIND-TREE.

This grows to be a large Tree, whose Branches are clothed with many winged or pinnated Leaves, made of several opposite oval Pinnæ, with never a single one at the End. The Flowers grow on the young Shoots in Clusters, eight or ten together, each of seven Leaves, four yellow, and three white, in purple Veins, in form of Orange-flowers, having three crooked Stamina, or Horns. The Fruit is of a yellowish-brown Colour, of a flatish-round Shape, three or four Inches long, having two or three swelling Knots, or Protuberances, containing an acid Pulp, full of stringy Fibres, and hard flat Stones, or Seed, of a Chestnut-colour; and these are the Tamarinds of the Shops. This Tree grows both in the East and West Indies, and in Egypt. The Tamarinds brought from East India are darker and drier, but contain more Pulp, being preserved without Sugar; and fitter to be put into Medicines: Those from the West Indies are redder, and have less Pulp, and are preserved with Sugar, and so pleasanter to be eaten as they are.

They are cooling and opening, good to purge cholerick Humours, and correct the bilious Heat in the Stomach and Bowels; they allay Thirst, provoke Urine; and help the Jaundice. *Miller's Bot. Off.*

This is the blackish Pulp of a Pod, something like common Beans: The Pulp lies between two Husks, or Shells, one of which is woody, the other tough and membranous. The Tree which bears the Fruit grows in Egypt, and in both Indies; and is described by *Tournefort*, in the *Memoirs of the Royal Academy* for 1699. We owe the Knowledge of this Purgative to the *Arabians*; for neither *Greeks* nor *Romans* knew any thing of it. The Dose, in Substance, is from an Ounce to an Ounce and an half; and three or four Ounces in Decoction. Some Physicians order a Tamarind-whey, *Serum Lactis Tamarindinatum*, as a gentle Purge,

Purge, in inflammatory Dispositions, Colics, &c. and Tamarinds are very properly mixed with Cassia: They may, likewise, be given as an Alterative, in the Quantity of half an Ounce; and they are very proper to be mixed with Pisans, and other Liquors, given to quench Thirst in acute Distempers. *Geoffroy.*

Tamarinds correct the Acrimony of Humours; purge Bile, and allay its Heat, and that of the Blood; cure acute Fevers, and the Jaundice; extinguish Thirst, and all unnatural Heat of the Liver and Stomach; and restrain Vomiting.

The *Turks* and *Arabians*, as we are told by *Bellonius*, when about to undertake a long Journey, provide themselves with Tamarinds: The *Turks* make great Use of them, not in Medicine, but to allay their Thirst. The *Indian Physicians*, as we are informed by *Garcias* and *Acosta*, apply the Leaves to an Erysipelas.

The *Arabians* preserve the small and green Pods with Sugar, or the Honey they call *Carob*; and when they are larger, and grown mature, preserve their Pulp with Sugar, and carry it with them in their Journeys, through the desert Places of *Africa*; and find it of extraordinary Use in quenching their Thirst, and refreshing them when inflamed, and almost spent with Heat, and the Journey, in evacuating great Quantities of hot-Humours by Stool.

In pestilential Fevers, and all other putrid burning Fevers, they drink Water, in which great Plenty of Tamarinds have been infused with Sugar, finding it a most pleasant as well as refreshing Liquor, under their burning Heat, and intense Thirst. They frequently use Tamarinds, also, in a Gonorrhoea; and *Fallopian* commends them in a Gonorrhoea of a bilious Kind.

In a Redundance of Bile, a Fervor and Ebullition of the Blood, a preternatural Thirst, cutaneous Diseases, and particularly the Jaundice, the *Indians* prescribe a simple Medicine, composed of Cassia Fistula, with Tamarinds, and the Sugar commonly called *Fagra de Canina*, which Preparation gently works by Stool. The Fruit of the Tamarind is not brought to us entire, but bruised, that, being by this means well compacted, it might keep out the external Air. Tamarinds are preserved three Years in a Glass Vessel with a narrow Mouth, and well stopped, and deposited in a clean Place, which is pervious to the Air and Winds, unless some external Heat or Moisture corrupts it. *Raii Hist. Plant.*

The Tamarind, which the *Egyptians* call *Derelside*, is a Tree of the Bigness of a Plum-tree, and full of Branches; the Leaves much resemble those of the Myrtle, called *Sesban*: It bears white Flowers, very like those of the Orange-tree, from the Midst of which proceed four white and very slender Threads, which become thick Pods; first green, but, when ripe, of an Ash-colour, and containing thick, uneven, and hard Seeds, involved in a black and acid Pulp.

The Tamarind-tree is not very plentiful in *Egypt*, which is not its native Soil; for it is brought thither from *Arabia* and *Ethiopia*, and kept in Green-houses. There grows a Tamarind-tree in the Desert of *St. Macharius*, near the Monastery of the *Affryians*, in a Place where no other Plant lives, which is looked upon as a Miracle: This Plant is to be admired for one Property, which is, that its Leaves always follow the Sun, and are called *Sun-flowers*; for, when the Sun setteth, they all close up, and open again at Sun-rising; and this Motion of the Leaves is so remarkable, that while the Pods are on, the Leaves, at Sun-set, close in upon them, and embrace them very strictly; and, when the Sun rises, open, and discharge themselves from the Pods, till the Return of Sun-set. This Conversion of the Leaves is observed in several other Plants of *Egypt*, as in the *Acacia*, *Abrus*, *Ab-fus*, and *Sesban*.

The Leaves of the Tamarind-tree are used to kill Worms in Children, and an Infusion or Decoction of the same is a gentle Purge; the Leaves are acid, and not unpleasant to the Taste. *Prosper Alpinus, de Plant. Egypt. Vol. 2.*

The *Arabians*, who are the present Inhabitants of *Egypt*, call this Tree, together with its Pod, *Tamarhendi*, that is, the *Indian Fruit*, because it was brought out of *East-India* into *Arabia Felix*, or out of *Ethiopia*, as *Alpinus* rightly observes, into *Egypt*, and the bordering *Arabia*; for that *Ethiopia* had the Name of *India*, among the Antients, is undoubtedly certain, from *Servius* and others. This noble Plant, therefore, was not transported from *Arabia* to the *Indians*, as some have written; but from *India* to the *Arabians*. But they are wider from the Truth, who derive the Name from Dates: For *Tamar* not only signifies a Date, but, as it is known to those who are but little skilled in *Arabic*, all Fruit whatever, so as, in its largest Signification, to comprehend the Fœtus of Trees and Animals. They who call the Tamarind the *Arabian Pod*, are pretty bold Nomenclators, and are obliged to find Distinctions for so many other Pod-bearing Plants among the *Arabians*. The Fruit of the Tamarind-tree is shorter than the Pod of the *Acacia*, but thicker and broader; and, for the grateful Acidity of its Pulp, is of principal Estimation among gentle Cathartics, though it has but little Effect, if gather'd while too green, or left to hang till it be grown too dry. *Vestlingii Observ. in Prosp. Alpin. de Plant. Egypt.*

Tamarinds are gently laxative, and are proper in febrile Heats, where not only Coolers, but Laxatives, are required: They are of Service in continual Fevers and Diarrhoeas, strengthen the Stomach, and are commended in a Flux of the Hemorrhoids, from a bilious and acrimonious Blood. The Leaves quench Thirst, and are useful in burning Fevers. *Hist. Plant. adscript. Boerhaave.*

TAMARISCUS.

The Characters are;

The Leaves are very thin, the Calyx small, the Flower small, rosaceous and pentapetalous; the Ovary is an oblong, membranaceous, bivalve Capsule, full of downy Seeds.

Boerhaave mentions two Sorts of Tamariscus; which are,

1. Tamariscus; Germanica. *Offic. Tourn. Inst. 66. Boerb. Ind. alt. 2. 257. Ger. 1194. Emac. 1378. Tamariscus folio latiore. Park. Theat. 1479. Raii Hist. 2. 1705. Tamarix fruticosa folio crassiore, five Germanica. C. B. P. 485. Tamarix Germanica five minor fruticosa. J. B. 1. 351. Tamarix minor, five fruticosa. Chab. 75. GERMAN TAMARISK.*

It is cultivated in Gardens, flowers in *June*; and the Parts in Use, with their Virtues, are the same with those of the common Tamarisk.

2. Tamariscus; Narbonensis. *Ger. 1194. Emac. 1378. Tourn. Inst. 661. Boerb. Ind. alt. 2. 257. Tamariscus. Offic. Tamariscus folio tenuiore. Park. Theat. 1479. Tamarix altera folio tenuiore, five Gallica. C. B. P. 485. Tamarix major five Arborea Narbonensis. J. B. 1. 351. Raii Hist. 2. 1704. Myrica five Tamarix. Chab. 75. TAMARISK.*

The Tamarisk never grows to be a Tree of any great Bigness in *England*, though beyond the Seas it will; having a rough dark-brown Bark. The younger Branches are of a Chestnut-colour, clothed with very fine tender green Leaves, somewhat like those of *Cypress*, but thinner and finer, and not at all hard or rough: The Flowers grow in round Spikes, at the Ends of the younger Shoots, an Inch or more in Length, several Spikes growing together, each consisting of a great many small, five-leaved, pale-red Flowers, which are succeeded by very small Seeds, included in a downy Substance. It is only planted in Gardens in *England*; its native Place being *Spain*, and the Southern Parts of *France*. The Wood, Bark, and Leaves, are used.

They are accounted specific for all Disorders of the Spleen, as being believed to lessen it much; and they used to drink out of Cups made of this Wood, to cure those Illnesses: And the Antients believed, that Swine, that fed out of a Trough made of this Wood, would have no Milt. The Bark is sometimes used for the Rickets in Children. *Miller's Bot. Off.*

It is cultivated in Gardens, flowers in *May* and *June*; and the Bark, Wood, Tops of the Branches, and the Flowers, are used.

Tamarisk is heating, drying, attenuant, aperitive, abstergent, subastrigent, diuretic, and splenic. Its principal Use is in Obstructions and Tumors of the Spleen, and in Diseases proceeding from black Bile, and Serum; as the Itch, Itchings, black Jaundice, and the Fluor albus. Outwardly applied, it cures the Tinea of the Head.

The Tamarisk was first transplanted into *England*, by the Care of *Edmund Grindall*, Archbishop of *Canterbury*, who had experienced its Virtue in the Cure of an Hardness of the Spleen, *Camden, in the Life of Queen Elizabeth.*

TAMARIX. See TAMARISCUS.

TAMISON, *тапион*. The same as COAGULUM.

TAMNUS. See BRYONIA.

TAMOATA, by the *Portuguese* called *Soldido*, is an *American* fresh-water Fish, about a Foot and an half long, three Inches in Circumference, and of an obscure ferruginous Colour: It is esteemed good Food, and said to be of an aperient Nature, and proper for the Cure of a Gravel. *Lemery des Drogues.*

TAMOATARANA: The Name of a *Brazilian* bulbous Plant, the Bulb of which is eaten like Potatoes, and is said to have an agreeable Taste. *Raii Hist. Plant.*

TANACETUM.

The Characters are;

The Root is fibrous; the Leaves alternate, and divided into pinnated and crenated Segments. The larger Flowers are closely compacted into a thick Umbella, and the Calyx is squamous and hemispherical.

Boerhaave mentions six Sorts of Tanacetum; which are,

1. Tanacetum; vulgare; luteum; maximum.
2. Tanacetum; vulgare; luteum. C. B. P. 132. *Tourn. Inst. 461. Boerb. Ind. alt. 124. Tanacetum. Offic. Ger. 525. Emac. 650. Raii Hist. 1. 365. Synop. 93. Tanacetum vulgare. Park. 80. Parad. 482. Tanacetum vulgare flore luteo. J. B. 3. 131. TANSIE.*

The Root of Tanse is large, stringy, and full of Fibres, sending forth many pretty large, yellowish-green, winged Leaves, divided into several deeply serrated Segments, set opposite to one another, with one cut into three Parts at the End, of a pleasant grateful Scent. The Stalks arise to the Height of about two Feet, having several similar, but smaller, Leaves growing on them, and, on their Tops, pretty large Umbels of yellow naked Flowers,

T A N

Flowers, composed only of fistular Thrums, without any Petals. It is found wild by Road-sides, and the Borders of Fields; and flowers in July.

The Leaves are used; being warming and aperitive, opening Obstructions of the Liver and Spleen, and helping the Jaundice: They likewise provoke Urine, and the Catamenia, though the good Women give a Syrup of the Juice to prevent Miscarriage. The Flowers are accounted good to destroy Worms in Children. *Miller's Bot. Off.*

This Plant is acrid, aromatic, bitter, and gives no Tincture of Red to blue Paper: The Roots are first insipid, afterwards astringent, but without Bitterness.

Tansie contains an aromatic, oily, volatile Salt, loaded with a great deal of Sulphur: For,

By the chymical Analysis, it yields a great deal of Oil, a pretty deal of Earth, a little urinous Spirit, and no volatile concrete Salt: Thus it is stomachic, febrifugous, sudorific, vulnerary, and aperitive. *Cesalpinus* says, its Leaves, infused in Wine, provoke the Terms; and that two Drams of their Juice, drank with Plantain-water, cure intermitting Fevers. *Saxonia* used this Juice with Success for chape Hands: It is highly esteemed for the Tettors and Scurf. For the Rheumatism, macerate the young Shoots of Tansie some Days in Brandy, and then distill it: The Spirit is very penetrating. Bathe frequently the afflicted Parts, and cover them with warm Cloths. Let the Patient drink two or three Spoonfuls of it every Day. It is very good for hydropic Cases; and the Decoction of Tansie with Wine is excellent to make Fomentations upon their Legs. For the Cachexy, Dropsy, or Green Sickness, drink three or four Ounces of the Juice; or else make a Tea of its Leaves, Flowers, and Seeds; cover the Pot, and, when cool, give it by Glass-fulls, in a malignant Fever, and the Diseases of the lower Belly: It cleanses the urinary Passages, purifies the Blood, removes Obstructions, and kills Worms. The Conserve of the Flowers of Tansie is esteemed for the Epilepsy and Vertigo. *Marty's Tournefort.*

It is usual, in time of Easter, to make a sort of Cakes of Eggs and Flour, mixed with the tender Leaves of Tansie, when it begins to shoot: These Cakes are not unpleasant to the Taste, and good for the Stomach, on account of dissolving the Flatulencies, generated by eating Puls and Fish, during Lent: The Tufts and Seed are often exhibited by Mountebanks, with surprising Success, for the Worms. A Conserve of the Leaves, and tender Tops, resists Putrefaction, opens Obstructions, comforts the Spleen, and invigorates the Senses. The Juice, used with any Kind of Oil, is said to give Relief in Pains and Contractions of the Nerves.

A Soldier of Montpelier, labouring under a stubborn Dropsy, was restored to perfect Health, by a Decoction only of Tansie. *Raii Hist. Plant.*

Tansie, in Temperature and Virtues, agrees with Feverfew: It is vulnerary, uterine, and nephritic; and is principally used against Worms, the Gripes, Stone in the Kidneys and Bladder, Obstructions of the Menfes, Flatulencies, and the Dropsy. The distilled Water kills Worms. *Dale.*

3. Tanacetum; Folis crispis. C. B. P. 432.

4. Tanacetum; Africanum; arborescens; Folis Lavendulæ, multifido Folio. H. A. 2. 201.

5. Tanacetum; Africanum; frutescens; Folis Lavendulæ multifidæ longe minoribus, graveolens.

6. Tanacetum; Africanum; fruticans; multiflorum; Folis Tanacetii vulgaris decuplo minoribus. H. A. 2. 199.

Tansie is considerably aromatic, very penetrating, comforting, aperitive, and heating: The first, second, and third Species afford the *Semen Sanctonicum Europæum*, as good against Worms as the *Sanctonicum Egyptiacum*. An Infusion of the Leaves drank, or a Cataplasm of the Flowers applied to the Navel, the distilled Water of the Flowers, or the Seed taken in Wine fasting, or three Ounces of the Decoction of the Leaves sweeten'd with Syrup or Honey, and so taken, are effectual for the same Purpose. These Herbs are balsamic, and extremely bitter, and may supply the Places of Nutmegs and Cinnamon: For I believe Asia does not afford a Plant of greater Fragrance than those Species of Tansie: They are, also, taken for the *Parthenium* of the Antients. The Leaves applied to a dead Body, and intruded into the Mouth and Nostrils, preserve it from Putrefaction and Insects; whence the Plant is called *Athanasia*, that is, the immortal Plant. The Juice performs the Effects of those of Wormwood and Feverfew in Conjunction. The latter Species are of a strong Smell, and proper in all cold Diseases. *Cesalpinus* tells us, that the Leaves of this Herb, infused in Wine, provoke the Menfes; that the Juice, drank with Plantain-water, cures all intermitting Fevers, with the Itch, Rheumatism, and Dropsy. Fomentations, prepared of the Leaves, are of great Use, and the Juice of the Plant relieves those who labour under a Chlorosis and Cachexy. The Conserve hereof is good for the Epilepsy, Colic, and hysterick Passion, and cleanses the Kidneys from Sand and Gravel. Tansie agrees in Virtue with Savine, Feverfew, and Southernwood; and is now used in Baths for the Uterus. The Flowers, dressed in a Cake, are of excellent Service in corroborating the Stomach. *Hist. Plant. adscript. Boerhaav.*

T A P

TANACETUM is, also, a Name for several Sorts of TAGETES; which see.

TANACETUM HORTENSE. A Name for the BALSAMITA MAs; which see.

TANACETUM INODORUM. A Name for the *Leucanthemum Tanacetii*; folio; flore majore.

TANACETUM-MINUS. A Name for the *Millefolium, nobile, Tragi.*

TANACETUM MONTANUM. A Name for the *Millefolium; Tanacetii folis; flore albo.*

TANGARACA. Marcgr. *Tangar. 2.* Pison. *Erva de Rato Lusitanis, Frutex baccifer Brasiliensis, Flore flammifera, Fructu deleterio.* A Brazilian bacciferous Shrub, whose Fruit is present Poison. *Raii Hist. Plant.*

TANGE, τανγῆ, in Hippocrates, is a preternatural Tumor; and, *Lib. 2. Epid.* is a putrefying Tumor. Some understand by the Word a strumous Swelling. *Cornarius* renders τανγῆ (Tangai) putrefying Tumors, because the Verb τανγίζω (tangizo) signifies to become putrid or rancid; whence τανγῆ τανγῆ, a putrid or rancid Oil. *Foesius.*

TANI. H. M. *Prunus Indica racemosa, Fructu pyriformi.* A kind of Plum-tree, growing in the East-Indies, and bearing a Pear-shaped Fruit, of the Size of a large Plum, consisting of a green, succulent, and insipid Pulp, surrounded with a smooth, shining, and red Skin, and containing an oblong-round Stone, which incloses a white Kernel, of a grateful Taste, and much resembling that of a Filberd.

The Kernels of the Fruit are eatable; and, being pulverized, cure that epidemic Cachexy, which the Portuguese call *Pitua*, and correct Disorders of the Eyes: The expressed Oil thereof, the Head being anointed therewith, strengthens the Hair: The Bark of the Tree is accounted an Antidote against the Poison of the Tree *Katou Tsjerou*, and its Fruit, however communicated: It is exhibited, finely triturated with a small Quantity of Asa-fetida. The Juice of the Bark and Root, boiled with Rice and Milk, mitigates the Pain of the Colic. *Raii Hist. Plant.*

TANTALUS, among the Alchymists, in the Affair of the Philosophers Stone, is an enigmatical Term for Mercury or Quicksilver. *Theat. Chym. Vol. 4.*

TAPHIUSIUS (*Lapis*) a fourth Species of *Ætites*, in *Pliny, Lib. 36. Cap. 11.* so called from the Place where it is found, *Taphiusa*, near *Leucadia*, now the Island of *St. Maura*. At present, says *Schroder*, it is unknown.

TAPHNEUS, a Term in *Paracelsus*, for a Species of Earth, whence are produced such Things as change not their Nature by Reverberation, or Calcination. *L. Grad. et Comp. Or. Taphneus* is a Medicine mundify'd, *Schol. in Lib. 7. L. Grad. et Comp. Cap. 9.*

TAPIA. *Brasil. Marcgrav. Pison. Pomifera trifolia Brasiliensis Fructu corticoso multis Officulis Pericarpio inclasis pleno.* This is a Tree of Brasil, which grows to the Height of a Beech, or Oak; and bears a Fruit of the Size of a moderate Apple, which, when ripe, becomes yellow, like an Orange, and has a Rind equal to it; within which it is full of hard little Stones, of the Size of Cherry-stones, oblong, yellow, and containing a white Kernel; about the Stones is a white soft Pulp, of a sweet Taste, and a nauseous Smell; the Fruit is eatable.

The Leaves, bruise'd, are an excellent Remedy against a Disorder very common in Brasil; and which they call *Richos de Ca*, being externally applied, and intruded into the Anus, like a Suppository. They are, also, cooling, and extinguish all manner of preternatural Heats, and mitigate Pains: Besides, being introduced into the Ears, they mitigate Pains of the Head, proceeding from Heat.

There are two Species of this Tree; the Wood of the first is esteem'd the hardest, and is the most ponderous, of all the Woods which grow in this Country; this Tree is accounted barren.

The other Species, which was known to *Piso*, has a smooth large Leaf, and bears a Fruit bigger than an Orange, with an hard, thick, yellowish Rind, variegated with ash-colour Spots, and containing an Honey-like Liquor, as sweet as Sugar, in which are intermixed a Multitude of little Stones, which, when the Liquor is dry'd up, make a rattling Noise, like Poppy-heads.

This Plant is used in Medicine, for Diseases of the Breast. *Raii Hist. Plant.*

TAPIRA *pecis.* A Species of smooth *Somchus*, in *Piso*. It grows with a single Stalk, above the Height of a Man's Leg, and has narrow, oblong, dentated, lanuginous Leaves, and white Flowers towards the Top of the Stalk, laden with Down. This Plant is an excellent Vulnerary. *Raii Hist. Plant. Index.*

TAPSIMEL. HONEY OF MULLEN.

Take of the Juice of Celandine, and bearded Mullen, each one Pint; of despumated Honey, three Parts; boil gradually, till the Juices are evaporated; adding, if the Operator pleases, calcined Virriol and Alum, with Copperas, and again boil into an Ointment.

The first College Dispensatory adds from the Author, that, if Occasion requires, this should be, at least, boil'd up to a pretty thick Con-

Confistence; and says, that it certainly will cure Itchings in any Part of the Body, and is a most noble Ointment. But, it seems, the present Practice has no Regard for it, as neither this, nor the following, are ever prescribed, or made. However, it has been thought fit to continue such Discoveries upon Record, for the sake of those who may think proper to make Trial of them.

TAPSI VALENTIA. THE POWERS OF MULLEN.

Take of the Juice of bearded Mullen, and of Hog's-lard, each as much as you please; let the Lard be cleansed of its Membranes and Fibres, and broke into small Parcels; then beat it with the expressed Juice; press out, and strain. Let it, afterwards, be put into a proper Vessel, for nine or ten Days; and then be twice more impregnated with fresh Juice, until it be quite green. Lastly, after all the Humidity, that will separate, is pour'd off, beat it again briskly, and put it by, in a proper Manner, for Use.

We are told by the first Compilers of the College Dispensatory, that this, and the preceding Process, were the Contrivance of John Arden an experienced Surgeon, at Newark in Nottinghamshire, who lived in the Reign of Edward the Third; and, about three hundred Years ago, were in great Esteem among the Surgeons of our own Country. The Contriver directs the Medicines, thus made, to be fresh beat once in a Month.

TAPSUS BARBATUS. See VERBASCUM.

TAPYRA-COAYNANA, *Brasiliensis*. Marcer. et Pison.

Cassia fistula Brasiliensis. C. B. *Solutiva Brasiliensis*. Park. *Cassia Siliqua Brasiliensis purgatrix compressa*. Lob. in Pharmac. Rond. *Cassia fistula Brasiliensis Flore incarnato*. Breyn.

It is a great, tall, and very spreading Tree, outwardly of a whitish Ash-colour; the Leaves stand in opposite Order, upon very short Pellicles, like the Leaves of Sena; the Flowers are disposed in Spikes, without Branches, and consist of five Petals, with three little semilunar Horns, which stand erect, in Conjunction with the Stamina; the Whole of a very fine carnation Colour, and visible at a great Distance. These Flowers are succeeded by Pods, green while immature, but black, or dusky-colour'd, when ripe, propending downwards, about two Feet long, and five Digits in Compals, and somewhat incurved. These Pods have a very hard ligneous Bark, which requires an Hammer to break it; and consist of a Multitude of Cells, of the Capacity of a Goose-quill, separated by Partitions, and containing every one a Kernel, of the Size and Figure of an Almond, of a white Colour, inclining to yellow, shining, smooth; of a white Medulla on the Inside, of an horny Substance, and immersed in a glutinous, blackish Pulp, like *Cassia Solutiva*, but of a bitter and ungrateful Taste; of a binding Quality before Maturity, but laxative, or solutive, afterwards.

The Tops of the Leaves cure Wounds and Pustules; and one Ounce of the Pulp, as *Lobel* observes, purges more than two Ounces of the other, or *Egyptian Cassia*. *Raii Hist. Plant.*

TARACHE, *ταράχη*. The same as TARAXIS.

TARANTISMUS. The Disorder which is said to be produced by the Bite of a *Tarantula*.

TARANTULA. The *Tarantula* (of which the Figure may be seen in *Baglivi's* Dissertation) is a Spider of *Apulia*, of the octonocular Kind; that is, of that Species that has eight Eyes, and spins Webs; it has eight Legs, four on each Side, and in each Leg three Joints; from the Mouth proceed two Darts, in Shape just like to a hooked Forceps, or Crab's Claw; these are solid, and very sharp, so that they can easily pierce the Skin; and between these and the fore Legs, there are two little Horns, which, I suppose, answer to those Bodies, call'd, from their Use in Flies, the Feelers; because as they do, so this Creature is observed to move them very briskly, when it approaches to its Prey.

This, as other Spiders do, propagates its Species by laying Eggs, which are very numerous; so that there are found sometimes, in the Female, when dissected, an hundred, or more; and these are hatched, partly by the Heat of the Mother, and partly by that of the Sun, in about twenty or thirty Days time.

There is, also, a Spider, of the like Nature with the *Tarantula*, in the *West-Indies*, which *Francis Hernandez* describes by the Name of *Hoitztocatl*, or the Pricking Spider; and says, that its Bite induces Madness.

In the Summer Months, especially when the Heats are greatest, as in the Dog-days, the *Tarantula*, creeping among the Corn in the Fields, bites the Mowers and Passengers; in the Winter it lurks in Holes, and is scarcely seen; and, if it bites then, it is not venomous, neither does it induce any ill Symptoms.

But in the hot Weather, altho' the Pain of its Bite is, at first, no greater than what is caused by the Sting of a Bee, yet the Part, quickly after, is discoloured with a livid, black, or yellowish Circle, and raised to an inflamed Swelling; the Patient, within a few Hours, is seized with a violent Sickness, Difficulty of Breathing, universal Faintness, and sometimes Trembling, with a Weakness of the Head: Being ask'd, what the Ail is, makes no Reply; or, with a querulous Voice, and melancholy Look, points to his Breast, as if the Heart was most affected.

During this mournful Scene, all the usual alexipharmic and cordial Medicines are of no Service; for, notwithstanding their repeated Use, the Patient growing, by degrees, more melancholy, stupid, and strangely timorous, in a short time expires; unless Music be call'd to his Assistance, which alone, without the Help of Medicine, performs the Cure.

For, at the first Sound of the musical Instrument, altho' the Sick lie, as it were, in an apoplectic Fit, they begin, by degrees, to move their Hands and Feet, till, at last, they get up, and fall to Dancing with wonderful Vigour, at first, for three or four Hours; then they are put to Bed, refreshed from their Sweating for a short time, and repeat the Exercise with the same Vehemence, perceiving no Weariness or Weakness from it, but professing they grow stronger and nimbler, the more they dance.

At this Sport they usually spend twelve Hours a Day, and it continues three or four Days; by which time they are generally freed from all their Symptoms, which, nevertheless, attack them again, about the same time, the next Year; and, if they do not take care to prevent this Relapse by Music, they fall into a Jaundice, want of Appetite, universal Weakness, and such-like Diseases, which are every Year increased, if Dancing be neglected, till at last they prove incurable.

As Music is the common Cure, so they who are bitten, are pleased, some with one Sort of it, some with another; one is raised with a Pipe, another with a Timbrel; one with an Harp, another with a Fiddle; so that the Musicians make, sometimes, several Essays, before they can accommodate their Art to the Venom. But this is constant and certain, notwithstanding this Variety, that they all require the quickest and briskest Tunes, and are never moved by a slow, dull Harmony.

While the *Tarantati*, or Affected, are dancing, they lose, in a manner, the Use of all their Senses, like so many Drunkards; do many ridiculous and foolish Tricks; talk and act obscenely and rudely; take great Pleasure in playing with Vine-leaves, with naked Swords, red Cloths, and the like; and, on the other hand, can't bear the Sight of any thing black; so that if any By-stander happen to appear in that Colour, he must immediately withdraw; otherwise, they relapse into their Symptoms with as much Violence as ever.

It may afford some Light towards understanding the Nature of this Poison, to observe, that *Apulia* is the hottest Part of all *Italy*, lying Eastward, and having, all the Summer long, but very little Rain to temper the Heats; so that the Inhabitants, as one of that Country observes, breathe an Air, as it were, out of a fiery Furnace: Hence their Temperament is dry and aust, as appears by their being generally lean, passionate, impatient, ready to Action, quick-witted, very subject to inflammatory Distempers, Phrenies, Melancholy, and the like; upon which Account, there are more mad People in this, than in all the other Parts of *Italy*: And what in other Countries is but a light Melancholy, arises here to a great Height; for Women in a Chlorosis suffer almost the same Symptoms as Persons poison'd by the *Tarantula*, and are cured the same Way; and, in like manner, the Venom of the Scorpion, does here, in Effects and Cure, agree very much with that of this Spider.

From all this History, it sufficiently appears, that those that are bitten by a *Tarantula*, thereupon, become delirious; and that, in order to account for their surprising Symptoms, the Nature of a Delirium, from which many of them proceed, ought to be understood.

Such is the Constitution of the human Oeconomy, that as, upon the Impression of outward Objects made upon the Organs, and by the Fluid of the Nerves, convey'd to the common Sensory, different Species are excited there, and represented to the Mind; so, also, upon this Representation, at the Command and Pleasure of the Soul, Part of the same Fluid is determined into the Muscles, and, mixing with the arterial Blood there, performs all the Variety of voluntary Motions and Actions.

This Order has been always so constant in us, that, at length, by a kind of natural Habitude, without the Intervention of the reasoning Faculty, Representations made to the Mind immediately, and necessarily, produce suitable Motions in the bodily Organs. When, therefore, these Representations are irregular, the Actions consequent to them must necessarily be so too.

This being premised, it may, perhaps, be probably said, that a Delirium is the Representation, and various Composition, of several Species to the Mind, without any Order, or Coherence; together, at least most commonly, with irregular, or, as it were, undesign'd Motions of the Body; that is, such a wandering and irregular Motion of the nervous Fluid, whereby several Objects are represented to the Mind, and, upon this Representation, divers Operations perform'd by the Body, tho' those Objects are not impress'd upon the Organs, nor those Operations or Motions deliberately commanded by the Soul.

The Mind, indeed, is the first Principle of all muscular Motion; but, in such Cases as these, its Promptitude to Action, or Habit, being so great, it is, in a manner, surpris'd, and cannot recover itself, after the Spirits are, with violent Force, determin'd, pursuant to the Representation of the Species. For, as, in the former State of Things, a Man is said to act rationally, so this

this latter Case is called a Perturbation of Mind, that is, a Delirium; tho' it is very manifest, that, in Reality, the Defect is not in the rational, but corporeal Part; such Species being really presented to the Mind, upon which, by the Order of our Constitution, such Motions ought to follow in the Body.

Thus, for Instance, if the Liquor of the Nerves is, without the Presence of any thing hurtful, put into a Motion, like that which a painful Impression makes in it, the same bodily Actions must ensue, as proceed from Fear, Anger, or the like Passion, determining the Spirits towards the muscular Parts; and a By-stander, who sees no Reason for such a Representation made to the Mind, will presently conclude, that the Person thus acting acts without, or besides, his Reason, that is, is delirious; especially if the Hurry and Confusion of the Spirits be such, that not only one, but several different Species, be, at the same time, presented to the Mind; for a Man, in this Case, may act the Part of one joyful, angry, timorous, or the like, without any appearing Reason, and all this, almost, in the same Moment of Time.

In one Word; *Deliria* are the Dreams of those who are awake: And as these in us sleeping are infinitely various, and wonderfully compounded, and all from the same common Cause, diversely pressing the Orifices of the Nerves, and thus making different Repercussions of their Fluid; and as we all know, that this Confusion making the Representation of several Species to the Mind, there hereupon follow, tho' the Body seem now at Rest, and in perfect Repose, such Motions in the Organs, as are, usually, the Effect of the arbitrary Determination of the Spirits thither; we are now to inquire, what Alteration of the Body, made by this Venom, can be the Occasion of this Disorder and Tumult in the nervous Fluid, which excites, in the Party infected, such surprising, and almost contradictory, Representations.

Most of the Symptoms of those who are bitten by the *Tarantula*, are, at the first, that is, before they rise to a Delirium, plainly the same with those which the Bite of a Viper induces. Without Doubt, therefore, as we have before observed [under *ARANEA*] of the common Spider, that it pierces the Flesh with its hooked Forceps, and, at the same time, instils, from the Proboscis in the Mouth, a liquid Venom into the Wound; so the like Claws, in this, serve to make way for an active and penetrating Juice, emitted from the same Part.

Of the Nature of which we may probably conjecture, that it is, when mix'd with the Blood, being exalted by the Heat of the Climate, of so great Force and Energy, that it immediately raises an extraordinary Fermentation in the whole arterial Fluid, by which its Texture and Crasis are very considerably alter'd; the Consequence of which Alteration, when the Ebullition is over, must necessarily be a Change in the Cohesion of its Parts, by which the Globules, which before, with equal Force, pressed each other, have now a very differing and irregular Nisus, or Action, so that some of them so firmly cohere together, as to compose Molecular, or small Clusters; upon which account, there being now a greater Number of Globules contained in the same Space than before, and, besides, the Impulse of many of these, when united together, differing according to the Conditions of their Cohesion, as to Magnitude, Figure, and other Qualities, not only will the Impetus, with which this Fluid is drove towards the Parts, beat some Strokes at least greater than ordinary; but the Pressure upon the Blood-vessels must be very unequal and irregular; and this, more especially, will be felt in them which are most easily distended; such as those of the Brain. And, hereupon, the Fluid of the Nerves must necessarily be put into various undulatory Motions, some of which will be like unto those which different Objects, acting upon the Organs or Passions of the Mind, naturally excite in it; whereupon such Actions must follow in the Body, as are usually the Consequents of the several Species of *Sadness*, Joy, Despair, or the like Determinations of the Thoughts; and we shall readily pronounce one in this Condition, sad, joyful, or timorous, and all without any apparent Reason or Cause; that is, in one Word, we shall say, he is delirious.

This is, in some Degree, a Coagulation of the Blood, which will the more certainly, when attended with an extraordinary Heat, as in the present Case, produce such-like Effects as these, because the Spirits separated from the Blood thus inflamed, and compounded of hard, fixt, and dry Particles, must unavoidably share in this Alteration; that is, whereas their Fluid consists of two Parts, one more active and volatile, the other viscid and glutinous, which is a kind of Vehicle to the former, their active Part will bear too great a Proportion to the viscid; and thus they must necessarily be of more than ordinary Volatility and Force, and will, therefore, upon the least Occasion imaginable, be irregularly determined to every Part; and hereupon will follow Tremblings of the Body; Anger, or Fear, upon a light, or no Cause; extreme Pleasure at what is but a trivial Entertainment, as red, green Colours, or the like; and, on the other hand, wonderful Sadness at any thing not agreeable to the Eyes, as dark and black Things; nay, ridiculous Laughter, obscene Talk and Actions, and such-like Symptoms; because, in this Constitution of the nervous Fluid, the most light Occasion will make as real a Re-

flux and Undulation of it to the Brain, that is, will present as lively and vivid Species there, as the strongest Cause and Impression can produce in its natural State and Condition; and, in such a Confusion, the Spirits cannot but sometimes, without any manifest Cause at all, be hurried towards those Organs, to which, at other times, they have been most frequently determined; and every one knows which they are in hot Countries and Constitutions.

It must, however, be remember'd, that the nervous Fluid is immediately alter'd by the venomous Juice. It will, perhaps, make this Theory more than probable, that *Baglivi*, in the Dissection of a Rabbit kill'd by a *Tarantula*, found the Blood-vessels of the Brain very turgid, and the Substance of the Brain itself, that is, the Beginning of the Nerves, lightly inflamed, and with livid Spots here-and-there; the Lungs, and other Viscera, distended with concrete clotted Blood, and large Grumes of Blood, with polypous Branches in the Heart; a large Quantity of extravasated Serum upon the Brain, which is (as he takes Notice) mostly observed in those Subjects which died by a Coagulation of the Blood.

Neither is it amiss to remark, that in a Chlorosis there is nothing preternatural, but an Infarction of the Arteries; and hence a retarded Circulation, from an Evacuation suppress'd; and, in this Country, too much Heat; that is, a beginning Coagulation, together with an inflammatory Disposition.

In short, *Bellini* has, at large, demonstrated, how *Deliria*, as well melancholic as maniacal, proceed from a State of the Blood and Spirits, not unlike to that I have here described.

But no less a Confirmation of these Notions may we have from the Cure; as to which, it is observable, that the *Tarantati* have no Inclination to dance, before they hear the Music; for, being ask'd to do it, they answer, 'Tis impossible, they have no Strength.

As for the Reason, therefore, of their starting up at the first Noise of the Instrument, we must reflect upon what we have just now been saying, concerning the Cause of the Motions of the Body in a Delirium; and consider withal, that muscular Motion is no other than a Contraction of the Fibres from the arterial Fluid, making an Effervescence with the nervous Juice, which, by the light Vibration and Tremor of the Nerve, is derived into the Muscles.

And thus we have a twofold Effect and Operation of Music; that is, both upon the Mind and Body.

To conclude with this Poison, we may take notice, that, as to the Return of the Symptoms the next Year, that is owing to the same excessive Heat in those Months acting again upon the small Remains of the venomous Ferment: Thus *Bartboline* relates a Story of a melancholy Physician at *Venice*, who suffered the Attacks of this Disease only during the Dog-days, which yearly ended and returned with them. A convincing Proof, how great a Share Heat has in all these Cases. *Mead on Poisons*.

Baglivi, who resided in *Italy*, and probably had good Opportunities of informing himself with respect to this Insect, has written a Treatise expressly upon this Subject; and most medicinal Writers mention the Distempers arising from the Bite thereof, as a Thing certain, and not to be disputed. But, notwithstanding all these great Authorities, there is good Reason to believe, that the whole Story is fabulous, and a vulgar Error; for it is treated as such by an *Italian* Physician in the *Philosophical Transactions*; and the late Mr. *Stanhope*, Brother to the Earl of *Harrington*, who resided at *Taranto* many Months, and during the Season, in which the Bite of a *Tarantula* is said to be most pernicious, assured me, that there was not a Physician in the Country, who believed there ever was such a Distemper, from such a Cause; that, amongst the Vulgar, there was a Tradition, that Distempers, attended with very extraordinary Circumstances, had been excited by the Bite of the *Tarantula*, but that nobody ever remembered a single Instance; and that he hired People to search in the Fields for this Insect, but could never procure one; nor ever learn, that any Sort of Spiders were to be found, different from those, which are common in most warm Countries. This was confirmed to me by a Gentleman of Honour and Fortune, now alive, who, likewise, resided for a considerable time at *Taranto*, and who, upon the strictest Inquiry, met with much the same Information. This last Gentleman told me, that the most eminent Physicians at *Taranto* told him, that what gave Rise to the vulgar Error, relative to the Bite of the *Tarantula*, was an epidemical Fever, which frequently affected the Country-people during Harvest, and which was usually attended with a few petechial Eruptions, and some very odd nervous Symptoms; and this Disorder the unthinking Vulgar, always fond of the Marvellous, had sometimes idly attributed to the Bite of a *Tarantula*. And his Opinion is, I think, confirmed by the Accounts we have, of the Disorders incident to the People of *Apulia*. Thus *Frederic Hoffman*, speaking of the Diseases to which the *Italians* are subject, says, that the Inhabitants of *Apulia* are highly subject to burning Fevers, Pleurisies, and other inflammatory Disorders, which, in a great measure, draw their Origin from that Redundance of Blood, which is generated by the high Living of the Inhabitants; for here the Soil is incredibly fertile; and large Quantities of Flesh are eaten by the Natives. Here, also, the Wines are black, fragrant, and rich, and the

the Air so intensely hot, as not only to render the Inhabitants highly impatient and uneasy; but very frequently delirious.

TARAXACUM. A Name for the *Dens Leonis latiore folio*.

TARAXIS, ταραξίς, from ταραξήναι, to disturb, a Disturbance, is frequently used by Hippocrates, as well as the Verb, from whence it is derived, to signify such a Disturbance, or Perturbation, of the Belly and Intestines, as is excited by some Cathartic, or other Means, irritating them to Excretion. The Verb ταραξήναι, according to Galen, *Com. 3. in Lib. de R. V. I. A.* indicates, in that Place, not a moderate, but a profuse Evacuation by Stool. In this Sense we are told, by Hippocrates, in the same Book, that Hydromel, drank by itself, is more effectual than Water, *εἰ μὴ ταραξείην τὴν κοιλίην*, "if it does not disturb the Belly," that is, waite the Strength by immoderate Irritations of the Belly. In *Coac. 342. ἐξήλασεν (Ektaraxis) κοιλίην* imports a critical Excretion, or such a Disturbance, or Perturbation, excited in the Belly, as issues in a sudden; violent, and profuse Discharge of its Contents. Hippocrates often uses ταραχόμενος κοιλίας to express the Belly under Irritations to Excretion, and actually discharging its Contents, particularly *Coac. 10.* And in the same Sense is the Word ἐξήλασεν used, 2 *Prophet.* where we read, *ἀπὸ κοιλίας ἰσχυρὰς δυνάμει ἐκστασεν ἀνὲρ ἐξήλασεν*, "the Belly labouring under violent Pains, without Perturbations" (in order to Evacuation); agreeably to which Sense, Celsus, *Cap. 8. Lib. 2.* renders ἐξήλασεν κοιλίην, 4 *Apb. 60 Ventrem resolutum*, "a loosen'd Belly."

The Adjective tarachodes, ταραχώδης, frequently signifies, also, turbulent, and is applied to those, who are disturbed and disordered for little or no Reason, which is an Indication of a delirious and disordered Mind. The same is applied to Diseases, Fevers, and Sleep attended with irregular Perturbations, and mental Disorders.

Idaxis, Taraxis, is, also, a Disease of the Eye, consisting in a Perturbation of that Part, when it is offended by some Compression, Attrition, Smoke, or the like. The Author of the *Isagogé* reckons, among ophthalmic Disorders, the *Taraxis*, which is, he says, when the Eye appears redder than ordinary, on occasion of some slight and superficial Commotion. But Galen, in 6 *Epid. Com. 5.* makes a *Taraxis* to be a morbid Disposition of the Eye, preceding an Inflammation, and the Beginning of an Inflammation; and Paulus, *Lib. 3. Cap. 22.* defines it to be an Heat and Humidity of the Eye, attended with a preternatural Redness, proceeding, not from the Body, but some external Cause, as the Sun, Smoke, Dust, and Wind; whence the Disorder is very speedily remedied, by removing the Cause.

TARBASON, or LARBASON. Antimony.

TARCHON. The same as DRACO HERBA.

TARDA. The Bustard; the same as OTIS.

TARERIAYA. The Name of a *Brasilian* siliquous Sort of Cinquefoil, of no Use in Medicine.

TARIROQUI. The Name of a *Brasilian* Vetch, called, by the Portuguese, *Metapasto*, of no Use in Medicine.

TARFATI, or TARFE. A barbarous Word, importing an Ecchymosis, or Sugillation.

TARGAR. Oil of Juniper, *Rulandus*.

TARICHOS, τάρχος, *Lat. Salsamentum*, Salt-meats, properly Fish seasoned and kept in Salt, and especially the Thynnus, of which Kind are also the *Cybia*, as appears from the fifth Book of Galen, *de C. M. S. L.* at the End, and from *Athenaus, Lib. 3.* at the End; and also from *Pliny*, who assures us, that the *Pelamis*, (a large Fish, see the Article *CYBIVM*) cut into Pieces, belonged to the *Cybia*, *Lib. 32. Cap. 11. and Lib. 9. Cap. 15.* *Suidas* expounds τάρχος by τὰ κρέατα ἀσπὶ πεπασμένον, "Flesh sprinkled with Salt;" and τάρχος signifies not only what is seasoned, and kept in Salt, but what is dried, and preserved without Salt. *Τάρχος τὰ δεικνύειν*, "such Salt-meats, as come from Gades," are recommended by Hippocrates, *Lib. de intern. Affect.* in more than one Place, to be eaten in an Anasarca. The same Author, *Lib. de Cap. Vuln.* in describing an Ulcer of fatal Prognostication, and drying up a little before Death, says, *καὶ φαίνεται ὡς περὶ τάρχος*, "It looks, also, like Flesh macerated and dried in Salt." And, *Lib. 2. de Morbis*, he advises eating the best and fattest *Tarichos* (Salt-meats). *Πεπασμένον τὰς ἀνθρώπους, Lib. de R. V. I. A.* is, to dry up, emaciate, and extenuate Patients with Hunger and Fasting, which was the Practice of some Physicians in the Time of Hippocrates, who, in the Beginning of Diseases, tormented the Sick with three or more Days total Abstinence. The Word is used in the same Sense by Galen, *Lib. 8. M. M.* and applied to the *Diatritarii* of his Time. See *DIATRITOS*.

TARITH. Mercury. *Rulandus*.

TARSI. A Name for the *Cyperus*; *rotundus*; *esculentus*; *angustifolius*.

TARSO is a kind of hard, and most white Marble, found in *Tuscany*, at the Foot of the *Verucola* of *Pisa* at *Seraveza*, and at the *Massa* of *Carara*, and in the River *Arnus*, above and below *Florence*; and it is, also, well known in other Places. It is used in making Glafs. *Ant. Neri*.

TARSUS, ταρσός. The Space between the Bones of the Leg and the Metatarsus. It consists of seven Bones; the *Astragalus*,

or *Talus*, *Calcaneum*, *Naviculare*, three *Ossa Cuneiformia*, and the *Cubiforme*.

The cartilaginous Edges of the Eye-lids, out of which the Eye-lashes grow, are, also, called *Tarfi*.

TARTARHAN. A barbarous Name for the Spirit of Tartar.

TARTARUS. Tartar.

The Generation of Tartar from Wine.

Wines, especially those prepared from Grapes, or of an acid and austere Taste, usually afford a copious Tartar, but not in Perfection, till they are once thoroughly fermented; and they afford the purest, when put up into a clean Vessel. It is more plentifully obtained from the Wine, when this has rested some time upon the Lees, and, in some measure, gently consumed it. The Tartar of fine White-wine is white; whence *Rhenish* Wine affords the best, which is white; and collected in thick Pieces, for Medicinal Use; and the whiter, heavier, more thinning, and thick, the Pieces are, the better. That of Red-wine is red, more impure, less firm, and the Pieces less solid, and more unctuous: This stony Salt of Wine is difficultly dissolved in Water, or Wine itself, but remains almost like a Stone therein. If boiled in a large Proportion of Water, it dissolves in some measure, and makes a turbid Liquor, wherein numerous shining Corpuscles are observed to float; and thus, in the Boiling, it constantly throws up a Skim to the Surface; which, if taken off with a Skimmer, and put into a wide Vessel to be dried, is called by the Name of *Cream of Tartar*: And thus, by degrees, the whole Quantity of Tartar may be converted into a kind of white acid Powder, excepting only a few feculent Parts, remaining at the Bottom.

If pure white Tartar be boiled with twenty times its Quantity, or more, of Water, till the Whole is perfectly dissolved therein, and the boiling Liquor be now immediately put into a Cask, without admitting any Faeces, a Crust will presently begin to form in all the internal Parts of the Vessel touched by the Liquor; and this Crust increases, till, in a short time, nearly all the Tartar shoots into little shining figured Lumps, called *Crystals of Tartar*; which, being collected, and gently dried, are thus to be preserved separate. The remaining Water, when cold, retains but little of the Tartar.

These Operations shew, that the Nature of the Salt, which is produced by vinous Fermentation, entirely differs, in these Properties, from any other known Salt. A new Solution, also, of the Cream or Crystal of Tartar, may be made in fresh boiling Water, so as to obtain them each time more pure and white; but the Virtue of them both scarce appears greater for any chymical or medicinal Uses, than that of Tartar itself.

REMARKS.

A Knowledge of this Process greatly conduces to the understanding the Nature of Fermentation, and the Tartar produced thereby. And thus we procure this wonderful Salt suited to so many Uses. Dyers, Silversmiths, Chymists, and Physicians, require it on many Occasions. The Chymists prepare many Things from it, and some of them capital ones. In Medicine it is highly serviceable for gently cleansing the first Passages, in a small Dose, or for purging strongly in a larger Quantity. And upon this Subject that candid Chymist *Angelus Sala* has written excellently.

The Resolution of Tartar into Water, an acid Spirit, Oil, and fixed alkaline Salt, by Distillation.

Fill Two-thirds of a glass Retort with choice Pieces of the best white Tartar, and place it in a Sand-furnace; apply a large Glass Receiver, or one that is of the greatest Size; and lute the Junction with a common Mixture of Linseed-meal: Apply a gentle Fire for some considerable time, scarce exceeding a hundred Degrees; there will come over a small Quantity of a limpid, thin, tartish, somewhat spirituous, bitterish, and lightly-odorous Liquor, which is so penetrating, as easily to sweat through the Luting. Let this be kept separate; then the Fire being raised to the Heat of boiling Water, a white Vapour comes over, and along with it an highly penetrating Spirit, which is wonderfully flatulent, and will pass through almost any Luting; and, if we endeavour to confine it by that called the *Lutum Sapientiae*, it bursts the Glass by its Elasticity; and it usually breaks out with Force, or perspires, at Intervals, through the Luting; and, along with this wild flatulent Spirit, there comes over a thin and extremely subtle Oil, of a yellow Colour, a somewhat aromatic Taste, bitter, heating, and of no ungrateful Odour. This surprising Oil I have found so incredibly penetrating, that when the Neck of the Retort entered five Inches into the Mouth of the Receiver, and the Junction was closely luted, yet this volatile Oil always returned back, and passed through the Body of the Luting, so as partly to distil in Drops, into a Cup set underneath, and in part to run down the external Surface of the Receiver: Nor could I hitherto, by any means, prevent this Effect; for, if a Luting be applied, that the Oil cannot pass through, the Vessel

fel flies to Pieces. I did not therefore wonder to find *Parasellus* and *Helmont* so highly recommend this Oil in Diseases of the Ligaments, Membranes, and Tendons, which they, upon Experience, have declared, may be cured by it, even though contracted.

The former Matters being collected separate, let the Remainder be urged gradually to the utmost Degree of Heat that Sand will give; and thus again a Spirit will come over, and an Oil, as before; but at the same time a gross, black, feid, ponderous, glutinous, and bitter Oil, leaving the remaining Tartar black, sharp, and, in every respect, truly alkaline. If this Mass be urged with the strongest Fire of Suppression, it will still yield a very thick, black, and pitchy Oil, along with a certain Smoke; and these will continue to rise, how violent soever the Fire be made, and how long soever the Operation is continued; and there will still remain an extremely black, sharp, alkaline, and dry Mass, at the Bottom; which, being exposed to the open Air, by breaking the Glass, grows hot, upon Contact therewith, and readily dissolves into a Liquor; nor can it be kept dry, without great Caution; whereas the Tartar, from whence it was produced, would scarce dissolve in Water.

When this black dry Mass is exposed to a naked Fire, in the open Air, it takes Flame; and, after burning, leaves a copious white alkaline Salt behind, as strong, fiery, and pure, as can any way be prepared. It affords but little Earth, and readily dissolves of itself: If long detained in a strong Fire, it grows blue, of a marble Colour, and sometimes brown; and thus always becomes stronger.

REMARKS.

From hence we learn many Particulars; and, first, how wonderful a Thing Fermentation is, which separates all the gross Parts, and leaves a transparent, subtile, fluid Wine, which generates an almost stony Body, that does not dissolve in cold Water, whilst the Principles of this Body lie concealed in so thin a Liquor. This stony Mass, also, contains Water, a Spirit, and different Kinds of Oil, thick and copious. It is hard to conceive, how this Oil could lie concealed in the Wine, which seems to contain Alcohol indeed, but no such Oil: But, what is more surprising, the entire Mass of Tartar is merely acid, and makes an Effervescence with Alkalies, as we shall clearly see in the Preparation of tartarised Tartar; and yet, by the bare Action of no violent Fire, in a close Vessel, without any considerable Separation of an Acid, the greatest Part of its whole Bulk is changed from Acid to true Alkali; and this, perhaps, is the only Example, where a fixed alkaline Salt is produced in a close Vessel, by a moderate Fire, without the free Admission of the Air; whilst, in other Cases, only a black insipid Coal is thus produced. Who would have suspected, that a manifest Acid could, by this means, have changed to an Alkali? And if the acid Water, the Spirit, and the Oil, be poured back upon this alkaline Mass, from whence they were before extracted, and the Distillation be performed, as before, scarce any Acid will come over, and little Oil, but nearly the whole Mass will be turned into Alkali. Whence we see, that a large Quantity of a very acid Matter may be easily changed to an alkaline Substance; but, on the contrary, I am acquainted with no Instance in Chymistry, of such a manifest Change of a strong Alkali into an Acid: Whence I cannot sufficiently admire the particular Nature of this Tartar, as knowing nothing like it. The first distilled and highly penetrating Oil of Tartar is recommended for dissolving cold Tumors, and for restoring Motion to the dried tendinous Parts in contracted Limbs, together with the Assistance of proper Baths, Fomentations, and Frictions. If these Oils be rectified, and rendered more subtile and penetrating, they are recommended by Chymists, even for resolving gouty Knots and Concretions. It is said by many, that rich Perfumes may be exalted by this Oil; but they, also, say, that decayed Musk and Civer may have their Scent invigorated, by being suspended in a Jakes. Salt of Tartar may be thus prepared in a greater Proportion to the Tartar employed, than by any other known Method; and in greater Plenty, the slower the Distillation was performed. This, also, is the best, sharpest, most penetrating and pure, of all the fixed Alkalies; nor is there any other known Body in Nature, that affords more of such a saline alkaline Matter, than Tartar. And if the black alkaline Matter, remaining after the most violent Distillation, be set by in the Retort, slightly covered with Paper, it wholly resolves into a Liquor, which, filtered, affords an admirable Oil of Tartar per Deliquium, extremely fit for numerous chymical Uses, and particular Operations. If the same Salt be first strongly calcined in an open Fire, it thus, also, resolves in the Air, and affords an Oil of Tartar per Deliquium, but of a more sharp and alkaline Nature, than the former.

THE NATIVE SALT, OR TARTAR OF VEGETABLES, FROM THEIR FERMENTED JUICE.

1. The expressed Juices of ripe Summer-fruits, being perfectly fermented, and so become Wine, deposit their Fæces, or Lees, barely by standing, and thus become bright. If, now,

this Wine be drawn into a clean Vessel, and suffered to rest for a long time, it produces in its Body little, shining, sharp Corpuscles, moving about therein. These Corpuscles, dispersing themselves from the Wine's Centre of Gravity to every Point of the Surface, at length touch, and fix themselves to the Sides of the Cask, and thus crust them all over, where-ever the Wine reaches. By degrees the Liquor deposits more of this Matter, which easily sticks to the former, whereto it seems to be attracted, till at length the whole Body of the Wine contains no more of it: After this, if the Wine, thus grown milder, be drawn off into another Cask, and fresh Wine, fined down as before, be put into the Cask that was emptied, but still remains lined with its Crust, the same Kind of Matter will be sooner generated, and grow to the former Crust, which more powerfully attracts it.

2. This appears to be the true Generation of that strange Production, which is the genuine saline Crystals of the Wine, tho' not, like other saline Crystals, found only in the Bottom, but equally all round the Sides of the containing Vessel. This Substance is, in many respects, different from the Lees of Wine, though it seems nearly of the same Nature; but it is more subtile, more pure, less earthy, less feculent, less unctuous, more difficultly soluble in Water, and of a more acid Taste. The Germans call it by a very proper Name, *Wine-stone*, but the Chymists, less properly, *Tartar*. There is a great Difference in it, according to the Nature of the Wine; the acid, austere Kinds whereof afford more; but the sweet and oleaginous, less. The Wines, that have their Fermentation stopped, before it was completed, afford a less Quantity; and those perfectly fermented, and become thin, a greater, as *Rhenish* Wine, for Example. The Tartar of Red-wine is red; and of White-wine, white.

REMARKS.

1. This is a Way of obtaining the natural Salt of Vegetables; which Salt is always acid and oily. It is easily changed into an Alkali; it dissolves neither in Water, Wine, nor Vinegar, without Heat, but remains like a Stone therein; and, like a strong Vessel, contains within its Crust the Wine from whence it is shot. It requires a boiling Heat, before it will perfectly dissolve in Water; and then again, as soon as the Water begins to cool, it immediately begins to become solid in the Water; and is there called *Cream*, or *Crystal of Tartar*. It requires twenty times its Quantity of Water, to dissolve it perfectly. It generates more elastic Air in Burning, than any other known Body, and yields a Vapour that can no way be confined. It is a great Corrector in those Bodies, which abound with a sharp bilious purid Matter; and hence becomes an approved Remedy in acute Diseases. It cleanses the first Passages, without much disturbing the more internal Parts. With a corrupt acrimonious Matter, it loses its Acidity, changes into a very soluble Substance, and hence becomes a good aperitive Remedy.
2. We may hence understand, what Salt that is, which resides in the natural or fermented Juices of Vegetables; but we shall shew, that these Salts, so generated, are easily resolved, by Art, into highly elastic Air, a tartish Water, a tartish and strong-smelling Spirit, an Oil the most volatile of any hitherto known, a gross and fixed Oil, a black alkaline Coal, an excellent Alkali, and an Earth. Salts, therefore, do not exist pure in Plants, but are always mixed with other Matters. And hence we may begin to understand the Nature of the chymical Analysis of Vegetables.

THE PREPARATION OF TARTARISED TARTAR.

Reduce the purest white Tartar to fine Powder, and boil a sufficient Quantity thereof with ten times its Weight of Water, in a large copper Vessel, till the Tartar appears sufficiently dissolved; let the Vessel remain over the Fire, that the Water and the Tartar may continue constantly boiling; the Liquor, being now tasted, proves acid, and is almost transparent, and tolerably pure. Then let fall, from an Height, a Quantity of Oil of Tartar, Drop by Drop, into the boiling Liquor, which is still to be kept boiling, whilst the Oil of Tartar is dropped in. Upon the falling of each Drop, there arises a great Ebullition in the Liquor, proceeding from the Meeting of the Acid and the Alkali; as appears from hence, that the Ebullition, soon after, spontaneously ceases, and is raised again by dropping in more of the alkaline Liquor; and, because this is performed in a strong boiling Heat, large spherical Bubbles are generated on the Surface of the boiling Liquor, that presently crack, burst, and appear again. In these Bubbles Chymists have found, or rather imagined they found, the Figure of Grapes. The Operation is thus to be patiently continued, till at length no more Effervescence arises from dropping the alkaline Liquor into the boiling Lixivium. And now the Acidity of the Tartar will be so saturated with such a Quantity of its own Alkali, as neither to appear acid, nor alkaline, but a third new Salt: But this Point of Saturation must be exactly hit; otherwise the Salt will be acid, if too little Alkali were added; or alkaline, if too much: Great Caution must, therefore, be used at the End. This Liquor is to be strained hot and quick through Flannel, till it becomes clear; it will be of a blackish-

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blackish-brown Colour, of a particular bitterish, saline, unctuous Taste, but scentless; if inspissated by Heat, till a Skin appears on its Surface, and then set, for some time, in a cold Place, it deposits, to the Bottom and Sides of the Vessel, certain saline Grains, which, when collected, are a Tartar easily soluble in Water, even in the Cold; whereas before it could scarce be dissolved therein, without a boiling Heat: Whence this Preparation may properly be called *soluble Tartar*.

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Tartar comes so near to a strong Hardness, as to remain insoluble in its own Wine, which is thus contained, as it were, in an earthen Vessel; whence the *Germans* appositely call it Wine-stone. It has a manifest Acidity; by the prevailing Force thereof it acts kindly upon the first Passages; and this Acidity is the Cause, that it makes so strong an Effervescence with its own fixed Alkali, which is so easily produced from it: For, after this Acidity is overcome by the Alkali, the Tartar becomes easily soluble, and a new Kind of Salt, which has a considerable Virtue in the Body, when taken upon an empty Stomach, dissolved in Water; for thus it deterges, and gently purges, and helps to cure many inveterate Diseases. Externally used, it cleanses foul Ulcers, and disposes them to heal: But whether this be the boasted Remedy of *Paracelsus*, by means whereof he declares he cured all fresh Wounds in a few Hours without Suppuration, I cannot tell. That Medicine he called *Samech*, which seems derived from a *German* Word, which signifies, *to conglutinate*. Thus much I can say, that a Solution of this Salt in Water is one of the best Menstruums hitherto known in Chymistry; as any one may learn, by boiling Gum Lac, Myrrh, and the like, therein. Whence he will find it can scarcely sufficiently be commended; and hence it is plain, that, used as a Medicine, it will dissolve viscous Matters in the first Passages; and it is even supposed to dissolve the tartarous Matter of the human Stone, generated in the Receptacles and Passages of the Bile and Urine, provided it be used plentifully every Day, the Dose being gradually increased. It is useful in the Stone, Jaundice, and hypochondriac Disorders. Lastly, the Examination of this Process shews, how proper Cream of Tartar is in all those Distempers, where the Bile in particular, and other Humours, purify in the Intestines, from a burning Fever, or other Causes, and thus become alkaline; for this Disposition is then corrected by the latent Acidity of the Tartar, and, at the same time, converted, in the Body, into a mild, aperitive, and soluble Salt, which opens the Passages, without greatly stimulating them, and removes Obstructions.

REGENERATED TARTAR.

To a Quantity of sharp, pure, and dried, fixed Alkali, contained in a large Glass, with a narrow Neck, pour strong distilled Vinegar, till it almost covers the Salt; scarcely any sensible Effervescence will appear, which seems strange, because so strong an Alkali might be expected to make an Effervescence with the Acid; but it seems, on the other hand, as if so weak an Acid would not make an Ebullition with so strong an Alkali: Shake them strongly together, and then some small short-lived Ebullition appears. Pour on more distilled Vinegar, and then a greater Ebullition will arise, and appear sufficiently manifest; after shaking the Glass, add a third Quantity, and then a violent Ebullition, frothing and hissing, will be found, and prove the stronger, the more the Glass was shook; and this continues a long while, so that the Vinegar poured on makes the stronger Effervescence, the nearer the Operation approaches to the Point of Saturation with the Alkali; which Point is generally obtained, when about fourteen times the Weight of strong distilled Vinegar is added to the Alkali. Now, towards the End, let the Mixture be well heated, and long and strongly stirred, that no more Acid may be poured on, than is exactly required, to obtain the Point of Saturation; which will, at length, be hit, by continuing to add a little of the distilled Vinegar by degrees, and well agitating the Mixture, till the Addition, and shaking in of a little more, no longer causes an Effervescence, even in the Heat. Then let the Mixture stand warm, for twenty-four Hours; and if, upon shaking, it makes no Ebullition, again drop in a little Vinegar, and shake the Vessel; and, if now no Effervescence arises, then the exact Point of Saturation is hit. During the Experiment, the violent Effervescence throws off a very elastic Vapour, which bursts out of the Glass with an hissing Noise, after having been confined by pressing the Hand against the Mouth of the Glass, whilst it was shook, and then suddenly taking it away; and if the Orifice should be closely and strongly shut up, during the Effervescence, the Glass would be burst to pieces. The Liquor thus prepared is transparent, of a particular Odour, not acid, and of a Taste neither acid nor alkaline, but particularly Saline, and almost without Acrimony. It has a mild and innocent Virtue, though powerfully attenuating and resolving, being purgative, diuretic, and sudorific; whence it proves an admirable Remedy in chronical Diseases, attended with a tenacious Matter, being given in a proper Dose, at proper Seasons.

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The Liquor, being decanted clear from its Fæces, and distilled in a glass Alembic, affords a pure simple Water; whilst the Liquor remaining behind becomes of a brown or blackish Colour, and at length perfectly black, fat, thick, or an extremely penetrating, or, as it were, melting Taste, which discovers it to be of a saponaceous, penetrating, and resolving Virtue. Take a little of this Liquor, and mix it with a little Vinegar; when, if it yields an Effervescence, this shews, that the Alkali still predominates; and therefore the Whole must be again saturated, by the careful Addition of distilled Vinegar; and, as this usually happens to be the Case, the Point of Saturation is to be carefully and anxiously secured.

When at length this is happily obtained, let the Liquor be separated, by Rest, from its Fæces, and then all the Water be drawn off by a gentle Fire, till a saline Mass remains at the Bottom, of a black-redish Colour, and an highly penetrating, but very particular saponaceous Taste. This Mass will have attracted and retained all the Acid of the Vinegar, and given out all the Water. Mr. *Homburg* has laboriously shewn, that the Weight of the fixed Alkali is here increased Nine-twentieths in respect of the Alkali, by the Acid of the Vinegar so attracted; and that this Acid, in respect of the Vinegar, was in the Vinegar about a thirty-seventh Part of the Whole; the other thirty-six Parts being pure Water. And thus the Salt is procured, which the Chymists call regenerated Tartar.

If the Salt, thus laboriously prepared, be urged with a strong Fire, it becomes volatile, and flies off into the Air. When carefully dried with a very gentle Fire, it appears like a Mass, that had strangely concreted, in the Cold, by the Apposition of little thin Plates, like Talc. It presently runs with Heat into a kind of a thick Oil, but again appears leafy in the Cold; and hence it has been called *Terra foliata*; and *Tachenius*, pretending it to be dissolved Talc, is reproved for it by *Zwelfer*, in his apologetic Discourse against *Tachenius*.

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There is not in all Chymistry a more instructing Experiment, than this; it shews us a new, unexpected, and particular Appearance of Alkali and Acid in the making an Effervescence. We here see all the Degrees of Colour from the transparent Whiteness of Water, up to Blackness; we see, that a fat, inflammable Oil is regenerated from Alkali, calcined by a violent Fire, and a thin, hungry Spirit of Vinegar; for this dry Salt takes Flame in the Fire, and, when distilled with a strong Heat, affords a true Oil. Hence we learn, that Salts, produced by a Mixture of Acid and Alkali, are not barely made up of the Acid and Alkali, as they are again separable, but that a new Thing is produced, of which no Sign appeared before. We are taught what Proportion of Acid, and what Proportion of Water, is contained in an acid Liquor; what Proportion of Acid is required exactly to saturate an Alkali; and the true Manner of converting fiery fixed Alkali into a mild, compound, volatile, saponaceous, oily Salt. This Salt, when properly prepared, is a most admirable Menstruum, converting its Subject, by Mixture and Digestion, into an uniform, soluble Mass, that will readily pass through the Body, and remain rich in its own Virtues. It is the greatest Resolvent in the Body hitherto known, and therefore highly valuable, as it is not hurtful in hot Cases, yet serviceable in cold ones, and almost suited to every Patient. Upon carefully considering all these Particulars, I have often doubted, whether this were not *Helmont's* volatile Salt of Tartar, which he so highly commends, and substitutes for the Alcahest itself, especially since it flows like Wax in the Fire. It seems certainly to be the *Acetum radicum* of the ancient Chymists, as in its Preparations Vinegar returns, and is joined with its own Matrix of calcined Tartar. But whoever shall over-carefully endeavour to dissolve, purify, filtre, inspissate, or calcine this Salt, in order to make it white, he will find it fly off into the Air, and be lost; and may thus indeed be convinced of its Volatility with the Loss of his Labour and Cost. And this Admonition I give, principally because *Sennertus* recommends a scrupulous Diligence in purifying this Salt; which is not only a Loss, but an impoverishing Labour.

TINCTURE OF TARTARISED TARTAR.

Reduce dry tartarised Tartar to fine Powder; put it into a tall Bolt-head, and pour pure Alcohol thereon, till it rises four Inches above it. Stop the Glass with Paper, and boil with a gentle Heat, for twenty-four Hours; by which means the Alcohol will become of a gold Colour, and of an aromatic, hot, penetrating Taste. If the Operation be repeated with fresh Alcohol, a white Salt will remain at the Bottom. Let the Tinctures be inspissated with a gentle Fire, till a tenth Part remains condensed behind.

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The Tincture thus prepared is aromatic, heating, cleanses Ulcers, and heals up Wounds; the remaining Salt is purer, and more simple, than before; which shews that Salts may be whitened, by drawing a Tincture from them with Alcohol.

THE DISSOLUTION OF REGENERATED TARTAR IN ALCOHOL.

Put regenerated Tartar prepared as above, and made as dry as it can be with Safety, into a tall Bolt-head; pour thereto six times its Quantity of pure Alcohol, and boil them carefully with a gentle Fire; they will thus be united into an uniform compound Liquor, that deposits some Fæces at the Bottom; which being subsided, let the Liquor be poured off pure. And, if any Salt remain undissolved behind, add fresh Alcohol, and proceed as before. Lastly, distil the Liquors with a gentle Fire to one half; and thus the Tincture or Solution of regenerated Tartar will be obtained.

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We have here the Alkali, the oily Acid, and the oily Spirit, of vegetable Subjects united together; whereby the most active Principles of Plants are freed from their indolent Earth, and yet remain safe, or not dangerous on account of their Acrimony. This Mixture, also, seems to be the lesser Elixir of the Philosophers; which the ancient Chymists commended for restoring Health. Certainly, it dissolves almost all Obstructions, penetrates the Vessels, agreeably stimulates the vital Faculties, and cures by Sweat. It is, also, a most excellent Solvent in Chymistry, whereby Bodies are dissolved into their smallest and most active Parts, without impairing their seminal Virtue; so as to gain them Entrance into the innermost Recesses of the Body, in order for conquering the most obstinate Distempers. It is no less serviceable, when externally used in Wounds, Tumors, and Ulcers. And, that the Poor may not want so excellent a Remedy, it may be directly prepared by mixing Pot-ashes with fifteen times their Weight of strong Vinegar; then straining and inspissating the Solution; and thus without less Labour, or great Expence, a Medicine may be easily prepared for Use. This Medicine was known to the ancient Romans, and is mentioned by Pliny in his Preface, where he says, *The Ashes of Vine-twigs, being dissolved in Vinegar, are drank in Diseases of the Spleen.*

HARVEY'S TINCTURE OF SALT OF TARTAR.

Take the black alkaline Salt, remaining in the Retort after the strongest Distillation of Tartar; reduce it to Powder, in an hot iron Mortar, with an hot Pestle; and immediately put it into a tall Bolt-head; pour the best common Spirit thereon, so as to rise four Inches above it; boil with a gentle Fire for twenty Hours; and thus a black, thin, bitter, aromatic, lixivious Liquor will be obtained; which, being decanted pure, may long be preserved perfect in a close Glass for Use, under the Title of *Harvey's Tincture of Salt of Tartar.*

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The common Spirit consisting of Water, Acid, and Alcohol united, coming to boil with the Alkali of Tartar, that still remains oily, makes a mild and safe Lixivium; the Alkali being here tempered by the Acid, Oil, and Alcohol: Whence we have a noble kind of Medicine and Menstruum; wherein if Vegetables be boil'd or digested, it dissolves them to good Advantage. In Surgery it is an excellent Remedy for cleansing, deterging, drying and healing all weeping, purulent, putrid, sanious, and virulent Ulcers, as well the fistulous, as the sinuous, and burrowing; and, also, for consuming proud Flesh; especially if artificially mixed with a little Oil. It has similar Effects, when used internally, in Distempers where acid, austere, aqueous, mucous, or terrestrial Matters and Coagulations abound, provided they be not attended with a putrid Dissolution of the Humours: And hence it is commended in old Obstructions of the Viscera, Collections of Water, dropical Dispositions, the Green-sickness, Jaundice, and cold Gout. It acts strongly as a Diuretic, a Diaphoretic, and sometimes, as a Purgative; and may be safely given in a large Dose. Two or three Drams thereof, being mollified with an Ounce of the Syrup of the Five opening Roots, and diluted with Fennel-water, will have a very good Effect, being taken in a Morning fasting, and repeated three or four times at due Intervals, or a better than most other Remedies. Hence the famous Dr. Harvey deservedly recommends it; though the ancient Physicians, also, were not unacquainted with the like for the same Purposes, as may appear from *Dioscorides.*

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HELMONT'S TINCTURE OF SALT OF TARTAR.

Take the black Salt of Tartar, remaining upon the Distillation of Tartar; put it into a large and strong Crucible; burn and calcine it well in the Fire, with Care to prevent the Coals, or other Matters, falling into it, till it becomes white, and all its oily Matter be consumed. Or, to make more Dispatch, take a Parcel of the best Tartar, and tie it up in Cap-paper, first made a little moist; then put it into the Fire, and surround it every-where with live Coals, and let the Fire at last go out of itself; then removing the hot Ashes, an alkaline saline Mass will be found run together at the Bottom; this is called common Salt of Tartar. Let either of these Preparations be dissolved in Water, filtered and exhaled away in a clean iron Pot; and let the Salt be afterwards calcined, and reduced to fine Powder, the finer the better; this will be excellent Salt of Tartar. Then have ready at Hand a tall and dry chymical Glass, with a wide Mouth, One-third full of pure and warm Alcohol; let, also, the whole Neck of the Glass be well heated all round, lest it should burst by the Heat of the Salt of Tartar, to be now presently poured in; fit a Paper Funnel to the Mouth of the Glass; and through this pour the Powder of the Salt of Tartar now extremely hot, as it comes from the Fire, and therefore dry, into the Alcohol. If all these Particulars are rightly observed, the Salt will fall into the Alcohol, with a great Hissing and Noise, and immediately cause an Ebullition. When a sufficient Quantity of Salt is put in, stop the Glass slightly with a Cork; and, when all is cold, pour in more Alcohol, till the Glass be Three-fourths full; shake them together; so that no Salt may hang on the Sides of the Neck of the Glass; but all of it remain entirely under the Alcohol: Otherwise these adhering Particles of Salt would dissolve by the Moisture of the Air, then mix themselves with the Alcohol, and frustrate the whole laborious Operation. Let the Glass now be set in an Heat of an hundred Degrees, and be often shaken, and lightly stopped, to exclude the Moisture of the Air, which is here so prejudicial. The Liquor will thus soon become of a deep and beautiful red Colour, and contain the manifest Virtue of the alkaline Salt, as appears by the Smell and Taste, though scarce by any Effervescence; but especially if it be very cautiously inspissated by Distillation; for, being afterwards examined, it is found manifestly saponaceous, and somewhat saline. If the least Particle of Water be mixed with either Ingredient, no Tincture will be obtained; but the Alcohol remain colourless, and transparent upon the Alkali, how long soever they stand together. And thus even the lightest Sign of Moisture will, also, appear: Whence I do not wonder to find, that some eminent chymical Authors have wrote, that this Tincture was impossible; for it cannot be made, if any one, even of the slightest Circumstances here required, be omitted. And as to what other Professors of the Art have wrote, that the Colour, by our Method communicated to the Alcohol, should be owing to a spontaneous Change thereof in time; this is confuted by the Experiment, and the Marks above described: But it is easy to mistake in so laborious and difficult an Experiment. I have not found the Tincture alkaline; but rather of a compound, saponaceous Nature.

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This Experiment, again, shews, that pure fixed Alkali has an Appetite of attracting almost all Liquids to itself, whenever it exists by itself. Thus it greedily drinks in Water, Acids, and Oils, and Alcohol, also, though not so strongly, or so closely, as the former. Hence we have a new Method of making an extremely subtle Soap of Alkali and Alcohol; for this Tincture is truly saponaceous, as appears by rubbing it between the Fingers, where it has a manifest detergent Property, in an high Degree; while pure Alcohol, thus treated, would manifest itself only by Driness. It shews itself to be saline and fiery by its Taste; it does not, indeed, make a manifest Effervescence with Acids, or readily precipitate Bodies dissolved therein. If the pure Tincture be inspissated by Distillation, it leaves a saline, saponaceous, scarcely alkaline, but sharp, coagulated Substance at the Bottom, of a deep-red, or almost black Colour. As a Menstruum, it incomparably dissolves all distilled Oils with great Expedition and Perfection; it, likewise, extracts excellent Tinctures from Gum Lac, Myrrh, and Amber: It is recommended by the Chymists for internal Use, against Distempers arising from a stubborn tartarous Matter; but, to say the Truth, it cannot be given, unless diluted with Water, Wine, or the like mild Liquor otherwise; it instantly burns the Parts it touches; and, when weakened, as it requires, to what Purpose was all the Pains taken to purify the Alcohol, and unite it with the Alkali?

Alkali? I judge, therefore, that *Harvey's Tincture of Salt of Tartar* affords a more excellent Medicine, with much less Trouble. The present Operation, however, is by no means useless; for it teaches many Particulars, some whereof are mention'd above.

I have long considered upon that casual Saying of the great *Helmont*, that, if Spirit of Wine be distill'd from thoroughly calcined Salt of Tartar, one half of it will be turned to Water. This I understood of Spirit only once rectified; especially, because, in another Place, he says, the same thing happens with Vinegar. But, because the principal Followers of *Helmont* declare, that we are to understand this Saying of pure Alcohol, one half whereof is joined to Salt of Tartar, whilst the other is turned to Water, and, therefore, that true Alcohol consists of these two separable Parts; and, also, that the Salt of Tartar is thus, also, converted into that noble Balsam, or *Samech*, of *Paracelsus*, which miraculously heals Wounds, without any Inconvenience; I judge proper here to declare, what I have myself found with great Labour. I made a perfect Tincture of the Salt of Tartar, in the manner above described; it was extremely strong, red, and fragrant, and of a sharp, fiery, and almost alkaline Taste: I digested it upon its Alkali for many Months, then set it by four Years; the Salt continued extremely dry at the Bottom, and the Tincture exceeding red above it: I then poured out all this Salt, and the Tincture, into a perfectly dry and clean glass Body; they were extremely fragrant. I distilled off all the Alcohol with a gentle Fire, having exactly luted the Juncures; the Alcohol was perfectly limpid, subtile, and fragrant; the Salt at the Bottom was now of a purple Colour, tho' it was white before; I poured the Alcohol upon its Salt, and distilled as before; the Alcohol now rose with more Difficulty, and a saline red Mass remained behind; the Alcohol was of a fiery Taste: I thus continued to cohobate it for one-and-twenty times, after which a black saline Mass remained at the Bottom, and the Alcohol came over exceeding sharp; in the last, I urged this black alkaline strong-smelling Mass with the greatest Heat that Sand could give; upon which there came over, not Alcohol, but Water, tho' I had with the utmost Care prevented any Water from getting in. And thus I found, that Water might be obtained from this Salt and Alcohol, but, not half the Quantity in respect of the Alcohol; and still I have some Doubt, whether this Water did not proceed from the Air, or was not secretly taken up upon returning, and distilling the Alcohol so many times over: This I am certain of, that the Alcohol thus first put to digest with the Salt of Tartar, for so many Months, and afterwards left for some Years therewith, then drawn off from it two-and-twenty times, did not make this Salt volatile, but left it fixed, and perfectly black. Having now broke the Vessel, and taken out all the Salt, I exposed it, in a hollow Glass, in a Cellar, where it ran into a brown Liquor of a sharp alkaline Taste, which I reserved by itself. This Labour I undertook, that I might at length be certain of the Nature of Salt of Tartar, and of the Conversion of Alcohol into Water by its means; the Union of Alcohol with Salt of Tartar, by distilling it therefrom; and the volatilizing of Salt of Tartar, by means of Alcohol: And hence we see what the great Promises made about these Matters end in. The Alcohol, so many times cohobated, was extremely clear, fragrant, of a fiery Taste, would burn away without leaving any Fæces, and made no kind of Effervescence upon the Addition of Acids; and this was the Reward of my Labour.

TARTARUM VITRIOLATUM.

Vitriolated Tartar.

1. Take three Ounces of pure Oil of Vitriol; dilute it with thrice the Quantity of warm Water, in a tall capacious glass Body, with a narrow Neck; add to it, Drop by Drop, a Quantity of Oil of Tartar *per Deliquium*; till the Point of Saturation is perfectly obtained; otherwise a pernicious Acrimony, either acid or alkaline, remains. In this Experiment a violent Effervescence will arise; and a white Salt begin to appear at the Bottom, long before the Saturation is completed. After this Point is found, shake the Vessel for a considerable time; and taste the Liquor: If it tastes neither acid nor alkaline, take a little thereof, and heat it; divide it into two Parts; and to one add a Drop of Oil of Vitriol, and to the other a Drop of Oil of Tartar *per Deliquium*; and, if no Effervescence appears in either, the Point of Saturation, here so requisite for medicinal Use, is exactly hit. If any Effervescence arise upon the Addition of the Acid, the Alkali prevails; and, if the Alkali causes any Effervescence, the Acid prevails; but, when the Equilibrium is obtained, let the Liquor be entirely dissolved by the Addition of hot Water, so that all the Salt may be taken up. Let the Liquor be strained while it is hot, evaporated to a Pellicule, and crystallized. A white Salt will be obtained, of a neutral Taste, that requires a large

Proportion of Water to dissolve it: What remains cannot be crystallized; as happens in the Case of Nitre, Sea-salt, and almost every other Salt.

2. Some eminent Chymists, among whom we reckon *Tachenius*, imagine that the Oil of Vitriol, after having suffered so great a Fire, carries up with it some volatilized metallic Part, that gives a noxious Quality to this Salt, not to be easily destroyed: Hence they endeavoured to obtain this Acid native and simple, without Fire, and join it with fixed Alkali of Tartar. They, therefore, dissolved Vitriol in Water, so as to make a dilute and pure Liquor, to which, when filtered, they added Oil of Tartar *per Deliquium*, Drop by Drop; upon which the Liquor grows turbid, and the Iron, in form of yellow Oker, falls to the Bottom: They carefully proceed thus, till no more Precipitate is obtained, upon Addition of the Alkali. This Point they carefully observe, and set by the Mixture, till all the metallic Fæces are precipitated; then filter the pure Liquor, insipitate and crystallize as before. Thus a *Tartarum Vitriolatum* is obtained without Fire; and, as they seem to imagine, without any Suspicion of a sharp corrosive Virtue; and if there be no blue, or green Colour remaining in the Liquor, or the Salt prepared from it, the Preparation will be good; but otherwise it will retain something of Copper, and prove malignant.
3. When, by the like means, a Salt is prepared with any pure volatile Alkali, and Oil of Vitriol, either alone, or diluted with Water, a like, but a semi-volatile and more penetrating Salt is obtained; whereas the former is wonderfully fixed. This Salt, in whatever manner prepared, appears considerably ponderous and solid; and, yet at the same time, is mild and opening.

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The Virtue of this Salt is esteemed highly opening, if taken upon an empty Stomach, diluted with Broth or Whey, and assisted with the Exercise of the Body; for thus, by attenuating, resisting Putrefaction, and stimulating, it opens the obstructed Viscera, so as to have acquired the Name of the universal Digestive; but *Tachenius* calls it an unmetallic Vitriol. It appears from various Chymical Processes, that the most corrosive Alkalies and Acids grow perfectly mild upon mixing together. Whence we learn, that two Poisons, as they would prove, if taken separate, may be render'd innocent, if drank mixed together; or even that one may be corrected by taking the other soon after. Hence, also, we see, that Water may lie wonderfully concealed in Salts, and at length be set free from them; for the acid Spirit of Nitre contains sixty Parts of Water, to nineteen of true Acid: Spirit of Salt holds fifty-two Parts of Water, to thirteen of Acid; and Oil of Vitriol sixty of Water, to thirty-seven of Acid; even supposing all these Liquors highly rectified: So large a Quantity, therefore, lay concealed in decrepitated Sea Salt. And hence we learn, that there are but very few simple fossil Acids; as the Acid of Alum, Vitriol, and Sulphur, is the same; Aqua-fortis, and Spirit of Nitre, have no Difference; and the Spirit of Sea-salt, salt Springs, and Sal Gerni, are all the same. *Boerhaave's Chymistry.*

TARTON RAIRE. The same as the *Sanamunda*. See THYMELÆA.

TATAIBA *Brasilensis*, Marg. & Pison. *Sive Arbor bacifera Brasilensis, fructu Tuberculis inæquali, Mori æmulo.*

A Tree growing in *Brasil*, of an ash-colour'd Bark, and a croceous or redish Wood; the Leaves are acuminate and serrated, resembling, in some measure, the Leaves of Birch. The Fruit is of the Size of a moderate Mulberry, round, and composed of Tubercles of a pale Colour, with many Filaments on the Outside, which are of a dark-brown Colour, and not very long: This Fruit is eaten, as Mulberries are, either alone, or with Sugar and Wine; it contains within it small whitish Grains dispersed through the Pulp.

The Wood of the Tree is extremely hard, and lasts a very long time, as well in Earth, or Water, as without them, being always green. It is the best of all Woods, and excels that of the *Masandiba*, in what manner soever it be used. Of the old Wood they prepare a Tincture of a very fine yellow Colour. The Tree grows every-where in the Woods, especially in maritime Places; and the Fruit is ripe in May. *Raii H. P.* 1639.

TATARIA, *Hungarica edulis, Panacis Heraclei folio, semine Libanotis Cachryophoræ.* J. B. *Panaci Heracleo similis Ungarica.* C. B. *Panaci Heracleo similis Tataria Ungarica dicta.* Park.

This is no common Plant, but has a very long and thick Root; for *Clusius* tells us, that he was presented with some of the Roots, which were as thick as a Man's Arm, and a Cubit or more in Length, by the noble *Balthasar de Barbyan*, who had order'd them to be brought from *Hungary* beyond the *Danube*, on his Account, that he might plant them in his Garden at *Vienna*. They produced Leaves not much unlike those of Turneps in their Jags and Incisures; but shorter, and in Shape more

resembling those of the *Panax*, cover'd with a rough lanuginous Substance, and of a palish-green Colour; after these were produced other Leaves with smaller Jags, but no less rough, from the Middle of which arose a striated, concave, and nodous Stalk to the Height of a Cubit, or more, as thick as a Man's Thumb, and as rough as the Leaves, and set with lesser multifid Leaves on broad Pedicles, and cover'd, also, with a rough woolly Substance; the Top of the Stalk expanded into an Umbrella, resembling that of the *Panax Heracleus*, on which are the Flowers equal in Shape and Colour, and succeeded by a few scattering Seeds (for all the Flowers are not fruitful) very thick, and not much unlike the large striated Seed of the *Libanotis Cachryophora*. *Clusius* had the Root two Years in his Garden, before ever a one of them produced a Stalk and Seed; after which they putrefy'd, and exhaled so noisome a Smell, that he was obliged to throw them away.

The Hungarians who live about *Agria*, and also, those who border upon *Walachia* and *Moldavia*, in a time of Dearth, make use of the Roots for want of better Bread; as *Clusius* was assured by the aforesaid Nobleman, and other Persons of Quality, who lived in that Country. *Raii Hist. Plant.* 424.

TATL. The Name of an extremely minute *American* Bird; I suppose the same as that call'd the Humming Bird. I don't know that it is of any Use in Medicine.

TATURA. The same as **DATURA**.

TAUROCOLLA. Glue made of the Ears and Genitals of Bulls. This Sort of Glue was esteem'd the best.

TAURUS. The Bull. See **Bos**.

TAXUS.

The Characters are;

The Leaves are broader, thicker, and blunter than those of Juniper; and disposed like the Teeth of a Comb. The Flower is amentaceous, consisting of a squamous Calyx, from whose Centre arises one Style, furnished with a Multitude of Testiculi or Apices shaped like a Mushroom. The Fruit grows on the same Plant with the Flower, but in a different Place, and is pulpy, bellied, and hollow like a Pot, or shaped like an Acorn, and containing one Seed.

Boerhaave mentions three Sorts of *Taxus*; which are,

1. *Taxus*. *Offic. Ger.* 1187. *Emac.* 1370. *Raii Hist.* 2. 1416. *Synop.* 3. 445. *J. B.* 1. 241. *C. B. P.* 505. *Tourn. Inst.* 589. *Boerb. Ind. A.* 2. 208. **THE YEW-TREE.**

This Tree grows in mountainous and rocky Places, and is commonly found in the Western and Southern Parts of *England* in hilly Woods and Hedges. Our Ancestors planted Yew-trees in Church-yards, on account, it is supposed, of the everlasting Greenness of its Leaves, which was a Symbol of that Immortality and eternal Life, to which they expected the dead Bodies there deposited would arise, at the general Resurrection. The Antients, and many of the Moderns, have affirmed, that the Fruit of this Tree is destructive and deadly. *Dioscorides* writes, that those who eat the Berries are seized with a Flux of the Belly; and elsewhere he says, that the *Taxus*, taken inwardly, induces a Coldness of the whole Body, Suffocation, and speedy Death. *Cesar, Lib. 6. de Bell. Gall.* writes, that *Cativulus*, King of the *Eburones*, killed himself with drinking the Juice of the *Taxus*. Some there are, says *Pliny*, who tell us, that from this Tree the poisonous Juices, with which the barbarous People tinged their Arrows, were called *Taxica*, though now *Toxica*. But *Vossius* and *J. Bodeus* shew, that the *Toxicum* was another Kind of Poison, with which they anointed their Arrows, that Wounds from them might prove mortal: *Toxicum*, therefore, is so called from *Toxon*, τόξον, a Bow. *Matthioli* affirms, that, in the Mountains of *Trent*, not only Horses, and other Beasts of Burden, but ruminating Animals, have died with eating of the *Taxus*; and that Shepherds, and Cutters of Wood, have been seized with burning Fevers, and a Flux, from eating the Berries, to the great Hazard of their Lives. *J. Bauhine*, also, tells us, that he has been assured by Persons of good Credit, that, in the Mountains of *Burgundy*, Oxen and Cows have died with eating the Leaves and Bark of this Tree. And *J. Lutz*, an Apothecary of *Kirchenheim*, told him, that a white Turtle-dove, with a black Collar, which he kept in his House, died with eating the Berries; and that, in the Village of *Oberentzingen*, an Ass died suddenly, after eating of the *Taxus*.

On the contrary, we are of Opinion, that the *Taxus* is unjustly blamed, since *Lobel* assures us, that Children in *England* use to feed on the Berries, without any ill Effects; and that he had tasted them himself, towards the End of the Autumn; and that they had no disagreeable Taste, only maukish and bitterish; and that the Swine there fed upon them as freely as on Acorns. Our Countryman *Gerard* relates, that both he himself, and great Numbers of his Schoolfellows, had often eaten of the Berries to Satiety, and had slept not only under the Shade, but on the Branches of the Yew-tree, without the least Inconvenience. *Camerarius* holds the *Taxus* to be harmless; that its red Berries are greedily covered by the Birds, who are stupefied by them, in such a manner as to be easily taken. Either, therefore, the Antients are mistaken in the Accounts they give us of the *Taxus*; or the Constitution of the Air, or Condition of the Soil, have occasion'd this Difference

in its Quality. The Tree, I confess, is of a sad Green, and its melancholy Aspect, if I may so say, seems to indicate some malignant Quality belonging to it; and at the time it is in Flower, and most pregnant with Juice, it may, possibly, be noxious to Cattle: However, I affirm nothing; for the Antients themselves do not talk very consistently, about the noxious and deadly Qualities of this Tree. *Theophrastus* writes, that some Persons eat the Fruit without Harm; and that the Leaves are mortal to labouring Beasts, but not to ruminating ones. *Plutarch* says, it is hurtful only when it begins to be in Flower. And *Dioscorides* gives a Hint, that it is not every-where deadly and poisonous, when he says, that the *Taxus* in *Italy*, and the Southern Parts of *France*, is mortal; that of *Italy*, with its Berries; and the other, with its very Shade. It is strange, that Birds, which eat of the Fruit of the *Taxus*, should turn black: And we learn from *Virgil*, that this Tree is prejudicial to Bees. Of old the best Bows were made of the Wood of the *Taxus*, which is still highly valued by Joiners, Turners, and other Artificers in wooden Work.

Evelyn speaks of another Species of *Taxus*, in the Garden at *Pisa*, whose Leaves are more like those of the Fir-tree, and the Tree thicker of Leaves and Branches; being clothed with Leaves from the very Root upwards, and so thick-set with Boughs, and small Branches, as to appear rather like an Hedge than a Tree, though it be, also, very tall. This Tree is supposed, by *Evelyn*, to be the deadly *Taxus* of the Antients, because *Bellucci*, the Keeper of the Garden, affirms, that the Gardeners, who sometimes clip the Tree, are not able to continue at their Work above half an Hour at a time, by reason of a very severe Pain in the Head, excited by the noxious and poisonous Smell, emitted from it while under Cutting. *Raii Hist. Plant.*

2. *Taxus*; *Folio latiori, magisque splendente.*

3. *Taxus*; *Foliis variegatis. H. R. Par. App.*

The Wood is very elegantly coloured, and used to make Walking-staves. The Berries eaten induce a Dysentery and Fever. This was a very noted Tree among the Antients, for its deleterious Quality, which proved mortal, as it was pretended, to all who took it. But though it was formerly accounted a poisonous Plant, we are now-a-days better informed, and cultivate it everywhere, for the sake of Ornament, in Gardens. *Hist. Plant. adscript. Boerhaav.*

Taxus is, also, a Name for the Badger; which is thus distinguished by Authors:

Taxus. *Offic. Schrod.* 5. 308. *Schw. Quad.* 130. *Ind. Med.* 115. *Aldrov. de Quad. Digit.* 264. *Jonf. de Quad.* 101. *Taxus etiam Daxus.* *Charlt. Exer.* 18. *Taxus suillus, Meles.* *Mer. Pin.* 168. *Taxus sine Meles.* *Raii Synop. A.* 185. *Meles.* *Gefn. de Quad. Digit.* 686. **THE BADGER.**

The whole Animal incinerated, its Blood, and its Fat, are applied to medicinal Uses. The Ashes of the burnt Animal are exhibited with Success in pulmonic Disorders, and an Hemorrhoe. The Blood, pulverized, is said to be good for the Leprosy; and the same, distilled, to be effectual against the Pestilence. The Fat, as it is a little thicker, so it is somewhat hotter, and more efficacious, than the Fat of Swine: It gives Relief under Pains of the Kidneys proceeding from the Stone, mitigates the Heat of Fevers, and restores Contractions and Weaknesses of the Joints and Nerves. *Schroder.*

TEAPHIN. This Word occurs in *Nicolaus Myrepsus, Sect. 12. Cap. 27.* It is mentioned as an Ingredient for a Fumigation, in Disorders of the Anus. The Word is utterly barbarous; and *Fuchsius*, his Commentator, confesses, he don't understand what the Author means.

TECMARSIS, τέκμασις, from τεκμαίρω, to indicate, of τέκμαρ, a Sign, is a Word used by *Hippocrates*, in the Beginning of his Book *de R. V. I. A.* importing a judicial Knowledge, or a Judgment founded upon determinate and necessary Signs. This Way of judging is syllogistic, or rational, and much in Use among Philosophers as well as Physicians. It comprehends the γνῶσις, διδῶσις, ἀνέστισις, and διαπίσις, and, consequently, almost the whole Art of Medicine, which depends on artificial Conjectures, or Judgment formed according to the Rules of Art; as sufficiently appears from those Words of *Hippocrates*, in the Book before-mentioned, ὁρίσταν δ' ἐς τέκμαρσιν λέγειναι ὡς καὶ ἐκασα ἰατρῶν. But since we must come to a Tecmarsis [Judgment formed upon Indications] for the Management of particular Cases, &c. And just before, καὶ ἐκασα ἰατρῶν ἐκασα ἐς τέκμαρσιν, And some Things well accommodated to a Tecmarsis. Here *Galen* explains τέκμαρσιν by ἡ διὰ τεκμήριον γνῶσις, Knowledge acquired from a Sign, that is, from the proper Signs, or distinguishing Characters, of Things, or from necessary and perpetual Signs, which are called syllogistic. *Erotian*, on *Hippocrates*, expounds τέκμαρσιν by ἀνέστισις, A Knowledge acquired by Signs, with an Eye to the above-quoted Places: He, also, says, that τέκμαρ and τεκμήριον, in *Hippocrates*, are ἰδίως τὸ σημεῖον, properly a Sign.

Tecmar, τέκμαρ, though expounded, in *Hesychius*, by τὸ πέρας καὶ τέλος, A Limit and End, and though *Aristotle, Lib. 1. Rhetor.* says, that τέκμαρ and πέρας (*Peras*) are the same thing in the ancient Language, yet it seems to mean a Sign in *Hippoc.* *Lib.*

Lib. 2. περί γυναικ. where it is said, ἀλλὰσι δ' ἄλλῃ πᾶσι τέμασι (ἰστέ), In others the Sign is contained in some other Part: For he seems to intend, that the Signs of the Disease are various in different Subjects. Some, however, understand by τέμασι the End, and then the Sense of the Quotation will be, In some Women the End (of the Disorder) is observable in a different Part. For as he had before told us, that a Fit of the Hysterics induced, at least, a great Heaviness and Oppression of the Head, so here he intends to say, that sometimes the Disorder ends with some ill Effects on a different Part.

TECMERION, τεκμήριον. How it differs from σημεῖον (*Se-me-ion*), we are taught by *Galen, Com. 3. in Prognost.* where he says, that Συλλογιστικὸν σημεῖον, A syllogistic (rational, or such as gave Room for Ratiocination) Sign was by the Antients called τεκμήριον.

TECOLITHOS, τηκόλιθος. A Name for the *Lapis Judaicus*.

TECOMAXOCHITL. The Mexican Name for a Sort of Bastard *Apocynum*, called *Gelsemium Hederaceum Indicum*. *Cornuti. Gelsemium Indicum maximum flore phœniceo. Ferrar. Pseudo-Apocynum Virginianum, alias Gelsemium maximum Americanum flore phœniceo. Park.* It is not used in Medicine. *Raii Hist. Plant.*

TEGANITES, τήσανιτης, from τήσανον, a Frying-pan. An Epithet for Bread, importing its being fried in a Pan.

TEGULA HIBERNICA. Irish Slate. It is thus distinguished:

Lapis Hibernicus. Offic. Mer. Pin. 213. Dougl. Ind. 50. Lapis fissilis Hibernicus. Charlt. Foss. 16. Tegula Hibernica. Full. Pharm. Ext. 281. Ardesia Hibernica, Tegula Hibernica. Ind. Med. 57. IRISH SLATE.

It is a fossil Stone, of a black Colour, somewhat inclining to an Azure, and of an earthy Taste; and found in Mines, as well in England as Ireland.

This Stone is frequently used in Contusions; for it resolves coagulated Blood: Some say it is effectual in Quartan Fevers; but it is of excellent Use in all Kinds of Hæmorrhages, uterine Fluxes, and Spitting of Blood. *Dale.*

TELA ARANEI. A Spider's Web. See **ARANEUS**.

TELAMONES, τελαμώνες. Lint, applied to Wounds; or the Fillers with which Bandages are made.

TELEPHIOIDES. Bastard Orpine.

The Characters are;

It hath a Rose-shaped Flower, consisting of several Petals, which are constantly placed in a circular Order; from whose Empalement rises the Pointal, which afterwards becomes a roundish Fruit, divided into six Cells, each containing a single Seed, of the same Form with the Cell.

Miller mentions five Species:

1. *Telephioides Græcum, humifusum, flore albo. Tourn. Cor.* Low trailing Greek bastard Orpine, with a white Flower.

2. *Telephioides Americanum, erectum, folio ovali subtus glauco, flore herbaceo.* Upright American bastard Orpine, with an oval Leaf, which is of a Sea-green underneath, and an herbaceous Flower.

3. *Telephioides Americanum, arborescens, fructu parvo, foliis acuminatis. Houst.* Tree-like American bastard Orpine, with a small Fruit, and pointed Leaves.

4. *Telephioides Americanum, arborescens, foliis latis, subrotundis, & subtus incanis, fructu maximo. Houst.* Tree-like American bastard Orpine, with broad roundish Leaves, which are hoary underneath, and the largest Fruit.

5. *Telephioides Americanum, arborescens, foliis latoribus subrotundis, fructu majore ex longo pediculo pendulo. Houst.* American Tree-like bastard Orpine, with broader roundish Leaves, and a larger Fruit hanging on long Foot-stalks.

The first Sort was discover'd by *Tournefort*, in Greece; who constituted this Genus, giving it this Name from the Similitude there is between this Plant and the true Orpine of *Imperatus*: This is a low trailing Plant, which seldom continues more than two Years.

The second Sort grows in *Barbadoes, Jamaica*, and several other Places in the *West-Indies*.

The third Sort was discover'd by the late *Dr. Houstoun*, at *La Vera Cruz*; from whence he sent the Seeds into England. This Sort rises to the Height of eight or ten Feet, having a woody Stem; the Leaves are branched into many Wings, and the Flowers, which are small, and of a whitish-green Colour, grow on the under Side of the Leaves, and are succeeded by small Fruit, which hath not as yet ripened in England.

The fourth and fifth Sorts were discovered by the late *Dr. Houstoun*, at *Campechy*; where they grow to the Height of twelve or fourteen Feet: The Leaves of these Kinds are broad, and come out alternately on the Branches. The Fruit of the fifth Sort is about the Size of a small Nut, and is produced on the under Side of the Leaves, hanging on very long Foot-stalks. The Fruit of the fourth Sort is as large as Walnuts, and hath hard woody Coverings, or Shells. *Miller's Dictionary.*

TELEPHIUM.

The Characters are;

The Leaves are alternate, the Calyx is polyphyllous, and the Flower resembling that of the *Helianthemum*: The Fruit is triangular, unicapular, and full of roundish Seeds.

Boerhaave mentions but one Sort of *Telephium*; which is the *Telephium*; *Dioscoridis. Imperat. 665. Polygonum, perenne, procumbens, folio breviori, floribus in capitulum congestis. M. H. 2. 592. Sedum, procumbens, rotundifolium, glaucum, purpurascens floribus. M. H. 3. 474. Boerb. Ind. alt. Plant.*

This Plant is emollient, consolidating, resolvent, and vulnerary. The Leaves, bruised, resolve Tumors, and accelerate Suppuration; and the bruised Root is effectual in Inflammations of the hæmorrhoidal Veins.

TELEPHIUM is, also, a Name for the **ANACAMPSEROS**; which see.

TELESPHORUS. See **ACESIUS**, and **ÆSCULAPIUS**.

TELLINA. *Offic. Jonst. Exang. 48. Tellina secunda. Rondel. de Aquat. 2. 7. Aldrov. de Exang. 518. Gefn. Aquat. 940. Tellina. Charlt. Exang. 67. Bellon. de Aquat. 403. Maris Italici. Bonan. 104. n. 57. Tellina intus ex Viola purpurascens, in ambitu serrata. Liff. Hist. A. A. 190. Subfusta angustior intus purpurascens. Ejusd. Hist. Conch. 3. n. 217. THE LIMPIN.*

Fresh Limpins are good for the Belly, especially the Liquor of them: Salted and burnt, then triturated, and distilled with *Resin*, they prevent the Hairs of the Eye-lids, which have been pulled out, from ever growing again. *Dioscorides, Lib. 2. Cap. 8.*

TELMA, τέλμα, is ὁ τόπος πηλῶδης ὑδάτος ἔχων, A clayey or muddy Place holding Water. And τελαμάδεα, telmatodea, in *Hippocrates, Lib. περὶ ἀδένων*, are the ousy, moist, and spongy Parts of the Body, which receive the superfluous Humours, as where he says, ὅτε οὐκ τελαμάδεα ἐνὶ τῇ ἀδένει, So that where the moist and spongy Parts of the Body are, there you meet with Glands: The Term being translated, by a Metaphor, from signifying ousy, boggy, and marshy Places of the Earth, as appears from the following Expression a little after; καὶ οὐδ' ἐν τοῖσι τέλμασι τῆς γῆς καὶ καθύπερθε, ἢ ἐν τῇ τῇ (πέρμα, For neither does Seed grow in Bogs, and watry Soils.

TELON. Fire. *Rulandus.*

TELMUM. A Dart. Tho' the modern way of making War has render'd a Detail of the Method of curing Wounds inflicted by Arrows and Darts of less Importance, it is necessary to take notice of the Artifices employ'd by the Antients for the Extraction of Darts, and curing the Wounds thereby inflicted.

Darts, and other missile Weapons, which have penetrated into the Body, and there remain, are oftentimes extracted with great Difficulty; which proceeds sometimes from the Kind of Weapon, with which the Wound is inflicted, sometimes from the Place in which it is lodged. All Darts, or other like Weapons, are extracted the Way, by which they enter'd; or by that to which they tended: In the first Case, the Weapon makes a Way for itself, by which it may return; in the other, a Passage is prepared for it by the Knife in cutting the Flesh against the Point of the Weapon. If the Dart, or the like, has not deeply penetrated, but is lodged in the outer Flesh, or, at least has not passed through the larger Veins, and nervous Parts, the best Method is to extract it the Way by which it enter'd; but, if the Passage, by which it must return, be longer than what remains to break through, and it has already made its Way through the Veins and Nerves, it will be most convenient to open a thorough Passage for it, and extract it the opposite Way, as being the nearest, as well as safest. And in one of the larger Members, if the Point be pass'd through, the Wound is the easier to be healed, as giving an Opportunity for the Application of Medicines to both Orifices; but, if the Weapon is to be retracted, the Wound is to be enlarged, that the Extraction may be the easier, and the Inflammation the less, which is always increased from a Laceration of the Parts by the Weapon in its Return. If a Wound be opened on the other Side, it is to be sufficiently large, so as not to be subject to Enlargement, from the Transition of the Weapon; and, in short, care is to be taken in both respects of wounding a Nerve, or Artery, or one of the larger Veins; but, if any such Misfortunes should happen, the Part, as soon as discover'd, is to be taken up with the blunt Hook, and cut off with the Knife. When the Incision is large enough, the Weapon is to be extracted, the same Care being taken, that none of the Parts, whose Security was before recommended, be injur'd by its Extraction.

OF EXTRACTION OF ARROWS.

Thus much has been said of Extraction of missile Weapons in general; but there are, besides, some particular Methods of Extraction properly belonging to the several Weapons. Nothing penetrates so easily, and lodges so deeply in the Body, as an Arrow, not only because it comes with great Violence, but, also, on account of its narrow and slender Make: For these Reasons, it oftener requires to be extracted at the adverse Part, than retracted the Way by which it enter'd; and the rather, because it is generally armed with Barbs, which cause a greater Laceration of the Parts in Retraction, than in Propulsion. For extracting

an Arrow, then, a Passage being opened, the Flesh is to be drawn asunder with a Steel Instrument, of the Figure of the Greek Letter γ ; and if the Point, or Head, appears with the Shaft fastened to it, the Arrow is to be propelled, or thrust forwards, till it may be taken hold of on the other Side, and pulled out. If the Shaft be fallen out, and only the Iron Head remains within the Body, it is to be taken by the Point, with the Fingers, or with the Forceps, and so extracted. Nor is there any other Method of extracting an Arrow, when it is thought most convenient to do it, the Way by which it enter'd; for the Wound must be enlarged; and the Shaft, if there be any, if not, the Iron alone, must be drawn out. If there appear any Spicula, or Barbs, and they are but short and slight, they are to be broken with the Forceps, and the Arrow is to be extracted without them: If they are thick and strong, they are to be sheathed in slit Reeds, to prevent their lacerating the Parts, and so pulled out.

OF EXTRACTING BROAD DARTS.

If a broad Dart be lodged in the Flesh, it cannot conveniently be extracted on the other Side, because that would be to add one large Wound to another: It is to be pulled out, therefore, with an Instrument which the Greeks call *Διουκλῆς γράφισκος*, *The Graphiscus of Diocles*; who was one of the greatest Physicians among the Ancients. This Instrument consists of an iron, or a copper Plate, which at one End is furnished with an Hook on each Side, bent downwards; at the other End it is doubled in on the Sides, with an easy Slope from the Extremity to the folded Part; and a Slope, also, in the Part which is perforated. This Instrument is introduced athwart the Weapon, till it reaches its Bottom, when they turn it a little, that it may receive the Point within its Perforation; which done, the Operator, with two Fingers under the Hooks, at the other End of the Instrument, extracts both that and the Weapon together.

OF EXTRACTING SOME OTHER KINDS OF WEAPONS.

A third Kind of Weapons, which sometimes require to be extracted, are leaden Balls, Stones, and the like, which have their whole Substance buried within the Skin. In all these Cases the Wound must be enlarged, and the offensive Body extracted with the Forceps by the Way it entered.

But there is, besides, an additional Difficulty in all Wounds, if the Weapon sticks or lodges in a Bone, or in a Joint between two Bones. If it be fixed in a Bone, it is to be moved, and gently agitated, till it be loosen'd from the Place in which it lodged, as the manner is in drawing Teeth; and the Weapon seldom or never fails to follow, upon drawing; but, if it stays, some Instrument must be used to dislodge it. The last Method, where other means of Extraction fail, is to make a Perforation near the Place, with an Instrument for that Purpose, and from that Perforation to cut the Bone, towards the Seat of the Weapon, in the Figure of the Letter V; which done, the Weapon must of Necessity be loosened, and may easily be separated.

If the Dart, or other missile Instrument of War, have made its Way through the Joints, and lodged itself between two Bones, the two Limbs, near the Wound, are to be swathed, and then pulled and drawn this Way and that Way, that the Tendons may be distended; by which means more Space will be left between the Bones, and so the Weapon may be extracted without much Difficulty, Care being taken, as before advised, that no Nerve, Vein, or Artery, be wounded by it in the Extraction.

OF EXTRACTING POISONED DARTS, OR OTHER WEAPONS.

Poisoned Weapons are to be extracted by the same Methods, if possible, as the others, only greater Speed is required; and, moreover, the same means are to be used as for drinking of Poison, or the Bites of Serpents. The Method of Cure, after Extraction of the Weapon, is the same here, and in all other Cases, as it would have been, if the Weapon had never lodged in the Wound. *Celsus, Lib. 7. Cap. 5.*

Darts, and other Kinds of missile Weapons, differ in Substance, Figure, Magnitude, Number, Structure, and Effects. With respect to Substance; as to the Shaft, it may be of Wood or Cane; and for the Head, it may be made of Iron, Brass, Tin, Lead, Horn, Glass, Bone, or even of Wood or Cane, as well as the Shaft; so many Differences are to be found, especially among the Egyptians. As to Figure, some are round, others angular, as are those which are triangular; some cuspidated or lancinated, as they are called, such are those with three Points; some are barbed, others not; and of those which are barbed, some have their Barbs inflected backwards, that they may wound and enter the Parts in Extraction; others have them directed forwards, that they may do the same in Impulsion; some, again, have their Barbs oppositely disposed in such a manner, after the Figure of a Thunderbolt, that, whether they are retracted or impelled, they wound alike; others, which move on an Hinge, have their Barbs contracted, but expanded by drawing, and by that means impede the Extraction of the Dart. With respect to Magnitude; some are three Digits in Length, others but one, which the Egyptians call *Missa*; others are of a middle Length. With regard to Number; some are simple, others compound, be-

ing furnished with slender Spikes of Iron, which, in Extraction, remain behind in the Body. With respect to their Make or Structure; some have the End of the Shaft first sharpened, and then inserted into the Head; others have a Tube, into which the Head is inserted; some have the Shaft firmly fastened to the Head; others but slightly, to the end, that in Extraction they may be separated, and the Head remain behind. As to their Effects, some are medicated, or poisoned, others not.

We have given you the Characters by which Darts differ from each other, and are now to shew the Methods of their Extraction from the Bodies of those who are either wounded in War, or otherwise, whether voluntarily or involuntarily, whatever may be the Occasion, or whatever the Substance of the Dart, by which the Wound is inflicted. Darts may be extracted from the Body, either by Attraction or Impulsion; Where the Wound is but shallow, the Extraction is performed by the first Method; as it is, also, in deep Wounds, when it is dangerous to open a Passage on the opposite Side, on account of an Hæmorrhage, or Consent of Parts [*συμπάθειας*]. The Method by Impulsion is to be preferred, when the Weapon has deeply penetrated, and the Remainder of the Passage to the opposite Parts is but short, and not incommoded by Nerve, Bone, or any other thing which may forbid a Section: But when the Weapon is fixed in the Bone, there is no other Method but Attraction to be used.

If, then, the Weapon appears in Sight, we immediately set about extracting it: If it be remote and latent, the Patient, says *Hippocrates*, is, if possible, to be placed in the same Posture in which he was wounded, and the Wound explored: If this cannot be done, he must, at least, lie in a Position the most conformable that may be to that Posture, and the Wound is to be probed. And if the Weapon be fixed in the Flesh, we are to pull it out with the Hands, by the Shaft, or the Part which is principally of Wood, if not fallen out; but if this Part be fallen out, or separated from the Head, the Extraction must be performed with the Forceps contrived for the pulling out of Teeth, or Roots, or Weapons of this Kind; and the Flesh must be cut, if the Wound be not large enough to admit the Instrument. If the Dart, or the like, has penetrated to the opposite Parts, so as to render it impossible to extract it the Way by which it entered, we are to open it a Passage by dividing those Parts, and bring it out through the Section, either extracting it in the Manner above directed, or impelling it, either by the Shaft, or, if that be fallen out, by introducing some impulsive Instrument, taking due Care, that no Nerve, Tendon, Artery, or any other necessary Part, be divided; for it would be a Shame, in extracting the Weapon, to make a worse Disorder than that caused by the Dart. And here, if the End of the Weapon inserted in the Shaft be sharp, which may be known by probing, it is to be propelled, or thrust forward, by the Help of a female Instrument, adapted and introduced for that Purpose: If the End of the Weapon be hollow, or tubulous, the Propulsion is effected by a male Instrument. If the extracted Head appears with Indentments, so as to give Occasion for suppleing Spikes inserted in it, the Wound is again to be searched, and the Spikes extracted: When the Head is barbed both Ways, and, therefore, cannot be propelled or retracted, Incisions are to be made in the adjacent Parts, that the Weapon, being laid bare, may be extracted without Molestation: Some sheath the Barbs in a Reed; and by that means secure the Flesh from Laceration, in the Extraction. If the Wound be free from an Inflammation, after convenient Sutures, we heal it by the common Method of treating green Wounds; if the Part be inflamed, we use Embrocations, Cataplasms, and other Topics proper for an Inflammation. If the Weapon be poisoned, we cut away, if it be possible, all the infected Flesh, which is known to be so by its Difference from what is sound, in appearing pale, livid, and, as it were, mortified. The *Dacians* and *Dalmatians* are reported to anoint the Barbs of their Arrows with *Helenium*, called, also, *Ninus*, which, if it mixes with the Blood of the wounded Person, proves mortal, though, if it be eaten by them, it does them no manner of Harm. If the Weapon be fixed in the Bone, we make a new Search with the Probe; and, if the Flesh be an Impediment, we cut it away, or lay it open: If the Head be deeply lodged in the Bone, which is known by its Firmness, in not being subject to Concussion, though Violence be offered, the Bone is to be cut round about, or, if it be thick, perforated, in order to dislodge the Weapon.

If the Dart, Arrow, or the like, be fixed in some principal Part, as the Brain, Throat, Heart, Lungs, Liver, Stomach, Intestines, Kidneys, Uterus, and mortal Symptoms already appear, and the Extraction cannot be made without much Trouble and Difficulty, we decline the Operation, not only on account of the Impossibility of Success, but lest we should expose ourselves to the Reproach of the Ignorant. If the Event be dubious, the Extraction is to be undertaken, Warning being first given of the Danger: For many have recovered of a Wound in some principal Part, beyond all Hope, a Suppuration arising therein; and even a Lobe of the Liver, a Part of the Omentum, and of the Peritonæum, and even the entire Uterus, have been often known to be removed; and yet the Consequence has not been Death; and

and we frequently use Bronchotomy in a Quinsy. In such Cases, to leave the Weapon in the Part induces inevitable Death, besides an Imputation of Cruelty and Inhumanity upon the Art; whereas the Extraction of it has been the means of saving many Lives.

It is not difficult to know whether some principal Part be wounded; for it may be discovered by peculiar Symptoms, as well as from the Excretions, and the Situation of the Parts. A Wound in the Membranes of the Brain is succeeded by a violent Pain all round the Head, a Fervor of the Eyes, a Redness of the Tongue, and a Disorder of the Reason. If the Wound reaches the Brain, the Patient falls down, loses his Voice, vomits Bile, distorts his Face, bleeds at the Nose, and discharges a white and pulsatious Humour at the Ears, if there be an Evacuation of Sanies from the Part affected. If the Weapon be fixed in the Cavity of the Thorax, so as that a Space be left for it, the Breath passes through the Perforation. If the Heart be wounded, the Weapon appears about the Left Breast, not as if it had penetrated into a Cavity, but, as it were, fixed in another Part, and sometimes seems to have a pulsatory Motion; there is, also, an Excretion of black Blood, if there be a Passage for it, with an universal Coldness, Sweat, Fainting, and Death speedily follows. A Wound of the Lungs is succeeded by a Discharge of spumous Blood, through the Perforation, if there be Room for it, if not, it is discharged mostly by Vomiting, the Vessels about the Neck are elevated, the Tongue changes Colour, there is a great Respiration, and a Desire of cold Water. In a Wound of the Diaphragm, the Weapon at the spurious Ribs appears fixed, there is a great Inspiration, with a Pain, and an universal Angustation of the Parts about the Shoulders. A Wound in the Abdomen is manifest from the Excrements, if there be room for it; or else from the Weapon, when extracted, or the Shaft broken within; there is a Vomiting of Chyle, and a Discharge of the Excrements. When the Bladder is wounded, there is an Effusion of the Urine.

As for Extractions in these Cases, when the Brain, or its Meninges, are wounded, we extract the Weapon through the Perforation of the Cranium. In the Thorax, if the Weapon resists, we make a moderate Incision between the Ribs, or even cut out a Rib, placing a Meningophylax [an Instrument to guard the Membrane]. We take the same Method in Wounds of the Abdomen, Bladder, and other deeply seated Parts; that is, if the Weapon readily follows, we extract it without Hesitation; otherwise we enlarge the Perforation, and treat it as other recent Wounds are treated; only, for the Abdomen, a Suture, also, may be necessary.

If the Weapon be fixed in some large Vessel, as the internal Jugulars, the Carotides, or the large Arteries about the Groin, or Armpits, and a larger Hemorrhage is to be feared from the Extraction, a Bandage is to be applied, above and below the Place, before you make the Extraction.

If, by the Weapon, one Part be fixed to another; as, for Instance, the Arm to the Thorax; or the Cubit to other Parts of the Body; or the Feet to one another; if both Parts are not thoroughly perforated, we take hold of the external Part of the Weapon, and extract it, as in a single Perforation: But, if it has penetrated through both Parts, we cut the Shaft in the Middle, and extract the Pieces.

It often happens, that Stones, ragged Flints, Pieces of Lead, and the like, discharged from Slings, by the Violence of their Motion, and the Angulosity of their Figure, penetrate into the Body: These discover themselves by a rough and unequal Tumor; and in that the Division they make has no direct Course; it is, also, larger, the Flesh appears contused and livid, and the Pain is attended with a kind of Heaviness. In such a Case, the offending Masses are to be dislodged, and extracted by a concave or vulnerary Probe, or some other fit Instrument; or, if the Wound will admit of it, may be taken out with the Forceps contriv'd for drawing Teeth; or that for pulling up Roots [*ὀδονόμορος ἢ ῥιζόμορος*]. There are many Instances in which the Weapon has lain concealed within the Body, a long time after the Wound has been cicatrized, and has at last discharged itself through an Abscess, arising and breaking in the same Place. *P. Egineta, Lib. 6. Cap. 88.*

TEMACHOS, *τεμάχιος*, from *τέμνω*, to cut, is a Piece separated from the Whole by Section. *Lat. Tomaculum*. It is the same as *τεμάς*, *Tomos*; but is chiefly spoken of Pieces or Fragments of Fishes, as is observed by the Scholiast on *Aristophanes's Plutus*, where he says, that *Temachos* is spoken of a Piece or Fragment of a Fish, or a Cake; but not of Flesh. The same Scholiast, on the Comedy of *the Frogs*, expounds *τεμάχιον* by *ῥήματα τῶν ἰχθύων*, *Slices of Fishes*. The Word, as well as its Diminutive, *Temachion*, *τεμάχιον*, is used in the same Sense, that is, for a Piece, Cut, or Slice of a Fish, in several Places of *Hippocrates, de Morbis & de intern. Affect.*

TEMPERAMENTUM. A Temperament, or Constitution. The ancient Division of Constitutions was into hot, cold, moist, dry, bilious, sanguine, phlegmatic, and atrabilarious.

The Characteristics of an hot Constitution were said to be, a large Quantity of yellow-grois Hairs all over the Body; a redish

Colour of the White of the Eye; a very red Colour of the Carunculae Lachrymales, Face, Lips, and Mouth; a slender, agile, robust, and hot Body; a large and frequent Pulse; a Propensity to Anger, which, however, is soon over: Such Persons seem to have robust and contracted Vessels, strong Viscera, and very dense and acrid Humours, in a brisk Motion. Moistening, diluting, and temperating Substances are beneficial; whilst, on the contrary, all heating things are highly pre-judicial to such Persons.

The Signs of a cold Temperament are directly opposite to the former; such as a Smoothness of the Skin; small Hairs; a pale Colour; a gross, slow, weak, cold, and easily swelling Body; a small and slow Pulse; Insensibility; and Fearfulness. The Humours of such Persons are mild, aqueous, pituitous, and languid in their Motion, whilst their Solids are lax and flaccid: Corroborative and heating Substances are beneficial, whilst cold, moist, and relaxing Things, are injurious to such Persons.

A dry Temperament is discover'd, almost, by the same Signs with those of the hot Kind, if there is, at the same time, a Leanness of the Habit. The Vessels of such Persons are contracted, and their Fluids small in Quantity, and almost acrid. Moistening, diluting, and temperate Substances are beneficial, but all heating Things injurious, to such Persons.

A moist Temperament approaches greatly to that of the cold Kind; for, if in the former there is a Swelling of the Body, they are, in other respects, the same.

A bilious Temperament is known from the great Quantity of black and curl'd Hairs; an Hardness, Extenuation, and Leanness of the Body; a dark-brown Colour; large Veins; a quick and large Pulse; Obstinacy, and a Propensity to Anger. In such Persons, the solid seem to exceed the fluid Parts. This Temperament approaches to those of the dry and hot Kinds. Hot and drying Substances are prejudicial, but moistening and refrigerating Things beneficial, to Persons of bilious Temperaments.

A sanguineous Temperament is discover'd by a small Quantity of Hairs, of a dark-brown, or whitish-yellow Colour; a large Quantity of soft Flesh; large blue Veins, distended with Blood; a redish Colour; a Propensity to Anger; and a flexible Mobility of Body. Evacuating and temperating Substances are beneficial, whereas heating and drastic stimulating Things are pernicious to such Persons.

A phlegmatic Temperament is known from the great Smoothness of the Skin; white, slender, and slow-growing Hairs; a Whiteness, Swelling, Softness, and Farness of the Body; narrow, and latent, or deep-seated Veins. Such Persons seem to have narrow Blood-vessels, but somewhat larger lateral Vessels. This approaches to the cold Temperament; for which Reason, moist and cold Things are prejudicial, whereas heating, corroborating, and drying Substances are beneficial, to Persons of phlegmatic Temperaments.

The Signs of a melancholic Temperament are, Smoothness; highly black Hairs; extreme Leanness; great Dryness of the Skin; and the blackish Colour which is observed in all the Parts of such Persons Bodies; Slowness; Constancy; long Retention of Anger; and great Penetration of Understanding: For this Reason, such Persons seem to have constricted, robust, and lean Vessels, and dense tenacious Humours, so thoroughly mix'd, that their Parts cannot be easily separated or changed. Such Persons are greatly injur'd by hot, drying, and acrid Substances; whereas moistening, refrigerating, relaxing, emollient Substances, and such as gently dissolve without any Acrimony, are beneficial to them.

This Doctrine is of great Advantage in investigating the Natures of those Diseases, which may be foreseen to arise from, and be most incident to, each particular Temperament. Upon this Doctrine, also, depends a great Part of the predisposing Causes of Diseases. *Boerhaav. Institut.*

TEMPERANTIA. Temperating Medicines.

Among the various Alteratives, we may justly reckon temperating Medicines, which not only check the hot intestine Motion of the sulphureous Particles in the Blood, but, also, contemperate, subdue, and consequently refrigerate, the excessively hot bilious Humours in the Intestines. Among Vegerables, the most considerable of this Kind are, the Root and Herb of Sorrel, Wood-sorrel, Citrons, China Oranges, Pomegranates, Currants, Strawberries, Barberries, Raspberries, Cherries, and their prepared Juices; Syrups and Waters distill'd from these, when recent; the Four greater cold Seeds, and Decoctions of Barley. Among Animal Substances, the most considerable, of a temperating Kind, are Whey, Butter-milk, Juice of River-crabs, Decoctions of Tortoises, weak Decoctions of the Shavings of Hartshorn and Vipers-grass, with or without Barley; Gellies of Hartshorn, and the Water distill'd from Shavings of Hartshorn. Among mineral Substances, the most efficacious of this Class is well purified Nitre; or, which is still better, Nitre regenerated from Aquafortis, by the Addition of Salt of Tartar. And, among Chymical and Pharmaceutical Preparations, the most considerable are, the essential Salt of Wood-sorrel; Cream of Tartar; Phlegm of Vitriol; sulphurated Clyffus of Antimony; and the Tinctures of Roses, Daisie-flowers, and Violets, prepared with Spirit of Vitriol.

Temperating Medicines act in three Manners; for, by means of their acid Salt, they bridle the volatile sulphureous Particles; and, by fixing their hot, internal, vertical Motion, and coagulating them, they, in some measure, lessen them: Or they operate by a certain expansive aereo-elastic Quality, such as that of which Nitre is possessed, which, being composed of an acid and alkaline Salt, contains not only a large Quantity of sulphureous Particles, but, also, of an aereo-etheral Fluid, by which it dispels the hot Matter in a violent, preternatural and vortical Motion, and produces, as it were, an Explosion of it from the Centre to the Periphery; whilst, at the same time, by the neutral Salt it contains, it resolves, attenuates, and separates the thick Matter, which is the Matrix of the Heat and Sulphur, the quick Motion of whose Parts it stops by its subtil Acid: Or they exert their Operation, by diluting and disjoining the adhering Parts, and restoring the Moisture consumed by the Heat, whilst, at the same time, they relax the too great Elasticity of the Vessels on which the Heat depends; as is principally observed in aqueous Liquors, such as Whey, Decoctions of Hartshorn, and of Barley.

These temperating Medicines are certainly of great Use in Medicine, where a greater natural Heat is to be extinguished; for which Reason, the Physician can by no means be without them in Fevers of all Kinds; as, also, in Inflammations, Spasms, and Pains, which are always attended with an hot and excessive Commotion of the Blood. But nitrous Preparations are justly preferable to Acids, which act by fixing and coagulating the Fluids; for Nitre is not only refrigerating, but, also, relaxes the rigid and spasmodically constricted Parts, whilst, at the same time, it promotes a Discharge of the Urine and Excrements. As other refrigerating and acid Substances rather condense and coagulate the Fluids, so Nitre rather colligates, rarefies, and attenuates, the thick and viscid Humours. Hence Nitre reduced to a Powder, or previously dissolved in Water, when mix'd with black coagulated Blood, renders it more fluid and florid: For this Reason, it is not only far more proper than other Acids, in Inflammations, and inflammatory Fevers, arising from black, coagulated, and incarcerated Blood; but, also, highly beneficial in defending the Body against Inflammations, because it effectually fuses and dissolves the tenacious and thick Matter of the Serum, a large Quantity of which appears in the Blood of Persons subject to Inflammations.

In chronical Fevers, such as those of the slow and hectic Kind, which generally draw their Origin from some Fault or Corruption of the Viscera, and especially when they are attended with a Cough, or a Spitting of Blood, or when the Lungs are any way affected, we are not to exhibit Acids, but nitrous and diluting Substances, especially those furnished from the Animal Kingdom, such as Whey, together with the Waters, Decoctions and Gellies of Hartshorn. Where a febrile Heat accompanies Diarrhoeas, Dysenteries, or a Cholera, we are, also, to abstain from acid and refrigerating Medicines, and rather to use diluting, gelatinous, and mucilaginous Substances, with an Addition of the temperating and absorbent Powders, and a Grain or two of Nitre. *Frederic Hoffman.*

TEMPERIES. The same as TEMPERAMENTUM.

TEMPLUM SOSTRATI. The Name of a Bandage described by *Galen*, in his Treatise of Bandages.

TEMPLUM PARVUM APOLLONII TYRII. The Name of another Sort of Bandage, described by the same Author, in the above-quoted Treatise.

TEMPORA. The Temples. *Tempora Morborum* are the Times of Diseases, that is, their Beginning, Increase, State, and Decline.

TEMPORALIS MUSCULUS. The Temporal Muscle. See CAPUT.

TENACULA. A Chirurgical Instrument, contrived for laying hold of any thing, of which there are many described by Chirurgical Authors.

TENCHA. The Tench. See TINCA.

TENDO. A Tendon. See MUSCULUS.

For Sutures of the Tendons, see SUTURA.

For Wounds of the Tendons, see VULNUS.

For the Method of treating a Tendon prick'd in Bleeding, see PHLEBOTOMIA.

TENESMUS. A Tenesmus is a too frequent, and almost continual, tho' ineffectual, Desire of going to Stool; since either nothing at all, or only a small Quantity, of mucous, viscid, bloody, or purulent Matter is discharged. This Disorder may be produced by a Dysentery; a Diarrhoea; the Hæmorrhoids; that Species of Worms call'd *Ascarides*; the Stone in the Bladder; a Weakness, or Ulceration, of the Sphincter Ani; or an irritating Humour in the Intestinum Rectum. In a Tenesmus, the Inclination returns more frequently than in a Dysentery, and the Pain is principally confined to the Intestinum Rectum. A Tenesmus is generally less dangerous than a Dysentery, except when it is accompanied with an Ulcer of the Intestinum Rectum, a Fistula in Ano, or a falling down of the Rectum. The Regimen, and Method of Cure, proper in a Tenesmus, are the same with those prescribed in a Dysentery. In this Disorder, great Relief is afforded by a Fomentation of warm Milk, in which Elder-flowers

have been boil'd; as, also, by a Clyster of Mutton-broth, or an emollient Clyster, in which Earth-worms have been boil'd. The Medicines, at present most generally used, for the Cure of a Tenesmus, are these following.

Take of the Pulvis Sanctus, and Rhubarb, each one Scruple; of the Oil of Cinnamon, one Drop; of *London Laudanum*, half a Grain; and of the Syrup of Violets, a sufficient Quantity, for making into a Bolus, to be taken in the Morning, and repeated, as the Situation of the Patient requires.

At Night, a Purgative may be exhibited, and Clysters afterwards used; for which Purpose,

Take of Whey, or Mutton-broth, four Ounces; of Canary Wine, two Ounces; of Gum Arabic, half an Ounce; of Gum Tragacanth, one Dram; and of crude Opium, two Grains. Make into a Clyster, to be injected twice or thrice a Day.

Or,

Take of the Decoction of Mallow-leaves, and Canary Wine, each three Ounces; of Suet, impregnated with the Juice of Melilot, an Ounce and an half; of Sperma Ceti, and the Confection of *Fracastorius* without Honey, each one Dram and an half; one Yolk of an Egg; and of *London Laudanum*, four Grains. Make up into a Clyster.

Or,

Take of the Roots of Tormentil, Bistort, and Pomegranate-peel, each one Dram; and of the Leaves of red Roses and Balaustines, each half an Handful. Boil in a sufficient Quantity of Spring-water; and to three Ounces of the Liquor, when strain'd, add three Ounces of red Wine, two Yolks of Eggs, and of *London Laudanum*, five Grains. Make all into a Clyster.

Afterwards, continue the following Medicine for some time.

Take of the Confection of *Fracastorius* without Honey, one Scruple; of Sperma Ceti, fifteen Grains; of the Species Hyacinthæ, *Japan Earth*, red Coral, and *Armenian Bole*, each eight Grains; of the Oil of Nutmegs, one Drop; and Syrup of red Roses, a sufficient Quantity for making a Bolus, to be taken twice a Day, in a small Quantity of the Tincture of red Roses.

In a Tenesmus, the last Refuge is to Opiates.

The Disorder which the *Greeks* call *τενσμός*, and the *Latins* *Tenesmus*, bears a great Affinity to what we commonly call Gripes, which it often precedes and follows. In a Tenesmus, as well as in Gripes, there is a Pain of the Anus, and a frequent Desire of going to Stool; whilst a mucous Substance, full of Phlegm, and somewhat bloody, is discharged. And as the Ulcer of the Intestinum Rectum increases, a purulent Matter is eliminated. In this Disorder, it sometimes happens, that the Excrements resemble undigested Aliments. When pregnant Women are seized with a Tenesmus, it frequently causes a Miscarriage. This Disorder is easily cured, and, of itself, rarely proves mortal, especially when the Patient is free from a Fever, and retains his natural Appetite for Food. A Tenesmus happening in the Autumn is generally contagious, and, for the most part, terminates in Gripes. And as this Case is generally dangerous in Adults, so it proves mortal to Children. An inveterate and long-standing Tenesmus sometimes terminates in the Iliac Passion; or, when it proceeds from Phlegm, in a Pain of the Colon: But, if it proceeds from Bile, it is generally succeeded by Gripes. A neglected Tenesmus often leaves behind it a fordid and purulent Ulcer, which degenerates into a Fistula, not to be cured without the greatest Difficulty. *Lomii Medicinal. Observat.*

TENGA. See *Palma*; *Indica*; *coccigera*; *angulosa*.

TENON, *τένον*, a Tendon. See TENDO.

TENONTAGRA, *τενοντάγρα*, from *τένον*, a Tendon; and *άγρα*, a Seizure. A Species of Arthritis, seated in the larger Tendons; for Instance, in the tendinous Ligaments of the Nucha. The Word occurs in *Celsus Aurelianus*, Lib. 5. Chronic. Cap. 2. near the Beginning.

TENONTOTROTI, *τενοντότροτι*, from *τένον*, a Tendon, and *τροπή*, of *τίστρομα*, to wound. Such as are wounded in the Tendons. *Galeni de C. M. P. G. Lib. 3. Cap. 2.*

TENOR, *τένος*. See TONOS.

TENSIO, *τάσις*, the same as DISTENSIO, or DISTENTIO; which see.

TENSIVUS, *τενώδης*, tensive. An Epithet of a Pain accompanied with a Tension, and proceeding, as *Galen* says, *de Loc. affect. Lib. 3. Cap. 9.* from a Flatus, or Spiritus.

TENSOR

TENSOR *Digitorum*. See **EXTENSOR DIGITORUM COMMUNIS**.

TENTA, in Surgery. A barbarous Word for a Tent.

TENTHRENIODES, *τενθρηνιάδης*, in *Hippoc. περί ἀνὰ*. Is an Epithet apply'd to the Lungs, and signifies, full of small Perforations, or, of a very rare Contexture. The Word comes from *τενθρην*, an Insect furnish'd with a Sting, and like a Wasp, by *Aristotle* call'd *τενθρηνίδης*, and render'd, by *Gaza*, *Teredo*, "a Perforator." Hence *τενθρηνίον*, in the same Author, is an Hive, or Nest, of these Animals, and very properly render'd by *Gaza*, a Person universally esteem'd for his Learning, *Teredinarius*. The Lungs, then, are said to be *Tenthreniodes*, that is, tenedinous, as it were, and full of Pertusions, or of a rare Substance by Nature; or, as *Galen*, *de Usu Part. Lib. 7. Cap. 9.* describes it, a soft, porous, and spirituous Flesh, made for Concoction of the external Air, the proper Aliment for the Spirit.

TENTIGO. See **PRIAPISMUS**.

TENTIO. The same as **TENSIO** before.

TENTIPELLUM, from *tendo*, to stretch, and *Pellis*, the Skin. A cosmetic Medicine for smoothing the Skin from Wrinkles.

TENUANS, the same as *Attenuans*, attenuating. See **ATTENUANTIA**.

TENXIS, *τέγξις*, from *τέγω*, to moisten, dip, or tinge, in some Liquid, is expounded in *Erotian* by *διάβρεξις*, an Humectation, or Moistening. The Word is read, 6 *Epid. Sect. 8. Aph. 15.* and is opposed to *ξηρότης*, *Xerotes*, Driness.

TEPHRICON, *τεφρίκον*, from *τέφρα*, Ashes, is the same as **SPODICUM**; which see.

TEPHRION, *τέφριον*. The Name of a Collyrium, so call'd from *τέφρα*, Ashes, because it was of an Ash-colour. It was otherwise call'd **CYTHION**, *κύθιον*, and is described by *Aetius*, *Lib. 7.* and, after a different Manner, by *Celsus*, *Lib. 6. Cap. 6.*

TEPIDARIUM, a Part of the Bath in which they sat awhile, and sweated gently, during the Time they put off their Cloaths, and made themselves ready for entering the *Caldarium*, *Celsus*, *Lib. 1. Cap. 4.* It was much the same with the **APODYTERION**; which see.

TEPIDUS, *χαλιερός*. See **CHLIAROS**.

TERAGOLINICA, prepared, or made up with the Hand. *Rulandus*.

TEREBELLA. A Name for any Chirurgical Instrument, with which Bones are perforated.

TEREBINTHINA. Turpentine. See **BALSAMUM**, and **TEREBINTHUS**.

TEREBINTHUS.

The Characters are;

The Leaves are pinnated to a common Rib, ending in an odd Leaf. The Flower on the male Plant is apetalous, and consists of apiculated Stamina. The Fruit on the female Plant is an unilocular, or bilocular Shell, full of oblong Seed.

Boerhaave mentions three Sorts of *Terebinthus*; which are, 1. *Terebinthus*; vulgaris. C. B. P. 400. *Tourn. Inst.* 579. *Boerb. Ind. A. 2. 173. Terebinthus*. *Offic. Ger.* 1245: *Emac.* 1433. J. B. 1. 278. *Raii Hist.* 2. 1577. *Terebinthus angustiore folio vulgarior*. *Park. Theat.* 1526. **THE TURPENTINE-TREE**.

This grows to be a pretty large Tree in the Eastern Countries; but in the Western Parts of the World it grows only to be a large Shrub: The Leaves are large, consisting of several oval, round-pointed Pinnæ, set opposite, with an odd one at the End; the Flowers appear early in the Spring, before the Leaves, in large Clusters of purple Stamina only; after which, come longish hard Nuts, whose Kernels are of a viscous and resinous Taste. The true Turpentine is the Resin of this Tree, the best of which comes from the Island of *Chio*, and is of a whitish Colour, clear, and almost transparent; thicker, and more tenacious, than *Venice* Turpentine; of a pleasant Smell: That which comes from *Cyprus* is browner, and fuller of Dross. *Miller's Bot. Off.*

This Turpentine is of the Consistence of Honey, of a very pleasant resinous Smell, and the best of all Turpentine for internal Use. It gives a violet Smell to the Urine, even when given in a Clyster. It is an excellent Diuretic, and very proper in Ulcers of the Kidneys, Bladder, and Uterus. In Gonorrhœas, it is commonly made into a Bolus with prepared Crabs-Eyes, or any other Absorbent. It may, likewise, be taken in the Yolk of an Egg, from half a Dram to a Dram. All these Precautions are necessary only to shun the disagreeable Taste; and Sugar, and powder'd Liquorice, may be used for the same Purpose. It is, likewise, often given in Clysters; being first dissolved in the Yolk of an Egg, and then mix'd with the Decoctions. It is thus administer'd in Stone Colics; but the Intestines ought previously to be unloaded by purgative Clysters. The Dose, in this manner, is from an Ounce to an Ounce and an half. Turpentine, like all other Balsams, is to be avoided in inflammatory Dispositions of all Kinds. *Geoffroy*.

The Compilers of the *Adversaria*, following, I suppose, *Theophrastus*, have made the *Terebinthus* an Evergreen; but we are well assured by *Bellonius*, *Rauwolfius*, *Casalpinius*, and *Clusius*, Persons of Veracity, and Eye-witnesses, that the Leaves are ca-

ducous. The *Terebinthus* delights, as *Matthioli* says, in dry and stony Places, which are exposed to the Sun. *Dioscorides* says, it grows in *Judea*, *Syria*, *Cyprus*, *Africa*, and the Islands of the *Cyclades*; and we are told by *Clusius*, that it grows spontaneously in many Parts of *Spain*, *Portugal*, and *Languedoc* and *Provence* in *France*, where, sometimes, it shoots up to the Bigness and Perfection of a Tree, but can generally be reckon'd no other than a Shrub. He might have mention'd *Italy*, says *Ray*, among the Places where it grows; for I have observed it in that Country myself. *Clusius*, for his Part, never knew that Resin was extracted from the *Terebinthus*, in the before-mention'd Places; but *Lobel* assures us, that the Turpentine-trees in the Wood of *Valena*, near *Montpelier*, will sometimes discharge a good Quantity of Turpentine from small Wounds made in the Tree. *Bellonius* says, that it grows plentifully in *Syria* and *Cilicia*, and that they gather a Gum from it, which is carried to *Damascus*, and sold there; but what is sold at *Cairo*, is brought thither from the Country which the *Turks* call *Asamia*, that is, *Mesopotamia* and *Assyria*. The Tree flowers at *Montpelier* in *April*, and *J. Bauhine* gather'd the Fruit in *September*.

The Leaves, Fruit, and Bark of the *Terebinthus* are, according to *Dioscorides*, of an astringent Quality; and are effectual for the same Purposes as those of the *Lentiscus*, being prepared and taken after the same Manner. The Fruit is esculent, but hurtful to the Stomach, is heating, and provokes Urine. It is, also, well adapted to excite to Venery. Taken in Wine, it is good against the Bite of the *Phalangium*; and the Seed, as *Pliny* says, is taken inwardly for a Pain of the Head.

Bellonius says, that the ancient Custom of eating the Seeds of the *Terebinthus* still remains in *Syria* and *Cilicia*; and that he once met an *Arabian* Peasant, leading a Camel laden with the Seeds of the *Terebinthus*, that he might sell them at *Damascus*.

There are a Kind of Galls, of the Size of Filberds, hollow within, and produced from Excrescences of the Leaves of the male *Terebinthus*. These, about the End of *June*, are gather'd by the Peasants of *Thrace* and *Macedonia*, and sold, at a dear Rate, to the Silk-dyers of *Prusa* in *Bithynia*. They take care to gather them, as soon as they are grown to the Size of Galls; otherwise, if let alone, they would run out to the Length of half a Foot, in the Shape of an Horn. Six thousand Weight of them are, every Year, consumed only by the Dyers aforesaid.

What we call Turpentine, as *Cordus* describes it, is the Resin of the *Terebinthus*, white, yellowish, vitreous, or white inclining to ceruleous, and sometimes pellucid; and, being rub'd, falls abroad into a Multitude of small Grains, and, soon after, becomes viscid and glutinous. It has an acrid, pleasant, tho' somewhat strong Smell, and not unlike the Resin of the *Larix*, especially when handled, or thrown upon the Coals; it is of a bitterish Taste, and becomes slimy under the Teeth, and sticks to them: It distils, at first, liquid, and grows dry by degrees. Impostors call the dry Sort, *Thus*, *Frankincense*, or *Incense*, and sell it for *Thus*; but the true *Thus* they call *Olibanum*, not knowing that this *Greek* Word, and the *Latin* Word *Thus*, are Names for the same Thing.

Turpentine, in the Opinion of *Dioscorides*, exceeds all other Resins; and, next to Turpentine, is *Mastic*, which *Galen* prefers before it.

All Resins, says *Dioscorides*, are mollifying, heating, dissolving, dissipating, and cleansing. In an Eclegma, whether alone, or with Honey, they are proper in Coughs and Consumptions, and promote Expectoration. They, also, provoke Urine, concoct Crudities, and render the Body soluble. They are of Service in agglutinating the Hairs of the Eye-lids; and, with *Verdegriſe*, *Vitriol*, and *Nitre*, cure the *Lepa*; and, with Honey and Oil, are effectual in cleansing the Ears, when overflowing with Sanies; and remove an Itching of the Pudenda. They are Ingredients in Plaisters, Malagmas, and Acopa; and are good for Pains of the Sides, being used alone, by way of Application, or Inunction.

Turpentine, according to *Galen*, has a kind of Bitterness, in Conjunction with a moderate Astringence; on which Account, it is more digestive than *Mastic*; and the same Quality renders it absterſive to such a Degree, as to cure the *Pſora*; and, for the like Reason, it loosens the Belly.

The Moderns ascribe to it the Virtues of cleansing the Thorax, Liver, Spleen, Kidneys, and Bladder, from all Impurities. It is of Service, also, in inveterate Coughs, Difficulty of Breathing, a purulent Spitting of Blood, Vertigo, Stone, and peculiarly for the *Sciatica*, and the Gout in the Feet and Hands; it opens, cleanses, warms, and strengthens the Nerves.

In particular, Turpentine is very useful in the Stone, and other Disorders of the Kidneys. Hence it is usual in Practice for the Cure of the Gravel, after mitigating the Symptoms, by way of Precaution, to use Turpentine, but boil'd, as they call it, to render it less heating, and more astringent. The same is practised in the *Sciatica*, Palsy, and Gout; in which Cases, it is exhibited twice in a Week, either unwash'd, or wash'd in Water of Succory. The Quantity of an *Halle-nut*, taken every Morning fasting, is highly commended, as we are told by *Avicenna*, in the Arthritis, and all other Diseases of the Joints; and no wonder it should help the Gout, since it is good for the Stone; and

and these Diseases are near akin, so as to have the same continent Cause, or Matter, and often to pass, by Metathesis, one into the other.

Turpentine may be exhibited, 1. By itself, which they call *Oblates*. 2. In some aqueous Liquor, with a very small Quantity of the Yolk of an Egg, by which Addition it will represent a milky Liquor. 3. It may be a little inspissated, and reduced into Pills; but the two former Ways are best, because of the Evaporation of the Spirit. *Schroder*.

Observe here, first, that the true Turpentine is unknown in the Shops; and that the official Turpentine is either the Resin of the Larix, or the Resin of Fir, gather'd from the Tubercles of young Fir-trees.

Secondly, that the Smell of the true Turpentine remains in the Urine of those who take it; and is, in some manner, like the Smell of Violets. I have heard, says *C. Hoffman*, a Person affirm, that it was an Anodyne, of immediate Efficacy in Pains of the Pudenda.

In the Spring-time, the tender budding Shoots of the small Branches of the *Terebinthus* being broken off, as it is the Custom about *Montpelier*, and other Parts of *Languedoc*, as well as in other Countries, these distils from them a Milk, like that of the Fig-tree, which, being received and preserved in proper Vessels, becomes a most limpid, tenacious, and resinous Liquor; which, while it is new, or, to use *Pliny's* Expression, in Must, if spilt upon a woollen Garment, makes no Stain, and, when wash'd off, leaves no Mark or Spot behind it; but it grows thick with Time, and cannot be wash'd off, without an Addition of the Yolk of an Egg. *Lob. de Balsamo*.

Turpentine distil'd, or Oil of Turpentine, is next to Oil of Balsam, or a little hotter; and is of Service in all cold Diseases, especially of the Nerves.

The distil'd Oil of Turpentine, taken inwardly, is of singular Efficacy in nephritic Pains. It is of extraordinary Service, also, in Contractions, Tensions, and Relaxations of the Nerves, being apply'd by way of Unction, and rub'd on the Parts affected, for a good while together, with an hot Hand; especially if it be mix'd and shaken together with some highly rectify'd Spirit of Wine.

Some there are, as *Schroder* tells us, who put Turpentine in their Beer, and let them ferment together, for their ordinary Drink, under Afflictions from the Stone, or Obstructions of the Viscera.

Dioscorides teaches a Method of preparing a Wine of Turpentine, from the bacciferous Branches of the *Terebinthus* being bruised and boil'd in Must, which, being grown out of Use, is, therefore, omitted. The Antients, also, had so great a Value for the Asparagi, or young Shoots of the *Terebinthus*, as to reserve them for Use in Winter. *Raii Hist. Plant.*

The Bark and Leaves of the *Terebinthus* are very astringent, and useful in a Diarrhoea, provoke Urine, and stimulate to Vener. From this Tree distils that most laudable Kind of Resin, call'd *Turpentine*, being a resinous, transparent, sofish Substance, thicker than the Resin of the Larix, and brought from *Cyprus*, and *Chios*, or *Scio*. The common Turpentine is gather'd in *Germany* and *Norway*, from the wounded Trunks of young Pines and Firs, and is depurated by frequent Washings with Water.

The Turpentine of *Cyprus*, or *Chios*, is but seldom used, having its Place supply'd by what they call

Terebinthina Veneta, or Venice Turpentine, which is extracted from the Larch-tree. See *LARIX*. This Kind of Turpentine is a liquid Substance, of the Consistence of new Honey, of a yellowish Colour, an acrid and bitterish Taste, and a grateful and fragrant Smell.

Venice Turpentine is of Efficacy in the nephritic Colic, a Cough, Asthma, Ulcers of the Bladder and Kidneys, the Strangury, Gonorrhoea, Fluor Albus, and Wounds internal and external; taken in a larger Quantity than ordinary, it frequently gives a Stool. Externally, it is of Service in Diseases of the Nerves, and for discussing Tumors. It is, also, an Ingredient in Clysters vulnerary, anticolic, and antinephritic, to be injected into the Bladder, Uterus, or Intestines; and enters the Composition of most Plaisters; for it promotes Suppuration; maturates and cures the Scabies, and other cutaneous Defecations. *Hist. Plant. adscript. Boerhaav. Schroder*.

2. *Terebinthus*; peregrina; fructu majore; Pistachius similis, eduli. *C. B. P.* 400.

3. *Terebinthus*; Indica; Theophrasti; Pistachia Dioscoridis. *Turn. Inst.* 380. *Boerb. Ind. a.* 2. 173. *Nux Pistacia*. *Offic. Park. Theat.* 1417. *Pistacia*. *Ger.* 1248. *Emac.* 1436. *J. B. I.* 275. *Raii Hist.* 2. 1682. *Pistacia peregrina fructu racemoso sive Terebinthus Indica Theophrasti*. *C. B. P.* 401. THE PISTACHIO, or FISTIC NUT-TREE.

This is the Fruit of a large Tree, with winged Leaves, like an Ash-tree, but rounder-pointed. It bears Bunches of small white Flowers, to which succeed long-pointed Nuts, cover'd with a brown wrinkled Bark; under which is a white brittle Shell, including, in a redish Skin, a greenish Kernel, of a pleasant sweet Taste. It grows in the Eastern Countries of *Persia* and *Turky*.

The Fruit is accounted nourishing and restorative, and good for weakly consumptive People; it opens Obstructions of the

Liver and Spleen, and is said to be a Provocative to Vener. *Miller's Bot. Off.*

Pistaches are grateful to the Stomach. *Dioscorides* and *Pliny* both affirm, that whether they are eaten, or bruised and taken in Wine, they are effectual against the Bites of venomous Reptiles; in other respects, their Virtues, they say, are the same with those of Pine-kernels.

Galen says, that Pistaches are of fine Parts, with something bitterish and scented; whence they open Obstructions, chiefly of the Liver, but, in some measure, of the Thorax, also, and Lungs; and that they afford but little Nourishment. But the Generality of the Moderns will have them to be highly nutritive, and stimulant to Vener; on account of which, they are recommended by the *Spanish*, *French*, and *Italian* Physicians, to be mix'd in Desserts, with other Things, of a comforting and restorative Nature: And so much is attributed to them, that there is scarce an analeptic Medicine without Pistaches.

The Oil of Pistaches, taken inwardly, is said, by *Matthioli*, to ease internal Pains, proceeding from viscid Phlegm and Flatulencies. The same Author tells us, that it is effectual against Convulsions and the Palsy; and, taken inwardly, improves the generative Faculty. *Raii Hist. Plant.*

Pistaches are heating, moistening, attenuant, and aperitive. They are principally used in mucilaginous Infarctions of the Lungs, and Obstructions of the Liver; they strengthen the Stomach, repress a Nausea and Vomiting, excite an Appetite, and afford good Nutrition. *Dale from Schroder*.

Miller takes Notice of eight Species of the *Terebinthus*.

TEREBOTIN. By this Word, *Paracelsus*, probably, means Turpentine.

TEREBRA. A Chirurgical Instrument for perforating Bones, or for extracting extraneous hard Bodies, as Bullets, out of Wounds.

TEREDO. *Offic. Schrod.* 5. 347. THE WOOD-EATER.

There is a great Dispute among Authors about the *Teredo*, some making it one thing, some another. *Aldrovandus* makes four Kinds of *Teredo*; one Kind is found in Wood, another is called *Vermiculus*, a third *Thris*, and a fourth *Cossus*; to these, *Johnson*, from *Agricola*, adds a fifth, which, from its copper Colour, is call'd *Kupfer-worm*. But we suppose that Worm with six Legs, from which is produced the *Scarabeus minor arborum*, commonly found in Trees, to be the *Teredo* of the Shops.

The Parts of this Insect in Use are the farinaceous Excrements, call'd POWDER OF POST. This Powder is drying, whence it is sprinkled, with good Success, on humid and watry Ulcers; and, for the same Reason, is in much Request among the good Women, for drying up the Excoriations of Infants. *Dale from Schroder*.

TEREDO is, also, a *Caries* of a Bone.

TEREGAM. H. M. The Name of a Fig-tree, which grows in *Malabar*, call'd *Ficus Malabarica foliis rigidis, fructu rotundo, lanuginoso, flavesciente, Cerasi Magnitudine*. *D. Comelin*.

It is a large Tree, thirty Feet high, the Root of which, confused with Vinegar, prepared of the Coco-nut, and taken in a Morning fasting, is said to cool the Viscera. The Fruit is, also, extremely refrigerating.

TERENGIBIL, or TERENIABIN. The *Arabic* Name for Manna.

TERES MUSCULUS. There are two Muscles of the Os Humeri, which are call'd by this Name; the first is the

TERES MAJOR.

This is a long, thick, flat Muscle, situated a little obliquely between the inferior Angle of the Scapula, and the upper Part of the Arm. This Muscle, and the *Teres Minor*, are call'd round, though they are considerably broader than they are thick; because they come much nearer to that Figure, than any other Muscle which moves the Os Humeri on the Scapula.

It is fixed by its posterior fleshy Extremity in all the large angular Surface, on the Outside of the Scapula, in the inferior Costa of that Bone, and near the Angle. From thence it advances, with longitudinal Fibres, toward the upper Quarter of the Os Humeri, terminating in a broad flat Tendon, intermixed with some fleshy Fibres, which, at the upper Edge, are continued all the Way to the Insertion, lying in the same Place with the Tendon.

It is inserted, by its anterior Extremity, at the lower Part of the bony Ridge of the small Tuberosity, along the Edge of the Channel, almost opposite to, and sometimes a little lower than, the Insertion of the *Pectoralis major*. It lines the Cavity of the Channel by a tendinous Elongation, which joins that from the *Pectoralis*, and seems to be continued with it. This Insertion is below that of the *Latissimus Dorsi*, with which it communicates by a small Aponeurosis.

The Tendons of these two Muscles, the *Teres major* and *Latissimus Dorsi*, lie almost in the same Plane, as has been already observed; the upper Edge of the first running up a little Way on one Side the lower Edge of the latter, and the two Edges crossing each other in a small Degree. The Tendon of the *Latissimus Dorsi* lies behind, and covers that of the *Teres Major*.

These two Tendons, near their Insertions, have a ligamentary Frænum belonging to them, which runs down from the Insertion of the *Subscapularis*, and is inserted below that of the *Teres major*. It covers the two Tendons, and keeps them close to the Bone.

The *Teres major*, by being inserted in the Os Humeri, in a Direction parallel to the *Latissimus Dorsi*, becomes a Congener to the superior and posterior Portion of that Muscle; and, accordingly, moves the Os Humeri in the same manner with it. It turns the Bone round its Axis, when the fore Arm is carried behind the Back.

It, also, pulls the Arm directly backward, without moving it round its Axis. But neither this Muscle, nor the *Latissimus Dorsi*, can perform this simple Motion, because of the incurvated Direction of their Tendons, without the Assistance of other Muscles, which, like Antagonists, prevent the Rotation already mention'd; and of this Number is the *Teres minor*.

The Nearness of the Tendon of this Muscle to that of the *Latissimus Dorsi* deserves our Attention. They are both inserted, according to their Breadth, in the same Line, along the Edge of the bony Chanel of the Os Humeri, opposite to the Insertion of the *Pectoralis major*, in the other Edge of the same Chanel. These two Tendons cross each other in the same Plane; that of the *Teres major* running obliquely from above downward; and that of the *Latissimus Dorsi*, obliquely from below upward.

By this Disposition, these two Tendons resemble, in a great measure, the Duplication, or Fold, of the Tendon of the *Pectoralis Major*; and, therefore, the *Teres Major* may become a particular Antagonist to the superior Portion of the *Pectoralis Major*; and the *Latissimus Dorsi* to the inferior Portion; and both these Muscles, taken together, may be a common Antagonist to the *Pectoralis major*, when that whole Muscle acts at the same time.

I before observed, that these two Tendons were bound down by a ligamentary Frænum, which, from the Insertion of the *Subscapularis*, runs down below that of the *Teres major*; and that this Frænum covers the two Tendons, and braces them down close to the Bone. The Use of this Frænum seems to be, to prevent the Separation of the two Tendons from the Edge of the Groove, in violent Rotations of the Arm.

The *Teres major* may, also, move the *Scapula* on the Os Humeri, by drawing the inferior Angle downward, and bringing it nearer the Arm; but, in order to this, the Arm must be kept immovable, by some considerable Force or Resistance; as when, in standing with the whole Arm hanging down, the Hand supports a great Weight. By this Action, the *Teres major* may, also, assist in raising the Shoulder, or in hindering it from sinking.

The second is the

TERES MINOR.

This is a very fleshy Muscle, resembling the *Teres major*, but narrow and shorter. It lies above the last-named Muscle, between the Costa inferior of the Scapula, and the Head of the Os Humeri.

It is fixed by one End to all the middle Part of the inferior Costa of the Scapula, and to the long particular Surface immediately above that Costa, reaching from the great angular Surface near the Neck of the Bone. From thence it runs wholly fleshy, till it changes into a flat Tendon, which is inserted in the posterior or inferior Surface of the great Tuberosity of the Head of the Bone, and, also, a little lower down.

It adheres very closely to the lower Edge of the *Infra-spina-tus*, and the Tendons of these two Muscles are united; for which Reason the Antients confounded them together, and did not look upon this as a particular Muscle. It is covered by the *Deltoideus*.

The *Teres minor* may turn the Arm, when depressed round its Axis, from before outward, as it happens, when the fore Arm, being bent, and applied to the lower Part of the Breast, is removed from thence, without moving the Elbow from the Side: This Rotation is in a contrary Direction to that performed by the *Subscapularis* and *Teres major*.

This Muscle may, also, pull the Arm directly backward, whether raised or depressed; but, in order to this, the *Subscapularis* must act at the same time as a Moderator, to prevent the Rotation. *Winflow's Anatomy.*

TERETRON, τέρετρον. The same as **TEREBRA**, or **TEREBELLA**.

TERFEZ. A Sort of white Truffle found in the Numidian Sands. It is said to be very nourishing, if roasted in the Embers, or boiled in Milk; to be good for the Stomach; to restore decay'd Strength; and to increase the seminal Juices.

TERMINTHI, τέρμινθοι, are expounded in *Galen's Exegetis*, in τῶν τε τέρμινθων καὶ τῶν παραπλησίων καὶ τὰ δέξματα συνιστάμενοι ὡς οὖσιν ὄγκοι, "preternatural Tumors seated in the Skin, and nearly resembling the Fruit of the Turpentine-tree." In these Words *Galen* seems to have an Eye to 2 *Epid.* where it is said κατεῖλε ἐν κνήμῃ τέρμινθος ἐγένετο, "and afterwards Terminthi arose in his Legs." *Hippocrates* uses the Word, also, *Lib.* πρὸς χυμῶν, where he says, καὶ τέρμινθους ἀλίσκουσαι, "nor are seized with Terminthi;"

which Words are repeated 6 *Epid. Sect.* 3. *Aph.* 28. where *Galen*, on the Place, says, καὶ τὸ τὸν τέρμινθον δὲ ὄγκμα μελάνων τινῶν ἐκφυμάτων, &c. "By the Name *Terminthi*, we are to understand a kind of black Tubercles arising chiefly in the Legs, in Colour and Size like the Fruit of the *Terebinthus*. The Comment. in *Lib.* 3. de *Humor.* ascribed to *Galen*, says, *Terminthi* are round Eminences seated in the Skin, of a black Colour inclining to green, and like the Fruit of the Turpentine-tree; which Definition seems to be taken from *Dioscorides Alexandrinus*, as quoted by *Paulus*, *Lib.* 4. *Cap.* 24. when he calls these Tumors *Terebinthi*, τέρεβινθοι. The *Terminthus* is, by some, described as follows; τέρμινθος ἐστὶν ἀπόστημα περὶ τὴν ἐπιφάνειαν γινόμενον, μελὰ φλυκτανώσεως, ἥς ῥα γίγνεται ἰσχυρὸς τις ἀπόρρῃς, καὶ ἡ ὑποκειμένη σὰρξ καὶ ἀλίσχεται ἐκείνης. "A *Terminthus* is an Abscess formed in the Skin with a Pustule, which Pustule breaking, an Ichor is discharged, and the subjacent Flesh appears perforated." This Description is taken from a Scholium annexed to a manuscript Copy of *Hippocrates*, in the King's Library at *Paris*; and comes very near to that of *Oribasius*, *Synops. Lib.* 7. *Cap.* 36. transcribed by *Paulus*, in the Beginning of his Chapter before-quoted: "Oribasius, he there says, makes the *Terminthus* a kind of Tubercle with a black Phlyctæna (Pustule), which breaking, the subjacent Part appears as if abraded." Τέρμινθος is defined by *Pollux*, *Lib.* 4. *Cap.* 25. φῶμα φλύκταιναν ἔχον, "a Tubercle with a Pustule." The Cure of a *Terminthus* is directed by *Aetius* to be managed in the same manner as that of the *EPINYCTIDES*. See *EPINYCTIS*.

There are two Sorts of painful Tubercles, says *Wiseman*, which I have met with in my Practice; they are taken notice of by the Antients, under the Names of *Epinyctis* and *Terminthus*, a Couple of angry Pustules, affecting the Skin in the Arms, Hands, and Thighs. They do not differ much one from another; so may well be joined together.

The *Epinyctis* is of the Bigness of a Lupin, of a dusky red, and sometimes of a livid pale Colour, with a great Inflammation and Pain. It dischargeth, first, a Sanies, then a bloody Matter. The *Terminthus* is somewhat less, of a blackish Colour; it breaks and gleans, and within a Day or two the Pustule separates, and comes away in a Slough, and from that time it digests and heals.

They both proceed from an excessive Heat in the Blood; but are without Malignity and Danger, and cure with little Difficulty, if there be no Error committed in Surgery.

The Cure consists in Evacuation by Bleeding, Purging, and Regulation of Diet, as in a Phlegmon.

The external Applications, commended to us by the Antients, are Leaves of Hemlock, Nightshade, and Plantain, with fine Flour; or apply Raisins cleaned and bruised; they may, also, be washed with Salt-water, to dry up the Matter, and prevent Erosion; afterwards dress them with a Mixture of equal Parts of native Sulphur, and Litharge of Silver with Wine. I never was consulted in these, till they were arrived at their Height; and then found Anodynes of most Use, and afterwards healed them with Ointment of Turty.

A Maid, came recommended to me with an *Epinyctis*, on the Inside of her Arm, of the Bigness of the greater Sort of Lupin, of a livid Colour, with a small acute Pustule rising up in the Middle. It was accompanied with great Inflammation, affecting the Tendons with Hardness in the Joint. I prescribed her a Cataplasm of the Mucilage of Psyllium, Marshmallows, and Linseed; and embrocated the Parts with Oil of Roses and Chamomile. By this the Tubercle was brought near Suppuration, the Pustule first broke, and discharged a thin Sanies. I dressed it with the Yolk of an Egg, and, about two Days after, the Tubercle itself thrust out a bloody Matter. I dressed it with Basilicon, added to the Yolk of an Egg, and applied Cerate of Marshmallows, and continued the Embrocation. The Matter, from that time, was daily better digested, and the Pain diminished; it was healed with Unguentum Diapompholygos, and the Plaster of Bole.

A young Gentleman, having such another on the Outside of his Wrist, was recommended to somebody who opened it by Incision; but from that time it became exceedingly painful. He came to me with it hard and dry, and it had communicated its Anguish all along the Tendons and Nerves, to the Arm-pit, with several Glands. I embrocated the Arm from the Arm-pit, to the Knuckles of that Hand, with Oil of Roses and Vinegar, and applied Plaster of Bole upon those Glands. To the Tubercle I applied Basilicon, with Oil of Roses, spread indifferent thick in the Form of a Plaster, and dressed it so twice a Day. I proposed the next Morning, to have let him Blood; but he was easier; and the same Night I felt the Tubercle softer, and saw a bloody Matter thrust out. From that time it digested better, and the Accidents diminished; in four or five Days, the Glands resolved, and the Ulcer was cured by the Application of Ointment of Turty, &c.

A Gentlewoman, about forty Years of Age, had a *Terminthus* on the Knuckle leading to the fore Finger, which I was called to see. It was a small Tubercle inflamed round its Basis, having a black Head, and a long inflamed Streak passing from it to a Fontanel, which she had on that Arm. Whether it ran upward from the Pustule to the Fontanel, and affected it, or descended from it

it to the Pustule, I know not: However it was, there were Marks of Communication from one to the other, and both were painful, and the Patient was indisposed with a Fever. In the Fontanel there was a small Orange-pea, which I cast out, and put in a common one, and dressed it with Liniments, and a Plaster to retain them on. I dressed the Pustule with Basilicon with the Yolk of Egg, and applied the Cerate of Deer's Suet. It suppurated the next Day, and the Head of it cast off in a Slough. I clipped off the loose Skin from it, and dressed it with Ointment of Tutty, and in five or six Days cicatrized it. During the Cure, the Patient was afflicted with a Diarrhoea, which was purged off: After which she was hot and feverish, and troubled with a Rheumatism; for which she was let Blood, and cured. *Wife-man's Surgery.*

TERNA. The same as **IMPETIGO**, or **MENTAGRA**. *Castellus from Fallopius.*

TERNATEA.

The Characters are,

It hath a papilionaceous (or Pea-bloom) Flower, whose Standard almost hides the Keel, and the Wings; the Pointal afterwards becomes a Pod, which opens two Ways, and is filled with Kidney-shaped Seeds. To these Notes should be added, that the Leaves are winged, and are terminated by an odd Lobe.

Miller mentions four Sorts of *Ternatea*; which are,

1. *Ternatea flore simplici, cœruleo.* *Acad. Reg. Scien.*

2. *Ternatea flore pleno, cœruleo.* *Acad. Reg. Scien.*

3. *Ternatea flore simplici albido.* *Acad. Reg. Scien.*

4. *Ternatea Americana, perennis, flore cœruleo.* *Hoult.*

The Name which Dr. Tournefort has given to this Genus of Plants is, from the Place whence these Plants were first brought, which is one of the *Molucca* Islands, called *Ternate*.

The Flowers of the first and second Sorts are of a very deep-blue Colour; and if put in Water, and macerated, will dye the Water almost as blue as Indigo.

The third Sort differs from the first, only in the Colour of the Flower.

The fourth Sort was discovered by the late Dr. William Houstoun, in *Jamaica*, from whence he sent the Seeds to England. *Miller's Dictionary.*

TERNIABIN. The same as **TERENGIBIL**.

TERRA, γῆ. Earth. See **ANALYSIS**.

ἡ κεραμικὴ, *Ge ceramica*, from κεραμικός, a Potter, in *Hippocrates, Lib. de intern. Affect.* is *Terra figularis*, or *figulina*, Pottery Clay. *Lib. 1. de Morb.* he calls it γῆ κεραμική, and in the Beginning of *Lib. 3.* reckons it among Refrigerants. *Galen*, in his *Exegesis*, expounds it by ἀργίλλη, **ARGILLA**, Clay.

ἡ σμικτή, ἢ σμικτική, *Ge smectis*, sive *smectica*, from σμύχω, to absterge, is expounded in *Galen's Exegesis*, and, also, in *Erotian*, by κίμωλα, *Cimolia (Terra)*. The Words occur, *Lib. 2. περὶ γυναικ.* and *Lib. de Fistulis*, where he advises anointing the Arms with this Earth.

ἡ μέλαινα ἢ Σαπίν, *Ge melana he Samie*, black Earth of *Samos*, is advised by *Hippocrates, Lib. περὶ γυναικ. που.* to be taken inwardly for cleansing of the Uterus.

ἡ χαλκίτις, *Ge Chalcitis*, according to *Galen*, in his *Exegesis*, means no more than simply **CHALCITIS**. He seems to have regard to that Place, *Lib. de Fistulis*, where we read συμμειχίας τῇ [for γῇ] χαλκίτιδι ἰσών, "mixing with it an equal Quantity of *Chalcitis*."

ἡ ἐρετρίς ἢ ἐρετρία, *Ge Eretris seu Eretrias*, *Terra Eretria, Eretris*, *Eretrias*, is directed by *Hippocrates, Lib. 3. de Morb.* to be rubbed on the Breast, in order to discover in what Part of the Thorax the Pus is seated.

ἡ ψιλή, *Ge psile*, *Lib. de Aer. Loc. & Aq.* is a bare Soil, opposed to γῆ δασύια, a Soil overgrown with Trees and Bushes.

ἡ ἐν κοίλῳ καὶ ἀνιγνύρῃ, *Ge en calo et anigere*, an hollow, depressed, and scorched Soil, as opposed to γῆ περὶ ὀρέων καὶ ψυχρῇ, *Ge meteoros et psichre*, an high, or elevated, and cold Soil.

Of the Differences of Earth.

By *Terra*, or *Earth*, is universally understood that Substance alone, which, being worked or kneaded with Liquor, becomes a Clay. For what *Earth* is found among Metals, will not admit of *Liquefaction*; by which Term I mean a Dissolution of the whole Substance into a Liquor; as, by *Madefaction*, an Irrigation only of the Superficies, the Humour not penetrating to the Depth of the Body.

All *Earth* is of a drying Quality, because the Substance of it is naturally hard; and where it is wholly free from any Mixture of igneous Particles, it dries in a very gentle manner, without the least Corrosion. To render it thus qualify'd, Washing is conducive; but some *Earths* need no Washing; others, on the contrary, require two or three Washings. Now, if you are acute and well-skilled in the Sense of Tasting, you may judge yourself, whether an *Earth* requires Washing, or not, from its Degree of Acrimony, or Astringency. But, since it is impossible to find a Substance absolutely simple and unmixed, we are to consider this compounded Matter, with regard to its Qualities, such as various Degrees of Lightness or Ponderosity, and, also, the Differences of Tastes. If, for Example, it appears to be

astringent, the more it participates of Astringency, the more it has of Coldness; if it betrays an acrimonious Quality, its Degree of Heat will be found, in proportion to its Acrimony. An *Earth* is light, when, through all its Contexture, it participates much of an areal Substance; on the contrary, it is found to be ponderous, more or less in proportion to its consisting more or less of mere *Earth*. An *Earth* of an hot Quality has an heating Effect; a cold and astringent *Earth* refrigerates and repels; what is endued with an absterive Virtue, without any manifest Heat, dries in a gentle manner. An *Earth* possessed of a considerable Degree of Glutinousness is not abstergent, but is the better qualify'd by its Glutinosity for an Emplastic, tho' by no means for an Abstergent, without an Addition of Acrimony to correct its Viscidness, as we see in an Egg.

These are necessary Observations, and such as will take place throughout the whole *Materia Medica*; for many imagine, that all burnt Things become colder than they were before; and some, on the other hand, think the Heat in burnt Things to be increased; whereas both are in an Error. All acrimonious Things, indeed, lose much of their Heat by Burning; but all which are not acrimonious, acquire a Heat by Burning. But nothing, after Burning, becomes perfectly cold; for there still remain some igneous and very fine Particles; and these Particles are what are deposited by burnt Substances in Washing; for what remains afterwards is a cold earthy Substance, which has a Virtue of drying without Corrosiveness; but the Water in which the Drug is washed, acquires the heating Quality of those igneous and fine Particles.

The Method of washing all Kinds of *Earth* is first to work it in Water, in which is no manifest medicinal Quality; and, when the Mud is subsided, to pour off the Water; and, after that, to cleanse it from the Gravel and Sand, which sink to the Bottom. *Aetius, Tetrab. 1. Serm. 2. Cap. 1.*

Of the Medicinal Uses of the Earth of Fields.

The *Earth* of all cultivated Fields, which are of a fat Soil, is effectual for the Cure of all Parts which require Drying, for which Purpose they use it in *Alexandria* and *Egypt*; and I have seen, in *Alexandria*, Persons labouring under the Dropsy, and Disorders of the Spleen, making use of the Mud of the *Egyptian* Soil. Many, by applying Cataplasms of this Mud to the Calves of their Legs, to their Thighs, Elbows, Arms, Back, Sides, and Breast, have found Relief. The same cures inveterate Inflammations, and lax Tumors; and I know some, who, from an immoderate Evacuation by the Hemorrhoids, were become aqueous and hydropical in the whole Habit of their Body, manifestly and greatly benefited thereby. Some, by the same means, have been perfectly cured of inveterate Pains, which have been fixed in one Place. Thus far *Galen*: What follows, is from *Strato*.

For an inveterate Pain of the Head: Take the Sordes of Baths, or of hot Water, and mix them with black *Earth* washed; or work the *Earth* in a Decoction of Heads of Roses; or add to the *Earth* a Shard or Fragment of a Vinegar-pot, triturated with a Decoction of Bay; or mix the *Earth* with the Tile of a Clibanus (see **CLIBANUS**); and pour thereto a Decoction of *Sampfuchus*.

For an Eruption of Pustules from the Scabies and Impetigo: Take black *Earth*, and work it with a Decoction of Almonds, or bitter Lupines; or wash out a Vinegar-pot with a Decoction of Rue, and with the same work the *Earth*; or pound the Globules of Salt, which are found in the Bottom of Vessels which hold Garum, and mix them with the *Earth*, and use it as an effectual Remedy; or mix the Dung of Pigeons with the *Earth*, and work them with a Decoction of the *Halicacabus*.

For an inveterate Cough, with a vitiated Habit of Body: Take *Earth*, and work it with a Decoction of Calves Bones, and therewith anoint the Breast; or wash out an Honey-pot with the same Liquor, and with it work the *Earth*: You may, also, work it with a Decoction of Cumin, Nigella, and *Sampfuchus*; and so use it.

For Disorders of the Spleen: Take Ashes of Vine-branches, and the grumous Lees of Wine, and work them with *Earth*; or work the *Earth* with a Decoction of Leaves of the *Capparis*; or mix the Recrements, or Dross, of Silver, with Clay; and so use it: Or work the Clay with a Decoction of the *Serapis Tritesticularis*.

For the Dropsy: Pound the old Shards or Fragments of a Vessel which holds Brine, and mix them with *Earth*; or mix the *Earth* with Garum of Pork or Veal; or boil *Sampfuchus* in Seawater, and work the *Earth* with it; or beat Salt-meats in a Decoction of bitter Lupines, and mix them with the *Earth*; or mix burnt Alum, and the Ashes of Penroyal, with Clay, and work them in Oxymel: Or take dry'd Cow-dung; triturate it, and mix it with the *Earth*, and work them in like manner in Oxymel.

For the Sciatica, and all Coldnesses of the nervous Parts: Boil *Sampfuchus* in a Decoction of Calves Bones; then work in it white *Earth*, and so use it; or boil an Eel in Salt and Nitre, and mix the *Earth* with the Decoction; or mix it with strigmentitious Sordes, (see **STRIGMENTUM**) and Quick-lime; or work the *Earth* in a Decoction of Garlick or Leeks, and then use it; or take Costus, Casia, *Juncus odoratus*, *Aspalathus*, *Xylobalsamum*, and *Sampfuchus*; bruise them, and boil them in Water and Oil, and then mix them with Clay, and so use them; or pound

pound Goats-dung and Cow-dung, with the Sordes of Ceratum Rhafricanum, and mix them with the Earth.

For the Gout: Let the Patient be covered from the Head to the Groin, with the forementioned Compositions; and from the Groin to the very Nails of the Toes, with what follows: Burn the hinder Feet of a Calf, together with the Hoofs; triturate them, and mix them with Earth; or bruise the Stone *Leucographis* in Water in which red-hot Iron has been often quenched; add thereto an Ounce of Alum, and work them with Earth; or work the Earth in a Decoction of the Leaves of *Cyprus*; or boil Galis till they are dry, and work the Earth with the Decoction. Another Prescription, for the same Purpose, is as follows: Take of liquid Alum, one Ounce; scissile Alum, one Ounce; six Ounces of Gum Arabic; nine Ounces of Cerus; five Ounces of Melantheria; six Ounces of Misy; twenty-four Ounces of Oil of Myrtles, or *Oleum Sicinum*; bruise them together; then work them with Earth, and so use them: Or take of Acacia, Copperas, each two Drams; bruise them in Vinegar, then dry them, and mix them with Earth: Or take of Alum, Spuma Argenti, Misy roasted, each four Drams; mix them with liquid Cerate of Myrtle, and work the Whole with Earth: Or take of Cerus, Spuma Argenti, of each twenty-four Drams; Oil of Myrtle, thirty-four Drams; Water, a sufficient Quantity: Work the Whole with Earth, and so use it. Another Prescription by which the Governor *Philinus* was cured, is as follows: Take of Juice of Mulberries, scissile Alum, Eastern Privet, the Vitex, Galls, Saffron, the Fruit of the Tamarisk, Frankincense, of each six Ounces: Reduce them all to a very fine Powder, and, when it is necessary to use it, dilute the same in Water, and work it with Earth. All that is to be said farther of this Kind of Earth is, that it requires not to be washed, but only to be watered and cherished with the Decoction of unripe Peaches. *Aetius, Tetrab. 1. Serm. 2. Cap. 3.*

TERRA	}	See	AMPELITES.	AMPELITES TERRA.
			ARGILLACEA.	ARGILLA.
			CHIA.	CHIA.
			CREPOLA.	SONCHUS; LAEVIS; ANGUSTIFOLIUS.
			ERETRIA.	ERETRIA.
			FABRILIS.	RUBRICA FABRILIS.
			GLANDES.	LATHYRUS; ARVENSIS; REPENS; TUBEROSUS.
				BOLUS CANDIDUS.
			GOLTBERGENSIS.	

TERRA JAPONICA.

Cachou, or *Terra Japonica*, according to Mr. *Caen*, Doctor of Physic, of the Faculty of *Paris*, suitably to what was communicated to him by one of his Friends, is an Earth that is found in the *Levant*, where it is called *Masquiqui*, which is usually met withal upon the highest Mountains, where the Cedars grow, under the Roots of which this Earth is found; which of itself is very hard, and in a Lump. To lose nothing of this Earth, the Natives, call'd *Algonquains*, gather it up, Sand and all together, and wet it with River-water, and make it into a Paste, drying it in the Sun to the Hardness we see it of. The Natives always carry it about them, and use it for the Pain of the Stomach: They, also, apply it outwardly like an Ointment upon the Region of the Stomach.

Tho' this Description of *Cachou* appears not very conformable to Truth, because there is no Probability of its being an Earth; yet, as the Person, who gave this Description to Mr. *Caen*, assured him that it was so, and so far as 'tis called in *Latin*, *Terra Japonica*, I was oblig'd to rank this in the Class of Earths, and leave it to those to determine what it is, who understood more of it than I do: All I shall say is, that you ought to chuse *Cachou* of a tawny Red without, and of a clear Red within, the brightest and least burnt that can be.

Cachou is a very bitter Drug, and of an unpleasant Taste when taken in the Mouth. It is usual to reduce it to a fine Powder, and to mix it with Ambergrise, which, with the Mucilage of Gum Tragacanth, is made up into a Paste, and formed into little Pellets, in Colour and Figure having the Resemblance of Mousse's Dung; and the smaller these Troches are made, the more valuable are they.

The Use of *Cachou*, whole or prepared, is to strengthen the Stomach, and to make the Breath sweet; and, in short, it is one of the best Drugs we have, and yet at this time the least used; which proceeds from the great Use of Tea and Coffee, tho *Cachou* is of much greater Virtues than either of them.

As *Cachou* is very unpleasant to the Palate, especially when first put into the Mouth; therefore some People, besides the Ambergrise, mix Sugar with it. *Pomet.*

Terra Japonica, according to another Account, is the inspissated Juice of the *Areca* or *Faufel* [See ARECA]; and is, also, called *Catechu* in the Shops. This is a gummy, indurated Substance, of a redish Colour, inclining to black; of an astringent and austere Taste at first, but afterwards sweet and grateful, and void of Smell. There are two Sorts of it; one purer, which, slightly tasted, melts, as it were, on the Tongue; the other harder, and less pure, and consequently of but little Use; and this perhaps led *Schroder* into an Error to mistake it for an Earth.

It is astringent; corroborates the Stomach; removes a Nausea; excites an Appetite; represses Vomiting; and stops Fluxes of the Belly, of the Menes, and Hæmorrhages.

The Learned are not agreed about the exotic Drug, called *Terra Japonica*, and *Catechu*, or *Caetchu*: Some, who take it for a true and genuine Species of Earth, as its Name imports, rank it among Minerals; others will have it to be a compound Substance, participating of a vitriolic Nature; and others there are, who, and indeed rightly, reckon it in the Class of vegetable Substances, and take it for an inspissated Juice.

This *Catechu* is easily dissolved in Water, incorporates with it, and communicates to it a red Tincture, as do many other vegetable inspissated Juices and Extracts: Besides, it is not separated by Filtration, as Earths usually are; but passes the Filtre with the Water; and is, moreover, by Calcination, perfectly converted into Ashes, which Earths are not. That it participates not of a vitriolic Nature, will abundantly appear from the following Experiments: The first is, that no vitriolic Salt can be separated from it. Secondly, The Mixture of an Alcali with it excites or produces not the least Effervescence or Precipitation. And, lastly, a Solution of the same, with the Addition of any kind of vitriolic Substance, becomes an Ink.

Garcias, and others after him, will have the *Catechu* to be the *Lycium* of *Dioscorides*; but are contradicted by *Clusius* and *Veslingius*, because the Trees which yield the *Lycium*, and the *Catechu*, are different in the Shape and Size of their Leaves and Fruits. Some assert it to be the inspissated Juice or Extract of the Fruit called *Anacardium Occidentale*, or *occidental Anacardium*, because of the seeming Affinity of the Names, that Fruit being called *Cajou*, and *Catzu*. *Cleyer* affirms it to be the Extract of the oriental Acacia, a Plant much like the Tamarind. *Paulus Ammannus* says, it is an artificial Composition, prepared of an Extract of *Indian Liquorice*, *Indian Calamus Aromaticus*, and the Juice of the *Areca*, which gives it its purple Colour. And, lastly, *J. Otto Helbigius*, a Person very well-skilled in *East Indian* Simples, informs us, that it is extracted from a kind of small, hard, resinous, astringent Fruit, which hangs in a sort of Clusters. This Fruit, he says, with the Leaves of *Be-el*, and *Lime*, are used over all *India*, in Chewing, for cleansing the Mouth; and is no other than what the Inhabitants of *Java* call *Faufel*, and those of *Malaya Pynang*. *Dale* declares himself of this last Opinion. The Fruit of this Tree is, also, of singular Use in curing the Scrophula, correcting the Blood, and altering noxious Humours; it rectifies a disordered Liver and Spleen, restores the digestive Faculty, and changes the whole Habit of the Body for the better.

It is to be observed, first, that the immature Fruit induces a Vertigo, like an Ebriety contracted from Wine. Secondly, that our *London Druggists*, by the Name of *Terra Japonica*, understand the Extract by itself, as it is imported among us; but, by *Catechu*, they mean a Composition of this Extract, Musk, Ambergrise, and other Ingredients.

TERRA	}	See	LEMNIA.	LEMNIA TERRA.
			LIVONICA.	TERRA SIGILLATA LIVONICA.
			MELITÆA.	CRETA.
			MERITA.	CURCUMA.

TERRA NOCERIANA. *Mont. Exot. 14. Terra Bezoartia de Nocera, Species de Terra Lemnia. Boccon. Mus. di Fific. p. 61. EARTH OF NOCERA.*

It is a white Kind of Earth found about *Nocera*, of an alexipharmic Quality, and of great Efficacy in malignant Fevers, and Heat of Urine. *Bocconi.* It is an Astringent, and an Edulcorant, or Sweetener. *Mont.*

TERRA PNIGITES. See PNIGITES.

TERRA PORTUGALLICA. EARTH OF PORTUGAL.

It is a redish Earth, inclining to a Rose-colour, and of a styptic and astringent Quality, so as to adhere to the Tongue; it is made up into little Cakes, with the Figure of a Rose stamp'd upon them. This Earth is highly styptic and astringent, and of Efficacy in Fluxes of the Belly.

TERRA	}	See	RUBRICA.	RUBRICA FABRILIS.
			SAMIA.	SAMIA TERRA.
			SICULA.	BEZOAR MINERALE.
			SELINUSIA.	CRETA SELINUSIA.

TERRA SIGILLATA. There are a great Number of sealed Earths mentioned by Pharmaceutical Writers.

1. *Terra Silefiaca. Offic. Terra Sigillata vulgo, five Terra Strigensis. Terra Sigillata Germanica lutea Strigensis dicta. Schrod. 3. 317. Sigillata Strigoniensis. Charlt. Foss. 5. Terra Silefiaca sigillata qui Chymicis Axungia Solis dicitur. Ejusd. 6. Terra Sigillata Silefiaca, five Terra Sigillata Germanica, Sigillum Strigoniense, Axungia Solis Chymicorum. Worm. 12. Terra Sigillata Silefiaca. Hoffm. Paral. Offic. 664. Terra Sigillata Silefiaca. Imp. Hist. Nat. 128. Terra Sigillata Strigoniensis. Schwenck. Fossil. 395. Bolus Silefianus. Calc. Mus. 110. SEALED EARTH OF STRIGA.*

It is of a luteous, inclining to a bright-yellow Colour, fat, viscous; and runs abroad like Butter in Water, or in the Mouth. It is generated in the Gold Mines of *Mens Acutus*, or *St. George*, near *Strigonium*, a Town in the Duchy of *Swidnitz*, among very hard Rocks.

Rocks. Hence it is digged, and prepared with the greatest Care, by Direction of the Magistrates; and reduced into little orbicular Masses, which are impressed with a Seal, having the Figure of the different Prominences of the Mountain, two cross Keys, a Buckler, and on the Right a Star. Under the Mountain are the Words, *Terra Sigillata Montis Acuti*. Wormius mentions this Earth under the Distinction of red-coloured Earth.

It is effectual in an Hæmoptoe, Phthisis, Ulcers of the Lungs, and Hæmorrhages of all Kinds; and represses a Dysentery, and all other Fluxes of the Belly. *Schwenckfeld*. It is highly commended by *Sennertus*, *Lib. de Peste*.

2. *Terra Sigillata alba & rubra magni Ducis*. Mont. Exot. 13. WHITE AND RED SEALED EARTH OF TUSCANY.

It is said to be an Astringent, and an Edulcorant, or Sweetener. *Monti*.

3. *Terra Vitriolata sigillanda*. M. Hoffm. Flor. Aldorff.

This Earth is taken out of a subterraneous Place, called DAK SEIKLOCK, in the Territory of *Welden*. It is like the *Terra Silesiaca*, and has been found by a Multitude of Experiments to be of the same Virtue in malignant Fevers, as we are assured by *C. Hoffman*.

4. *Terra Turcica*. Offic. *Terra Sigillata Turcica*. Schrod. 317. *Pastilli Turcici Characteristicis insigniti*. Worm. 9. TURKEY EARTH.

The Inside of the Mass is all of an Ash-colour, the Outside red, answering in no respect to the *Terra Lemnia*, tho' it is supposed to have the same Virtues; and is commonly sold for *Terra Lemnia*.

5. *Terra Sigillata Livonica*. Offic. Worm. 12. Charlt. Foss. 6. SEALED EARTH OF LIVONIA.

It is redder than the *Silesian Earth*; and is very astringent, whence it is recommended in Dysenteries, Diarrhoeas, and other Kinds of Fluxes.

In the German Shops, some other sealed Earths are to be met with; of which the *Terra Strigoniensis*, and *Lignitzenfis*, are the principal. The former, termed by the German Writers, *Axungia*, and *Medulla Solis*, is of a yellow Colour, fat like Soap, and melts in Water, or when held in the Mouth. It is dug in the Clefts of hard Rocks, in the Hill of *St. George*, among the Gold Mines near *Strigonium*, in Hungary. The Magistrates take a great deal of Care, that it be duly prepared; and, being formed into little Balls, it is marked with the Seal of the Town, and believed to be impregnated with the Sulphur of Gold. The *Terra Lignitzenfis*, or *Goldabengensis*, called *Axungia*, and *Medulla Lune*, is of a whitish Ash-colour, and imagined to arise from Silver. Both these Earths are said to be useful in malignant Fevers, the Plague, Dysentery, Diarrhoea, and the Bites of venomous Animals. They operate by Sweat; and the Dose is between half a Dram, and two Drams. *Geoffroy*.

TERRA	{	SILESIACA.	} See	TERRA SIGILLATA.
		STRIGONENSIS.		TERRA SIGILLATA.
		TRIPOLITANA.		ALANA TERRA.
		TURCICA.		TERRA SIGILLATA.
		VITRIOLATA.		TERRA SIGILLATA.

TERRIFICATIO. A Coalition of the earthy Particles, in Fermentation.

TERROR. A Fright. This is the Cause of many Distempers, as Faintings, Epilepsies, Convulsions, Palpitations, and sometimes of Death. And it is esteem'd a Remedy for some Disorders, as the Hiccup, and Chin-cough; and *Horace* mentions a Fright as a Remedy for a Lethargy.

TERTHRON, *τέρθρον*. *Hippocrates*, who was an Islander, travel'd much by Sea, and was, in all Probability, well acquainted with Shipping, sometimes makes use of naval Terms, and takes Metaphors from the Terms of Seamen. Of this we have an Instance in the Word which is the Subject of this Article.

Terthron, *τέρθρον*, "properly signifies, as *Galen* says in his *Exegesis*, the extreme Part of the Sail-yard; whence the Ropes which reach to the Extremities of the Sail, are call'd *Terthroi* *τέρθροι*. But *Hippocrates*, in his second Book de Morb. Mu. heb. where he says, *ἐν τέρθρῳ τὸ τέρθρον ἢ τὸ πᾶν*, since here is the *Terthron* of the Disease, means as if he should say, "Here is the utmost Pitch and Extremity of the Disease, and what requires all our Care." In the Place here indicated by *Galen*, all the Copies most corruptly read *τὸ σπέρν* (*stereon*), "the Solidity;" for tho' the Strength and confirmed State of the Disease may be included in the Expression, yet the Elegance of the Expression is eluded. *Erotian*, also, hints at this Place, when he says, that, "the *Terthron* of a Disease is put ἀπὸ τοῦ τέλους," "instead of the End;" and he adds, that the Antients call the End or Extremity of a thing *Terthron*, and confirms it by the Authority of *Euripides* and *Apollodorus*. According to *Hesychius*, *Terthron* is a Name for the Mainfall; but some, he says, so call the End of the Sail-yard [*Virgil* calls the Ends *Antenna Cornua*], and the Roof of an House: And with some it signifies the Extremity and Height; and this last Sense agrees with *Galen's* Explication.

TERTIANA FEBRIS. A Tertian Fever.

No Fever so exactly manifests the Nature and Genius of that general febrile Commotion, which preys upon the Vessels, and

nervous Parts, and is, by way of Eminence, called *ἥν* by *Hippocrates*, and the *Greeks*, as that commonly called a Tertian Fever; which rages so frequently, spares no Sex, Age, nor Constitution, and seizes the Patient, every other Day, with a kind of Rigor and Horror, which are succeeded by a quick Pulse, which is known from its Frequency, as, also, by an uneasy and burning Heat.

A Tertian Fever, when of the regular and legitimate Kind, is accompanied with these Symptoms: The Head is first seized with Pain; the Joints become languid; about the first Vertebrae of the Back, a Pain of the Loins is perceiv'd, which ascends along the Back, to the Epigastrium, and is accompanied with Costiveness, and a painful Sense of Tension in the Hypochondria. To these Symptoms are added a Refrigeration of the external Parts, especially of the Nostri and Ears; a Pandiculation, Oscitation, and Horror, which often produces a Trembling of the Limbs, a small, contracted, weak Pulse, and sometimes an insatiable Thirst. These Symptoms are succeeded by a Nausea, attended with a fruitless Desire of vomiting, or a real Vomiting of bilious, peccant, and sometimes greenish Matter, frequently accompanied with a troublesome Cough, with a Discharge of Phlegm, arising from acid and viscid Crudities of the Stomach; then an uneasy burning and dry Heat seizes the whole Body, and the Face, before collapsed and pale, the Skin contracted and rigid, and the Vessels in the Hands and Feet emptied, rise, and begin to become red and tumid: The Pulse, is also, larger, fuller, and quicker; the Restlessness of the Patient is increased; his Respiration becomes more difficult; and his Eyes being hardly clos'd, he speaks many improper and incoherent Things. Afterwards these Symptoms gradually decrease; the Heat is allayed; the Skin is relaxed and moistened; high-coloured Urine is discharged, resembling the Liquor obtained in the Distillation of Spirit of Nitre, or Aqua-fortis, though without a Sediment. The Pulse, in the mean time, becomes softer; and a Sweat breaking out, the Paroxysm is removed, though at the same time its Duration varies according to the Difference of Constitutions, and morbid Causes; so that in some Patients it is protracted to ten or eleven, and in some to twenty Hours. On the subsequent Day of Intermission, the Body is languid, somewhat cold, and easily seized with an Horror; and the Pulse, though quick and vehement under the Paroxysm, is now slow, weak, and undulating; the Urine is, also, thicker, and deposits a Sediment, or at least contains a Cloud, which discovers a Disposition to a Sediment.

Thus the Course of the febrile Paroxysm, from the very Nature of the Symptoms, may justly be class'd among those spasmodic and convulsive Motions, which affect almost the whole nervous Parts of the Body. Hence it happens, that all those Things, which irritate the nervous Parts to anomalous Motions, such as the Passions of the Mind, strong Cathartics, acrid, caustic, and poisonous Substances, received into the Body with Aliments, or the Air, Substances of a Nature astringent, cold, and unfriendly to the Nerves, and acrid Clysters, with drastic Purgatives for their Ingredients, greatly contribute not only to the Generation, but also to a Relapse, or at least an Exacerbation, of Tertian Fevers.

The Antients imagined the Cause of these febrile Commotions in Tertian Fevers, to be an intemperate Bile, separated from the other Humours, extravasated and lodged in the lower Belly. But the Cause which excites and sustains these Commotions, is rather an excrementitious Matter, of a saline, sulphureous and active Nature, which, in my Opinion, is principally lodged in the Primæ-Viæ, partly in the biliary Ducts of the Liver, and partly in the Duodenum; for in this Cavity the bilious and salivary Humours, especially the pancreatic Juice, being vitiated by their mutual Fermentation with the Crudities arising from bad Digestion, by their Continuance and Stagnation generate a virulent Matter of this Kind, which, being successively convey'd hence, through the lacteal Vessels, to the Blood, and with it in a sufficient Quantity to the nervous Coats of the Head, spinal Marrow, Stomach, Intestines, and other secretory and excretory Ducts, excites such an universal Spasm; during which the Blood is first forced to the interior and larger Vessels, and afterwards, when the systaltic Motion of the Heart and Arteries is increased, the Circulation of the whole Mass of Blood and Humours is accelerated; the Obstructions in the minute Vessels of the nervous Parts are remov'd; and when the Spasm remits, and the excretory Ducts are relaxed, the febrile Matter is eliminated either by Sweat or Perspiration, after which the Paroxysm ceases, till a sufficient Quantity, of the like excrementitious Matter, being again convey'd from the Primæ Viæ to the Blood, and nervous Coats, excites and brings on a fresh Paroxysm.

The Generation of this Matter, and consequently of a Tertian Fever, is very easy, in Persons of delicate and choleric Constitutions, and in those disposed to Spasms or Commotions of Mind; it is, also, more quickly generated in Persons in the Flower of their Age, than in Infants, and Persons far advanced in Years: It is, moreover, speedily generated in hot Summers, when Southerly or Easterly Winds blow, especially, when cold Liquors are largely drank, or the Body long exposed to a nocturnal Cold, or moist Air, or an Atmosphere impregnated with minute Insects, about

about Lakes and Ponds; but much more, when the Stomach is full of Crudities, or when heavy or astringent Aliments are taken, especially with a Nausea.

'Tis, also, certain from Experience, that in the Spring, after copious Venesection, Persons of spongy Habits easily fall into spurious Tertian, or Catarrhus Fevers, especially when, at the very Time Fevers are already raging, they are exposed to a moist and rainy Air, and the Stomach is loaded with Aliments of hard Digestion. I have, also, known a Tertian Fever, sometimes of the continual, and sometimes of the double and anomalous Kind, produced by the Repulsion of the Purples by external Cold, by the Itch preposterously and unseasonably cur'd by means of mercurial and sulphureous Liniments; by an unskilful Drinking of medicinal and mineral Waters, neglecting at the same time a proper Regimen; as, also, by the hot *Caroline* Waters, which are or an astringent Quality, especially in Habits which are plethoric, impure, and full of Crudities.

Tertian Fevers, arising from these Causes, do not always proceed in the same manner, but widely differ: For which Reason Physicians have distinguished them into various Species. Thus a Tertian Fever is either of the legitimate or spurious Kind: the former principally attacks Persons of a bilious Habit, and those of delicate Constitutions, especially in the Heat of the Summer; and is accompanied with violent Symptoms, such as an Horror, Heat, Head-ach, Thirst, Vomiting and Uneasiness, and an intensely high-coloured Urine, but it is soon terminated and removed. *Hippocrates* indeed asserts, that this violent Disorder, lasts for twelve Hours, and is remov'd by the seventh Paroxysm; but these exact periodical Fevers are not found in our Northerly moist and cold Climates. Hence *Hieronymus Mercurialis*, in *Prælect. Bonon.* uses these Words: "The Tertian Fever of *Hippocrates* very rarely occurs; and I have hardly seen it, tho' I have practised Medicine for forty Years." This I can also affirm from my own Experience. But in a spurious Tertian Fever, the Symptoms are indeed milder, the Heat not so burning, the Vomiting not so frequent, the Urine not of so high a Colour, and on the Day of Intermision, a Languor of the Strength, a Weariness of the Joints, and a Want of Appetite, remain with the Patient. This Species of Tertian is most incident to Persons of languid Habits, Women, and those of spongy Constitutions, especially in the Autumn.

A Tertian Fever may be, also, either regular or irregular, or anomalous, or confused. The former preserves an equal Type, both with respect to the Time of its Invasion and Termination, the Length and Shortness of the Paroxysm, and is accompanied with the usual Symptoms; whereas, in the latter, the Time of the Accession is irregular, sometimes in the Fore, and sometimes in the Afternoon, sometimes in the Evening and sometimes in the Middle of the Night; the Paroxysm is sometimes shorter and sometimes longer; the Urine, at the time of Remission or Intermision, deposits no Sediment; the Sweat is either too small, or too profuse, and affects the Patient on the Day of Intermision. It is, also, accompanied with different Symptoms, according to the Diversity of Constitutions; such as Fluxes, Hæmorrhages of the Nose, violent Subversions of the Stomach, intolerable Head-achs, Alienations of Mind, excessive Cardialgias, Pains of the Joints, and Gripes of the Intestines. And these irregular Fevers, which preserve no Type, are generally epidemical, arise from a præter-natural and unusual Constitution of the Summer and Autumn; and are generally of the continual Kind. In the Year 1727, Fevers, of this Kind, were epidemical almost all over *Germany*, after an intense Dryness, and Heat of the Atmosphere for several Months.

Tertian Fevers are also sometimes simple and sometimes double. In the former, the Paroxysms recur every other Day; but in the latter daily, and sometimes twice a Day, with one Day of Intermision. A double Tertian is however to be distinguish'd from a Quotidian, which daily keeps equal Times of Accession; but in the former, the Return of the Paroxysm corresponds to the alternate Days.

There is also a Tertian of the continual Kind, which may be known by these Signs; It attacks the Patient with Horror, Anxiety, Vomiting, Heat and excessive Languor: Nor on the following Day do these Symptoms totally intermit, but only remit; the Frequency of Pulse also remains, and is accompanied with Heat, Languor, and Weakness; but on the Day of the Paroxysm, after a previous but gentle Refrigeration of the external Parts, all the Symptoms are again increased and augmented. Such Fevers when epidemical, sometimes continue for two or three Weeks, before they terminate in a legitimate Intermittent. But it frequently happens, that a Tertian is for some Days of the continual Kind, and afterwards passes into an Intermittent, which is a good Sign; whereas 'tis a bad Sign, when from an Intermittent it changes to a Continual.

Generally simple and regular, as well as double and anomalous Tertians are epidemical, and arise from a præternatural Constitution of the Weather, especially in Summer. Epidemical Tertians are familiar, and, as it were, peculiar to certain Places; those, for Instance, which are situated low, cloudy, surrounded with Lakes, and Ponds, and infested with Gnats or Insects, so that the Inhabitants of such Places rarely escape a Tertian every Year, and

Strangers are oftener afflicted with such a Misfortune, and with Difficulty totally freed from it.

All these Species of Tertians are at first mild, but are increased as the Paroxysms are repeated; a sure Proof, that under the Impetus of the Disorder, by the inordinate Motions of the Solids and the Fluids, the Juices of the Body are more and more contaminated, and rendered intemperate; and these Juices, on the Days of Intermision, when Perspiration and Excretion is diminished, gradually acquire a still worse Quality.

Every Paroxysm, is terminated by a Relaxation of the Compages of the Skin, by Moisture, or Sweat. The Urine on the Day of Intermision is thicker, contains a Cloud, or deposits a Sediment, which is the more copious, the more the Body abounds in Blood and Juices. But if in the Decline, the Sweat does not break forth, if the Urine is, also, thin and aqueous on the Day of Intermision, and the Patient intensely costive, as is very usual with hypochondriac Patients, these Signs are strong Proofs that the nervous System is greatly affected by Spasms, arising from an obstinate and rebellious febrile Matter.

Generally about the third or fourth Paroxysm, small Ulcers arise about the Lips, and the Urine is discharged with a kind of Heat, after which the Symptoms are remarkably mitigated. But this Species of Fever is best, most securely, and totally terminated, when either by Nature alone, or the Assistance of Art, a copious bilious Flux is procured, and Perspiration increased; on the Day of Intermision; which may be known from the Largeness and Vigour of the Pulse, and the Increase of the Strength. But those who labour under epidemical and anomalous Tertians; after the Termination of the Fever, recover Health and Strength in a slow and difficult manner, for which Reason they require an accurate and proper Regimen.

No Fever by its Heat and intense internal Motion under the Paroxysm, so quickly dries a succulent, or emaciates a corpulent Habit, and generates so large a Quantity of bilious Recrements, which are voided by Vomit, Urine and Stool, as a Tertian, accompanied with an intense and long protracted Heat. And this was certainly the Reason, why the Antients derived this Fever from an intemperate and redundant Bile, tho' this Redundance is rather the Effect, than the Cause of the Disorder.

Tertians are longer and more obstinate in Autumn and Winter, than at other Seasons, especially when the Viscera are in a bad Condition, the *Prima Via* spasmodically constricted, and infarcted with Flatulencies, the Patient costive, or voracious; or when he has eaten too much, especially before the Paroxysm, as, also, when, in consequence of the Neglect of a proper Regimen, under, and after the Paroxysm, the Sweat is suppressed, or when the Cure is preposterously instituted, which generally happens in poor Persons, and those who labour for their Bread. This Doctrine is confirm'd by *Hippocrates*, in *Secl. 1. Aph. 9.* But Tertians are shorter, and less dubious when they happen in the Summer, when the *Prima Via* and Viscera are disposed to a sound State, and a proper dietetic and diaphoretic Regimen, are skilfully used, during the Times of Intermision.

Tho' every Intermittent is not of a very dangerous Nature, yet hardly any Fever requires a stricter Regimen, and a more cautious Method of Cure, than those of the Tertian and Quartan Kind; since these, if proper Measures are not taken, bring on violent and incurable Diseases, such as slow and hectic Fevers, sudden Swellings of the Feet, Dropsies, Contractions and violent Pains of the Limbs, flatulent and hypochondriac Disorders, and various spasmodic and convulsive Diseases; and in Children Epilepsies; all which Disorders succeed the preposterous and too liberal Use of Astringents, before a due Correction and Evacuation of the excrementitious Matter. Hence *Alexander Trallianus*, in *Lib. 12. Cap. 6.* justly observes, "that a Tertian is easily cured; but when it is treated by those Physicians who have not Judgment enough to take proper Measures, it is not only cured with Difficulty, but also sometimes rendered incurable."

A Tertian in consequence of some Error, either of the Patient or Physician, may easily change into some other Disorder, a simple Tertian, for Instance, into one of the double; and sometimes of the triple Kind; or into a quotidian, and slow, or even into a continual or choleric Fever.

Tertian and Quartan Fevers return more frequently and easily than other Disorders, especially when they are preposterously suppressed. For when a Patient, lately recovered from such Fevers, is exposed to a moist and cold Air, or a penetrating North-Wind; when his Stomach is over-loaded with too great a Quantity of Food, or full of Aliments of an unsalutary Quality; when his Mind is discomposed by any Passion, especially Anger, or a Fright; or when any acrid Purgative is exhibited, forthwith the febrile Spasms, the Head-ach, the Refrigeration of the external Parts, such as the Ears and Nostrils, the Oscitation, Pandiculation, the Pain about the first Vertebra of the Loins, the Languor of the Limbs, the uneasy Stricture and Tension of the Hypochondria and Intestines, the Horripilation and Refrigeration together with the concomitant Heat return; tho' in the first Paroxysm of the returning Disorder, just as in the Beginning of all Intermittents, all these Symptoms are mild, but increased and augmented in the subsequent Paroxysms.

The Method of preventing Tertians.

Since Tertian Fevers are generally epidemical, and their antecedent productive Cause principally consists in some Fault, or long Intemperance, of the Air, a Suppression of Perspiration, and a Load of Crudities in the Primæ Viæ, 'tis sufficiently obvious, that, when such Fevers rage, an imtemperate, impure, and vapid Air is to be avoided; but, above all, a nocturnal and moist Air: Nor is the Patient to overload his Stomach with too large a Quantity of Aliments, or those of hard Digestion: Neither is he to drink large Quantities of Liquor, especially of the spirituous or acedent kind; nor to indulge himself in the Gratification of his Passions.

Among the Medicines proper for preventing Tertians in an excessively hot Summer, the most considerable are, gently nitrous, absorbent, and diaphoretic Powders; temperate and diluting Decoctions, prepar'd of the Roots of Succory and Vipers-grass, the Shavings of Hartshorn, and clean Barley, and us'd for ordinary Drink; as, also, the cold *Selteran* Waters, or those of *Wildungen*, which at the same time render the Body sufficiently soluble. It is, also, expedient every Morning after Sleep, to promote Perspiration by Infusions of such Herbs as purify the Blood, such as Scordium and Paul's Betony: For a Tertian Fever does not readily seize the Person, whose Body is sufficiently soluble, and whose Perspiration is free: On the contrary, when he is preternaturally costive, and his Body languid, and somewhat cold, 'tis a pretty infallible Sign, that a Tertian is not far off.

Intentions of Cure in a Tertian.

In the Cure of all Disorders, the principal Intention of the Physician is to be directed to the Removal of the proximate Causes. Since, therefore, Tertians principally arise from a thin, acrid, moveable, and bilious Humour, stimulating the whole nervous System, and Coats of the Vessels, to Spasms and Strictures, hence 'tis obvious, that the great Intentions to be pursued in their Cure are,

1. To temperate and correct that subtile and caustic Acrimony.
2. Gently to dissipate and evacuate, especially by Perspiration, the corrected and prepar'd peccant Matter, generated and left in the Body in consequence of an obstructed Perspiration.
3. To mitigate the violence of the Spasms, which especially under the Cold and Horror excite terrible Symptoms.
4. Seasonably to dislodge and evacuate the acid, viscid, and bilious Crudities, which are principally lodg'd in the Duodenum, and afford a *Nidus* for the febrile Matter.
5. After the Paroxysm to restore Strength to the Body, and preserve the Excretions in due Order, left, as is usual, after every violent Shock of any Disorder, and Spasms of the muscular and nervous Parts, a want of due Tone in the Parts, and Languor of the Motions, should succeed, in consequence of which the Circulation of the Blood and Humours, together with the Secretions and Excretions, would become languid, and, by this means, the febrile Matter be afresh generated, cherish'd, and accumulated. And
6. When such a Fever is remov'd, since it easily recurs, carefully to hinder and prevent the Generation of fresh Matter fit for producing a Relapse.

In order, then, to answer the first Intention, which is to correct the bilious Acrimony, which, in consequence of the intense Heat, gradually contaminates all the Juices, nothing is more efficacious than common Nitre duly depurated, since by fixing the volatile Sulphur, by which the intestine Motion is excited, it extinguishes the Heat, and produces a far better Effect than Acids, which indeed allay the Heat, but at the same time inspissate the Humours; whereas Nitre rather preserves them fluid and thin. The sulphureous and bilious Acrimony is, also, excellently obtund'd by drinking Liquors of a diluting and moistening Nature, such as Pilsans prepared of Barley-roots, of Vipers-grass, Shavings of Hartshorn, Juice and Peel of Citron duly boil'd in pure Water; as, also, Water-gruel, sweet Whey, the *Salteran* Waters, or Small-beer well boil'd, and of a diuretic Quality: And these are principally beneficial under the Paroxysm.

The second Intention, which is, after the Paroxysm, gently to eliminate, especially by Perspiration, the thin excrementitious bilious Humours now prepared and corrected, is principally answer'd by gentle Diaphoretics, such as Cerus of Antimony, burnt and Philosophically prepar'd Hartshorn, Infusions prepar'd of Scordium, or Carduus Benedictus, and Citron-peel; as, also, the Essence of Scordium, or Carduus Benedictus, sufficiently saturated, tho' not very spirituous, and mix'd with the anodyne mineral Liquor.

The third Intention of Cure is, to mitigate the Violence of the Spasms, under the Paroxysm. This Purpose is excellently answer'd by the Use of nitrous, refrigerating, gently diaphoretic, and diluting Substances, together with such things as excite a moderate breathing Sweat: But, among all other Medicines, this Intention is best answer'd by the anodyne mineral Liquor, or, which may be used as a Succedaneum for it, by the dulcify'd Spirit of Nitre well prepar'd; since by its mild anodyne Sulphur,

which is friendly to Nature, it checks the exorbitant Commotions, not only of the nervous Fluid, but, also, of the solid, nervous, and muscular Parts, especially when it is mix'd with fix'd Powders, or diaphoretic Essences, and exhibited with Waters of a sedative Virtue, such as those obtain'd from the Flowers of Elder, the Lime-tree, Primroses, Lilies of the Valley, common Chamomile, Roses, the *Egyptian* Thorn, Meadow-sweet, and that obtain'd from black Cherries.

In order to answer the fourth Intention, which is to dislodge and evacuate the acid, viscid, and bilious Sordes lodg'd in the *Primæ Viæ*, the Physician is carefully to endeavour to correct and eliminate the peccant and imtemperate Juices, convey'd thither from the whole Body. Hence, in Cases where there is a Redundance of acid Crudities, the Cure is perform'd by Absorbents alone, whether alkaline or saline earthy Substances. The safest and most efficacious of these are the Eyes and Claws of Crabs, and the Shells of Eggs, which, as they are tender, and easily dissolv'd, are for that Reason justly preferable to Shells, which are hard, cannot be easily dissolv'd, and which with an Acid acquire an astringent Quality.

We have already mention'd, that nothing is superior to Nitre, in Cases where there is a bilious Acrimony; but where the Juices are thick, viscid, and tenacious, no Medicines are more efficacious than neutral Salts, such as vitriolated Tartar, the digestive Salt of *Sylvius*, prepar'd of the Caput Mortuum of Spirit of Sal Ammoniac, made of equal Parts of Salt of Tartar, and Sal Ammoniac, as, also, depurated Sal Ammoniac itself: These Medicines are certainly highly beneficial and efficacious in robust Persons, accusom'd to a coarse heavy, Food and Aliments obtain'd from the Sea, such as the *Swedes*, the *Dutch*, and the *Westphalians*, with whom these Fevers generally last very long. But these Salts must be diluted in a sufficient Quantity of some aqueous Vehicle; for these Medicines, when duly repeated, or exhibited in a large Dose, besides their inciding Quality, also, prove purgative, and effectually eliminate the Sordes. For this Reason, in our Days, the Salts prepar'd of medicinal Waters have acquir'd a just Reputation for their Salubrity, such as the Salts obtain'd from the Waters of *Sedlitz* and *Egra*; and, in Imitation of them, *Epsom* Salts; half an Ounce or more of which, dissolv'd in a Pint of Water, by deterring and evacuating the viscid and excrementitious Sordes of the *Primæ Viæ*, is of excellent Service against Intermittents, and the Disorders arising from the Stomach. The same Effect is produc'd by the bitter *Sedlitz* Waters, which I discover'd; for I have known Tertians cured only by drinking half a Pint of them three or four times on the Days of Intermission. But sometimes the Weakness of the Stomach, and the Frequency of Spasms in it, together with acid, saline Juices, which are usual in Infants, old Persons, hypochondriac Patients, and those labouring under Cardialgias, contra-indicate the Use of Salts: For which Reason in such Cases, it is rather expedient to exhibit an Ounce or two of Manna, with or without Rhubarb, with the Addition of a Dram, or half a Dram, of the *Terra foliata Tartari*, and a few Drops of the Oil of Cedar.

When the *Duodenum* is full of a bilious Humour, or the biliary Ducts infarct'd with tough and contaminated Juices, it is expedient to make an Evacuation, by means of Emetics. For this Purpose we may, to weak Patients, exhibit *Ipecacuanha*-root, but, to more robust Persons, this Root mix'd with a Grain or two of Emetic Tartar, Emetic Tartar by itself, also, or, which is still better, the emetic Julap prepar'd of spirituous Citron-peel-water, Julap of Roses, and dissolv'd Emetic Tartar; but if 'tis necessary, not only to purge the superior, but, also, the inferior Viscera from recrementitious Sordes, in Persons who indulge themselves in Gluttony, both those Ends may be commodiously obtain'd by an Infusion of Manna, prepar'd of an Ounce or an Ounce and an half of Manna, a Dram of the *Terra foliata Tartari*, and one or two Grains of emetic Tartar.

The peccant Humours being thus corrected, and evacuated thro' the several Emunctories of the Body, the Physician is next to pursue the fifth Intention of Cure, which consists in restoring the Strength of all the solid Parts, especially of the Stomach and Intestines, which are weaken'd by the long-continued Spasms and Paroxysms. This is a Circumstance of such Importance in the Cure of Intermittents, that tho' alternative, aperient, bitter, and evacuating Medicines are ever so long us'd; yet the Paroxysms are not remov'd, whereas it remits, and at last ceases, by the due Use of proper Corroboratives; for when the Strength of the nervous vascular and muscular Parts is restor'd, they are not subject to Stagnations of the Humours, which are the Causes of the spasmodic Paroxysms; but the Circulation of the Blood, and all the Juices, rather becomes more free, the Pulse quicker, and the Respiration, together with the Secretions and Excretions, stronger; so that the Paroxysms not only cease, but, also, the fresh Fomes of the febrile Spasms is dispel'd, which otherwise gains Strength, when, on the Day of Intermission, the Patient's Respiration is languid, and his Pulse small.

But, among all the antifebrile Specifics of an astringent Quality hitherto known, such as the astringent Barks and Roots, Per-

Perspiration of Steel or Alum, or even the somewhat hotter Medicines, none is more temperate, safe, or better accommodated to Persons of all Ages, Temperaments, and Sexes, or answers more Intentions of Cure, than the Peruvian Bark, as is evinc'd by numberless Experiments; for when this Medicine is us'd at a proper Season, and in Conjunction with a due Regimen, so as not to suppress, but rather to promote, the natural Excretions, it, on account of its mild earthy astringent Principle, and balsamic Bitterness, surpasses all other Medicines; and, when a few Doses of it are only exhibited, miraculously allays febrile Paroxysms: But 'tis far more efficacious in Powder and Substance, than in Decoctions, Infusions, Essences, or Extracts; and, if all other Circumstances are alike, if it is exhibited in the time of Intermission, the Pulse becomes more brisk, the Heat and Perspiration greater, and the Body, especially in choleric Patients, more soluble; all which are certain Proofs of its happy and successful Operation. I often prescribe an Electuary, by which I have seen a great Number of Patients labouring under Tertian Fevers cur'd, and which is prepar'd in the following manner.

Take of Elder-rob, half an Ounce; of Peruvian Bark, six Drams; of the Powder of common Chamomile-flowers, two Drams; of the Extract of the lesser Centaury, and Powder of Cloves, each half a Dram; and of the Syrup of Citron-juice, an Ounce and an half: Make into an Electuary.

I sometimes, also, in order to facilitate Perspiration, mix with it half a Dram of diaphoretic Antimony, old Theriaca, or Sal Ammoniac; and, after the Paroxysm is over, every two Hours I exhibit half a Dram of this Electuary. But for those who have tender Constitutions, and weak Stomachs, the Bark is to be reduc'd to a liquid Form in the following manner.

Take of Peruvian Bark, an Ounce; of Calcarilla, Cinnamon, and Salt of Tartar, each one Dram; of the Water of Chamomile-flowers, one Pint and of Wine, the like Quantity: Digest in a gentle Heat; and to the Liquor, when strain'd, add half an Ounce of the Syrup of Orange-peel: Mix for an antifebrile Potion, an Ounce or two of which are to be taken every two Hours.

In order to prevent, which is the Design of the sixth Intention, the frequent Relapses of Intermittent, and especially of Tertian Fevers, there is no more effectual Method, than to avoid all such Things, as have a Tendency to generate such Fevers, carefully observing the Cautions before inculcated in the Method of Prevention: And since, when the Body is exhausted by the Fever, the Appetite, on its Departure, is generally very keen, whilst the Stomach and Nature are as yet but weak and languid, it frequently happens, that new Crudities are regenerated in the *Primæ Viæ*, which lay a Foundation either for a slow Fever, or a Relapse into the former, which was before remov'd. Hence 'tis absolutely expedient, that those who are just recover'd from a Fever, should eat light Suppers, and Aliments of easy Digestion, and use proper Measures to support the Strength of their Stomachs, eliminate the Sordes from the *Primæ Viæ*, and deterge the Remains of the Disorder, if there are any. For this Purpose I recommend the moderate, tho' frequent, Use of the *Balsamic Cordial Pills*, nine or eleven of which may be swallowed every other Day, either at Morning or Night; for by their means the whole Body acquires Strength, the Flatulences are easily discuss'd, the Body render'd gently soluble, the Pulse increas'd, and the Perspiration render'd brisker. In this Case, excellent Effects are, also, produc'd by Stomachic corroborative Elixirs, of which thirty or forty Drops are to be taken before Dinner. This Intention is, also, excellently answer'd by the Balsamic Elixir, the Stomachic Elixir of *Michaeli* to be found in the *Thesaurus Pharmaceuticus* subjoin'd to the *Clavis Schraderiana*, or the Stomachic Essence prepar'd in my manner; or the Essence of red Gentian, mix'd with Sal Volatile Oleosum, as, also, my visceral Elixir.

The Methods of Cure in particular Cases.

When a Load of peccant Humours in the Stomach and Duodenum calls for an effectual Depletion, which may be conjectur'd from a previous Course of Gluttony, an Anxiety of the Præcordia, Nausea, Eructations, and Bitterness of the Mouth, we are, immediately after the first or second Paroxysm, to exhibit, on the Day of Intermission, such an Emetic as we have above recommended; or, if the Stomach is strong, and peccant Matter to be evacuated by Vomit and Stool, the following Formula may be prescrib'd.

Take of *Sedlitz* or *Epsom* Salts, half an Ounce; and of emetic Tartar, two or three Grains: Reduce to a Powder, to be dissolv'd in half a Pint of pure tepid Water, to be drank two Hours after the Paroxysm is ended; afterwards

facilitating the Evacuation by large Draughts of thin Water-gruel, with a large Quantity of Butter in it.

But as soon as the Strength is, in some measure recover'd, after the Evacuation, some Doses of the above describ'd antifebrile Electuary are forthwith to be exhibited; by which means it has often happen'd, that the Fever has been remov'd in its very Beginning, and by the Use of a proper and moderate Regimen never return'd.

On the contrary, if any thing hinders the salutary Excretions, and many serous and crude Juices remain within, which require a sufficient Evacuation, the Cure is to be begun by purging with deterfive Salts: For which Purpose,

Take of *Sedlitz* Salts, half an Ounce; of Sal Ammoniac, or the digestive Salt of *Sylvius*, and of Crabs-eyes, each two Drams; and of purified Nitre, one Dram: Make into a Powder, of which half a Dram is to be taken every two Hours, in an Ounce of pure Water, or common Chamomile-water or Pisan, drinking, immediately after, a Cup of Tea.

With this, after I have, for some of the intermittent Days, mildly and gradually purged the whole Intestines, and the Fever yet remains, or is not diminish'd with respect to its Vehemence, I either order equal Quantities of the Peruvian Bark and Salts, or my Electuary alone, to be interpos'd; and by this Method I have soon and happily cur'd epidemical and autumnal Tertians.

But if the Patient is subject to the hypochondriac Disorder, is of a delicate Constitution, is costive, or afflicted with Inflammations of the Stomach, is impatient, and readily dispos'd to Commotions of Mind, we are neither to use Emetics, nor purgative Salts; but the most happy Effects are produc'd by Clysters prepar'd of temperate, carminative, and emollient Substances, as, also, the balsamic Pills exhibited in a small Dose, nine, for Instance, or eleven, at the time of Intermission, giving some Hours, either before or after, a digestive Powder, prepar'd of Crabs-eyes, the *Terra foliata Tartari*, vitriolated Tartar, and depurated Nitre.

In the Accession of the Fever, and under the Paroxysm, especially during the Rigor, nothing is to be attempted by the Physician: The Patient is at that time, also, to abstain from drinking, especially cold Liquors, even tho', under the cold Fit, he should be rack'd with Drought. But as the Heat gradually increases, and arrives at its Height, a sufficient Quantity of Drink is to be allow'd, tho' not in large Draughts, but small Quantities frequently exhibited, taking care, at the same time, that it be not ungrateful to the Palate. For this Purpose, we may use the Decoctions and Infusions already recommended, and especially Pisans, or Water-gruel, with Vipers-grass, adding the Syrup of Lemons, or Raspberries, as, also, the dulcify'd Spirit of Nitre, and Oil of Cedar. In order to extinguish the Heat, nothing is more proper than a tempering Powder, consisting of two Parts of Crabs-eyes, and one Part of Nitre, frequently exhibited with Pisan.

When the Heat remits, and the Paroxysm is terminated, the appearing Moisture or Sweat on the Skin is to be gently promoted, not only by the Heat of the Bed and Stoves, but, also, by internal Medicines: For which Purpose, besides the Things already mentioned, Infusions of the Roots of Vipers-grass, Scordium, and Citron-peel, are excellent. But, after the Fever is totally remov'd, the Body is to be carefully defended against all Refrigeration internal or external, whilst we are rather to keep it in a perpetual Perspiration; which may be obtain'd by proper Exercise, and the frequent Drinking of warm Liquors.

Practical Cautions and Observations.

In order to the skilful Cure of Tertians, whether simple, double, or continued, the Beginning and End of the Paroxysm are, above all things, to be observ'd by the Physician, who may judge of it from the Refrigeration of the Extremities, the Pandiculation, the Oscitation, the Horror, and a Change of the Pulse into one of a more quick and contracted Kind. But he is to judge of the Termination of the Paroxysm from the increas'd Softness of the Pulse, the Remission of the Heat, and the Moisture or Sweat on the Body; for, either before or during the Paroxysm, 'tis not expedient either to let Blood, or exhibit a Vomit, a Purgative, Peruvian Bark, or any other corroborating and astringent Medicine. But, when the Paroxysm is over, the Sweat, when 'tis expedient, is to be commodiously promoted; and in the Time of the total Intermission, it is proper to exhibit Diaphoretics, Evacuants, or Specifics, accommodated to the peculiar Circumstances of the Patient.

As a Tertian in the Beginning, especially in hot Constitutions, often resembles a continual and burning Fever, we are only at that time to use tempering, diluting, gently saline, digestive and nitrous Preparations, abstaining from Emetics, and acrid, hot Sudorifics, till it has assum'd the Type of a Tertian.

If a Tertian is obstinate, as in the Autumn, or passes into a Quotidian, the antifebrile Potion, described by *Crollius*, from him recommended by *Riverius*, and consisting of the distilled Water of Carduus Benedictus, Salt of Wormwood, and Spirit of Vitriol, drank twice or thrice a Day, afford great Relief, especially when the balsamic Pills are interposed. But 'tis to be observed, that the Spirit of Vitriol is not to be immediately mixed with the Salt of Wormwood, but the Mixture is to be made in the Water. I, also, generally substitute Oil of Tarsar per Deliquium in the room of the Salt of Wormwood, observing, in the Mixture, exactly to hit upon the Point of Saturation. And such a Potion is possessed of a similar, or even a superior, aperient Virtue, to the medicinal and mineral Waters above-mentioned.

The same Potion is highly beneficial in a too bilious Tertian, or one produced, in choleric Patients, by Anger. We are, in such Cases, carefully to abstain from bitter, sudorific, alexipharmic, acrid, aromatic Medicines, and much more from volatile Salts; but we are rather to use highly temperate, saline, nitrous, and precipitating Medicines.

Peruvian Bark is certainly an excellent Antifebrile, and I have found it both safe and efficacious in epidemical Fevers. But it is always more safe in Patients of delicate hot and brisk Constitutions; as, also, when the Urine deposits a Sediment, and the Perspiration is freely carried on, than in languid, melancholic, and phlegmatic Patients, Women who labour under a Suppression of the Menstrues, and those in whom the Excretions are defective, or the Urine crude. Hence, after the Exhibition of the Bark, Motion of the Body is carefully to be enjoined; and not cold, but hot, Liquors prescribed for Drink.

'Tis sometimes necessary, by means of the Peruvian Bark, and other Specifics, to check the Paroxysms, before the morbid Matter is corrected, and sufficiently evacuated, that the Physician may afterwards more successfully correct and eliminate the Fomes of the Fever by proper Remedies.

When the Heat, and other Symptoms are so violent as to exhaust the Strength, I have found from many Instances, that happy Effects are produced by Peruvian Bark mixed with Nitre, and exhibited in the Form of an Electuary; by the Use of which, I have seen the Symptoms immediately mitigated, and the Patient's Strength increased: Only 'tis to be observed, that, even after this, the febrile Matter is to be corrected and evacuated by proper Medicines.

As acrid Purgatives increase the Spasms, they are never to be exhibited in a Tertian, much less when by the Peruvian Bark, or other Medicines, the Paroxysms are removed, because they easily produce a Relapse. But if the Patient is costive, his Body is to be rendered soluble by Clysters, or the balsamic Pills, interposing the Use of the Salts.

Emetics, when indicated, are, in the very Beginning, to be used without Delay; nor are we to wait, till the Matter is concocted; but rather eliminate it by the nearest Way, before it diffuses its hurtful Influences farther. But, if the Patient has already laboured under a Tertian for some time, the preternatural Heat disposes the Stomach to an Inflammation, which is afterwards easily brought on by an Emetic. However, when the Paroxysm returns frequently, tho' mildly, and when the Fever, thro' a Neglect of a proper Regimen, or a bad Method of Cure, continues for some Months, a Vomit is often exhibited with Success: Only 'tis to be observed, that at this time a smaller Dose is to be exhibited, than at the Beginning; and that, by means of such an Emetic, so large a Quantity of bilious Humours is evacuated from the Duodenum, that tho' the Fever does not totally cease, yet 'tis afterwards easily cured by antifebrile Specifics, especially the Peruvian Bark, with the Addition of a due and proper Regimen.

In Tertian Fevers, Venesection is not to be used without the greatest Caution. In the Beginning of the Fever, when it resembles one of the continual Kind, when the Heat is intense, and accompanied with a Delirium, when the Disorder happens in the Summer, when the Patient is in the Flower of his Age, of a bilious Constitution, easily provok'd to Anger, and addicted to luxurious and high Living, opening a Vein is of great Service; only the *Prima Via* are to be previously cleansed, and the Time of Intermission chosen for that Purpose. A few Hours before or after the Venesection, the Patient may drink a few Cups of an Infusion of common Chamomile-flowers, which is of singular Efficacy against Fevers; partly because the Blood, being by it attenuated, circulates more freely; and, partly, because the spasmodic Motions, which constitute the very Nature of these Fevers, are, by its means, in some measure allay'd: On the contrary, when the *Prima Via* are full of Crudities and Sordes, the Patient not plethoric, and other Symptoms not present, Venesection is injurious, because the salutary Excretions, especially Perspiration, are, by its means, suppressed; and the Fever, as we find from Experience, increased and protracted.

In Intermittent Fevers, we are absolutely to abstain from Opiates and Anodynes, among which are, the *Pilula de Cynoglossa*; for tho' they mitigate, and sometimes suspend, the Paroxysm, they yet impair the Strength, and disturb the whole Progress and salutary Crisis of the Fever; so that the Cause of the Disorder becomes stronger, and the Paroxysms far more violent. But the

Pilula Wildeganfii, or the *Theriacal Caelestis*, are far more proper and expedient in this Disorder.

Preparations of Alum and Vitriol, also, stop the Paroxysms of Fevers. But, if these vulgar Medicines are exhibited, 'tis necessary, after they are used, to promote Sweat by Exercise, or by warm Decoctions and Infusions, that their noxious Qualities may be, in some measure, prevented; for, after the preposterous Use of these and other more powerful Astringents, I have observed many Misfortunes, especially a total Suppression of salutary Discharges of Blood, in those accustomed to them.

Cascarilla-Bark is, also, an excellent Medicine in Intermittent Fevers, on account of its balsamic, sulphureous, anodyne, earthy, and astringent Principle. But, because it generally throws the Blood into preternatural Commotions, and excites a violent Heat, it is not much used in bilious Patients, and those subject to impetuous Motions of their Fluids; and, if it is prescribed for such, a very small Dose of it must only be used. But for languid and phlegmatic Patients, as, also, for Women, it is more prescribed; upon which Occasions, it is most commodiously mixed with Peruvian Bark.

Tho' Absorbents are of singular Efficacy in the Cure of Fevers, yet they ought to be used moderately, and chosen judiciously; for when large Quantities of them are exhibited, they are not subdued by the Solvent or Menstruum of the Stomach; but, remaining entire, overload it, or which is worse, by uniting into a kind of Paste, create Anxieties, and a Nausea. The coarse Absorbents, principally obtained from Sea-substances, are not only with Difficulty dissolved, but, also, afterwards, acquire an astringent Quality.

It frequently happens, that in the Paroxysm, especially its Beginning, in consequence of a Congestion of Blood to the Head, particularly in plethoric Patients, there arises a violent Head-ach, accompanied with a Perturbation of the Senses and Imagination. But this Head-ach is not to be promiscuously removed by Topics; for, I have observed, that the common Family Epithems, prepared with Wormwood, Rue, Cumin, Juniper-berries, common Salt and bruised Bread, do more Harm than Good, in consequence of the Vapour with which they fill the Head. Much less are we to use cephalic and nervous Substances, such as, my *Balsam of Life*; which are, on other Occasions, highly beneficial in Head-achs.

In the Paroxysm, hot Liquors, such as Tea and Coffee, are highly improper, because they too much exagitate the acrid and bilious Humours of the Blood, and surprisingly increase both the Heat and Anxieties; for *Hippocrates*, in *Lib. 3. de Morb.* informs us, "that hot Liquors are not expedient in Tertians, but rather such as are cold." But out of the Paroxysm, these warm Potions are of singular Service, especially when the Body is sufficiently soluble.

When a Tertian Fever is removed by means of Specifics, the proper Methods of preserving Health, are not to be neglected; but Refrigeration of the Body is to be carefully avoided, Moderation in Eating and Drinking observed, and the Use not only of the balsamic Pills, but, also, of the Stomachic Elixirs, for some time persisted in.

But if, in consequence of drinking large Draughts of cold Liquor, or the preposterous Use of Astringents in Tertians, cedematous Tumors succeed, we are, by no means to use acrid Purgatives, Chalybeates, or volatile Salts, but the Cure is rather to be attempted by absterfent Salts, balsamic Pills, and temperate Decoctions of the Woods. When the Patient labours under an *Anasarca*, great Relief is, also, afforded by an Emetic, mixed with a due Quantity of the Extractum Parchymagogum Crollii, since by this means a large Quantity of Water is evacuated.

I have often observed, that plethoric old Persons, and those accustomed to Venesection, by Refrigeration, have fallen into a violent Colic, succeeded by a continual epidemic Tertian, and in these, Venesection proves highly beneficial; but the Peruvian Bark, too soon exhibited, generally proves so prejudicial, as to induce a Quotidian, resembling an Hætic.

To Children of eight or ten Years of Age, labouring under Tertians, I have with Success exhibited an emetic Potion, and afterwards, ordered Clysters of antifebrile Ingredients, such as the lesser Centaury, and Peruvian Bark to be injected, by which means the Fever ceases totally, and never returns.

Women become Cachectic from a Suppression of the Menstrues, when seized with a tertian Fever, are to be treated very cautiously, rejecting all drastic Medicines, Evacuants, Corroboratives, and even Emmenagogues; which, however, if temperate, may be successfully used, when the Fever is wearing off. But great Relief is afforded by Clysters of gently laxative, bitter, and carminative Ingredients; as, also, by gently laxative Infusions, which contain bitter Ingredients, Peruvian Bark, and Filings of Steel.

Childbed Women, labouring under intermittent Fevers suffer very much, and are afflicted with hysteric Symptoms, unless their *Lochia* are duly attended to, especially when this Evacuation, together with the Fever, is too soon suppressed, by Absorbents obtained from Sea-substances, or precipitating Substances of a gross Texture, such as Shells and Coral, with or without an Acid. In this Case, great Relief is afforded by the *Pilula Balsamica*.

jamica tonica, which are highly beneficial in Diseases arising from any Fault of the Uterus. *Frederic Hoffman.*

TERTIANARIA. A Name for the *Scutellaria*. See **CASSIDA**.

TERTIAS.

The Latin Phrase *ad tertias*, though frequently used in Medicine, is capable of a double Interpretation, for it may either signify two Thirds, or one Third; that is, when applied to Decoctions: For Example, it may either signify, that the Boiling should be continued till only one Third of the original Liquor remains behind; or till only one Third of the Whole is wasted, and two Thirds are left: But the latter seems to be the more common and approved Acceptation; and so, likewise, *ad tertias implere*, or *ad duas tertias*, is not to fill one Third, but two Thirds of a Vessel. *Edinburgh Dispensatory.*

TERTIUM SAL. A neutral Salt.

TESSELLÆ. The same as **ROTULÆ**, or **TABELLÆ**, Lozenges, or Troches.

TESSERÆ OS. The *Os Cuboides*.

TESTA. The Shell of a Fish, or Snail; or an earthen Vessel.

TESTES. The Testicles.

TESTICULI. The Testicles. See **GENERATIO**.

THE METHOD OF TREATING A CANCER, OR SPHACELUS, IN THE TESTICLES.

If a Scirrhus of the Testicle should degenerate into a Cancer, or an Inflammation into a Sphacelus, or if from any other Cause the whole Testicle should be affected with Putrefaction, one, and that a miserable Remedy only remains, by extirpating the Testicle, in order to prevent the Disorder from extending itself to the Groin, and the interior Part of the Abdomen, and at last, killing the Patient. The Method of performing this Operation is explained under the Article **CASTRATIO**.

But when the Testicle is only in part corrupted by an Abscess, there is no Necessity of extirpating it entirely, but only of opening the Abscess, and afterwards cleansing and healing the Ulcer. *Garengeot* observes, that it is extremely necessary in every Castration, that an Incision should be made at the Ring of the Abdomen, and that the spermatic Vessels should be divided from the Parts to which they adhere, and a Ligature be made about them, at the Ring, or even above it, before the Testicle be touched; which Method, he says, will not only be milder to the Patient, but even promote the Cure: But for what Reason, he does not say. On the contrary, it is rather to be feared, that such an Incision would weaken this Part of the Abdomen, and make it liable to be affected with a Rupture; not to mention the Pain, which the Patient must undergo, in suffering this Incision, which appears, at least to me, unnecessary; besides the Danger of an Inflammation being produced by the Ligature, which might proceed to the internal Parts. But if the Corruption lies in the spermatic Vessels to the Ring, or above it, Castration ought rather not to be attempted.

OF AN INFLAMMATION OF THE TESTICLES.

Sometimes one, or both the Testicles are attacked with an Inflammation, which is attended with excruciating Pains, especially if the Disorder comes to any considerable Height.

This Disorder may proceed from two Causes: 1. From external Violence, as a Fall, Bruise, or Contusion, which may readily happen from mounting an Horse hastily, or carelessly. 2. From a Venereal Cause, by the too early or imprudent Checking of a Gonorrhœa.

An Inflammation of the Testicles may be distinguished from any other Disorder, particularly a Rupture of the Scrotum, when the Patient, after any of the above-mentioned Causes, complains of a Swelling, Heat, Redness, and Pain in the Testicles, and when the Tumor and Inflammation are apparent on Inspection. Besides, upon feeling the affected Testicle, it will be found preternaturally enlarged, and sometimes equal to the Size of a Fist.

This Disorder is far from being trivial; for frequently an Abscess or Sphacelus is induced, and the Patient is either deprived of his Virility, or his life; or it degenerates into a Scirrhus, or a Cancer, the consequence of which, also, is generally Death; or lastly, it is succeeded by a Sarcocœle, or Hydrocœle, not without extreme Uneasiness to the Patient.

The same Medicines are required for resolving an Inflammation of the Testicles, which are used for the same Intention in Inflammations of the Breasts (see **MAMMA**); particularly Vinegar of Litharge, and Lime-water, mixed with camphorated Spirit of Wine, Cerus, Turty, and Lapis Calaminaris: But in the Night-time, when Fomentations are inconvenient, apply the Plaster of Frogs, with a double Quantity of Mercury, or the Diachylon-plaster. Nor are internal digerent Medicines to be neglected: If the Tumor proceeds from external Violence, or an Inspissation of the Blood, the Powders of prepared Crabs-eyes, Oyster-shells, Mother of Pearl, Cinnabar, and *Arcanum Duplicatum*, are to be frequently exhibited; Sorbitions, also, of Tea, and Decoctions of digestive Roots, Woods, and Herbs; every thing which heats the Blood, and all Foods difficult of Digestion, or taken plentifully, are to be carefully avoided. When

the Heat is very violent, it may not be improper to mix a little Nitre with the above-mentioned Powders, and some Drops of the Spirit of Vitriol, or of Sulphur, with the Patient's Drink; and if he be plethoric, Blood may be taken from the Arm.

If the Disorder arises from a Venereal Infection, Purgatives, mixed with *Mercurius Dulcis*, seem necessary, and all those Remedies which are proper against the Venereal Disease. Nor are warm Drinks of Tea, or Pisans made of Barley, Liquorice, and Anise boiled in Water; to be omitted, which not only serve to temper and attenuate the Blood, but, also, to dissipate the Inflammation.

If the Surgeon be called too late, or if the Inflammation be too violent to yield to the above discutient Remedies, a Suppuration, or Gangrene is generally the Consequence. Therefore, the Application of the same suppurative Medicines, which are directed under the Article **MAMMA**, become necessary. When the Pus is ripened, and the Abscess does not quickly burst spontaneously, it must be carefully opened with the Knife, and the Matter being discharged, let the Wound be derged with some digestive Ointment, and some spirituous Injections which resist Putrefaction; then heal the Wound with some vulnerary Balsam. But in digesting the Matter, and diminishing the Pains, the Plaster of Henbane, and, also, of Diachylon, with the Gums, are very efficacious; and, in the mean time, particular Care must be taken to remove the Venereal Taint. Altho', in these Cases, the *Scrotum* is often so consumed, that the Testicle is exposed to View, yet, if digestive and balsamic Medicines be properly apply'd, the lost Substance of the Scrotum may be restored, as I have often observed. *Heister's Surgery.*

See the Method of removing Tubercles of the Testicles, and that of Castration, under the Article **HERNIA**.

TESTICULUS MORIONUS. A Name for the *Orchis*; *morio*; *mas*; *foliis maculatis*; and for the *Orchis*; *morio-femina*.

TESTUACEUS, or **TESTUACEUS PANIS.** Bread bak'd on a Tile, or in an earthen Vessel.

TESTUDO TERRESTRIS. Offic. Schrod. 5. 333. Ind. Med. 116. Bellon. de Aquat. 52. Aldrov. de Quad. Ovip. 705. Gefn. de Quad. Ovip. 107. Charlt. Exer. 30. Jonf. de Quad. 144. *Testudo terrestris vulgaris.* Raii Synop. 3. 243. **THE LAND TORTOISE.**

The recent and crude Blood is prescribed in an hectic Fever; and the same, dry'd, is recommended for the Epilepsy.

TESTUDO MARINA. Offic. Schrod. 5. 333. Bellon. de Aquat. 50. Schonef. Ichth. 74. Gefn. de Quad. Ovip. 113. Aldr. de Quad. Ovip. 712. Charlt. Exer. 30. Jonf. de Quad. 147. *Testudo marina vulgaris.* Raii Synop. A. 254. **THE SEA TORTOISE, or TURTLE.**

The Parts in Use are the *Legs*, the *Penis*, and the *Gall*. The Legs are worn as a most approved Amulet against the Gout; and the Gall is good for the Eyes. *Schröder. Ligon. de Insula Barb.* commends the Penis in nephritic Disorders.

TESTUDO PALUSTRIS. Offic. *Testudo nigra palustris.* Ind. Med. 116. *Testudo lutaria palustris.* Schw. Rept. 164. *Testudo aquarum dulcium & lutaria.* Raii Synop. A. 254. Jonf. Quad. 146. *Testudo aquatica.* Charlt. Exer. 30. *Testudo lutaria.* Rondel. de Aquat. 2. 229. *Testudo Aqua dulcis, & lutaria.* Aldrov. de Quad. Ovip. 710. *Testudo quæ in Aqua dulci vivit.* Gefn. de Quad. Ovip. 110. **THE WATER TORTOISE.**

The Blood and Gall agree in Virtues with the other Tortoises: The Tortoise is so named from *Testa*, a Shell; this Animal being covered with an hollow Shell of a peculiar Kind, and remarkable for the Largeness of its Size, Solidity, and Beauty, which is shaped like a Shield, and diversified with Variety of Colours. Its Head and Tail resemble those of a Serpent, and its Feet are like the Feet of a Lizard.

Tortoises are of four Sorts. 1. Land Tortoises. 2. Sea Tortoises. 3. Fresh-water Tortoises. 4. Mud Tortoises, which live in muddy Places. They are mostly amphibious; but some Authors except the Land Tortoises.

The Land Tortoise is found in Mountains, Forests, Woods, Fields, and Gardens. It lives upon Fruits and Herbs, Worms, Snails, and other Insects; and may be fed in Houses, with Bran and Flour. In Winter they conceal themselves in Holes, like Serpents and Lizards, where they continue without any Food, as several other Animals do. They live long, move very slowly, and are said to have a natural Aversion to the Eagle, which sometimes seizes them, and carries them off, in order to devour them. *Aristotle* says, they fight with Serpents and Vipers, and that they are always provided with the Plant called *Cumila*, or Savory, for curing the Stinging of those Animals. *Pliny* says, that this kind of Turtle is very plentiful in *Africa*, and is much used for Food. Some Authors recommend the eating of it in *August* and *September*, when it is fattest.

The Sea Tortoises sometimes go ashore, where they fall asleep; and, if they continue long there, they die. In the Sea they feed upon Shell-fish, and, when upon Land, they eat Herbs. It is said, that, when their Heads are cut off, they will live some time, and they will bite very hard.

Pliny says, there are Sea Tortoises in the *Indies* so large, that the Shells of each of them are big enough to cover small Houses,

and the Inhabitants make some of them into Barks, with which they sail into the Islands of the Red Sea.

There is but little Difference between the Fresh-water Tortoises, and those which live in muddy Places; they feed upon Herbs, and watery Insects; they live more by Water than Land; and, it is said, a long time without Food.

The Flesh of the Tortoise is very good, and like Veal. It is strange, that *Galen*, and others, who have treated of Food, should never mention this Animal; for it is much used.

The Flesh of Tortoises is very nourishing, and is solid and durable Food; for it contains an oily, balsamic, and saltish Juice. Upon account of this Juice, also, it is restorative and pectoral; and, for phthical and hectic Patients, a Syrup is made of the Flesh, which is excellent for qualifying the sharp Humours of the Breast. In the mean time, it is hard and viscous, and not easily digested, breeding viscous and gross Humours, and producing Dulness and Laziness; therefore, it ought to be well boiled, and seasoned with such Things as help Digestion.

Cardan, in his ninth Book, assures us, that the Flesh of the African Tortoises, being eaten with Bread for several Days together, is an excellent Remedy against the Leprosy. The Blood of the Tortoise, being dried, is reckoned good for curing the Falling Sickness, giving a Dram of it for a Dose.

In some Countries, an Oil proper for burning is extracted from the Tortoise. *Lemery on Foods*.

TETANUS.

The Neck is subject to some very violent Disorders, than which none are more troublesome and acute, than that in which, by reason of a certain Rigor of the Nerves, the Head is immovably reclined to the Scapula; that in which the Chin is fixed to the Breast; and that in which the Neck is straight, but yet immovable. The first was, by the *Greeks*, called *Opisthotonos*, the second *Emprosthotonos*, and the third *Tetanus*; tho' some, without any regard to Accuracy, confound these Words together. These Disorders prove mortal within the fourth Day; and, if they continue beyond it, they are without Danger.

'Tis universally agreed upon, that all these Disorders are to be cured in the same manner; and, for this Purpose, *Asclepiades* ordered Venesection, which, according to others, was not to be used, because, under these Disorders, the Body was destitute of a due Degree of Heat, which, residing in the Blood, would, of course, be lessened by a Diminution of that Fluid. This Doctrine is absolutely false, since the Blood is not naturally hot, but quickly becomes either hot or cold, in consequence of what happens in the Animal Oeconomy. But whether Venesection is expedient, may be collected from the Circumstances and Situation of the Patient. In these Disorders it is proper to exhibit Castor in Conjunction with Pepper or Lafer. Dry and moist Fomentations are, also, necessary; for which Purpose many, now-and-then, pour large Quantities of warm Water on the Necks of Patients afflicted with these Disorders. But though this Practice affords immediate Relief, it is not to be used, because it renders the Nerves more susceptible of the Injuries of the Cold.

It is, therefore, more expedient, first, to anoint the Neck with a liquid Cerate, and then to apply Oxens Bladders, or small Phials full of warm Oil, or a Cataplasm of warm Meal, or of Figs and Pepper beat up together. But, among all the Measures taken for the Cure of these Disorders, none is more effectual, than to hold the Patient's Neck over a Vessel full of warm Water, in which a considerable Quantity of Salt is included in a Linen Bag. When these Steps have been taken, we must place the Patient before the Fire; or, if it is Summer, expose him to the Influence of the Sun, and carefully rub his Neck, Scapula, and Spine, with old Oil, and if that cannot be had, with Syriac Oil; or, if that is, also, wanting, with the oldest Fat that can be had.

As Friction is serviceable to all the Vertebrae; so 'tis, in a particular manner, beneficial to those of the Neck; for which Reason this Practice is to be used both in the Day and Night, only allowing some Intervals, during which we are to apply a Malagma, consisting of heating Ingredients. The Patient is, also, to be carefully preserved from Cold, for which reason his Room ought always to have a Fire kept in it, especially about the Twilight, when the Coldness of the Air is generally augmented. It is, also, expedient to shave the Head, which being anointed with the *Oleum Irinum*, or the *Oleum Cyprinum*, is to be covered with a warm Cap. It is, also, sometimes proper to bathe the whole Body, either in Oil by itself, or in warm Water, in which Fennugreek has been boiled, adding a third Part of Oil. By rendering the Body soluble, the Strictures of the superior Parts are, also, frequently relaxed.

But if the Pain becomes very intense, Cupping with Scarification, is to be apply'd to the Neck; and the Incisions made in the Skin are to be burnt either by Synopsims, or proper Instruments. When the Pain is alleviated, and the Head begins to move, we are sure that the Disorder yields to the Influence of the Remedies. But the Patient is long to abstain from all Kinds of high Food, and only use Sorbitions, poach'd Eggs, and Broths prepared of young Fowls, and other soft and light Fleshes. If these Measures succeed happily, and the Patient's Neck begins to

seem totally restored to its natural State, he is first to use, only, Pap, or thin Spoon-meat; but he may much sooner eat Bread than drink Wine, which, being highly dangerous, is therefore to be the longer abstained from. *Celsus, Lib. 4. Cap. 3.*

Various Disorders arise from Contractions and Convulsions, of which there are various Species, such as the *Emprosthotonos* and *Opisthotonos*; the former of which is a convulsive Inclination of the Head forwards, and the latter an Inclination of it backwards. The antecedent Causes of these Disorders are Blows and Contusions of the large Tendons, lying long upon them in one Posture, lying with them applied to hard Substances, laying any weighty Thing upon the Neck, drinking strong Liquors, excessive Cold, or, which frequently happens, Wounds of the Nerves and Muscles, and the Drinking Wine before such Wounds are cured. These Disorders, also, most frequently happen by the Use of cold Water, especially at that Time, when such Wounds, being free from Sordes, seem to be deterged, and coming to a Cicatrix; they, also, sometimes happen sooner, and when the Wounds are as yet tumid, or in their worst State. That Species of Contraction, which the *Greeks* call *Spasmus*, is an involuntary Tension and Contraction of the Parts, accompanied with violent and acute Pain, in consequence of the excessive Stricture. But that Species of Convulsion, which they call *Tetanus*, is, by the Followers of *Asclepiades*, defined an Extension of the whole Body, or of some of its Parts. But, in giving this Definition, they seem to have forgot that some Parts may be extended by the Influence of the Will; and Persons afflicted with a *Satyriasis*, or Gour, have in the former an Extension of the Penis, and in the latter of the Feet, without being afflicted with that Species of Convulsion which the *Greeks* call *Tetanus*. Others define a *Tetanus*, a Convulsion of those Muscles of the Neck and Cheeks, called *Stagomites*, in consequence of their violent Tension and Pain. Other Authors of the Methodic Sect, in defining this Disorder, have, instead of Convulsion, used the Word *Conclusio*; but this is only giving different Names to one and the same Thing, for these Writers imagined, that this was the Cause of the Disorder. But in general we may answer all these Writers, by telling them, that there is a great Difference betwixt a Disorder, and its Cause: We must, therefore, ascertain, not what the Cause of Convulsions is, but what Convulsions are; for as the Cause is latent and occult, it must vary according to Opinion and Apprehension. But the Phenomena peculiar to Convulsions or Contractions are obvious, manifest, and perceptible by every one; and it is but reasonable, that, as far as is possible, we should found our Doctrine upon consistent Principles. According to our Sect therefore, that Species of Distension or Extension, which the *Greeks* call *Tetanus*, is an involuntary, rigid, and inflexible Tension of the Neck, in an erect Position, occasioned by a violent Stricture or Tumor of the Parts. An *Opisthotonos* is an involuntary spasmodic Retraction of the Neck, also produced by the Stricture or Tumor of the Parts; and an *Emprosthotonos*, an involuntary Inclination of the Head forwards, produced by the same Causes. Those Disorders are called involuntary, in Opposition to those Motions of the Head, by which, in consequence of the Concurrence of the Will it is held in these Positions. They are also said to proceed from the Stricture or Tumor of the Parts, in Contradistinction to those Positions and Directions of the Head, produced in such as are hanged. Persons about to fall into these Disorders, are generally seized with the following Symptoms; a difficult Motion of the Neck, a continual Oscitation, especially, in the Parts about to be affected: This State is succeeded by an uneasy and painful Posture of Lying; a slight Tension and Hardness of the large Tendons; an uneasy and troublesome Punction between the Spine and the Occiput; a small Difficulty in Drinking; a Pain of the Temples, which is particularly exasperated when the Patients yawn, or open their Mouths; a Dulness of Hearing; a Stammering of the Tongue, and Slowness of Speech; a continual Discharge of the Saliva; a painful Sensation in the Calves of the Legs, and Soles of the Feet. The Countenance is, also, seemingly smiling, without any apparent Cause, and there is a kind of Palpitation in its Parts. When the Disorder seizes, there is a violent Convulsion and Hardness of the Parts of the Neck, and Muscles of the Cheeks, accompanied with excessive Pain; there is a Redness of the Countenance and violent Contraction of the above-mentioned Muscles; the Teeth, also, are strongly clos'd, the Patient is thrown into a profuse Sweat, whilst there is a cold Torpor of the Joints, an obscure Pulse, an Extension of the Neck, a Difficulty of Breathing, a Contraction of the Legs and Arms, and a Regurgitation of any Liquor put into the Mouth through the Nostrils; some are, also, afflicted with an Alienation of Mind, a quick Respiration, and a Rattling of the Throat and Breast. In a *Tetanus*, the Neck is strait, rigid, and inflexible. In an *Opisthotonos*, there is a Reclination of the Head to the posterior Parts, accompanied with an excessive Pain and Tension of the Back and Buttocks; such Patients, also, have their Legs contracted, tho' their Arms are not seized with convulsive Motions; their Fingers are contracted and folded, as *Hippocrates* affirms, and it often happens that they keep their Thumb clenched in the rest of their Fingers; neither can they retain themselves in one

one Posture, but shift about with a kind of Palpitation, when the Pain seizes them. An Opisthoronos is more dangerous than a Tetanus; and all these Disorders are dangerous, when they are accompanied with Wounds of the more noble Parts, and such as are more immediately subservient to Life. In an Emprosthoronos, the Head is spasmodically inclined forwards, and the Chin fixed to the Breast, the Hypochondria and Præcordia are distended, there is a frequent Inclination to discharge the Urine, and the Patient cannot without Difficulty bend his Fingers. These Disorders are not cured without great Difficulty, if the Spasms should be produced by Wounds, or if there should be a natural Hardness of the Spine; but if the Spasms should happen without a Fever, the Patient is more easily cured. A Fever, according to Hippocrates, succeeding the Spasm is salutary; but a Spasm succeeding a Fever, dangerous. This Opinion is, however, rejected by some, who tell us, that according to Hippocrates himself, a Fever gives a violent Shock to the Constitution, and produces violent Symptoms accompanied with excessive Pain; for, say they, a natural and moderate Heat relaxes the Tumor of the Parts, whereas the Heat of a Fever, being intense, preternatural, and immoderate, increases and augments it. Hence a Diminution of the concomitant Symptoms of the Disorder, lays a Foundation for the Hopes of future Recovery. *Cælius Aurel. Lib. 3. Acut. Morb. Cap. 6.*

The Emprosthoronos, Opisthoronos, and Tetanus, may be produced by various Causes; for they generally happen after Wounds, when either the Membranes, Muscles, or Nerves are punctured, in which Cases they generally prove mortal; for by Wounds of the Nerves, mortal Convulsions are excited. Women in consequence of Abortion, are also sometimes seized with Convulsions, which frequently prove fatal to them. Others have these Disorders brought on by violent Blows of the Neck; excessive Cold may, also, prove the Cause of them, for which Reason they rage more in the Winter, than in the Spring and Autumn; but very rarely in the Summer, unless a Wound is previously inflicted, or when foreign Diseases rage epidemically. Women are more subject to Convulsions of the Nerves than Men, because the former are of a colder Nature, but they are also more frequently freed from them, because they are of moiſter Constitutions. As for Persons of different Ages, Children are most infested and afflicted with these Disorders; but they are not generally destroyed by them, because they are in a manner peculiar and familiar to them. Young Persons are less subject to these Disorders than Children, but then they are more frequently taken off by them. Those arrived at the Years of Maturity, are by no means subject to these Disorders, tho' old Persons are greatly infested with them, and are frequently taken off by them; the Reason of which is to be ascribed to the Coldness and Dryness of Old-age, in Consequence of which, they in some measure approach to the State and Condition of a dead Body; for in cold and moist Habits, Convulsions are far less violent and dangerous.

All these Disorders are accompany'd with a Pain and Tension of the Tendons, Spinæ and Muscles of the Jaws and Breast; for these Muscles so fix the superior to the inferior Jaw-bone, that they cannot be easily separated even by Wedges; and when they are violently separated, if any Liquor is poured into their Mouth, they cannot swallow it, but either retain it in their Mouths, suffer it to flow out, or it regurgitates thro' the Nostrils; because the Fauces being compressed, and the Tonſils hard and tense, cannot admit of the Protrusion and Deglutition of Aliments. The Face is red and variegated by Spots of various Colours. The Eyes are almost immoveable, and their smallest Motions accompanied with Pain; there is a great Suffocation and Difficulty of Breathing; the Arms and Legs are seized with Convulsions, and the Muscles palpitate; the Face is distorted in various Manners; there is a Tremor of the Jaw-bones and Lips; a shaking of the Chin, and a Grinding of the Teeth. In one Patient, I, also, had an Opportunity of observing, with Admiration, a Concussion or Shaking of the Ears, accompanied with a Noise. The Urine is either suppressed, or flows spontaneously, in consequence of the Compression of the Bladder. These Symptoms occur in Convulsions of all Kinds; but the Symptoms, peculiar to each Species, are these: In a Tetanus, the whole Body is straight, immoveable and inflexible, the Arms and Legs are, also, straight.

In an Opisthoronos the Patient is reclined backwards; his Head is drawn back between his Shoulders; his Throat starts out; his Jaws are generally open, and they are rarely united; he snorts in Respiration; his Belly and Breast are prominent; his Urine is generally discharged spontaneously; and his Abdomen, being tense, rebounds, when struck; his Arms are spasmodically drawn backwards; the Legs are, also, distorted and incurvated in a Direction opposite to the Hams.

In an Emprosthoronos, the Back is gibbous; the Hips become prominent, so as to lie in a straight Line with the Back; the Spine is strait; the Head is inclined to the Breast, to which the Chin is fixed; the Hands are clenched, and the Legs extended. All Patients labouring under this Disorder, are afflicted with violent Pains; a mournful Voice, resembling that of a Person weeping, Sighs, and deep Groans. If the Disorder affects the Breast and Respiration, Death is not far off; and it is a great Happi-

ness to the Patient to be delivered from his Pains, his Distortions, and the deplorable State he was in; so that the nearest Relations can, with a kind of Pleasure, see their Friends exchange their Condition for Death. If Life should still remain, and Respiration continue to be carried on, though in a deplorable manner, the Patient is so incurvated forwards, as to resemble not only a Bow, but a Sphere; so that he has his Head fixed to his Knees; and his Back and Legs so drawn forwards, that the Joint at the Knee seems thrust into the Ham. This Disorder is not only intolerable to the Patient, and moving in the Eyes of Spectators, but, also, incurable; so that those labouring under it, are, on account of their Distortion, disowned by their Friends; and though it would have formerly been Impiety, yet it is now Charity and Compassion, to wish for their Death, even though it should be of the most cruel Kind. Nor can the Physician, when present, either restore Health, mitigate his Pain, or rectify his distorted Figure; and since he might cut him to Pieces, before he could render his Limbs strait, all he can do is to be grieved at this deplorable State. *Aræus, de Causis & Signis Acut. Morb. Lib. 1. Cap. 6.*

THE CURE.

In order to cure a Tetanus, the Bed of the Patient is to be soft, grateful, smooth, commodious, and warm; for this Disorder renders the Nerves rigid, hard, and tense; the Skin, also, being every-where dry and rough, becomes tense; the Eye-lids, naturally moveable, wink with Difficulty; the Eyes are fixed, and as it were turned inwards; the Limbs are, also, rendered immoveable, on account of the Tension of the Parts. The Patient's Room, also, even in the Summer-time, is to be kept warm by Fire, though not to such a Degree as to excite Sweats or Languor; because a Tetanus inclines to a Syncope. Other Remedies must, also, be used without any Delay. Whether, therefore, a Tetanus is produced without any manifest Cause, or whether it arises from excessive Cold, Wounds, or Abortion in Women; Venesection is to be instituted in the Arm; but the Ligature must not be too tight, and the Incision must be made gently and expeditiously, otherwise Convulsions of the Nerves will be produced. Let moderate Venesection be only once used, though not to such a Degree as to produce *Deliquium*; and a Refrigeration of the whole Body. The Patient is not to be harassed by Hunger, which dries and refrigerates the Body. Let him, therefore, drink coarse, strong Muls, and Cream of Pistach mixed with Honey; for when these are protruded by the Tonſils, they create but little Pain, are easily swallowed, fit for rendering the Body soluble, and effectual for restoring the Strength. The whole Body is, also, to be wrapt up in woollen Cloths, wet in the Oleum Gleucinum, or the Oleum Crocinum, in which Rosemary, Flea-bane, or Mugwort, have been boiled; let every thing be used hot, not only in its Quality, but, also, to the Touch. The Patient is, also, to be anointed with an Ointment prepared of the Limnestides, Euphorbium, Nitre, and Pellitory of Spain, to which a large Quantity of Castor is to be added. The Tendons are, also, to be well covered with woollen Cloths, and the Parts about the Ears and Chin well anointed, since these are most affected, and excessively tense. The Tendons and Region of the Bladder are, also, to be cherished with gently warm Substances; such as Bags full of roasted Millet, or Oxens Bladders half full of warm Oil, applied to the Parts affected. 'Tis sometimes necessary to foment the Head; and, though this Practice is somewhat prejudicial to the Senses, 'tis nevertheless salutary to the Nerves; for though by the Elevation of the Vapours it, in some measure, clouds the Senses, yet it fills the Nerves. The Patients are to be fomented in the softest manner, with a Matter that is not fetid, and which is to be used alone. This Matter may be either inodorous Oil boiled in a double Vessel, and put in Bladders, or fine Salt contained in a Bag: For, though Millet and Linseed are grateful to the Touch, yet fetid Vapours are exhaled from them. The Method of fomenting is this; Laying the Patient on his Back, the Fomentations are to be placed under him, as far as the Crown of the Head, and no farther; but their Influence is not to be permitted to act on the Forehead, which, being the common Sensory, is, therefore the Source of all the favourable, and unlucky Turns of Disorders. If Cataplasms are applied to the Tendons, let the back Part of the Head be elevated; for, if these Cataplasms are applied to the superior Parts, they will fill the Head with the Vapours of the Linseed and the Fenugreek. After the Use of the Cataplasms it will be expedient to apply Cupping-glasses to the Occiput, on each Side of the Spine; but very little Fire is to be used; for the strong Impression of the Lips of the Cupping-glass excites Pains and Convulsions: We must, therefore, make rather a slow and gentle than a sudden and violent Exhaustion of the Air; for by this means the Skin will without Pain be raised into a convex Tumor; and may afterwards have proper Incisions made in it. The Quantity of Blood to be taken from such Patients is to be estimated from their Strength. These are the Measures to be taken in a Tetanus not attended with Wounds.

But if a Convulsion of the Nerves is produced by a Wound, the State of the Patient is deplorable, and almost desperate; the Cure

Cure ought, however, to be attempted, since some by the Use of proper Remedies have been recovered. Besides the other Measures, therefore, the Ulcers are to be cured by anointing them with warm and proper Substances, by Fomentations, Cataplasms, and Medicines which easily excite Heat, and form Pus copiously; for in a Tetanus the Ulcers are dry. For this Purpose take a sufficient Quantity of the Manna of Frankincense, of the Tops of Poley-mountain, of the Resins both of the Pitch and Turpentine-tree, of Marshmallow-roots, and of the Herbs Rue and Henbane; make all into a Cataplasm by melting such as are susceptible of it, adding the Powders of such as are capable of being pulverized; but some of the Ingredients must be macerated in Oil, and the Marshmallows must be previously boiled in Muls. Let Castor be, also, sprinkled on the Ulcers, since that Medicine is very efficacious in exciting Heat in all the Parts of the Body; for Horrors arising from Ulcers are of a very malignant Nature. Let the Nostils be, also, anointed with Castor, or the Oleum Crocinum. Three Oboli, also, of Castor-oil may be daily exhibited; and if the Stomach loathes it, we must interpose the same Weight of the Root of Laspitium, or half the Weight of Myrrh; and all these are to be exhibited in Hydromel. But if Cyrenaic Laspitium can be had, the Bulk of a bitter Verch of it may be exhibited wrapt up in boiled Honey, by which means it is rendered more palatable; for it is of an acrid Taste, and produces disagreeable and ferid Eructations. But if the Patient cannot take it in this Form, let it be dissolved in Hydromel; for it is of all other Medicines the most efficacious. These Medicines are fit for heating, moistening, relaxing Convulsions, and softening the Nerves. But if the Patient can swallow nothing, inject a Clyster, prepared with Castor and Oil, with which, also, mixed with some proper Ointment, or with Honey, the Anus is to be anointed. With the same Clyster, also, mixed to a due Consistence, with melted Wax, the Region of the Bladder is to be anointed. If there is a Necessity for procuring an Evacuation of the Fæces and Flatulences, a Clyster prepared of two Drams of Hiera, with a sufficient Quantity of Hydromel and Oil, is to be injected, which not only procures the designed Evacuation, but, also, cherishes the lower Belly; for Hiera is an heating Medicine suited to various Intentions. *Areteus de Curat. Acut. Morb. Lib. 1. Cap. 6.*

TETARTÆUS, τεταρταῖος. The same as **QUARTANA**.

TETHALASSOMENOS, τεθαλασσομένος. An Epithet for Wine, importing its being mix'd with Sea-water.

TETHYIA, or **TETHÆA**. This is a Shell-fish, sometimes found adhering to Oysters. Its Shell is of a spherical Figure, rough, unequal, and less hard than the Shells of other Fishes. There are various Species of this Animal, which are found either adhering to the Rocks, in the Wrack, or on the Shore. Its Flesh is fungous, carminative, proper to cure the windy Colic, Pains of the Kidneys, and the Sciatic Pain. It is, also, proper to excite a Discharge of the Urine, and to eliminate the Stone of the Kidneys and Bladder. *Lemery, Traité des Drogues.*

TETLATIAM, seu *Arbor Urens*. Nierenberg. An Indian Tree, which agrees in Qualities with the *Manchineel*.

TETRABIT. A Name for the *Sideritis*; *birsuta*; *procumbens*.

TETRADRACHMON. The Weight of four Drams.

TETRAGNATHUS, τετραγνάθος, from *τέσσαρες*, four, and *γνάθος*, a Jaw, is a Species of *Phalangium*, of a whitish Colour, with scabrous Legs, and near the Head two Eminences, one strait, the other broad, so that you would think it had two Mouths; it has four Jaws, (whence the Name *Tetragnathos*) and an even Line through its Mouth.

They who are stung by this Spider, labour under the same Symptoms in general; as they who are stung by the Scorpion; and besides, are affected with a tensive Pain in the wounded Part, which becomes whitish. The Head and Face, also, swell; and the wounded Parts, as far as the Joints, become extenuated; the Members, also, receive no sensible Nourishment, and the Patient, even after Recovery, is molested with obstinate Watchings.

Remedies in this Case are Calamint, Trefoil, Rue, Panax, Polium, taken in Wine, and all such Medicines as are proper for those who are stung by the *Phalangium*. *Aetius, Tetrab. 4. Serm. 1. Cap. 17.*

TETRAGONIA. A Name for the *Euonymus*; *vulgaris*; *granis rubentibus*.

TETRAGONOCARPOS.

The Characters are;

The Leaves are dispos'd in a scattering manner: The End of the Pedicle becomes an Ovary, on whose Apex grows a Flower or Calyx, which is quadrifid, rarely quinquefid, expanded, and furnished with a Multitude of Stamina, that is to say, eighteen or twenty. The Ovary is furnished with four erect Tubes, and becomes a quadricapular Fruit, with a single Seed in each Capsule. In some Plants the Calyx is seated under the Ovary and Flower.

Boerhaave mentions three Sorts of *Tetragonocarpus*; which are,

1. *Tetragonocarpus*; *Africana*; *fruticans*; *foliis longis*, &c. *angustis*. *H. A. 2. 205.*

2. *Tetragonocarpus*; *præcedenti similis*; *fructu rotundo*, *tetragono*, *umbilicato*.

3. *Tetragonocarpus*, *Afra*, *folio Porruacæ longo*; *flore herbaceo*. *Boerb. Ind. alt. Plant. Vol. 2.*

I find no Virtues ascribed to any one of these.

TETRAGONON, τετράγωνον, from *τέσσαρες*, four, and *γωνία*, an Angle, in *Hippocrates de intern. Affect.* seems to be a Medicine for purging the Head; as where he says, *ἡ τὴν κεφαλὴν καθαίρειν τῷ τετράγωνῳ*, "and purge the Head with *Tetragonum*;" and directs the same in another Place of that Treatise. *Galen* seems to expound this in his *Exegesis* as follows: *Τετράγωνον τινὲς μὲν ταῖς ἐνιστοιμέναις καὶ τὸ σίμμι πλατὶ τινὲς αὐτὸ τὸ σίμμι*. "Some by *Tetragonum* understand the Crusts" which are found about Antimony, some Antimony itself. The same Author expounds *τετράγωνα βέλη*, "quadrangular Arrows," by *τὰ τέσσαρας ἔχοντα γλαγχίνας*, (Arrows) "having four Points, or Edges." *Foesius*.

Tetragonon in *Hippocrates*, is a very obscure Word; for we are not certain whether he means by it a Medicine or Instrument; the Meaning thereof was unknown even in the Time of *Galen*, as appears above; and it is still a Question whether Antimony were known to *Hippocrates*. *Schaltzius*.

TETRAMYRON, τετραμύρον. The Name of an *Acopon*, describ'd by *Galen*, *L. 7. de Comp. M. P. G. Cap. 12.*

TETRAO. The Name of a large Bird of the Bustard-kind. *Aldrovandus*.

TETRAPHARMACON. A Name for any Medicine compounded of four Ingredients. Thus the *Emplastrum Basilicon*, and the *Diatefferon*, are both call'd by this Name.

TETRESARIUS. Half an Ounce. *Marcellus Empiricus*.

TETROBOLON. The Weight of four Oboli.

TETROROS, τέτρορος. The same as **QUATRIO**.

TETY-POTE-IBA, *Vitis arbutifolia* Pisonis, is said to be produced from the Dung of the Birds called *Tetys* deposited by Orange-trees, with which it closely unites, and in time over-spreads and kills.

Of the Roots and Branches bruised together, and then fry'd in common Oil, is prepared an excellent Medicine for Inflammations of the Belly and Feet, contracted from Cold. *Raii Hist. Plant. Index.*

TEUCHOS, τεῦχος. *Hippocrates* uses this to express the whole Body.

TEUCRIUM.

The Characters are;

The Calyx is tubulated, quinquefid, or Bell-shaped, and inclosing in its Bottom roundish Seeds. The Flower, which has nothing of a Galea, is unfolded from a very short Tube into five large Segments. In the Place of a Galea arise Stamina; the Beard is quinquefid, the middle Segment being excavated, and the other seated opposite to one another in the Neck of the Flower; the Flowers proceed from the Wings of the Leaves.

Boerhaave mentions eight Sorts of *Teucrium*; which are,

1. *Teucrium*; calyce tubulato; flore pallide luteolo. *Boerb. Ind. A. 181. Teucrium*. Offic. C. B. P. 247. *Raii Hist. 1. 526. Teucrium multis*. J. B. 3. 290. *Teucrium latifolium*. Ger. 532. Emac. 654. *Teucrium majus vulgare*. Park. Theat. 103. *Chamedrys frutescens*; *Teucrium vulgo*. Tourn. Inst. 205. **TREE-GERMANDER**.

It grows in Italy and Sicily, and flowers in Summer, and the Leaves are in Use.

Teucrium heats and dries, cures Disorders of the Liver and Spleen, and is effectual against the Bites of Serpents. As it has the outward Appearance of the *Chamedrys*, so it resembles it in Virtues. *Dale*.

2. *Teucrium*; calyce tubulato; flore purpureo. *Chamedrys; erecta Teucrii Folio, purpureo*. Flor. 2. 83.

3. *Teucrium*; Boeticum; calyce campanulato. *Chamedrys; fruticosior, flore violaceo, foliis subtus incanis*. M. H. 3. 422.

4. *Teucrium*; Boeticum; calyce campanulato, folio elegant-ter variegato.

5. *Teucrium*; calyce campanulato; Stoechados facie. *Boerb. Ind. A. 181. Polium Creticum*. Offic. *Polium angustifolium Creticum*. C. B. P. 221. Park. 25. *Raii Hist. 1. 523. Teucrium frutescens, Stoechadis Arabica folio & facie*. Tourn. Cor. 14. *Rosmarinum Stoechados facie*. Alp. Exot. 103. **POLEY OF CANDIA**.

This Species of *Polium* is very rarely to be met with in the Shops: It is a smaller tenderer Plant, having lesser and narrower Leaves, not at all indented about the Edges, but as woolly as the *Polium montanum*, and having the like Heads of Flowers, of a finer and more agreeable Smell. It grows in the Island of *Crete* or *Candy*.

It is much of the Nature of the *Polium montanum*, but is rather stronger; and if it could be procured, is what ought to be used when *Polium Creticum* is prescrib'd; but, as it is hardly to be met with, the other may be used without much Detriment to any Composition. *Miller's Bot. Off.*

6. *Teucrium*

6. Teucrium; calyce campanulato; laciniatum; flore magno subcocculeo.

7. Teucrium; calice campanulato; laciniatum; flore parvo subcocculeo.

8. Teucrium; calyce tubulato; Creticum, purpureum. *Chamaedrys fruticosa*, *Cretica*, purpureo flore. T. 205. Boerb. Ind. alt. Plant.

TEUTHROBANON. A Name for the *Polygonum*, in *Oribasius*, *Collect. Medicinal*.

TEUTLON, τεῦτλον, τεῦτλων. A Name for the *BETA*. *Blancard*.

TEUTLOPHACE, τευτλοφακή, from τεῦτλον, a Beet, and φακή, a Lentil. A Sort of Food consisting of Beets and Lentils, and prescribed by *Heraclides Tarentinus*, as *Galen*, L. 1. de Al. Fac. C. 18. says, not only to sound, but sick Persons.

TEXOCTLIFERA *Mexicana* *Nieremberg*. Is a Tree of a moderate Bigness, growing spontaneously in hilly Places, very thick set with Thorns, and with Leaves like those of our Apple-trees, but rougher, and serrated. It bears Apples resembling ours, but small, and no bigger than Walnuts, of a yellow Colour, and very hard before they are ripe; but afterwards soft, in a manner, like Fat, of an unpleasant Taste, tho' grateful to many Palates. The Seeds, of which there are three in each Apple, are lunated, large, and distinguish'd by two Angles, and a Ridge, and as hard as a Stone. The *Mexicans* first suffer them to putrefy, and then bring them to Market. To preserve them the longer from Corruption, they sprinkle them with Water of Nitre. The Buds, bruised, and apply'd with Water, cure Exanthemata. *Raii Hist. Plant.*

TEXTURA, Texture, is properly spoken with respect to the *Art textoria*, or *Art of Weaving*; but is apply'd by Metaphor to the organical Structure of the Body, in which Sense we, also, use the Word *Contexture*.

Θ, the first Letter of the Word θάνατος, "Death," and used by *Hippocrates* in the *Epidemics*, as a Sign or Mark of Death; as T, the first Letter of the Word υγία, Health, was a Mark to signify Recovery. *Galen. Com. 1. in 3 Epid.*

THACOS, θάκος, the same as θάκος, *Thacos*, a Seat, a Place to sit on. *Hippocr. 7 Epid.*

THAIS, θάις, a Name for a cosmetic Cerate, to give a beautiful Red to the Face, described by *Aegineta*, Lib. 3. Cap. 25. Also, a Bandage for the Head, of which *Galen de Fasciis* reckons three Kinds.

THALAME, θαλάμη. A Bed, or Hole, where Fish lie; θαλάμη in *Erotian* are expounded καλὰ δ' οὖτοι, Dens, Nests, Burrows. The Word occurs in *Hippocrates*, Lib. περὶ τέχνης, where you read, καὶ τῶν ἐδὲν ἐπὶ τῇ ὑπαρξὶ ἐστὶ, καὶ ἔχον περὶ αὐτῆς θαλάμους. "And of these (Joints) there is none but what is somewhat spumeous, and furnished with Cells." He is here speaking of the internal Cavities about the Joints, which are full of a sort of Spume or Mucus. Some Copies, however, for ὑπαρξον read ὑπόρρον, and *Erotian* reads ὑπερρον, which signify, with not much Variation of the Sense, occult, cavernous, or full of Cells and Perforations; but ὑπαρξον seems to be the true Reading.

THALAMUS, θάλαμος. A Bed, in Anatomy, is the Place from which the Optic Nerves proceed; so called by *Galen de Usu Part. Lib. 16. Cap. 3.*

THALASSERON, θαλασσηρόν. The Collyrium of *Hermophilus* so called; a Remedy adapted to Catarrhs, and Dimness of Sight; and described by *Galen*, de C. M. S. L. Lib. 4. Cap. 7. and *Aeginet. Lib. 7. Cap. 16.*

THALASSITES, θαλασσίτης. The same as TETHALASSOMENOS; which see.

THALASSOMELI, θαλασσομέλι, from θάλασσα, the Sea, and μέλι, Honey, is, as *Dioscorides* says, supposed to be a potent Cathartic. It is composed, he tells us, of equal Portions of Rain-water, Sea-water, and Honey, strained, and exposed to the Sun in a pitch'd Vessel, during the Heat of the Dog-days. Some take two Parts of Sea-water, and one Part of Honey, and put them in a Vessel; and this Composition is milder, and more gentle in Operation, than Sea-water alone. *Dioscorides, Lib. 5. Cap. 20.*

THALEROS, θαλερός, from θάλλω, to bud, or blossom; florid, as apply'd to πνεῦμα, Respiration, can mean nothing, as *Galen* says, *Com. 2. in 1 Prorrh.* 39. but σφόδρα μέγα, "vastly great." The same Author, *ibid. Text. 92.* tells us, that the Interpreters of *Hippocrates*, who read θαλερόν, (for he himself, with the Generality, reads θαλερόν with an ο, in both the Places mention'd) expound it by θάλλον, καὶ ἀκμάζον, καὶ μέγα, "flourishing, vigorous, and great." See THOLON. Θαλερόν πνεῦμα, in *Galen's Exegesis*, is however, expounded, by θερμὸν ὡς ἀπὸ ἡλίου, παρὰ γὰρ τὸ θερμαίνει γέγονε τοῦτομα, "heated as by the Sun; for the Name is derived from θερμαίνω, theromai," (signifying to be heated). But some Copies read the Place θαλερόν πνεῦμα, μέγα καὶ διεγερμένον, "a florid Respiration, that is, a great and heighten'd Spirit or Respiration." Thus θαλερόν δακρυ, *Hom. Il. B. v. 266.* when we read θαλερόν δέ δὲ ἔκπεσεν δακρυ, is expounded by the Scholiast θερμὸν καὶ ἀκμάτον, "hot and vigorous," importing that the hot Tears gushed out in a violent and plentiful manner, as from a Source that would

never dry. In this Sense θαλερόν δακρυ, in *Hesychius*, is expounded by τὸ πολὺ, καὶ ἡ ἐκραινόμενον, ἀλλ' ἐπὶ τῶν ἐρεθισμῶν αὐτὸ βάλλω, "plentiful, and never dry'd, but always springing up in the Eyes." Θαλερός is, also, expounded in *Hesychius* by ταχύς, quick, and ισχυρός, strong; but θαλερόν προσώπου, "a florid Countenance," is explain'd in *Galen, Com. 2. in Prorrh.* τὸ εἶναι εὐκλείαν καὶ εὐχρυσήν, "such as is of a good Habit and Colour."

THALICTRUM.

The Characters are;

The Root is fibrous, except in the last Species; the Leaves are lobated, tripartite, and resemble those of umbelliferous Plants. The Flower is naked, tetrapetalous, or pentepetalous, rosaceous, with caducous Petals, furnished with Multitudes of Stamina, dispos'd round the Basis of the Ovary in form of an Umbella. The Ovary consists of a Multitude of small Capsules, winged or not winged, furnished with a long Tube, and containing each a single Seed, which is generally of an oblong Figure.

Boerhaave mentions fifteen Sorts of *Thalictrum*; which are,

1. *Thalictrum*; Canadense. *Corn. 186.*
2. *Thalictrum*; Canadense; majus; caulibus viridantibus. *Flor. 2. 9.*
3. *Thalictrum*; Canadense; caule viridescente & purpurascens; staminibus saturatus purpurascens.
4. *Thalictrum*; majus; florum staminibus purpurascens. *C. B. P. 327.*
5. *Thalictrum*; foliis amplissimis; rugosis; florum staminibus albis.
6. *Thalictrum*; majus; siliqua angulosa, aut striata. *C. B. P. 336. Boerb. Ind. A. 44. Tourn. Inst. 270. Thalictrum. Offic. Thalictrum seu Thalictrum majus. Ger. 1060. Emac. 1251. Raii Hist. 1. 403. Synop. 3. 203. Thalictrum majus vulgare. Park. Theat. 263. Thalictrum nigrum caule & semine striato. J. B. 3. 486. MEADOW-RUE.*

It delights in watry Places, and is commonly found on the Banks of running Streams, and flowers in June.

The Leaves, mixed with other Greens, are somewhat laxative, according to *Dodonæus*; but a Decoction of the Root is more so. It may very well be substituted for Rhubarb. *D. Palmer.*

In some Parts of Italy, as we are assur'd by *Camerarius*; they use the *Thalictrums* against the Plague; in Saxony, for the Jaundice. *Raii Hist. Plant.*

It cicatrizes old Ulcers, *Dioscorides*. It is aperitive, inciding, and provokes Evacuation by Stool and Urine. An Ounce or two purge like Rhubarb, whence it is called in Germany the *Poor's Rhubarb*, and *Tartary Rhubarb*. *Dale.*

7. *Thalictrum*; montanum; album; altius. *C. B. P. 337.*
8. *Thalictrum*; majus; flavum; staminibus luteis vel glaucis folio. *C. B. P. 336. Boerb. Ind. A. 244. Tourn. Inst. 270. Pseudo-Rhabarbarum. Offic. Thalictrum speciosissimum glaucum semine & caule striato. J. B. 3. 486. Raii Hist. 1. 403. Thalictrum majus album Hispanicum. Park. Theat. 264. Thalictrum majus Hispanicum. Ger. Emac. 1252. SPANISH MEADOW-RUE.*

It grows in Meadows, and is cultivated in the Gardens of the Curious, and flowers in Summer; the Part in Use is the yellow bitter Root, which agrees in Virtues with the former, and is sold in the Herb-shops for Rhubarb. *Rupp.*

9. *Thalictrum*; pratense; angustifolium. *C. B. P. 337. Rata, pratensis, major, angustifolia. Tab. Germ. 121.*
10. *Thalictrum*; pratense; angustissimo folio. *C. B. P. 337.*
11. *Thalictrum*; minus. *C. B. P. 337.*
12. *Thalictrum*; minimum; foetidissimum. *C. B. P. 337.*
13. *Thalictrum*; minimum; montanum; arboribus; foliis splendentibus. *Raii Syn. 100.*
14. *Thalictrum*; Canadense; minus.
15. *Thalictrum*; minus; grumosa radice; floribus majoribus. *Flor. 29. Ranunculus, Thalictri folio, Aphodeti radice. M. H. 2. 438. Oenanthe foliis Hederae. C. B. P. 163. Boerb. Ind. alt. Plant. Vol. 1.*

The Name is antient, and is found in the Copies written two ways, δαλιχτρον (*Dalichtron*) and θαλιχτρον (*Thalichtron*); but now the Name *Thalictrum*, universally obtains, being deriv'd of θάλλω, (*thallo*) to be green, and flourishing; whence it was used at Weddings, and regarded as an Ornament to Gardens. It was, also, called πηγανον (*Peganon*), Rue, because some Botanists have reckon'd it a Species of Rue.

I do not remember any medicinal Uses of this Plant, except of the sixth Species; whose Root, which is very large, being taken up in Season, and given to the Quantity of one or two Ounces, purges like Rhubarb; penetrating through all the Passages with its salutary Juice. Hence it communicates both Colour and Smell to the Urine, which it renders of a golden Colour, tinged, also, the Fæces and Saliva. This Plant therefore, is an excellent Aperitive, corroborating and strengthening the Intestines like Rhubarb; but then the Dose ought to be triple that of Rhubarb. It is commonly said to purge Bile. The Flowers are effectual in Spitting of Blood, the *Fluxus Albus*, and other female Disorders; externally they are of Service, in the Scabies, all cutaneous Diseases, Wounds, and Ulcers. The

Flower of the thirteenth Species is invisible to the naked Eye, but appears through a Microscope tetrapetalous. *Hist. Plant. adscript. Boerhaav.*

THALLIA, *Thallos*, θαλλία, θαλλός, a Bud of any Vegetable, but especially of an Olive-tree. *Aginet. Lib. 5. Cap. 66. Rhod. in Scribon. N° 142.* expounds it by an Olive-branch, of which they composed Garlands on Festivals.

THALPOS, θαλπος, from θαλπω, to cherish, foment. The same as θερμότης, *Thermotes*, Heat. The Word occurs 3 *Apb.* 1. and 5.

THALPSIS, θαλψις, of the same Original with the preceding. A Fomentation. *Moschion de Morb. Mul. Cap. 126.*

THAMAR, an Arabic Word for *Dactylus*, a Date; whence the Name of a Confection, *Diatbamaron*, corruptly *Diacamaron*. *Blancard.*

THAMARINDUS. The same as **TAMARINDUS**.

THAMATICA. See **THAUMA**.

THAMES, **THAMINOS**, θαμνός, θαμινός, and the Adverbs, θαμνίως, θαμινά, *Thameos*, *Thamina*, import Frequency, and often occur in *Hippocrates*.

THAMNA. The same as **LORA**; which see.

THAPHNEUS, a Medicine cleansed and purified. *Rulandus.*

THAPSIA.

The Characters are;

The Root is generally thick and milky, but in some Plants is fibrous; the Leaves are, for the most part, finely cut. The Seed is long, striated, and surrounded with a very large foliaceous Wing, emarginated on both Sides.

Boerhaave mentions nine Sorts of *Thapsia*; which are,

1. *Thapsia*; latifolia; villosa. *C. B. B. 148.*
2. *Thapsia*; foliis Libanotidis; foetidissima. *C. B. P. 148.*
3. *Thapsia*; foliis Apii; Lusitanica; foetidissima; flore albo. *T. 322.*
4. *Thapsia*; foliis Apii; foetidissima; flore luteo.
5. *Thapsia*; tenuiori folio; Appula. *T. 322. Panax Asclepium, semine folioso. C. B. P. 158.*
6. *Thapsia*; Orientalis; Anethi folio; semine eleganter crenato. *Tourn. Cor. 22. Boerb. Ind. A. 60. Gingidium. Offic. Gingidium Faniculi folio. C. B. P. 151. Gingidium verum Syriacum. Park. Theat. 890. Anetho similis planta semine lato laciniato. J. B. 3. 2. Raii Hist. 1. 416. ORIENTAL PICKTOOTH.*

It grows in the Eastern Countries, and flowers in Summer, and the Leaves are in Use.

The *Thapsia* provokes Urine; and the Decoction of it taken, with Wine, is good for the Bladder; and, eaten as other Greens, whether raw, boiled or pickled, is very beneficial to the Stomach. *Dale from Dioscorides.*

7. *Thapsia*; Alpina; lucida; Thalictri aut Carotæ folio; flore albo. *Bocc. Mus. p. 2. 84. Tab. 77.*
8. *Thapsia*; five Turbith Garganicum; semine latissimo. *J. B. 3. 2. 50. Tourn. Inst. 322. Boerb. Ind. A. 60. Raii Hist. 1. 418. Thapsia. Offic. Turpethum Garganicum. Schrod. 4. 250. DEADLY CARROTS.*

The Roots of this Plant are long, but not very thick, with many large winged Leaves, not much unlike common Carrot, but having the Segments each set opposite to one another, somewhat rough and hairy; the Flowers are small, yellow, and five-leav'd, growing in Umbels at the Top of the Stalks; and are succeeded by flat broad Seeds, having a thin scaly Skin on each Side, of an hot Taste. It grows in *Italy* and *Spain*, and flowers in *July*.

The Root only is used, and that very rarely, being accounted of a poisonous Nature, working upwards and downwards with great Violence, and has been formerly sold in the Shops for the *Radix Turpethi*. *Miller's Bot. Off.*

This Plant is sometimes cultivated in the Gardens of the Curious; and the Part used is the long and acrimonious Root, which is black without, and white within. *Mesue* calls it black *Turbith*, and employ'd it to evacuate thin Humours. The old Women of *Salamanca* in *Spain* used the Root to provoke the Menfes, and with Emollients to promote other Evacuations, as we are assur'd by *Clusius*.

9. *Thapsia*; maxima; folio latissimo. *C. B. P. 148. Boerb. Ind. alt. Plant. Vol. 1.*

Thapsia takes its Name from the Island *Thapsos*, where it was remarkably plentiful.

The Antients expressed a Juice from this Plant, which they made use of when they thought violent Purging necessary; for the Juice of the Root, inspissated, and given to the Quantity of an Ounce, purges upwards and downwards, so as sometimes to produce an Inflammation of the Stomach and Intestines; whence a Dysentery is occasion'd. The same is so highly acrimonious as to cause Convulsions, succeeded by very bad Symptoms, as *Clusius* very well observed; which are not to be removed but by a Draught of Vinegar, Oil and Water, for which Reason I would not have this Plant used inwardly. The Root has been sold for the *Turbith* of the Antients, but with very mischievous Consequences; for the Roots of the first, third, fourth, and ninth Species, are no less caustic than that of the eighth. Externally they are of Use in Ointments for the Itch, and the like Diseases. *Hist. Plant. adscript. Boerhaav.*

THAPSIA is, also, a Name for the *Seseli*; *que Ferule facit*, *Thapsia, five Turbith Gallorum.*

THAPSUS. The same as **TAPSUS BARBATUS**; which see.

THARRAS. The Name of an Inventor of a digestive Magma for a Dropsy of the Uterus, which is to be apply'd under a triple Cloth, and secur'd with a Bandage, but not too tight.

This was pretty much in Use in *Celsus's* Time, as he observes, *Lib. 3. Cap. 21.* but he no-where describes it.

THAUMA, θαῦμα, properly a Miracle; but it is taken in a special Sense for an automatus Machine used in Plays and Representations; whence *Ars Thaumaturgus*, corruptly *Thaumetica*, is the Art of constructing or managing these Machines; and *Thaumaturgus* or *Thaumatopeus*, the Contriver or Manager of the same.

THEA. *Offic. The Sinenfium five Tisia Japonensibus.* *Breyn. Cent. 1. cap. 52. 111. The Sinenfium five Tisia Japonensibus. Breynii. Raii. Hist. 2. 1619. Euonymo affinis Arbor Orientalis nucifera flore roseo. Pluk. Phytog. Tab. 88. Fig. 6. Almag. 139. The Chinenfium, five Tschia Japonensium. Hort. Amst. 346. Chaa Herba in Japonia. C. B. P. 247. Syraci & Euonymo media affinis. THE THEE or TEA PLANT.*

Tea, so much in Use of late Years, is a shrubby Bush, seldom growing above four or five Feet high, full of Branches clothed with dark-green serrated Leaves, set on the Branches without any Order, somewhat of an oval Shape, but sharp-pointed at the End: Among these come forth several pretty large Flowers, made of five round white, or pale-yellow Leaves, with several Stamina in the middle; and in their Places come the Fruit, containing, for the most part, three round Berries or Seeds, though sometimes only two, and sometimes but one, covered with a brownish Husk; they seldom gather the Leaves from the Shrubs, till the Plants are three Years old, and always in dry Sunshiny Weather. The Leaves, thus gathered, are put into a Chinese Pan, made of cast Iron, clean, and red-hot, but placed obliquely, wherein they are stirred about, and shaken together, till they shrivel up, and are crisp; and then they are laid on Mats, and fan'd with Fans to cool them; and so put into Tubs or Canisters.

We have three Sorts of Tea; the Green, the Bohea, and the Imperial Tea; but all gathered from the same Kind of Plant, and only differing in the Age of the Leaves, the Time of gathering, or Way of curing.

The Liquor made of this Plant by Infusion in warm Water, though so much in Use at present, was hardly known an hundred Years ago, and hath not half so long been in much Use in *Europe*. It is extolled by some Persons as a Purifier of the Blood, promoting Digestion, strengthening the Head, provoking Urine, and preventing the Stone and Gout: The Bohea Tea is reckoned balsamic, analeptic, and accounted nourishing, and good for Consumptions; but either of them, drank in too great Quantity, are subject to bring on Tremblings, and hurt the Stomach. *Miller's Bot. Off.*

Tea is a Leaf brought from *China* and *Japan*, an excellent Account of which is given by *Kempfer*, in his *Amoenitates Exotica*. The fresh Leaf is said to affect the Head, and to intoxicate, but it loses these Qualities when dried and prepared. The *Japanese* first bruise the dried Leaves in stone Mortars, and then throw a sufficient Quantity into boiling Water, and suffer it to infuse but a very little while. The greatest Advantage of Tea, considering the Quantity of it that is drank, seems to be, that it prevents the hot Water from relaxing the Stomach to too great a Degree, because it is a little astringent: All the other Effects of this fashionable Liquor seem to proceed from the hot Water. Tea boiled in Milk, in the Quantity of two Drams to a Pint, has been found to stop a Looseness, the Dose being repeated two or three times. Green Tea, being drank too freely, is prejudicial to weak Lungs. They who are subject to this Disease, ought therefore to chuse Bohea, and to mix Milk with it, in order to make it more laxative. *Geoffroy.*

There are six Sorts of Tea used in *England*: The first is called *Bohea*, which is a small blackish Leaf, which tinges the Water with a brown or redish Colour, and renders it of a Taste like an Infusion of *Sena*; the second Sort is called *Congo*; the third *Peco*; and the fourth *Green Tea*, and, by some, *Singlo*. This last is of two Kinds; one consists of an oblong narrow Leaf; the other has lesser Leaves, but both are equally good, and of a bluish-green Colour, seem very crisp when chewed, and tinge the Water with a Pale-green. The fifth Sort is called *Imperial Tea*; this has a large loose Leaf, whereas that of the other two last-mentioned is convolved, or shrivelled up; this Species is, also, most sightly to the Eye, of a green Colour, crisp in the Mouth, and of a pleasant Smell. The sixth Sort is call'd *Hey-sham Tea*.

All these Sorts of Tea are brought from *China*, and are supposed to be Leaves of the same Tree, and distinguished only by the Time of Gathering, and the Method of Preparation, or, as they call it, *Curing*. *Dale.*

The following Account is from *M. Wilhelms ten Rhyne*, Physician to the Emperor of *Japan*:

THE

The Virtues which the *Chinese* ascribe to Tea, are: That it purifies the Blood, prevents frightful Dreams, and defends the Brain from malignant Vapours; cures a Verrigo, and Pain of the Head; especially when it proceeds from a Crapula; is good for hydropic Persons, for it is a potent Diuretic; dries up Rheums of the Head; corrects the Acrimony of Humours; removes Obstructions of the Viscera; and restores a decayed Sight; for the *Japanese*, I believe, make use of a Decoction of Tea, which they call *Tebia*, as their principal Antidote against a Weakness of the Eyes, contracted chiefly from the frequent and constant Use of hot Rice, and drinking their Liquor *Sargui*. It tempers adust Humours, corrects an hot Liver, mollifies an Hardness of the Spleen, and prevents Sleep, especially in those who are not accustomed to it. Moreover, it renders the Body brisk and lively, quickens the Senses, prevents a Torpor and Drowsiness, exhilarates the Heart, repels Fear, cures Gripes and Flatulences, discusses Wind in the Uterus, comforts and strengthens the Viscera, revives the Memory, sharpens the Wit, and tempers Bile. It is a noble Lithontriptic; at least I think I have Reason to say so, since I never found among the *Japanese* the least Sign, or hear the least Complaint, of any Stone or Gravel in the Kidneys or Bladder, though I was diligent enough in my Inquiries about it; and, to say no more, it renders the nuptial Embraces more acceptable and endearing.

Ettmuller says, that Tea is a Specific for the Stomach, and not only corroborates that Part, but is a Preservative from the Stone and Gout, and is especially beneficial to the Head. It preserves from Drunkenness, prevents Drowsiness, and is particularly adapted to the Stomach.

That the Drinking of Tea is not so effectual in curing or preventing some Distempers in our *European* Countries, as in *China* and *Japan*, may reasonably be imputed to the constant Use of this Liquor, and the temperate Way of living in those Eastern Parts.

That a Tincture is extracted from the Leaves of Tea by means of hot Water, every body knows. That the drinking of this Liquor may be useful in some Cases, I shall not deny; but, that it is good for all, I cannot be persuaded to grant, since some of the good Effects, which are thought to proceed from Tea, are rather to be ascribed to the hot Water. That this Liquor has been pernicious in some Cases, has been often proved by Experience, of which the following is an Instance: A Woman of a sound and vigorous Constitution, but addicted to the Use of Tea, complain'd of a Concussion of her internal Parts from a kind of acrimonious Coldness, which molested her chiefly by Night, and which she thought was owing to Tea, because she was principally seized with this Disorder after a free Use of that Liquor. And I remember, that some Years ago a robust Man complained of the like acrimonious Coldness in the Abdomen, which he also imputed to the daily Use of Tea. *D. Hulse*, from *Muy's Podalirius redivivus, de Potu Thea et Coffee*.

But what shall we judge of the Drinking of Tea and Coffee? When I was a Student at *Leyden in Holland*, I was miserably afflicted for a whole Year with the Headach; but after I began to drink freely of Tea, and especially of *Coffee*, every Day, I lived free not only from the Headach, but from all other Disorders; though before that time I had a lingering Life, more like Death, having conflicted with a long Series of Distempers for five Years past. *Ibid*.

I know some of my Acquaintance, who laboured under no small Inconvenience from the Stone and Gravel in the Kidneys, wholly freed from all painful Sensations of that kind by drinking plentifully of *Coffee*. *Ibid*.

Some who have travelled into those Eastern Parts, assure us, that Persons of Quality in *China* and *Japan*, boil the Buds and Flowers of the Tea, ascribing more Virtues to them, than to the Leaves. *Raii Hist. Plant. See PURPURA*.

THECA, *θήκη*, from *τίθημι*, to place; in general, is a Receptacle in which any thing is lodged; but is frequently appropriated to a Surgeon's Chest, wherein he keeps his Apparatus of Instruments, and other Necessaries. *Rhodius* attempts to prove from *Martial*, that *Theca* signifies, also, a Kind of Fibula, contrived not only for the sake of Chastity, but Modesty. *Castellus*.

THEE, the same as THEA.

THEATRICOS, *θητρικός*, from *θεάω*, to behold, sightly, entertaining to the Eye, is an Epithet applied by *Hippocrates*, *πρόβλητος* to such Bandages, as are contrived more for Shew and Ornamentation, than real Use and Service.

THEION, *θεῖον*. The Divinity, or Divine Nature, the principal Cause, and prime Agent, in human Affairs, according to *Hippocrates*, in the Beginning of his Book *de Natura Mulieris*, *μάλιστα τὸ θεῖον ἐν τοῖς ἀνθρώποις ἀσθενείας ἐκείνη*, "the Divinity is the chief Cause in Men [in human Affairs]". And, a little after, *δαί δὲ τὸν ὁρθὸς τὰς αἰτίαις αἰσθάνεται*, "He who intends to manage these things aright, must take his Beginning from divine Things." *Τὸ θεῖον* signifies, also, any thing divine, which proceeds from God, or is incomprehensible, as God is, and the Cause of it beyond the Reach of Sense or Thought. This is the Meaning of *τὸ θεῖον* in

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the Beginning of the Book *de Morbo Sacro*, and in many other Places. In the same Sense some understand the following Expression in the *Prognostics*, *ἔτι θεῶν ἐνέσι ἐν τῇ νόσῳ*, "Whether there be any thing divine in Diseases;" but *Galen*, on the Place, after rejecting some other Interpretations, confidently asserts, that it means *τὴν τὴν πνευματικὴν ἡμῶν καὶ σώματος*, "the Constitution of the Air which surrounds us;" which is the Cause of epidemic Diseases; or the Knowledge of the Stars, which conduces much to the Prediction of Diseases, and the Constitution of the Seasons throughout the Year. This Part of *Physiology Hippocrates* would have a Physician to be acquainted with, as we learn from the Books of the *Epidemics*, and the Book of *Air, Water, and Situations*. *Gorræus* and *Fernelius* understand by *τὸ θεῖον* such a Constitution of the Air, as offends more in Substance, than Qualities, which *Hippocrates*, *Lib. de Nat. Humana*, calls *ποσὸν σκόνειον*, "a morbid Secretion," or, according to *Galen's* Exposition of *σκόνειον*, by *ἀναθυμίασις*, a morbid Evaporation, or Exhalation. *Gorræus*. *Foefius*.

THEKA, *H. M. Kyati seu Quercus Indica Bontii*, is a very tall and beautiful Tree of *Malabar*, with a very thick Trunk, covered with a thick, scabrous, and ash-coloured Bark, furnished with very numerous, green, geniculated, and quadrangular small Branches. The Wood is whitish, hard, smooth, striated, and not unlike that of the Oak. The Root is redish, of an astringent and bitterish Taste, and has somewhat of an acid Smell. The Leaves adhere by Pairs to the Branches in parallel Order, and are oblong, round, acuminate, dense, thick, shining above, but not beneath, two Spans or more in Length, and a Span abroad, of an acid, and oftentimes austere Smell; rubbed together in the Hands, they yield a Gum, which immediately becomes of a black-purple Colour like Blood. The Flowers are small and sweet-scented, and are disposed about the tender Branches, at the Origin of the Leaves, in long, quadrangular, and sulcated Pedicles; and, gradually extending their Columns, are expanded in form of an Umbella. They consist of five or six roundish, white, and outwardly reflexed Petals, and are seated in a small and acuminate Calyx. Between the Petals stand a like Number of small white Stamina, with yellow Apices, the Middle being occupied by a greenish acuminate Pointal. At length appear large green Vessels, open above, in which are lodged, though separated from one another by a ligneous Partition, three or four roundish, green, lanuginous, and hairy Fruits, of a greenish Pulp, without Smell, and of a bitter and astringent Taste, inclosing a square Stone, of a white Colour inclining to red, and containing a small whitish Kernel.

Whole Woods of these large evergreen Trees are found in *Malabar*. The Pagans, from some unaccountable Superstition, use no Wood but this in building and repairing their Temples; of the tender Leaves they prepare a purple Colour, with which they dip their Silks and Cottons; they are, also, eaten as a Delicacy, and they boil them with Sugar into a Syrup, which cures the *Aphthæ*. Of the Flowers boiled with Honey they prepare a Medicine, which evacuates the Bodies of hydropic Persons of the Water: The Root dried, then pulverized, and exhibited, dissolves concreted Blood where-ever seated; and of the tender Fruits bruised is prepared an Ointment, which is very serviceable in curing an Herpes. *Raii Hist. Plant.*

THELE, *θήλα*. The Nipple of the Breast; or Breast.

THELYGONOS. A female Plant.

THELYPTERIS. Female Fern.

THENAR, *θέναρ*. The Palm of the Hand, or Sole of the Foot. But *Thenar* is the Name of a Muscle of the Hand, and another of the Foot.

The *Thenar* of the Hand is a very thick, fleshy Muscle; in some measure pyriform, lying on the first Phalanx of the Thumb, toward the Palm of the Hand, the large Eminence in which is principally formed by it. Its Name is taken from a *Greek Word*, which signifies *to strike*.

It is fixed to the Bone which supports the Thumb, and to the neighbouring Part of the great internal, annular, or transverse Ligament of the Carpus. It is, in some measure, bipartite, two distinct Portions answering to the two Insertions already mentioned. As it runs along the first Phalanx, these two Portions unite, and, diminishing in Thickness, are both inserted by one Tendon in the lateral internal Part of the Head of the first Phalanx; in the lateral Part of the Basis of the second, and in the lateral Ligament of that Joint.

The void Space between the two Portions of this Muscle gives Passage to the Tendon of the *Flexor Pollicis Longus*. That Portion, which lies nearest the Hollow of the Hand, is the largest; and its tendinous Extremity is inserted in the first sesamoid Bone, situated at the Basis of the second Phalanx.

The *Thenar*, by its Insertion in the first Phalanx of the Thumb, serves to draw it from the first Bone of the Metacarpus, more or less directly, as one of its Portions acts more than the other, or as they both act equally.

By the Insertion of the large Portion in the Basis of the second Phalanx, by the Intervention of the sesamoid Bone of the same Side, it may bend this Phalanx laterally on the first, and thereby bring the Thumb to a greater Distance from the Index.

Neither

Neither does this Distance hinder it from sometimes bending, and sometimes extending the Thumb, in the ordinary manner.

When the small Portion acts alone, it may give the second Phalanx a small Degree of Rotation on the first, these two Bones not being articulated by a Ginglymus.

Near this is another Muscle, called, by *Winslow*, the *Mesothernar*, which is a flat and nearly triangular Muscle lying between the first Phalanx of the Thumb, and the Bottom of the Palm of the Hand.

It is inserted by a very broad Basis in the Ligament which connects the Os Magnum of the Carpus to that which supports the Thumb: It is, also, inserted along the internal or angular Part of that Bone of the Metacarpus, which supports the middle Finger, and in the small Extremity of that which answers to the Index.

From thence the Fibres contracting to an Angle, terminate in a flat Tendon of different Breadths, which is inserted in that Side of the Head of the first Phalanx of the Thumb, which is turned to the Hollow of the Hand, and in the neighbouring Part of the Basis of the second Phalanx, by means of the second sesamoide Bone belonging to that Joint.

The *Mesothernar* moves the first Phalanx of the Thumb towards the Hollow of the Hand, more or less obliquely, as it acts either alone, or with the large Portion of the *Thenar*, or even with the *Antithernar*. By its Insertion in the sesamoide Bone of the second Phalanx, it, likewise, moves that Phalanx on the first, and thereby assists the *Flexor Longus*.

The *Thenar* of the Foot is a Muscle made up of several Portions, and lies on the inner Edge of the Sole of the Foot.

It is fixed, by three or four fleshy Fasciculi, to the lower and inner Part of the Os Calcis, Os Scaphoides, and Os Cuneiforme majus. It is, also, fixed a little in the annular Ligament under the inner Ankle, which belongs to the Tendon of the *Flexor Longus*.

From all these different Insertions the fleshy Fasciculi approach each other, as they advance forwards under the first Bone of the Metatarsus; and are fixed partly in the internal sesamoide Bone, and partly in the Inside of the first Phalanx near its Basis.

There is another Fasciculus fixed by one End to the Os Scaphoides and Os Cuneiforme majus, and by the other to the external sesamoide Bone, and Outside of the first Phalanx of the great Toe.

The *Thenar* bends the first Phalanx of the great Toe. When the Portion nearest the inner Edge of the Foot either acts alone, or acts more than the rest, the great Toe is separated from the other Toes, especially if it be at the same time extended. This Separation may be greater or less, according to the Degrees of Action of the other Portions of the *Thenar*. *Winslow's Anatomy*.

THEODORETOS, Θεοδωρετός. The Name of an Antidote described by *Paulus Aegineta*, L. 7. C. 11. and by many other medicinal Authors. The principal Ingredient is *Anacardium*; and it is intended for strengthening the Memory. The Word imports *divine*.

THEODORICON. This Word, like the preceding, imports *divine*; and is used as an Epithet for many Compositions, two of which occur in *Mesue*.

THEODOTIA, Θεοδοτία. The Name of several *Collyria* described by *Galen*, *Aetius*, and *Paulus Aegineta*.

THEOPEMPTOS. Sent from God. This is a pompous Title for an Antidote, or Tincture of Antimony, made with Antimony and Gold, and described by *Schroder*, L. 3. C. 17.

THEOPHILION, Θεοφίλιον. The Name of a *Collyrium* described by *Aetius*.

THEOPHRASTICI. A Name for the Disciples or Followers of *Theophrastus Paracelsus*.

THEORIA, from θεωρέω, to contemplate. The contemplative, or speculative Part of Medicine. See the PREFACE. The wild Imaginations of the Whimsical and Conceited have in all Ages suggested, and still continue to suggest, innumerable Theories of Physic, highly detrimental to the Art of Healing, of which a thousand Instances might be given. Thus *Hippocrates* directs Bleeding under the Tongue in a Quinsey; but *Celsus Aurelianus* condemns this Practice, without consulting Experience, the only Test; because it is not consistent with his favourite Theory.

THEOXENI MALAGMA. The Name of a *Malagma* against Pains of the Feet, described by *Celsus*, L. 5. C. 18.

THERÆUS, Θερᾶιος. An Epithet for a Species of *Cretan* Wine, mentioned by *Galen*, which was sweet, black, and thick, but not astrigent.

THERAPEIA, θεραπεία, from θεραπεύω, to heal, or cure, according to *Galen's* Definition, *Com. 1. in R. V. I. A.* is ἡ τῶν νοσημάτων ἀνέγχεσις ὅταν γενημένη, ἢ γινόμενη ᾖ, that is to say a Removal of Diseases already done, or completed, not what is still in its Progress. It is usually distinguished into perfect and palliative; the first is when the Disease is totally subdued; the other, when the Symptoms are only mitigated.

THERAPEUTICE, θεραπευτικά, is that Part of Medicine, which is particularly concerned in the Cure of Diseases.

THERENIABIN, Tereniabin. Oriental Manna, called also by the Greek Names *Drosomeli* and *Abromeli*.

THERIACA, θηριακά, from θήρ, a wild Beast, are properly such Medicines as cure the Bites of venomous Animals; and are supposed to differ from *Alexipharmics*, in that these latter are a Remedy for Poisons, which are taken inwardly; the other for such as affect the internal Parts from the Bites of Animals, as appears from *Nicander*, who has very elegantly treated of both, in two Books in heroic Verse. But he seems to make two Sorts of *Theriaca*; one by which the Bites of Animals are prevented, either by way of Suffumigation, or by rubbing or covering the Parts exposed; the other, by which the Bite itself is cured, and rendered of no ill Consequence. These Remedies are called *θηριακά ἀπὸ τῶν θηρίων*, from wild and venomous Animals, and not from any particular Species of them; tho' the Viper, which is properly called *ἔχιδνα*, (*Echidna*), or *ἔχis*, (*Echis*), is by the Greeks called *θηρίον*, (*Therion*) by Way of Eminence; as the Lion, also, is sometimes called *θηρ*, (*Ther*).

THERIACE, θηριακή, is an Antidote effectual against all Sorts of Poisons; and tho' every thing endowed with this Property may be called by this Name, since *Galen* calls *Garlick* the Countryman's *Theriace*, yet it is principally given to that most celebrated Medicine, composed of a Multitude of Simples with the Flesh of Vipers, and of Efficacy against all Manner of Poison convey'd into the Body, whether from a Bite, or through the Mouth. For the Antients often meeting with Poisons, and finding it no easy Matter to avoid either the Bites of Serpents, or a treacherous and poisonous Draught; and also considering that the Natures of Men were so different from one another, that what was good for one Man was oftentimes of no Use to another, they set themselves to invent some manifold and exquisitely compounded Medicine, which should be an universal and present Remedy in all Cases where Poison was concerned, and such was what we commonly call *Theriace*. The Invention of this Medicine is not very antient; but about the Time of *Nero*, when *Andromachus*, a very celebrated Physician, while the Professors of Medicine were consulting with one another, how to render this Antidote the most speedy as well as effectual, first thought upon adding Viper's Flesh. The Composition of the *Theriaca*, therefore, which bears the Name of *Andromachus*, is very antient, and in *Galen's* Opinion very good. This *Theriaca* is described by *Andromachus* himself, in some Verses dedicated to *Nero*, and inserted by *Galen*, in his Treatise of *Theriaca ad Pisonem*. [See the Description under the Article *ANDROMACHUS*]. To this Antidote *Andromachus* did not give the Name of *θηριακή* but *γαλήνη*, (*Galene*), that is, *Sereneness*; he also called *ἡλάρη*, (*Hilare*), and *εὐδία*, (*Eudior*), Words importing Cheerfulness and Serenity of Mind; but *Crito*, and others after him, gave it the Name *θηριακή*, on account of the Viper's Flesh which entered its Composition. In Imitation hereof several other Physicians composed Antidotes against Poisons, which they, also, called *θηριακά*, an Account of which you have, as here follows, under the Names of their Authors, or some noble and illustrious Persons.

Θηριακή Ἀλλίς Γάλλου, "the *Theriaca* of *Alus Gallus*," which he is said, after his Return from *Arabia*, to have presented to *Cesar* with this Recommendation, that it had saved the Lives of many Persons under him. It is as follows: Take of the Root of the white Vine, sixteen Drams; Seeds of Trefoil, *Opopanax*, each eight Drams, *Aristolochia Tenuis* twelve Drams; Root of *Libanotis*, *Iris Illyrica*, Ginger, Opium, each eight Drams; Seeds of wild Rue, twelve Drams; of *Ethiopian* Cumin, sixteen Drams; of Myrrh, Cassia, Castor, Sefeli, *Eringo-root*, *Serpyllum*, *Succus Cyrenicus*, each six Drams; of *Medica*, twelve Drams; *Sagapenum*, six Drams; Saffron, five Drams; Meal of *Ervum*, twenty-four Drams: Make them with Water into Troches of the Weight of three Oboli, and exhibit them in Wine.

Θηριακή Ἀσκληπιοφίλου, "the *Theriaca* of *Asclepiades Philometor*," is thus prepared: Take of the Roots of Meum, *Serpyllum*, *Opopanax*, each two Drams; Seeds of Trefoil, one Dram; Seeds of Anise, Fennel, Ammi, Apium, each one Acetabulum; very fine Flower of *Ervum*, two Acetabula; old Wine, as much as is sufficient to mix them together, in order to make Troches to be dry'd in the Shade. The Dose is three Oboli in three Cyathi of Wine. *Eudemus* gives us the Composition in Verse, as we have it in *Galen*, Lib. 2. de Antidotis.

Θηριακή Δημοκράτους, "the *Theriaca* of *Democrates*," who was an excellent Physician, and describ'd his *Theriaca* in Iambic Verses, recorded by *Galen*, Lib. 1. de Antid. It contains the same Simples as the *Theriaca Andromachi*, but differs in the Weights; for of these, where *Andromachus* directs four Drams, he orders but two; and where *Andromachus* takes two Drams, he directs four; as may be observ'd in many of the Simples which enter that Composition. You have this *Theriaca* in *Aetius*, *Tetrabib. 4. Serm. 3.*

Θηριακή Δημήτριος, "the *Theriaca* of *Demetrius*." This Author was chief Physician to the Emperor in the Time of *Galen*; and in the Composition of his *Theriaca* agreed with *Andromachus*, except in the Weight of the Troches of Squils, which has but an inconsiderable Difference; for whereas *Andromachus* prescribes forty-eight Drams of those Troches, he directs but forty-six in the Composition of the *Theriaca*.

Θηριακή Εὐκλείδου, "the *Theriaca* of *Euclid*," surnamed *Palatianus*, which was thus prepared: Take of Castor, six Drams; *Opo-*

Opopanax, Sagapenum, Sefeli, Cachrys, Chamædrys, Chamæpitys, Marrubium, each sixteen Drams; Stryx, Bitumen Judaicum, Myrrh, each seven Drams; Juice of Poppy, eight Drams; Honey, one Pound. It is given in the Juice of the Fraxinus, or in Wine, to the Quantity of a Dram, or more, at Discretion; it is good, also, in Quartan Fevers.

Θηριακὴ Ζήνωνος, "the Theriaca of Zenon" of Laodicea: It contains of Cardamoms husked, Serpyllum, Seeds of Apium, Root of the white Vine, the Seeds of Trefoil, Anise, Parsley, the Root and Seeds of Fennel, Ammi, Aristolochia tenuis, Meal of Ervum, Opopanax, of each an equal Weight: Bruise each of them separately; then mix them together, and work them up in Wine into Troches, to be dry'd in the Shade.

Θηριακὴ Μιθριδάτης, "the Theriaca of Mithridates." This Antidote is otherwise called *Μιθριδάτιος*, "Mithridate," because King Mithridates always used it, to preserve himself against Poison; and that so effectually, that when he was besieged by the Romans, and had twice attempted in vain to poison himself, he was obliged to fall upon his Sword, and thus dispatch'd himself. It consists of a great Number of Simples, and is described by Galen, *Lib. 2. de Antid.* [See the Preparation under MITHRIDATIUM]. This Theriaca is the same which Aetius unaccountably describes for the Theriaca Andromachi.

Θηριακοὶ ἅλας, Theriaci Sales, Theriacal Salts, are prepared of Vipers in the following manner: They put four Vipers alive into an earthen Pot, which has its Outside well cover'd with Clay, and upon them they cast an *Italic* Modius, that is, twenty Pounds of Sal Ammoniac, or common Salt, to which they add Troches prepared in the following manner: Take of Gentian-root, one Pound; Tops of the lesser Centaury, Marrubium, each six Ounces; Mountain Scordium, Apium, Chamædrys, Seeds of Garden-rue, each one Pound: Bruise them, and make them up with Attic Honey into Troches, half a Pound of which is to be put into the Pot with the Viper, and the rest is to be mixed with the Salt, together with five tender and fresh Squils cut very small. This done, they put Fire under the Pot, which is to have four or five Perforations in the Cover, through which the exhaling Vapour, when it appears no longer gross and foul, but like a thin and pure Flame, shews the Burning is completed. Martianus, besides the Pastils, adds another *Italic* Modius of Salt. The Pot, being taken from the Fire, is suffer'd to cool for a Day and a Night; then they open it, and, taking out the burnt Contents, carefully triturate them, and put them into a Sieve with the following Mixture: Take of Seeds of wild Rue, Hyssop, each nine Ounces; Fennel-Seeds, Gallic Nard, Stachys, each six Ounces; Macedonian Parsley, four Ounces; the Tops of Origanum and Thyme, each nine Ounces; the Berries of Amomum, and the Seeds of Horminum roasted, each three Ounces; Juniper-berries, black and white Pepper, each two Pounds; the Root of Laserpitium, ten Ounces; the Seed of Coriander, Ginger, the Seed or Root of Saryrion, Pennyroyal, Sefeli, Mountain Tordylium, Mint, each six Ounces; Casia Fistula, two Ounces, Cinamon, one Ounce: Bruise them, and mix them all together with the rest; and, having passed them through a Sieve, set them aside in glass Vessels in a dry Place, and use them not till the End of forty Days. I, says Galen, *Lib. ad Pisonem*, burn not the Vipers; but take as many Theatrical Troches, as contain four Vipers; that is, says Martianus, about two Ounces and an half of dry Troches; and mix with those Things which are burnt with the Vipers, that they may lose the Bitterness, with which they are endu'd, in the Burning; and by this Method prepare the best of Theriacal Salts. These Salts are highly efficacious in cutaneous Diseases, as the Leuce, Lepra, Impetigo, and Phthiriasis, provoking a copious Sweat, by which means the excrementious and morbid Juices latent under the Skin are expelled.

These Theriacal Salts are described by Galen, *Lib. de Theriaca ad Pisonem*; but the Reader is to take notice, that the Copy of Galen is very much corrupted in this Place; but, may however, be corrected from Aetius, *Tetrab. 4. Serm. 1. Cap. 97.* by Help of which we may, also, restore Paulus, who describes these Salts at the End of his seventh Book.

Θηριακοὶ ἀπὸ κρέατος ἰσχυροὶ, "Theriacal Pastils, or Troches." These are Troches prepared of the Flesh of Vipers for the Composition of the Theriaca; and are made in the following manner: They take female Vipers caught in the End of the Spring, take off their Skins, and carefully cleanse them; then, after giving the Flesh two or three Washings in Water, they put it in a clean Pot with a sufficient Quantity of Water, and boil it over a Fire made of the Wood of the Vine, till the Flesh be wholly separated from the Spine. Afterwards they carefully press the Flesh with their Hands, and pound it very well in a Mortar, instilling every now-and-then some of the Broth. This done, they take of the finest Bread, new, dry, pounded, and sifted, three Parts for one-fourth, or at least four Parts for one-fifth of the Flesh; and pound them very carefully together, instilling at proper Intervals some of the Bread, till they are exactly united. Of this Mass they form fine Troches of a moderate Size, adding a little Opopalsamum in the Formation, and dry them in the Shade. They are then rubbed over with the best

Opobalsamum, and kept in a glass-Vessel; and if at any time there appear about them any Dustiness, or Whiteness, on account of Mouldiness, it is carefully wiped off with a Linen Cloth.

Θηριακὴ, Theriaca, is, also, the Name of a Plaister of Centaury commended by Oribasius for Wounds and Punctures of the Nerves and Muscles; and for the Bites of wild Beasts, and a mad Dog: It is described by Aetius, *Tetrabib. 4. Serm. 3.*

THERIACA ANDROMACHI.

THE TREACLE OF ANDROMACHUS, commonly called VENICE TREACLE. See ANDROMACHUS.

THERIACA COELESTIS.

Take of the Theriaca Benedicta of Quercetan, a Preparation not much different from Venice Treacle, a Pound and an half. Extract with Treacle-water; pour the Whole into another Vessel; and abstract to the Consistence of Honey. Then, keeping the Essence separate, pour the abstracted Spirit to what before remain'd in the Vessel. Then extract and pour off a second time. To what remains pour a sufficient Quantity of rectified Spirit of Wine, and extract its remaining Essence, then decant again, and mix this Essence with the former. Then extract what still remains in Treacle-water, and at last in distill'd Vinegar, fortified with Spirit of Nitre: With these last Extracts precipitate the former, and coagulate the former to the Consistence of Honey. Then mix with the Whole, of the Magisteries of Coral and Pearls, each one Ounce; of the Magisteries of Iacynth, Rubies and Emeralds, each six Drams; of Animal and Mineral Bezoar, and Salts of Coral and Pearls, each half an Ounce; of oriental Bezoar, Seal'd Earth, true Unicorn, and of the Bone of a Stag's Hart, each three Drams; of Ambergrise, two Drams; inspissated in a double Vessel to the Consistence of an Extract, or a Mass fit for Pills. Schroder.

THERIACA DIATESERON:

An Electuary of four Ingredients.

See DIATESERON. The THERIACA PAUPERUM is the same.

THERIACA EDINENSIS:

The Edinburgh Treacle.

Take the Roots of Angelica, Contrayerva, Masterwort, Virginian Snakeroot, wild Valerian, Zedoary, and Bayberries, of each two Ounces; the Leaves of Rue, and Scordium, of each an Ounce and an half; of the Powder of Diambra, three Ounces; Camphire, Saffron, Rosin of Guaiacum, Myrrh, and Opium, each an Ounce; clarified Honey, thrice the Weight of the Powders; and as much Canary-wine as will serve to dissolve the Opium: Mix all together, and make it into an Electuary, according to the Rules of Art. *Edinburgh Dispensatory.*

THERIACA GERMANORUM.

The Rob made of the expressed Juice of green Juniper-berries is so called.

THERIACA LONDINENSIS:

London Treacle.

Take of the Four greater and lesser hot Seeds, each an Ounce; of the Roots of Angelica, Virginian Snakeroot, Tormentil, Elecampane, Zedoary, Contrayerva, Calamus Aromaticus, and Gentian, each two Drams; the Leaves of Cretic Dittany, Scordium, Rue, Laurel, and Juniper-berries, each half an Ounce; Nutmegs, Mace, Saffron, Myrrh, and Cloves, each three Drams; Ginger and Opium, each two Drams; Syrup of white Poppies, boiled to an higher Consistence than ordinary, three times as much as the Weight of the rest; and of Canary a sufficient Quantity to make the Whole into an Electuary.

This is much altered from what has been in all the preceding Dispensatories; and as an Alexipharmic, which is plainly its main Intention, much for the better; for many Ingredients, very weakly conducive to such an End, are now rejected; and one of the most efficacious we have in the Shops, of that Class, added, which is the Contrayerva; but, as this has hitherto been mostly used by the Surgeons, where warm Cataplasms are required, how far it is improved for such Purposes, and especially by the Exchange of Honey for Syrupus de Meconio, I will not pretend to be a Judge.

Quercetan ascribes surprising Virtues to this Preparation, in subduing Poisons, and contagious Disorders; in allaying Comotions of the Spirits and Humours; in mitigating Catarrhs, Pains,

Pains, and Watchings; in corroborating the natural Balsam, and preventing Putrefaction. *Schrod. Pharmacop.*

THERINOS, *Θήρινος*, is an Epithet apply'd to a sort of Wine, which was moderately thick and black, and of the Growth of *Asia*. *Galen, Lib. πρὸ ἐνυχυρίας*. *Θήρινος* is an Epithet of a Collyrium in the same Author, *Lib. 4. de C. M. S. L. Cap. 7.*

THERIODES, *Θηριώδης*, from *Θήρ*, *Fera*, a wild Beast; wild, savage, is applied to Things of a ferine or malignant Nature, and particularly to Diseases which take their Names from wild Beasts, as the *Elephas*, and *Cancer*, or under which Animals, as large Worms, or *Ascarides*, are generated; or even to a *Phthisis*, under which the Nails are incurvated, like the Talons of wild Beasts. *Hippocrates* applies it, also, to the Autumn, as being the Season of the Year, in which malignant and destructive Distempers are most predominant. Thus *Galen*, commenting on τὸ *Θηριώδες ἐκδινοτάτω*, 6 *Epid. Sect. 1. Aph. 13.* says, that whether the Author, by τὸ *Θηριώδες* of the Autumn, means the large Worms or *Ascarides*; or the *Elephas* or *Cancer*, or, as some will have it, a *Phthisis*, all those Disorders are chiefly generated in the Autumn. *Θηριώδες* may be apply'd to the Autumn on account, also, of those ferine and melancholy Disorders proceeding from black and highly adust and torrefy'd Bile, under which the Patients fall upon every one they meet, and attempt to worry them after the manner of wild Beasts. *Galen*, in his *Exegesis*, expounds the τὸ *Θηριώδες*, of Animals, such as the large Worms, or *Ascarides*, in the Intestines; or by τὸ *ἐκδινοτάτω*, "rabific," because the Autumn is a Season disposed, from the Corruption of the Humours, for the Generation of many severe and dangerous Disorders, which often terminate in Consumptions; which are, also, very mortal in Autumn. *Arctaus*, also, who almost equal'd *Hippocrates*, in Grandeur of Style, bestows the same Epithet *Θηριώδες* on the Autumn. And *Erosian*, expounding the τὸ *Θηριώδες*, 6 *Epid.* before-mention'd, tells us that some understand by it malignant Ulcers, called *Θηριώματα* (*Theriomata*) which are most rife in Autumn, because of the Inequality of the Air; others refer it to small Worms, which are then principally generated; and others will have it meant of a *Phthisis*.

Θηριώδης βήξ, 6 *Epid. Sect. 2. Aph. 11.* a ferine and malignant Cough, is explained by some Interpreters, as *Galen* tells us, by a dry Cough excited by Worms creeping upwards to the Mouth of the Stomach, and lancing the same; others, he says, accommodate the Expression to the Cough of those in a *Phthisis*, because their Nails are incurvated, as was said before. Others, again, expound *Θηριώδης* by *κακοῦς* (*Cacothēs*) malignant, which is the Opinion of *Galen* himself; so that *Θηριώδης βήξ* is a malignant and pernicious Cough, which is no Indication of an Abscess; nor gives any Hopes of a Concoction. The same Author, in his Comment on 6 *Epid. Sect. 2. Aph. 16.* where *Hippocrates* speaks of such dry Coughs in a burning Fever, as are not very troublesome, nor excite a Thirst, nor dry the Tongue, because they are owing, he says, ἢ τῷ *Θηριώδει*, ἢ τῷ *νεύματι*, "not to any (thing expressed by) *Theriodes*, but to the Wind (or Air)," as appears in that the Patient never coughs, but when he speaks, or his Mouth is open, explains the τὸ *Θηριώδες* as follows: *γινόμενον δὲ βρυχῶν ἐν πύλαις καὶ διὰ τὴν κακοῦσιν τὸ νεύματι, &c.* "Since dry Coughs proceed, also, from some Malignity of the Disease, in order to distinguish them from those of which he is now speaking, he says, that these latter are not excited by any thing signify'd by *Theriodes*, but by the Air. Some will have it, that by *Θηριώδες* here *Hippocrates* does not mean simply all Malignity in general, but, as some of them interpret it, a *Phthisis*, because the Patients under that Disease resemble Beasts in respect of the Crookedness of their Nails; others understand it of a *Therion*, which is properly an Ulcer of the Lungs; others, again, will have it spoken with respect to Worms, ascending into the Mouth of the Stomach, and by Irritation of that Part provoking a Cough; though they can neither prove this by Reason nor Experience. The best way, therefore, is to understand *Theriodes* of some Malignancy, whether the Cough, arises from some Defluxion from the Head, or an Ulcer in any of the Organs of Respiration, or an Abscess in those Parts, or what they call an *Empyema*. Now there are other kinds of Coughs besides this, which are not malignant, and are owing to a Distemperature of the Organs of Respiration, or of the Fauces, or of the *Aspera Arteria*, or to exasperating Meats and Drinks, and even sometimes to the ambient Air." In the like Sense, by *Θηριώδης τὰ ἐκίμνητα* (*Theriodes ta Emumena*) *Coac. 623.* we are to understand malignant Vomitings, by which the great Corruption and Malignancy of the Humours are indicated; or by which, perhaps, Worms are, also, ejected.

Θηριώδης παραφρένις (*Theriodes Paracrusies*) in *Hippocrates*, 1 *Prorrhet. 26.* and *Coac. 85. 55.* are Disorders of the Brain from Deliriousness, or Loss of Reason; wherein the Patients behave like wild Beasts, or, as *Galen* says, *Com. 1. in Prorrhet.* kick, bite, and rage at those who come near them, as if they were their mortal Enemies. Also, *Θηριώδης παραφρένις*, (*Theriodes Paracrusies*) 1 *Prorrhet. 123.* import a ferine and savage Madness, more vehement than Melancholy, and very malignant

[see *DELIRIUM*]: Or, as *Galen* explains it, "by this Expression is to be understood an Epitasis (Intenseness) of the melancholy Disorder; for as they who are melancholy, and highly delirious, are prone to do those who stand near them a Mischief, so, when they are mischievous and raging beyond measure, he gives the Disorder the Name of *Theriodes*."

Θηριώδης διαίτη (*Theriodes Dieta*) is such Diet as is common to Men with Brutes, and such as was used in the first Ages, *Lib. πρὸ ἀρχαίων ἰσχυρίων*.

Θηριώδης (*Theriodes*) are Patients molested with Worms; or such Fevers as by a peculiar Malignity and Depravation of the Humours, which naturally happens in Autumn, afford Matter for the Generation of Worms. Thus, 4 *Epid. Θηριώδης ἐν τῷ χρόνῳ* are those who conflict with Worms about the Time of a Crisis; or those who, labouring under a Fever, towards the time of its Decline and Solution, discharged Worms or *Ascarides* by Stool or Vomit, by the Benefit of Nature, making Efforts to free itself from whatever offended or opposed it.

THERIOMA, *Θηριώμα*. See the preceding Word.

THERION, *Θηρίον*, in *Hesychius*, is pounded *πάθος τοῦ σώματος*, a kind of bodily Disease; which is, as *Galen* in his *Exegesis* expounds it, either Worms, or a ferine (*ἀγρευ*) Ulcer; as it signifies, he says, in the Book *de Locis ad Hom.* where you read, *Θηρίον ἐν τῷ σώματι ἐπὶ χέλει*, "a ferine (or malignant) Ulcer arises on the Body." It has the same Signification. *Coac. 467.*

THERIOTOME, from *Θηρίον*, a wild Beast, and *τέμνω*, to cut, or dissect. The Anatomy of Brutes.

THERMÆ. Natural warm Springs, of which the celebrated *Frederic Hoffman*, in his Dissertation on the *Caroline Waters*, has given us the following Account.

Nothing has more perplex'd the Minds of Men, and laid a more effectual Foundation for different Opinions among Physicians, than that actual and continual Heat, which in some Medicinal Springs is obvious to the Senses. We shall not enumerate all these Opinions, but only specify some of the most considerable: Many, therefore, especially among the Antients, accounted for the continual Heat of these Waters from the *Platonic Barathrum* and Centre of the Earth, where they suppos'd a perpetual Fire lodg'd, and thence diffus'd thro' Chinks and Apertures to particular Parts. But this Notion is rather the Creature of a wanton Fancy, than a Theory capable of being supported by solid Arguments. Others have accounted for the Heat of such Springs, from that of the Sun. But the Rays of the Sun do not penetrate into the Bowels of the Earth; and these Waters always retain the same Heat, when the Sun has retir'd from our Hemisphere, where he shines faintly in the Winter, and when the Earth is constricted and harden'd by Frost. Nor, if the Heat of these Waters was produc'd by the Influence of the Sun, could any Reason be assign'd, why other Springs, equally expos'd to the Solar Rays, should not be, also, hot.

Some Chymists derive the Origin of the Heat in these Waters, from the Effervescence of an Acid and an Alkali, as, also, from a Congress of Quick-lime with the Water. But if the Heat of these Waters was produc'd by the Conflict of an Acid and an Alkali, a neutral Salt, which is always produc'd by a Mixture of these, must necessarily be found in the hot Springs; which, however, does not happen. And there are Limestone Mountains in the Earth, yet the Matter of them conveys no Heat to the Waters, till it is previously burn'd; but Quick-lime is rarely found in the Bowels of the Earth. Others think they embrace a more rational Opinion, when they assert, that in the Production of the Universe, these Waters were furnish'd with their Heat: But this Notion seems to be as repugnant to Truth as the others; for, if this Heat was innate, I do not see why it should be so soon lost: So that we may conclude, that this Heat depends upon the Communication and Access of an igneous Substance, in the same manner as Water is heated by the Fire, and becomes cold when remov'd from it.

'Tis not, therefore, to be doubted, but that these Waters, naturally cold, contract their Heat in the Bowels of the Earth thro' which they pass; so far is the Earth from being render'd warm by the Heat of the Waters. As Water out of the Earth is render'd hot by Fire, so in the Bowels of the Earth a latent Fire renders the Waters flowing by it tepid or hot. That the Existence of such Fire is not precariously asserted, but that it is really lodg'd in the Meanders of the Earth, is sufficiently certain, from the burning Mountains found in different Countries, the violent subterraneous Commotions and Thunders, the Eruptions of Flames, and the burning of Rocks and Mountains. We must, therefore, inquire, by what means this subterraneous Fire is generated in the Bowels of the Earth; and how it is so long, and so constantly supported and maintain'd.

In order, therefore, to explain this difficult Phenomenon, we must, from the Principles of Natural Philosophy and Chymistry, account for the Origin of Fire, and the Production of Flames. We, therefore, affirm, that the Matter, Matrix, or Food of Fire is supplied by pinguious and sulphureous Substances. These not only give Origin to Flames, but are, also, quickly carried into

into an igneous Motion. Sulphurs are converted into Fire, by their highly accelerated and quick intestine Motion; so that Fire is only a Species of brisk intestine Motion, which destroys the Union and Mixture of Bodies. Hence, the Person who from cold Bodies attempts to produce Fire and Flame, must take sulphureous Substances, and by a violent Attrition and Collision put them into a brisk igneous Commotion.

Thus, for Instance, Iron is a very sulphureous Metal; and for that Reason, of all other Metals, the most susceptible of Heat. Hence, when it stands in Fusion, it throws off numberless Sparks; and its Filings, when blown into the Flame of a Candle, forthwith diffuse lucid Sparkles. This Sulphur of Iron, by Collision, put into an accelerated Motion, produces manifest and visible Fire. Hence it is that a Piece of Iron, by a quick and repeated Percussion with a Hammer, appears igneous, and is rendered so hot, as to burn and kindle Sulphur. This Origin of Heat and Fire is sufficiently proved by that curious Experiment, in which, the most lucid Flame is in a Moment produced, by duly mixing highly concentrated fuming Spirit of Nitre with Oil of Cloves; for this Oil, which is replete with a large Quantity of thick Sulphur, is, by an Admixture of this Spirit, thrown into a brisk intestine Agitation and Motion, which is Fire.

When, therefore, it is asked, What is the first Origin of subterraneous Fire, and by what it is supported? I think we may assert, that these Things happen, because the sulphureous Substances, lodged in the Bowels of the Earth, being by their mutual Action put into a violent Motion, first produce Fire; which afterwards easily diffuses and propagates itself, by means of the adjacent sulphureous, and, especially, the bituminous and easily inflammable Materials. We must, also, inquire, what Substances, hid in the Bosom of the Earth, are fit for taking Fire; and these, in my Opinion, are principally iron and sulphureous Ores. For that large Tracts of Ground are full of iron Ore, is sufficiently certain; nor is it less true, that profound subterraneous Caverns abound with sulphureous and vitriolic Ores; as is obvious from the digging Sulphur and Vitriol, almost for a thousand Years past, from mount *Ramelshurg* near *Goslar*.

Some Parts of *Italy*, also, abound with Sulphur; which is the principal Cause of the burning Mountains, and frequent Earthquakes in that Country. Hence, *Tschirnhausen*, in *Lib. de Medicament*, tells us, that in Mount *Etna* in *Sicily*, and Mount *Vesuvius* in *Campania*, he principally observed four Things: First, common inflammable Sulphur: Secondly, a porous Earth: Thirdly, Air: And fourthly, Sea-Water; for, the Sulphur kindled in these Mountains, not only produces these terrible Eruptions, but also by heating the Earth intensely, renders the Waters, which flow thorough them, warm.

This is, also, the Reason, why in *Italy*, where the Sulphur burns in the subterraneous Spaces, hot Springs are so numerous. Thus, *Laurentius Grullus*, in *Orat. de Peregrinat. Studii Medicinal. ergo suscepta*, tells us, that in *Siena* there are above fifteen medicinal Springs; and, a little after, he speaks in the following manner: "Afterwards, at *Puzzolo*, I saw whole Mountains of native Sulphur, which is much esteemed in the Shops; these were formerly called the *Phlegraan* Mountains. Near *Baia*, I, also, saw various Mixtures of hot mineral Waters; and in the Bay of *Naples*, near the Lake *Avernus*, the Vapours arising from the Earth almost surpass the Virtues of the hot Springs." There is, also, found a Sulphur of the same Kind, in some of the hot Springs of *Germany*, especially those of *Aix la Chapelle*, which not only tinge Silver with a brownish Colour, but, also, in the *Cæsarean* Bath produce a pure Sulphur in the Form of Flowers.

We have already shewn that Sulphur is the Matter, as of all Fire, so, also, of that which is lodged in the Bowels of the Earth. But in what manner this Sulphur should be spontaneously kindled, and take Fire, is not as yet explained. In my Opinion, therefore, this happens by the mutual Congress, and violent intestine Motions, of the sulphureous Bodies, when the disengaged Sulphur acts upon chalybeate Earths and Substances, or upon a bituminous Earth. We may, therefore, conceive the Thing to happen in the following manner: When, in the Bowels of the Earth, Sulphur is mixed with Bitumen, or a Fossile abounding with an acid Salt, as, also, with chalybeate and sulphureous vitriolic Marcasites, when these are collected in large Quantities, and when the Water approaches them, then the Acid of the Vitriol contained in the Sulphur is dissolv'd, and by its Action on the bituminous Earth, and the sulphureous chalybeate Ores, not only excites an intense Heat, but, also, if the Earth is porous, and a free Access afforded to the Air, produces a bright Flame.

This Doctrine will be further illustrated by the following chymical Experiment: When one Pound of native Sulphur, reduced to a Powder, is mixed with an equal Quantity of the fine Filings of Iron, and put into a Glass, sprinkling as much Water as will render the Mixture moist, like a Poultice; this Mass after twelve Hours, is raised in a Froth, and such an hot internal Conflict is produced, that the Glass is broken by the Heat, whilst the Colour of the Mass, which was before yellow, degenerates into black; this Magma, when taken out of the Glass, broken into small Pieces, laid in a Heap, and for a short time exposed to the free Air, not only becomes more intensely hot than before,

but, also, produces a manifest Flame, attended with a sulphureous Smoke.

The Origin of subterraneous Fire, may be farther illustrated by a common Experiment, by which it is shewn, that the Marcasites, and sulphureous Portions of Earth, of which Vitriol is made, when exposed to a moist and rainy Air, soon conceive an intense Heat. The same happens when the Fragments of the black Caput Mortuum, remaining after the Sublimation of Sulphur, from sulphureous Marcasites, are laid in a Heap, and exposed to a moist Air; for on this Occasion, they contract so violent an Heat, that the Hand cannot be put near them, without the Danger of being burnt. This is sufficiently obvious to the Senses, at *Alt-Sattel*, a Town in *Bohemia*, a Mile distant from the *Caroline* Springs, where Allum, Sulphur, and Vitriol, are prepared.

The Origin, and true Cause, of subterraneous Fires, is still further illustrated by a remarkable Phenomenon, daily observable in those Places, where Alum is prepared; such as *Dieben* in the Marquisate of *Meissen*, and *Commoden* in *Bohemia*. For we know that in the Preparation of Alum, a Sort of fossile Coals is dug out of the Bowels of the Earth, or a black, inflammable, bituminous Earth, in which the sulphureous and aluminous Salt is lodged: This Earth is afterwards laid in an Heap, and being moistened by the Rain it not only becomes violently Hot, but also sends up a Smoke, and sometimes an open Flame; from no other Cause but that the sulphureous Acid of the Alum, being dissolved, attacks the sulphureous and bituminous Earth; Thus by the mutual Action and Reaction of their Parts, the Sulphur is not only rendered warm, but also upon a Commotion from the Air, is plainly converted into Fire. Our Doctrine is also confirmed by a curious Experiment, in which, if burnt Alum is mixed with any sulphureous inflammable Substance, a Mass is obtained, which when exposed to the free Air, spontaneously becomes hot, takes Fire, and burns.

After an Enumeration of these Observations and Experiments, relating to the Origin of Fire, it will be no hard Task to ascertain the Origin, and genuine Causes, of that subterraneous Fire, which is the Cause and Source of the Heat in hot Springs, of Earthquakes, and of burning Mountains; for when the Sulphur, by the mutual Action of the various bituminous, chalybeate, vitriolic and sulphureous Minerals, is agitated by a violent internal Motion, and the Air contained in the Caverns of the Earth, by blowing upon it, increases the Heat, and excites a greater intestine Collision and Motion, a violent Fire may be produced, which spreading further through the subterraneous Passages, often shakes large Tracts of Land, excites subterraneous Lightnings and Thunders, and sometimes raises into the Air large Quantities of Earth and Rocks. These Phenomena are most frequent in Places washed by the Sea, and in which the Sea-water, by secret Conveyances, rushing into the subterraneous Cavities, forces the Air, contained in them, into a smaller Space, and thus excites a Wind. Thus 'tis known, that Waters, by their Fall into Caverns, may excite a Discharge of Winds, through certain Passages, which in many Parts correspond to Bellows. On the contrary, where a strong Gale is wanting, and the Places are remote from the Sea, as the middle Parts of *Germany* are, a great Heat is, indeed, produced, but the Fire pent up, never breaks out into an open Flame. It nevertheless diffuses far and near hot Exhalations, which passing through the Pores and Chinks of the Earth, render the Waters, which flow along them, hot.

It may possibly at first seem hard to explain, by what means the continual Heat, for so many Ages, communicating the same Degree of Warmth to these Waters, can subsist in the subterraneous Cavities. But this is not so hard to be accounted for as some imagine; since we are not to suppose that there is a scanty penurious Store of these Minerals in the Bowels of the Earth; but rather an inexhaustible Fund of Sulphur, Bitumen, and vitriolic Marcasites. A memorable Instance of this, is found at *Alt-Sattel* in *Bohemia*, where for above two Centuries, Sulphur, Bitumen, and Vitriol have been obtained from the Earth; as also at *Puzzolo* in *Italy*, where for many Centuries, Alum and Sulphur, have been prepared; and yet there still remain large Quantities of these Ores. Besides, when in the subterraneous Passages by the Access of the Water, producing the mutual Action, and Reaction of these Minerals, the Sulphur is once put into a violent igneous Motion, this intestine Motion readily finds similar Materials to act upon; and thus it easily propagates itself, and communicates the like Motion, to the pinguious inflammable Substances, the most considerable of which is the bituminous, inflammable Earth of fossile Coals.

'Tis also certain, from frequent Observation, that all Fire pent up, and preserved from the free Access of the Air, is not easily dissipated, but burns for a long time, without any considerable Waste of its *Pabulum*. They, who have been present at the Burning of Houses, know that in the Joists, buried under the Rubbish, the Fire has remained very long, even many Days after the Burning has been begun. The same happens to fossile Coals, which, if once set on Fire, it retains it for a long time under the Ashes. It is also curious to observe, that in *Papin's* Machine, which is so closely shut up, that neither the Air, nor the Steam of warm Water can get out, the hardest Fleashes may be boiled by the Help

of a very few live Coals, over which when this brazen Machine is placed, it not only conceives the Heat soon, but retains it long. And, to draw an Instance from the human Body, this noble Structure, when the Pores are closed up, and Perspiration obstructed, is, in Fevers, far more afflicted with intense Heat, than when the hot Vapours are freely dissipated and eliminated thro' the cutaneous Pores. In like manner the hot subterraneous Exhalations, when not dissipated in the free Air, but, as it were, re-forbed by themselves, in consequence of a repeated Gyration, last long, and are not soon consumed.

We are furnished with a memorable Instance of long-concealed Fire in the Coals of a Mountain near *Zwickavia*, in the Marquisate of *Meissen*; for the People of the Neighbourhood inform us, that, above a Century ago, this Mountain was set on Fire by the *Swedes*, and burned so long, that there was a Necessity for filling up its gaping Chinks and Cavities with Earth, and by that means suffocating the Fire. But about fifteen Years ago, when these Cavities were again opened, their internal Parts were found burning, and there was a second Necessity for filling up the Chinks. Above an hundred Years ago, *George Agricola*, in his Treatise de *Ortu & Causa Subterranea*, mentions this Mountain, and in his Treatise de *Natura eorum qua effluunt ex Terra*, Lib. 4. Cap. 17. he speaks in the following manner: "There is a Mountain near *Zwickavia*, in the Marquisate of *Meissen*, which burns continually, whilst Cavities are gradually formed on its Surface, at which if any one looks, they resemble burning Furnaces; and any combustible Substance which comes within four Feet of them, is set on Fire." He, also, informs us, "that in many Parts of *Germany*, burning Vapours are emitted in the Night, especially in *Meissen*, near the River *Muldah*, through all the Fields between *Zwickham* and *Glauca*." *Laurentius Gryllus*, also, mentions this Mountain in the following manner: "Near *Zwickavia*, is a Mountain which burns perpetually, just as Mount *Vesuvius* did in the Days of *Trajan*, and discharges a sulphureous Substance useful in Medicine."

Neither is it to be doubted, but in the Place where the *Caroline* Springs appear, there were formerly apparent Fires, which, being now latent and concealed, by dissipating and dispersing their hot Vapours thro' the Surface of the Earth, render the Waters descending from the high Hills warm. *Agricola*, in his Treatise de *Re Metall.* confirms this in the following manner: "These Places seem scorched, because Fires once burned in them, and the Remains of these Fires are generally found in the Bowels of the Earth, as is observable in the Fields of *Elbog*, between *Lessau* and *Culma*; for in these Fields, testaceous Earths, somewhat burn'd, are dug up: Nor is this to be wondered at, since in these Parts the Earth is sulphureous, and a Bitumen is dug up near *Sattel*, and the *Caroline* Springs are only eight Miles distant from that Town, which receives its Denomination from the Plain of *Falcons* [*Planities Falconum*], in that Part which is called the *Burning Hill*."

But there is a still more memorable Proof of this in *Bogisl. Balbini Histor. Regni Bohem. Cap. 32.* where the Author speaks in the following manner: "The District of *Elbog* abounds with fossile Coals; but they are not used by the Inhabitants, who are provided with large Quantities of Wood. At *Falkenaw*, near the River *Egra*, hard by *Konigsweber*, where *St. Cunigund's* Church stands, is a Mountain, or rather a Cavity, or large Hollow, which formerly did much Harm to the Neighbourhood. The subterraneous Fires prey upon the Bowels of the Mountain, and if a Person applies his Ear to the Ground, which I did, he hears within such a Noise of Winds, or Flames, that Fear represents to the Mind a Picture of a lesser *Vesuvius*. This Mountain burns in the Night, and even in the Day-time, when there is any considerable Change of the Atmosphere; and the People of the Neighbourhood have frequently perceived a kind of Earthquake, and a Roaring in the Bowels of the Earth. The Persons who live near this Part, tells us, that formerly there were iron Mines in it. There are, also, mix'd fossile Coals, but black, and already, as it were, consumed by the Flames; such as *Boetius* informs us, are sometimes found in the other Parts of *Bohemia*." This Passage sufficiently evinces, that there were formerly subterraneous Fires in these Parts.

'Tis, also, to be observed, that the Earth near the *Caroline* Springs is found warm. This is, also, the Reason why, at *Carlesbad*, on account of the subterraneous Heat, Cellars cannot be dug under Ground, but must be made in the adjacent Mountains. Hence the Reason is obvious, why, in the Town of *Carlesbad*, the Snow is melted as soon it falls, and all around is soon dissolved; so that 'tis plain, that there is a subterraneous Fire under all the Ground on which *Carlesbad* is built, which, when near the Waters, warms them; and when farther distant from them, diffuses its Exhalations, which, mixing with the Waters, impregnate them with an excellent medicinal Virtue; for that these Waters receive their Heat from the Earth thro' which they pass, is sufficiently proved from this, that there are many sweet warm Waters impregnated with no mineral Substance, but exquisitely pure and light, such as *St. John's Bath* at *Lucca*, the Bath at *Pisa*, that of *Siena*, and that of *Cornello*. Of the same Nature

are the celebrated *Piperan* Springs in the Country of the *Grisons*; the Waters of which consist of Snow melted on the Tops of the Hills by the Sun, which passing thro' hot subterraneous Places break out warm.

As the constituent Principles of cold and hot medicinal Waters are the same, so they must of course produce the same Effects in the human Body. Now as the various Intentions of Medicine are to remove Obstructions, correct peccant Humours, restore the Strength of the weakened Fibres, and eliminate whatever is noxious and prejudicial to the Constitution, so all these Intentions are excellently answered by warm Springs; for they incide, resolve, colligate, and carry off the stagnant Humours, and by that means remove old Obstructions; they obtund and correct the acid and saline Humours lodged in the *Prima Via*, and resolve the viscid Mucus of the Blood; they dilute crude and ill concocted Juices, and imbibe, sheath up, and disperse the saline Spiculæ with which they are mixed; they restore the Tone of the weakened Solids, and by that means promote the Circulation of the Blood; they, also, promote Excretions of all Kinds, by Stool, Urine, Perspiration, a Discharge of the Saliva, and Vomit, and all this without any considerable Irritation, or Loss of Strength; they have, also, a Tendency to remove Plethoras, Cachymies, and preternatural Commotions of the Humours, the fruitful Sources of Diseases; they are excellently adapted to Disorders of the Stomach, such as an uneasy Inflation of it producing an Anxiety of the *Præcordia*; they extinguish Thirst, excite the Appetite, remove a Sense of Weight in the Stomach, and check the Vomiting of a viscid Matter in the Morning; they remove a Lubricity and Falling down of the Anus, and cure a *Tenesmus*, by restoring Strength to the Fibres; they are, also, of singular Efficacy in Cachexies, Scurvies, a Jaundice, Melancholy, hypochondriac Disorders, Dropsies, obstinate Quartans, and other intermittent Fevers; they are, also, proper for checking all immoderate Hæmorrhages, whether from the Stomach, Uterus, or Veins of the Anus; though in such Cases they are to be used with great Caution, and when the Menfes or Hæmorrhoids, either are not duly discharged, or totally suppressed, nothing is more effectual for restoring them to their natural State, than hot mineral Waters. These Springs, by cleansing the urinary Passages, prevent Gravel and Dysuries; they free the pulmonary Vessels from Infarctions, and by that means render Respiration freer in a moist Asthma; nor are they prejudicial to phthisical Patients, especially if their Disorder proceeds from Obstructions of the Viscera; for which Reason, *Morton*, in *Phthisis. Lib. 2. Cap. 2.* recommends the *Islington* Waters in a Phthisis. They, also, produce happy Effects in arthritic, rheumatic, and gouty Patients. When used externally in Bathing, they soften hard Tumors, open the Pores of the Skin, strengthen the nervous and muscular Parts, whose Tone is weakened by Defluxions of Humours, and relax Parts affected with Spasms or Rigors; for which Reason they are highly beneficial to paralytic Patients, and those afflicted with Contractions, Imbecillity, Languor, Pains, or Tumors; they, also, remove Defecations of the Skin, and cure the Itch, Impetigo, and Leprosy. But as the most salutary Remedies are not proper on all Occasions, so the Use of hot Springs is dangerous in Cases where the Viscera are indurated and scirrhus; where the Humours are extravasated in the Cavities of the Head, Thorax, or Abdomen; where the Stomach, Lungs, Mesentery, and Intestines, are exulcerated, or affected with an Empyema, or Abscess. The Use of these Waters is, also, prejudicial to those who are disposed to an Apoplexy, an Epilepsy, an inveterate Hemiplegia, and a Privation of Memory, or of the internal or external Senses. Nor are these Waters proper for those afflicted with a convulsive Asthma, a Polypus of the Heart, a Dropsy of the Breast, a confirmed Phthisis, Cancers, spreading Venereal Ulcers, or a Gleet. These Waters are, also, to be cautiously used in all Kinds of Inflammations, whether external or internal, till the Force of the Disorder is allay'd.

Before any Cure is attempted by the Use of hot Springs, if the Body is full of Blood and Juices, a Vein is previously to be opened, that the Waters to be drank, may meet with no Resistance. Then the *Prima Viæ* are to be cleansed from the Sordes, lest the Waters passing quickly thro' those Parts, should carry the recrementitious Matter along with them; or lest that Matter should prevent the medicinal and salutary Operation of the Water. Purging is by no means to be attempted by drastic Remedies, which destroy the Tone of the Stomach and Intestines, but rather by mild Preparations of Manna, Rhubarb, and proper Salts, which operate without impairing the Strength. And this Evacuation is to be used not only in the Beginning of the Cure, but, also, during its Progress, and after it is over. Nor is the Stomach to be loaded with too large a Quantity of these Waters, but they are at first to be drank sparingly, and afterwards, more liberally. A proper Regimen and Exercise are, also, necessary, always avoiding tumultuous Commotions of Mind, and the Occasions of Sorrow and Sadness, lest by neglecting these, the salutary Effects of the Waters should be prevented. In drinking all medicinal Waters, the Stomach ought to be fortified with Corroboratives and Balsamics, by which means salutary and laudable Fluids are generated and distributed thro' all the Parts of the Body.

Body. As the *Therma* are actually hot, and the *Acidula* actually cold, so they are to be duly distinguished, and judiciously prescribed, both with respect to the particular Disease, and the Constitution of the Patient. They differ, also, in this, that the *Acidula* contain a volatile, and the *Therma* a fixed Salt. There is, also, more of a subtile Virioli in the cold, than in the hot Springs; tho' some of the latter, such as those of *Aix la Chapelle*, contain common Sulphur in Substance. Cold Springs, also, contain a larger Quantity of mineral Spirit, than the hot Springs, which, by reason of their Heat, are easily deprived of it.

From a Knowledge of these Differences, arise some very useful Rules in Practice. Thus, for those who have small Vessels, tender and delicate Fibres, and weak nervous Systems, subject to frequent Spasms, the hot Springs are more beneficial and proper, than such as are cold. But Persons of more robust Constitutions, in whom the Texture of the Fibres is more firm, and the Obstructions and Disorder obstinate, require stronger Waters, both of the cold and hot Kind, since they can bear them better than Persons of tender, delicate, spongy and lax Habits, to whom the fine, light, and subtile Waters are more beneficial. As for the external Use of hot Springs, those which have an heavy hard Water, strongly repel, and for that Reason easily excite Fevers, Head-achs, and Thirst, by forcing the peccant Matter inwards from the Surface of the Body; for which Reason they are to be cautiously used: Whereas those hot Springs, whose Waters are mild and soft, soften the hard Parts, open the Pores, promote the Excretions, and draw the peccant Matter from the Centre to the Circumference of the Body.

With respect to the Nature, Difference, and Use of these Waters, 'tis to be observed, that the cold Springs are possessed of a more noble and efficacious Quality, than the hot, on account of the large Quantity of mineral Spirit it contains. Cold Waters are, also, lighter, and more subtile, than those of the hot Kind, which, by their Heat, dissolve and carry off many coarse Substances lodged in the Bowels of the Earth. 'Tis, however, certain, that more Harm is done by cold, than by hot Springs. But this, in my Opinion, is owing to their being drank cold, especially upon an empty Stomach in the Morning. Hence I would advise all *Acidula* used in the Morning, to be drank not cold, as they come from the Fountain, but tepid. But as by the Heat, the subtile Spirit with which they abound, may be evaporated, I would advise them to be put in close-stopped Vessels, which are to be immersed in boiling Water.

With respect to the external Use of hot Springs, a great Error is very frequently committed in using the Bath too hot; for by the external Heat, the Blood and Humours are thrown into a violent intestine Motion, and preternatural Expansion, by which means a Palpitation of the Heart, Anxiety of the Præcordia, Head-achs, Inquietudes, and Loss of Strength, are produced. And the Injury is the greater, the more the Body abounds with impure Blood and Juices, since by this means the redundant Blood acts more forcibly upon the Parts, and vitiates them; and the Sordes are, by the Heat, rendered more subtile and acrid. *Frederic Hoffman*.

THERMANTERION, from θερμαινω, to render hot. A Chafing-dish.

THERMASMA, θερμασμα, from θερμαινω, to render hot. A warm Fomentation, recommended by *Hippocrates*, for easing Pains in a Pleurefy: Or, as *Galen* explains it, any thing which warms the Body.

THERMEMERIA, θερμμερία, from θερμός, warm, and ημέρα, a Day; in *Hippocrates*, *Lib. de Natura humana*, is the kindly Warmth of a vernal Day.

THERMINTHUS. The same as **TERMINTHUS**.

THERMOCOELIOS, θερμοκοίλιος. A Person who has an hot Stomach. *Hippocrates*, *Epidem. L. 6*.

THERMOLE, θερμωλή, the same as θερμότης (*Thermotes*) or θερμή (*Therme*), Heat, Warmth; in the *Ionian* Dialect, signifies the same as πυρετός (*Pyretos*), a Fever, as is observed from *Corinthius*. *Erotian*, also, expounds θερμωλή by πυρετός; but observes, at the same time, that the Word, in *Hippocrates*, signifies all manner of Heat. The Word occurs several times, in *Lib. de Locis in Homine*, where, indeed, it signifies Heat, but such as is immoderate and preternatural.

THERMOLITHUS. Offic. *Lapis Schistos*. *Charit. 17. Lapis Schistus Cornubiensis diu Calorem retinens*. *Mer. Pin. 214*. **THE WARMING STONE**.

It is found in the County of *Cornwall*. I meet with this Stone, says *Dale*, in the Catalogue of Officinal Simples, at the End of *Shipton's Pharmacopœia*, but nothing of its medicinal Use occurs in Authors.

THERMOMETRUM, from θερμός, hot, and μέτρον, a Measure. An Instrument contrived for measuring the Degrees of Heat in any Body; of these there are many Sorts. See **IGNIS**.

THERMOPOLIUM, θερμopolιον, from θερμός, hot, and πωλειν, to sell. A publick House, where warm Liquors were sold among the Antients, as they are at the modern Coffee-houses.

THERMOPOSIA, θερμωποσία, from θερμός, hot, and πίνειν, to drink. The drinking of warm Liquors.

THERMOS, θερμός, from θέρω, to heat. Hot, warm. *Θερμός*, *Thermon*, in the Neuter Gender, is sometimes spoken of a Quality, sometimes of a Substance, as *Galen* observes, *Com. ad 1 Aph. 14*. *Thermon*, in the latter Signification, Heat, in *Hippocrates*, is, also, of two Sorts; one ἐμφύτον (*emphyton*) native, or natural; the other igneous, mordaceous, and preternatural, according to *Galen*, *Com. in 6 Epid. Sect. 4. Aph. 23*. The θερμὸν ἐμφύτον, or natural and innate Heat, was deny'd by *Asclepiades*, *Praxagoras*, *Philotimus*, and *Erasistratus*, who asserted it to be acquired, and not innate. It is defined, A Substance in its Nature always moveable the first in an Animal, as being generated, and innate from the Beginning; for Nature itself, and the Soul, are nothing but innate Heat. The Motion of the natural Heat, both internal and external, is perpetual; and is, therefore, always moveable while it is moderately kindled, and while it is moderately extinguished, as *Heraclitus* said. The natural Heat is compounded of Heat and Cold, otherwise it would not be perpetually moveable; for since it is the Nature of Heat to be always expanding and mounting, it would soon be dissipated, were it not restrain'd, and repelled inwards, by the Cold, and so prevented from destroying itself by Extension. Thus *Galen*, *Lib. de Tremor. Palpis. &c.*

THERMOSCOPIUM. The same as **THERMOMETRUM**.

THERMOSPEDIA, θερμωσποδία. Hot Ashes. *Dioscorides*.

THEROS, θέρω. The Summer.

THESIS, θέσις. The Position, Situation, or Connection of the Parts of the Body.

THESPIANA, or **THESPESIANA**, θεσπιάνη, or θεσπιαίνω. The Name of an Antidote, or Confection described by *Galen*, *L. 7. de Comp. M. S. L. Cap. 3*. and by *Aetius*, *Tetrab. 2. Serm. 4. C. 65*. It is intended for Suppurations in the *Thorax*, and internal Abscesses.

THESSALICUS. A Physician of the Sect of *Thessalus*; that is, the *Methodic*.

THESSALICUM SEDILE, the *Thessalian* Chair, so called from *Thessaly*, the Country where Chairs of this Figure were most in Use, is recommended by *Hippocrates*, *Lib. de Artic.* in place of a Machine for reducing a recent Luxation of the Shoulder-bone. The Back of this Chair is perpendicular to the Séat, as *Galen* tells us; by which Construction it is distinguished, and accommodated to the Operation; which see described from *Hippocrates*, under the Article **AMBE**.

THEOU CHEIR, Θεοῦ χεῖρ. The Hand of God. The Name of an Antidote prepared of Goats Blood, and recommended in the Stone and Gravel by *Aetius*, *Tetrabib. 3. Serm. 3. Cap. 12*. from *Philagrius*.

THEXIS, θήξις, from θήγω, to pierce with a Needle, or the like Instrument, or, as *Hesychius* expounds the Verb, to whet, or sharpen; is a Puncture with a Needle. Hence κατὰ θήξιν θεραπεία, is the Greek Phrase for the Treatment of Wounds by Suture, or the Operation of the Needle, mentioned by *Archigenes* in *Galen*, *Lib. 2. κατὰ τήξιν*. There are two other Ways of uniting the Lips of Wounds there mentioned, one by ἀγκύλησις (*Ankylosis*), or by Help of the *Anker* [see **ANCTER**]; the other by a **SYSSARCOSIS**, that is, by filling up the Interval with new Flesh.

THISMA. Beds, and subterraneous Veins of Minerals.

THLASIAS, θλασίας. An Eunuch made by the Compression or Contusion of the Testicles.

THLASIS, **THLASMA**, θλάσις, θλάσμα, from θλάω, to contuse. A Contusion, or Collision, a Wound in the Flesh, or Muscles, from a blunt, or heavy Weapon. *Thlasma* is defined by the Author of the *Definit. Medicæ*, "A Recess of the Cranium inwards, without a Fracture, and principally incident to Children; it may be the more clearly conceived by observing what happens to tin Vessels." The same is called *Thlasia* in *Galen*, *Lib. 2. de Caus. Morb.* The same Author, in his *Exegesis*, expounds θλάσιν, by τὸν ἐμβρυοθλάστην, ὅστις ἐν πύελῳ καλεῖται, "an Embryo-thlastes [an Instrument contrived for the Contusion of the dead Fœtus] which, *Lib. 1. περὶ γυναικ.* is, also, called *Piestron*." See **PIESTRON**.

THLASPI.

The Characters are;

The Fruit is roundish, flat, generally surrounded with a foliaceous Border, and, for the most part, cloven on the upper Side, and divided into two Capsules full of flat Seeds; the Leaves are not divided, but entire.

Boerhaave mentions thirteen Sorts of *Thlaspi*; which are,
1. *Thlaspi*; arvense; siliquis latis. *C. B. P. 105. Tourn. Inf. 212. Boerb. Ind. A. 2. 7. Thlaspi*. Offic. *Thlaspi Dioscoridis*. *Ger. 204. Emac. 262. Raii Hist. 1. 831. Synop. 3. 305. Thlaspi Drabæ folio*. *Park. Theat. 835. Thlaspi cum siliiculis latis*. *J. B. 2. 923*. **TREACLE MUSTARD**.

This Kind of *Thlaspi* has a small, white, fibrous Root, sending forth firm Stalks about a Foot high, beset with smooth, jagged Leaves from a broad Base, ending in a sharp Point. On the Tops of the Stalks grow small, four-leaved, white Flowers, succeeded by large, broad, flat, and round Seed-vessels, having foliaceous Borders divided into two Cells, with a Slit on the Top, containing small, round, reddish-brown Seed, of an hot biting Taste. It grows

grows in Corn-fields in some Parts of Essex, and flowers in May. The Seed is used.

It is hot and dry, and somewhat diuretic, provoking Urine, and helping the Dropsy, Gout, Sciatica, and forwarding the menstrual Evacuations.

The Seed of this Plant is what ought to be used in the Theriaca and Mithridate; but, being very scarce, the Seed of the next may be used as a Succedaneum for it. *Miller's Bot. Off.*

It is found in Corn-fields, tho' rarely, and flowers in June. The Parts used are the small, black, oblong, acrimonious Seeds, which are drying and abstergent; and principally used in breaking internal Abscesses, provoking the Menes, and curing Ichthiaca Affections, and the like. *Dale.*

2. *Thlaspi*; arvense; *Vaccariae folio incano*; majus. C. B. P. 206. *Boerb. Ind. A. 2. 7. Thlaspi vulgare. Offic. Thlaspi vulgatifissimum. Ger. 204. Emac. 262. Thlaspi vulgatus. J. B. 2. 2612. Rati Hist. 1. 830. Synop. 3. 305. Tourn. Inst. 212. Thlaspi Mithridaticum seu vulgatifissimum, Baccariae folio. Park. Theat. 835. MITHRIDATE MUSTARD.*

The Root of this *Thlaspi* is small and woody, from which arise Stalks scarce a Foot high, single, or but little branched, thick set with long, narrow, soft, and hairy green Leaves, broad at Bottom, with two sharp Ears, and sharp-pointed at the End; the Flowers are small and numerous, growing in little Spikes on the Tops of the Stalks, four-leaved, and white; and are succeeded by little round Seed-vessels, much less than the former, containing dark-brown Seed. It grows frequently in Corn-fields; and flowers in May.

The Seed of this *Thlaspi*, as was before observed, is generally used instead of the former, being, like that, heating and drying, and supposed to have the same Virtues. *Miller's Bot. Off.*

The Seed enters the Composition of the Theriaca; and, externally used, cleanses all Sorts of running Ulcers; and is, also, a Ptaric, but not very common. It is reckoned an Enemy to pregnant Women, because it kills the Fœtus. *Schroder.*

3. *Thlaspi*; spicatum; Perficum; perfoliatum; maritimum; foliis inferioribus tenuiter incis; superioribus à caule Perfoliatis modo penetratis. M. H. 2. 294. *Nasturtium Orientale, foliis inferioribus Millefolium, superioribus Perfoliatum referentibus. T. 214.*

4. *Thlaspi*; capitulis hirsutis. J. B. 2. 922.

5. *Thlaspi*; capsulâ cordatâ; peregrinum. J. B. 2. 927.

6. *Thlaspi*; parvum; saxatile; flore rubente. C. B. P. 107.

Lithothlaspi quartum, carnosum, rotundo folio. Col. 1. 279.

7. *Thlaspi*; montanum; sempervirens. C. B. P. 106.

8. *Thlaspi*; Creticum; quibudam; flore rubente & albo.

J. B. 2. 924. *Draba, five Arabis, five Thlaspi Candia. Dod. P. 713.*

9. *Thlaspi*; Cappadocicum; flore albo. H. Eyst. Æst. o. 7.

F. 11. Fig. 3.

10. *Thlaspi*; umbellatum; arvense; amarum. J. B. 2. 925.

11. *Thlaspi*; Virginianum; foliis Iberidis amplioribus & serratis. T. 213. *Iberis, humilior, annua, Virginiana, ramosior. M. H. 2. 311.*

12. *Thlaspi*; arvense; perfoliatum; majus. C. B. P. 106.

Bursa Pastoria, foliis Perfoliatis. J. B. 2. 938.

13. *Thlaspi*; Rosa de Hiericho dictum. M. H. 2. 328. *Rosa Hierichuntina vulgo dicta. C. B. P. 484. Boerb. Ind. alt. Plant. Vol. 2.*

The *Thlaspi* has the highly penetrating Taste of Garlick, diffusing itself over all the Mouth.

The first and second Species, in particular, have the Savour of the strongest and most penetrating Garlick, nor are the rest destitute of it; whence the Seeds of this Plant are an Ingredient in alexipharmic and theriacal Medicines, in which they so promote Perspiration, as by their aromatic Virtue to expel any Poison by Sweat or Diaphoresis; for the same Reason it is commended against the Pestilence; it is, also, an Antiscorbutic, Diuretic, and stimulates to Veneri.

The third has the Appearance of the *Millefolium*, with the Leaves of the *Perfoliata*; and would justly be prefer'd by M. Tournefort to *Nasturtium*, were it not for its Taste.

The tenth Species is extremely bitter, and of a most penetrating Quality; for, if chewed, it provokes Plenty of Spit; and all Plants which have this Effect, are very good Aperients; for they act after the same manner on the Stomach.

The eleventh, also, is highly penetrating; two Ounces of the Seed of the *Thlaspi*, bruised, are a noble Diaphoretic in Case of Poison, being taken in *Rhenish* Wine; or in the Plague, being exhibited in Vinegar. It is a very good Remedy in cold Diseases, and the Seeds are used in breaking internal Abscesses, and provoking Urine; and the Menes; but they are to be given with great Caution to Women with Child, lest, by exciting too great a Commotion in the Uterus, they should cause Abortion. Externally used by way of Insersion; they cleanse and absterge Ulcers; they are applied, also, in Pains of the Sciatica, and are Ingredients in the Theriaca.

All tetrapetalous Siliquous Plants, from the *Crambe* to the *Cakile*, if chewed, affect the Mouth with a kind of biting Acrimony, have something of Heat, and a feid Smell, that is, not the Smell of an Herb, but the Fetidness of an Onion, and always putrefy in the same manner. Hence these Plants abound with an alkaline

volatile Salt, of which others are not so full; and hence, also, they are all Antiscorbutics; and of Service in a Coldness and Viscidity of the Humours. Since, therefore, these Plants stimulate to Veneri, and provoke Lust, they appear to be heating, sudorific, and diaphoretic; by which Qualities they act in Opposition to an Acid. But then these Plants are not to be used in hot Diseases, whence it is that they grow in cold Countries, a few excepted. If the aromatic Particles in them excel in Subtily, they shew a diaphoretic Quality; if in Acrimony, the Plant is sudorific. None of them are poisonous, but all equally good, and of Service, where an inert Phlegm, or Acid, are very predominant. *Hist. Plant. adscript. Boerb.*

THLASPI is, also, a Name for several Sorts of *ALYSSON*, and *THLASPIDIUM*; which see.

THLASPI CLYPEATUM. A Name for the *Ionthlaspi*; *minimatum*; *spicatum*; *lunatum*.

THLASPI FATUUM. See *BURSA PASTORIS*.

THLASPI SAXATILE. A Name for the *Ionthlaspi*; *luteo flore*; *incanum*; *montanum*; *diurosides*.

THLASPI UMBELLATUM. A Name for the *Nasturtium*; *sylvestre*; *Dalechampia*.

THLASPIDIUM. Bastard Mithridate Mustard.

The Characters are;

The Fruit is, in a manner, double, smooth, consisting of two Parts, separated by an Interclosure, and containing each a single Seed, which is generally of an oblong and flatish Figure.

Boerhaave mentions seven Sorts of *Thlaspidium*; which are,

1. *Thlaspidium*; fruticosum; folio Leucoii; semper florens.

T. 214. *Thlaspi, latifolium, platycarpon, Leucoii folio. Rar. 55.*

2. *Thlaspidium*; fruticosum; Leucoii folio variegato; sempervirens. T. 215.

3. *Thlaspidium*; hirsutum; calyce floris auriculato. T. 214.

Thlaspi bifurcatum, villosum, flore calcaris donato. C. B. P. 107.

Prod. 49. Leucoium montanum, flore pedato. Col. p. 2. 61.

4. *Thlaspidium*; Raphani folio. T. 214. *Thlaspi, bifurcatum, Raphani, aur. Irionis, folio. Bocc. Rar. 45.*

5. *Thlaspidium*; Monspelienae; Hieraci folio hirsuto. T. 214.

Thlaspi bifurcatum, asperum, Hieracifolium, & majus. C. B. P. 107.

Lunaria bifurcata. J. B. 2. 935. Leucoium bifurcatum, asperum, Hieracifolium, majus. M. H. 2. 249.

6. *Thlaspidium*; Apulum; spicatum. T. 215. *Thlaspi bifurcatum, asperum, minus. C. B. P. 107. Fendrabia Apula, alyssoides, spicata. Col. p. 1. 285. Leucoium, bifurcatum, asperum, minus. M. H. 2. 249.*

7. *Thlaspidium*; annuum; flore pallide luteo. T. 214. *Thlaspi bifurcatum, annuum, asperum. H. R. Par. Boerb. Ind. alt. Plant. Vol. 2.*

It is called *Thlaspidium*, from the *Thlaspi*, which, in some measure, it resembles; and is an oleraceous Plant, without any medicinal Use. *Hist. Plant. adscript. Boerhaave.*

THLIBIÆ, from *θλίβω*, to compress. Persons whose Testicles are consumed.

THLIPSIS, *θλίψις*, from *θλίβω*, to compress, a Compression.

Θλίψις σφαγῆς, in *Galen's Isagoge Pulsuum*, is a Compression of the Stomach from Food, which is offensive only by its Quantity, and not endued with any remarkable Quality, or from a Conflux of Humours void of Acrimony into the Part.

THOCOS, *θῶκος*. See *THACOS*.

THOLEROS, *θολερὸς*, from *θῆλω*, Mud; turbid, foul, muddy.

Θολερὸν πνεῦμα, "a turbid Respiration," is expounded in *Galen's Exegesis*, by *μέγα & διεσπασμένον*, "a great and raised (or quickened) Respiration." The Expression occurs, *Lib. de Humoribus*, and in several Places in *1 Prorrhetic* and *Coac*. As to its Meaning, we find *Galen, Conn. 2. in Prorrhetic*, thus discouraging, *τὸ δὲ θολερὸν πνεῦμα τί ποῖα ἐνδοὶ τῶν ἀσθενῶν ἐστὶ, &c.*

"As for the *θολερὸν πνεῦμα*, what it imports, remains an Obscurity; and the more, because it no-where occurs in the *Prognostics*, nor in the *Aphorisms*, nor in any genuine Book.

"If it be said, that *Hippocrates* used *θολερὸν πνεῦμα*, in the same Sense as *θολερὸν ὕδωρ*, 'turbid Urine,' we understand the Meaning of the latter very well from those who use the Expression of

"turbid, or foul Water, every Day, and from *Hippocrates* himself, who says, it is like that whose Sediment is disturbed, or

"like the Urine of Dray-horses. But what we are to understand by a *turbid*, or *foul* Spirit, (Respiration) is by no means

"obvious, since no Person calls the Air turbid (*θολερὸς*) in the same Sense as he calls the Water so, unless he be told, that it is

"filled with Vapours; which, indeed, is the Sense in which some take the Expression, telling us, that, as we observe an Effusion

"of Sweat under a Syncope, so, in a Resolusion of the internal

"Parts, there is an Efflux of the Humours within; and for that Reason a Multitude of Vapours is discharged in Expiration;

"and this is the *θολερὸν πνεῦμα*, 'the turbid Respiration.' He

says the same in another Place, and endeavours to prove, that

θολερὸν πνεῦμα was not written by *Hippocrates*. Again, at the

End of his second Comment, (on *Prorrhetic. T. 92.*) he says,

"that this *θολερὸν πνεῦμα*; as he observed before, was of ambiguous Signification; but in that Place it seems reasonable to

"be understood of Expiration; but here some will have it meant

"of Eructations, others of Flatuosities. We said before, that

"*θολερὸν*

"*σπέρμα* was, by some, expounded *συνέπας*, fetid; by others, *ατμός*, vaporous" [See *THALEROS*]. The same Author, *Lib. de Trem. Palpit. &c.* calls by the Name of *σπέρμα πνέυμα*, a gross, thick, dark, and cloudy Spirit or Wind contained in the Muscles, or within the Skin, and proceeding from some refrigerating, condensing and emplastick Causes: To this gross Spirit is opposed what is thin, pure, and limpid.

Tholeros, *σπέρμα*, "turbid," is often apply'd by *Hippocrates* to the Urine, as, also, to the Stools, Menes, and Spir; in which latter Case it signifies sordid, muddy, feculent.

THOLOS, Mud: But in *Galen* it is a Name for a Species of Bandage for the Head.

THORA. A Name for the *Ranunculus*, *Cyclaminis folio*, *Alphodeli Radice*; *major*.

THORACICA. Medicines for Disorders of the *Thorax*, or Breast.

THORAX. The Breast.

By the *Thorax* we commonly understand all that Part of the Body, which answers to the Extent of the Sternum, Ribs, and Vertebrae of the Back; both outwardly and inwardly.

The *Thorax* is divided into the anterior Part, called commonly the Breast; the posterior Part, called the Back; and the lateral Parts, called the Right and Left Sides.

The external Parts of the *Thorax*, besides the Skin and Membrana Adiposa, are principally the Mammæ, and the Muscles which cover the Ribs, and fill the Spaces between them. In the Mammæ we see the Papillæ, or Nipples, and a small coloured Circle which surrounds them. The Muscles are the Pectorales majores and minores, Subclavi, Serrati majores, Serrati superiores postici, Latissimi Dorsi, and Vertebrales; and to these we may add the Muscles which cover the Scapula.

The internal Parts of the *Thorax* are contained in the large Cavity of that Portion of the Trunk, which the Antients called the middle Venter; but the Moderns name it simply the Cavity of the Breast. This Cavity is lined by a Membrane named Pleura, and divided into lateral Cavities by a membranous Septum, named Mediastinum, which is a Production or Duplication of the Pleura.

These Parts are the Heart, Pericardium, Trunk of the Aorta, great Arch of the Aorta, Trunks of the carotid Arteries, Subclavian Arteries, Trunks of the vertebral and axillary Arteries, the superior Portion of the descending Aorta, the intercostal Arteries, the Vena Cava Superior, Vena Azygos, Subclavian Veins, Trunks of the Jugular, vertebral and axillary Veins, a Portion of the Aspera Arteria, and of the Oesophagus, the Ductus lacteus, or Thoracicus, the Lungs, pulmonary Artery, pulmonary Veins, &c.

The Arteries and Veins, which particularly belong to the *Thorax*, are these:

- Arteriæ & Venæ Thoracicæ, superiores & inferiores.
- Arteriæ & Venæ Mammariæ, externæ & internæ.
- Arteriæ & Venæ Intercostales, superiores & inferiores.
- Arteriæ & Venæ Spinales, with the venal Sinuses of the Canal of the Spine.

The Nerves distributed to the *Thorax*, are these:

- Nervi sympathetici Medii, or the eighth Pair.
- Nervi sympathetici Universalis, commonly called Intercostales.

The last cervical Pair.

The twelve dorsal Pairs.

Nervi Diaphragmatici.

The Cavity of the *Thorax* is terminated downward by the Diaphragm, which parts it from the Abdomen.

The whole Extent of the *Thorax*, in a living Subject, is commonly determined, not only by the Sternum Vertebrae of the Back and Ribs; but, also, by all that Space contained between the Articulations of the two Arms with the Scapulae and Claviculae; and, in this Sense, the Outside of the *Thorax* is broader above than below, in an healthy Subject, who has a moderate Quantity of Flesh on his Bones.

This Breadth of the upper Part of the Breast proceeds from the Pectorales majores, and Latissimi Dorsi, viewed directly forward or backward. But when we take a direct lateral View of the Breast, it appears narrower above than below, not only in an entire Subject, but even after every thing has been removed, that cover the Sides of the *Thorax*, and in the Skeleton itself.

The common Integuments of the *Thorax* are the same with those of the Abdomen; and the convex Side of this Part of the Body is, likewise, covered by several Muscles. Anteriorly we find the Pectorales majores and minores, a large Portion of the Serrati majores, the Subclavi, a Portion of the Scaleni, and of the Obliqui Abdominis Externi: Posteriorly, we have all the Muscles which cover both Sides of the Scapula, the Serrati Postici, and a Part of the Sacro-lumbares, Longissimi Dorsi, Vertebrales, &c. Among all the external Parts of the *Thorax*, only two are peculiar to it in the human Body, I mean the two Eminencies called Mammæ.

The hard Parts which form the Sides of the Cavity of the *Thorax*, are the twelve Vertebrae of the Back, all the Ribs, and the Sternum. The soft Parts, which complete the Sides, are the

Membrane called Pleura, which lines the Cavity, and the Musculi Intercostales, Sterno-costales, and the Diaphragm.

All these hard and soft Parts, taken together, represent a kind of Cage, in some measure of a conical Figure, flatted on the fore Side, depressed on the back Side, and, in a manner, divided into two Nooks, by the Figure of the Vertebrae of the Back, and terminated below by a broad-arched Basis inclined backward. The intercostal Muscles fill up the Interstices betwixt the Ribs, and so complete the Sides of the Cavity: The Basis is the Diaphragm, and the Pleura not only covers the whole inner Surface of the Cavity, but, by forming the Mediastinum, divides it into two, one on the Right Hand, the other on the Left.

For the Breasts, see MAMMÆ.

For the Pleura and Mediastinum, see PLEURA.

For the Thymus, see THYMUS.

For the Heart, see COR.

For the Lungs, see PULMONES.

For the Oesophagus, see OESOPHAGUS.

The Ductus Thoracicus is under the Article CHYLUS. *Winslow*.

Mr. *Monro* tells us, that the Ribs, or Costæ, (as if they were Custodes or Guards to these principal Organs of the animal Machine, the Heart and Lungs) are the long crooked Bones placed at the Side of the Chest in an oblique Direction downwards, with respect of the Back-bone. Their Number is generally twelve on each Side, though frequently eleven, or thirteen, have been found: I never saw fewer or more than the ordinary Number; but in the Skeleton of a Boy about eight Years old, now in my Possession, the fourth and fifth Ribs of the Left Side are grown together at their Roots for near an Inch; and, afterwards dividing, have the same Appearance as the Ribs of the opposite Side, which are naturally formed.

The Ribs are all convex externally, and concave internally, where they are, also, made smooth by the Action of the contain'd Parts, which on this account are in no danger of being hurt by them. The Extremities of the Ribs, next the Vertebrae, are rounder than after these Bones have advanced forwards, when they become flatter and broader, and have a superior and inferior Edge, each of which is made rough by the Action of the intercostal Muscles, inserted into them. These Muscles, being all of near equal Force, and equally stretched in the Interstices of the Ribs, will resist these Bones, having their broken Ends, in a Fracture, removed far out of their natural Places to interrupt the Motion of the vital Organs.

The upper Edge of the Ribs is more obtuse and rounded than the inferior, which is depressed on its internal Side by a long Fossa, for lodging the intercostal Vessels and Nerves. This Channel is not observable, however, at either Extremity of the Ribs; for at the posterior, or Root, the Vessels have not yet reached the Ribs; and, at the anterior Extremity, they are split away into Branches, to serve the Parts between the Ribs; which plainly teaches Surgeons, how much safer it is to perform the Operation of the Empyema, towards the Sides of the *Thorax*, than either near the Back or Breast, tho' there were no other Reasons to determine them in the Choice of the Place, where this Operation should be performed.

At the posterior Extremity of each Rib, a little Head is formed, which is divided by a middle Ridge, into two plain or hollow Surfaces, the inferior of which is the broadest and deepest. The two Plains are joined to the Bodies of two different Vertebrae, and the Ridge forces itself into the intervening Cartilage. A little Way from this Head, we find on the external Surface a small Cavity; where mucilaginous Glands are lodged; and round the Head the Bone appears spongy, where the circular Ligament of the Articulation is fixed. Immediately beyond this, a flattened Tubercle, rises with a small Cavity at, and Roughness round the Root of it, for the Articulation of the Rib, with the transverse Process of the lowest of the two Vertebrae, with the Bodies of which the Head of the Rib is joined. Advancing still a little further on this external Surface, we observe another smaller Tubercle, into which the Tendons of the *Longissimus Dorsi* are inserted. Soon after this the Ribs make a considerable Curve, which some call their Angle; into it the *Sacro-lumbalis* is inserted. Then the Rib begins to turn broad, and continues so to its anterior Extremity, which is hollowed and spongy, for the Reception of, and firm Coalition with, the Cartilage which runs thence to be inserted into the Sternum, or to be joined with some other Cartilages. In Adults, generally, the Cavity at this anterior Extremity of the Ribs, is smooth and polished on its Surface, by which the Articulation of the Cartilage, with it would seem designed for Motion; which, however, is not allowed.

The Substance of the Ribs is spongy, cellular, and only covered with a very thin external lamellated Surface, which is thicker and stronger near the Vertebrae, than at the anterior Extremity.

To each Rib a long, broad, and strong Cartilage is fixed, and reaches thence to the Sternum, or is adjoining to the one next it: This Course, however, of theirs, is not a strait Line with the Rib; for generally the Cartilages make a considerable Curve, the concave Part of which is upwards; therefore, at their Intersection

tion into the Sternum, they make an obtuse Angle above, and an acute one below. These Cartilages are of such a Length, as never to allow the Ribs to come to a right Angle with the Spine, but keep them sinuated so obliquely, as to make a very considerable obtuse Angle above, 'till once a Force superior to the Elasticity of the Cartilages is applied. These Cartilages, as all others, are firmer and harder internally, than they are on their external Surface, and sometimes in old People, according to *Vesalius*, all their middle Substance becomes bony, while a thin cartilaginous Lamella appears externally, tho' the Ossification begins much oftener at the external Surface. The greatest alternate Motions of the Cartilages being made at their great Curvature, that Part, as *Havers* has remarked, remains frequently cartilaginous after all the rest is ossified.

The Ribs are, then, articulated at each Extremity, of which the posterior is doubly joined to the Vertebrae, for the Head is received into the Cavities of two Bodies of the Vertebrae, by a Species of Ginglymus; and the larger Tubercle is articulated to the transverse Process of the inferior Vertebrae, by what is commonly called Arthrodia. As soon as one considers this double Articulation, he must immediately see, that no other Motion can here be allowed than up and down, since the transverse Processes hinder it from being thrust back; the Resistance on the other Side of the Sternum prevents the Ribs coming forward; and each of the two Joints, with the other Parts attached, oppose their turning round: But then 'tis likewise as evident, that even the Motion upwards and downwards can be but small in any one Rib at the Articulation itself, tho' it may be very conspicuous at the anterior Extremity, which moves in a Circle, whose Radius is the Length of the Rib. If, at the same time, we consider, how obliquely the Ribs are situated with respect to the Vertebrae, we must be convinced, that the Ribs cannot be raised without removing farther from the Back-bone; and, as a considerable Resistance is made by the Sternum, to their anterior Extremities, these Bones must, in moving upwards, be, also, turned outwards, as *Winslow* has proved. The anterior End of the Ribs has no proper moveable Articulation, except so far, as the Cartilages between the Sternum and Ribs will yield, on which account, and because of the Resistance, such Ribs as perform large Motions under these Disadvantages, are commonly twisted towards their anterior Extremities.

Hitherto I have laid down the Structure and Connection, which most of the Ribs enjoy, as belonging to all of them; but must now consider the Specialities, wherein any of them, either collectively or singly, may differ from the general Description given, or from each other. In viewing the Ribs from above downwards, their Figure is still straighter, the uppermost being the most crooked of any. Their Obliquity, with respect to the Spine, increases as they descend; so that tho' the Distance of their posterior Extremities from each other is very little different; yet at their anterior Extremities, the Distances between the inferior ones must increase. In consequence, too, of this increased Obliquity of the inferior Ribs, each of the Cartilages of the inferior Ribs make a greater Curve in its Progress from the Rib towards the Sternum; and the Tubercles, which are articulated to the transverse Processes of the Vertebrae, have their smooth Surface gradually facing more upwards. The Ribs becoming thus more oblique, while the Sternum advances forward in its Descent, make the Distance between the Sternum and the anterior Extremity of the lower Ribs greater, than between the Sternum and the superior Ribs; consequently the Cartilages of those Ribs that are joined to the Breast-bone, are longer in the lower ones. These Cartilages are placed nearer to each other, as the Ribs descend, which affords to make the Curvature of the Cartilages greater. The Length of the Ribs increases from the first or uppermost Rib, as far down as the seventh, and from that to the twelfth as gradually diminishes.

The superior of the two plain, or rather hollow Surfaces, by which the Ribs are articulated to the Bodies of the Vertebrae, gradually increases from the first to the fourth Rib, and is diminished after that in each lower Rib; and the Distance of their Angles from the Heads always increases, as they descend to the ninth. This is remarked by *Winslow*.

The Ribs are commonly divided into True and False.

The true Costae are the seven superior of each Side, whose Cartilages are all gradually longer as the Ribs descend, and are joined to the Breast-bone: So that being pressed constantly between two Bones, they are flattened at both Extremities, and are thicker, harder, and more liable to ossify than the other Cartilages, which are not subject to so much pressure. These Ribs include the Heart and Lungs, and therefore are the proper or true Custodes of Life.

The five inferior of each Side are the False, or Bastard, whose Cartilages do not reach the Sternum; and therefore, wanting that Resistance at their anterior Extremity, are there pointed, and, for the same Reason, being less pressed, the Substance of these Cartilages is softer. The Cartilages of these false

Ribs are shorter as the Ribs descend. To all these five Ribs, the circular Edge of the Diaphragm is connected; and its Fibres, instead of being stretched immediately transversely, and so running perpendicular to the Ribs, are pressed so as to be often, especially in Expiration, parallel to the Plan in which the Ribs lie; one may even judge by the Attachments, which these Fibres have so frequently to the Sides of the Thorax, a considerable way above where their Extremities are inserted into the Ribs, and by the Situation of the Viscera, always to be observed in a dead Subject laid supine, that there is constantly a large Concavity, formed on each Side by the Diaphragm, within these bastard Ribs, in which the Stomach, Liver, Spleen, &c. are contained, which, being only reckoned among the Viscera Naturalia, have occasioned the Name of Bastard Custodes to these Bones.

Hence we may easily understand the Justice of *Hippocrates's* Rule, in simple Fractures of the false Ribs, without a Fever, to keep the Stomach moderately filled with Food, lest the pendulous Ribs, falling inwards, should thereby increase the Pain and Cough. The Truth of this Observation *Paré*, after his long Experience, confirms; but it is now-a-days much forgot, or entirely neglected.

The uppermost or first Rib has several proper Specialities, some of them contradictory to any Character yet delivered of the Ribs; for the Figure of it is much more curve, than any of the rest; whence the Name of *articularis retorta*, has been applied to it and the second. The Situation of the first is such, that the flat Sides are superior and inferior, while the Edges are anterior and posterior, or nearly so; therefore sufficient Space is left above it, for the Subclavian Vessels and Muscle; and the broad-concave Surface of it is opposed to the Lungs: But then, in consequence to this Situation, the Chancel for the intercostal Vessels is not to be found, and the Edges are differently formed from all the other, except the second, the lower one being rounded, and the other sharp. The Head of this Rib is not divided into two plain Surfaces by middle Ridge, because it is only articulated with the first Vertebrae of the Thorax. The Cartilage, at the anterior Extremity of the first Costa, is ossified in Adults, and is united to the Sternum at right Angles. Frequently this first Rib has a Ridge, rising near the middle of its posterior Edge, where one of the Heads of the Scalenus Muscle rises; and, nearer to the anterior Extremity, it is flattened, or sometimes depressed by the Clavicle.

The third and fourth Ribs have been distinguished by the Name *sapaei, solidae*; the fifth and sixth, by the Appellation of *sapirides, pectorales*, the seventh and eighth are called *maxillares, distantes*. But it must be acknowledged, there is no great Occasion, or good Reason, for these Names, since these Ribs scarce can claim any thing particular, but what comes under the general Description, or belongs to more than two of them. The fifth, sixth, seventh, or rather the sixth, seventh, eighth, and sometimes fifth, sixth, seventh, eighth, and ninth, Ribs have their Cartilages, at least, contiguous; and frequently they are conjoined by cross Cartilages; and most commonly the Cartilages of the eighth, ninth, and tenth, are connected to the former, and to each other, by firm Ligaments.

The eleventh, and sometimes the tenth, Rib has no Tubercle for its Articulation with the transverse Process of the Vertebrae, to which it is only loosely fixed by a Ligament. The Fossa, in its inferior Edge, is not so deep as in the superior Ribs, because the Vessels run more towards the Interstice between the Ribs. Its anterior Extremity is smaller than its Body, and its short small Cartilage is but loosely connected to the Cartilage of the Rib above.

The twelfth Rib is the shortest and straightest: The Head of it is only articulated with the last Vertebra of the Thorax; therefore it is not divided into two Surfaces. This Rib is not joined to the transverse Process of the Vertebrae, and therefore has no Tubercles, being often pulled necessarily inwards by the Diaphragm, which an Articulation with the transverse Process would not have allowed. The Fossa is not found at its under Edge, because the Vessels run below it. The anterior Extremity of this last Rib is smaller, than its middle, and has only a very small pointed Cartilage fixed to it. To the whole Length of this Rib internally the Diaphragm is connected.

The Ribs are all complete in a new-born Child; only their Cartilages are proportionally longer than in an adult Person.

Here I cannot help remarking the wise Providence of our Creator, in preserving us from perishing, as soon as we come into the World. The Extremities, by which the Bones of the Limbs are articulated, remain in a cartilaginous State after Birth, and are many Years before they are entirely united to the main Body of their several Bones; whereas the Condyles of the occipital Bone, and of the lower Jaw, and the Heads and Tubercles of the Ribs, are true original Processes, and ossified before Birth; and therefore the Weight of the large Head is firmly supported, the Actions of Sucking, Swallowing, Respiration,

ration, &c. which are indispensably necessary for us, as soon as we come into the World, are performed without any Danger of the Parts of the Bones, which are most pressed on in these Motions, being separated; whereas, had these Processes of the Head, Jaw, and Ribs, been Epiphyses at the Birth, Children must have been exposed to an evident Danger of dying, by such a Separation, whose immediate Consequences would be the Compression of the Beginning of the Medulla Spinalis, or want of Food, or of Respiration.

The STERNUM.

The Sternum, or Breast-bone, is the broad flat Bone, or Pile of Bones, at the anterior Part of the Thorax. The Number of Bones this should be divided into, has occasioned Debates among Anatomists, who have considered it in young Subjects of different Ages. In Adults of a middle Age, it is composed of three Bones, which easily separate, after the Cartilages connecting them are destroyed: Frequently the two lower Bones are found intimately united; and very often, in old People, the Sternum is a continued bony Substance, from one End to the other, tho' on the Surface of it we may still observe two, sometimes three transverse Lines, which mark out the former Divisions.

When we consider the Sternum as one Bone, we find it broadest and thickest above, and becoming smaller as it descends: The internal, or posterior Surface of this Bone, is somewhat hollowed for enlarging the Thorax; but the Convexity on the external Surface is not so conspicuous, because the Sides are pressed outwards by the true Ribs, the round Heads of whose Cartilages are received into seven smooth Pits, formed in each Side of the Sternum; and are kept firm there by strong Ligaments, which on the external Surface, have a particular radiated Texture: Frequently the cartilaginous Fibres thrust themselves into the bony Substance of the Sternum, and are joined by a sort of Suture. The Pits at the superior Part of the Sternum are at the greatest Distance one from another, and, as they descend are nearer, so that the two lowest are contiguous.

The Substance of the Breast-bone is cellular, with a very thin external Plate, especially on its internal Surface, where, with *Jac. Sylvius*, we may frequently observe rather a cartilaginous Crust spreads over it. On both Surfaces, however, a strong ligamentous Membrane is closely braced; and the Cells of this Bone are so small, that a considerable Quantity of osseous Fibres must be employed in the Composition of it: Whence, with the Defence the Muscles give it, and the moveable Support it has from the flexible Cartilages, it is sufficiently secured from being broke by any small external Force: For it is strong by its Quantity of Bone; its Parts are kept together by the Ligaments; and it yields enough to elude considerably the Violence offered.

So far in general may be said of this Bone: But, to descend to its particular Description, let us examine the three Bones, which, according to the common Accounts, go to the Composition of it in an Adult.

The first, all agree, is somewhat of the Figure of an Heart, as it is commonly painted; only it does not terminate in a sharp Point. This is the uppermost thickest Part of the Sternum.

The superior, middle Part of this first Bone, where it is thickest, is hollowed, to make place for the Trachea Arteria, tho' this Cavity is principally formed by the Clavicles pressing on one Side, and by the Sterno-mastoidei Muscles pulling the Substance of the Bone above, to both which it yields while it is soft; and therefore is raised into two Tubercles, while the middle is not protruded by such Powers. On the Outside of each Tubercle there is an oblong Cavity, that, in viewing it transversely from before backwards, appears a little convex: Into these *Glenae* the Extremities of the Clavicles are received. Immediately below these, the Sides of this Bone begin to turn thinner; and in each a superficial Cavity, or a rough Surface, is to be seen, where the first Ribs are received or conjoined to the Sternum. In the Side of the under Extremity of this first Bone, half of the Pit for the second Rib on each Side is formed. The superior Part of the posterior Surface is covered with a strong Ligament described by *Weitbreicht* and *Winslow*, which secures the Clavicles.

The second or middle Division of this Bone is much longer, narrower, and thinner, than the first; but, excepting that it is a little narrow above, is pretty equal all over as to its Dimensions of Breadth or Thickness. In the Sides of it are complete Pits for the third, fourth, fifth, and sixth Ribs; and half of the Pits for the second and seventh are formed in it. Near its Middle an unossified Part of the Bone is sometimes found, which, freed of the ligamentous Membrane, or Cartilage, which fills it, is described as an Hole; and in this Place, for the most part, we may observe a transverse Line running, which has made Authors divide this Bone into two. When the Cartilage between this and the first Bone is not ossified, a manifest enough Motion of this upon the first may be observed in Respiration, or in raising the Sternum, by pulling the Ribs upwards in a recent Subject.

The third Bone is by much the least, and has only one half of the Pit for the seventh Rib formed in it; wherefore it might be reckoned only an Appendix of the Sternum. In young Subjects it is always cartilaginous, and is better known by the Name of Cartilago Xiphoides or Ensisformis, than any other, tho' the Antients often called the whole Sternum, Ensisforme, comparing the two first Bones to the Handle, and this Appendix to the Blade of a Sword. This Bone is seldom of the same Figure, Magnitude, or Situation, in any two Subjects; for sometimes it is a plain triangular Bone, with one of the Angles below, and perpendicular to the middle of the superior Side, by which it is connected to the second Bone. At other times the Point is turned to one Side or other, or obliquely forwards or backwards.

Frequently it is all of near an equal Breadth, and in several Subjects the Extremity of it is bifurcated; whence some Writers give it the Name of *Farcella* or *Farcula inferior*; or else it is perforated in the Middle. In the greatest Number of Adults it is ossified, and tipped with a Cartilage; in some it is half or wholly cartilaginous.

So many different ways this small Bone may be constituted without any Inconvenience: But then some of these Positions may be so directed, as to bring on a great Train of ill Consequences; particularly, when the lower Extremity is entirely ossified, and is too much turned outwards or inwards, or when the Conjunction of this Appendix with the second Bone is too weak.

Rolfincius relates the History of an old Man, who could not bend his Body forwards, without a violent pungent Pain from the Ossification and sharp Point of this Bone. *Paaw* assures us, he has seen several Instances of a difficult Breathing from the same Cause; and enumerates several Diseases, such as a *Phthisis pulmonalis*, Obstructions of the Spleen, Liver, or Mesentery, which may depend on too great a Relaxation of this Cartilage; and sometimes this Relaxation may only be a Consequence of these Diseases. *Borrhius* confirms all this by some Examples. But, not to be tedious in relating such Histories, I shall refer you to *Bonetus*, who has several Examples collected; and will direct you to the Writers on this Subject, which in the last Century employed several Pens, tho' it is now much neglected. This Neglect is the more surprising, since the Connection of the Diaphragm here, the Situation of the large Lobe of the Liver, and of the Stomach, and the constant Pressure and Rubbing of our Clothes on this Part; leads us naturally to consider the Effects of a faulty Structure and Situation of this Bone.

The Sternum is joined by Synchronosis to the seven superior Ribs, unless when the first coalesces with it in an intimate Union of Substance; and it is articulated with the Clavicles by a Ginglymus of the second Kind.

The Sternum most frequently has four round small Bones, surrounded with Cartilage, in Children born to the full time; the uppermost of these, which is the first Bone, being the largest by much. Two or three other very small bony Points are, likewise to be seen in several Children. The Number of Bones increases for some Years, and then diminishes, but uncertainly, till they are at last united into those above described of an Adult.

The Uses of this Bone are, to afford Origin and Insertion to several Muscles; to sustain the Mediastinum; to defend the vital Organs, the Heart, and Lungs, at the anterior Part; and, lastly, by serving as a moveable Fulcrum of the Ribs, to assist considerably in Respiration: Which Action, so far as it depends on the Motion of the Bones, we are now at Liberty to explain.

When, then, the Ribs which are connected by their Cartilages to the Sternum, or to the Cartilages of the true Ribs, are acted upon by the intercostal Muscles, they must all be pulled from the oblique Position their Cartilages kept them in, nearer to right Angles with the Vertebrae and Sternum, because the first or uppermost Rib is by much the most fixed of any; and their large arched middle Part, will be turned outwards, to increase the Distance between the Sides of the Thorax, or to widen this Cavity; while, by raising the Ribs nearer to right Angles, the Distance between the parallel Lines, which comprehend their Extremities, is increased: And as the Vertebrae hinder the Ribs from receding back, this whole Increase must be by the Advance of these Extremities forwards. Hence, the intermediate Fulcrum, the Sternum, pressed strongly on both Sides, must be pushed forwards, and that, at its several Parts, in Proportion to the Length and Motion of its Supporters, the Ribs; that is, most at its inferior Extremity; which, thus forced forwards, will, with the Cartilages now in the same manner acted upon, draw the Diaphragm connected to them; consequently so far stretch it, and bring it nearer to a Plain: And the same Power which raises this Bone and Cartilages, will sufficiently fix them, so that they may resist the Action of that Muscle, whose Fibres contract at the same time, and thrust the Viscera of the Abdomen downwards. The arched Part of the Ribs being thus moved outwards, the anterior Extremity of the Ribs, and the Sternum,

Sternum, being advanced forwards, and the Diaphragm being brought nearer to a plain Surface, instead of being greatly convex on each Side, within each Cavity of the Thorax, 'tis evident how considerably the Cavity, of which the nine or ten superior of these Bones are the Sides, must be widened, and made deeper and longer. But while this is doing in the superior Ribs, the inferior, whose Cartilages are not conjoined, perform a very different Office, tho' it conspires to the same Intention, the Enlargement of the Thorax. For as they have no fixed Point, to which their anterior Extremity is fastened, and have the Diaphragm inserted into them, at the Place where that Muscle runs pretty strait upwards from its Origin at the Vertebrae; therefore these Ribs being exposed on the one Side to the direct Action of this strong Muscle, and of the Muscles of the Abdomen, which at this time are resisting the stretching Force of the Bowels, and are drawing these Bones down, while the intercostal Muscles are pulling them upwards, the Effect of either of these Powers, which are Antagonists to each other, is very little as to the moving the Ribs either up, or down. But the Muscles of the Abdomen, being pushed at this time outwards by the Viscera, carry these Ribs along with them; and thus the Thorax is not only to be shortened, but is really widened at its lower Part, to assist in making sufficient Space for the due Distention of the Lungs.

As soon as the Action of these several Muscles ceases, the elastic Cartilages, extending themselves to their natural Situation, depress the superior Ribs, and the Sternum subsides; the Diaphragm is thrust up by the Abdominal Viscera, and raises the inferior Ribs with it, in which it is assisted by any Action their intercostal Muscles have, while the oblique and transverse Muscles of the Belly serve to draw these Ribs inwards, at the same time: From all which the Cavity of the Breast is diminished in all its Dimensions. Thus, then, the Thorax is made wider, deeper, and longer; and is, again, straitened and shortened in a manner not generally so well understood. *Monro's Osteol.*

Disorders of the Thorax, which require the Assistance of Surgery:

- For Fractures of the Ribs; and Clavicles, see FRACTURA.
- For Luxations of the Ribs, and Clavicles, see LUXATIO.
- For Bandages proper for the Breast, see FASCIÆ.

Wounds inflicted in the Thorax, and not penetrating into its Cavities, are known by Sight; by the Probe; by the Impossibility of procuring a Discharge of the Air by any Art; by the Return of any tepid Liquor injected into the Wound; by placing the Patient in the Posture he was in when the Wound was received; and by the sure Signs of an Adhesion of the Lungs to that Part of the Pleura, thro' which the Wound is made.

The Thorax is that Part of the human Trunk, which, before, is terminated by the Sternum; behind, by twelve Vertebrae of the Back; on the Sides, by the arched Ribs; above, by the two superior Ribs; and, below, by the Diaphragm, which separates it from the Abdomen. But as the Thorax forms a kind of arched Vault, which rises in the Middle, and is lower at the Edges, 'tis obvious, that its Cavity must be far greatest towards the hinder or posterior Parts. Internally this whole Cavity is lin'd with an highly smooth Membrane, call'd the Pleura; which, as is shewn under the Article VULNUS, forming, as it were, two hollow Bladders, approaching to each other near the Sternum, divides the Thorax into two equal Cavities. Between these two Portions of the Pleura is situated the Pericardium, with the Heart, which constitutes the third Cavity of the Thorax.

In all Wounds of the Thorax, 'tis first to be inquired, Whether they have penetrated into its Cavities, or not? When the wounding Instrument has perforated the Pleura, or the Pericardium, then the Wound is said to penetrate into the Cavity of the Thorax; but otherwise not. Many Parts, however, may be very dangerously wounded, tho' the Wound does not penetrate into the Cavities of the Thorax; for the Pleura on both Sides, when it reaches to the Sides of the Bodies of the Vertebrae, separates from the last Extremities of the Ribs, and, rising thence, leaves a pretty large Space possessed by the cellular Membrane, thro' which the Oesophagus, the Aorta, and the thoracic Duct, pass. All the Parts, therefore, situated here, may be hurt, tho' the Wound does not penetrate into the Cavities of the Thorax; but 'tis sufficiently obvious, that this can rarely happen, because in the posterior Part the Bodies of the Vertebrae are pretty securely defended. That a Wound has not penetrated into the Cavities of the Breast, may be known from the following Signs.

By the Sight: When, for Instance, the Wound is sufficiently large, and has penetrated in a straight Direction.

By the Probe: For this Purpose, a Probe of Lead, or the softest Silver, is to be introduced, without any Violence, into the Wound. But 'tis sufficiently obvious, that a Change of the Situation of the Body, Fat obstructing the Wound, or a Throm-

bis, may make a Resistance to the Probe, even tho' the Wound has penetrated into the Cavity of the Thorax.

By the Impossibility of procuring a Discharge of Air by any Art; Under the Article VULNUS, 'tis shewn, that so long as the Cavity of the Thorax is close and entire, the Lungs are always exactly contiguous to the Pleura, and that there is no Air lodg'd between them; but when a wounding Instrument has penetrated the Pleura, the Air can enter, the Lungs on that Side, collapse, and the empty Space, form'd by that means, is fill'd by the Air that enters. And this Air, when rarefied by the Heat, will, again, in some measure, be discharg'd thro' the Wound, whilst fresh Air enters, and thus it goes and returns thro' the Wound; especially, if the Wound of the Pleura is not too large; for, in this Case, some Dilatation of the Lungs may be still produc'd by the Air, which is convey'd to them thro' the Glottis, as is shewn under the Article VULNUS. In Wounds of the Thorax, skilful Surgeons examine whether the Air is impetuously convey'd thro' the Wound, in the following manner: After they have, with their Thumb, or Fingers, so compressed the Lips of the Wound, that no Air can either get in or out, they order the Patient strongly to inspire the Air, and retain it in the Lungs, by closing the Larynx; then, before the Patient performs Expiration, the Surgeon places a small lighted Candle near the Wound, and suddenly separates the Lips of the Wound; in which Case, if any Air has enter'd the Cavity of the Thorax, it will be impetuously discharg'd from the Wound, so as sensibly to act on the Flame of the Candle; for when Air, in consequence of a Wound of the Pleura, is lodg'd in the Cavity of the Breast, when the Wound is clos'd, this Air will be rarefied by the Heat of the Body. If at the same time, by a strong Inspiration, the Lungs on that Side can be still but a little dilated, the Air retain'd in the Lungs by closing the Glottis, being rarefied, will expand the Lungs: Hence the Air, receiv'd into the Cavity of the Thorax, will be more press'd upon; and therefore, upon opening the Wound, be discharg'd impetuously, and with an hissing Noise. 'Tis sufficiently obvious, if the Air is thus discharg'd from such a Wound, that 'it has penetrated into the Cavity of the Thorax: It may, however, happen, that a Perforation of the Thorax is made, and yet no Air enter its Cavities; when, for Instance, Fat, especially after a Change of Situation in the Body, immediately fills up the Passage made by the wounding Instrument; or, when a little Air has enter'd in this manner, it cannot, for the same Cause, be easily discharg'd again: And this principally happens, when the Wound is small.

By the Return of any tepid Liquor injected into the Wound:

This Method seems, of all others, the most safe and infallible; for a Search made with the Probe may often prove fallacious, since sometimes by a Change of Posture in the Body, especially in fat Persons, the cellular Membrane obstructs the Probe, and hinders it from reaching to the Bottom of the Wound. Sometimes, also, the Probe may be introduc'd a great Way, and yet not penetrate into the Cavity of the Thorax; when, for Instance, the wounding Instrument, by means of the Fat, has pass'd along the Ribs, as is certain from chirurgical Observations. Thus, in fighting a Duel, a certain Student had his Antagonist's Sword pass'd into the Right Side of his Thorax, so far that its Point wounded the Left Side, without penetrating into the Cavity of the Breast, but only passing along the Ribs. Tepid Water is gently to be injected into the Wound, by means of a Syringe; and if a considerable Quantity of Water may be thus injected without Resistance, and if there is no Tumor in the adjacent Parts, produc'd by the Water collected in the *Membrana Cellulosa*, we then know, that the Water is convey'd thro' the Wound into the Cavity of the Thorax; but if there is a great Resistance, and the Water immediately returns thro' the Orifice of the Wound, we know, that it has not penetrated into the Cavity of the Thorax. Nor is any Harm to be dreaded from a Conveyance of the tepid Water into the Cavity of the Breast; since it may be easily evacuated again by a proper Posture of the Body, or other Measures, to be afterwards specified. And tho' the Water should even be left in the Cavity of the Breast, it will be resorb'd by the bibulous venous Vessels, distributed thro' all the internal Surface of the Thorax, and the Surface of the Lungs. That Fluids, contain'd in the Cavity of the Thorax, have been frequently dissipated in this manner, is certain from chirurgical Observations. In an Empyema, it has been found, that the Pus has been resorb'd by Expectoration, Stool, and Urine; and, also, that the Pus entering the Veins, and mixing with the Blood; has been, by a Translocation, convey'd to various Parts of the Body. *Paré*, in the tenth Chapter of his Works, informs us, that when he injected a bitter Liquor into the Cavity of the Thorax, in order to deterge the Parts from the extravasated and corrupted Blood, he was surpris'd to find his Patient complain of a violent Sense of Bitterness, and an Inclination to vomit; for which Reason he afterwards abstain'd from that Practice.

By placing the Patient in the Posture he was in when the Wound was receiv'd: Under the Article VULNUS, 'tis observ'd, of

of how great Importance it is in determining the Nature of Wounds, and forming Prognostics of the Misfortunes to be dreaded from them, to know the Posture of the Body at the time the Wound was received; for it would often be impossible to trace the Way of the wounding Instrument, unless the Patient was put in the same Posture with that he was in when wounded; for the various Actions of the Muscles may surprisingly change the Situation of the Parts, as *Eustachius* has beautifully shewn in his *Tabula Anatomica*; for, in the thirtieth Plate of that Work, he represents the Right Arm elevated, and the Elbow bended; and the Left Arm stretched downwards, with the Elbow unbended; so that, upon comparing the Right, with the Left Side of the Thorax, there appears a considerable Difference in the Situation of the Parts. And, lastly,

By the certain Signs of the Adhesion of the Lungs to that Part of the Pleura where the Wound is made: As the Lungs, both in Inspiration and Expiration, are always contiguous to the Pleura, as is certain from Physiology, yet they are naturally free in the Cavity of the Breast, adhering only by their Air-vessels to the *Aspera Arteria*, and by their Blood-vessels to the Heart, but nowhere else. The principal Cause why these Parts do not grow together, seems to be, that the small arterial Vessels of the Lungs and Pleura always exhale a fine subtil Dew, which hinders the Adhesion of the Lungs to the Pleura. This is beautifully expressed by *Hippocrates*, who, in his *Treatise de Arte*, Cap. 8. informs us, "that every Part of the human Body, not concrete, or adhering to another, whether covered with Skin, or whether its Surface is fleshy, is filled with Air, if sound; but with Ichor, if unsound and infirm." But when, in consequence of an Inflammation, the large Vessels are so distended, as to compress these small Vessels to that degree, that they cannot exhale their highly fine and subtil Fluid, the dry Surfaces of the Parts pretty soon grow together. Hence it is, that after Pleurifies, Peripneumonies, and Empyemas, the Lungs are so often found adhering to the Pleura. If it is, therefore, obvious, that the Patient has formerly been afflicted with these Disorders, the Surgeon is carefully to advert to such a Circumstance; for, if the Wound is inflicted in the Part where the Lungs adhere to the Pleura, the wounding Instrument may penetrate the Substance of the Lungs, without entering the Cavity of the Breast. This may be known to be the State of the Patient, when Water, injected into the Wound, excites a gentle Cough, and is thrown up through the *Aspera Arteria*; for then the Wound has penetrated into the Lungs, but not into the Cavity of the Thorax.

These are the Signs by which Surgeons generally conclude, that Wounds have only injured the external Parts, but not penetrated into the Cavity of the Breast. But it may sometimes happen, that all these Circumstances, tho' ever so carefully adverted to, may yet prove fallacious, especially if the Wound is inflicted with a very small Instrument; for, in this Case, upon withdrawing the Instrument, the Fat may so obstruct the Wound, that neither the Air, the Probe, nor warm Water, can enter; and yet the hurt pulmonary Vessels may discharge Blood into the Cavity of the Thorax. Hence the Surgeon is to consider, whether the Respiration is injured; for if the Cavity of the Thorax is lessened and oppressed, either by the Air that enters, or by extravasated Blood, the Respiration will always be difficult; and if this Symptom is observed after Wounds of the Breast, it always seems to indicate, that the Wound, tho' it should appear by no other Signs, has penetrated into the Cavity of the Thorax. Physicians, therefore, and Surgeons, ought to take care not to lose their Reputations, by looking on the smallest Wounds as inconsiderable, and void of Danger.

If Wounds of the Thorax descend obliquely upon or within the Ribs, the Pleura being, by this means, frequently corroded, they deposit Pus in the Cavity of the Thorax, especially if the Passage of the Pus to the external Parts is by any Cause obstructed. In this Case an Empyema is formed, and many Misfortunes produced.

Tho' 'tis certain, that a Wound has not penetrated into the Cavities of the Breast, yet many terrible Misfortunes may arise from it; for if the Condition of a Wound is such, that its Orifice is placed in a superior Part, whilst, at the same time, it descends pretty deep among the Muscles, the extravasated Humours will be here collected, become acrid by their Stagnation and Continuance, form various Sinuses, and at last, may, in consequence of a Corrosion of the Pleura, fall into the Cavity of the Breast. The collected Pus will daily fall from such a sinuous Ulcer; the Quantity of Fluids contained in the Cavity of the Thorax will be augmented; an Empyema will be formed; and the Lungs, being macerated in Pus, which daily becomes more acrid, will be consumed. Hence, a most insupportable Train of Miseries is succeeded by Death. These Misfortunes are most dangerous and troublesome, when such fistulous Cavities descend behind the Ribs; for then there is scarcely any Room left either for Dilatation, or Compression. Besides, if the bony or cartilaginous Substances of the Sternum and Breast are injured, many Misfortunes may arise from such a Circumstance; and the Cure will

be highly difficult, as is obvious from what is said under the Article Os. *Galen*, in *Treat. de Anatom. Administ. Lib. 7. Cap. 13.* confirms this by a memorable Instance. In the *Palestra*, a Boy receiving a Blow on the Sternum, was, at first, neglected, and afterwards not well cured. Four Months after, Pus appeared in the Part where he received the Blow; a Surgeon made an Incision in the Place; and, as he thought, brought it soon enough to a Cicatrix. Afterwards, a fresh Inflammation arising, a second Incision was made, nor could the Wound any more be brought to a Cicatrix. After this, *Galen*, and several other Physicians, being called, found the Bone of the Sternum carious; and when all refused to attempt the Cure, *Galen* cut out the corrupted Part of the Sternum, found Part of the subjacent Pericardium putrid, and saw the naked Heart; and yet the Boy was recovered in a short time. And *Galen* himself, in the Beginning of his first Book *de Placitis Hippocratis & Platonis*, seems to speak of this Case, when he tells us, that in a Boy he saw the Heart as distinctly, as in Animals dissected for that Purpose; and he adds, that this Boy recovered. But such Misfortunes are most of all to be dreaded, when either by the Situation of the Wound, or preposterous Measures, the Passage of the Pus to the external Parts is hindered.

Hence, in the Cure of Wounds of the Thorax, we are to abstain from all Tents, emplastick Substances, and Compression; and are, on the contrary, to use depurating and balsamic Substances, Pledgets, slight Bandage, and a proper Posture of the Body.

Since, in Wounds of the Thorax, so many terrible Misfortunes may arise from the extravasated Humours retained in their Cavities, and frequently making new Ways to themselves through the *Membrana Cellulosa*, 'tis sufficiently obvious, that a free Discharge of them ought to be procured. It was once the Custom of almost all Surgeons, to put Tents into most Wounds, especially those of the Thorax, in order to prevent the sudden Consolidation of the Orifice of the Wound, before its internal Parts are grown together; that there might be a free Discharge for the heterogeneous Bodies left in the Wound, and that vulnerable Remedies might have the freer Access to the Bottom of the Wound. *Belloste*, to whom we owe the beautiful Invention of making small Perforations in the Bones stript of their *Periosteum* mentioned in the Article CAPUT, in his *Hospital Surgeon*, opposes this Practice; and by solid Arguments demonstrates, that the Use of Tents is pernicious, especially in Wounds of the Thorax; and shews from Instances, that Experience has confirmed the Truth of his Arguments: For Tents, prepared of folded Lint, or any other similar Substance, and put into the Orifice of a Wound, become tumid, by absorbing the extravasated Humours; and are soon expelled, unless secured by an adhesive Plaster, or a Bandage. But if they are so secured that they cannot be expelled, becoming tumid, they, by a slow Dilaceration, dilate the Orifice of the Wound, with great Pain and Irritation of the Parts. At the same time, by blocking up the Orifice of the Wound, they hinder the Evacuation of the Pus, and other discharged Liquors, which will, therefore, find new Ways for themselves, and are capable of converting the Wound into a malignant sinuous Ulcer; or perhaps, when the Pleura is corroded, they may fall into the Cavities of the Thorax, a new Source of terrible Misfortunes. Besides, every Moment the Capacity of the Thorax is changed, since, in the mildest Respiration, the Ribs, and the Muscles affix'd to them, move. Hence such a Wound is never at Rest, and there is a continual Friction of its Lips on the Tent. Hence Pain, Inflammation, and at last, a Callosity, is produced in the Lips of the Wound; which Callosity must be afterwards remov'd, before a Consolidation can be obtained. Hence 'tis sufficiently obvious, that in Wounds of the Thorax, no Good is to be expected from the Use of Tents. Perhaps the only Case in which they are proper is, when the Orifice of the Wound, being too small, ought to be dilated; though, as is observed under the Article VULNUS, this is more easily done by the Knife. And if Tents are to be used for this Purpose, they ought only to be applied for a Day or two, and not thro' the whole Course of the Cure. Besides, as is observed under the last-mentioned Article, a Tent of Sponge duly prepared, and put into the Orifice of a Wound, is, in a few Hours, capable of making a very considerable Dilatation. For the same Reason 'tis obvious, why the most tenacious and adhesive Plaisters are injurious in Cases of this Nature, because they hinder the free Discharge of the Humours from the Wound. 'Tis, therefore, most expedient, in Wounds of the Thorax, to apply plain Pledgets, covered with vulnerary Balsam, or the softest Digestives, according to the Condition of the Wound. Over such Pledgets we are to apply a Plaster, which is not very tenacious, and cut into many small Holes; over this we may apply a proper Bandage, if it is thought necessary; observing this Caution, that by Bolsters, or some other Expedient, we hinder the Bandage from compressing the Aperture of the Wound, and by that means preventing the Discharge of the extravasated Humours.

Hippocrates, in *Coac. Praenot.* N° 430. observes, "that those who have the external Part of a Wound of the Thorax cured, and

“ and not its internal Part, are in Danger of having an Empyema formed; and if a weak Cicatrix is formed in the internal Part, it is easily broken.” Hence ’tis obvious, that great Care ought to be taken, that the internal Surface of the Wound should be consolidated, before its external Orifice is brought to a Cicatrix. Hence some may possibly conclude, that Tents would be beneficial in hindering the Concretion of the external Orifice of the Wound. But if we consider, that a Tent so blocks up the Wound, that the Pus cannot be discharged, it will be obvious, that it hinders the Concretion of the internal Parts of the Wound, since the Pus retained in the Wound, prevents the Contact of the Parts which ought to be united, and, being increased in Quantity, makes new Ways for itself, by which means the Surface of the internal Wound is enlarged. That Hippocrates condemned the Use of Tents, is certain from another memorable Passage of that Author, who, in *Traët. de Morbis, Lib. 1. Cap. 9.* tells us, “ that in those who have an Empyema formed, by Wounds of the Thorax, inflicted either by a Spear, Dagger, or Dart, so long as the Matter of the Ulcer is discharged externally by the original Wound, then the Pus is easily evacuated; and, if the internal and external Parts are healed together, the Patient is restored to Health. But if the external Part is healed, but not the internal, the Patient has an Empyema formed. But if both the internal and external Parts are healed together, and the Cicatrix within remains weak, rough, and livid, the Ulcer sometimes recurs, and the Patient is seized with an Empyema.”

From this Passage ’tis sufficiently obvious, that an equable and firm Consolidation of the internal and external Parts of the Wound ought not to be attempted by Tents; but by such a Posture of the Body, that the Fluids, contained in the Cavity of the Wound, may, by their own Weight, fall to the external Aperture of the Wound; and when the Bottom of the Wound is lower than its Orifice, and when this Misfortune cannot be corrected by the Posture of the Patient, then by Compresses applied to the Bottom of the Wound, and proper Bandage, the Humours are to be forced to its Orifice; and thus, by expelling the Fluids, the Parts in the Bottom of the Wound, being brought into Contact, easily grow together. The Pus, in the mean time, continually discharg’d from the Orifice of the Wound, will hinder it from closing, before the internal Parts are healed. But if the internal Surface of the Wound, being fordid, requires Depuration before a Consolidation can be expected, then the Remedies specified under the Article VULNUS for that Purpose, are to be used, and their Use is to be persisted in, till the Pus discharged is white, mild, viscid, smooth, equal, and without Smell. Then, by a gentle and gradual Compression from the Bottom to the Orifice of the Wound, its Consolidation is to be attempted.

That a Wound has penetrated into the Cavity of the Breast, may be known, first, by comparing the Cause with the Largeness of the Wound; secondly, by means of a Probe, after the Body is reduced to the same Posture in which the Patient received the Wound; thirdly, by a strong Inspiration of Air into the Lungs, whilst the Wound is clos’d, upon which, if the Mouth and Nostrils are shut, and the Wound suddenly uncovered, the Air in the Cavity of the Breast is discharged from the Wound, and frequently with a Noise; fourthly, by Injection; fifthly, by an Emphysema, when the Air, contained in the Cavity of the Breast, being continually increased by the Action of the wounded Lungs, rarefied, compressed by Inspiration, hinder’d from a free Evacuation thro’ the Wound, and at the Lips of the Wound forced into the cellular Membrane, occasions frequently, that the whole Body is raised into a livid, smooth Tumor, which renders him eleven Inches larger; but this Tumor does not affect the Soles of the Feet, and the Palms of the Hands; see *Acad. Reg. Sc. 1713. Hist.* where we have an Account of a mortal Emphysema, from a Fracture of the Ribs, without any Injury done to the Skin; and, sixthly, from a Discharge of frothy Blood.

Great Caution is requisite in determining, whether a Wound has penetrated into the Cavity of the Thorax, or not; for the Cavity of the Thorax, before, ascends much higher than in the posterior Parts. Hence shameful Errors have happened, when Wounds were thought to penetrate into the Cavity of the Thorax, whilst they only pass’d into that of the Abdomen. Of this we have a memorable Instance in Mr. *Ruyssch’s Observationum Anatom. Chirurg. Centur. Observat. 65.* from which Observation, ’tis certain, that the Situation and Disposition of the Diaphragm ought to be duly known, in order to determine, whether a Wound has penetrated into the Cavity of the Thorax, or not.

But Wounds may penetrate into the Cavity of the Thorax, when, being inflicted on the Abdomen, they pass thro’ the Diaphragm; but of this there are no certain Signs, since such Misfortunes are generally only discovered after the Death of the Patient; Instances of this are specified under the Article VULNUS. Or Wounds perforating the Thorax, properly so called, pass into its Cavities: These we are here treating of, and they may be known by the following Signs.

1. By comparing the Cause with the Largeness of the Wound: As almost all Instruments, with which Wounds are inflicted by Puncture, are of a conical Figure, ’tis sufficiently obvious, that the Largeness of the Wound, compared with the wounding Instrument, may inform us how far such an Instrument has penetrated. But this Sign may prove fallacious, if the Wound is among the Muscles upon the Ribs; for in this Case a great Part of the Instrument may penetrate into the Muscles, without entering into the Cavity of the Thorax.

2. By means of a Probe, after the Body is reduced to the Posture in which the Patient received the Wound: This Sign we have already considered both in this Article, and under the Article VULNUS, where ’tis shewn, that, by a Change of Posture, the Muscles change their Situation, and the Fat pressed into the Wound may easily obstruct the Probe.

3. By a strong Inspiration of the Air into the Lungs, whilst the Wound is closed: We have already, in the Beginning of this Article, considered this Sign; but in making such a Trial, we are to take care, that the Air do not enter the Cavity of the Thorax; for when the Lips of the Wound are separated, and the Thorax dilated by Inspiration, the Air may easily enter, tho’ it had not before found a Passage; for in fat Persons, when a Wound penetrates into the Cavity of the Thorax, the Fat, upon withdrawing the Instrument, so blocks up the Wound, that the Air cannot enter. Hence, when an Attempt is made this way, the Lips of the Wound are carefully to be compressed; then the Patient is to retain the Breath drawn in by a strong Inspiration; then, closing his Mouth and Nostrils, he is to make a strong Effort of Expiration; then the retained Air, expanded by the Heat, will violently dilate the Lungs. Hence they will compress the Air between the Pleura and the Lungs, which is, also, rarefied by the Heat of the Place; then, uncovering the Wound, there is no Fear, that the Air will, thro’ the external Wound, enter the Cavity of the Thorax, because the distended Lungs will be everywhere apply’d to the Pleura, if there is already no Air in the Cavity of the Breast: But if any Portion of Air has already entered, this Air, rarefied by the Heat, and pressed upon by the dilated Lungs, will be more than a Balance for the Pressure of the external Atmosphere, and be discharged imperiously from the Wound. But if the Wound is such, that there is a free Ingress of the Air into the Cavity of the Thorax, and is not, at the same time, much larger than the Aperture of the Glottis, see VULNUS, the Air will go and come thro’ the Aperture of the Wound, with a manifest Hissing.

4. By Injection: We have already treated of this Sign.

5. By an Emphysema: Under the Article CAPUT, this surprising Symptom is said sometimes to succeed Wounds of the Head; but happens far more frequently in Wounds of the Breast, which penetrate into the Cavity of the Thorax; in which Case the Emphysema may, in a short time, be diffused over all the Body; for when Air enters the Cavity of the Thorax through the Wound, and when the external Aperture is clos’d up by adhesive Plaisters, or Fat, the Air, rarefied by the Heat of the Place, often makes a Way for it self thro’ the Membrana Adiposa. But large Tumors of this Kind are most frequently produced, if the Air-vessels of the Lungs, injured by the Wound, have deposited the inspired Air in the Cavities of the Breast; for, in this Case, the Disorder is every Moment increased. In the Works of *Ambrose Paré, Lib. 10.* and in the Memoirs of the *Acad. des Sciences*, for the Year 1713, there are Instances which sufficiently confirm, that Emphysemas frequently succeed Wounds of the Breast, especially if the Wound admits Air into the Cavity of the Thorax, whilst, at the same time, the free Egress of the Air is by any means obstructed. But ’tis certain, from such Observations, that the largest Tumors of this Kind are formed, if the Lungs, being wounded, convey the inspired Air into the Cavity of the Breast, especially when there is not a great Hæmorrhage; for when there is, the Blood, falling into the Cavity of the Thorax, and filling it, prevents such an Accumulation of Air in the Cavity of the Breast, as is sufficient for inflating the whole Body. Hence, also, appears the Reason, why, if a Wound of the Thorax is suddenly succeeded by such an Emphysema, we may justly conclude, that it has penetrated into the Cavity of the Thorax. And,

6. By a Discharge of frothy Blood. This is a certain Sign that the Lungs are wounded; for when the Blood-vessels of the Lungs are wounded, the Blood, flowing out of them, and mixing with the Air of the Air-vessels of the Lungs, froths. Hence, in such a Case, the Patient either expectorates a frothy Blood through the Aspera Arteria, or such a Blood is copiously discharged. But the Lungs cannot be hurt, unless the wounding Instrument has penetrated into the Cavity of the Thorax, except the Lungs adhere to the Pleura in that Part where the Wound is inflicted, as is already observed. *Virgil*, in his *Æneid. Lib. 9.* has beautifully painted this Case, when he describes *Antiphates* as wounded by *Turnus*.

— volat Itala Cornu

Aera per tenerum, Stomachoque infixæ sub altrum
Pectus abit: reddit Specus arri Vulneris Undam
Spumantem, & fixo ferrum in Pulmone sepefcit.

For the same Reason, if in any Disorder a frothy Blood is expectorated, we conclude that it comes from the Lungs.

The Effects of such Wounds are frequently, first, a Pressure of the Air, which has entered upon the Lungs, which are, by that means, rendered unfit for carrying on Respiration, and the Circulation of the Blood; secondly, an Effusion and Accumulation of Blood in the Thorax; thirdly, a Putrefaction of the extravasated, heated, moved, and every way pent up Blood; fourthly, hence a Maceration, Corrosion, Corruption, and *Fætor* of the Pleura, Lungs, Mediastinum, Diaphragm, and Pericardium; fifthly, an infinite Number of Diseases arising from these Circumstances; and, sixthly, a Spitting of Blood.

In this Paragraph are enumerated the Misfortunes, sometimes, observed to succeed Wounds penetrating the Cavity of the Thorax; all which principally depend either on the Admission of the Air, or an Extravasation of the Humours.

1. *As for the Pressure of the Air, which has entered upon the Lungs*, under the Article *VULNUS*, 'tis shewn, that, in a sound Person, there is naturally no Air between the Lungs, and Pleura; and that this Circumstance was requisite, that the Lungs when the Breast is dilated, might be distended by the Air, which enters by the Glottis. Hence, as soon as, by a Wound of the Thorax, the Air is admitted into the Cavity of the Breast, the free Expansion of the Lungs is hindered, and, in large Wounds, totally destroyed. Under the last-quoted Article, 'tis, also, shewn how far, and under what Limitation, this is true; for if the Air can enter very freely into the Wound, the Lungs cannot be dilated at all. If thro' a smaller Wound, a less Quantity of Air enters, than that convey'd thro' the Aperture of the Glottis, there will be some Expansion of the Lungs, tho' not so great as in a natural State. *Galen*, in his *Treatise de Anatom. Administrat. Lib. 8. Cap. 3.* has beautifully expressed this in the following manner: "Now it is evident, that, in Inspiration by the Mouth of an Animal, so much is defeated or lost, by means of the Wound, as is equal to the Quantity of the circumambient Air, which flows into the Thorax thro' the Wound, instead of Inspiration by the Mouth; and that the less is drawn in by Inspiration, the less must, also, be discharged in Expiration; and the more the Expiration is decreased, the shorter the Voice must of course be." If the Air, convey'd into the Cavity of the Breast, cannot again, by whatever Cause, be discharged, thro' the Wound, this Air, being rarefied by the Heat, will be expanded, and, by strongly compressing the Lungs, hinder Inspiration, and the Dilatation of the Lungs by that means; which, after we are brought into the World, is requisite, that the Blood expelled from the Right Ventricle of the Heart, may pass freely thro' the narrowest Parts of the pulmonary Artery. The Reason of all these Circumstances is easily deduced from a Knowledge of the Properties of the Air, and those Things which in Physiology are shewn to be necessary to Respiration, and a free Circulation of the Blood thro' the Vessels of the Lungs.

2. *As for the Effusion and Accumulation of Blood in the Thorax*; if, for Instance, the intercostal Arteries are injur'd, a large Quantity of Blood may be collected in the Thorax; for the adjacent Heart, with great Force, throws the Blood into these Arteries. The Motion of the Thorax, in Respiration, hinders these wounded Arteries from remaining in a State of Rest, and being soon contracted. Now, if the Blood-vessels of the Lungs should be cut, 'tis sufficiently obvious, that a large Quantity of Blood must suddenly be accumulated; but if the large Blood-vessels, running from the Heart, should be wounded, Death would soon ensue. The Blood thus poured out from the Vessels, unless discharged thro' the external Aperture of the Wound, will be collected in the Cavity of the Thorax, and hinder the free Dilatation of the Lungs. Hence a violent Uneasiness and Impediment of Respiration will be produced.

3. *As for the Putrefaction of the extravasated Blood*; the Blood, thus extravasated, is lodged in a Part which is warm, moist, and continually moved by Respiration. Hence it must easily degenerate into a putrid Corruption; especially since, thro' Wounds penetrating into the Cavity of the Thorax, the Air almost continually enters; as, also, if the Air-vessels of the Lungs, being wounded, convey the inspired Air into the Cavity of the Breast, Chirurgical Observations sufficiently evince, that such extravasated Blood soon becomes putrid. Thus *Hippocrates*, in his *Treatise de Morbis, Cap. 2.* informs us, "that Blood, flowing from a Wound or Vein into the Thorax, must necessarily become corrupted."

4. *As for the Maceration of the Pleura, Lungs, Mediastinum, and Diaphragm*; the sudden Corruption of the extravasated Blood will every Moment be increased; for in these Parts there is a violent Heat, on account of the Vicinity of the vital Viscera: Hence the Blood will be changed into an highly putrid Ichor. The Lungs situated in this gangrenous corrupted Liquor will be macerated, and rendered putrid: So, also, will the Pericardium, Pleura, and other Parts mentioned. 'Tis shewn, in the preceding Paragraph, that Blood thus extravasated may be soon corrupted; and 'tis certain from Experience, that it is capable of acquiring

the greatest Degree of Corruption. Instances confirming this are found in *Scultet. Armament. Chirurg. Observ. 43. ibid. Obs. 50.* and in *Hildani Observat. Chirurg. Centur. 2. Observ. 27.*

As for the infinite Number of Disorders arising from these Circumstances; the extravasated Humours may, by compressing, or, if they have acquired a putrid Acrimony, by corroding, disturb, or even abolish, all the Functions of the Viscera situated here. Hence may arise violent Dyspnoeas, excessive Palpitations of the Heart, intolerable Anxieties, Inflammations, Exulcerations, and Gangrenes of these Parts. The extravasated Blood, also, by the Heat and Length of Time becoming putrid and attenuated, may be reformed by the bibulous Veins on the Surface of these Parts, mixed with the Blood, and induce a malignant Cacochymy. Hence arise acute putrid Fevers, surprising Translations of the putrid Matter to other Parts of the Body, a Phthisis, an Atrophy, and Death. Hence we justly conclude, that numberless Diseases, even of the worst Kind, may arise from an Extravasation of the Humours in the Cavity of the Thorax.

As for a Spitting of Blood; if, immediately after the Infliction of the Wound, Blood is spit, 'tis a Sign, that the Lungs are wounded, especially if the Blood is frothy. Hence, if the Vessels of the Lungs are wounded, the Blood may fall down into the Cavity of the Breast, unless the Lungs adhere to the Pleura in that Part where the Wound was inflicted. If, a few Days after the Infliction of the Wound, a bloody Matter is expectorated, this may happen, because the extravasated Blood, being, by the Heat and Length of Time attenuated, may be reformed by the Vessels of the Lungs. How this happens, we shall not pretend to determine: 'Tis, however, certain, that an Empyema has been cured by an Expectoration of purulent Spit. In a true Pleurisy, yellow Spit, mixed with bloody Streaks, has been often observed to remove the Disorder, as is certain from practical Observations. Hence 'tis obvious, that Blood extravasated in the Cavity of the Thorax may produce a Spitting of Blood.

The Signs of Blood extravasated in the Cavity of the Thorax are, first, an Orthopnoea; secondly, the Patient's lying most commodiously on his Back, with Difficulty on the wounded Side, and the absolute Impossibility of his lying on the sound Side; thirdly, the Consequences already said to attend such a Wound; fourthly, a Weight in the Septrum; fifthly, the Fluctuation of Matter; sixthly, the Nature and Situation of the Wound inflicted; seventhly, the great Weakness of the Patient, accompanied with Paleness, and a cold Sweat; and, eighthly, the continual Increase of almost all the Symptoms.

After it is determined, that a Wound has penetrated into the Cavity of the Thorax, it is next, with equal Care and Accuracy, to be examined, whether, in consequence of an Aperture of the Vessels, there is not a considerable Quantity of extravasated Blood, lodged in the Cavity of the Thorax. Nor is it always easy to determine this, since many of the Signs, to be afterwards specified, may prove fallacious: Hence a Concurrence of many of them is requisite to establish any thing certain in this Case. But that much Harm may be done by the Physician's or Surgeon's Error, in the Diagnostic, is sufficiently obvious, since the extravasated Blood ought to be evacuated either by the Wound already made, or by making a new Aperture. But if this is attempted, when there is no Blood in the Cavity of the Breast, the Air, which, in this Case, is always injurious, is admitted, and the Wound is irritated. Hence all Circumstances ought to be carefully adverted to, lest the Patient should be exposed to unnecessary Pain, and the Reputation of the Physician endangered.

As for an Orthopnoea; this is a difficult and snorting Respiration, which can only be performed with the Neck and Thorax in an erect Posture; and which always denotes, that the free Expansion of the Lungs, by the inspired Air, is hindered, by whatever Cause this happens. But as the Blood, extravasated in the Cavity of the Thorax, possesses that Space which the dilated Lungs ought to fill, 'tis sufficiently obvious, that a difficult Respiration must arise from such a Circumstance. But when the Patient remains in an erect Posture, the Diaphragm is, by the Weight of the extravasated Blood, depressed, and the Cavity of the Thorax by that means enlarged. Hence at that time there may happen some Expansion of the Lungs, at least a greater than in any other Posture of the Body. But this Sign, considered by itself, may prove fallacious; for the Air entering the Cavity of the Breast, and hindering the free Expansion of the Lungs, may produce an Orthopnoea. A spasmodic Constriction of the Lungs in asthmatic Patients, also, produces the same Disorder.

2. *As for the Patient's lying most commodiously on his Back*; this Sign is of great Importance; for the Diaphragm, descending very far towards the posterior Parts of the Body, greatly increases the Capacity of the Thorax. Hence the Blood extravasated in the Cavity of the Thorax, when the Patient lies on his Back, spontaneously falls to the inferior and posterior Parts of the Thorax, and that Part of the Diaphragm is more easily pressed downwards; for the middle and tendinous Part of the Diaphragm, to which the Pericardium adheres by a broad Basis, cannot be easily depressed, as is observed under the Article *VULNUS*.

Hence 'tis obvious, that, in this Posture, the extravasated Blood is most commodiously disposed of. Whilst the Patient lies on the wounded Side, that Posture is more uneasy, tho' still tolerable; but if he lies on the sound Side, the extravasated Blood will press the Mediastinum and Pericardium towards the other Cavity of the Breast: Hence its Capacity will be diminished, and the Difficulty of Respiration increased, which when the Patient perceives, he is forced to change the Posture of his Body, for fear of a Suffocation.

3. *As for the Consequences already described in the preceding Paragraph*; these principally depend on the Corruption of the extravasated Blood, and the Taint communicated to the Viscera, by such a putrid Gore. Hence, by the Signs, the Pressure of extravasated Blood is known, but often too late.

4. *As for the Weight perceived in the Diaphragm*; when the Patient is in an erect Posture, the extravasated Blood, by its Weight, presses the Diaphragm downwards. Hence a Sense of the incumbent Weight is perceived, and a Pain produced about those Parts to which the Diaphragm adheres. In consequence of the Depression of the Diaphragm, there, also, appears a Tumor of the Abdomen on the Side affected. Hence in an Empyema, sometimes the Diaphragm depressed, and gradually moved, and more distended by the collected Pus, renders the Abdomen so protuberant, that the Disorder resembles that Species of Dropsy, called *Ascites*.

5. *As for the Fluctuation of the peccant Matter*; when there is a Suspicion, that Pus is lodged in the Cavities of the Breast, *Hippocrates*, in his *Treatise de Morbis, Lib. 2. Cap. 6.* orders the Patient to be washed with a large Quantity of warm Water, and placed in a firm Chair; then, whilst an Assistant holds his Hands, and shakes the Trunk of his Body, the Physician is to listen on what Side the Noise is to be heard. In the same Part, *Cap. 24.* he prescribes the same Method, in order to discover a latent Dropsy of the Breast, and determine the particular Part, by opening which, the Serum accumulated in the Breast may be evacuated. But it is sufficiently apparent, that this Sign may, sometimes, prove fallacious, when extravasated Blood is collected in the Cavity of the Breast; for this Blood, by Stagnation, becomes grumous, in consequence of which its Fluctuation is, with Difficulty, perceived. Besides, if the Breast is full of Blood, no Sound, in consequence of the Plenitude, can be heard, upon shaking the Thorax. Hence, in *Coac. Prænot. N° 432.* he gives the following excellent Caution: "Those Persons labouring under an Empyema, in whom, upon shaking the Shoulders, a great Noise is heard, contain a smaller Quantity of Pus, than those in whom, when afflicted with a greater Difficulty of Breathing, tho' their Colour is better, only a small Noise is perceived. But those in whom no Noise is perceived, whilst there is a violent Difficulty of Breathing, and a livid State of the Nails, are full of Pus, and consequently in a dangerous Condition."

6. *As for the Nature and Situation of the inflicted Wound*; when, from Anatomy, we know the Place of the Wound, and the Direction of the wounding Instrument thro' the Parts, it is easy to determine, whether large Arteries or Veins are wounded or not. Thus the large Trunks of the intercostal Arteries run near the inferior Margin of the Ribs. The internal mammary Arteries are placed behind the Cartilages of the Ribs, on each Side of the Sternum, about a Finger's-breadth from that Bone; and the large Vein, distinguished by the Name *Azygos*, is situated on the Right Side of the Vertebrae of the Back: And from a due Acquaintance with this Disposition of the Parts, the greater or smaller Danger of the Wound is determined.

7. *As for the Weakness of the Patient, accompanied with Paleness, and a cold Sweat*; some Persons are so timorous and faint-hearted, as to fall into a Delirium, upon seeing the Wound of another; and such Persons, even when wounded very gently, are easily seized with all these Symptoms. But they are soon restored by sprinkling cold Water upon them, or by exhibiting a stimulating Cardiac. Nor does the Weakness, arising from this Cause, continue long. But when, after a Wound penetrating into the Cavity of the Thorax, there is a great Weakness, a Paleness and Contraction of the Face, a Paleness and Languor of the Eyes, a cold Sweat, appearing in Drops, especially on the Face and Breast, and a hardly perceptible Pulse, we then know that, from the wounded Vessels, so large a Quantity of Blood is discharged, that hardly any returns to the Heart, but almost the Whole is discharged from the Body, or lodged in the Cavities of the Breast. In this Case, the Danger is very great. Thus *Hippocrates*, in *Prophet. Lib. 1. N° 130.* tells us, "that Wounds of the Thorax discharging Blood, and accompanied with Sweats, are of the worst Kind, since such Patients unexpectedly die, whilst speaking." In *Coac. Prænot. N° 328.* he affirms the same thing; in which Passage, instead of *ἐκιδέσθαι*, the Word *ἐκρίπτεσθαι* occurs. In his *Prophet. Lib. 1. N° 153.* he informs us, that Rigors succeed large Hæmorrhages, and affirms, that the Rigor stops the Effusion of the Blood. But from what has been said, 'tis obvious, that in this Passage, he only treats of Hæmorrhages from the Nose. But when, in Wounds of the Thorax, the large Vessels, so contiguous to the Heart, are wounded, 'tis sufficiently obvious, that a Rigor may succeed a large Hæmor-

rhage, tho' the Effusion of the Blood cannot, in such a Case, be stopp'd by its means.

8. *As for the perpetual Increase of almost all the Symptoms*; in the Thorax are very large Blood-vessels, and those very contiguous to the Heart. Hence, if these Vessels are wounded, the Blood will be discharged into the Cavities of the Thorax. Hence the Compression of the Lungs, the Anxiety and Dyspnoea, will be continually increased, till, in consequence of a Diminution of the Patient's Strength, or a Contraction of the wounded Vessels, the Effusion of Blood ceases. Many Symptoms may, in such Cases be, also, produced by concomitant Dread or Anger, which, however, are gradually lessened; but the Symptoms arising from the Effusion of Blood will continue as long as the Hæmorrhage lasts; for which Reason, the perpetual Increase of the Symptoms is justly reckoned among the Signs, by which it is known, that there is an Effusion of Blood into the Cavities of the Thorax. But when the Signs evince, that the Wound has penetrated into the larger Cavities of the Body, and it is to be dreaded, lest the wounded Vessels should discharge large Quantities of Blood internally, tho' there should be no Hæmorrhage externally, great Caution is necessary in making a Prognostic, lest the Reputation of the Surgeon or Physician should be risked in pronouncing, that nothing was to be feared; for often such Patients die unexpectedly, and their Deaths will, by such as defend the Cause of him who inflicted the Wound, be imputed to their Ignorance. With how great Accuracy all Phenomena ought to be adverted to in order to determine, whether extravasated Blood is lodged in the Cavities of the Breast, is obvious from this, that the most skilful Surgeons have sometimes been deceived. Thus *Mr. Mery*, in the *Memoirs de l'Acad. des Scienc.* for the Year 1713. ingenuously confesses, that he was deceived in a Case of this Nature; since, in a young Man wounded with a Sword in the superior and anterior Part of the Right Arm, three Hours after the Infliction of the Wound, he saw so many, and so violent Symptoms, that he concluded the Cavity of the Thorax filled with extravasated Blood, and resolved to perform the Operation for the Empyema. But the Event shew'd, that he was mistaken, since in eight Days time the Wound was perfectly healed. 'Tis highly probable, that in this Patient a Wound in the Tendon of the pectoral Muscle produced the intense Pain, and the Difficulty of Respiration.

Blood extravasated in the Cavities of the Thorax is with all Expedition to be evacuated; first, by a proper Situation, Motion, and Effort of the Body; secondly, by Suction thro' a flexible Tube, perforated on the Sides, and blunt at the End; thirdly, by an Injection of diluting, resolvent, and depurating Liquors; fourthly, by a Dilatation of the Wound; and, fifthly, by another Aperture between the second and third of the inferior true Ribs, about four Fingers-breadths from the Vertebrae, and the inferior Angle of the Omoplatæ, made by a cutting Instrument, and making the Incision parallel to the Ribs in the middle Space between them, and directing the Edge downwards.

After 'tis certain from the Signs specified in the preceding Paragraph, that extravasated Blood is lodged in the Cavity of the Thorax, the great Intention of Cure is, with all Expedition, to eliminate it, lest it should prove injurious by its Corruption, or a Compression of the Parts. But 'tis to be observed, that this Evacuation of the Blood is not to be made, till 'tis certain, that the wounded Vessels discharge no more Blood; for it would be of no Importance to evacuate the Blood, if the as yet open Mouths of the wounded Vessels are so irritated by the Motion of the Body, the Suction and the Injection, as still to discharge Blood. But when the Pulse is pretty strong and equable, the Extremities of the Body warm, the Patient afflicted with no Cough nor Spasms; and if he enjoys a considerable Degree of Strength, we know, that the internal Spasm has ceased, and that the Measures for the Evacuation of the Blood lodged in the Cavity of the Thorax may be safely taken.

'Tis, also, to be doubted, whether the extravasated Blood ought always to be evacuated by Art; since, 'tis certain from Observation, that Blood, Pus, and Water, have been gradually removed from the Cavity of the Thorax, being reforc'd by the Veins, and afterwards eliminated by Sweat, Urine, and other Methods. Instances of this are found in *Fabricius ab Aquapendente, Opera Chirurg. Part. 1. Lib. 2. Cap. 22.* and in *Belloste's Hospital Surgeon*. 'Tis, also, certain from Experience, that in such Cases, copious Discharges of Urine, and profuse Sweats, have proved highly beneficial. Various Observations, of this Kind, occur in practical Authors, but these are sufficient to prove, that Nature, which is often sufficient for answering her own Ends, has, in very surprising Manners, cured such Wounds. But lucky Accidents of this Kind rarely happen; and the Physician ought carefully to observe whether he discovers any such Efforts of Nature: However, if this Work was always left to Nature alone, 'tis certain that many would die, in consequence of the corrupted and extravasated Blood, preying upon the vital Viscera, who might otherwise have been preserved, if that Blood had been evacuated. Now this Evacuation is to be attempted by the following Means.

1. *By the Posture, Motion, and Effort of the Body:* If the Blood, in the Cavity of the Thorax, is as yet fluid, and the Wound, being pretty large, does not run obliquely through the Integuments, but penetrates directly, the Blood will be spontaneously discharged, if the Patient is put in such a Posture, as that the Blood may, by its Weight, fall down to the Aperture of the Wound. Hence, in such Cases, the most skilful Surgeons, for some Hours, apply nothing at all to the Orifice of the Wound, that, thus the Blood may be freely discharged. *Dionis*, in his *Opérations de Chirurgie*, informs us, that, he treated, in this manner, a Man, who, with a Sword, received a Wound under his left Pap, which penetrated into the Cavity of the Thorax; for, when he found the Cavity of the Breast full of Blood, after dilating the Orifice of the Wound, he ordered the Patient to lie upon it all Night, and next Morning found the Cavity of the Thorax entirely empty, after which the Cure succeeded very happily. *Ambrose Paré*, in Book 10. informs us, that he ordered a Man wounded in the same manner, to be placed with his Feet high, and his Head low; after which passing his Fingers into the Orifice of the Wound, and removing a Thrombus of coagulated Blood, he evacuated the extravasated Blood, and preserved the Patient from imminent Suffocation.

But this Evacuation of the extravasated Blood, through the Orifice of the Wound, is much assisted, if by a broad Bandage, or the Application of the Hands, the Abdomen is compress'd, if the Patient long retains the inclosed Air, and closing the Glottis makes a strong Effort of Expiration, for thus the Lungs being greatly dilated, and the Diaphragm pressed upwards, the Blood contained in the Cavity of the Thorax, is expressed through the Aperture of the Wound.

2. *By Suction through a flexible Tube;* As it is often incommo-
dious, in many Wounds of the Thorax, to retain the Patient in such a Situation, that the extravasated Blood may, by its Weight, be discharged through the Aperture of the Wound, Surgeons have invented another Method: Thus *Scultetus*, in *Armament. Chirug. Tab. 12. Fig. 9, and 10*, has exhibited a flexible Tube of Gold, perforated on the Sides, and its Cavity filled with a golden Probe, that it might be commodiously introduced without an Angustation, or Lessening of its Diameter. This Tube is to be cautiously introduced, as far as possible, into the Cavity of the Thorax, and then withdrawing the Probe, the extravasated Blood is to be extracted, either by Suction of the Mouth, or the Application of a Syringe. The Point of the Pipe must be obtruse, lest it should injure the Lungs. Pipes, for this Purpose, may, also, be prepared of Lead, or flexible Leather, and a Whalebone Probe. *Scultetus*, in the same Work, *Obs. 42*, informs us, that by such an Instrument, bended into an Angle, after extracting the Probe, he without any Suction, evacuated a large Quantity of Blood from the Cavity of the Thorax.

3. *By the Injection of diluting, resolvent, and depurating Liquors.* 'Tis sufficiently obvious, that the two preceding Methods can only be used, where the extravasated Blood is as yet fluid; but, if it is formed into grumous Concretions, it cannot easily be discharged from the Wound, much less enter the Perforations of the Pipe introduced. 'Tis true, indeed, the coagulated Blood is afterwards spontaneously dissolved, but, at the same time, it becomes putrid; a Circumstance, which in this Case, would be highly injurious; and often on account of the Compression of the Lungs, there is so great an Anxiety, that this spontaneous Resolution of the concentered Blood could not be waited for. In such a Case, they inject tepid Water with Honey, and the Addition of a little Salt and Venice Soap. For this Purpose,

Take of common Honey, two Ounces; of Venice Soap, two Drams; of Sea-salt, four Drams; and of Rain-Water, twelve Ounces; mix all together.

Or,

Take of Sal Ammoniac and Nitre, each three Drams; of the recent Urine of a sound Person, twelve Ounces; and of common Honey, two Ounces; mix all together.

Or,

Take of Aloes, dissolved in Water, duly depurated from its resinous Fæces, and, again gently inspissated, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of French White-wine, two Ounces; Mix all together.

These Liquors, when injected, are by the Motion of Respiration agitated, and, as it were, triturated with the grumous Concretions, which are thus so resolved, that they may be discharged, through the Aperture of the Wound, together with the injected Liquor. According to various Intentions, the Liquor to be injected may be prepared of different Ingredients: For the Dilution and Resolution of the concentered Blood, tepid Water, with Honey, and a little Salt, is sufficient; but when the extravasated Blood, begins to become putrid, it is most expedient to inject Infusions of Sordium, Rue, Horehound and other similar antiseptic and gently detergent Substances, with the Addition of a little Vinegar.

4. *By the Dilatation of the Wound.* This Method is treated of under the Article VULNUS.

5. *By another Aperture made in the Manner directed.* When the State and Condition of the Wound is such, that the Matter collected, in the Cavity of the Thorax, cannot be evacuated, then, the only Measure to be taken, is to make a new Incision in a Part of the Thorax, to which, in consequence of its natural Figure, the contained Fluids may naturally fall. This is principally requisite, when the Wound is inflicted in the superior Part of the Thorax; for in this Case, 'tis hardly possible, that the extravasated Blood should be discharged through the Aperture of the Wound. But, as the Cavity of the Thorax, in the posterior Parts, descends very deep, in consequence of the Situation of the Diaphragm; hence, it is, that in such a low Place, the Cavity of the Thorax may be penetrated, without any Wound in the Diaphragm, which adheres to the inferior Ribs; and from the posterior Part of the Thorax, ascending towards the anterior Parts, is formed a pretty acute Angle, with the Bodies of the Vertebrae. But lest the strong Muscles, called the Sacrolumbalis, and the Longissimus Dorsi, which being placed at each Side of the Spine of the Back, and ascending through the Loins and Back, should be wounded, this Aperture of the Thorax ought at least to be three Fingers Breadths from the Vertebrae. This Aperture is generally made between the second and third, or the third and fourth of the inferior spurious Ribs. But, since, according to *Albinus*, in *Hist. Musculorum Hominis, Lib. 3. Cap. 81*, the Diaphragm on the Right Side, ascends higher into the Thorax than on the Left; hence, when the Operation of the Paracentesis, in the Thorax, is performed in the Right Side, the Incision is generally made between the third and fourth Rib; but on the Left Side, between the second and third of the spurious Ribs; as *Van Solingen*, in his *Manuale Operat. Cap. 1*, advises. Perhaps, for this Reason, *Hippocrates*, when inquiring on what Side the Operation for the Empyema ought to be perform'd, wished that the Pus was contained in the Left, as he informs us, in his *Treatise de Morbis, L. 2. C. 16*. *Dionis*, also, in his *Cours d'Operation de Chirurgie*, ordered this Operation to be performed between the third and fourth Rib: hence there seems to be an Error in the Text of *Boerhaave* in this Place, since the Operation is ordered to be perform'd between the second and third of the true Ribs, because afterwards the Operation is order'd to be performed far lower; and because under the Article *Empyema*, where the Perforation of the Thorax is treated of, the Part specified, is between the fifth and sixth, or fifth and fourth of the inferior Ribs; which Place, according to *Paulus Aegineta, Lib. 6. Cap. 44*, is by some open'd for the Cure of an Empyema, tho', as he tells us, the Operation is succeeded by sudden Death, or, incurable Fistulas: Hence I am of Opinion, that the Words of the Text ought to be *between the second and third of the inferior spurious Ribs*, unless in this Passage we were to suppose, that the Perforation was to be made in the anterior Part of the Thorax; in which Case the Operation is best perform'd between the second and third of the inferior true Ribs, as *Dionis*, also, informs us, in his *Cours d'Operations de Chirurgie*, where he only mentions this Advantage, as attending the Operation perform'd in this Place, that the Patient can in the Surgeon's Absence take care of his own Wound. But the greater Deepness of the posterior Parts of the Thorax, and the spontaneous Tendency of the extravasated Blood to the Aperture of the Wound, whilst the Patient lies, readily convince any thinking Person, that a Perforation of the Thorax in the posterior and inferior Parts is preferable. Tho' *Hippocrates*, in his *Treatise de Morbis, Lib. 2. Cap. 16*, when treating of the Cure of an Empyema, does not exactly specify the Part to be open'd; yet he determines, that the Operation ought to be perform'd in the posterior and inferior Parts; for, says he, "if, on account of the Thickness and Redundance of the Pus, there is no Noise perceiv'd, as it sometimes happens, which ever of the Sides is tumid and painful, is to be open'd in the lowest Part between the Ribs, rather on the posterior, than the anterior Part of the Tumour, that a more easy Discharge of the Pus may be procur'd." And, in the same Work, *Lib. 3. Cap. penult.* when treating of the same Disease, he tells us, "that we must make an Incision or cauterize the Patient, as near the Septum as possible, taking care however not to wound it."

When, in a Dropsy of the Breast, the Waters are to be evacuated, *Hippocrates*, in his *Treatise de intern. Affection. Cap. 24*, orders an Incision to be made in the Integuments lying above the third inferior Rib, which is then to be perforated with an acute Perforator, and a small Quantity of Water is to be evacuated: From which Passage 'tis sufficiently obvious, that *Hippocrates* made Choice of the lowest Part of the Thorax, as the most proper for an Evacuation of any Liquids contain'd in it.

The Place most proper for this Purpose is easily found by numbering the Ribs, when the Patient is naked; but 'tis not to be found without some Difficulty in fat Persons, and those labouring under an Emphysema; for which Reason Surgeons have fallen upon another Method of determining the Part. Thus *van Solingen*, in his *Manuale Operation, Cap. 1*, orders a Thread to be

be convey'd from the Cartilago Eniformis to the Spine of the Back; then he divides this Thread into three equal Parts, and determines the Part for the Operation to be two Thirds of the Length of the Thread from the Sternum. *Dionis*, in his *Cours d'Operations de Chirurgie, Demonstret*. 5. orders us to measure four Fingers-breadth from the lower Angle of the Omoplate, and the like Distance from the Spine of the Back, in order to find the proper Place for the Incision. But as the Scapula is moveable, and may change its Situation by the various Actions of the Muscles adhering to it, 'tis sufficiently obvious, that this Method is not always very certain. Hence 'tis more proper, when the Place is found, to examine with the Fingers, whether it corresponds to the Interstice of the Ribs.

The proper Place for the Incision, when found, is generally mark'd with Ink, that it may not afterwards be mistaken: But as the Ribs are moveable, 'tis sufficiently obvious, that, by a Change of Posture in the Body, the Situation of the Skin may be, also, alter'd. Hence *Hippocrates*, in his *Treatise de Morbis, Lib. 3. Cap. penult.* justly advises, "that, after the Part is mark'd, we are to take care, that in cauterizing, or making the Incision, the Figure of the Skin does not deceive us by a Change of its Situation, either upwards or downwards." The Aperture ought to be made with a cutting, but not with a pungent Instrument, as in the Paracentesis of the Abdomen, which is perform'd by a Steel Trocar, introduc'd into a Silver Canula; because by this Method there would be great Danger of wounding the Lungs. But that the cutting Instrument may penetrate the Cavity of the Thorax, the Skin, the Panniculus Adiposus, the Longissimus Dorsi, the intercostal Muscles, and the Pleura must be cut; and, that this may be done safely, the Patient's Body is to be a little reclin'd towards the posterior Parts, that the Skin may be loose: Then the Surgeon is with his Fingers to elevate all the common Integuments, and, if possible, along with them, the Latissimus Dorsi; and make an Incision in them about three or four Fingers-breadth long. After this let the Body of the Patient be bend'd forwards, and at the same time a little towards the opposite Side, that the Ribs may recede the more from each other, and the intercostal Muscles be stretch'd. Then with a Knife gently incur'd, and the Back and Apex of which are to be cover'd with the fore Finger, the Surgeon is to cut the stretch'd intercostal Muscle and Pleura, penetrating cautiously, and with a small Wound, into the Cavity of the Thorax, lest he should wound the Lungs. As soon as the Pleura is cut, the Lungs immediately collapse, and recede from the Ribs; after which the Wound may be safely dilated. The Incision to be made parallel to the Ribs, in the middle Space between them, and with the Edge of the Knife downwards, in order to avoid the intercostal Vessels, adjacent to the inferior Part of the superior Rib, which is fulcrated.

By an Observation of these Cautions, the Operation is most safely perform'd: In practical Authors, there are, however, some Directions of less Moment to be found. Thus *Fabricius ab Aquapendente*, in *operat. Chirurg. Cap. 45.* orders the Patient at the time the Pleura is cutting, to expire strongly, that the Lungs, by this means, receding from the Pleura, may not be hurt by the Knife. But from Physiology 'tis now known, that the Lungs, both in Inspiration and Expiration, are continually contiguous to the Pleura, and that they are expanded according to the Dilatation of the Breast. *Hippocrates*, in *Aphor. 27. Sect. 6.* informs us, that if dropical Patients, or those labouring under an Empyema, are cut or cauteriz'd, and the Water or Pus discharg'd all at once, they die. Hence some have ordered, that the extravasated Blood should not be evacuated all at once, but at different times. But in an Empyema, or Dropsy of the Breast, the Lungs are long macerated by the Pus, or extravasated Serum. Hence, if the Whole of this Sordes is at once evacuated, the Blood, suddenly dilating the almost consum'd Vessels of the Lungs, may burst them, and occasion a sudden Death. But in Wounds of the Thorax, when this Operation is perform'd, we rarely defer it so long, that this is to be dreaded; and 'tis certain from many Chirurgical Operations, that all the extravasated Blood has been in this manner safely and suddenly evacuated. It much facilitates this Operation, that the extravasated Humours, by compressing the Lungs, and by their Weight depressing the Diaphragm, occasion that upon cutting the Pleura these Parts are not so easily wounded.

We have already observ'd, that the Lungs sometimes adhere to the Pleura. Now, if the Paracentesis should be perform'd in the Part where such an Adhesion is, 'tis sufficiently obvious, that great Difficulty must arise from such a Circumstance. Most Chirurgical Authors, who have wrote on this Subject, inform us, that this has happen'd to them; in which Case they order the Surgeon, by introducing his Finger into the Wound, cautiously to separate the Lungs from the Pleura, to which they adher'd; and certainly nothing else remains to be done, tho' it seems cruel thus to lacerate concreted Parts in a living Person; for, unless this was done, the Paracentesis would be performed in vain. *Hippocrates*, in his *Treatise de Morbis*, has a surprising Passage relating to this; for he there de-

scribes the Disorders which arise when the Lungs fall upon the Side [*ὁ πλευρὸν προσπεσὼν ἐς τὸ πλευρὸν*] which sufficiently agree with those Phenomena, which appear after acute inflammatory Disorders, in which the Lungs adhere to the Pleura: And the Method of Cure he prescribes for such Disorders, also, confirms this; but he afterwards adds, "But if this Misfortune should happen by a Wound, or by an Incision for the Empyema, we are to fix a Bladder to a Pipe, introduce it into the Wound, blow it full, and force it forwards by means of a solid tin Probe."

From this Passage we may conclude, that *Hippocrates*, in order to divide the Lungs from the Pleura, introduc'd a folded Bladder into the Wound, and afterwards blow'd into it, that thus, being distended in the Cavity of the Thorax, the Lungs might be separated from the Pleura, to which they adher'd. Or, at least, we may hence deduce, that the Antients attempted the Separation of the Lungs from the Pleura, for fear of such a Concretion. Some advise the Integuments, and Intercostal Muscles, to be prudently cut without wounding the Pleura, and then carefully to examine the denudated Part of the Pleura, whether from its unusual Thickness or Callosity, 'tis to be dreaded, that in this Part the Lungs adhere to the Pleura; in which Case, it would be expedient to lengthen the Incision, till we come to a Part free from the Adhesion. But such an Operation is more easily demonstrated on a Carcass, than perform'd on a living Person, on whom it seems very cruel to perform, so slow an Incision thro' the Integuments and Muscles: But there are sometimes so surprising Concretions of the Lungs to the Pleura, as to render this Operation entirely useless. Thus, says *van Swieten*, in a young Gentleman who died of an Apoplexy after a Spitting of Blood, I saw the middle Lobe of the Right Side of the Lungs every-where so adhering to the Pleura, that the Right Cavity of the Thorax was divided into two distinct Cavities. If in such a Case a Wound had been made in the superior Part of the Right Breast, 'tis sufficiently obvious, that the Paracentesis must have been of no Service, if perform'd in that Part. But Cases of this kind rarely occur, and Errors of this sort are not to be ascrib'd to the Surgeon, since such a latent Circumstance could not be discover'd by any Signs.

After the Perforation of the Thorax, all the Measures before prescribed are to be us'd in order to evacuate the extravasated Blood. But if Liquors proper for dissolving concreted Blood are to be injected, they may be commodiously convey'd thro' the Wound first inflicted, because 'tis pretty high in the Thorax; after which they are easily discharg'd thro' the new Aperture.

If Wounds of the Thorax are distended by no Tents, and uncover'd rarely; if the Access of the Air is prevented; if by artificial Suction, and a due Effort of Respiration, the admitted Air is expel'd; and if Cold is avoided; they are soon and efficaciously cur'd, if they are curable.

We have already specified the Reasons, for which the Use of Tents is to be condemn'd, in such Wounds as do not penetrate into the Thorax; but when it seems expedient, not all at once, but at different times, to evacuate the Liquids contain'd in the Cavity of the Thorax, which rarely, tho' sometimes, happens in Wounds of the Breast, Water, or Pus, as *Hippocrates* observes, being collected in it, then a Tent is to be put into the Wound, that the Matter stagnating in the Breast may be evacuated at Pleasure. And *Belleste*, in his Hospital Surgeon, tho' in all other Cases he condemns the Use of Tents, yet advises the Use of them the first Day after the Paracentesis, lest the new Incision of the Pleura should be concreted; but after this they always seem to be hurtful, since by absorbing the Fluids they become tumid, and by the Motion of the Thorax, rub upon the Libs of the Wound, which by that means become callous, and render the Cure more difficult. Some pretend that, by means of Tents, the Access of the Air into the Cavity of the Thorax is prevented; but every time the dressing is renew'd, that Fluid enters freely thro' the open Wound; and when its Return is hinder'd by the Application of a new Tent, it is dilated by the Heat, often finds strange ways for itself, and may produce the worst of Emphysemas. 'Tis, therefore, better to cover the Wound with a plain Pledget, and leave a free Passage for the Humours to be discharg'd; and if the Wound is pretty large, we are to take care, that the Pledget do not fall into the Cavity of the Breast, which some practical Authors affirm to have happen'd with respect to Tents. Thus *Tulpius*, in *Observ. Medicin. Lib. 2. Cap. 15.* informs us, that a certain Danish Gentleman being wounded in the Thorax, and not duly taken care of by his Surgeon, a Tent fell into the Cavity of his Thorax, which he expectorated six Months after, and afterwards enjoy'd a State of perfect Health. Another Instance of the like Nature is found in *Hildanus, Obs. Chirurg. Cent. 1. Obs. 46.*

Another Step, necessary in this Case, is, to hinder the Air from entering the Cavity of the Thorax; and, if it has enter'd, to evacuate

evacuate it. So long as the extravasated Liquids are not evacuated from the Cavity of the Breast, 'tis impossible to hinder the Ingress of the Air, because a free Discharge of the extravasated Humours is requisite; but when no more Matter is discharged thro' the Wound, then the Air in the Thorax between the Lungs and Pleura is to be evacuated, and its future Ingress carefully prevented; for 'tis certain from Physiology, that, in order to a free Expansion of the Lungs, by the inspir'd Air, there must be no Air in the Cavity of the Thorax. This Evacuation of the Air may be obtain'd by Suction, but best of all in the following manner: The Lips of the Wound are to be clos'd by the Fingers, that no Air can enter; then the Patient is, by a slow and profound Inspiration, to draw in a large Quantity of Air, and retain it in the Lungs as long as he can. The Air thus retain'd, being rarefied by the Heat, will expand the Lungs, and by that means compress the Air between the Pleura and the Lungs. If, in this Case, before the Patient performs Expiration, the Lips of the Wound are separated, a large Quantity of the Air in the Cavity of the Thorax, will be express'd: Upon this, the Lips of the Wound are to be immediately clos'd; and then let the Patient perform Expiration, but not before. If this Method is several times repeated, all the Air in the Cavity of the Breast will be expel'd, and the Patient will immediately find his Respiration easier: When all the Air is thus expel'd, we suddenly apply an adhesive Plaster, at the time the Patient retains the inspir'd Air in his Lungs; for then the distended Lungs, being contiguous to the Pleura, will hinder the Ingress of the Air thro' the Wound. This Plaster is left on as long as possible; and if there is a Necessity for a new Dressing, a similar Plaster is to be applied, with the same Cautions; and certainly rare Dressing is in no Wounds more beneficial, than in those which penetrate into the Cavity of the Thorax. The Efficacy of this Method is prov'd by the Experiments made on live Animals, mention'd under the Article VULNUS; for when, by Perforating both Sides of the Thorax with a large Wound, Respiration ceas'd, and the Animal seem'd dead, upon extracting the Air from the Cavities of the Breast, the Animal reviv'd, and Respiration was immediately restor'd.

But, as, all the Parts contain'd in the Thorax, lying near the Heart, the Source of Heat, are continually cherish'd with a gentle Warmth, we are to take care, that they be not injur'd by an unusual Cold in dressing the Wound. Hence, the State of the Air is always to be kept warm, especially when the Dressings are renew'd.

By these Measures, Wounds penetrating into the Cavity of the Thorax, tho' of the most dangerous Kind, and accompanied with the most terrible Symptoms, have been sometimes cur'd; nor are we easily to despair, since Instances of very surprising Cures of this Kind are recorded by Authors, as is shewn under the Article VULNUS. That great Harm is always to be dreaded from such Wounds, is certain; since the vital Viscera, the Heart, the Lungs, and the largest Blood-vessels, are situated in the Thorax. But as Wounds of the Heart are not always absolutely mortal, [tho' Pliny, in his *Natural History*, Lib. 11. Cap. 37. affirms, that they are instantaneously fatal] 'tis obvious, that some Hopes remain in the most desperate Wounds, since Men, who, in consequence of Wounds, of the largest Blood-vessels, have been given over for dead, have yet recover'd, when no Methods were us'd for their Relief, nor any Cordials exhibited in order to recruit their Strength. 'Tis not only certain from Experience, that violent Wounds of the Thorax have been cur'd; but, also, that they have been cur'd in a very short time: Of this there is a memorable Instance in *Bellefleur's* Hospital Surgeon, Part 2. Cap. 8. The same Author, also, furnishes us with various Cases, which evince, that the most desperate Wounds of the Thorax, and such as are accompanied with the worst of Symptoms, have sometimes been happily cur'd, by rare Dressing without the Use of Tents.

Then, all the violent Symptoms before-mention'd are prevented: The worst Consequences which appear after Wounds of the Thorax, arise almost only from the Ingress of Air into the Cavities of the Thorax; or from the extravasated Liquors, which either lessen the Cavities of the Thorax, or by their Corruption injure the contain'd Viscera. When such Wounds are not clos'd up with Tents, the extravasated Blood is freely discharg'd. Rare Dressing and the Cautions already directed, prevent the Ingress of the Air, which, when admitted, may be evacuated in the manner before directed. Hence, a successful Cure is always obtain'd, unless such Parts as are absolutely necessary to Life are wounded; and it is at the same time obvious, that the History and Cure of Wounds of the Thorax afford great Light in many Diseases of the Breast, and Viscera contain'd in it. *Van Swieten*.

FROM HEISTER.

Wounds of the Thorax are of three Sorts; 1. External; 2. Penetrating into the Cavity of the Thorax, without injuring its Contents; or, 3. The Internal Parts are also injur'd.

The Wound may be known to be external only, by several Methods: 1. By the Sight; 2. If no Sound is perceived from the Wound in breathing; 3. If neither the Finger, nor a Probe, can be

introduced into the Cavities of the Thorax; 4. If, upon injecting warm Water with 2 Syringe, it immediately returns; or, 5. When no violent Disorders appear, such as Difficulty of breathing, Faintings, and other dangerous Symptoms. All these Circumstances being carefully examined, if it appears that the Wound is only external, it may be dress'd with a digestive Ointment, and vulnerary Balm, and treated in the same manner with other slight Wounds.

Sometimes indeed it happens, that external Wounds of this kind run deep and obliquely between the Muscles and Ribs, so that the Wound cannot without Difficulty be cleansed from the Blood and Matter: Hence, the contained Matter may putrefy, and corrode the neighbouring Parts; and produce Ulcers, and incurable Fistulas; or, by forcing its Way through the Pleura, into the Cavity of the Thorax, it may occasion an Empyema, Phthisis, or even Death.

In order to prevent these Disorders, particular Care must be taken to clear the Sinuses of the Wound of the Blood and Matter, either by Compression, by the Suction of an healthy Person, by extracting it with a Syringe, or, if necessary, by making farther Incision. The Remainder of the Cure is to be performed as we above directed. The most proper Bandage, for securing the Dressings, is the Napkin with the Scapular; which, however, must not be made too tight, that the Discharge of the corrupt Matter may be facilitated.

Various Sorts of Syringes, for extracting the Blood, are used in this Case. Some are straight, others crooked. Some Surgeons use a tin Syringe, about twice as large as that represented in *Tab. XXVII. Fig. 8.* whose Mouth B is larger than the Pipe AA, and may be either triangular, round, or oval; its true Size is exhibited at *Fig. 9.* In using this Syringe, its Mouth must be exactly fitted to the Orifice of the Wound, and the Blood extracted by drawing out the Sucker of the Syringe. It is therefore necessary to be provided with Mouths of different Sizes, accommodated to different Wounds. Concerning the Excellency and Use of these Syringes, it may be proper to consult *Anel* in his Treatise call'd *L'Art de sucer les Playes*.

When the Wound penetrates into the Cavity of the Thorax, it may be discovered, 1. By the Sight, when you can plainly see into the Cavity; 2. By Feeling, when the Finger or Probe may be introduced into the Cavity; 3. By Hearing, when the Patient makes a particular sort of Noise in drawing his Breath; 4. From the Agitation of the Flame of a Candle, or of Feathers, when held near the Wound, in Respiration, or in Coughing; 5. From the Injection of warm Water, when it appears to be received into the Belly; or lastly, from a Difficulty of breathing, Faintings, and other violent Symptoms; which may proceed from the Compression of the Lungs, or from the Blood collected in the Cavity, or from both these Causes.

When Blood is discharged into the Cavity of the Thorax, which, however, is not always the Case, the Expansion of the Lungs, Respiration, and the Circulation of the Blood in the Lungs, must be impeded; and the Blood being by these means inspissated in the Lungs, Death must be the Consequence. But, though the Quantity of Blood lodged in the Thorax should not be sufficient to obstruct the Breathing, or Course of the Blood in the Lungs, yet still there is great Danger, that this Blood should by Degrees putrefy, and consequently corrupt and consume the Diaphragm, the Pleura, or the Lungs, producing many violent Symptoms, and at last inevitable Death.

When Blood has been discharged into the Thorax, it appears from the following Symptoms; 1. When there is a Difficulty of breathing, and the Patient cannot draw his Breath, unless whilst sitting upright; 2. When the Patient lies easiest upon his Back, or wounded Side, and finds lying upon the sound Side, extremely troublesome, or even impracticable; 3. When the Patient feels the Diaphragm, as if it were, pressed with a Weight; 4. If the Fluctuation and Agitation of the Blood is perceived inwardly, upon turning the Body round; and, lastly, If little or no Blood flows outwardly from the Wound.

When from these Signs it appears, that Blood is collected in the Cavity of the Thorax, care must be immediately taken to procure its Discharge. 1. If, therefore, the middle or lower Part of the Thorax be wounded, and the Orifice be large, the Patient should be laid upon the wounded Side, and advis'd to draw his Breath vehemently, or endeavour to cough. *Dionis*, in his Surgery, relates, that, in a Case of this Kind, he left the Patient inclined all Night, upon the Wound without dressing, and afterwards happily completed the Cure; and *La Motte* gives us another Instance of this Kind in his *Observations Chirurgicae*. If the Passage should be obstructed by Clots of Blood, they must be remov'd with the Finger, or a Probe, or suck'd out with the Syringe. 2. If the Blood be already too thick to flow out of the Wound, a digesting and attenuating Injection becomes necessary; which may be made of a Decoction of Barley, common Honey, Honey of Roses, mixed with a little Soap, which must be several times injected, and again discharged, till all the Blood appears to be extracted out of the Cavity. For this Purpose, the Syringe of *Tab. XXVII. Fig. 8.* may be used, with the Pipes describ'd in *Fig. 10* and *11.*

T H O

3. If the Wound be so narrow, or oblique, as not to permit the Discharge of the contained Blood, it must be cautiously enlarged by Incision, either with the common Knife, and grooved Probe, or with such Knives as are represented in *Tab. V. Fig. 3. 4. and 5.* But particular Care must be taken, not to give the Patient too much Fatigue, by endeavouring to discharge the extravasated Blood all at once; and therefore, if he be weak, the Blood may be extracted at Intervals; especially, if he be subject to Swoonings. In the mean time it will be proper to introduce into the Wound, to keep it open, a Leaden or Silver Pipe, like those of *Tab. XXIII. Q, R, S;* or, if more convenient, a flexible one, like that of *Tab. XXVI. Fig. 9.* Some, instead of these Pipes, use Tents armed with a String, or a long narrow Bit of Linen, dressing with Plaisters and Compresses, securing the Whole with the Napkin and Scapular, till no Blood or Matter appears upon the Dressings; and then the Wound may be conveniently healed.

But if the Wound should be inflicted in the upper Part of the Thorax, or between the superior Ribs, then this Method of inclining the Body upon the Wound has generally but little Effect, in discharging the Blood contained in the Cavity, as the Patient must be turned upon his Head. If, therefore, the Suction of the Syringe should prove ineffectual, another Aperture should be made in the lower Part of the Thorax, by Incision, which Operation is called *Paracentesis*. This Aperture, is generally made between the second and third Rib, if the Blood is lodged in the Left Side; or between the third or fourth, if in the Right Side, about the Distance of an Hand's-breadth from the Spine of the Back, which should be marked with Ink. The Trocar is generally used on this Occasion, which must be introduced above the Rib into the Breast, very cautiously and gently; then retracting the triangular Part of the Instrument, leave the Pipe, for the Discharge of the confined Blood, which may, also, be extracted by the Suction of a Syringe. But as the Lungs may be readily injured by the Trocar, it may, therefore, be safer, first to open the Integuments with the Knife, and then gently to make an Incision through the Intercostal Muscles, and at last through the Pleura itself; taking particular Care, that the Lungs, which often adhere to the Pleura, be not at the same time wounded. This Operation being properly performed, proceed in the rest of the Cure as before directed; and the superior Wound must be healed expeditiously, with a vulnerary Balsam, and proper Plaisters.

As the Lungs frequently adhere to the Pleura, this Operation requires particular Circumspection in the Surgeon. The Pleura, therefore, must be opened with the greatest Tenderness; and then the Surgeon must examine, whether the adhesive Lungs can be separated with the Finger or Probe. For if the Lungs are too firmly connected with the Pleura, all the Pains taken to perforate the Thorax, in order to discharge the Blood, prove ineffectual.

If by these means the Thorax can be cleansed, the Wound needs only be dressed once a Day, and that with all Expedition, in order to prevent the Intrusion of the external Air. It will, also, be necessary for warming and attenuating the external Air, to have a Chafing-dish of hot Coals placed near the Thorax, at the time of Dressing; sometimes, likewise, it may be necessary to extract the Air, that has obtained Admittance into the Wound, with a Syringe; and the Patient should be advised to draw his Breath with more than ordinary Vehemence. Then the Wound must, without Delay, be dressed with a vulnerary Balsam, Plaisters and Compresses, and the Whole must be secured with a proper Bandage: This Method must be continued, till the Wound is almost entirely conglutinated.

When any of the Contents of the Thorax are wounded, as the Heart, the Aorta, the Vena Cava, the Pulmonary Vein or Artery, the Diaphragm, or a large Portion of the Lungs, Death is generally too sudden for all the Art of the Surgeon. But if the Lungs are only slightly wounded, that is, if only the smaller Ramifications of the Aspera Arteria, and pulmonary Vein, are divided, the Danger is indeed very great, though the Wound may be curable; and a Cure of this Kind is completed more by the Strength of Nature, than the Skill of the Surgeon.

We may conclude, that the Lungs are wounded, when a large Quantity of frothy Blood is discharged at the Mouth, and attended with a short Cough; when the Blood appears florid at the Wound; and when Breathing is performed with a particular Noise. The Duty of the Surgeon, in such Wounds, seems to consist in extracting the Blood collected in the Cavity of the Thorax, and treating the Wound externally, as we have already directed; for the internal Wound will admit of being dress'd. In such Cases, therefore, when the Effusion of Blood spontaneously ceases, the Patients may be preserved, though, after their Recovery, they are extremely subject to Ulcers of the Lungs, and Consumptions. But when the larger Blood-vessels of the Lungs are divided, the Violence of the Hæmorrhage either occasions immediate Death; or, if it ceases a little, it is liable to return, and cut off the Patient in a more lingering manner. In order to prevent such a Relapse, the Patient ought to keep himself quiet for some Days; to speak little or none; to take lenient internal Medicines, pro-

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per for stopping an Hæmorrhage; to avoid every thing that is acrid or heating; and, if the Patient has Strength sufficient, Venesection should be performed.

Sometimes the divided Part of the Lungs is protruded into the Wound of the Thorax, where it firmly adheres, as *Fontanus, Tulpius, and Raysch,* have observed; nor is it proper to repress it, lest the Blood should be discharged into the Cavity of the Thorax. It will, therefore, be safer to allow this Part of the Lungs to remain in the external Wound, and to treat it with a vulnerary Balsam, scrap'd Lint, and Plaisters, earnestly advising the Patient to keep himself quiet; and thus will the wounded Part of the Lungs by degrees be conglutinated with the external Wound. But if the wounded Part of the Lungs should be protruded without the Thorax, it should be carefully wrapped up in a Piece of soft Linen, and a Ligature should be made with a strong Thread above the Linen, cutting off all that projects below the Ligature. The remaining sound Part of the Lungs should be gently returned by the Finger into the Cavity of the Thorax, leaving the Thread of the Ligature hanging without the external Wound, which must be kept open with a Tent, till the Ligature can be extracted; the Cavity of the Thorax must be carefully deterged; and the Wound must be treated as before directed. *Hildanus, in Cent. 2. Obs. 32.* relates a Case of this Kind, where the Part of the Lungs prolapsed without the Thorax, being become black and corrupted, was extirpated with a red-hot Knife; and the Patient, after the sound Part of the Lungs was returned, and the Wound healed, recovered his former Health.

The most proper internal Medicines, after the Hæmorrhage is stopped, are vulnerary Decoctions, adapted to promote the Cure, with frequent Doses of *Lucatellus's Balsam,* or that of *Mecibomius,* observing at the same time a strict Regulation with regard to Diet. By these means the Surgeon may sometimes preserve his Patient, at least as far as the Nature of the Circumstances will permit.

See the Method of performing the *PARACENTESIS* of the *THORAX* under the Article *EMPYEMA*; and the *BANDAGES* proper for this Part under the Article *FASCIA*.

THOREXIS, *Θάρηξις*, from *θάρηξ*, the Thorax, in *Hippocrates*, signifies either simply a drinking of Wine, or else a drinking of Wine purer than ordinary, because, as a Reason for the Etymology, it warms and strengthens the Thorax, and arms it; as it were, with a Breast-plate. *Θάρηξις*, in *Galen's Exegesis*, is expounded by *δινουσία ἢ οἶν ἢ μέθυ*, "Drunkennes with Wine." But *Erotian*, from 2 *Aph. 21.* and 7 *Aph. 48.* expounds it by *δινουσία*, "a drinking of Wine." *Galen*, also, *Com. ad 2 Aph. 21.* says that *Hippocrates* usually calls drinking of Wine *Thorexis*, and Drinkers of Wine *Thoreffomeni*; and, *Com. ad 7 Aph. 48.* he says *θάρηξις*, *ταῖς οἷν ἢ ἀπὸ οἷν ἢ ἀπὸ μέθυ*. "Thorexis" is either simply a drinking of Wine, or else of Wine purer than ordinary. The Word, also, as well as the Verbs *θάρηξαι*, *θαρήνομαι*, (*thoreco, thorecomai*) often signify and import Ebriety; for instance, *Lib. 2. de Morbis*, *θαρήξαι ἀπὸ οἷν ἢ ἀπὸ μέθυ*; "let him abstain from Ebriety and Venery." And, *ibid.* *ἢ γὰρ ἐν θαρήξει ταῦτα πάθη*, "if these Disorders proceed from Drunkennes." And, 4 *Epid. 3.* *ἐτοίμαθα θάρηξαι*, "they were inebriated." And, 2 *Prophet. 3.* *ἢ θαρήξω*, "or shall be inebriated." *Ἀκροθάρηξις* (*Acrothoreces*), from *ἀκρον*, the Top or Extremity, and *θάρηξ*, the Thorax, with the Ancients, were such as had drank but slightly, or were but just beginning to be inebriated; and *Erotian* says, that till his very time they called *τὰς μὴ ἐπιπλέουσιν δινομένους*, "those who were not much overcome with Wine," *Acrothoreces*. And in *Aristotle's Problems*, *sect. 3. Prob. 2.* the *Acrothoreces*, *Ἀκροθάρηξις* are opposed to *οἱς σφόδρα μεθύουσι*, "to those who are very drunk." *Hesychius* and *Varinus* write the Word, also, *θάρηξις*, *Thorixis*, and expound it by *δινουσία*, *Oenopsia*, a drinking of Wine. *Foefius*.

THOROS, *Θόρος*, from *θόρειν*, to gush out. Male Sperma.

THORYBOS, *Θόρυβος*, is a Perturbation excited in the Body. Thus *Progn. & Coac. 282.* *συνδυάζει ἐν τῇ ὑποχονδρίᾳ θόρυβον σημαίνει ἢ παραφροσύνην*, "a Pulsion in the Hypochondrium" indicates some Perturbation, or a Delirium. Here *Galen* on the Passage says, *θόρυβος μὲν σημαίνει σάει*, &c. "A Perturbation" is signify'd, which is one common Symptom of all dangerous Cases, in which not only the Patients, but the Physicians themselves are under a Perturbation, [*θόρυβος σημαίνει σάει*]. *Θορυβώδης γῆρυς* signify a disorder'd Mind, or a Mind very subject to Perturbation. And, 5 *Epid. T. 94.* we find *θορυβώδης γέλως*, "a disorderly Laughter," or a Laughter with a Perturbation, related as a Symptom of a Wound in the Breast, which proved mortal. The Word generally imports, as used by *Hippocrates*, a Perturbation of Mind. *Foefius*.

THRACIUS LAPIS. *Offic. Gæbal. 30.* **THRACIAN STONE**.

This Substance is produc'd in the River *Ponto* in *Scythia*, and, by *Dioscorides*, has the same Virtues with the Jet ascrib'd to it. Authors entertain various Opinions concerning this Stone. *Martholus*, from *Galen*, introduces *Nicander* the Poet, as informing us, that if this Stone after Ignition is immers'd in Water, it will be all in a Flame; but is effectually extinguish'd by

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by an immediate Affusion of Oil. But it is of no Use in Medicine, nor does Nicander ascribe any Virtues to it, except that its fetid Smell, when us'd by way of Fumigation, banishes wild Beasts. But *Matthiolus* concludes, that it is rather a fabulous than a real Stone, since neither he, nor any of his Friends, could find it in Italy. *Boetius de Boet* informs us, that some take it for the Jet, and others for the Pit-coal; and *Wormius* takes it for the same with the *Terra Ampelitis*. It is at present unknown in the Shops; but, as *Dioscorides* gives it the same Virtues with Jet, so Jet may be us'd in its stead. Dale.

THRANOS, *Θρανός*. A Seat, Chair, or Stool. *Galen. Exeg.*
THRASI. A Name for the *Cyperus*; *rotundus*; *esculentus*; *angustifolius*.

THRASOS, *Θρασός*. *Hippocrates* uses this Word to express a certain Fierceness and Audacity of the Aspect, or Eyes, in or on the Approach of a Delirium.

THRAUSMA, *Θραύσμα* from *Θραύω*, to break. A Species of Gum Ammoniac, which is friable, and broke into small Pieces.

THRINCOS, *Θρινκός*, is expounded by *περίβολος*, *περίσπαραγμα*, a Circumvallation; Palisade, Inclosure. The Word occurs in *Hippocrates's* Epistles, where he says of the Tongue, that *ἐκχυρὸς ὁδὸν τὸν σπινθῆρα περικύβηται*, "it is guarded by the strong Palisade of the Teeth."

THRISSA, *Θρίσσα*. The same as *ALOSA*. The Shad-fish.

THRIX, *Θρίξ*. An Hair.

THROMBOS, *Θρόμβος*. A Grume, or Clot of Blood.

THRONOS, *Θρόνος*, in *Hippocrates*, *Lib. περὶ ἐνυκν.* is a high Seat, or a Seat in an high Place; where he directs to observe the Decubitures of the Sick, as in the following Words: *ἐν μέν γὰρ αὐτῶν ἐς θρόνους, ἐν δ' ἐκασταίς καὶ σπλῆνός τε καὶ σπινθῆρας* "Some of them (lie sick) in high and airy, others in dark and subterranean Places, or Seats." *Foesius*.

THRONUS MARCELLIUS, in *Paulus Aegineta*, *L. 7. C. 12.* is the Name of a Pastil there describ'd.

THRYALLIS. A Name for the *Phlomis*; *fruticosa*; *Salvia folio longiore & angustiore*.

THRYMMA, *Θρύμμα*, from *Θρύλλω*, to break, is a Fragment, *Lib. 1. περὶ γυν.* *Hesychius* expounds the Word by *κλάσμα τῆς ἀρτίς*, a Morfel of Bread; *Suidas* by *τρυφός*, *Tryphus*, a Fragment. *Foesius*.

THUNUS. *Offic. Aldrov. de Pisc. 112. Schonf. Ichth. 75. Jonf. de Pisc. 4. Charlt. de Pisc. 6. Thynnus, Bellon. de Aquat. 106. Gefn. de Aquat. 967. Salv. de Aquat. 123. Thynnus seu Thunnus. Raii Ichth. 176. Ejusd. Synop. Pisc. 57. Orcynus. Rondel. de Pisc. 1. 249. THE TUNNEY FISH; or SPANISH MACKAREL.*

The Tunny, which the *Latins* call *Thunnus*, is a pretty large, heavy, big-belly Fish, which is plentiful in the *Mediterranean*, especially in *Provence*, and at *Nice*, from whence comes what we sell: There are, likewise, a great many of them upon the Coast of *Spain*. The Net being taken out of the Sea, the Fish die, not being able to live out of the Water; then they hang them up in the Air, open them, take out their Entrails, and take off the Head; and, having cut them in Pieces, broil them on large Gridirons, and fry them in Olive-oil; and, after having seasoned them with Salt and Pepper, and Cloves; and some Bay-leaves, they put them into little Barrels, thus dress'd, and ready to eat with fresh Olive-oil, and a little Vinegar, or to transport into several Parts, where this is call'd *Sea Tunny*.

There are two Sorts which have no other Difference; but that some have the Black-bone taken out; and for that Reason are call'd bon'd Tunny, and are usually put up in little white Wood-barrels, broad at the Bottom, and narrow at the Top; and that which is unbon'd, is in little round Barrels: Choose both Sorts new, firm, laid in good Oil, and the Flesh white like Veal. Its Use is very common in *Europe*, and several other Parts of the World; as well because it is ready to eat; as because it is of an excellent Taste like Veal. They commonly catch with the Tunny another Fish, which the *Provincials* call *Imperador*, or Emperor; and Dolphins are, also, there to be seen.

Aristotle observes, that this Fish sometimes goes up into Rivers. It is covered with large Scales closely united to one another, and feeds upon Weeds and Sea-plants. Some relate that this Fish sees better with the Right Eye, than with the Left; and, that it is so cruel as to devour its own Young. Some Authors assure us, that it lives but two Years; but it is difficult to conceive, how, in so short a Space of Time, it can acquire so large a Size.

The Tunny contains much Oil, and volatile Salt; is firm, short, and of an excellent Taste; and yields a nourishing, solid, and durable Food; and is reckoned to be good against Poison, the Stinging of Serpents, and the Bite of a mad Dog; but it is hard of Digestion. The most delicious and juicy Part is the lower Part of the Belly, but it is farthest; it adheres to the Stomach, relaxes and debilitates the Fibres, and therefore is not so wholesome as the rest. It agrees with those who are young, bilious, and sanguine; who have good Stomachs, and are us'd to Exercise. *Lemery on Foods.*

The pickled Flesh of the Tunny cures those who are bitten

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by the Viper called *Præster*; but the Patient is to vomit plentifully at every Turn with large Draughts of Wine; it is of great Efficacy, also, against the Bite of a Dog, being rubbed on the Wound. Dale from *Dioscorides*.

THUREÆ GLANDULÆ. The same as *TOLLES*.

THUS. Frankincense. See *OLIBANUM*.

THUYA. See *ARBOR VITÆ*.

THYE, *Θήνη* (the Plural of *Θύη*) from *θύω*, to sacrifice, in *Galen's Exegetis*, are expounded by *θυμιάματα*, *ἀρώματα*, "Perfumes, Spices." *Hesychius* gives much the same Explication; only he puts *θύματα* (*Thymata*) for *θυμιάματα* (*Thymemata*); and *θυμιάματα*, he says, are *τὰ ἐπιπροσέμμενα ἀρώματα εἰς θυσίαν*, "the Cake offer'd in Sacrifice," *Θύεα*, in *Homer, Il. 2, Vers. 270.* are expounded by the Scholiast *θυμιάματα*, *θυσίαι*, "Perfumes (or Incense) Sacrifices."

Thye, *Thyeia*, *Thyia*, *Θήνη*, *Θύεα*, *Θύα*, are also Names for a Mortar, *Lib. 1. & 2. γυναικ. Foesius*.

THYEMA, *Θύημα*. See the preceding Word.

THYITES LAPIS. *Offic. Marth. 1386. Thyites. Boet. 415. De Laet. 142. Aldrov. Mus. Metall. 670. THE GREEN STONE.*

This Stone is of a greenish Colour, resembling the Jasper; tho', when diluted, it renders the Liquor us'd for that Purpose of a milky Colour. It is produc'd in *Ethiopia*, is of an highly pungent Quality, and, according to *Dioscorides*, removes Specks and Dimness of the Eyes.

The Thyites of *Dioscorides* is now unknown to us; but we do not find, that the Writers of former Ages were better acquainted with it. *Fuchsius* thinks, that it is the Lapis Turcius; but this Opinion is excellently confuted by *Matthiolus*. *Agri-cola*, in *Lib. 6. de Nat. Fossil.* thinks, that it is not at all different from the *Marobillius*.

THYLACOS, or THYLACION, *Θυλάκος*, or *Θυλάκιον*. A Bag, or Pouch. *Thylacion* is us'd to express the Bag form'd by the Membranes of the *Fœtus* at the Orifice of the *Pudenda*, before the Birth.

THYMA, *Θύμα*. A pruriginous Pustule excited by Heat.

THYMALLUS. See *ASCHIA*.

THYMBRA. A Name for several Sorts of *SATUREIA*.

THYMBRA HISPANICA. See *MASTICHINA*.

THYMELÆA.

The Characters are;

The Leaves are entire, the Flower is monopetalous, as it were, Funnel-shaped, and quadrid. The Ovary in the Centre of the Flower becomes an oval Fruit, full of Juice, or dry, and containing an oblong Seed.

Boerhaave mentions four Sorts of *Thymelæa*; which are,
1. *Thymelæa*; *Lauri folio*; semper virens; seu *Laureola mas.* *Tourn. Inst. 495. Boerb. Ind. A. 2. 213. Laureola. Offic. Ger. 1219. Emac. 1404. Park. Theat. 205. Raii Hist. 2. 1587. Synop. 3. 465. Laureola semper virens, flore viridi, quibusdam Laureola mas. C. B. P. 462. Laureola semper virens, flore luteolo. J. B. 1. 564. Daphnoides & Laureola. Chab. 45. SPURGE-LAUREL.*

This is a low Shrub, seldom growing above two or three Feet high; with a woody Stem about a Finger thick, covered with an Ash-coloured Bark; it is divided towards the Top into several Branches, clothed with long, thick, smooth, and shining green Leaves, which are set round the Tops of the Branches. The Flowers grow among these Leaves, being oblong greenish Tubes, divided at the Ends into four Segments, with a few yellowish Stamina in the middle, of a sweet Smell; these are succeeded by small oval Berries, of a blackish Colour when ripe. It flowers in *March* or *April*, and the Berries are ripe in *September*. The whole Plant is of an hot caustic Taste, burning; and inflaming the Mouth and Throat. It grows in Woods and Thickets. The Leaves and Berries are used, though but rarely.

They purge Bile, cholerick and serous Humours, with great Violence, both upwards and downwards; and, by some adventurous Persons, are given in the Dropsy, and to evacuate tough Phlegm from the Lungs; but, being frequently attended with dangerous Consequences, it is rarely prescribed by judicious Physicians. *Miller's Bot. Off.*

This Plant has the Qualities of the *Daphnoides* of *Pliny* and *Dioscorides*; for the Leaves vellicate and inflame the Mouth and Fauces. The same, taken inwardly, whether green or dry, purge Phlegm by Stool; and provoke Vomiting, and the Menfes. Being chew'd, they attract Phlegm from the Head; and also, promote the menstrual Flux. Fifteen of the Berries (five or ten, according to *Pliny*) are a Dose for a Purge.

The Leaves taken inwardly are very hurtful to the Stomach, provoke Vomiting, and burn and injure the internal Parts. Some Empiricks venture to use the Leaves and Berries, in hydropical Cases, to evacuate serous Humours; but, says *J. Bauhine*, we should be very cautious of exhibiting this Plant, or any Part of it, because of its extraordinary Acrimony; which however, says *Ray*, may be corrected by macerating it in Vinegar.

This *Thymelæa*, first macerated in Vinegar, then dry'd and pulverized, and the Powder sprinkled upon a Cancer, is found to be of Service in that Disorder. Cold and repellent Remedies

are proper in an occult Cancer, but not in an ulcerated one. *D. Bowle. Raii Hist. Plant.*

The Plant flowers in February, and the Bark, Leaves, and black oblong Berries, are used.

It is of an igneous, very acrid, exulcerating, and stimulating Quality; exciting Fevers; weakening the Force of the Heart, and the noble Parts; and purging Bile and bilious, Serofities with great Violence: It is corrected by Maceration in Acids. *Dale* from *Schroder*.

2. *Thymelæa*; *Lauri folio deciduo*; five *Laureola* *fœmina*. *Tourn. Inst. 595. Boerb. Ind. A. 2. 213. Mezerion, Chamelæa. Offic. Chamelæa Germanica five Mezerion. Ger. 1216. Emac. 1402. Raii Hist. 2. 1587. Chamelæa Germanica, five Mezerion vulgo. Park. Theat. 201. Laureola folio deciduo, flore purpureo, Officinis Laureola fœmina. C. B. Pin. 462. Laureola flore deciduo, five Mezerion Germanicum. J. B. 1. 566. MEZEREON, or SPURGE-OLIVE.*

This is a low shrubby Tree, with many flexible Branches, seldom growing above four or five Feet high, shooting out Clusters of Flowers, all round the upper Parts of the Branches, early in the Spring, before the Leaves appear; they are of a pale Purple, or Peach-colour, of a single tubulous Leaf, cut into four Segments at the End; of a pleasant, sweet Smell, and are succeeded by small, longish, round Berries, of a red Colour. The Leaves grow thick together on the Tops of the Twigs, about two Inches long, and scarce half so broad at the End where they are broadest. The Root is full of Branches, and runs deep in the Earth; it is planted here in Gardens, but grows wild about Geneva, and the mountainous Parts of Germany; flowering in February and March. The Root, Bark, Leaves, and Berries, are used.

They all of them purge serous and choleric Humours very violently; and help the Dropsy, and inveterate Asthma; but, we having milder, gentler, and yet as prevalent Medicines, these are very rarely used. *Miller's Bot. Off.*

The Bark, Leaves, and red Berries, are used, and agree in Virtues with those of the former. *Dale.*

It is in great Esteem among us, on account of the beautiful Aspect, and pleasant Smell, of the Flowers; and is very studiously cultivated every-where in Gardens and Green-houses. The whole Plant, except the Flowers, has a strong Smell, and a very acrid and burning Taste. There is a Variety in the Colour of the Flowers, some being of a palish Red, others white; and the Berries are the *Cocci Cnidii*, or *Grana Cnidia*, of the Shops.

This Species is, like the other, of a very caustic and exulcerating Quality: Chewed in the Mouth, it burns the Fauces and Oesophagus, the troublesome Sensation and Impression from it lasting a long time, as we are assured by *Lobel*, and by Experience. It is corrected by macerating it four-and-twenty Hours in Vinegar, as the *Elleborus* and *Blusa* are, or in the Juice of Pomegranates or Quinces, or of Purslane, or in Mucilage of the Seeds of *Psyllium*. Some correct it by infusing it in Wine, and afterwards drying it, others macerate it three Days in Vinegar, every Day pouring fresh Vinegar on it, and at last giving it a thorough washing with Water.

But the Leaves, Bark, and Berries, in what manner soever corrected and prepared, very seldom come in Use, on account of their Malignity; and are not to be exhibited, but for want of safer Medicines, and in desperate Cases, and even then with great Caution and Consideration. *Raii Hist. Plant.*

3. *Thymelæa*; *Lauri Folio deciduo*; flore albedo; fructu flavescente.

4. *Thymelæa*; *Alpina*; *linifolia*; humilior; flore purpureo; odoratissima. *Tourn. Inst. 594. Boerb. Ind. A. 2. 213. Cneoron niger. Offic. Cneoron Matthioli. Ger. Emac. 1596. Cneoron Matthioli suffrutex. J. B. 1. 570. Thymelæa minor, five Cneoron Matthioli. Park. Theat. 201. Thymelæa affinis facie externa. C. B. Pin. 463. Raii Hist. 2. 1589. ROCK-ROSE.*

It is a beautiful Under-shrub, consisting of a Multitude of slender, flexible, furculous Branches, which shoot directly out of the Earth, and diffuse themselves on the Ground. The Leaves are disorderly disposed, nearly resembling those of the *Thymelæa vera*, at first of an unpleasant, afterwards of a better Taste, with very little orinoAcrimony, as far as I could perceive by the Taste. The Flowers grow on the Tops of the small Branches, six, seven, or more, close together, and are tetrapetalous, of a red Colour inclining to purple, almost like the Flowers of the lesser Centaury, of an ungrateful and bitter Taste, but of a very beautiful Aspect, fragrant, and affecting the Head, if long smelled to. These are succeeded by a small Fruit, not unlike that of the *Thymelæa*, tho' not red, but white, and somewhat oblong, containing a Seed mix'd with an Ash-colour'd Membrane, round, and of the Size of a Grain of the *Thymelæa*. The Root is long, generally of the Thickness of the little Finger, sometimes blackish, but commonly yellowish, tough and flexible, and sometimes slender in its upper Part: Whence proceed the flexible Branches, which are dispers'd on the Ground; and here-and-there, according to the Cavities of the *Ala*, shoot forth yellowish Fibres of a competent Thickness.

It grows on many of the Mountains about Vienna in Austria in so great Abundance, that the Country-women gather the Flowers by Handfuls, and sell them in the Market, where they buy it to adorn their Dining-rooms: It flowers generally in April, and the Fruit is ripe in June; sometimes it flowers thrice in a Year. *Raii Hist. Plant.*

It agrees in Virtues with the *Chamelæa. Dale.*

The Antients us'd the Leaves of the *Thymelæa* to evacuate serous Humours; it is a most violent Cathartic, and is corrected with Sugar. *Hist. Plant. adscript. Boerb.*

Besides the foregoing Sorts of *Thymelæa*, *Dale* mentions the two following; which are,

1. *THYMELÆA. Offic. Ger. 1217. Emac. 1403. Park. Theat. 201. Raii Hist. 2. 1588. Thymelæa foliis Lani. C. B. P. 463. Tourn. Inst. 594. Thymelæa Monspeliaca. J. B. 591. SPURGE-FLAX.*

This is a Shrub an Inch sometimes in Thickness, and a Cubit or more in Height, and divided into many slender, beautiful strait Twigs, a Cubit in Length, surrounded by evergreen Leaves, pretty well resembling those of Flax, but larger and broader, not blunt like those of the *Chamelæa*, nor so brittle, but mucronated, tough, and feeling somewhat gummy under the Teeth. The Flowers grow in great Plenty on the Ends of the Branches, and are tetrapetalous, white, nearly resembling those of the *Olea*, or Olive-tree, and generally hang in Clusters. The Fruit is sometimes of the Size of Myrtle-berries, but somewhat longer, green at first, but afterwards red as Coral, with a juicy Pulp, like that of Cherries, inclosing a Seed, cover'd with a black and frail Membrane, and containing a Medulla of a fervid Taste. The Root is hard and woody, and cover'd with a thick, but very tough and tenacious Bark, as is also the whole Plant.

It grows in Italy, and in Provence and Languedoc in France, in low Grounds, among other Shrubs, almost every-where. *Clusius* says, that it grows in rugged Places over all Spain.

The most skilful Botanists take the Fruit of this Plant to be the *Coccus Cnidius*, or *Grana Cnidium* of the Antients, tho' the Shops take the Berries of the *Mezereon* for the *Grana Cnidia*. The *Coccus Cnidius* is of a very caustic Quality, and burns the Fauces, whence we wonder, that Partridges and small Birds feed so greedily on the Berries of the *Thymelæa*. But the *Grana*, or Grains, are not the entire Berries, which perhaps are eatable, but the Seeds which are inclosed in the Berries. The Peasants of Spain catch vast Numbers of small Birds with this Seed, by Help of a crooked Rod, and some Lime, as we are inform'd by *Amatus* and *Clusius*. We are advis'd by *Camerarius*, to beware of eating the Root, because it proves mortal in a few Hours. *Raii Hist. Plant.*

It is cultivated with us in the Gardens of the Curious, and the Berries called *Grana Cnidia* are used, being of a caustic Quality. The English Shops, as well as some of the most skilful Botanists, take the Fruit for the *Coccus Cnidius*, or *Grana Cnidia*, but *Cordus* and *Schroder* will have the Berries of the *Mezereon* to be the *Grana Cnidia* of the Shops. *Dale.*

2. *SANAMUNDA. Offic. Sanamunda prima Clusii. Ger. Emac. 1595. Park. Theat. 203. Thymelæa foliis Chamelæa minoribus subbisjuriis. C. B. P. 463. Tourn. Inst. 594. Thymelæa foliis candicantibus, serici instar molibus. Raii Hist. 2. 1538. Tarton-raire Massiliensium. Park. Theat. 199. Tarton-raire Gallo-Provinciæ. Ger. 408. Emac. 506. Tarton-raire Massiliensium, Sanamunda prima Clusii. J. B. 1. 523. HEATH-SPURGE.*

This is a Shrub, a Cubit in Height, very ramous; the Root runs very deep in the Earth, and is cover'd with a Bark extremely viscous and pliant, and capable of being drawn into very small Threads, not without Flocks, which you may call Wool: The Branches are, also, cover'd with the like Bark; but overlaid with a dense, whitish, and, as it were, Silver-colour'd tomentaceous Substance. The Leaves are of the Size of those of the *Tarentine* Myrtle, only a little broader towards the Extremity, and ending in a more obtuse Point, quite cover'd with Down, soft to the Touch, and whitish, or Silver-colour'd, and shining. From the midst of these Leaves proceed the Flowers, resembling those of the *Olea*, yellow, oblong, and tetrapetalous. The Fruit, as *Clusius* was inform'd, is much like that of the *Thymelæa*, but of a blackish Colour. The same Author *Clusius* says, that the Leaves are carnos, gummous, and bitterish at first; but leaving an acrimonious and burning Taste behind.

It grows about *Marseilles*, on the Declivities towards the Sea, and very plentifully on the dry, squalid, and gravelly Hill called *Ment rond*.

The Leaves are of a caustic Quality, as has been said, and very much in Use among the Spanish Peasants, on account of their cathartic Virtue; but this Property, says *Lobel*, is so violent, and difficult to be restrained, that it frequently induces Dysenteries, and immoderate Fluxes; and therefore is not to be given but to robust Persons, and then with Caution. *Raii Hist. Plant.*

THYMELÆA is, also, a Name for the *EMPETRUM*; which see.

THYMIAMA, *θυμίαμα*. A Suffumigation of Aromatics.
THYMION, *θυμίων*. A Caruncle, or Tubercle, generated in the Pudendum, Anus, Glans, or Præputium. *Galen. M. M. Lib. 14. Cap. 13. & Lib. de Tumor. præter Nat.* The Latins call it *Thymion* and *Thymus*. *Hippocrates, Lib. de Ulceribus*, says that the Parthenium called *μυρτίσουλλον* (*tenuifolium*) cures a *Thymion* affecting the Præputium.

What they call an *Acrothymion* (*Thymion*) says *Celsus*, elevates itself above the Superficies like a Wart, being narrow and slender at the Skin, but broader above, somewhat hard, and very rough at the Top, where it is of the Colour of the Flowers of Thyme, whence it has its Name, and easily cleaves and bleeds, and sometimes discharges a small Quantity of Blood. It is usually of the Size of an Egyptian Bean, seldom bigger, sometimes very small; sometimes but one, sometimes several together, are generated in the Palms of the Hands, or Bottoms of the Feet; but the worst and most subject to bleed, are those which affect the Pudenda. *Celsus, Lib. 5. Cap. 28.*

Thymi, *θυμίοι*, in *P. Aegineta, Lib. 6. Cap. 58.* are carnosous Tubercles, affecting sometimes the Glans, sometimes the Præputium; and, *Cap. 71.* he says, *Thymus* is an Eminence in the Skin, sometimes red, sometimes white, for the most part indolent, and of the Figure of the Tufts or Tops of the Herb Thyme.

For the Cure of the *Acrothymion*, or *Thymion*, *Celsus* recommends a Caustic prepared of the Lees of Wine, or a Fig boiled in Water.

THYMITES, *θυμίτης*. An Epithet for Wine impregnated with Thyme. *Dioscorides, L. 5. C. 59.*

THYMOXALME. A Preparation of Vinegar, Thyme, Salt, and some other Ingredients, given by *Dioscorides, L. 5. C. 24.* See **ACETUM**.

THYMUS, *θύμος*, in Nosology, is a small, indolent, carnosous Tubercle, like a Wart, arising sometimes about the Anus, and sometimes about the Pudenda, of both Sexes, resembling in Shape the Flowers of Thyme.

THYMUS, in Anatomy, is that Gland, which in Calves, Lambs, and young Animals, is call'd the Sweetbread.

The Thymus is an oblong, glandular Body, round on the upper Part, and divided below into two or three Lobes, of which that toward the Left Hand is the longest. In the Fœtus it is of a pretty large Size, less in Children, and very little in aged Persons. In Children it is of a white Colour, sometimes mixed with Red; but, in an advanced Age, its Colour is generally dark.

The greatest Part of the Thymus lies between the Duplication of the superior and anterior Portion of the Mediastinum, and the great Vessels of the Heart, from whence it reaches a little higher than the Tops of the two Pleuræ, so that some Part of it is out of the Cavity of the Thorax; and in the Fœtus, and in Children, it lies as much without the Thorax as within it.

Its particular inward Structure and Secretions are not as yet sufficiently known to determine its Uses, which however seem to be designed more for the Fœtus, than for Adults. It has Vessels belonging to it, called *Arteries* and *Vena Thymica*. *Winslow.*

THYMUS, in Botany, is a well known Plant; the Characters of which are;

The Leaves are short, narrow, and rigid; the Stalks ligneous, small, and erect. The Galea is erect, and generally bifid; and the Beard divided into three Parts. The Flowers are collected into little Heads, the lower Whorle being remov'd at some Distance from the Head.

Boerhaave mentions five Sorts of *Thymus*; which are;

1. *Thymus; vulgaris; folio latiore.* C. B. P. 219.
2. *Thymus; vulgaris; folio tenuiore.* C. B. P. 219. *Tourn. Inst. 196. Boerb. Ind. A. 155. Thymus. Offic. Thymum-durius.* Ger. 458. Emac. 573. *Raii Hist. 1. 521. Thymum-durius vulgare.* Park. Theat. 7. *Thymum-vulgare rigidius; folio cinereo.* J. B. 3. 263. **THYME.**

The common Thyme seldom grows above half a Foot high, full of slender, round, and somewhat hairy Stalks; having two small roundish Leaves, a little pointed at the Ends, set opposite at a Joint: The Flowers grow in loose Spikes towards the Top of the Branches, set in Whorles among the Leaves, of a purple Colour, galeated, and labiated in small hairy Calyces; both Leaves and Flowers have a strong pleasant Smell, and an hot Taste; the Root is composed of a Bush of stringy Fibres. It is planted in Gardens, but grows wild in Spain and Italy, and flowers in July. The whole Plant is used.

Thyme is heating and attenuating, good to free the Lungs from viscid Phlegm; and by that means is helpful to those who are troubled with Wheezy and Shortness of Breath. It is likewise, cephalic, and of Use against all Diseases of the Head and Nerves.

The only Official Preparation is the *Oleum Thymi distillatum*. Distill'd Oil of Thyme. *Miller's Bot. Off.*

There is scarce a more common Herb in Provence and Languedoc. The Virtues are suppos'd much the same with those of **SERPILLUM**; which see: But it is particularly serviceable

in tartareous Affections of the Lungs and Joints, frees all the Viscera from Obstructions, and excites an Appetite, &c. *Dale* from *Schroder.*

3. *Thymus; capitarus; qui Dioscoridis.* C. B. P. 219. *Raii Hist. 1. 519. Tourn. Inst. 196. Boerb. Ind. A. 155. Thymum-verum.* Offic. *Thymum Creticum.* Ger. 459. Emac. 574. *Thymum Creticum sive Antiquorum.* J. B. 3. 262. *Thymum levisimum capitatum.* Park. Theat. 6. *Hyssopus capitata minor, Thymi odore.* Hist. Oxon. 3. 360. **TRUE THYME.**

It grows plentifully about Seville and Cadiz, where the Island is join'd by a Bridge to the Continent, and over all Andalusia, on the maritime Hills, facing the Sun, and in the Islands of Crete, Sicily, and Corcyra; and in the Island of Cithera, now Cerigo, there is another Species or Variety of it, with lesser Leaves, growing in Parcels together. It is found over all Greece, as *Bellonius* tells us; and no Herb is more common on the Mountains, where, according to the Variety of Soil, it produces a Flower, sometimes all white, sometimes bluish, or purple, or mixt.

This Thyme, with Vinegar and Salt, purges Phlegm by Stool; the Decoction is serviceable in an Asthma and Orthopnea, expels the small Worms called *Timeæ* from the Belly, provokes the Menes, and brings away the Birth and After-birth, and is a good Diuretic. Made into an Eclegma with Honey, it facilitates Expectoration; it dissolves Tumors, dissolves concentered Blood, and removes Warts, being rubbed on the Parts with Vinegar. Apply'd with Wine and Polenta, it gives Relief under the Sciatica; and, used in Food, helps Dimness of Sight, and is very good for healthy Persons to eat as Seasoning to their Meats. *Dioscorides.*

Pliny ascribes the same Virtue to it, and adds, that it is exhibited to epileptic Persons, who are roused from their Fit by the Smell of Thyme, and to Men afflicted with Inflations, Flux of the Belly, or Pains of the Testes or Bladder; that, being bruised, and apply'd with Oil on Wool, it is effectual in the Gout and Luxations; and that, for the Gout, it is taken, also, inwardly, to the Weight of three Oboli in three Cyathi of Vinegar and Honey.

The Inhabitants of Seville, as *Clusius* says, use a Decoction of Thyme, in washing out and cleansing their Wine-vessels, because of its most grateful Smell; and it is of no less Service in giving a good Scent to those Vessels in which they preserve their Grapes. *Raii Hist. Plant.*

4. *Thymus; vulgaris; folio tenuiore, candido & graveolente.* C. B. P. 219.

5. *Thymum; legitimum; cephalotes; angustifolium.* *Salvad. Boerb. Ind. alt. Plant.*

This Plant is excellent in Suffumigations to revive the Spirits; and, by its extraordinary Fragrancy, is very comfortable to the Brain, and highly exhilarating to the Heart. Infused in cold Wine, it cures the Bites of all venomous Animals, and is recommended against the Bite of a mad Dog. It is very effectual against pituitous and cold Diseases, particularly the Asthma and Cough. A Conserve is prepared of the Leaves with Sugar, and kept in China or Glass-vessels; there is, also, a medicated Wine made of the same, and, also, a Water which has the same Virtues in curing almost all Diseases of the Breast incident to aged and phlegmatic Persons; but in hot or inflammatory Diseases these Plants are not to be used. A little Thyme mixed with Wine gives it a most grateful Savour, and both the Smell and Taste of it are very penetrating; whence it becomes sudorific, inciding, penetrating, healing, and opening; and is of Service in the flatulent Colic, restores a decay'd Appetite, is properly given in difficult Labour, and removes Obstructions of the Menes: Externally used, it is effectual against the Pain of the Gout, and cold Tumors. *Hist. Plant. adscript. Boerb.*

THYMUS CEPHALOTES. A Name for the *Satureia; Virginiana.*

Besides the foregoing Sorts of *Thymus*, *Dale* mentions the following;

- THYMUS SYLVESTRIS.** Offic. *Thymus Narbonensis Zygis dictus Serpyllum Creticum.* Ger. 456. Emac. 571. *Serpyllum Narbonense.* Park. Theat. 7. *Serpyllum folio Thymi.* C. B. P. 220. *Raii Hist. 1. 523. Serpyllum sylvestre, Zygis Clusio, Thymo-vulgari rigidiori simile.* J. B. 3. 271. *Thymbra Hispanica Coridis folio.* *Tourn. Inst. 117.* **WILD THYME.**

This Thyme, as *Clusius* describes it, in Appearance, Branches, Height, and Roots, is very like the common Thyme; only its Leaves are somewhat broader, and not so sweet-scented; but have a stronger Smell, as between that of *Abrotanum* and *Stachas*. The Flowers, also, are disposed in Whorles on the small Branches, and are of a white Colour, inclining to Purple; by which Disposition of the Flowers, and its Smell, it can almost only be distinguish'd from the common Thyme. It has, also, less Acrimony, as having a Mixture of Astringency. *Raii Hist. Plant.*

It grows in Old Castile in Spain, in the same Places with the other Thyme; but is cultivated with us in the Gardens of the Curious, and is esteem'd to have the same Virtues with the *Thymus Offic.* or common Thyme. *Dale.*

THYNNUS. See **TRUNNUS.**

THYROARETÆNOIDEI MUSCULI. Two Muscles of the Larynx. See LARYNX.

THYROIDEÆ GLANDULÆ. The Thyroide Glands. On the lower Part of the Larynx, upon the Sides of the annular Cartilage, and of the first Ring of the Trachea, there are two lymphatic Glands called *Thyroidea*, of the Figure of a Pear; their Colour is red; they have Veins, Nerves, and Arteries, as the Larynx. *Keil's Anatomy.* See LARYNX.

These Glands secrete a lubricating Fluid, which moistens the Cartilages and Muscles of the Larynx. *Boerhaave's Institutes.*

THYROIDES, *θυροειδής*, from *θυρεός*, a Shield, and *είδος*, Shape. The Name of a Cartilage of the LARYNX; which see.

THYROPHARYNGÆI MUSCULI. Two Muscles of the Pharynx. See OESOPHAGUS.

THYROSTAPHYLINI MUSCULI. Two Muscles of the Uvula. See PALATUM.

THYRSUS. See ACANTHUS.

THYSSELINUM.

The Characters are;

The Root is perennial, large, and very full of a lacteous Juice, as is, also, the whole Plant; it has the Leaf of the *Ferula* or *Phellandrium*. The Seed is oval, flat, large, striated, margined, and sometimes casts its Husk.

Boerhaave mentions two Sorts of *Thyselinum*; which are;

1. *Thyselinum.* Plinii. See APIUM.

2. *Thyselinum*; palustre. T. 319. *Seseli, palustre, lactescens acre, foliis ferulaceis, flore albo, semine lato.* J. B. 3. 2. 188. *Seseli, palustre, lactescens.* C. B. P. 162. Prodr. 85. *ic. Ancho Pyrethrum umbelliferum.* C. B. P. 148. *Boerb. Ind. alt. Plant.*

Thyselinum is from *θύω*, (*thyo*) to be hot, and *σέλινον*, (*Selinon*) Apium; that is to say, hot Apium.

It is a very acrid Plant, so that when I first found it in the Ditches; and tasted it, I felt my Mouth and Fauces inflamed. We are to rank it, therefore, among those Plants which are of the most acrimonious Nature; and, tho' it may have its Use in Medicine, it must be with a great deal of Caution. The Roots are aperient and penetrating, and provoke Urine and the Menfes. It grows in watry Places; the Milk is much of the Nature of Scammony, and may be substituted in its room. *Hist. Plant. adscript. Boerhaav.*

TIBERIANUM TORMENTUM. The Colic.

TIBIA. The larger Bone of the Leg. See CRUS.

TIBIÆUS. The same as TIBIALIS.

TIBIALIS. An Epithet for several Muscles. Thus there is the TIBIALIS ANTICUS.

This is a long Muscle, fleshy at the upper Part, and tendinous at the lower, situated on the fore Side of the Leg, between the Tibia and the Extensor Digitorum Longus.

It is fixed above by fleshy Fibres, in the upper third Part of the external Labium of the Crista Tibiæ, and of the Inside of the Aponeurosis tibialis, or of that ligamentary Expansion, which goes between the Crista Tibiæ, and the anterior Angle of the Fibula. It is, also, fixed obliquely in the upper Two-thirds of the Outside of the Tibia, or that next the Fibula.

Thence it runs down, and ends in a Tendon, which first passes through a Ring of the common annular Ligament, and then through another separate Ring, situated lower down. Afterwards the Tendon is fixed partly in the upper and inner Part of the Os Cuboides, and partly in the Inside of the first Bone of the Metatarsus.

The Tibialis Anticus bends the Foot, that is, turns the Point of the Foot toward the Leg; which Motion is performed by the Ginglymoide Articulation of the Astragalus with the Tibia and Fibula. It, likewise, bends the Leg on the Foot, or hinders its Extension. The first of these Uses is generally known; and we have an Instance of the second, every time we stand or walk. When we stand, the Feet being turned directly forwards this Muscle, like a Frænum, keeps the Leg in Æquilibrio, and hinders it from falling backward. This Use is still more evident, when we walk backwards.

By its lateral Insertions in the Os Cuneiforme Maximum it moves this Bone, in particular, over the anterior Extremity of the Os Calcis, by which the Sole of the Foot is turned inwards toward the other. This lateral Situation of its Insertion is the Reason why it cannot bend the Foot directly, without the Help of the anterior Peronæi; neither can it alone keep the Leg in Æquilibrio, when we stand on one Foot. *Winflow.*

TIBIALIS GRACILIS. See PLANTARIS.

TIBIALIS POSTICUS.

This is a long fleshy penniform Muscle, broader above than below, situated between the Tibia and Fibula on the back Side of the Leg, and covered by the Extensor Digitorum Longus.

It is fixed above by fleshy Fibres, immediately under the Articulation of the Tibia and Fibula, to the nearest Parts of these two Bones, principally to the Tibia, reaching to the lateral Parts of that Bone, above the interosseous Ligament, which is here wanting.

From thence its Insertion is extended below the oblique Line

or Impression in the Tibia, over all the neighbouring Part of the interosseous Ligament, and through more than the upper Half of the internal Angle of the Fibula.

Through all this Space it is fleshy, penniform, and covered by the Extensor Digitorum Longus, which sometimes communicates with it by a middle Tendon, and sends off an Aponeurosis to it, which does the Office of a Frænum.

After this it forms a Tendon, which runs down behind the inner Malleolus, through a cartilaginous Groove; and an annular Ligament, passing under the Malleolus, is inserted in the Tuberosity or lower Part of the Os Scaphoides. This Tendon is sometimes divided into two, either of which, crossing a little over that of the Peronæus Longus, is fixed in the Os Cuboides.

When the Tibialis Posticus acts alone, it extends the Foot obliquely inward. When it acts together with the Gastrocnemii and Soleus, it changes the straight Direction of their Motion to an oblique one. When it acts with the Tibialis Anticus, the Sole of the Foot is turned more or less directly inward or toward the other Foot. *Winflow.*

TIBURO.

This is a large ceraceous Fish, found in the Indian Ocean, which is sometimes twenty Feet in Length, and ten in Thickness. In its Head are found three or four bony, insipid Stones, which may be easily scraped into Powder. The Stones are reckon'd good for the Stone, and a Difficulty of Urine, serving to dissolve the Stone in the Kidneys and Bladder. *Lemery des Drogues.*

TIFACOU. Quicksilver. *Rulandus.*

TIFATUM. Sulphur. *Rulandus.*

TIGALA. An Arabic Epithet for Sugar. *Cassellus.*

TIGILLUM. A Tile. According to *Blancard*, a Crucible.

TIGRIS. Offic. Aldrov. de Quad. Digit. 101. Gesn. de Quad. Digit. 936. Jons. de Quad. 84. Charlt. Exer. 14. Schw. Quad. 130. Raii Synop. A. 165. **THE TIGER.**

The Part of this Animal used in Medicine is the Fat, which is suppos'd to agree in Virtues with the Fat of a Dog. *Dale.*

TILIA.

The Characters are;

The Calyx is pentaphylloidal, the Flower rosaceous, polypetalous, and furnished with numerous Stamina. The Ovary has a long Tube, with a globous Apex, and becomes a roundish uncapitular Shell, containing oblong Seeds.

Boerhaave mentions five Sorts of *Tilia*; which are;

1. *Tilia*; *scemina*; folio majore. C. B. P. 426. *Tourn. Inst. 611. Boerb. Ind. A. 2. 230. Tilia.* Offic. *Tilia femina.* Ger. 1298. Emac. 1483. *Tilia femina major.* Park. Theat. 1407. *Tilia vulgaris platyphyllos.* J. B. 1. 131. Raii Hist. 2. 1694. Synop. 3. 473. **THE LIME-TREE.**

This is a Tree well known, having an handsome Body with a smooth Bark, spreading its Branches round in a regular manner; the Leaves are broad and roundish, with a sharp Point, serrated about the Edges; at the Foot of these, in the Summer spring out thin leafy Ligulas, of a yellow Colour, from the middle of the back Ribs of which arise Stalks about an Inch long, divided into four or five shorter ones, each bearing a yellow, five-leaved, sweet Flower, succeeded by a small hoary Fruit about the Size of a Pea. Limes grow every where about Gentlemens Seats, and in Parks, and flower in July.

We seldom use any thing but the Flowers, which are accounted cephalic and nervine, and good for the Apoplexy, Epilepsy, Vertigo, and Palpitation of the Heart. They are put in the compound Peony-water, and the Spirit of Lavender. The *Aqua Florum Tiliæ*, or Water of the Flowers of the Lime-tree, takes its Name from them. *Miller's Bot. Off.*

The feminal Leaves of the Lime-tree, as *J. Bauhine* observes, are generally cut into five Divisions, as into so many Fingers, the extremes and middle one exceeding the rest in Length, which is a Thing rare and singular.

Thalys observ'd an Excrescence, or Tumor, like the Gall of an Oak, in the Roots of old Lime-trees. *Raii H. P.*

It is planted in Walks and Areas, flowers in June, and the Leaves and Flowers are used. The Leaves are drying and repellent, and provoke Urine and the Menfes. The Flowers are heating and drying, and of fine Parts, discutient, and cephalic. *Dale.*

2. *Tilia*; *scemina*; folio minore. C. B. P. 426. *Tourn. Inst. 611. Boerb. Ind. A. 2. 230. Tilia.* Offic. *Tilia folio minore.* J. B. 1. 137. Raii Hist. 2. 1695. Synop. 3. 473. *Tilia.* Offic. *five facunda Pseudopiperifera.* Hoff. Cat. Altorff. **THE SMALLER LIME-TREE, BAST, or PEPPER-TREE.**

It grows in Woods and Hedges; the Flowers are used, and agree in Virtues with those of the former. *Dale.*

3. *Tilia*; foliis molliter hirsutis; viminibus rubris; fructu tetragonis. *Raii Synop. 316.*

4. *Tilia*; folio subtrus glauco Populi.

5. *Tilia*; folio magno; ramis erectissimis. *Boerb. Ind. alt. Plant.*

The Bark and Leaves of the *Tilia* are drying and repellent; the Mucilage of the Bark is of great Use in Wounds and Ambustions. *Dodonaus* recommends the Bark chew'd, and apply'd for these Purposes. The Leaves bruised, and sprinkled with Water,

Water, discuss Tumors of the Feet, and are accounted a singular Remedy for the Aphthæ, and fluxulent Spasms in Women with Child; the expressed Juice, mixed with Wine, and rubbed hot on the Joints, is good for the same spasmodical Affections.

The Flowers are of fine Parts; their Smell is extremely sweet, and the Water of Use in cephalic Affections; it is commended in Palpitation of the Heart, Pains of the Uterus, Stone in the Kidneys, and Concretions of Blood occasioned by Contusions. Some mix therewith Powder of Charcoals made of the *Tilia*. The Dose is an Ounce, or an Ounce and an half; some exhibit the same against the Gripes; and Women use it as a Cosmetic.

The Berries, reduced to Powder, are highly commended in the Dysentery, and other Fluxes of the Belly; the same, bruised with Vinegar, and put up the Nostrils, stop Bleeding at the Nose; and some of the Berries, swallowed, are said to be very effectual for that Purpose.

The Ancients wrote on the inner Bark of the *Tilia*, called *Philyra*, while it was fresh. *Rais H. P. p. 1694.*

The distilled Water of the Flowers is good against the epileptic Disorders of Children, and against hypochondriac and cephalic Affections. Externally they are recommended in the Form of a Cataplasm in a Teneismus. *Hist. Plant. adscript. Boerhaav.*

The *Tilia* affords us some very good Remedies, particularly in the Flowers, by an Infusion of which in Water, after the manner of Tea, with long and constant Use, I have known an inveterate Epilepsy perfectly cured. The Water of the Flowers is specific in all Diseases where Pains or Convulsions are predominant; whence it justly deserves the Name of *Polychrestum*. The middle Bark of the Tree, reduced with Water to a Mucilage, is of incomparable Virtue in mitigating Pains, Heats, and Inflammations; whence it gives immediate Relief in the Pain of the Arthritis and Podagra. *F. Hoffman.*

TILMATA, *τίλματα* (the Plural of *τίλμα*, *Tilma*), from *τίλλω*, to vellicate. Vellications. *Galen, Com. 3. in Lib. nat. intp.* tells us, that Spasms affect the Fibres of the Muscles, which are distended to such a Degree, as to cause a Rupture in some of them; and that these Spasms are, by the more modern Physicians, properly called *τίλματα*, Vellications.

Τίλματα (called, also, *τίλματα* and *τίλτα*) in *Hippocrates, Lib. περί ευσχημ.* signify scraped Lint, or Tents of the same. Thus, also, *Archigenes, in Galen, Lib. 2. τῶν κατὰ τόπον*, by *τίλμα* and *τίλματιον* (*Tilmation*), means a kind of scraped Lint, proper for Wounds of the Head, and otherwise called *μοτὸν τίλτον*, (*Moton tilton*) or, simply, *τίλτον* (*Tilton*); and number'd among the five Kinds of *μοτὸς* (*Motos*), or Lint.

Τίλμοι (*Tilmoi*), in *Hippocrates, Lib. περί χυμῶν*, and *1 Epid. Sect. 3.* signify Vellications of the Bed-clothes, plucking Hairs out of Garments, or picking Motes from the Wall, and such-like Morions as are usually practised in a Delirium, by those who labour under acute Diseases, as a Phrensy and Peripneumony. Sometime *τίλμοι* signify Vellications or Lancinations of the Parts from acrimonious Humours, or corroding Pus; sometimes, also, Vellications of the Parts by the Patients themselves; when under a Delirium, as we are informed by *Galen, Com. 3. in 1 Epid.*

TIMÆI COMPOSITIO AD IGNEM SACRUM VEL CANCRUM. The Name of a Composition in *Celsus, Lib. 5. Cap. 22.*

TIMARTIRI. This Word occurs in *Nicolaus Myrepsus, Sect. 1. Cap. 150.* *Fuchsus*, his Commentator, confesses, he don't know what the Author means, unless it be burnt Silk.

TIMBO. See *GUAIANA*.

TIN. Sulphur. *Rulandus.*

TINA. A Bath, of great Service in the Colic.

TINCA. Offic. *Schrod. 5. 334.* *Aldrov. de Pisc. 645.* *Bellon. de Aquat. 324.* *Gesf. de Aquat. 984.* *Charlt. de Pisc. 43.* *Mer. Pin. 190.* *Jonf. de Pisc. 114.* *Rondel. de Pisc. 2. 157.* *Salv. de Aquat. 90.* *Rais Ichth. 251.* *Ejusd. Synop. Pisc. 117.* *Schonf. Ichth. 76.* **THE TENCH.**

It is a mucous, excrementitious Fish, which delights in marshy and muddy Waters. As to its Uses, it is cut abroad, and apply'd to the Wrists, and Soles of the Feet, in order to mitigate feverish Heats, and to divert the Venom of the Pestilence; in like manner is it apply'd in Pains of the Head and Joints. Live Tenches, apply'd one after another to the Regions of the Umbilicus and Liver, and kept there till they die, are said to cure the Jaundice; for they contract, it seems, a yellow Colour. *Schroder* says, that he has seen an incinerated Tench, and especially its Tegument, exhibited with Success in the *Fluor. Albus*.

TINCAR. See *BORAX*.

TINCONES. Bubos. *Fallopis de Morb. Gallico.*

TINCTORIA Arbor, J. B. is a Tree growing in the Kingdom of *Jenago* in *Ethiopia*, of the Thickness of our glandiferous Trees, bearing a Fruit like a Date, from which is extracted an Oil of admirable Virtue. This Oil, mixed with Water, turns it quite of a Saffron-colour, and with the same Colour they dye their Caps, and their Caps, which are made of a Contexture of Rushes, or Rice-straw; the Oil smells like the *Viola Martia*, and tastes like our Oil; for which Reason many use it in seasoning their Fish, Rice, and other Food. *Rais Hist. Plant. 1794.* from *M. Thevet.*

TINCTORIUS FLOS. A Name for the *Genista*; *tinctoria*; *Germanica.*

TINCTURA. A Tincture.

The Processes of Distillation, and that for extracting Tinctures, differ only in this, that the former can take out those lighter Parts only which are able to rise in Vapour; and the latter, all such Parts as are capable of being suspended in a Menstruum.

The Management and Rules of Procedure in Tinctures, Elixirs, medicated Wines, Vinegars, Decoctions, and Infusions, depend upon the same Reason and Principles; these several Forms differing only in the Finesses of the Materials for Suspension in Fluids of different Consistences, and the best manner thence arising for drawing them out: The principal Rule in all which is, that the Liquor made use of for a Menstruum, or Vehicle, be more or less spirituous, as the Ingredients which are ordered in it are of a lighter or more fixed Nature; and the Times of standing in Digestion, either hot, or cold, are, also, to be proportion'd accordingly.

Under the Denomination of Tinctures and Elixirs are generally included those Things of a volatile, light Texture, which best give out their Virtues to spirituous Liquors; and these are either simple or compound. Of the former are the Tinctures of Saffron, Castor, Myrrh, Sulphur, Snake-root, and red Roses; all which are ordered in Liquors, judged suitable to their respective Textures and Virtues. Saffron is drawn with the Treacle-water in the Intention of an Alexipharmic; but as a Cordial, and for the better Preservation of its Colour, which soon fades with any Acid, Liberty is given to infuse it, also, in Canary, or *French Brandy*. The Tincture of Castor is, likewise, drawn by a Spirit with equal Ease and Readiness, because both these are of a lax Texture, and soon open in such Vehicles; but the Myrrh, upon Account of its Tenacity, requires a Mixture of Salt of Tartar with it, and to stand for some time, previous to its Infusion in Spirit; by which means its adhesive Texture is broken, and it comes more readily to unite with the Spirit afterwards. Something like to this is ordered with the *Virginian Snake-root*, it being directed to be drawn with the Tincture of Salt of Tartar; but if this Root is broke small in a Mortar, it gives out all its Warmth to a various Spirit; and some rather prefer it, because the Tincture of Salt of Tartar gives it a nauseous urinous Scent, and makes it almost intolerably burning in the Stomach; which Quality in itself is frequently moderated with Acids, which is a very opposite Management to this. The red Roses are drawn only with hot Water acidulated with Oil of Vitriol, which not only greatly assists the Intention of an Astringent in all Instances, as well as this, but, likewise, contributes to strike a most beautiful red Colour. The Tincture of Poppies become a Compound only by the Addition of some Nutmeg; and it agrees with the Roses in this respect, of being greatly improveable in its Colour by Acids, but both would change into a most unsightly Green, were Salt of Tartar, or any alkalious Matter to touch them; a Difference very proper to take notice of.

In all compound Tinctures or Elixirs, drawn with a Spirit, and where the Dose is so small, as to be assigned in Drops, particular Care ought to be taken not to interpose any Ingredients, which are not of proportionable Efficacy with the rest, howsoever they may agree in Intention. For it is not here as in Distillation, where an useless, or a weak Ingredient may do no Harm; because, in a Tincture, every such one will so help to fate the Menstruum, that it will be less able to take up Things of more Efficacy, and will consequently be, in the Whole, a weaker Medicine. Thus, in *Mynsicht's* Elixir of Vitriol, tho' Mint certainly comes within the Intention of a Stomachic, and Sage may be allowed to do so too; yet, in a Medicine that will not bear Exhibition in a larger Quantity than twenty or thirty Drops for a Dose, such things are very improperly crouded; for, besides the Hindrance they occasion to the Menstruum in taking up the other more efficacious Ingredients, by saturating it with something from themselves, if we compute the Share they have in a Dose, it will vanish almost to nothing; for here is no more than half an Handful of these Things, in a Quantity that makes some Thousands of Doses; whereas common Experience informs us, that they may be, and frequently are, taken with our common Food, in as large Quantities as they enter into the Whole of this Composition, without any Inconvenience. What the Sugar-candy does in this Composition is, likewise, not easy to guess or justify; and the Oil of Vitriol seems to be ordered in too large a Quantity, the Sharpness of that necessarily making a Dose small, that the Spices have not a due Proportion in it. But the greatest Error in this celebrated Medicine consists in the making, when all the Ingredients are digested together; for the Oil of Vitriol entirely burns and hardens them, so that they not only give out their Virtues the less, but, also, deform the Whole with a blackish dirty Colour; both which Inconveniencies might be avoided by infusing the Spices in the Spirit alone; and, after that is strained fine, the Oil of Vitriol might be added, which then only gives it a thicker Consistence, and somewhat raises its Colour.

The same is observable of the Acid in that Sort of Elixir Proprietatis, which is made with it. If it be put upon the Ingredients with

with the Spirit, it unites them for giving out their Virtues, and will not admit of so good a Colour or Consistence, as when put in afterwards.

These Remarks naturally lead us to another Circumstance, very necessary to be regarded in the Extraction of all compound Tinctures; and that is, when the Ingredients are so different in Texture, that some open and take the Menstruum much sooner than others, they ought to be drawn separately, with a proportionable Part of the Menstruum, because, otherwise, those which with most Difficulty give out their Virtues, will have very little or no Share in the Composition. Thus, in the common *Elixir Proprietatis*, though there are but three Ingredients, yet they are so unequal in their Fitness for Solution, that if they are put in together, the hardest, which is the Myrrh, will, in a good measure, be lost; because the Spirit will be very soon loaded with the other two, and, consequently, become less able to take up the Myrrh. If, therefore, they are all infused in their proper Shares of Spirit, they will be all easily dissolved; and when put together afterwards, with the Addition of the Acid, they will make a most beautiful high-coloured Tincture, almost of the Consistence of a Syrup. To this Rule the *Elixir Proprietatis* of Helmont hath a particular Regard, where the Aloes and Saffron, which are of the loosest Texture, are dissolved together, and the Myrrh separately from them both, the several Tinctures being at last united.

Thus, likewise, in the compound Tincture of Myrrh, if the Myrrh be first dissolved, the Aloes, with equal Ease, will afterwards be taken up; but if they are put in together, the Aloes loads the Spirit so soon, that the Myrrh will be much longer in Solution. And in all the liquid Laudanums, if the Spices are first drawn out, the Opium will soon dissolve afterwards; but if the Opium be put in with them, they will give out their Virtues to great Disadvantage. Thus, also, in the *Elixir Salutis*, if the Seeds, Liquorice, and Raisins, were added, after the harder Ingredients had stood some time in the Spirit, the Medicine would be the better; but these are Circumstances which very few Compounders will be exact enough to observe.

The usual Intentions, for which Tinctures are ordered in common Practice, are those of Cephalics, Stomachics, or Cathartics. The Cephalics take in oleous and aromatic Simples, and such as are called for in nervous Affections; the Stomachics receive the same things in Conjunction with Bitters; the Cathartics, such as are appropriated to that Distinction by their purgative Qualities. In all nervous Cases, the odorous Simples are best brought into Tincture with spirituous or vinous Liquors, as they most readily give out their Virtues to them; and this is best done cold; or, when Heat is required, in close Vessels, to prevent Exhalation and Loss of the better Parts. Tinctures, also, of Stomachics, are best ordered without Heat, and commonly in Liquors moderately spirituous, as the ordinary White-wines. And Cathartics, whether resinous or saline, for extemporaneous Occasions, want nothing more than hot Water, as in making common Tea, to draw out their Virtues. The Proportions of Ingredients in all these Cases cannot be adjusted, but by Examples, and Experience of the Patient's Strength; but, for Cephalics and Stomachics, it is a certain Rule, never to take a Liquor with Ingredients beyond what is agreeable to the Palate, for an irksome Cordial, or Stomachic, almost implies an Absurdity; tho' in hysteric Affections, and where the fetid Simples are required, the Case is quite otherwise.

In the Exhibition of the officinal Tinctures of any Intention; all those which are so sated with resinous, or gummy Simples, that they turn milky in common Water, are, in a more agreeable and slight manner, directed in Wine, where the Circumstances of a Patient will admit of it; and, for Bitters in particular, made with a vinous Liquor, they are much better directed: between the Times of Breakfast and Dinner, or about an Hour before the latter, than fasting, which was formerly the customary Way, because they then less affect the Head.

A cordial, or cephalic Tincture for present Occasions, is very readily made; and now occurs frequently in extemporaneous Prescription, with the species *Diambra*, and some genurous White-wine. In hysteric and hypochondriacal Affections, the Root of Cassamunir, black Hellebore, and others of the same Tribe, are conveniently directed in compound Briony-water, or Water of Pennyroyal; and, for a Stomachic, Centaury-flowers, Gentian-root, Galangal, the Peels of *Seville* Oranges, and other Things of like Properties, may be drawn with any White-wine. All these are to be varied in the Proportion of the Ingredients to the Strength of the Liquor, and the Quantities for a Dose, according to the several Circumstances of a Patient. *Quincy's Pharmaceutical Lectures.*

TINCTURA ANTIMONII ACRIS SIMPLEX. The simple acrid Tincture of Antimony is directed to be made in the *Brandenburgh Dispensatory*, by digesting the *Scoria* of the Martial *Regulus* of Antimony just made, and hot, in highly rectify'd Spirit of Wine. Another acrid Tincture of Antimony, called the *Reguline Tincture*, is made by digesting equal Parts of the Martial *Regulus* of Antimony detonated with an equal Quantity of Nitre, in highly rectify'd Spirit of Wine.

It is said, that neither of these take up much from the Antimony, but that all their Virtues are borrowed from the Nitre rendered alkaline and acrid, by being fused with Antimony.

These Tinctures, given in a proper Vehicle, and a considerable Dose, are said to bring away the serous Humours of cachectic Patients.

TINCTURA ASTHMATICA.

Tincture for an Asthma.

Take Roots of Elecampane, Florentine Orris, Seeds of Anise, Caraway, Liquorice, of each two Drams; Leaves of Carduus Benedictus, two Handfuls; stoned Raisins, one Pound; Sena, six Ounces; Aniseed-water, six Pints. Let them all digest four Days; then strain the Liquor, and keep it for Use.

The Carduus here nauseates the Medicine, and contributes but little to its Efficacy; and, therefore, is better left out. This may be taken two or three Spoonfuls, going to Bed; and as much next Morning, according to the Strength of the Patient; and if it be long continued in corpulent Habits, it is said to do much Good.

TINCTURA AURI. See **AURUM.**

TINCTURA BENZOINI. See **BENZOINUM.**

TINCTURA BEZOARTICA.

The Bezoartic Tincture.

Take Roots of Elecampane, Angelica; Zedoary, *Virginia* Snake-root, of each one Ounce and an half; Saffron, one Ounce; Myrrh, Cinamon, dry'd Citron-peels, of each six Drams; Leaves of Scordium and Rue, of each half an Handful; *Venice* Treacle, three Ounces; Opium, two Drams; rectify'd Spirit of Tartar, fifteen Ounces; Spirit of Vitriol, three Ounces; Spirit of Elder, and Juniper-berries rectify'd, of each eighteen Ounces. Digest them together for some Days in a Sand-warmth in a close Body, then filter and dissolve in it Salt of Amber, one Ounce; and of Camphire, two Drams; which keep close-stopt for Use.

This is an admirable Alexipharmic, and very convenient to give in extemporaneous Draughts or Mixtures, from two Drams to one Ounce in a Dose. It has in it all that can be expected, or wished for, to answer the Intentions of a Cordial and Cephalic. Where, therefore, a Person is almost spent with struggling under a Fever, or the Nerves are even convuls'd; it is very proper to be given. And in the Beginning, also, of an acute Distemper, it will, with proper Diluters, as soon as any thing, raise a Sweat. The Camphire and Salt of Amber are admirable Ingredients, and in very few official Prescriptions besides; though the latter is often in occasional Practice. This is not much known in the Shops, but highly deserves Encouragement, being preferable to most of those in Use.

TINCTURA CANTHARIDUM. See **CANTHARIDES.**

TINCTURA CASTOREÆ. See **CASTOR.**

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

Take Cinnamon, two Ounces; rectify'd Spirit of Wine, one Quart. Digest for four Days; then add Sugar, half a Pound; Rose-water, one Quart, Ambergrise half a Scruple, and Musk four Grains.

It is preferable to the Spirit in all Fluxes and Relaxations, as it abounds more with the rough astringent Parts of the Spice. It is, also, as pleasant to take, and from the Sweets in it, where they do not offend, is much more cardiac. The Dose is from half an Ounce, to two or three Ounces.

TINCTURA CORALLI. See **CORALLIUM.**

TINCTURA CORTICIS.

Tincture of the Bark.

Take of the Bark in Powder four Ounces; put it into a Bolt-head; add to it rectify'd Spirits of Wine, twelve Ounces; sit it for Circulation, and set it in a gentle Sand-heat four or five Days, shaking it often; then decant the Spirit carefully into a Phial for Use.

It is best given in red Wine, from twenty to one hundred Drops; and to be repeated every four Hours between the Fits, or oftener, according to the Urgency of the Symptoms.

TINCTURA CROCI. See **CROCUS.**

TINCTURA EUPHORBII.

Tincture of Euphorbium.

Put into a Phial what Quantity you please of pulveriz'd Euphorbium, and pour upon it Oil of Tartar made *per Deliquium*.

quim, about four Fingers high; stop the Phial, and place it in Digestion upon hot Sand, and leave it there for two Days, and there will be made a deep-yellow or redish Tincture; strain it, and keep it in a glass Bottle.

This is very attenuating and incisive, and is powerful in cleansing old foul Ulcers, carious Bones, and callous Lips of Wounds; and is good, also, to dissolve scrophulous Tumors, and very obstinate Indurations of the Glands.

TINCTURA FERRI. See MARS.

TINCTURA GUAIACI. See GUAIACUM.

TINCTURA HELLEBORI. See HELLEBORUS.

TINCTURA HIERÆ PICRÆ. See HIERA PICRA.

TINCTURA GUMMI LACCA. See JUJUBA INDICA.

TINCTURA MARTIS AUREA. See MARS.

TINCTURA MARTIS GLAUBERI. See MARS.

TINCTURA MARTIS MYNSICHTI. See MARS.

TINCTURA MARTIS CUM SPIRITU SALIS. See MARS.

TINCTURA MELAMPODII. See HELLEBORUS.

TINCTURA MELLIS. See MEL.

TINCTURA METALLORUM. *Tincture of Metals*. I have already given the Manner of preparing this under the Article *Metalum*, from the Memoirs of the Royal Academy, which see. But *Quincy's* Preparation is different, and is as follows:

Take of *Regulus Martis*, half a Pound; of Spittle-Duff, (which is the Scoria that falls from hot Plates of Copper, quenched in Water) four Ounces (or the like Quantity of Caput Mortuum of the Spirit of Verdegrise); of Saltpetre, two Pounds; of Tartar, half a Pound. Powder and mix them well; and put them into a red-hot Crucible by Spoonfuls: After it has stood melting half an Hour, remove it from the Fire, and powder it in a clean warm Mortar. Before it attracts the Air, return it into a Matrafs, and add two Pounds of tartarized Spirit of Wine: Make a circulating Vessel of the Matrafs, and let it digest two Days. When cool and settled, decant the Liquor by Inclination.

It is reckoned an efficacious Alterative in all chronic Cases. The Dose is from twenty to an hundred Drops.

TINCTURA MYRRHÆ. See MYRRHA.

TINCTURA NITRI.

Tincture of Nitre.

Take of the Nitrum fixatum, (described in *Quincy*) one Pound; melt it in a Crucible, with a strong Heat, for three or four Hours; then put it into a warm Mortar; powder it, and, whilst warm, pour upon it half a Pound of tartarized Spirit of Wine: Set the Mixture in a Matrafs upon warm Sand, gradually increasing the Fire, till the Spirit of Wine simmers; and so continue for two or three Hours, in which time the fixed Nitre will have communicated its Tincture to the Spirit of Wine: Decant, and put on more, and digest, as long as it yields any more Tincture.

This operates both by *Diaphoresis* and Urine, but principally the latter Way. It is accounted a great Purifier of the Blood, and a good Antiscorbutic. Its Dose is from twenty to sixty Drops.

TINCTURA PARALYTICA.

Tincture against the Palsy.

Take *Spanish Flies* in Powder, two Ounces; Seeds of Bishops-weed, six Drams; rectified Spirit of Wine, three half Pints. Let them digest together for some Days in a Sand Heat, and then decant, or filtre the clear Liquor from the Ingredients.

This is designed for Embrocations in Numbness, and for paralytic Limbs; in which Cases it is a notable Stimulus; and, if possible, will rouse and stir the almost insensible and stupefied Fibres, and occasion a proper Derivation of their Fluids. If much rubbed into the Part, it is sharp enough to excoriate; but for inward Uses, it is not to be meddled with, without Hazard of Stranguries, and other Disorders of the Bladder.

TINCTURA PAPAVERIS COMPOSITA.

Compound Tincture of Poppies.

Take of the wild Poppy Flowers, one Pound; of Nutmegs sliced, three Drams; of white Sugar, two Ounces; of French Brandy, four Pounds. Draw out the Tincture by a gentle Heat.

TINCTURA REGALIS.

The Royal Tincture.

Take of Copper, in little Pieces, two Ounces, put it in a

Crucible, and set it in a melting Furnace; when it is red-hot, put to it of *Regulus Foris* (in gross Powder) fourteen Ounces, let them melt well together the Space of a Quarter of an Hour; then cast them into a warm greased Cone; when cold, beat them into a Powder, which must be put (by a Spoonful at a time) into double its Weight of melted Salt of Tartar; when it is all in, shut the Door of the melting Furnace, and keep it in the strongest Fire can be given it, for two or three Hours: Then take it from the Fire, and pour it into a clean warm Mortar; beat it to Powder, whilst warm; and, before it attracts any Air, put it into a Matrafs, where there is one Pint of tartarized Spirit of Wine: Lute it as in the *Tinctura Antimonii*, and in all things proceed as in that Tincture.

Some are so fond of this, as to cry it up for an universal Medicine: And indeed its Defects are great; for it is very efficacious in all chronic Diseases: It is sudorific and diuretic. Its Dose is from ten to fifty or sixty Drops. In the room of two Ounces of Copper, there may be used two Ounces and an half of the Scoria of Copper, and the Tincture will be more beautiful. Some are of Opinion, that the emetic Quality of Antimony is not to be destroyed, so as not to return again; but if these Tinctures are kept ever so long, they will not prove emetic.

TINCTURA REGIA.

The Royal Tincture.

Take Musk, half a Scruple; Civet, five Grains; Balsam of Peru, twelve Drops; Oil of Cloves, four Drops; of Rhodium, two Drops: Drop these upon half a Dram of Salt of Tartar, and mix them well together; then pour upon the Mass, rectified Spirits of Wine, two Ounces; and let them stand in a Heat equal to that of the Sun, in a close Vessel, many Days; and afterwards pour off the clear Spirit by Decantation.

This is fit only to be kept in Readiness to flavour any cordial Dram, that such things are proper and required in, and is as good for this Purpose, as can well be contrived: The least Drop is sufficient for many Ounces of a Liquor. This is a Preparation of *Le Mort*.

TINCTURA RHABARBARI.

Tincture of Rhubarb.

Take of Rhubarb, one Ounce and an half; of the lesser Cardamom-seeds and Saffron, of each two Drams; of Licorice-root, half an Ounce; of French Brandy, one Pint; and make into a Tincture.

This is given for the same Intention as the Root.

TINCTURA RORIS SOLIS.

Tincture of Sun Dew.

Take of Ros Solis, or Sun Dew, four Handfuls; Cinnamon, Nutmegs, Mace, Cloves, Ginger, of each one Ounce; Musk, five Grains; Spirit of Wine, one Gallon: Digest all together twenty Days; and then dissolve in the strained Tincture, of Loaf Sugar, one Pound; and put up in a close Vessel for Use.

This is a warm high Cordial, and a good Cephalic, especially in cold Constitutions: It heats the Blood, and quickens its Motion, and greatly recruits the animal Spirits. For all these Reasons it contributes to what it is most celebrated for, the Cure of Impotence, and a Provoker to Venery.

TINCTURA ROSARUM RUBRARUM.

Tincture of Red Roses.

Take half an Ounce of Red Rose Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them, in a glazed earthen Vessel; two Pints and an half of boiling Spring-water; and let them stand close covered for three Hours; then strain off the Liquor; and put to it three Ounces of fine Sugar-candy.

In the making, most drop in the Oil of Vitriol, after the Water is poured upon the Roses.

TINCTURA SACRA. See HIERA PICRA.

TINCTURA SALIS TARTARI HARVEYANA. See TARTARUS.

TINCTURA SALIS TARTARI HELMONTIANA. See TARTARUS.

TINCTURA SCAMMONII. See SCAMMONIUM.

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TINCTURA SERPENTARIÆ VIRGINIANÆ.

Tincture of the Virginia Snake-root.

Take of *Virginia* Snake-root powdered, two Ounces; of the Tincture of Salt of Tartar, sixteen Ounces. Digest so, as to draw out a Tincture.

It is convenient enough to those who cannot take it in Substance; and may be given from one to three Drams in any proper Liquor.

TINCTURA STOMACHICA AMARA.

The bitter Stomachic Tincture.

Take Gentian-root, and Orange-peels dried, both cut very small, of each one Pound; pour upon them, into a glass Body, rectified Spirits of Wine, one Gallon and an half: Let them stand close covered, in a very mild Warmth, for some Days; then press out the Spirit strongly, and let it fine down for Use.

The Peels must be of the most fragrant *Seville* Oranges, cleared of the White, and carefully dried. This makes a Tincture not to be known from several which are so extravagantly cried up in Empirical Advertisement, and is the best that can be made, notwithstanding those Boasters talk of so many Ingredients in theirs; which is only to put a Blind upon the Ignorant. To this, Centory, and many things of the like kind, might be added; but they would rather clog the Medicine, than increase its Virtues. This is very conveniently kept in the Shops, to make the bitter Draught *extempore*, with any kind of Wine, or other Vehicle: From fifteen to sixty Drops is sufficient for a Dose of two or three Ounces. It is, also, very conveniently added to Steel-wine, as Bitters are often joined with it. It has all the Virtues of the common Bitters, and warms and strengthens the Stomach; but answers that End much better when joined with a little Acid, which makes a Subastringent of it not much unlike the *Elixir Vitrioli*; one Ounce of *Spiritus Sulphuris per Campanam* would be enough for a Pint of this Tincture, and make it of a more beautiful Colour, and pleasanter to take.

TINCTURA SUCCINI. See AMBRA.

TINCTURA SULPHURIS.

Tincture of Sulphur.

Beat of the Liver of Sulphur, (while it is warm) four Ounces, in a warm Mortar; put it presently into a Matrafs; and to it Spirit of Wine, one Pint; set them in Digestion for twenty-four Hours, and there will be a very red Tincture, which keep in a Phial well stopped, for Use.

Canary Wine is the best Vehicle to give it in. Its Dose is from ten to forty Drops.

TINCTURA TARTARI TARTARISATI. See TARTARUS.

TINCTURA THERIACALIS.

The Alexipharmic Tincture.

Take of French Brandy, and the best Vinegar, of each one Quart; of *Venice* Treacle, and Mithridate, of each half a Pound; digest them in a gentle Heat, and strain out the Tincture for Use.

It has all the Virtues of the Treacle; and, by the Help of the Vinegar, will sometimes procure a Diaphoresis, where that fails. In short, it is an excellent Alexipharmic, and well deserves the first Rank in Practice. It may be given from two Drams to two or three Ounces with any convenient Vehicle, or by itself. This may, also, be enticed down with many Children, who cannot be prevailed upon with any other Form: They may take from one Dram to half an Ounce. In Fevers, if no other Medicines of the same Intention are used, it ought to be repeated every four or six Hours, according to the Exigency of the Case, till a Sweat rises.

TINCTURA TERRÆ JAPONICÆ.

Tincture of Japan Earth.

Powder finely four Ounces of *Japan* Earth; of Cinnamon, one Ounce; of *Peruvian* Bark, one Ounce and an half; Musk and Ambergrise, of each six Grains; rub the two last with Sugar-candy, one Ounce: Put them all into a Matrafs; and put to them Spirit of Wine, twenty-four Ounces; make of the Matrafs a circulating Vessel; lute well the Junction; set it upon warm Sand, to digest, for four or five Days, shaking it about two or three times a Day; then set

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it by to settle; and, by gentle Inclination, pour it into a Phial for Use.

This is of good Service in all Defluxions, Catarrhs, Fluxes of the Belly, Dysentery, and Overflowing of the Menfes; and even in a Gonorrhœa and old Gleet, where the Virulence has been already conquered. It is, also, said to be a good Succedaneum to the Bark, and that it will cure Intermittents. Its Dose is from half a Spoonful to three or four, in rough Wine, or any other proper Vehicle.

TINCTURA VENERIS.

Tincture of Copper.

Take Verdegrise, one Dram; Spirit of Sal Ammoniac, and rectified Spirit of Wine, each half an Ounce; let them stand until they are of a deep Sky-colour.

This is not fit for any inward Use; for it offends the Stomach, and provokes to Vomiting; but it makes an admirable Injection for a Gonorrhœa; and if Care be taken, and Skill enough acquired to know when the Infection is only in the Urethra, a Person may be soon and infallibly cured with it. But it is adviseable, that Beginners be not too busy with it.

TINCTURA VIPERARUM COMPOSITA.

Compound Tincture of Vipers.

Take of Flowers of Sulphur, one Pound; crude Antimony, four Ounces; grind them to a fine Powder; put it into an earthen Dish, and saturate it with Oil of Sulphur, made by the Bell, (or Oil of Vitriol) four Ounces; put it into a Retort, and pour gradually upon it, of sweet Spirit of Nitre, one Pound; place the Retort in a sand Furnace, and draw off the Spirit. Into one Pound of this Spirit put two Ounces of dried Vipers; (cut into small Pieces) let them digest forty-eight Hours in a Matrafs; when cool, strain it thro' an hair Cloth. Return the Menstruum into a Matrafs, adding of Cochineal, Saffron, and *Virginia* Snake-root, of each two Drams; let them digest forty-eight Hours; then decant the clear Tincture.

This is said to be an excellent Diaphoretic; and in the *London* Sickness 1665. it was much used with Success. Its Dose is from ten to fifty or sixty Drops, in Canary or Plague-water.

TINCTURA VIRIDIS.

The green Tincture.

Take of Verdegrise, half an Ounce; of yellow Arsenic, six Drams; of Alum, three Drams: Boil them together in one Pound of White-wine, to the Consumption of half the Quantity; and, after it is cold, add to it of Rose and Plantain-water, of each six Ounces.

This hath not been received by the College, until the Dispensatory before the present; and in that, Nightshade-water was ordered, where that of Plantain is here substituted, because that is not now directed to be made amongst the simple Waters.

TINDA parva. H. M. *Arbor Malabarica, baccifera, cortice albicante, glomerato flore.* D. Syén. It is a tall Tree, growing in sandy Places, in the Country of *Malabar*.

The Root bruised, and used by way of Lotion, is good for the Morbus Sacer; the same, bruised, is applied to Impostumes. The Leaves, in Decoction, are used in Fomentations, or Cataplasms, for easing all Kinds of Pain; and are serviceable to Women in Childbed. *Raii Hist. Plant.*

TINEA. See ACHOR.

TINEARIA. A Name for the *Stachas Citrina angustifolia*.

TINIARIA, in *Marcellus Empiricus*, C. 17. is the *Polygonum*.

TINKAR. Borax.

TINNITUS AURIUM. A Noise in the Ears, like that of a Bell.

TINNUNCULUS. A Species of Hawk mentioned by *Al-droavandus*.

TINTINNABULUM. The UVULA. *Vesalius*.

TINUS.

The Characters are;

The Calyx is double, the lower trifid, the upper quinquefid, and both monophyllous. The Flower is monopetalous, rotated, quinquefid, tabulated for a short way below, and furnished with five Stamina, which arise from the Inside of the Tube of the Flower. The Ovary in the Bottom of the Calyx is furnished with a long, triangular, scabrous Tube, and becomes a Fruit like an Olive, umbilicated, and full of a single pear-shaped Seed.

Baerhaave mentions three Sorts of *Tinus*, which are;

1. *Tinus*;

1. *Timus*; prior; *Classi. Tourn. Inst. 607. Boerb. Ind. A. 225. Laurus Timus. Offic. Ger. 1224. Emac. 1409. Laurus Timus Lusitanica carulea bacca. Park. Theat. 206. Laurus sylvestris corni feminae, foliis subbisfutis. C.B.P. 461. Lauri Timi sylvestris primum genus. J. B. 1. 418. WILD BAY.*

It is a Native of Portugal, and flowers in July and August. The Berries, which are used, being taken inwardly, purge by Stool, with great Disorder and Perturbation of the whole Body. Dale from Parkinson.

2. *Timus*; II. *Clus. H. 49. Lugd. 204. Laurus sylvestris, foliis venosis. C.B.P. 461.*

3. *Timus*; III. *Clus. H. 49. Lugd. 204. Laurus sylvestris, folio minore. C.B.P. 461. Boerb. Ind. alt. Plant*

The *Timus* is a poisonous Plant; the Berries, held in the Mouth, soon burn the Fauces; they are sometimes exhibited in the Dropsy with singular Success, being a very strong Cathartic; but I would not advise the internal Use of this Plant. *Hist. Plant. adscript. Boerhaave.*

TIPL. A shrubby Species of *Alliaria* growing in Brasil, with a whitish Flower, and a black round Fruit, like a Plum. *Pis. Raii Hist. Plant. Index.* There are no Virtues ascribed to it.

TIPIOCA. A Sort of Cremor prepared of the *MANIHOT*, which see.

TIPSARIA. Barley-water, from *Pisana, Rulandus* and *Johnson* write it *Tapfaria. Castellus.*

TIPULA. A kind of Water-fly, resembling a Spider. It has six long Legs, which it extends upon the Water, and walks upon them without sinking; its Body is of an oval Shape, and a whitish Colour; its Wings are silver-coloured, its Eyes black, and its Tail sharp-pointed.

It is of a discutive-Virtue, being outwardly applied. *Lemery des Drogues.*

TIRUCALLI. *H. M.* A Name for the *Tithymalus Indicus frutescens.*

TITANOKERATOPHYTON, from *τίτανος* Lime, or Plaster, and *ΚΕΡΑΤΟΦΥΤΟΝ*, which see. A Name given by *Boerhaave* to a very large marine Plant, found near the Coast of Norway, resembling the *Keratophyton*, except that it is incrustated, as it were, with a calcarious or gypseous Substance. *Boerhaave* mentions twenty-four Species of this Plant, none of which have any medicinal Virtues ascribed to them at present, that I know of.

TITANOS, *τίτανος*, *Calx*, Lime; *τίτανος* is expounded in *Erotian* by *λίμω*, Lime, or a Lixivium prepared thereof; *τίτανος* *ή άναόβης* is Quicklime, commonly called *άόβης* (*Asbestus*), and advised by *Galen, de C. M. S. L. Lib. 1. Cap. 4.* among dry Depilatories. *Titanos* in *Rulandus* is Lime of Gypsum. *Foefius. Castellus.*

TITHYMALOIDES.

The Characters are;

It is a Species of *Tithymalus*; the Flower is monopetalous, anomalous, and shaped like a Shoe.

Boerhaave mentions two Sorts of *Tithymaloides*, which are;

1. *Tithymaloides*; frutescens; folio-myrti amplissimo. *T. 654. Tithymalus Curassavicus, myrtifolius, flore coccineo mellifero. Par. Bat. H. R. D.*

2. *An Tithymaloides*; frutescens; foliis Nerii. *Plum. T. 654. Boerb. Ind. alt. Plant.*

There are no medicinal Virtues ascribed to this Plant at present, that I know of.

TITHYMALUS.

The Characters are;

The Root is fibrous or tuberous; the Leaves are alternate, oblong, intire, and a few of them orbicular. The Pedicle ends in a gross Body, hollow like a Calyx, to the Top of whose Lobes grow four or five anomalous Petals, often semilunated, and excavated, representing a tetrapetaloidal Flower, with almost lunar Segments, surrounded with two Leaves, instead of a Calyx. From the very Bottom of the Cavity of the Calyx, at the Sides of the Pointal, arise four, five, or more Stamina, longer or shorter, with their Testiculi. From the Centre of the Calyx arises a long Style, or Pointal, bearing a triangular or hexagonal tricapsular Ovary, from whose Centre arises a long, triple Tube, with a bifid, scabrous Apex; this Tube runs out into so great a Length, that the Ovary appears almost in the Middle of the Pointal. Every Part of the Plant abounds with Plenty of Milk.

Boerhaave mentions forty-four Sorts of *Tithymalus*, which are;

1. *Tithymalus*; latifolius; Cataputia dictus. *Tourn. Inst. 86. Boerb. Ind. A. 255. Cataputia minor, Lathyrus. Offic. Cataputia minor. Raii Hist. 1. 866. Lathyrus major. C.B. Pin. 293. Lathyrus major hortensis. Theat. 191. Lathyrus, five Cataputia minor. Ger. Emac. 503. J. B. 3. 880. Esula major. Rivin. Tet. Irr. Rupp. Flor. Jen. 219. GARDEN SPURGE.*

It is frequently found in Gardens, and the Parts in Use are the round oblong Seeds, or Grains, which are bigger than a Pea, and include under a corticous Pellicle a white, pinguious Nucleus, or Kernel, of a sweetish, acrid, and nauseous Taste, and a vio-

lent cathartic Quality; but those Grains, as well as those of the other Species of *Tithymalus*, are seldom used.

Twelve or fourteen Grains, bruised, and taken in Wine, put the whole Body in a Commotion, purge the Belly, evacuate Bile and Phlegm, potently provoke Vomiting, and attract Phlegm, Bile, and Melancholy.

This Plant, the first Year of its springing from Seed, grows scarce to be two Foot high, with a thick reddish Stalk, beset with long and narrow bluish-green Leaves, and so continues, without running into Branches, till the next Year, when it rises to three or four Foot high, with many Branches toward the Top; on which, at every Division, grow broader and somewhat triangular Leaves, set on without Footstalks: The Flowers are small and yellow, standing in round hollow Leaves, which encompass the Stalk like a Cup, and these are followed by three square Seed-vessels, containing three oblong Seeds. The whole Plant is so full of Milk, that, if you cut off a Branch, it will run out by Drops in some Quantity; which Milk is of a hot, fiery, burning Taste, inflaming the Mouth and Throat for a great while. This Spurge grows in Gardens, where it springs up of its own sowing, dying after it has brought its Seed to Perfection.

This is much of the same Nature with the *Cataputia major*, but is rather stronger, and more violent, in its Operation; and therefore only given by bold adventuring Empirics. The Milk is good to take away Warts. *Miller's Bot. Off.*

The Whole of this Plant abounds with a milky, highly acrid Juice, which operates violently both by Vomit and Stool. It is classed among the Poisons which are manifestly acrid and caustic, which create a Gangrene and Putrefaction, and whose Effects are to be opposed by aqueous, tepid, somewhat acrid, and pinguious Substances; as, also, by Preparations of Honey. See *Boerhaave, Institut. 1137. Forest. Obs. Med. L. 1. Obs. 23. Joel. T. 2.* Its most specific Remedy or Antidote is said to be *St. John's-wort*. See *Kircherus, Mund. Subt. T. 2.* and *Baubine* from *Matthioli* informs us, that if any one intends to destroy the Hairs of his Eyebrows and Forehead, he may mix the Juice of this Plant with Oil, and anoint them with it in the Sun, but in such a manner, that no Part of the Preparation touch his Eyes and Face, since such Parts are immediately inflamed, become red, and resemble a Leprosy. The Juice of the Garden-spurge removes the Tooth-ach, when put into the Cavity of the affected Tooth; but due Care must be taken to fortify the Gum by means of red Wax; for which reason it ought to be principally used in removing superfluous Hairs, Warts, and Serpigos. Impudent Beggars generally use to spoil and deform their Skins by means of this Juice, in order the more effectually to move the deluded Spectator to Compassion. *Baubine*, also, informs us, that, in order to purge by Stool, *Fernelius* orders three or four Leaves of Garden-spurge to be exhibited in pinguious Broth. *Disco-rides*, also, observes, that the Leaves of this Plant boiled with a Fowl, or Pot-herbs, produced the same Effect. If Fishes eat the Leaves and Seeds of this Plant, when thrown into Ponds and Lakes, they turn up their Bellies as if they were dead, so that they may be caught by the Hand, and will revive, when put into other Water, according to *Baubine* from *Hollerius*. Twelve or fourteen Seeds of Garden-spurge, bruised and drank in Wine, throw the whole Body into Commotions, purge by Stool, eliminate Phlegm and Bile, powerfully vomit, and procure an Expectoration of Phlegm, Choler, and Melancholy. *Morison* from *Tragus* affirms, that Pills prepared of the Milk of this Plant, Vinegar, and aromatic Substances, are beneficial to dropical Patients. *Disco-rides* informs us, that six or seven of the Seeds taken in Pills, Figs, or Dates, purge by Stool, and evacuate Bile, Phlegm, and Water, but that the Patient must drink cold Water after them. According to *Pliny*, "twenty Seeds of "Garden-spurge, drank in pure Water, or Hydromel, cure "dropical Patients, and evacuate Bile. Those who intend to "be violently purged, take them with the Husks; but, as these "are found offensive to the Stomach, it is thought proper to "take them with Fish, or Broth prepared of Fowls." *Baubine* from *Matthioli* informs us, that ten or twelve Seeds of Garden-spurge, freed from the Husks, are beneficially exhibited in order to excite a violent Vomiting in those who have swallowed Love-potions, or other bewitching Things. But as there is no Scarcity of secure Emetics and Purgatives in the *Materia Medica*, there can be no Reason for prescribing the Seeds of this Plant, with which presumptuous Quacks have killed many, thinking to distinguish themselves from the knowing and skilful Physicians. Those who have, perhaps, without any Injury, swallowed any of these Seeds, owe their good Fortune rather to the Smallness of the Dose, their Stomachs abounding with acid Juices, a previous Use of oleous Liquors, the using Things of a like Nature immediately after, or the natural Vigour of their Constitutions, than to the safe and innocent Nature of such a Medicine. That in some Patients the Seeds of Garden-spurge should operate by Stool, and in others by Vomit, seems to be owing to the particular Habit and Temperament of those who use them; since it is certain, that some have Bodies more disposed to one particular kind of Evacuation, than others; or to the Juices, or Remains

of the Aliments, lodged in the Stomach, and promoting one or other of the Evacuations by means of the Purgative. Perhaps this Circumstance has laid a Foundation for the Story which prevails among superstitious old Women, who assert that, if the Seeds are stript downwards, they purge by Stool; whereas, if they are stript upwards, they evacuate by Vomit. *Ettmüller* informs, "that the Seeds of Garden-spurge are purgative. Thus, for Instance, if from ten to twelve or fifteen Seeds are bruised and taken in a poached Egg, they purge violently and instantaneously by Stool. If the Intention is, that they should purge strongly, they should be well chewed; but if they are intended to vomit, they are to be swallowed whole." See *Bauhine*, 3. P. *Morif.* 3. *Ray*, 1. *Diösc.* 4. *Plin.* 27. *Bodeus in Theophrast.* *Schrod. Pharm.* *Ettmüller*, 1. *Dale. König. R. U. Böhler.* 1.

2. *Tithymalus*; *Characias*; *amygdaloides*. *Boerb. Ind. A.* 255. *Tithymalus Characias*. *Offic. Tithymalus Characias Monspeliensum.* *Ger.* 405. *Emac.* 499. *Park. Theat.* 186. *Raii Synop.* 3. 312. *Tithymalus Characias rubens peregrinus.* *C. B. P.* 290. *Tourn. Inst.* 85. *Tithymalus amygdaloides seu Characias.* *J. B.* 3. 672. *Raii Hist.* 864. *Esula Characias rubens.* *Riv. in.* WOOD-SPURGE.

This Species grows in rocky Places both in France and Italy, and flowers in March; the Flower is not of a pale or yellowish Colour, as in the rest, but black.

The Root, Leaves, and Seeds, are of an acrimonious and caustic Quality; and the Juice, as *Dioscorides* says, is a violent Cathartic.

3. *Tithymalus*; *Characias*; *amygdaloides*; *foliis eleganter variegatis.* *Flor.* 2. 115.

4. *Tithymalus*; *Characias*; *folio serrato.* *C. B. P.* 290.

5. *Tithymalus*; *Afer*; *arborescens*; *folio Hyperici majore*, in summitate ramorum confertim nato.

6. *Tithymalus*; *arborescens*; *folio glauco, angusto, acuto, dense congesto.* *Boerb. Ind. A.* 256. *Tithymalus paralius.* *Offic. J. B.* 3. 674. *Ger.* 401. *Emac.* 498. *Raii Hist.* 1. 865. *Synop.* 3. 312. *Tithymalus paralius five maritimus.* *Park. Theat.* 184. *Tithymalus maritimus.* *C. B. P.* 291. *Tourn. Inst.* 87. *Esula marina Linariae folio.* *Riv. in.* *Irr. Tet.* SEA-SPURGE.

It grows in sandy Places by the Sea-side, and runs up, with some red, woody Sprigs, a Foot, or a Cubit in Height, and thick-set, from Top to Bottom, with Leaves somewhat like those of Flax, but thick, and of a greyish Sort of Colour, and turgid with a lacteous Juice of a very acrimonious Quality. The Root is of a good Thickness, oblong, woody, and perennial.

The whole Plant is reserved for Use, and is esteemed of the same Virtues with the other Spurges.

7. *Tithymalus*; *myrsinites*; *latifolius.* *C. B. P.* 290. *Boerb. Ind. A.* 256. *Tithymalus myrsites.* *Offic. Tithymalus myrsinites.* *J. B.* 3. 674. *Park. Theat.* 187. *Raii Hist.* 1. 865. *Tithymalus myrsifolius.* *Ger.* 402. *Tithymalus myrsifolius, latifolius.* *Ger. Emac.* 499. *Esula foliis myrsi.* *Riv. in.* *Irr. Tet.* MYRTLE-SPURGE.

This Species shoots forth spriggy Stalks a Span in Length, and pretty thick, which, for the most part, spread themselves on the Ground, and are surrounded with Leaves orderly disposed, resembling those of Myrtle, farthest, of a glaucous Colour, and acuminate. The Ends of the Branches run into small Sprays, perforating round, pyxidated Leaves, and disposed in the Form of an Umbella; upon these, among the Leaves, grow Flowers of an herbaceous Colour. *Raii Hist. Plant.*

It grows in Calabria and Sicily, and flowers in Summer. The Root, Leaves, Seed, and Juice, are used, and are said by *Dioscorides* to be of the same Virtues with those of the *Tithymalus Characias*, or WOOD-SPURGE.

8. *Tithymalus*; *myrsinites*; *angustifolius.* *C. B. P.* 290.

9. *Tithymalus*; *arbores*; *caule corallino*; *folio Hyperici*; *Pericarpio barbaro.*

10. *Tithymalus*; *Characias*; *radice repente.* *H. R. Par.*

11. *Tithymalus*; *salicis angusto folio glabro.*

12. *Tithymalus*; *tuberosa pyriformi radice.* See *APROS.*

13. *Tithymalus*; *palustris*; *fruticosus.* *C. B. P.* 292. *Tourn. Inst.* 87. *Boerb. Ind. A.* 256. *Esula major.* *Offic. Esula major Germanica.* *Ger.* 404. *Emac.* 501. *Tithymalus palustris, five Esula major Germanica.* *Park. Theat.* 188. *Tithymalus magnus multicaulis, five Esula major.* *J. B.* 3. 671. *Raii Hist.* 1. 864. GERMAN SPURGE.

This Species of *Tithymalus* has a very large thick Root, several times bigger than a Man's Arm, spread out into many Branches, and sending up many tough Stalks, two or three Foot high, reddish, and much divided, having smooth, long, narrowish, green Leaves, broadest at the End. The Flowers, which grow on the Tops of the Stalks, are small and yellow, like other Spurges, which are followed by triangular Seed-vessels containing three roundish Seeds. The whole Plant is full of a caustic Milk, burning and inflaming the Mouth and Jaws for a great while together. It grows in several Parts of Germany, flowering in June. The Root is used, and of that the Bark only.

It is a strong Cathartic, working violently by Vomit and Stool, but is very offensive to the Stomach and Bowels by reason of its

sharp corrosive Quality, and therefore ought to be used with the utmost Caution by steeping it in Vinegar, and giving proper Correctors, and then it is said to evacuate serous and bilious Humours, and to help the Dropsy, Gout, and other obstinate Distempers. It is put in the *Pilula Mechoacanna* and *Ferida.* *Miller's Bot. Off.*

It grows plentifully in the upper Germany, and in the lower by the Rhine, and in Silesia on the sandy shelving Banks of Rivers, but with us is cultivated in Gardens. The Part used in Medicine is the Root, which is a very potent Purge of Phlegm, chiefly by Stool. Of the Root, Herb, and lacteous Juice, is prepared a singular kind of Ointment, which is very effectual against a contagious Scabies of the Head.

14. *Tithymalus*; *arbores*; *altissimus*; *folio salicis*; *caulibus rubentibus.*

15. *Tithymalus*; *arvensis*; *latifolius*; *Germanicus.* *C. B. P.* 291. *Esula minor, vulgo.*

16. *Tithymalus*; *Amygdali folio angustiori*; *montis Pollini.*

17. *Tithymalus*; *Amygdali folio, breviori*; *latiori, hirsuto*; *montis Pollini.*

18. *Tithymalus*; *subrotundis foliis majoribus, crenatis.* *Boerb. Ind. A.* 256. *Tithymalus.* *Offic. Helioscopius.* *Ger.* 313. *Emac.* 498. *Park. Theat.* 189. *C. B. P.* 291. *Raii Hist.* 1. 869. *Synop.* 3. 313. *Tourn. Inst.* 87. *Tithymalus Helioscopius five falsequius.* *J. B.* 3. 663. *Esula falsequa.* *Rupp. Flor. Jen.* 219. SUN-SPURGE, or HARTWORT.

This Species is of an herby Taste, a little saltish; it gives a very deep Tincture of Red to the Blue-paper. *Martyn's Tournefort.*

This Plant has a single white Root, which runs strait downwards, is furnished with some Fibres, and shoots forth a single Stalk, half a Foot, or a Foot in Height, round, and with a few Hairs. The Leaves grow thick on the Stalk, without any Order, and are like those of Purslane, or the *Peplis*, a Digit, and sometimes a Digit and half in Length, roundish at the End, and finely indented about the Edges. The Top of the Stalk divides itself into Sprays, commonly five in Number, making a sort of Umbella and surrounded by a like Number of Leaves, which are large, and rounder than those on the Stalk, and each Spray parts into three others, surrounded by as many Leaves. The Flowers grow single on the Stalks and Divarications of the Sprays, and are small, herbaceous; tetrapetalous, with roundish, and not at all lunulated Petals. The Pointal proceeds from the Middle of the Flower, and has its Apex turgid with a triangular, tricoccus Seed-vessel, reflexed towards the Sides of the Flower.

It flowers, and the Seed is ripe in Summer, but it perishes in Winter. It grows in Kitchen-gardens, far ploughed Fields, and is frequently found among Ruins by the Walls of Cities, and in the like Places. *Raii Hist. P.*

Besides the Virtues it has in common with the other Species, the Juice is recommended against Warts. *Dale.*

19. *Tithymalus*; *rotundis foliis, non crenatis.* *Tourn. Inst.* 87. *Boerb. Ind. A.* 256. *Peplus.* *Offic. Peplus five Esula rotunda.* *C. B. P.* 292. *Ger.* 406. *Emac.* 503. *J. B.* 3. 669. *Raii Hist.* 1. 869. *Esula rotunda five Peplus.* *Park. Theat.* 194. *Tithymalus parvus, annuus, foliis subrotundis, non crenatis, Peplus dictus.* *Raii Synop.* 3. 313. PETTY-SPURGE.

This is a Plant a Span in Height, full of a milky Juice, like the *Tithymalus Helioscopius*, and seems to be a Species of it, only less in all respects. The Stalks are reddish, the Leaves are very small, of an oblongish Round, and entire at the Margin, (by which proper Character it is certainly distinguished from the *Tithymalus Helioscopius*, whose Leaves are crenated) larger below, and smaller above. The Coma, or Tops of the Stalks, are rounded, or formed into an Umbella. The Root is slender, fibrous, and annual.

It grows in Gardens and Vineyards, and sometimes is cultivated in Fields; flowers in Summer, and endures till Winter. *Raii in Hist. Plant.*

Taken in Hydromel, it evacuates Bile and Phlegm; sprinkled upon Meat, it excites Commotions in the Belly. *Dale* from *Dioscorides.*

20. *Tithymalus*; *annuus*; *folio rotundo*; & *caule viridi.*

21. *Tithymalus*; *maritimus*; *folio Linariae.* *Boerb. Ind. A.* 256. *Tithymalus amygdaloides angustifolius.* *Tourn. Inst.* 86. *Tithymalus characias angustifolius.* *Ger. Emac.* 500. *Park. Theat.* 187. *Tithymalo maritima affinis, Linariae folio.* *C. B. P.* 256. *Esula folio Amygdali angusto.* *Rupp. Flor. Jen.* 220. *Alypum Marzhioli, Tithymalo affinis.* *J. B.* 3. 676. NARROW-LEAVED WOOD-SPURGE.

It grows in Woods, and among Rushes and Brambles; the Leaves are used, and esteem'd of the same Virtues with those of the other Species of *Tithymalus.* *Dale.*

22. *Tithymalus*; *Ragulinus*; *flore luteo*; *pentapetalo.* *M. H.* 3. 342.

23. *Tithymalus*; *exiguus*; *erectus.* *H. L. Esula exigua, Tragi.* *Lob. Ic.* 357.

24. *Tithymalus*; *foliis Pini*; *forte Dioscoridis Picrysa.* *C. B. P.* 292. *Tourn. Inst.* 86. *Boerb. Ind. A.* 257. *Esula minor,*

minor, *Pityusa*. Offic. *Tithymalus Pineus*. Ger. 402. Emac. 499. *Pityusa*, *Tithymalus Pineus* five *Esula minor*. Park. Theat. 192. *Tithymalo Cyparissie similis*, *Pityusa*, *multis*. J. B. 3. 665. Raii Hist. 1. 867. PINE-SPURGE.

This Species has a much lesser Root than the *Tithymalus palustris fruticosus*, and sends forth many Stalks not much branched, a Foot or more high, set thick with long narrow Leaves like Toad-Flax, but rounder pointed; the Tops of the Stalks are divided into several Partitions like Umbels, having several hollow Cup-like Leaves pierced through by the Foot-stalks of the Flowers, which are small and yellow; the Seed-vessel is triangular. It grows in several Places of Germany and France, but with us only in Gardens.

The Virtues ascribed to this Spurge are the same with those of the *Tithymalus palustris fruticosus*, being a strong and violent Cathartic and Emetic; but the Shops being furnished with safer and gentler Medicines, both of them are worn out of Esteem, and very rarely prescribed. *Miller's Bot. Off.*

The Parts used in Medicine are the Root, Bark of the Root, and the Leaves. The Root is oblong, more slender than that of the *Esula major*, of a brown Colour on the Outside, but of a whitish Yellow within, and of a pretty acrid Taste.

It burns the Tongue and Fauces by its caustic Acrimony, when but tasted; but, taken inwardly, it purges Water from hydropic Persons upwards and downwards, with such Violence and Disorder, as requires great Caution in using it. Both this, and the *Esula major*, are corrected by Maceration in Acids. *Dale.*

Esula purges Phlegm most violently, and especially by Stool; whence it is called the Countryman's Rhubarb. It is of an acrimonious, caustic, and corrosive Nature, so as to be serviceable to sturdy Beggars, who with its Juice raise Exulcerations on their Skin, that they may appear afflicted with the Scabies, and the like Diseases, in order to move Pity. *Schroder.*

C. Hoffman says, that he never prescribed it himself, but has been an Observer of the Rashness of the common Sort, who have ventured to take it by whole Spoonfuls. If any, however, has a mind to try it, let him use the *Esula preparata* of the Shops, which has lain four-and-twenty Hours in an Infusion of very strong Vinegar, and then dry'd. The Dose hereof is from two Scruples to a Dram, and is an innocent Purge. *Casp. Dornavius* corrects it thus:

Take of *Esula* prepar'd, four Ounces; Mace, Galangals, each two Drams; Spodium prepared, one Dram; Tragacanth, Bdellium, each three Drams: Reduce them to a Powder, of which give from half a Dram to a Dram. *Raii Hist. Plant.*

25. *Tithymalus*; *cyparissias*. *Prosp. Alpin. Exot.* 65. *M. H.* 3. 238.

This Species of *Tithymalus* has a thick Root, four Digits in Length, and turgid with a milky Juice, as is, also, the whole Plant, while it is fresh. This Root shoots up a Multitude of thin, slender juncous, Stalks, furnished with numerous small, slender, short Capillaments, like Lime-leaves, (whence the Name *Cyparissa* has been given to this Plant) naked near the Root, but marked with frequent blackish small Spots. Each of these Stalks has its Top form'd into an Umbella consisting of three or four Sprigs; and at the Beginning of the Umbella, on each Side a small oblong Leaf, sharp at the Extremity, and resembling a Myrtle-leaf; but less, and thinner. Every Sprig of the Umbella, also, has about the Middle, on each Side, a Leaf like the former, but less, from whence it continues to bare Leaves in manner of a Spike to the Extremity, inclining on one Side, and much shorter and broader than the rest; with small Flowers, like those of the *Leucoium*, and small Fruit of a triangular Figure, containing three round, white Seeds, less than a Grain of Pepper. Among the aforesaid long, slender, and strait Stalks, there are sometimes one or two of the Thickness of the little Finger, which are likewise divided into several foliated Caules, or Sprigs, each adorned on the Top with an Umbella, as the others, and these thick Stalks, before their Division, are, also, naked; and marked with Spots.

The whole Plant, while fresh, abounds with a milky Juice, which the Natives use as a Cathartic for the Evacuation of pituitous and serous Humours. *Prosper Alpinus de Plantis exoticis.*

26. *Tithymalus*; *exiguus*; *procumbens*; *Chamaesyce dictus*. *Boerb. Ind. A.* 257. *Chamaesyce*. Offic. Ger. 407. Emac. 504. Park. Theat. 195. C. B. P. 293. J. B. 3. 667. Raii Hist. 1. 869. *Tithymalus exiguus glaber*, *Nummularia folio*. Tourn. Inf. 87. *Esula minima Chamaesyce dicta*. Volck. Flor. Nor. 155. TIME-SPURGE.

This Species has a little slender Root, about a Palm in Length, and furnished with some very slender Fibres. The Stalks are from three Inches to a Foot in Length, and subdivided into small Branches; the Stalks are of a reddish Colour, somewhat hairy, and spreading circularly on the Ground; at their Joints grow small Leaves, conjugated, roundish, and reddish on the Side towards the Earth, and greenish above, only distinguished with a purple Spot in the middle; and some of them at the Extremities of the Sprays, have both their upper and under Face of a very deep Red. The Flowers are of a

purple Colour, and are produced at the Divarication of the Sprays among the Leaves.

It grows in the Vineyards and Fields of Italy, Sicily, and Languedoc and Provence in France, and flowers in Summer.

The Herb is used, and is esteem'd a Cathartic, as well as the Juice, which is a Remedy against the Sting of a Scorpion, the Place being anointed therewith. *Dioscorides.*

27. *Tithymalus*; *Americanus*; *arborescens*; *folio Cotini*. *H. A.* 1. 29.

28. *Tithymalus*; *Indicus*; *frutescens*. *Raii Hist. Plant.* 1710. *Tiru Calli. H. Malabar. H. A.* 2. 85.

29. *Tithymalus*; *Indicus*; *vimineus*; *penitus aphyllus*. *H. R. D.*

30. *Tithymalus*; *arborescens*. *Park. Theat.* 187. *Alpin. Exot.* 63. *Raii Hist.* 1. 864. *Tourn. Inf.* 85. *Boerb. Ind. A.* 257. *Tithymalus dendroides*. Offic. J. B. 3. 675. *Tithymalus dendroides ex Codice Casareo*. Ger. Emac. 501. *Tithymalus myrtifolius arborescens*. C. B. P. 290. *Tithymalus myrsinites, arborescens*. Ger. Emac. 499. *Esula caule crasso*. Rivin. Irr. Tet. TREE-SPURGE.

The *Tithymalus arborescens* grows in the Island of Crete (now Candy) to the Height of a Man, or higher. The Roots are numerous, long, slender, whitish, running out here-and-there in strait Lines within the Earth, and all meeting together at the Beginning of the Trunk, or all proceeding from the Beginning of the Trunk. From the Trunk, which is thick, round, and of a Man's Height, proceed several strait, slender, viscid Branches, forming a kind of Umbella, and beset with long Leaves, without any Order, and thinner than those of the *Tithymalus Characias*. On the Tops are the Flowers representing a small Umbella, and succeeded by small, round, white Seed. The whole Plant is turgid with a lacteous Juice.

It is used as a Cathartic; for the Weight of half an Obolus purges Bile, Phlegm, and serous Humours. It is hot and dry beyond the third Degree, and excites an Inflammation and Exulceration. P. Bellonius tells us, that he saw on the Top of Mount Ida a *Tithymalus Dendridas* of twice a Man's Height, and as thick as a Man's Thigh. *Prosper Alpinus de Plantis exoticis.*

It grows in the mountainous Parts of the Kingdom of Naples, and other Countries. The Leaves, Seeds, and Juice, are used; which, according to *Dioscorides*, have the same Virtues as most of the other Species of *Tithymalus*. *Dale.*

31. *Tithymalus*; *Orientalis*; *Salicis folio*; *caule purpureo*; *flore magno*. *T. Cor.* 2.

32. *Tithymalus*; *annuus*; *erectus*; *folio oblongo, acuminato*. *T. 87. Peplis, annua, foliis acutis, flore muscosa*. Bocc. Rar. 24.

33. *Tithymalus*; *Africanus*; *tuberosus*; *folio Myrti*.

34. *Tithymalus*; *Americanus*; *folio & facie Hyperici*.

35. *Tithymalus*; *folio longo, glauco*; *caule rubro*; *capulis verrucosis*; *elator*; *Siculus*. *Raii H.* 872.

36. *Tithymalus*; *Creticus*; *characias*; *angusti folius*; *villosus & incanus*. *T. Cor.* 1.

37. *Tithymalus*; *sylvaticus*; *lunato flore*. C. B. P. 190. *Tourn. Inf.* 85. *Boerb. Ind. A.* 257. *Tithymalus lunato flore Columnae*. Park. Theat. 187. Raii Hist. 1. 871. *Tithymalus sylvaticus toto anno folia retinens*. J. B. 3. 671. EVERGREEN WOOD-SPURGE.

This Root is small in respect of the Plant, black on the Outside, and produces several Stalks a Foot in Height, reddish from the Bottom, and smooth; but, from the Middle, there are several Leaves disposed almost in the Form of a Wheel, to the Top, of a lively Green and hairy, and cover'd with short, roundish Leaves, placed alternately. The Stalk about the Bottom is bare of Leaves, like the *Characias*. From the Top of the Leaves proceed some Alæ, bearing, on the Top, round, hollow Leaves, from whence proceed two others, standing on juncous Pedicles, and hollow, like a Bason: In these grow the Flowers, which are of an herbaceous Colour, inclining to yellow, tetrapetalous, and representing the Figure of a new Crescent, the Horns turned outwards, and the gibbous Parts looking inwards, and touching one another. They are furnished with four yellow Stamina, from whose Umbilicus proceeds the Pointal, sustaining on the Top a triangular Fruit, propending downwards.

It grows in several Parts of Italy, delighting in high, moist, and but little sheltered Places; it has nothing singular in its Virtues. *Raii H. P.*

38. *Tithymalus*; *folio lini*; *major*; *Italicus*. *Barr. Obs.* 60. *IC.* 821.

39. *Tithymalus*; *marinus*; *folio retuso*; *Terracinenfis*. *Barr. Obs.* 50.

40. *Tithymalus*; *palustris*; *villosus*; *mollior*; *erectus*. *Barr. Obs.* 41. *IC.* 885.

41. *Tithymalus*; *folio Salicis tenuissimè serrato & villoso*. *T. 86.*

42. *Tithymalus*; *Lugdunenfis*; *Laureolæ folio*. *D. Goiffon. H. R. D.*

43. *Tithymalus*; *annuus*; *Lini folio acuto*. *Bot. Monsp. M. H.* 3. 339.

44. *Tithymalus*; *exiguus*; *villosus*; *Nummulariæ folio*. *T. 87. Chamaesyce villosa, major, cauliculis viridibus*. Schol. Bot. 122. *M. H.* 3. 340. *Boerb. Ind. alt. Plant. Vol.* 1.

The whole Plant, in what Part soever wounded, discharges a very copious and very white Milk, which by Infolation becomes of a brown Colour. This Juice is of a most acrid, fervid, and penetrating Taste, which remains a long time; and, if taken in too great a Quantity, it inflames the Fauces, and produces a Quinsy. Apply'd to the Skin, and suffer'd to remain there for some time, it first causes a Redness, and afterwards corrupts the whole Part. Hence by virtue of its caustic Quality, it is very effectual in eating out and extirpating Warts, small Cancers, and Tumors. The Plant dried, and taken to the Weight of four Grains, causes a plentiful Evacuation of Serum, but not without most violent Gripings, and forces out Water through the Kidneys and Bladder. The Roots dry'd, and boiled in Whey, are proper in a Dropsy, and we read of wonderful Effects of it in *Rulandus's* Book of *Empiric Cases*. From the first Species is prepar'd the Juice of the *Cataputia* of the Shops, and of the same is prepared an Oil, which is brought from *India*. A few Drops of this Juice, being involved in some tenacious Matter, and taken, are a more potent Cathartic than the *Esula*. This Juice is much like Scammony, but more acrimonious. If this Plant be boiled in Vinegar or Rhenish Wine, it loses all its Force; and this is all the Method by which the French Physicians would have it corrected, but then it is of no Service in the Cure of Diseases. *Hippocrates* says, that the *Esula*, *Hellebore*, and the *Grana Cnidia*, cure the Dropsy; but those are of an alkaline and igneous Quality. The *Tithymalus*, since the Root of Jalap has been known, is but little used. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Sorts of *Tithymalus*, *Dale* mentions the following;

1. *Tithymalus Myrsinites fructu Verrucæ simili.* C. B. P. 291. *Tourn. Inst.* 84. *Tithymalus verrucosus.* J. B. 3. 673. *Raii Hist.* 1. 871. *Synop.* 3. 312. *Tithymalus verrucosus Dalechampi.* Park. *Theat.* 187. ROUGH-FRUITED-SPURGE.

It grows in the Fields, and the Herb, which is used in Medicine, agrees in Virtues with the other Spurge.

2. *Tithymalus platyphyllos.* *Offic. Ger.* 404. *Emac.* 500. *Raii Hist.* 1. 870. *Tithymalus latifolius Hispanicus.* C. B. P. 291. *Tourn. Inst.* 86. Park. *Theat.* 188. BROAD-LEAVED SPURGE.

It grows in *Spain*, and flowers in Summer. The Parts used are the Root, the Juice, and the Leaves, which have the same Virtues with the other Species. *Dioscorides* says, that, bruised, and thrown into the Waters, it kills Fish.

3. *PITYUSA.* *Offic. Tithymalus foliis brevibus, aculeatis.* C. B. P. 292. *Tithymalus Cyparissias vulgaris.* Park. *Theat.* 193. *quoad icon.* PINE-SPURGE WITH SHARP-POINTED LEAVES.

It grows in *Italy*. The Root, which is the Part used, is reckoned among Cathartics.

4. *PEPLIS.* *Offic. Ger.* 406. *Emac.* 503. Park. *Theat.* 194. J. B. 3. 668. *Raii Hist.* 1. 869. *Peplis maritima folio obtuso.* C. B. P. 291. *Tithymalus maritimus supinus annuus Peplis dictus.* *Raii Synop.* 3. 313. *Tithymalus maritimus folio obtuso, aurito, rubro perinde ac caule.* *Tourn. Inst.* 87. PURPLE SEA-SPURGE.

This Species grows in the sandy Places of the Sea-shore, and flowers in Summer. The Herb, which is used, is endow'd with the same medicinal Virtues as most of the other Species.

The fifth is the HIPPOPHAES; which see.

The sixth is the *Tithymalus cyparissias.* *Offic. C. B. P.* 291. J. B. 3. 663. *Raii Hist.* 1. 867. *Tourn. Inst.* 86. *Tithymalus cyparissias vulgaris.* Park. *Theat.* 193. *Tithymalus cupressinus.* *Ger.* 402. *Emac.* 499. *Esula Officinarum.* Volck. 154. *Cæsalp.* 374. CYPRESS-SPURGE.

Caspar Baubine ranges under this last Species the *Tithymalus cupressinus* II. of *Tabernæmontanus*; but those who consider this Figure well, and those of the *Tithymalus Cyparissias*, and of the *Tithymalus Cupressinus* I. of the same Author will allow that *John Baubine* had Reason to believe, that these three Figures represent the same Plant in different States. It is often found in the Spring, with several Stalks without Branches, garnished with larger Leaves than ordinary; especially towards the Top, where they are marbled with Spots of the Colour of Oker. *Caspar Baubine* has made a different Species of it. *Thalius* calls it *Tithymalus σικτόφυλλος*, and has taken it for a non descript. *John Baubine* believes, that it is an Abortion of the common *Tithymalus Cyparissias*. It has been observed in the Wood of *Boulogne*, that the same Plant had such Stalks and Leaves as *Thalius* has described; these Stalks were mixed, also, among others that were in good Condition; they perished in a little time, and then the Root produced better.

The Leaves of the *Tithymalus Cyparissias* have the Taste of Almonds, the Milk of which has been drawn by Emulsion; they are styptic, but without any Acrimony, or Bitterness; and give a pretty deep Tincture of Red to the blue Paper; but the Roots give a much deeper: They seem at first, to have the same Taste with the Leaves, but leave at last a very considerable Acrimony in the Throat. It is very likely, that there is in the Roots of this Plant a Salt resembling Alum, but involved in a great Quantity of refinous Sulphur. This Mixture whitens the

Phlegm of the Spurge much after the same manner, as it happens to the Magistery of Jalap, or that of Scammony. This Spurge is an excellent Hydragogue. It is very proper to correct it by macerating it in Vinegar, or the Solution of Cream of Tartar: For if one swallows ever so little of this Root, it leaves a considerable Acrimony and Burning, not only in the Throat, but all along the Oesophagus, and sometimes in the Stomach itself. The Bark of the Roots of this Plant is given in Substance from a Scruple to a Dram, and in Infusion from one Dram to two. This Purgative is good for the Dropsy, Cachexy, and intermitting Fevers. It may be used in all Diseases, where it is requisite to carry off the Humours that resist the ordinary Purgatives. It must be given in a Bolus after the following manner; take half a Dram, or two Scruples, of the Root of this Spurge, half a Dram of Cream of Tartar, twenty Grains of *Mercurius dulcis*; mix them with a sufficient Quantity of Marmelade of Orange-flowers, or with the Conserve of Wormwood perfumed with five or six Drops of Balm of Peru: The Magistery may, also, be made of the whole Plant, bruised and digested in Spirit of Wine. Twelve, fifteen, or twenty Seeds, with the Husks of this Spurge, purge well: It is usually called in French, *Petite Esula*, *Esula minor Officinarum*.

Fernelius used it as the Basis of the Pills, which he calls *Pilule ex Esula*, the Dose of which is two Scruples. The Root of this Plant is an Ingredient in the *Benedicta laxativa*, *Hydragogum eximium* of *Renodæus*, *Extractum eximium* and *Cholagogum* of *Rolfsincius*. *Martyr's Tournefort.*

TITHYMELÆA. The same as THYMELÆA. *Blancard.* TITIANOS, τῑτιανός. The Name of an emollient Pessary, describ'd by *Aetius*, and by *Paulus Aegineta*. L. 7. C. 24.

TITILLARES VENÆ. The Iliac Veins.

TITILLICUM. The Arm-pit.

TITTHOS, τῑτθος. The Breast. See MAMMA.

TLACHICHINO PATLAHOAC. A Name for the *Heliotropium*; *Mexicanum*; *mali Limonii foliis*.

TLA ALLI. A Name for the *Mayx*; *granis aureis*, which see. TLAPALCOCATLI. A Name for the *Tagetes*; *Indicus minimus*; *flore sericea hirsutie obfita*.

TLAPALTE. A Name for the *Tagetes*; *Indicus*; *medius*; *flore luteo*; *multiplicato*.

TLATLANCUAYE. A Name for the *Piper longum*; which see.

TLEON. The Name of a Serpent found in *Brasil*, whose Bite is extremely dangerous, and which is to be cur'd by the same Methods, as those taken for the Bite of the Viper.

As to its medicinal Virtues, it is esteem'd sudorific, and a Restiter of Poisons.

TLILZCHITL. See VANILIA.

TMOLITES, τμολίτης. The Name of an excellent Wine, like the *Falerian*, mention'd by *Galen*.

TODDA-PANNA. A Name for the *Palma*; *Japonica*; *spinosis Pediculis*; *Polypodii Folio*.

TOETICA, according to *Blancard*, are attenuating Medicines.

TOLLES, TOLES, or TOLÆ. The Tonsils. The Name is, also, apply'd to glandular Abscesses in the Limbs. *Cæsellus*, from *M. Aur. Severinus*.

TOLUTANUM BALSAMUM. Balsam of Tolu. See BALSAMUM.

TOMAHUACTLI COPATLI *Hernandez*. The Name of a Mexican Species of *Aristolochia*.

TOMEION, or TOMEUS, τομειον, or τομύς. An incising, or cutting Instrument, either in Mechanics, or Surgery; from τέμνω, to cut.

TOMINEIO. The Name of an extremely minute Bird, found in *Brasil*, said to be good for an Epilepsy, either eaten, or taken in Powder. *Lemery des Drogues*.

TOMOTOCIA, from τέμνω, to cut, and τόκος, a Foetus. The Cæsaean Operation.

TONDI-TEREGAM. H. M. P. 4. T. 60. p. 123. *Arbor flore tetrapetalo odorato, fructu nullo*.

This is a tall Tree, about sixty Feet in Height, with a thick Trunk, and very numerous, strait, long, dark-green, lanuginous, rough Branches, full of fungous Pith. The Leaves stand by Pairs, in a parallel Order, on long Pedicles, about the small Branches, and are oblong-round, acuminate, crenated, thick, soft, smooth, green, and shining above, and greenish and lanuginous beneath, of a sweet Smell, and an aromatic Taste. The Flowers, which consist of four acuminate Petals, proceed from the Bosom of the Leaves, three or more together, and are of a purple Colour, and, being rubbed in the Hands, emit a pleasant Smell. Between the Petals are four purplish Stamina, in the middle of which is the Pointal, of a beautiful red Colour, and a whitish Apex. The Inhabitants of *Malabar* assure us, that this Tree bears no Fruit; but we cannot believe them.

The Leaves of this Tree, boiled in Whey, make a good Collution of the Mouth for the Aphthæ; and of a Decoction of the Bark and Root is prepared an Apozem, with Water which allays the Heat of Fevers, opens Obstructions of the Liver, and cures the Herpes, Scabies, and the like Affections. *Raii Hist. Plant.*

TONICOS, τονικός. An Epithet in *Galen*, for external Applications, which increase the Strength, Vigour, and Elasticity

city of the Parts. Or it is apply'd to internal Medicines of the same Efficacy.

TONITRU. Thunder. It is more the Province of the Naturalist, than Physician, to explain the Nature of Thunder. It has been sometimes esteem'd the Cause of Epilepsies; and I have been acquainted with some, in whom it always excited a temporary Purging. But, in both these Causes, I apprehend it acted only by causing a Terror.

TONOS, *τόνος*, from *τείνω*, to stretch, in the Language of Hippocrates, is a Nerve; whether proceeding from the Brain, or the spinal Marrow. *Galen. Lib. i. de Mot. Musc.* tells us, that the same Organ is called by two Names, *νεῦρον* and *τόνος*, because it may be said, both *νεῦρον*, to hang loose or slack, and *τείνω*, to stretch. The same Author, *Com. 1. in 6 Epid.* tells us, there are three Kinds of similar Bodies in Animals, which are exanguinous, and void of Cavity, some proceeding from the Bones; others generated of the Brain, and spinal Marrow; and others in the third place, deduced from the Muscles. The first of these, in Hippocrates, have commonly the Name of *σύνδεσμος*, (*Syndesmos*) a Ligament: The second he calls *νεῦρον*, and *τόνος*. the Third, *τένον* (a Tendon). And to the same Purpose *Ruffus Ephesius* describes the *τόνοι*, as taking their Original, and doing the Functions of Action, Motion, and Sensation to the whole Body. We often meet with the Word in this Sense in Hippocrates; for Instance, *Lib. 2. Epid.* where he says, *δύο δὲ τόνοι ἀπ' ἐγκεφάλου ὑπὸ τὸ ὀστέον τῆς μεγάλης σπονδυλῆς*, "there are two Nerves which proceed from the Brain, under the Bone of the great Spondyle or Vertebra." The same is repeated, *Lib. de Ossium Natura*; and, *Lib. de Artic.* we read, *τότοι γὰρ ἐπικαλεῖσθαι τόνοις γινώσκουσιν*, "for they are in the Vicinity of the principal Nerves." Here *Galen*, in his Comment, writes thus: *ὑποκρίσθαι τὸ ὑπὸ τῇ μασχάλῃ φησὶ τόνοις ἐπικαλεῖσθαι, &c.* He (*Hippocrates*) says that under the Arm (or Arm-pits) are seated some considerable *τόνοι*, so he calls the Nerves. It is a ridiculous Assertion, therefore, of some modern Physicians, who imagine, that he only calls the Nerves which proceed from the Brain by Pairs, by the Name of *τόνοι*, because, in a Book of his *Epidemics*, he says, there are two Nerves, &c. as before; for the Nerves which proceed to the Arms, are, by all skilful Anatomists, concluded to arise from the spinal Marrow about the Neck, in those Parts which are in the Vicinity of the Thorax; and are here, by Hippocrates, called *τόνοι*, as he, also, calls them again twice successively, that is, "a little below, and where he treats of the Spine." He uses the same Word, *τόνοι*, to express the Nerves in other Places of the same Treatise. *Galen*, also, explaining those very remarkable Nerves under the Arm-pits, which Hippocrates calls *ἐπικαλεῖσθαι τόνοις*, "says, that Hippocrates usually applies this Appellation to those Nerves which have a great Force, as those have in particular, on account of their Vicinity to the spinal Marrow, and their extraordinary Thickness." Again, in the same Treatise of Hippocrates, we read *ἥντιν ἀν κοινωσάντων αὐτοῖς τοῖς σὺννεργῶν*, "with which the neighbouring Nerves communicate." Here, tho' *Galen* understands, by *τόνοι*, the Nerves of the Back and Vertebrae, it is rather meant of the Ligaments, which by their Force, and a Communication of Tubercles, more easily pervert and draw aside the Vertebrae, from whence they have their Original, than the small, soft, and weak Nerves. In the same Book, *τόνοι νεύροδες* are the Nerves, which are extended lengthwise on both Sides of the Vertebrae, from the Top to the Bottom. Here *νεύροδες* are expounded, in *Galen*, by *ἰσχυροί*, "strong." With respect to these, and some other like Places of Hippocrates, *Erotian* expounds the Word *τόνοι*, where he says, *τὰ περιελαμένα σώματα τοῖς σάξιν, διὸν φλέβας, καὶ τὰ ὅμοια, τόνοις ὀνομάζον, ἀπὸ τῆς περιπελάσθαι ἐνὶ σὲ δὲ τὰ νεύρα μόνον, ἐννοεῖ δὲ τὰς ὑμέρας ἐκτασθαι*. "Those Bodies which stretch themselves about the Flesh, as Veins, Nerves, and the like, he calls *τόνοι* from the Verb *περιπελάσθαι* (to be stretched about); sometimes he gives this Name to the Nerves only; and some have bestowed the Appellation on the Membranes."

Τόνος, also, is not only a Nerve, but a Tension of that Nerve, as well as of other Parts, as appears from *Aretaeus, Cap. 4. Lib. i. de ὄφθ. παθ.* and *Hippocrates de Glandulis*.

TONSILLÆ. The Tonsils. These are describ'd under the Article *SALIVA*, by the Name of the Almonds, or *AMYGDALÆ*.

THE METHOD OF SCARIFYING THE TONSILS, WHEN AFFECTED WITH AN INFLAMMATION AND QUINSEY.

A violent Inflammation of the Tonsils, especially if attended with a Quinsey, may be reckoned amongst the most violent Disorders. In order to prevent a Gangrene, and the like dismal Consequences, immediate recourse must be had to the most efficacious Remedies, for alleviating the Inflammation. Besides the Remedies of this kind proposed in an Inflammation of the Uvula, (*SEE UVULA*) repeated Bleedings at the Arms, Legs, Jugulars, and under the Tongue, and Scarification of the Tonsils themselves, will be very beneficial; for, by these means, the superfluous and inspissated Blood may be happily discharged. The ancient Surgeons used to perform Scarification and Cupping on the external Parts of the Neck, nearest the Tonsils; a Practice

which I have found very efficacious in this Disorder. In *England* and *France* it is usual, as I have been informed, to scarify the Tonsils internally; which is certainly the readiest and most convenient Method of Cure, if, at the same time, proper internal Medicines are exhibited; as plentiful drinking of thin aqueous Liquors, and cooling Clysters. For the more convenient Performance of this Operation, such an Instrument should be used as is delineated in *Tab. XLII. Fig. 9.* which may serve to depress the Tongue, whilst at the same time the Scarificator is concealed. This Instrument may be called *Paristhmiotomus*, from the Greek Word *Peristhmia*, which signifies the Tonsils, and should be somewhat longer than it is represented in the Figure.

THE METHOD OF OPENING ULCERS IN THE TONSILS.

Sometimes, through Neglect or Mismanagement, an Inflammation of the Tonsils cannot be resolved, but degenerates into an Abscess, or Scirrhus. In such a Case it is necessary, by emollient Gargarisms and Malagmas, to accelerate the Suppuration with all Expedition; by which means the Patient will not only be relieved from a most miserable Situation, but, also, from the Danger of Suffocation, which is threatened by the Increase of the Exulceration; having, likewise, his Speech and Deglutition restored. For these Reasons it would be highly improper and extremely dangerous, to wait till the Matter bursts spontaneously; and, therefore, the Abscess must be opened by Incision, as soon as the Pus can be perceived to be formed; which must be carefully observ'd both by Feeling and Inspection.

This Operation may be thus performed: Take a long Lancet covered with Linen, or a Piece of Plaister, so that only about the Breadth of a Finger may be left naked at the Point. Then the Tongue being depressed with a Spatula, like that in *Tab. XXII. P.* or the plain Handle of a Spoon, the Lancet must be entered into the most proper Part of the diseased Tonsil; and, immediately upon the bursting of the Matter, the excruciating Pains will abate. In this Operation, the *Paristhmiotomus*, or Instrument above recommended, for scarifying the Tonsils, (*see Tab. XLII. Fig. 9.*) may be more conveniently used; which not only serves to depress the Tongue, instead of a Spatula; but, as the Lancet is concealed, as it were, in a Sheath, the Patient is not intimidated by seeing it: It must be introduced into the Abscess by pushing forward the Button B, with the Fingers. This Instrument is, therefore, very necessary for Children, and timorous Patients.

The exulcerated Tonsils being thus opened, a warm Gargarism of a Decoction of vulnerary Herbs mixed with Honey of Roses, or of Wine mixed with Water, or a little of the Infusion of Tea, and Honey of Roses, must be often used every Day, till the diseased Part is healed. Mean while the Patient should be strictly ordered to abstain from whatever is acrid or salt; for, should any such Substances adhere to the Wound, they may irritate and excite a new Inflammation, to the great Hazard of his Life.

THE METHOD OF TREATING INDURATED TONSILS.

Sometimes, after an Inflammation of the Tonsils, they are so extremely indurated and swelled, that they almost close up the Fauces, and prevent the Patient from either swallowing or breathing, especially if both the Tonsils are affected. As this Hardness cannot easily be dissolved, it will be more proper to extirpate it; and Extirpation may be performed either with corrosive Medicines, with the Knife, or sometimes by a Ligature.

In the Application of corrosive Medicines, particular Care must be taken not to use the stronger Escharotics, which might happen to slip into the Stomach, and occasion greater Misery to the Patient. Here, then, we may apply the Oil of Tartar per Deliquium; and, if that should fail, a Mixture of Aqua-fortis, with as much Quicksilver as it can dissolve over the Fire. With these, or the like Remedies, that Part of the Tonsils, which is most severely indurated, should be touched once or twice a Day with a Brush, till they are sufficiently diminished. Two Cautions are necessary to be observed in this Method of Cure; that none of the sound Parts be touched with the Escharotic; and that neither Meat nor Drink be taken, nor even the Spitte swallowed, for some time after its Application, lest some of it should be carried into the Stomach. It is, therefore, expedient for the Patient to incline his Face downwards, for half an Hour after the Application, that the Escharotic may flow, with the Spitte, out of his Mouth; and, before eating or drinking, he should wash his Mouth, and gargarize with warm Water. This Course he must pursue, till a sufficient Quantity of the Tonsils is consumed to make him breathe and swallow freely. There is no Occasion for consuming the Tonsils totally, which would not only prolong the Cure, but prove prejudicial.

The Method taken by the Antients to extirpate indurated Tonsils, was by Incision. They opened the Mouth with an Hook, like those represented in *Tab. XXIX. Fig. 2. or 3.* and carefully removed the indurated Part with a proper Knife. But as this Operation must be very cruel, and is, also, inconvenient, because of the obscure Situation of the Tonsils, it is seldom now performed.

Lastly, the third Method of removing indurated Tonsils, is by Ligature, which is to be performed when the Tonsil hangs, as it were, by a slender Stalk; though, it may be, with equal Conveniency, extirpated with a Knife, or Pair of Scissars. To apply the Ligature, that Instrument is recommended, which is represented in *Tab. XLII. Fig. 7.* The Ligature must be renewed every Day, till the corrupted Part of the Tonsils falls off; which, according to some Physicians, happens in two or three Days, if the Ligatures be exactly made. The Ends of the Thread or Ligature should be fixed upon the Cheek with a Piece of Plaster, lest it should slip into the Fauces. *Cheselden* made a Ligature in this kind of Disorder, with the Assistance of a Probe. But in a scirrhus Tonsil, with a broad Root, he perforated its Basis with a peculiar kind of Needle, made a Ligature on both Sides, and, by this Method extirpated it. *Heist. Chir.*

Of Ulcers of the TONSILS.

The Tonsils are subject to Ulcers, some of which are familiar, of a favourable Kind, and harmless; others foreign, malignant, and deadly. The mild or favourable Sort are pure, small, not deep, and free from Pain and Inflammation; but the malignant are broad, hollow, sordid, and contained under a white, livid, or black concremented Humour; and these Ulcers go by the Name of *Aphthæ*. If the Concretion be deep, the Disease is an *Eschara*, (or Crust) and is called by that Name. Round this *Eschara* appears a great Redness and Inflammation, attended with a Pain in the Veins, as from a Carbuncle, and an Eruption of thin, small Pustules, which, breaking out one upon another, form at last a Coalition, and become one broad Ulcer. And if this Ulcer eats its Way outwardly, it comes first to the Uvula, and consumes it; and afterwards makes its Approaches to the Tongue, Gums, the Ligaments of the Jaws, [*χαλνὸς*] and the Teeth, which are loosened in their Sockets, and become black, and the Inflammation extends itself to the Neck; after which the Patient survives but a few Days, sinking under the accumulated Weight and Oppression of the Fever, Inflammation, Fœtor, and Famine. But if the phagedenic Ulcer spreads itself through the *Aspera Arteria* towards the Thorax, it induces a Suffocation on the same Day; for the Heart and Lungs are incapable of supporting either the Smell, or the Ulcer, or the Ichor; but Coughs and a Dyspnoea seize the Patient.

The Cause of an Affection of the Tonsils is the Deglutition of cold, rough, hot, acid, and astringent Things; for these Parts are serviceable to the Thorax for the Voice and Respiration, to the Belly for the Transmission of the Aliment, and to the Stomach for Deglutition. And if any Disorder happens to the internal Parts, as to the Belly, Stomach, and Thorax, the same ascends, and is communicated to the Fauces and Tonsils, with the adjacent Parts, by Eructation. For this Cause Boys, before the Age of Puberty, are principally subject to this Disease; for as, at this tender Age, they abound with Heat, they require and receive great Quantities of cold Air by Inspiration; they are, also, intemperate in eating, and cover Varieties; and are, besides, much given to Vociferation, when they are angry, or at Play. Girls, too, are much subject to this Distemper, before their first menstrual Purgations. *Aret. περί ἀσθ. καὶ σπυ. δέ. παθ. Lib. I. Cap. 9.* See the Remainder of this Chapter, which gives an Account of the Countries most subject to this Disorder, and the most miserable Kind of Death it induces, under the Article *ÆGYPTIA ULCERA*.

Of the Cure of malignant Ulcers in the TONSILS.

The Method of Cure of this Kind of Ulcers is partly in common with that of other Affections of the Tonsils, partly proper to the Disease itself. Common Remedies, which serve as well for an Inflammation and Strangulation, are Clysters, Phlebotomy, Embrocations, Cataplasms, Fomentations, Ligatures, and Cupping. But stronger Unctions are to be used; for neither the Ulcers remain in a settled State, nor Crusts arise on the Superficies; and if there be a Distillation of Ichor from the Place inwardly, the sound Parts are very soon ulcerated, and the Ulcer very quickly eats its Way into the internal Parts, and destroys the Patient.

It would, therefore, be proper indeed to cauterize the diseased Part, if it were not too rash an Undertaking on account of the Situation of the Fauces; but we ought, however, to use Remedies equivalent to a Caution, in order to restrain the spreading of the Ulcer, and to cause the Crusts to fall off. Such are Alum with Honey, Galls, Balaustines dry mixed with Hydromel; or the same may be blown in through a Reed, Pen, or a long and thickish Quill [*καυλῶ*] so as that the Medicines may apply themselves to the Ulcers. Very proper Remedies are, also, burnt Chalcitis, with Cadmia triturated with Vinegar; or two Parts of Cadmia with one Part of the Root of Rheum in some (proper) Liquor. But Care is to be taken, that the Ulcers may not be compressed; for by that means they would contract Humidities, and spread themselves the farther. For this Reason dry Medicines are to be applied by way of Insersion with a Feather, and the liquid Kind

rendered thin enough to be infused on the Uvula. If the Crusts are already resolved, and the Ulcers appear red, there is great Danger of Convulsions; for, as the Ulcers generally dry up, the Nerves are contracted. The Parts are, therefore, to be mollified and moistened with Milk and Amylum, or the Juices, or Cremors, of Pistan, *Tragus*, Linseed, or the Seed of Fenugreek. Sometimes the Uvula is corroded to the very Bone of the Palate, and the Tonsils are consumed to their very Basis, and the Epiglottis; by which means a Cicatrix is induced so considerable, as to intercept the Deglutition of either solid or liquid Aliment; and even to force a Return of what the Patient drinks, through his Nostrils, whence, of Necessity, he perishes with Hunger. *Aretæus, περί ὁσπας. Ὁζ. παθ. Lib. I. Cap. 9.*

TONSORIS EMPLASTRUM. See EMPLASTRUM.

TOPAZIUS. The Topaz. See CHRYSOPASIUS.

TOPHUS. A Toph. A calcarious, or rather chalky Substance, growing in any Part of the Body.

TOPICA, from *τόπος*, a Place. Topics, or local Applications.

The best and most generous Remedy may, according to *Galen*, prove injurious, as well as beneficial. This Maxim holds true, not only with respect to internal Medicines, but, also, with respect to Topics, or external Applications. Though the former of these are more efficacious, and of more universal Use, than the latter, yet Topics are, in some Cases, so necessary, that Practice cannot subsist without them; for which Reason we shall point out the several Errors with respect to the Use and Application of Topics.

Topics in general include whatever is externally applied to any Part of the Body, and consequently comprehend whatever is laid to Wounds, Ulcers, or any Injuries of the Limbs; whether it consists in the Application of the various chirurgic Instruments, or in the Use of Ointments, Plaisters, Injections, and Tents. But we shall confine ourselves to the Consideration of those Topics used in Disorders which arise from an internal Cause, and consequently belong rather to the Province of the Physician, than of the Surgeon.

Baths, then, for the Head, whether prepared of simple Water and a Lixivium, or Wine boiled with cephalic or emollient Herbs, are often preposterously used by Persons ignorant of Medicine. These are generally prejudicial in all Disorders of the Head, and a Weakness of the Brain or Nerves; but they are in a particular manner injurious in Achors, Catarrhs, a Ringing of the Ears, Dulness of Hearing, and Inflammations of the Eyes. I have often known an Epilepsy produced by a preposterous Use of Baths for Childrens Heads; and I am of Opinion, that we ought totally to abstain from such Baths; and substitute, in their room, Frictions of the Head, and Substances of a drying and corroborative Nature; for the above-mentioned Disorders are produced by an impetuous Conveyance of the Humours from the inferior Parts to the Head, and an Infarction and Stagnation of Blood either pure or serous there. Now nothing more disposes the Head to receive the Impetus of the Humours, and retain the serous Parts of the Blood, than these Baths; which, by their hot or tepid Moisture, render the Fibres flaccid, and hinder the congested Humours from returning thro' the Veins. But in all Disorders of the Head, or superior Parts, we are rather to bathe and relax the Feet and Legs, in order to make a Revulsion and Derivation from the superior to the inferior Parts.

I, also, condemn the Use of cephalic Plaisters; when, for Instance, the whole Head is shaved, and covered with a Plaister, as is usual in violent Hæmorrhages, Epilepsies, and other Symptoms, generally produced by external Causes, such as Contusions or Blows: And though some, upon this Occasion, make a Distinction between Plaisters prepared of Balsams and Gums, and those which consist of viscid and glutinous Substances, yet, in my Opinion, both are more hurtful than useful, not excepting the celebrated Bethony-plaister. The Reason of this Assertion seems to be, that the freer the Perspiration of the Part affected, is, the Cure always succeeds the better. Besides, the farther the Parts are removed from the Heart, the Source of Heat, or the less Blood circulates in them, of the greater Importance it is, to promote Transpiration in them. Every one must, therefore, be convinced, that Plaisters must prove prejudicial by closing the Pores of the Head.

We can, therefore, from Experience, recommend in their stead dry Powders, either sprinkled on the Head, or included in Bags; and which, by their subtle, mild, and sulphureous Quality, corroborate the nervous or cold Parts, and preserve a free Perspiration. But if dry Powders are contraindicated, we may substitute, in their room, Bags with cephalic Ingredients, boiled in Wine, or Liniments prepared of such Substances, as are possessed of a penetrating Quality, a volatile, oleous Salt, and a balsamic Resin; among which the most considerable are the *Peruvian* Balsam, Camphire, rectified Spirit of Wine, Sal Ammoniac, or volatile Salt of Worms, strengthened by the unadulterated Oils of Lavender, Marjoram, Rosemary, or Nutmegs, and impregnated with Essence of Castor. These Liniments afford great Relief in all Disorders of the Head, whether they partake of the Nature of Convulsions and Epilepsies, or are accompanied with Pain,

Pain, and the Interception of any of the Senses. But my Intention is not to destroy the Use of all Plaisters, which, in certain Cases, are beneficial, when applied to the Forehead, or Nape of the Neck; but I only speak of those Plaisters which cover the Whole or Half of the Head. It is, also, to be observed, that frequently powdering the Hair, especially with pounded Starch, is productive of bad Consequences. Thus a Gentleman of Distinction told me, that, by the frequent and immoderate Use of such Powder in his Youth, he contracted a Weakness of his Eyes, which at last terminated in a perfect Cataract. Nor is it difficult to assign a Reason for this, since such tenacious Substances, by blocking up the Pores of the Head, greatly obstruct Perspiration, so necessary to the Health and Strength of that Part.

It is a common Error in Practice, to apply various Liniments and Balsams in most Disorders of the Head, especially a Vertigo, an Head-ach accompanied with a Sense of Weight, a Carus, an Apoplexy, a Torpor of the Senses, and an Hemiplegia. Thus it is customary not only to anoint the Nostrils and Temples, but, also, the Crown of the Head and Neck, with fragrant Balsams prepared of Musk, Amber, Civet, and Oil of Roses, because these are thought efficacious against Disorders of the Head. But such a Practice is not so innocent as it is imagined; for these are vaporous Medicines, and, by their elastic Vaporosity, insinuating themselves into the Pores of the Vessels, distend them too much, and, in some measure, fix the impetuous Motion of the Blood; and thus, by their sedative and anodyne Quality, dispose to Drowsiness. Hence every one must perceive, that we are to deal cautiously with Medicines of this kind, which are not proper in Disorders of this Nature, where the Head and its Vessels are already infarcted and distended by the Impetus and Quantity of the Blood. In this Case, by increasing the Expansion of the Humours, and consequently augmenting the Danger of their Stagnation, they are experimentally found to produce Head-achs, Vertigos, Ringing of the Ears, Drowsiness, and a greater Oppression and Torpor of the Mind and Senses. What *Hippocrates* says in *Aphor.* 28. *Sect.* 5. with respect to Fumigations, holds true concerning these Medicines; which is, that they would, in many respects, contribute to the Production of good Effects, if they did not induce an Heaviness of the Head. For which Reason, to the Remedies above-mentioned, we prefer such balsamic Liniments, as only consist of highly rectified Spirit of Wine, in which Camphire, the Oils of Marjoram, Lavender, and Rue, but not adulterated with Turpentine, are dissolved; for these Substances rather operate by discussing and opening the Pores, than by filling the Head with Vapours; and for that Reason are always safer in Cephalalgias, and violent apoplectic Fits.

We now proceed to the Topics generally used in Disorders of the Eyes; and so great are the Errors committed both by Physicians and Surgeons in this respect, that we may justly affirm, that more are deprived of Sight by a preposterous Application of these, than by the Violence of the Disorders. Thus it is a vulgar Error, that cold Substances are friendly to the Eyes; whereas such as are hot are prejudicial to them: This, indeed, holds true, when the Eyes are found, in which Case it is more expedient to wash them with cold, than with warm Water; because the latter, by relaxing the Fibres, disposes the Eyes to Defluxions, whereas cold Water, by corroborating the Pores of the Coats, and Sides of the Vessels, prevents an excessive Flux of Blood and Humours, and thus preserves the Eyes serene, lively, and sound. But this Rule is by no means to be observed in a preternatural State of the Eyes, especially in an Ophthalmia, in which the Use of cold Substances is highly dangerous. Thus *Forestus*, in *Obs. Chirur. L. 2. Obs.* 19. gives us an Account of a Woman, who, labouring under an Ophthalmia, used a Collyrium of Talc, and distilled Water; but, soon after, her Eyes were seized with such an intense Pain and Heat, that an Ulcer succeeded. When the Eyes have been afflicted with an inflammatory Heat, I have often seen them rendered turbid, and the Inflammation so greatly increased, that within a few Days the Sight has not only been obscured, but, also, sometimes totally destroyed for want of proper Management; for as in all Inflammations, skilful Physicians justly condemn the external Application of cold, astringent, and incrustating Substances, so I see no Reason why we should admit their Use in Inflammations of the Eyes, whose capillary Vessels are far more tender than those of other Parts; for the Cause and Origin of every Inflammation is an Infarction of Blood or Humours in the larger Vessels, on account of the Obstruction of the adjacent small Vessels: Now Obstructions are by nothing more confirmed, than by Things actually cold, which deprive the Juices of their Fluidity, and render them thick, and incapable of Circulation.

In inflammatory Disorders of the Eyes, we not only reject such Collyriums, as are actually cold, but, also, such as are possessed of an incrustating and condensing Quality, or invite a farther Afflux of the Humours to the Part affected; such as all the ophthalmic Waters, the Frogspawn Water, for Instance, Rose-water, that of Plantain, that with Sugar of Lead, that of Alum, the White of an Egg, red Bole, and all mucilaginous Substances. Thus *Forestus*, in *Lib. 2. Obs.* 26. observes, that oleous and pinguious Substances are hurtful to the Eyes; in Confirmation of

which, he tells us, that a Barber treated an Ulcer with hot Oil, till, breaking into the Tunica Cornea and Uvea, it at last degenerated into a Cataract. Greater Efficacy is to be promised from such Substances, which, without any great Acrimony or Heat, are possessed of a discutient Quality; among which Camphire is the most considerable, because, as in all other Inflammations, so, also, in this, it affords instantaneous Relief. If, therefore, the Inflammation is only slight and superficial, Elder-flower Water, in which a little Saffron is dissolved, with the Addition of a few Drops of a well-saturated Solution of Camphire, applied tepid, is of singular Service. If the Inflammation is accompanied with a saline and acrid Lymph, a Mucilage of Quince-seeds, or Rose-water mixed with Saffron and Camphire, are of singular Efficacy; for when the Inflammation is violent, deep, and dangerous, the Eye being almost deprived of Sight and Sensibility, I have found happy Effects produced by tepid camphorated Spirit of Wine, mixed with *Petravian* Balsam; by which means the Sensation, Motion, Tone, and Colour of the Eyes are gradually restored.

It is sufficiently known, that Vitriol, in consequence of its partaking of Copper, is among Practitioners reckoned a great Arcanum in Disorders of the Eyes; but as it is almost promiscuously used in all Collyriums, great Misfortunes are sometimes produced by it. We are, therefore, to abstain from the Use of Vitriol in all Inflammations, and in saline, hot, and acrid Defluxions; accompanied with Redness and Itching, because Vitriol, by its Acrimony, increases all these Symptoms. But Vitriol is properly used, either when the Humours are thick, and formed into Sordes; or when they begin to form small Membranes in the Tunica Albuginea, which frequently happens after the Small Pox and Measles, which induce a too great Thickness of the Lymph. In such a Case, therefore, surprising Effects are produced by one Grain of *Cyprian* Vitriol, dissolved in one Ounce of Celandine Water, with which Liquor upon a Feather the Part affected is to be frequently touched every Day. But when a manifestly corroding and burning Matter is perceived, temperating, demulcent, and mucilaginous Substances are to be used; and of these the best are, the Mucilages of the Seeds of Fleabane, and white *Sieff* without Opium; as, also, the Powder of Sarcocolla.

With respect to the Fat of Vipers, and of that Species of Fish called *Umber*, which is so greatly extolled in Wounds of the Eyes, and in that Disorder in their Corners, which is generally called the *Pannus*, we are to observe, that these Fats ought to be recent, since, when by Age they have contracted a Rancidity, they are not only injurious in these, but, also, in all other Disorders of the Eyes. Besides, Collyriums are of no Use, or rather hurtful, when, from a Fault and Dyscrasy of the Lymph and Blood, which often happens in a Scurvy and Lues Venerea, the Eyes are red, painful, dropping, and turbid. In such Cases, Topics of all Kinds are useless: We first correct the Juices by internal Medicines, which is excellently performed by Decoctions of the Woods, and of such Herbs, as sweeten the Blood. It, also, sometimes happens, that, in consequence of an inveterate Tumor of the Glands of the Neck, an obstructed Discharge from the Ears, an Application of Cosmetics to the Face, or the Retropulsion of an Anchor in the Head, the peccant Matter fixes its Seat in the Eyes; in which Case we are not to trust to Topics alone, but these are to be assisted by internal Medicines, and the Cause of the Disorder must be totally removed.

With respect to Disorders of the Ears, numberless Errors are, also, committed; for nothing is more improper, than, in a Dulness of Hearing, to put Oils, whether expressed, as the Oil of sweet Almonds, or mixed with Cephalic Oils, into the Ears. Though this Piece of Practice is extolled by many Practitioners, yet I have rarely found it productive of good Effects: For a Dulness of Hearing proceeds either from a too great Relaxation of the Tympanum, or from an excessive Humidity of the Membrane surrounding the Organ of Hearing, that is, the Labyrinth and Cochlea; so that Oils, by producing a greater Relaxation, increase the Disorder; and Oils of an hot, acrid, or too spirituous Kind produce intense Pain and Heat in that highly nervous and sensible Membrane, which surrounds the auditory Passage. Besides, if we have recourse to the Observations of the most skilful Practitioners, we shall find, that Topics are so far from being beneficial in a Dulness of Hearing, or Ringing of the Ears, that they are rather hurtful. Nor do I see by what means the Virtues of Medicines, whether unctuous, oleous, or spirituous, can penetrate to the Seat of the Disorder, which is within the Brain, or in the most remote Recesses of the Os Petrosum. In such Cases I have always observed happier Effects produced by apoplegmatizing and cephalic Substances.

There are, however, some Cases, in which Topics are beneficial in Disorders of the Ears; when, for Instance, the Ear-wax is so indurated, as to assume the Nature and Consistence of a Plaster, and greatly obstruct the Hearing; in which Case tepid Oil of sweet Almonds mollifies the indurated Ear-wax, so that it may be commodiously extracted with Ear-picks. I remember some Years ago a Mountebank pretended to a wonderful Secret for removing Deafness, which consisted in injecting into the Ear, with a Syringe, Fennel-water, into which a little of the Oil of Tartar had been dropped. This Injection he cautiously made several

times a Day; and in some Patients, that is those whose auditory Passages were block'd up with the Ear-wax, the Experiment succeeded very well. The like happy Effect is sometimes produced by a tepid Injection of mineral Waters into the Ear; but they are only beneficial, when the Dulness of Hearing proceeds from Sordes too much clogging the Membrane of the Tympanum.

As Abscesses sometimes arise in the internal Ears, 'tis to be observed, that these require a particular Treatment, since, if they are treated in any other manner, they frequently terminate in putrid and carious Ulcers, accompanied with a total Loss of Hearing. 'Tis, therefore, a bad Piece of Practice to use digestive and oleous Ointments, such as these cold, dry, nervous, and sensible Parts cannot bear. But such Abscesses are rather consolidated and hindered from degenerating into Ulcers, by putting warm Balsamics into the Ear, with Cotton; such as the Essences of Myrrh, Opobalsam, and Amber.

The Nostrils have, also, their peculiar Topics, which, when properly apply'd, are very beneficial, but no less prejudicial, when preposterously used; an Instance of this we have in the great Variety of Things thrust up the Nostrils, in order to stop excessive Hæmorrhages: And tho' the Applications of this Kind are inconceivably numerous, yet few of them are useful, or even innocent in Practice. For as an Hæmorrhage generally proceeds from an internal Cause, which for the most part is a Spasm, a violent Constriction or Obstruction of some Parts remote from the Nostrils, and as the Blood is imperiously convey'd to the Vessels of the Head, when this Blood is too much congested, it distends the Orifices of the Vessels, and at last breaks the Coats of the Nostrils. Hence, every one must perceive, that it is not only in vain, but, also, dangerous, in such Cases, to use external Styptics and Repellents; for, closing up the Orifices of the Vessels by Astringents, we derive the Disorder to other Parts of the Head, or perhaps to the Breast, whilst the internal Impetus of the Blood still remains. But if the open Orifices of the Vessels from which the Blood flows, are situated pretty deep in the Fauces, so that the Efficacy of Styptics cannot reach them, and the Nostrils, in the mean time, so stop'd up, as to afford no Discharge of the Blood, it falls from the Fauces upon the Aspera Arteria, sometimes not without Danger of Suffocation. Besides, as all Styptics are unfriendly to nervous and glandular Membranes, they greatly injure these Parts, when thrust far into the Nostrils.

These Topics, for the Nostrils, are, therefore, of little or no Use, unless we previously derive the Blood from the Head, by Venesections, Frictions, and Immersions of the Feet and Hands in warm Wine or Water; as, also, by Diaphoretics, which, without any great Motion and Heat, propel the Blood from the Centre to the Circumference of the Body; and then there is no Necessity for these cold and styptic Repellents, since the Essence of *Terra Japonica* alone, received into the Nostrils, is far superior to them all. 'Tis customary, among the Vulgar, in excessive Hæmorrhages of the Nose, to apply a Piece of Silver Coin wet in cold Water, either to the Forehead or Nape of the Neck; or to apply a Linen Cloth wet with cold Water, either to the Forehead or Whole of the Neck. But these Practices cannot be used in the Beginning of the Hæmorrhage, without Danger of an Apoplexy. We do not, however, disapprove of such Epithems as are at once possessed of a discutient and corroborative Virtue; such as Vinegar of Roses, mixed with Nitre, Camphire, and the Oil of Rosewood; which Mixture, when apply'd tepid to the Temples and Neck, is of singular Efficacy, and preferable to all others.

We now come to consider the Topics generally used in those putrid and carious Ulcers of the Ossa Squamosa, which are familiar to those labouring under the Lues Venerea, or the Scurvy. The Topics for these Purposes are generally the Waters of Roses, Plantain, and Houfleeck, mixed with red Bole, Sugar of Lead, or Magistery of Lead; or, if the Ulcers penetrate to the Bones of the Fauces, or corrode or consume the Substance of the Uvula, Injections or Gargarisms are commonly used. But all these cold Preparations are of no Use, since they are by no means fit for stopping the putrid Corruption. Disorders of this Kind require far more powerful, and more penetrating Medicines; such as Oil of Cloves, which is an excellent Preserver of the Bones, especially when mixed with *Peruvian* Balsam; *Elixir Proprietatis*, prepared without an Acid; Essence of Amber, or camphorated Spirit of Wine, cautiously injected thro' the Nostrils, by means of a Syringe, are, also, excellent for curing these feid and malignant Ulcers. This Method I have often, upon Reflection, concluded good; and, upon Trial, found it to answer my Expectations. Many Venereal Patients, on account of the Ignorance of their Surgeons, and the preposterous Application of Medicines, are long afflicted with such sordid Ulcers, which at last corrode and consume the whole internal Structure of the Nostrils, the Uvula, and the Bone of the Palate, to the great Detriment not only of their Voice, but, also, of their Health, since Gargarisms, tho' prepared of the most efficacious Ingredients, are in vain apply'd, because they cannot reach the Root of the Disorder, and the Part affected, which is above the Bone of the Palate.

Many Topics are, also, prescribed both by Physicians, Surgeons, and the Vulgar, for the Tooth-ach; but most of these generally do

more Injury than Good: And tho' after the Use of gentle Astringents and Anodynes, the best of which seems, to me, to be the Essence of *Terra Japonica*, mixed with the anodyne Essence, there is some Alleviation of the Pain; yet it is very small, short-liv'd, and, at another time, not to be obtained. And as a Tooth-ach is frequently epidemical, and arises from a Rheumatism, or an acrid erysipelatous Defluxion, infecting the carious Tooth, and generally joined with a catarrhal Fever, it is easy to perceive, how foolish and ineffectual an immediate Application to the Tooth must be. In this Case, if any Benefit is to be expected from external Applications, the best we can use, are paregoric Bags, prepared of discutient, carminative, and anodyne Ingredients: And tho' the Oils of Cloves and Origanum are excellently appropriated to a Caries of the Teeth, accompanied with Pain, yet, when, in a carious Tooth, a nervous Membrane is too much distended, or corroded by an aqueous Fluid, lodged between the narrow Interstices of the Bone, we are rather to use the liquid apoplectic Balsam, or the Balsam of Life, received into the Nostrils, or a tepid Decoction of Milk with Elder-flowers and Saffron kept in the Mouth, will better alleviate such a Pain, than any other external Application whatever. And I can affirm, from Experience, that Diaphoretics alone, such as the Bezoardic Tincture, Sulphur of Antimony, prepared in the manner directed by me, or succinated Spirit of Hartshorn, mixed with the sweet Spirit of Nitre, used in violent Tooth-achs, with a sudorific Regimen, after the Use of such Medicines as render the Body soluble, produce very happy Effects; so that 'tis sufficiently obvious, how preposterously Topics are generally used in Tooth-achs.

Various Errors are, also, committed, with respect to the Cure of cutaneous Disorders of the Face and Head. Thus nothing is more customary among the Vulgar, than the curing Achors and Scal'd-heads in Children, with various Lotions, Lixiviums, Decoctions, and Ointments prepared with Sulphur, Oil of Olives, and other unctuous Substances. But I have experimentally found this Method productive of the worst Consequences, since it is generally succeeded by Epilepsies, Inflammations, and Suppurations of the Eyes, an Epiphora, a Gutta Serena, violent Peripneumonies, Asthmas, and other Disorders of a like Nature. We are, therefore, in such Cases, to deal very cautiously with external Applications, for fear of obstructing the Perspiration in the Parts; nor are we ever to prescribe them, without at the same time exhibiting internal Medicines for correcting and evacuating the peccant Humours. We are never externally to apply moist, oleous and astringent Substances; and if Topics are indicated as proper, antimonial Balsam of Sulphur, dissolved in camphorated Spirit of Wine, and mixed with Oil of sweet Almonds, will produce excellent Effects, by mollifying, discussing, and resisting farther Putrefaction. In Venereal Pustules, and the Gutta Rosacea, we are, also, to deal very cautiously with Repellents, and such Medicines as constrict the Pores of the Skin, since, by their means, I have often observed the saline acrid Serum precipitated to the Coats of the Eyes, and an Ophthalmia produced. How much Topics are abused in the Cure of an Erysipelas, is too obvious; for, certainly, this Disorder requires a cautious Application of Externals, particularly when near the Brain and Origin of the Nerves; and it is not free from Danger, especially in scorbutic Patients, as Practitioners sufficiently know.

Practical Authors furnish us with numberless Instances of the bad Effects of Topics in the Cure of an Erysipelas. Thus *Rolfinckius*, in *Method. curand. Affect. Capit.* makes mention of a Quinsy produced by the unseasonable Use of Repellents in the Cure of an Erysipelas of the Head. *Aquapendente*, also, in *Lib. de Tumoribus*, justly orders, that, in an Erysipelas of the Face or Head, we are neither to use Topics before, nor after Purging; for, by cold Substances, the Matter may be repelled to the Brain, and produce a Phrenitis; or to the Fauces where it induces a Quinsy. In such Cases all Cataplasms, all unctuous, moist, and aqueous Substances are highly prejudicial. But we are rather to use dry Substances alone, such as Bags prepared of emollient and discutient Herbs, that the Transpiration may remain free. Sometimes, however, camphorated Spirit of Wine, mixed with Essence of Castor, or Oil of Nutmegs, mixed with volatile Salt of Worms, Nitre, and a little Opium, used by way of Ointment, produce very salutary Effects. Those seem to be in a great Error, who, for the Cure of a Gutta Rosacea, and Pustules, use sublimate Mercury, or a weak Water of precipitate Mercury, since these, when received into the Pores, greatly dispose to violent Heads-achs, Hemicranias, and Looseness of the Teeth. But the Intention will be far better answered by Essence of Benjamin, mixed with Magistery of Lead, Camphire, Sugar of Lead, Frogs-spawn-water, and Elder-flower-water.

When the Flesh of the Gums is so corroded, that the Roots of the Teeth appear bare, the Disorder is generally thought to proceed from a Relaxation of the Fibres. Hence 'tis a common Custom to prevent this Misfortune by the external Use of Astringents, such as the Essences of Mastich and Tormentil, Alum, and the Essence of *Japon* Earth, which, instead of being beneficial, are rather hurtful; for the Disorder is an Atrophy, and proceeds from a Defect of the nutritive Juice, in consequence of an Obstruction of the minute and numerous Arteries of the Gums. Now, if

this Obstruction is confirmed by Astringents, the Gums must be still more deprived of their fine nutritive Juices. In such Cases, happier Effects are produced by Decoctions of Wine with Sage, Origanum, Rosemary, Camphire, Nitre, and a small Quantity of the Spirit of Sal Ammoniac. By washing the Mouth and Gums frequently with such Decoctions warm, the Vessels are opened, the Blood and Juices invited, the Fibres of the Gums corroborated, and the Use and Vigour of those Parts restored.

We now come to consider the Abuse of Topics in Disorders of the Thorax. In those inflammatory Tumors, therefore, of the Lungs, commonly called Pleurifies, or Peripneumonies, nothing is more customary than the external Use of oleous Ointments, in order to allay the Pain. But I have rarely seen happy Effects produced by such a Practice, since, when the Disorder might at first have been dissipated by internal Diaphoretics and Discutients, they hinder its Discussion, and dispose it to a Suppuration; just as in other erysipelatous Disorders of the external Parts, these Ointments, by obstructing the Pores, and relaxing the Fibres, invite a farther Defluxion of Humours, and dispose the Part to Suppuration and Exulceration. If, therefore, as it often happens, the Pleurisy is spurious, that is, if an acrid saline Serum stagnates between the Membranes of the intercostal Muscles, in which Case, it is a Species of Rheumatism, the above-mention'd Topics will be far more injurious than beneficial, by hindering the Transpiration and Excretion of the stagnant Matter; which, however, is absolutely necessary to the Recovery of the Patient. Some, in order to allay violent Pain, have a Custom of adding to those, Oil of Henbane, by which means the Pain is, indeed, mitigated, but, at the same time, a Drowsiness, a Languor of the Strength, and a difficult Expectoration succeed, which, especially in Old-age, are not without Danger. Besides, in these Disorders, 'tis customary, with some, to apply Plaisters, such as the Emplastrum Vigonis, mixed with Mercury, Balsam of Sulphur, and Camphire. But, by this means, I have found, that when the Pleurisy has been spurious, and affected the intercostal Muscles and Membranes, but not the Lungs, the Pain has, indeed, been dissipated, but the Matter has been conveyed to other Parts; and I have frequently known the Matter repelled to the Substance of the Lungs, where it has produced Impostumations sufficiently chronical and dangerous.

In my Opinion, therefore, in all these inflammatory Disorders of the Thorax, we are either absolutely to abstain from all Topics; or, if any are to be admitted, camphorated Spirit of Wine, mitigated, and rendered anodyne by an Addition of Castor, Saffron, and distilled Oil of Nutmegs, used by way of Ointment, seems preferable to all others. There are, however, some Disorders in which pinguious Ointments, those possessed of an anodyne Quality, and such as relax the Fibres, produce happy Effects, though they are rarely used. A Disorder of this Kind is the dry Chincough, in which, not so much the Quantity, as the peccant Quality of a thin and acrid Matter stimulates the pneumonic Nerves and Thorax to violent convulsive and concussive Motions, in which Case 'tis necessary to allay these Motions, and relax the constricted Parts of the Thorax, not neglecting, at the same time, to inspissate and correct the thin and acrid Humour. This Species of Cough is frequently very obstinate, and raging violently at certain Seasons, principally attacks Children and Infants. I have frequently seen good Effects produced by anointing the whole Breast with an Ointment prepared of the Unguentum Portabile Rubrum, Sperma Ceti, Badger's Fat, Ointment of Poplar, Oil of Anise, and Camphire.

We shall now subjoin something with respect to Topics, in a true Phthisis, or Exulceration of the Lungs: We have Instances of phthisical Patients who bear some Ointments and Plaisters well, but others not without Injury. The Nature, therefore, of every Phthisis, and its particular Cause, are to be investigated. Topics are not, therefore, useless, when the Lungs are full of hard Tubercles, which, for the most part, gradually come to a Suppuration: For this Purpose the Plaisters ought not to consist of too hot Substances, nor of those of too rough and unctuous a Kind; for the former increase the Pain and Inflammation, and the latter hinders a free Perspiration. The best of all is *Rulandus's* Emplastrum Diasulphuris, without the Colophony, which is prepared of amygdalated Balsam of Sulphur, Myrrh, Earth of Vitriol, Wax, and Turpentine, to which Bdellium may be added. This Plaister, by its corroborating Quality, diverts the Impetus of the Humours from the Breast, and discusses the Stagnation of the Juices. But 'tis to be observed, that, in Disorders of the Lungs, Plaisters are not to be applied to the Sternum, thro' which they cannot penetrate, but rather to the Back and Sides, because there the Pores are more open, the Blood more copious, and the Vessels more numerous, in consequence of which, the subtle and salutary Parts of the Plaister are the better received and admitted.

We now come to consider some Disorders of the Stomach, in which Topics are beneficial, provided they are duly applied. No Pain is more cruel than that which is fixed in the Right and Left Orifices of the Stomach, which are highly sensible; and is generally called a Cardialgia. In this Disorder, 'tis customary to take internally various Remedies for mitigating the Pain, and externally to anoint the Region of the Stomach with some spiri-

tuous Liniment, or an Ointment prepared of carminative and anodyne Ingredients. But this Method does not produce the desired Effect; for since the Pain is fixed in a very small Part, that is, in these nervous Orifices, it is sufficiently obvious, that a penetrating and efficacious Medicine is to be applied as near as possible to those Parts. Now, if either a Plaister, Liniment, or Ointment, is applied to the whole Region of the Stomach, a small Quantity of any of them can only penetrate to the Orifices of the Stomach. Besides, as 'tis certain from Anatomy, that the superior Orifice of the Stomach is nearer the Back and Vertebrae, since it is situated hard by the Aspera Arteria, it is sufficiently obvious, that the Medicines applied to the Pit of the Stomach can by no means penetrate to it. Such Remedies are, therefore, to be applied to the Back about the eighth or ninth Vertebra, before they can affect it. But if the Right Orifice is affected, we are to apply our Remedies under the Stomach, towards the Right Side. But in Cases of this Nature, we are by no means to use too volatile Substances, such as Spirits; nor unctuous and emplastific Substances, which operate too slowly, but rather a pretty thick Liniment, in the Form of a Plaister, and prepared of Treacle, Saffron, Oil of Nutmegs, Camphire, *Peruvian* Balsam, and Oil of Henbane. I have often found this Preparation afford Relief, and where it proves unsuccessful, nothing is to be expected from other Topics.

Practitioners well know, that in a Weakness of the Stomach, Vomiting and Nausea, nothing is more common, than to apply Ointments, or oval stomachic Plaisters under the Sternum. But, upon dissecting Carcasses, we find, that only a very small Portion of the Stomach, but the Liver, the Intestinum Colon, and the small Intestines are situated there. The Stomach rather inclines to the Left Side under the Ribs, where, at least, three Parts of it are situated towards the Spine. If, therefore, we apply generous and penetrating Medicines to the spurious Ribs of the Left Side towards the Back, we shall find far more happy Effects produced on the Stomach by them.

The violent Pain arising from a Stone sticking in the Beginning or Middle of the Ureters, also, demands the Use of Topics; but they must be applied with great Caution; for 'tis sufficiently known, that a pretty large Stone, whilst lodged in the tubular Substance of the Kidneys, creates no Uneasiness; but creates an intolerable Pain, when it falls into the narrow and sensible Ureters. Hence we perceive, that Topics for this Purpose ought not to be applied to the Loins where the Kidneys are situated; but according to the Direction of the Ureters, that is from the Loins to the Groin. But even in this, a violent Error is generally committed, whilst, with the Ointments, most Persons mix hot forcing Substances, such as the Oil of Amber, the Spirit of Turpentine, and the Oil of Juniper; which Practice is productive of very bad Effects. Many, indeed, intend, by these hot Substances, to force the Passage of the Stone thro' the Ureters; but it is, by this means, rather fixed, and more violent Symptoms, such as a Suppression of Urine, Vomiting, and Convulsions, are excited: For that the Stone remains fixed in the Ureter, is not so much owing to the Bulk thereof, as to the painful Spasm of the Ureter; and, as by the Austerity of the Stone, the nervous Fibres are generally irritated, there happens an Influx of the Spirits, and Pain accompanied with Spasms and Constrictions; and the more intense the Pain is, the more narrow and contracted the Passages are. Now, if spirituous hot Substances are, in such a Case applied, we excite an Influx of the Blood and Spirits, fix the Stone more firmly in the Part, increase the Pain, and induce many terrible Symptoms. 'Tis not, indeed, to be denied, that where there is neither Pain nor Spasms, or where there is a certain Laxity, or Want of Tone, in the nervous and membranous Fibres of the Kidneys, such Things, externally applied, because they strengthen the Tone of the Parts, promote a Discharge of the Urine, but they are by no means to be used when there is any Pain or Spasm, in which case we are rather to use emollient paregoric and anodyne Oils, such as the Ointments of Poplar, Henbane, Poppy-seeds, and white Lilies, Badger's Fat, and Camphire, which gives them a penetrating Quality. With these the Region of the Ureters is to be frequently rubbed and anointed with a warm Hand; for these Substances, by checking the Imperus of the Spirits, and relaxing the constricted Fibres of the Ureters, occasion a far more easy and expeditious Passage for the Stone. For this Reason, sitting in a Bath is highly beneficial, and sometimes affords instantaneous Relief.

In excessive Discharges of the Menfes, and involuntary Effusions of Seed in Men, 'tis customary to apply to the lumbar Region, where the large Ramifications of Blood-vessels are situated, and freely exposed, such Medicines, as, in some measure, check the Imperus of the Blood to the genital Parts; for it is of great Importance, what Medicines are used on such an Occasion, and at what Time they are applied; for I knew a Woman, who, when after forty Years of Age, in an immoderate Flux of the Menfes, had a Plaister applied to her Loins, consisting of the Frog's-spawn Plaister, mixed with Sugar of Lead, and Oil of Henbane; but, from that time forth, her Menfes never returned to the great Detriment of Health. We are, also, carefully to abstain from all things actually cold, and much more from Narcotics; because

because all these, by checking the Blood, if it tends too much to these Parts, produce a palliative Cure; but bring on much worse Misfortunes, such as Inflammations of the Kidneys, convulsive Colics, and spasmodic Disorders of the Abdomen. Hence, 'tis the safest Method, especially in Evacuations of Blood, totally to abstain from these Topics, and rather carry on the Cure by internal Medicines.

We now come to consider some Disorders which proceed from a Relaxation, Resolution, or Want of Tone and Strength in the Ligaments; such as the Falling down of the Fundament in Infants, and of the Uterus in Women. Physicians and Surgeons, in consequence of the Relaxation, generally treat these Disorders with Astringents; and, for that Purpose, foment and cherish the Parts affected with astringent Decoctions. But as this Prolapsus, or Falling down, does not so much proceed from a Relaxation of the Uterus, or Intestinum Rectum, as from a Relaxation of their Ligaments, on account of the Congestion and Accumulation of the Juices there, so every one must perceive, that this Method is idle and ineffectual, because these external Astringents cannot penetrate to the Ligaments themselves. Hence, in a Falling down either of the Uterus itself, or of the Vagina, such Things, immediately applied to the Uterus, are of no Efficacy. But rather the inguinal Region is to be cherished with balsamic and penetrating Liniments and Plaisters, which, being not so much possessed of an earthy Stypticity, as of a spirituous corroborating Quality, restore Vigour, Motion, and Tone, to the moist and relaxed Parts. But 'tis here to be observed, that as in all other Cases, so, also, in these, Topics alone are not sufficient, but that internal Medicines are more universally necessary in all internal, and even external, Disorders of the Body. I do not, however, reject Fumigations, and Fomentations of Wine prepared with aromatic Herbs, such as are possessed of a volatile, oleous Salt, and a certain earthy Principle, by which these Parts may be immediately affected, since the Force of Fumigations penetrates intimately, as do, also, the Effluvia arising from Baths.

With respect to the blind Hæmorrhoids, it is sufficiently known, that great Uneasiness is produced by this Tumor of the hæmorrhoidal Veins arising from the too great Afflux and Stagnation of the Blood, or of a viscid Serum. For the Cure of this Disorder, Physicians and Surgeons have invented numberless Medicines, especially Topics; but how much they all fall short of their Intention, is too well known to the miserable Patients; for the Astringents recommended rather obstruct the Humours which produce the Tumor; on the contrary, emollient and anodyne Substances, relax the Parts, and invite a farther Afflux of the Humours; whilst acrid Medicines corrode the Parts, and generally dispose them to malignant Ulcers, and even Fistulas. The Skill, therefore, of the Physician consists in distinguishing the Use of these according to Circumstances, and knowing what he ought, and what he ought not to do; for, if the Pain is excessive, anodyne and emollient Substances are beneficial. Hence, Linseed-oil alone, applied in a sufficient Quantity, excellently mitigates the Pain. If the Tumor is troublesome by its Bulk, then not so much earthy Styptics, as Corroboratives, are to be used, such as Fomentations of Wine prepared with Mastich, Amber, Rose-flowers, Balaustines, Frankincense, and Yarrow. Nor are Fumigations, in such Cases, to be excluded, especially such as are prepared of Things impregnated with a volatile, oleous Salt, the Nature and Virtues of which are, to insinuate themselves deeply, to strengthen the Pores, and dissipate the excessive Humidity. Hence, also, the Sea-mice (a Sort of Shell-fish), whose peculiar Virtues are at present so much extolled, act in no other manner, than other Fumigations impregnated with a certain volatile, oleous Salt: From what has been said, I think 'tis sufficiently obvious, how preposterous a Practice it would be, when the Pain is greatest, to use astringent, cold, or acrid Substances; or if, when there is a violent Tumor without Pain, we should apply emollient, anodyne, and relaxing Substances.

Here occurs a Question to be discussed; which is, Whether, in excessive Effusions of Blood or Lymph from the Uterus, Injections may be properly used, especially since we find from Experience, that they are with great Advantage used in excessive Fluxes of the Semen? But as the Vulgar are of Opinion, that Fluxes ought only to be stopt by Astringents, so nothing is more dangerous, than to attempt the checking of excessive Discharges of this kind by external Injections possessed of an astringent Quality. I remember a Woman, who, when labouring under an excessive Discharge of the Menes, by an Injection of the Decoction of Yarrow impregnated with Alum, contracted an Ulcer, accompanied with a Consumption and hectic Fever, which prov'd mortal to her. We are, therefore, to deal very cautiously with Injections, since they do more Harm than Good.

We now come to consider the Disorders of the Joints: And certainly, if Topics are in any Cases abused, they are so in arthritic and gouty Pains; for, because the Disorder lies in the external Parts, many are of Opinion, that the Remedy is immediately to be applied to the Part affected, that they may the sooner reach the Cause of the Disease. But in this they are greatly mistaken; for Topics are not, in these Disorders, so requisite, but the Pain may be mitigated without them; for we learn from Experience, that

without any Topics, by internal Medicines alone, opposite to the morbid Cause, the Violence of these Pains may, in Process of Time, be not only mitigated, but, also, totally removed. But we are, above all things, to take care, that Repellents, especially in the Beginning of the Disorder, be not used; for these disturb the Motion of Nature, which is from the Centre to the Circumference, repel the peccant Matter inwards, and excite violent Symptoms. See *Drabizius de Scorbut. Tit. de Arthrit.* In the Beginning of a Gout, I know the Application of a Plaister, composed of the White of an Egg and Alum, in a plethoric Man, produce, in one Night's time, a lathargic Disorder, which destroy'd the Force of his Genius, and the Strength of his Memory, all his Life after. *Hagendorp, in Cent. 1. Hist. 28.* gives us a memorable Instance of a Merchant, who, labouring under a scorbutic Tumor, had an Epithem prepared of distilled Waters, Cerufs, and Camphire, applied to it, by which his Pain was alleviated, but he lost his Speech, and the Use of his Left Arm. With no better Success is the present Practice, of anointing the external Parts with camphorated Spirit of Wine. It is hardly possible to enumerate the Misfortunes which may be produced by this Remedy, used without any respect to the Patient, and his Circumstances. Thus, by the Application of it to gouty Feet, I have frequently observed Cardialgias, convulsive and epileptic Motions of the Limbs, Palsies, and other terrible Symptoms, excited. 'Tis, also, certain from Experience, that all Medicines are not beneficial to all Patients, since some Topics remove the Pain in some, and increase it in others, whilst others are relieved by spirituous Liniments, others by anodyne Plaisters, and others by Cataplasms prepared of Milk, and the Crums of Bread, whilst none of all these Remedies agree with others.

The Cause of these particular Effects is not sufficiently adverted to, and investigated, since 'tis sufficiently known to Surgeons, that all Patients cannot equally bear the same thing in external Wounds. But the Cause of this is not so much the peculiar Disposition of the peccant Humours, as the sensitive and tonic Constitution of the Fibres, Pores and Vessels of the Skin; for all the Parts, especially the Emunctories and Strainers, have their peculiar Strength, Tone, Tension, and Dilatation, which Species of Motion, so highly necessary to the Secretions and Excretions principally depend upon the Influx of the animal Spirits, and the Tension of the nervous Membranes. Of what Kind, therefore, this Influx of the animal Spirits, and Tension of the nervous Membranes, is in every Patient, in all Disorders, and their various Stages, ought to be diligently considered by Physicians, in the Application of their Topics; for every one sees, that when the Pores are constricted by Pain and Spasms, hot and spirituous Substances are by no means proper, but rather such Medicines as gently relax the constricted Parts. On the contrary, if there is too great a Relaxation after the Pain, which appears from the Tumor, and the Decrease of the Pain, all moist, unctuous, and anodyne Ointments are very injurious; in which Cases we are, therefore, rather to use spirituous nervous Liniments. And tho' Topics, sometimes, are beneficial in allaying Pain, and mitigating the Fever, yet they do not always produce the same happy Effects in the same Patients. In a Word, the stronger Nature is in expelling, and the greater the Strength of the Body, and of the internal Motion, are, the less Danger Topics, if decently applied, induce. But, if the Vigour of the Motions has ceased, if the Patient is old, or afflicted with a Cachexy, Topics are absolutely to be rejected; for the principal Intention of the Physician is not, by Topics, to hinder the Evaporation of the peccant Matter, but to promote it; and, since great Judgment is necessary to this, it is safest to abstain from all Topics, to commit the whole Cure to internal Medicines, and keep the Parts affected in a gentle Heat.

I have, also, observed, that the Generation of Tophi, which principally happen in a fixed Gout, is, for the most part, owing to an incautious Application of Topics, especially those of the stupefying and refrigerating Kind. Thus *Wedelius, in his Tract. de Medicament. Facultat.* informs us, "that many arthritic Patients have suffered much, have had their Wandering converted into fixed Gouts, and many Tophi formed, by using unctuous and pinguious Plaisters." Hence *Galen, in Method. Medend. Lib. 4. Cap. 3.* tells us, that in the Gout, Tophi are produced by a thick and glutinous Humour, which is not gradually digested, but suddenly dried by violent Remedies. And *Fernelius, in Consil. 12.* observes, that Gout Pains are produced by the same means. But I am of Opinion, that all Topics are not to be discarded in internal Pains of the Joints; for when the Pain is inveterate, and accompanied with a certain Torpor, and Insensibility, which frequently happens in Old-age, then after checking the internal Ebullition of the Blood, we are, by nervous and balsamic Liniments, to corroborate the Nerves, and invite the Influx of the nervous Fluid into the weakened Parts.

We must not forget the common Practice of applying live Earthworms to the Parts affected in a wandering scorbutic Gout. Great Encomiums are bestowed on this Remedy, by practical Physicians, especially by *Wierus*. And 'tis certain, that on account of the volatile, absterfing, and nitro-sulphureous Salt these Animals contain, they are of an excellent discutient and sedative Virtue, which manifests itself not only internally, but, also, externally.

ternally in various Kinds of Pains, and even in the Lues Venerea itself. Yet great Caution is requisite in the Application of these Animals; for though, in the most cruel Pain, when the Fluids are in Motion, the Strength entire, and the Patient young, these actually cold Substances produce happy Effects, yet they produce quite contrary Effects in a fixed inveterate Gout.

We shall subjoin something more, with respect to an Erysipelas; for the Cure of which, most Surgeons and Physicians have immediate recourse to Topics, tho' the Errors arising from that Practice have been often exposed. But I would have it observ'd as a general Maxim, that an Erysipelas, arising from an external, ought to be distinguished from that arising from an internal Cause. In the former, produced by Contusions, and other Wounds, Topics are not generally prejudicial; but when the Disorder proceeds from an Orgasm of the Humours, and a febrile Impetus, an heterogeneous Matter, generally of an acrid and corrosive Nature, is protruded to the Surface of the Body; in which Case we must be very cautious; since the Matter is easily repelled, and since by those Topics, which, in other Cases, prove beneficial, we may do an irreparable Injury to the Patient, by repelling to the internal Parts the peccant Matter, which then acquires the Nature of a Poison; see *Frid. Hoffman. Dissert. de Conversione Morbi Benigni in Malignum*. Nothing is more common, than by Astringents, such as the White of an Egg, mixed with Alum, to render a slight Erysipelas fixed and profound, and to excite malignant Ulcers; Instances of which daily occur in Practice. Hence those Physicians act prudently, who treat all the Species of Erysipelas with Internals, applying only, externally, Bags full of paregoric Herbs, which, by their mild Influence, keep the Pores open, relax such as are constricted, and cherish the Parts.

We must, also, observe, that Surgeons commit a terrible Error in applying hot Cataplasms, prepared of Bean-meal, Liquorice-root, emollient and discutient Herbs, and proper Waters: For since by the Heat the Moisture is dried up, and the Matter is more firmly impacted in the Skin, and its Pores, so that it can hardly be remov'd by a Knife, the Business of Transpiration is greatly injur'd; and the Erysipelas, which by proper Measures might have been discuss'd, is converted into an Abscess or an Ulcer: We are, therefore, to endeavour, to preserve a free Respiration in the Parts affected; which can neither be obtained under a cold State of the Air, an intense Heat, or a great Load of Clothes, but under a moderate Heat, which excellently encourages Perspiration.

In like manner Topics ought to be cautiously applied to Buboës, because by Repellents they are render'd malignant. Much less are we to apply Topics of an astringent and refrigerating Kind to malignant and critical Buboës, because such a Practice is highly dangerous. Critical Buboës, when the Humours are convey'd to the Glands, are known by the Patient's retaining his Strength, by their happening on the critical Days, and by the previous Signs of Concoction in the Urine. At this Time all Repellents are highly prejudicial; for, as *Hippocrates* justly observes, in a perfect Crisis, no Change of the Patient's State is to be attempted, but the whole Business is to be left to Nature. Sometimes a Bubo arises from a Redundance of Blood, in which Case, according to *Avicenna*, *Oribasius*, and others, we are by no means to use Repellents. But when a Bubo tends to Suppuration, nothing is more beneficial than the Application of the Diachylon plaster with the Gums, mixed with Opopanax.

'Tis justly to be doubted, whether Topics are proper in the Small Pox; only we may affirm in general, that, as this Disorder is a critical Evacuation, great Caution is requisite. However, if before the Eruption the Patient is afflicted with a Delirium, we may with Advantage apply to the Forehead Spirit of Roses mix'd with Camphire. But, during the Eruption and the Suppuration, I am of Opinion, that we ought to abstain from all Liniments. In the Decline, and at the Time of the Exiccation of the Disease, when the Force of the Disorder is subdued, I can not disapprove of Oil of sweet Almonds, mix'd with Camphire and Sperma Ceti, in order to prevent the Defecation of the Skin, and correct the Acrimony, which generally lies pretty deep. See *Frid. Hoffman. Dissert. de Variolis epidemice grassantibus*. For this Reason we are cautiously to proceed with Topics of this Kind, such as Spirit of Wine impregnated with Myrrh, and Sugar of Lead mixed with Rose-water.

The Itch, which is a pustulous Exulceration of the Skin, more or less moist, is generally thought incurable without the Use of Topics. Hence, neglecting all internal Remedies, they forthwith have recourse to various sulphureous and mercurial Liniments, which they apply either to the whole Surface of the Body, or only to the Joints, tho' frequently with a very considerable Danger both to Life and Health; for it is never safe by Topics to cure external Disorders, proceeding from an internal Cause; but as Nature expels the heterogeneous and morbid Matter, the Physician ought to do the same, and never counteract the Intentions of Nature, which is generally done by Repellents, externally applied. Hence I am of Opinion, that the Cure of these cutaneous Disorders, ought not only to be begun, but, also, finish'd by such internal Medicines, as correct and dispose the peccant

Matter to Excretion, and at the same time eliminate it. To this Class of Medicines belong not only Diaphoretics, emollient and laxative Infusions, but, also, if the Itch is inveterate and malignant, Preparations of Mercury and Antimony. Then, for the better Consolidation of the Skin, and the Restoration of its Beauty, we may use Baths, drying, sulphureous, and saturnine Ointments. But we are always to abstain from external mercurial Liniments, which can never be us'd without Danger, as is obvious from numberless practical Observations.

As for mercurial Liniments and Fumigations us'd to excite a Salivation in the Lues Venerea, it is sufficiently known, what violent Symptoms are brought on by this means, and how precarious this Method of curing so obstinate a Disorder is. I am certain from Experience, that the Lues Venerea may be happily remov'd by proper Preparations of Mercury and Antimony, and Decoctions of the Woods exhibited internally in a due manner, without any external mercurial Applications, and often without exciting a Salivation, or any Train of uneasy Symptoms.

With respect to Topics applied to paralytic Parts; tho' these excellently assist the Operation of internal Remedies; yet they ought to be properly chosen, and cautiously applied. Those are, in my Opinion, greatly mistaken, who think that only Fats, Lards, and unctuous Liniments, ought to be applied either immediately to the Parts affected, or to the Spine of the Back; for these Substances obstruct the Pores, and still more relax the Fibres, whose Tone is already destroy'd; by which means they dispose the Parts to a Tumor. On the contrary, spirituous, hot and ethereal Oils alone, do not produce the desired Effect, since most of them, in consequence of the Subtility of their Parts, fly off in the Air, and leave the nervous and muscular Fibres too rigid. This Intention is better answer'd by Ointments prepar'd of the Fats of Animals, and the distilled Oils, such as those of Rice, Marjoram, Lavender, Juniper, Cloves, and Rosemary; for the Tone of the nervous Parts ought to be render'd natural, so that there be neither too great a Relaxation nor Constriction, too great an Humidity or Dryness. Besides, 'tis to be observ'd, that in a Palsy arising from a Disorder of the Spinal Marrow, and Origin of the Nerves, these Medicines are not to be applied to the Parts destitute of Sensation and Motion; but to the Source of the Disorder, which is lodg'd in the Spinal Marrow. But 'tis quite otherwise in that Species of Palsy, in which the Motion, but not the Sensation of the Part is destroy'd, which happens frequently to Metall-diggers; in which case 'tis of no use to anoint the Spinal Marrow, but the Part affected is to be frequently fomented and cherish'd with the above-mention'd Medicines.

With respect to oedematous Tumors, which frequently seize the Feet; great Caution is, also, in this Case, requisite, as to the Application of Topics, since they who treat them with Baths, commit a terrible Error. Thus I have seen cachectic Persons, by immersing their Feet in warm Water, contract, in one Nights time, a considerable Tumor of them, which could not afterwards be easily remov'd. The Reason of this is obvious; for these Baths by their Moisture, which by means of the Heat insinuates itself into the Pores, renders the weaken'd Fibres still more lax, so that the Humours flow down, and are not quickly again receiv'd into the Veins, and lymphatic Vessels. The same Effects are, also, produc'd by those who attempt to dissipate such Tumors by Ointments and Plaisters, for a Reason easily deduc'd from what has been said. Some have a Custom of tying discutient Herbs about the Feet, such as the greater Celandine, Fumitory, Wormwood, and Rue; but if these are moist and cold; they often increase the Tumor, instead of removing it. 'Tis, therefore, better to abstain from all these, and apply proper Bandage to the Feet, especially towards the Evening, when such Tumors are always observ'd to increase, that by this means the Fibres may be corroborated and strengthen'd. Fomentations of strong Vinegar, mixed with Essence of Amber, and pour'd upon ignited Bricks, have often been found productive of happy Effects.

'Tis customary, in various Disorders, to apply Epithems and Plaisters to the Pulse in the Wrists. This Practice, tho' not to be discourag'd in itself, is nevertheless often abus'd, especially by Nurses, and the common People, who, whether a Disorder is of the cold or hot Kind, commonly have recourse to the celebrated Aqua Carbunculi, which they think of so incredible Efficacy to restore Strength. But every one must perceive, that this is by no means proper in a burning or acute Fever, or in the Heat of an intermittent Fever; in which Cases rather penetrating Acids, such as Citron-juice, and Vinegar of Roses, are proper. Epithems and Plaisters are, also, applied to the Wrist, in order to remove the febrile Paroxysms in Intermittents; for which Purpose, they mix Alum, Vinegar, Rue, the greater Houfleck and Spiders Webs. They, also, make a Plaister of Turpentine, Alum, and Powder of Spiders, which are often of great Service in mitigating the Paroxysms, and even in totally removing them, if the greater Part of the febrile Matter is evacuated.

The Manner in which such Medicines operate, is somewhat difficult to be conceiv'd; and such an Experiment, in my Opinion, illustrates the Generation of Fevers of this Kind; for the Heart

and Arteries, which have their proper Nerves, and systaltic and diastaltic Motions, are the Instruments, by which the intense Motion of the Fluids is perform'd. Hence such things as in some measure check and hinder the excessive Motion of the Spirits to these Parts, when immediately apply'd to the Arteries, must necessarily for some time stop the febrile and intensely hot Motion of the Blood. *Frederic Hoffman.*

TOPINARIA. A Species of Tumor in the Skin of the Head. The same as **TALPA**.

TORCULAR HEROPHILI, in Anatomy, is the Place where the Sinuses of the *Dura Mater* meet.

TORCULAR, in Surgery, is the *Tournequet*.

The *Tournequet* is a sort of Bandage, which is very necessary in suppressing copious Hæmorrhages, particularly after the Amputation of the larger Limbs; and consists of several Parts; 1. A plain Roller, an Inch in Breadth, and a *Paris Ell* in Length; 2. A small cylindrical Piece of Wood; 3. A rolled Bandage, about the Thickness of two Fingers, and four in Length; 4. Long Compresses about the Breadth of four Fingers, for encompassing the Leg or Arm, to which the Roller is to be applied; lastly, 5. A square Piece of thick Paper, or stiff Leather, about the Breadth of four Fingers.

Let us next consider the Method of applying the *Tournequet*. The rolled Bandage must be applied to the Trunk of the wounded Artery lengthwise; and the Compresses must be placed in a contrary Direction, surrounding the Arm or Leg like a Ring; then the Roller must be twice brought round them, and tied, but so loosely, that the Hand may easily pass between it and the wounded Limb. The Piece of Leather, or thick Paper must next be introduced with the greatest Caution, under the Roller, on the external Side of the wounded Leg or Arm; then the small cylindrical Piece of Wood must be introduced above the Piece of Leather or Paper, and the Roller twisted about by it, till it be made sufficiently tight to stop the Bleeding. Then the Stick must be fixed, lest it should untwist itself; the Wound must be treated in a proper manner, and the Profusion of Blood suppressed by Astringents, by a Ligature, or the actual Cautery, or by any other Instruments designed for that Purpose in Amputations. This Intention being answered, the *Tournequet* may be relaxed or removed, as soon as it can be done with Safety and Convenience. When the *Tournequet* is applied to the Arm, the rolled Bandage should be placed near the Arm-pit, in the internal Part of the Humerus, as the Situation of the Artery requires that Position; and the Stick, with which the whole is to be tightened, is to be introduced on the external Part. See *Tab. XXIV. Fig. I. Let. K.* When the Hæmorrhage is to be stopped in the Leg, the *Tournequet* should be applied to the upper Part of the Thigh, or a little above the Ham, according to the Circumstances of the Case. See *Let. L, M. N.* But in order to give a distinct Idea of this *Tournequet*, it is represented separately in *Tab. XXIV. Fig. 2.*

In the room of this Instrument, *Petit's Tournequet* has been substituted, who invented and describ'd it in 1718, which has been preferred, because it could be applied without the Help of an Assistant, which the other required to preserve its Situation. It might, also, be retained upon the Limb, as long as might be thought necessary, without obstructing the Circulation of the Blood in the Part affected; whilst the other entirely stopped the Circulation, and must therefore be quickly removed. But its Description is so short and imperfect, especially as the Parts of the Instrument are not described separately, that in many Places I could not understand it. *Garengeot* has given us another Representation of it; but he, also, is obscure.

I have, therefore, endeavoured to correct it, as is shewn in *Tab. XXVI. Fig. 6.* AA represent the upper Part; BB the lower; C the Screw, all in their proper Size, and made of strong Wood. In the Extremity DD are fastened two smaller Iron Screws, to which a strong Silk Roller or Bandage is to be fixed, being of the same Breadth with the Instrument, and about twenty Inches in Length, that it may encompass the larger Limbs, the other End being to be fastened to the Hooks at EE. The Extremities FFFF must be a little hollowed, that the Roller may lie firm without Danger of being moved, or falling off. G represents an Iron Plate, which is there placed to strengthen the Wood. The Wound, therefore, being properly dressed, the lower Part of the *Tournequet* BB, being guarded with a thick Bolster, must be applied to the Side opposite to the Wound, and the Roller drawn tightly round the Limb, and fastened to the Hooks at E. Then by turning the Screw C, it may be stretched sufficiently to stop the Hæmorrhage, and kept in this Situation as long as may be thought necessary.

Garengeot has described and delineated another *Tournequet* of this Kind, invented by *Morand*; which in many Particulars agrees with that of *Petit*, but principally differing in this Circumstance, that, instead of a simple Screw, *Morand* furnished his with a compound Screw made of Iron, for quicker Actions, one Turn of which would tighten the Roller more, and consequently sooner compress the Wound or Artery, than two or more Turns of the Screw used by *Petit*. However, *Garengeot* makes some Objections to this Instrument, and prefers that of *Petit*.

I once saw a *Tournequet*, made of Iron, and very heavy, which in many respects agreed with that of *Morand*, though in some Particulars it differed, by I know not whose Contrivance, which is delineated in *Tab. XXVI. Fig. 7.* AA, is the lower Plate with many Perforations towards the Edges, by which means a Cushion or Bolster may be sewed to it. B is the Barrel for receiving the Screw; CC is the superior Plate; D is another Barrel on the superior Plate for receiving the Screw. EE represent the Extremities of the superior Plate, one furnished with Hooks, the other with Hooks, and a kind of Arch, for fixing the Roller, for compressing the Limb, as is done in the *Tournequets* represented in *Fig. 2.* and in *Tab. XXVII. Fig. 1.* 'Tis a kind of Ring surrounding the Barrel in the superior Plate; G is a square or cubical Body, made like a female Screw, for the Reception of the small Screw H; and thus is the larger Screw I, K, kept firm in the Box D, which would otherwise easily fall down, and remit. L is an Iron Cylinder, which is firmly fixed in the lower Plate, but is loose in the other, that the upper Plate may be allowed to slide freely up and down, as Occasion may require; it, also, serves to retain the Plates in the same Situation with respect to one another.

With Design to improve this Instrument, I ordered one to be made of Brads, like that represented in *Tab. XXVII. Fig. 1.* where the superior Plate is much shorter than the inferior, which, being fixed to one Extremity of the upper Plate, is brought round the Limb, and fastened to Hooks in the other. The Belt must, also, be passed through Openings, made at each Extremity of the lower Plate for that Purpose. By this Contrivance the Instrument is kept even, and does not change its Position on the Motion of the Screw. The Reader may choose which of these Instruments he pleases: All of them will answer the Intention, for which they were designed; only some do it sooner than others.

It may be proper to observe here, that astringent Medicines; exhibited internally, have little or no Effect in stopping Hæmorrhages proceeding from Wounds of the larger Arteries; and they not only create Obstructions in the lacteal Vessels of the Intestines, Glands of the Mesentery, and other Parts, but, also, excite Pains, Inflammations, Fevers, and the like dangerous Disorders; and therefore we should abstain from them, rather than use them. *Heist. Chirurg.*

TORDILIUM.

The Characters are;

The Root is annular and fibrous; the Petals are unequal; Heart-shaped, and deeply bifid. The Seed is orbiculated, flat, with a raised Margin, which is for the most part denticulated, and deposits its Husk.

Boerhaave mentions seven Sorts of *Tordylium*; which are,

1. *Tordylium*; maximum. *T. 320. Caulis, maxima, Sphenodylii aculeato femine. C. B. P. 152. An & Sefeli, majus. C. B. P. 161?*

2. *Tordylium*; minus; limbo granulato; Syriacum. *M. U. 37. 40. Gingidium, foliis Pastinaca latifolia. C. B. P. 151. Caulis, Syriaca, cum maximo femine. J. B. 3. 2. 86.*

3. *Tordylium*; Narbonense; minus. *Tourn. Inst. 320. Boerb. Ind. a. 68. Raii Synop. 266. Sefeli, Creticum. Offic. Ger. 894. Sefeli Creticum minus. C. B. P. 161. Ger. Emac. 1050. Tordylium five Sefeli Creticum minus. Park. Theat. 906. Raii Hist. 1. 412. Caulis minor pulchro femine five Bellonii. J. B. 3. 84.*

HARTWORT OF CANDY.

It is cultivated in the Gardens of Botanists; and the Seed, tho' but seldom, is used.

The Seed of this Plant is Nephritic, Uterine, and Pulmonic: Its principal Uses are in the Strangury, and Stoppage of Urine. It removes Pain, provokes the Menfes, and promotes Expectoration in Catarrhs. *Schroder.* In the Catalogue of Simples in the *London Dispensatory* this Plant is, I know not how, confounded with the *Sefeli Massiliense*.

4. *Tordylium*; Apulum; minimum. *Col. 1. 124. M. H. 3. 316. Sefeli, Creticum, minimum. C. B. P. 161.*

5. *Tordylium*; album; facie Tordylii luteo, Columnæ. *H. C.*

6. *Tordylium*; folio longo, angusto; flore albo, magno, semine elegantissimè & profundissimè crenato, albo.

7. *Tordylium*; Orientale; Secacul Arabum dictum Rauwolfio. *Boerb. Ind. a. 68. Secacul. Offic. Sifarum Syriacum. C. B. P. 155. Raii Hist. 1. 443. Sifarum alterum Syriacum. Park. Theat. 945. Pastinaca Syriaca & Secacul Arabum quibusdam. J. B. 3. 66. Pastinaca Syriaca Rauwolfii, Secacul Arabum & Maurorum quorundam. Chab. 390. Apium Syriacum radice amplè eduli. Hist. Oxon. 3. 292. SYRIAN SKIRRET.*

It has a tender, smooth Root, hoary on the Outside, and white within, brittle, of the Thickness, but double the Length, of a Finger, and distinguish'd with Nodes or Tubercles, like Warts; it has a pleasant Taste, like a Carrot. From this Root arise a Multitude of Leaves very much cut and jagged, like those of the Carrot. The Stalks at the Joints are cover'd with the same sort of Leaves, and have their Tops adorn'd with an Umbella of Flowers, like those of the Carrot, but of a pale-yellow Colour. It grows spontaneously about *Grand Cairo* in *Egypt*, and *Aleppo* in *Syria*. *Raii Hist. Plant.*

The Root, in medicinal Uses, agrees with that of the common *Sifer*, or *Skirret*. *Dale*.

TORI. The Knots in the Stalks of Plants.

TORMENTILLA. Tormentil. A Name for the *Quinquefolium minus*; *repens*; *luteum*; *flore tetrapetalo*.

TORMENTUM. Pain in general; the Colic; or Iliac Passion, in which last Sense it us'd by *Calius Aurelianus*.

TORMINA. Gripes. See *COLICA*.

TORNA SOLIS. Tornesol. See *HELIOTROPIMUM*.

TORNATA URINA. Urine which is thick, muddy, and not transparent. *Johannes Anglicus*.

TORNESOL. See *HELIOTROPIMUM*.

TORNEUMATA, *τορνευματα*. Shavings, or Rasplings. *Dioscorides*, L. I. C. 108.

TORPEDO. Offic. Aldrov. de Pisc. 415. Rondel. de Pisc. 1. 358. Jonf. de Pisc. 18. Charlt. Pisc. 9. Salv. de Aquat. 142. Bellon. de Aquat. 89. Gesn. de Aquat. 988. Raii Ichth. 81. Ejsld. Synop. Pisc. 28. **THE CRAMP FISH.**

It is taken in the *Mediterranean Sea*.

It mitigates the Violence of the Pain in an inveterate Headach, being apply'd to the Part; and, also, prevents and restrains the Prolapse or Falling-down of the Anus, being in like manner apply'd. *Dioscorides*.

TORPOR. A Numbness, or deficient Sensation.

Of Prædiction from a *Torpor* and *Paralegia*.

By a *Torpor*, we mean a Disorder of the animal Faculty, attended with a Difficulty of Sense and Motion, and sometimes a kind of dull Sense and Motion of some Part.

The Cause of this last, as we are taught by *Galen*, de *Caus. Symp. Lib. 1. Cap. 5.* is an Obstruction, Incrassation, or Hebetude of the Nerves, by which means the Spirits are clog'd and hinder'd in their Motion; for the Nerves are render'd dull by cold and gross Humours, in the same manner, as the Air is darken'd and obscur'd by Dirt, Water and Clouds: Or else the Disorder is occasion'd by some cold Quality, either internal or external. The Causes of this kind of *Torpor* maybe, also, a Fever Phlegmon, Scirrhus, and a Luxation of the Vertebra inwards, by which the Nerves, being under a compression, are obstructed, and the Passages straiten'd.

The Causes of a *Torpor*, in our first Sense of the Word, or, as it is defin'd, an Affection of the Animal Faculty, with a Difficulty of Sense and Motion, is a Refrigeration of the Brain, either positive, as they call it, or from an Exinction of the natural Heat.

Having thus assigned the Cause of a *Torpor*, we are next to consider what it portends in Diseases; for in healthy Persons it threatens an Apoplexy, according to *Coac.* 476. "Unusual *Torpor*s and *Stupor*s, it is there said, are Forerunners of an Apoplexy." And, a little after T. 478. we read, that "Refrigerations and *Torpor*s under apoplectic Disorders are of bad Signification."

In continual Fevers, then, a perpetual *Torpor* is bad, especially of the first Sort, or that of the Mind, which they call a *Stupor*: Such *Torpor*s in acute Fevers are quite pernicious, as proceeding either from a Refrigeration of the Brain, or an Exinction of the natural Heat, both which are destructive. The Author of the *Coac.* T. 14. pronounces *Torpor*s proceeding from Rigors malignant, where he says *τα πολλά νωθρότητα πύρεα κακώδεια*, "many torporific Rigors are malignant." And, *ibid.* 91. he pronounces a *Torpor* of the Mind, or *Stupor*, in a Phrensy, destructive; and justly, because it is occasion'd either by a Refrigeration of the Brain, which is a very pernicious Symptom in a Phrensy, or an Exinction of the natural Heat. *Ibid.* T. 208. 334. he condemns a *Torpor*, and Deafness, succeeded by a small Distillation of Blood from the Nose: And we may affirm the same to be not only somewhat difficult and troublesome, as he pronounces it, but to be absolutely destructive.

Nor is this *Torpor* of the Mind less pernicious in an internal Phlegmon, as being occasion'd by a flammeous Heat, the natural Heat being dissipated. Of this kind of *Torpor*, perhaps, we read, *Coac.* 315. where it is said, that "a Pain seized in the Breast with a *Torpor* is bad in a Fever." For it is a bad Sign to see the Patient labouring under a *Torpor* from an internal Inflammation, which admits neither of Resolution, Suppuration, nor Expectoration. With relation to this Case, perhaps we find it written, *Coac.* 374. that, "under a Quinsy, a Pain of the Hypochondrium not critical, attended with an Impotence" and *Torpor*, proves mortal in an occult manner, while the "Patients seem to lie very quiet and compos'd." A *Stupor*, therefore, or a *Torpor* of the Mind, in acute Diseases, is always fatal.

A *Torpor* in the other Sense, affecting some Part of the Body, and inducing a Dulness or Diminution of Sense and Motion, is never good, unless it happens critically, and when the Disease is concocted. For it is not impossible for the Humors to be critically translated from the Veins upon the Nerves, and by that means to induce a *Torpor* upon the Parts which are supply'd by those Nerves, in the same manner as a critical Tremor [see that Word] is sometimes occasion'd. But such an Event

rarely happens, and may easily be distinguish'd by other critical Signs.

The same Judgment is to be form'd of a Palsy, Paraplexia, or partial Apoplexy, which are sometimes of Service in Diseases, the Humour being propelled from the Veins, either to the Spinal Marrow, or to the Nerves of some particular Parts, by which a Palsy is occasion'd. But when these Distempers proceed from a Disorder of the Brain in acute Diseases, they are absolutely pernicious; and, therefore, in recent Wounds, where some Parts suffer a Resolution, they indicate the near Approach of Death.

It is not so dangerous, after an Apoplexy, for some Parts to be deprived of Motion, which kind of Disorder is by *Hippocrates* usually called by the proper Name of *παρὰ πλῆξιν*, *Paraplexia*, or *Paraplegia*. It sometimes happens, that the Matter, which is the Cause of the *Paraplexia*, in its imperious Course from one Part to another, induces a paraplectic Resolution of those Parts, which is succeeded by Convulsions. These Mutations are mention'd by the Author of the *Prorrhetices*, T. 118. "Morbific Matter, he says, communicated by Redundance to the Neck and Head, and causing a Resolution in these Parts after a paraplectic Manner, threaten Convulsions, and a Delirium: It deserves Inquiry, whether such Disorders are remov'd by Convulsions. The Patient in such Disorders is long and variously affected:" Such Mutations, then, are occasion'd by the various Motions of the Humours, and are agreeable to the Observations of *Galen*, who, in his Comment on the Place, says, that "he once knew a Person affected after this manner, and observ'd him labouring under Mutations of various Symptoms succeeding one another. After those preceding Pains of the Loins, Neck, and Head, the Patient had one of his Hands depriv'd almost of Sense and Motion in every Part, after a paraplectic manner, as is here said, tho' it was not a perfect *Paraplegia*. But a Convulsion, which soon succeeded, render'd the Part more sensible, and more capable of Motion; but when the Convulsion ceased, the Part grew worse again by Degrees. Afterwards the Patient was again seized with Pains of the Loins, Neck and Head, and had a sudden and universal Increase of the Palsy in his Hand, after which it was again considerably convuls'd." All this may be very true, and yet nothing of Certainty concluded or learnt from it; for neither does a supervening Convulsion remove a Palsy, nor is the reverse true; for in whatever manner the Patient becomes paraplectic, in acute Fevers, it is always bad.

But what is most of all to be dreaded, both by sound and sick Persons from paraplectic Affections is an Apoplexy. And this we find confirm'd by *Hippocrates*, 6 *Aph.* 51. "Whoever," he says, in a State of Health are taken with a sudden Pain of the Head, and immediately become speechless, and snore, die in seven Days, unless a Fever seizes them. *Prosper Alpinus de Prasag. Vit. & Mort.*

TORQUILLA. The Wry-neck; a sort of Bird.

TORQUIS. A Necklace or Collar. *Galen*, de *simpl. Medicament. Facult.* L. 9. informs us, that he had experienc'd the Virtues of a Necklace made of the Jasper-stone, in such a manner, that the Stones reach'd to the Region of the Mouth of the Stomach, in Disorders of that Part. The Whimsical among the Moderns have, also, ascrib'd great Virtues to Necklaces made of various Materials, in a great many Diseases.

TORREFACTIO. The Roasting, or Toasting of Medicines. In Metallurgy it is the Roasting of Ores, in order to destroy their volatile Sulphur, for the more easy Extraction of the Metals.

TORSIONES. Gripes.

TORTA. A Pasty; or Tart.

TORTIO. A Strain of the Joints.

TORTJALIS FACIES. A cadaverous Countenance, or Hippocratic Face. *Calius Aurelianus* gives this sort of Countenance the Epithet *Mortuosa*.

TORTURA. A Spasm, particularly of the Face and Mouth. *Castellus* from *Valesius de Taranta*.

TORUSCULA. A Drop. *Rulandus*.

TORYBETHRUM or **THORYBETHRON.** A Name in *Oribasius*, *Collect. Medicinal.* L. 11. for the *Leontopetalon*.

TORYNE, *τορύνη*. A kind of Ladle, or Spatula, with which any thing, during Coction, is stir'd in a Pot.

TORYNETOS, *τορυνητος*, from the preceding Word. A kind of Panada made by boiling Bread, and agitating it, during the Coction, with a Spatula, Spoon, or some such Instrument. *Calius Aurelianus*, *Chron.* L. 1. C. 1. calls it, in his barbarous manner, *ex Panis Pulvicula confecta*.

TOSTIO. The same as **TORREFACTIO**.

TOTA BONA. See *Bonus Henricus*.

TOTANUS. The Name of a black and white aquatic Fowl, mention'd by *Jonston*, whose Fat is said to be anodyne and resolvent.

TOTOCIFERA ARBOR *Orellanensium*, *indigenis Ademanie Totocke*. De *Laet*.

This is a very tall and ramous Tree, with great Leaves shaped almost like Elm-leaves. It bears no Flower, but a kind of Buds, of the same Colour with the Leaves, that is, of a dark Green,

Green, which increases in Bigness by degrees, and protrudes at last a large Fruit, sometimes as big as a Man's Head, almost round, but somewhat compressed on the fore Part, of a ligneous, hard and very thick Cortex, striated and tuberosous on the Outside, and of a dark-brown and almost black Colour. It is divided by certain Spaces into six Regions, as we call them, in each of which are contained eight, ten, and sometimes twelve Nuts closely joined together, and each of them cover'd with a ligneous, hard, and pretty thick Cortex of various Forms, but generally triangular, convex on one Part, with three Suckers, as it were, and very rough and wrinkled, yet not so much as the whole Cortex, three Inches long, and an Inch and half broad, and of a russet, and sometimes of a brown, or Ash-colour. The Inside is wholly taken up with an oblong Kernel, like an Almond, cover'd with a red Skin, and consisting of a very white and solid Flesh, which is, also, somewhat oileous: but in Taste it is more like a Filbert than an Almond; it may very well, however, supply the Place of Almonds, even in Confections, as *Europeans* have observ'd. The Natives ascribe to them a Faculty of provoking Lust.

The Trees which bear this Fruit are so high, and the Fruit itself so hard and ponderous, that the Natives of the Country dare not enter the Woods when the Fruit is ripe, without having their Heads defended by some strong Buckler, or some other Covert, from the falling of the Fruit, which would break their Heads as effectually as a Stone. *Raii Hist. Plant.*

TOXICODENDRON, from *τοξικόν*, (*Toxicon*) Poison, and *δένδρον*, (*Dendron*) a Tree. The Poison-tree.

The Characters are;

The Leaves grow by Threes, as in the Trefoils. The Calyx is very small, dentated, quinquefid, and monophyllous; the Flower rosaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes a roundish, dry, striated Fruit, pregnant with a compressed, or flattish Seed.

Boerhaave mentions two Sorts of *Toxicodendron*; which are,

1. *Toxicodendron*; triphyllum; glabrum. *T. 611. Edera, trifolia, Canadensis.* Corn. 96. *Vitis, sylvestris, trifolia.* Park. Theat. 1556. *Apocynum, trifolium, Indicum, vulgò Epimedium.* Stap. in Theoph. 364.

2. *Toxicodendron*; triphyllum; folio sinuato, pubescente. *T. 611. Hedera trifolia Canadensis affinis Planta, peregrina, Arbor venenata quorundam.* H. R. Par. 84. *Arbor, trifolia, venenata, Virginiana, folio hirsuto.* *Raii Hist. 1799. Boerb. Ind. alt. Plant.*

This Species differs from the *Vitis Virginiana* by its hairy Leaves, and their red Pedicles, Ribs, and Fibres. *Raii Hist. Plant.*

To these two Species *Miller*, in his *Gardeners Dictionary*, adds,

3. *Toxicodendron*; Carolinianum, Foliis pinnatis, Floribus minimis herbaceis. Carolina Poison-ash, *vulgò.*

This Plant is poisonous to such a Degree, that it is said to kill all kinds of Animals; whence no Insect will feed on it, nor is ever found in it. *Hist. Plant. adscript. Boerb.*

The Wood of these Trees, when burnt, emits a noxious Fume, which will suffocate Animals, when shut up in a Room where it is burnt. An Instance of this is mention'd in the *Philosophical Transactions* by Dr. *William Sherard*, which was communicated to him in a Letter from *New England* by Mr. *Moore*, in which he mentions some People, who had cut some of this Wood for Fuel, which they were burning; and in a short time they lost the Use of their Limbs, and became stupid, so that if a Neighbour had not accidentally open'd the Door, and saw them in that Condition, it is believed they would have perished. *Miller's Dictionary.*

TOXICON, *τοξικόν*, from *τόξον*. An Arrow, or Bow. That particular Species of Poison, with which the Antients us'd to infect their Arrows and Darts. But it is us'd to express any sort of Poison. *Toxicon* is, also, a Species of *Ladanium*, which is found in *Syria* and *Africa*.

TRACHEA ARTERIA. The ASPERA ARTERIA. See PULMONES.

TRACHELAGRA. The Gout in the Neck.

TRACHELIUM. A Species of *CAMPANULA*; which see.

TRACHELO-MASTOIDÆUS. The Name of a Muscle, thus describ'd by *Douglas*.

It arises from the transverse Process of the first and second Vertebrae of the Back and from the three or four lowermost of the Neck, by so many thin Tendons, which, uniting, form a pretty thick fleshy Belly, that runs up under the *Splenius*, and is inserted into the middle of the Backside of the *Processus Mastoideus* by a thin Tendon.

Its Use is to assist the *Complexus*.

N. B. This Muscle often receives a roundish fleshy Slip from the *Longissimus Dorsi*.

TRACHELOS, *τραχηλος*. The Neck.

TRACHEOTOMIA. Bronchotomy. See *ANGINA*.

TRACHOMA, *τράχυμα*, from *τράχος*, rough. An Asperity, or Roughness of the Eye-lids, particularly the internal Parts.

The Eye-lids are subject to Scabs, which differ in proportion to the Largeness of the pruriginous Ulcers, that are formed about their Edges; and to the Malignity of the Humour, which produces them.

This Disease is known by the following Signs: A Weight and Heaviness in the Eye; Swelling in the Eye-lids, with Pain and Itching; Heat and Redness at the Corners, and in the *Conjunctiva*. A viscid Humour, mixed with pungent Tears, flows from the Ulcers; and, in proportion to its Viscosity, it glews the Eye-lids together in the Night-time. This Disease sometimes affects the Whole, and sometimes a Part, of the Eye-lid; and if it continues long, especially in old People, the lower Eye-lid grows considerably thick, and turns downwards, so that the Cartilage resembles raw Flesh.

The Tetter of the Eye-lids very much resembles those Scabs, and its Signs are almost the same, the Appearance of raw Flesh excepted; and if the Eyelids be turned out, they appear red in the Inside, and seem to have Inequalities resembling the small Grains of Figs.

The original Cause of these Disorders is a saline, corrosive Humour of the Blood, that is discharged on the Eye-lids, which suffer in proportion to its Malignity. The immediate Cause is often the Ulceration of the glandulous Vessels, which furnish the Film on the Edge of the Eye-lids; when these Vessels are ulcerated, they emit constantly a viscid slow Humour, which promotes their Ulceration.

Although this Disease is generally very obstinate, yet it may be speedily cured by Medicines which sweeten the Blood, and lessen the Violence of its Motion, provided the following Remedies be joined with them.

To cure the Ulceration of the Eye-lids, when it is caused by the Itch, I have found, that, by touching them with the *Lapis infernalis*, they cicatrize easily. The violent Heat of the Caustic must be abated, as soon as they have been touched, by washing the Eye in a small Glass full of warm Water; and all possible Care must be taken, that the Part of the Eye-lid, which was touched with the Escharotic, may not bear against the Globe of the Eye, till the Pain be entirely ceased. They may be touched, in this manner, once or twice a Week, till they seem to require no more Use of the Caustic; then apply to the Parts, Morning and Evening, Tutty, reduced to a very fine Powder, which will cicatrize them.

But, before the Application of the *Lapis Infernalis*, I use the following Water.

Take of Liver of Antimony, two Drams; prepared Tutty, half an Ounce; Camphire, half a Dram; Cloves, twenty Grains: Infuse them together for eight Days, in Eye-bright, Fennel, great Celandine and Rue-waters, of each four Ounces: Let some of this Water be dropped into the Eye, three times a Day.

Let the following Pomatum be used at the same time:

Take of Butter, melted, purified, and washed several times in Plantain and Rose-waters, an Ounce; of prepared Tutty, a Dram: Mix them together. Every Night, going to Bed, let a little of this Ointment be rubbed between the Eye-lids, so that some of it may pass on the Eye.

Ulcers of this Kind, which lie deep, are more difficult to cure than those attended with fungous Flesh.

The Tettors of the Eye-lids do not require such powerful Medicines; for the Ulcerations, which they cause, in the Inside of the Eye-lids, scarcely appear. The following simple Remedy may be successfully used.

Take of Sugar of Lead, and crude Sal Ammoniac, each four Grains; dissolve them in Plantain, and Rose-water, of each four Ounces. Let the Eye-lids be washed with this three or four times a Day.

These Remedies, together with Internals, proper to correct the peccant Quality of the Blood, and to dissipate its sharp Humours, will procure a speedy Cure of these Disorders. *St. Yves.*

TRACHOMATICON, *τράχματιζόν*. The Name of a *Collyrium* describ'd by *Galen*, *Metb. Medendi, L. 14. C. 19.*

TRACHSAT. A Metal existing in its Ore.

TRACHURUS, *τραχύρες*. The Name of a Fish mentioned by *Aldrovandus*.

TRAGACANTHA.

The Characters are;

The Leaves grow by Pairs, as it were conjugated, to a Rib which ends in a stiff, sharp Point. The Pod, which is bicipular, and divided lengthwise, is full of Kidney-shaped Seeds.

Boerhaave mentions four Sorts of *Tragacantha*; which are,

1. *Tragacantha*. Offic. C. B. P. 388. Boerb. Ind. A. 2. 53. *Tragacantha vera*. Park. Theat. 995. *Tragacantha Massiliensis*. J. B. 1. 407. Raii Hist. 1. 933. Tourn. Inst. 417. *Tragacantha*, five *Spina Hirci*. Ger. 1147. Emac. 1328. *Astragalus aculeatus fruticosus Massiliensis Tragacantha dictus*, Pluk. Almag. 60. GOAT'S-THORN.

The true Goats-thorn has a long, thick, crooked, woody Root, taking fast Hold in the Ground by its many Fibres, from which spring diverse Branches, growing very thick together, having several small, round, whitish, hoary Pinnæ, set opposite upon long Foot-stalks, ending in a Spine; which, when the Leaves drop, as they do every Year, become harder and stiffer; new Leaves springing out, the old Stalks degenerating into Thorns: The Flowers grow towards the Tops of the Branches, singly, being white; in Shape like Broom-flowers, but much less; and after them in their native Country, come short, flat Pods, with two or three small round Seeds. It grows in the Southern Parts of France and Italy, but it yields the Gum, only, in the more Eastern Countries.

The Gum *Tragacantha*, or Gum Dragon of the Shops, bursts forth from the Root of this Plant; it is brought to us from Turkey, in Pieces of different Magnitudes, twisted and curled up like Worms, sometimes white and sometimes yellowish, but the whitish and clearest is best: It has little Smell or Taste, it swells very much in Water, a little of it making a great deal of Mucilage.

Gum Dragon is of a glutinous Nature, good to correct the Acrimony and Sharpness of the Humours, and therefore pectoral and good for Coughs, Hoarseness, and catarrhus Defluxions; it likewise takes off the Heat and Sharpness of the Urine, and helps Dysenteries, arising from the Excoriation of the Bowels, by sharp corrosive Humours. Outwardly, it is good in Collyriums, for hot inflamed Eyes. *Miller's Bot. Off.*

Gum *Tragacantha* has an emplastick Virtue of stopping the Pores, and of obtunding Acrimony. Its Use is in Ophthalmic Medicines, as also in Coughs, Asperities of the Windpipe, Defects of the Voice, and in Catarrhs, being made into an Eclegma with Honey, or suffered to melt under the Tongue. A Dram of it macerated in *Pasum*, is taken for Pains in the Kidneys, and Corrosions of the Bladder, being mixed with burnt and washed Hartshorn, and a little feathered Alum. *Dioscorides, Lib. 3. Cap. 23.*

Externally, says *Schroder*, it is of Efficacy in Clysters for the Dysentery; and dissolved in Milk, or Rose-water, is good for the Redness, and acrimonious Rheums affecting the Eyes, and for Asperities of the Eye-lids. Being dissolved in warm Water, it makes a Mucilage, very convenient for the Formation of Troches, and other Forms of Medicines.

It is moistening, lenient, emplastick, corrects Acrimony, and incrassates: Hence it is of Efficacy in Hoarsenesses, Spitting of Blood, Asperities of the Fauces, and the Strangury. *Dale.*

It is called *Tragacantha*, from *τράγος*, (*Tragus*) a Goat, and *ἀκανθα*, (*Acantha*) a Thorn, that is to say Goat's Thorn, because its Pod resembles a Goat's Beard.

Gum *Tragacantha* is a most gentle and excellent Medicine, in all Diseases attended with a Bleeding of the Capillary Vessels, on Account of their Debility, or the Acrimony of the Humours. Four, or Six Grains, taken in Milk, or Water, are effectual against Pissing of Blood, and two Grains, diluted with Rose-water, are commended in Inflammations and Asperities of the Eyes. It is a Demulcent, and incrassates thin and acrid Lymph, and is therefore good in Hoarsenesses and Coughs, proceeding from thin Rheums; in the Strangury, and Acrimony, and Heat of Urine; a Decoction of the Leaves is a Strengtheners. *Hist. Plant. ascript. Boerhaave.*

2. *Tragacantha*; foliis incanis; minoribus; minusque villosis.

3. *Tragacantha*, humilis; Balearica; foliis parvis; vix incanis; flore albo. *Salvador.*

4. *Tragacantha*; foliis minimis; viridibus. *Boerb. Ind. alt. Plant. Vol. 2.*

Besides the foregoing Sorts of *Tragacantha*, *Dale* mentions the following,

POTERIUM. Offic. *Spina Hirci minor*. Ger. 1147. Emac. 1328. *Tragacantha altera, seu minor, Poterion forte, Dioscoridis*. Park. Theat. 996. *Tragacantha altera Poterion forte Clusio*. J. B. 1. 408. Tourn. Inst. 417. Raii Hist. 1. 933. *Tragacantha affinis lanuginosa five Poterium*. C. B. P. 388. SMALL GOAT'S THORN.

It grows in the Kingdom of Granada in Spain, and flowers in Summer. The Root, which is the Part used in Medicine, being bruised and applied, conglutinates Wounds and Cuts where the Nerves are divided; the Decoction, also, being drank, is effectual in nervous Affections. *Dioscorides, Lib. 3. Cap. 17.*

TRAGANOS. A Name for the *Ephedra, maritima, major*.

TRAGASIUS, *τράγασιος*. An Epithet for a Sort of Salt, procured from a certain stagnant Water, very little different from Sea-salt. *Galen de Simp. Facult. L. 15.*

TRAGEA, A Sort of Powder, made up with Sugar, in order to be apply'd externally, as to the Region of the Stomach; or to be infused in Wine; or made into an Electuary. *Schroder* gives several Powders under this Name, L. 2. C. 77.

TRAGELAPHAS. An Animal resembling a Goat and a Stag; mentioned by *Aldrovandus*.

TRAGEMA. The same as TRAGEA.

TRAGI, TRASI, or TRASSI, Names for the *Cyperus*; *retundus*; *esulentus*; *angustifolius*.

TRAGIA.

The Characters are;

It hath a funnel-shaped Flower, consisting of one Leaf, for the most Part divided into three Segments, but these are barren; for the Embrios are placed at a Distance, on the same Plant, which afterwards become tricoccus Fruits, composed of three Cells, each containing one spherical Seed.

Miller mentions two Species.

1. *Tragia alia scandens, urticae Folio*. Plum. Nov. Gen.

2. *Tragia scandens, longo Betonica Folio*. Plum. Nov. Gen.

These Plants were discovered by Father Plumier in America, who constituted this Genus by this Name, in Honour to Hieronymus Bock, a famous Botanist, who was commonly called *Tragus*.

The first Sort grows plentifully in the Savannas in Jamaica, and the other warm Parts of America; where it twines round whatever Plants or Trees it grows near, and rises seven or eight Feet high, having tough woody Stems. The Leaves are like those of the common Nettle; and the whole Plant is covered with burning Spines, like those of the Nettle, which renders it very unpleasant to handle.

The second Sort was found by the late Dr. Houstoun, at Campeachy, from whence he sent the Seeds. *Miller's Dictionary.*

TRAGIUM.

Dioscorides mentions two Species of *Tragium*, but has written so obscurely of them as to leave much room for Controversy, concerning the first of them, among Botanists, who call several Plants by that Name. *Gesner*, makes it the *Polygonum bacciferum*; *Dodonæus*, in his *Historia Gallica*, will have it to be the *Atriplex olida*, which he calls *Tragium Germanicum*; *Pena* and *Bellus* take it for the *Androspermum feridam*, which *Bellonius* calls *Tragium Creticum*. *Lobel* affirms the *Tragium* of *Dioscorides* to be our *Fraxinella*, to which Opinion I am most inclined, because none of the foresaid Plants, besides this, can be said to be like the Lemisk in Seed, Leaf, and Branches, only of a lesser Size.

The other *Tragium* *Rauwolfius* makes a Species of *Stachas*; which see under *Tragium alterum*.

TRAGIUM ALTERUM, Offic. *Tragium alterum Dioscoridis quibusdam, Foliis Trichomanis*, J. B. 3. 279. *Stachadi serrata Afensis*, C. B. P. 216. Raii Hist. 1. 514. *Secudus, vel Sucudus Avicennæ*, *Rauwolf. BASTARD DITTANY.*

Dioscorides describes it as having the Leaves of the *Scolopendrium*, and the fine white Root of the wild Radish. The Leaves in Autumn have the strong, rank, Smell of the Goat, whence the Plant takes the Name of *Tragium*. It grows on Mountains and Precipices, and was found by *Rauwolfius* about Aleppo, especially in moist Places.

The Herb and Root are used; the Herb, whether crude or boiled, is said, by *Dioscorides*, to be good for the Dysentery.

TRAGOCEROS. *Brunfelsius* informs us, that this is the *Anemone*; and, also, that the *Tragium Alterum*, and the *Alie* are both thus called by *Dioscorides*. But he either mistakes, or misquotes his Author, for I find no such Passages.

TRAGOPOGON.

The Characters are;

It has all the Characters of the *Scorzonera*, only the Calyx is oblong, not squamous, and its Segments are extended without the Flowers, surrounding them in the Form of a Star; the Floscules, also, are easily convolved, and unfold themselves against the Sun.

Boerhaave mentions nine Species of *Tragopogon*, which are;

1. *Tragopogon*; alter; gramineo Folio; suaverubens. Col. 1. 232. *Desfer. 231. Ic.*

2. *Tragopogon*; flore obsolete purpureo. Flor. 2. 29. *An. Tragopogon, Porri Folio, dilute ianthino Flore*. H. R. P?

3. *Tragopogon*; pratense; luteum; minus. M. H. R. Blasf.

4. *Tragopogon*; pratense; luteum; majus. C. B. P. 274. Tourn. Inst. 477. Boerb. Ind. A. 90. *Tragopogon*. Offic. Park. Parad. 514. *Tragopogon luteum*. Ger. 595. Emac. 735. Raii Hist. 1. 252. Synop. 76. *Tragopogon Flore luteum*. J. B. 2. 1058. YELLOW GOAT'S BEARD.

It grows in Meadows and Pastures, and flowers in June and July. The Roots are very nutritive, and for that Reason good for lean and consumptive Persons. They are said, also, to cure Disorders of the Breast, the Cough, and Difficulty of Respiration, and the Pleurisy; for which Effects, since the Roots are sweet, *C. Hoffman* knows not how to account. They are, also, supposed to be good for the Strangury, and to expel the Stone, whence the Herb is called by the Italians *Sassifica*, as much as to say *Saxifraga*. It is, also, usefully apply'd to Wounds. The expressed Juice of the Root, and its distilled Water work the same Effects. *Raii H. P.*

This Herb grows in Meadows and moist Places. Its Root is soft and sweet like Milk, affords good Nourishment, removes Costiveness, purifies the Blood, sweetens the acrid Humours, increases the Milk, provokes Urine, expels Gravel, and is good against Oppressions of the Breast and Lungs, the Cough, a Consumption, and pricking Pains of the Sides. Some in Consumptions, arising from Ulcers in the Lungs, recommend the Roots of this Herb and a Syrup prepared of its Juice. The expressed Juice cures recent

cent Wounds. Its Water is said to be possessed of surprising Qualities for the Cure of a Spitting of Blood. *Zorn. Botanologia.*

It is said to be good for Effusions and lancing Pains of the Stomach and Thorax. *Dale.*

5. *Tragopogon*; luteum; *Foliiis gramineis*; caule purpurascens; *Rand.*

6. *Tragopogon*; purpuro-ceruleum; *crocifolium*. C. B. P. 275. *M. H.* 3. 80. 8.

7. *Tragopogon*; *Coronopi Folio*. C. B. P. 274.

8. *Tragopogon*; purpuro-ceruleum; *Porri Folio*; quod *Artifi vulgo*. C. B. P. 274. *Barbula Hirci*; *purpurea caerulea*. Tab. Ic. 599. *Gerontopogon*, sive *Saxifraga Italorum*. Lugd. 1079.

9. *Tragopogon*; caule circa caput tumido. *Vaill. Boerb. Ind. alt. Plant. Vol. 1.*

The Name is from *τράγος* (*Tragos*) a Goat, and *πάγων* (*Pogon*) a Beard; because its downy Seed, while inclosed in the Calyx, resembles the Beard of a Goat.

The Virtues are the same as those of the *Scorzonera*, only a little weaker; it affords very good Nutriment, and is therefore adapted to culinary Uses. It is accounted, also, a Specific against the Pleurisy, and the Stone in the Kidneys and Bladder; it opens and molifies the Passages, and acts upon them by its demulcent Quality; it is, also, a very good Digerter of Phlegm, and for that Reason of excellent Service in an Asthma and Dyspnoea. *Hist. Plant. adscript. Boerhaav.*

Tragopogon Hispanicus. A Name for the *Scorzonera*; *latifolia*; *sinuata*.

Tragopogon, laciniatum. A Name for the *Scorzonera*; *laciniatis Foliiis*.

TRAGOPYRUM. The same as FAGOPYRUM.

TRAGORCHIS; see ORCHIS,

TRAGORIGANUM. Offic. *Tragoriganum Creticum*. C. B. P. 223. *Park. Theat.* 16. *Raii Hist.* 1. 523. *Tragoriganum Cretense*. *Ger. Emac.* 668. *Tragoriganum quibusdam nigrius*, *Folio duro*, *Flore purpureo*. J. B. 3. 261. GOAT'S MARJORAM.

It grows in the Island of Crete or Candy, and flowers in March.

Tragoriganum is of an hot and acrimonious Quality, and useful for the same Purposes as Thyme, Savory, Hyssop, and the like; that is, for pulmonic Affections, as the Cough and other Disorders of the Lungs; to provoke Urine, and the Menstrues; for Crudities of the Stomach, acid Eructations, and the like Affections of that Part.

TRAGORIGANUM ALTERUM. Offic. *Tragoriganum Clusii*. *Ger.* 543. *Emac.* 668. *Tragoriganum Hispanicum*. *Park. Theat.* 16. *Tragoriganum angustifolium*. C. B. P. 223. *Raii Hist.* 1. 523. *Tragoriganum tenuioribus Foliiis*, *Flore candido*. J. B. 3. 261. SPANISH GOAT'S MARJORAM.

It grows in the Kingdom of Valentia in Spain, and flowers in March; and the Herb, which is the Part used in Medicine, agrees in Virtues with common Goat's Marjoram.

TRAGORIGANUM, is, also, a Name for several Sorts of *Satureia*; which see.

TRAGOSLINUM.

The Characters are;

The Root is like that of a Cabbage, and acrimonious in many Plants, the Leaves are pinnated like those of the *Pimpinella saxifraga*; the Petals of the Flower are bifid and unequal in many; and the Seeds are oblong, gibbous, and striated.

Boerhaave mentions nine Sorts of *Tragoslinum*; which are,

1. *Tragoslinum*; majus; umbella candida. *Tourn. Inst.* 309. *Boerb. Ind. A.* 54. *Pimpinella Saxifraga*. Offic. *Ger.* 887. *Emac.* 1044. *Raii Hist.* 1. 445. *Synop.* 3. 213. *Pimpinella Saxifraga major umbella candida*. C. B. P. 109. *Saxifraga Hircina major*. *Park. Theat.* 947. J. B. 3. 109. BURNET SAXIFRAGE.

The Root, of the great Burnet Saxifrage, is thick at the Head, spreading into several Branches; which grow deep in the Earth, of a whitish Colour, and an hot biting Taste, from which spring several pinnated Leaves, having three or four Pair of Pinnæ, set opposite, with an odd one at the End; they are somewhat hard in handling, and are larger, narrower, and more deeply cut in, than those of the common Burnet; the Stalks are about a Yard high, stiff-jointed, and full of Branches clothed with narrower Leaves; and at their Ends grow Umbels of small white Flowers, followed by very small, dark, brown, striated Seed; it grows in divers Parts of England, particularly, in many Places of Kent; but is not very common about Town; and therefore our Herb-women sell the Roots of the smaller Kind, or the *Pimpinella Saxifraga minor* *Foliiis Sanguisorbæ*, *Ray's Synop.* which grows frequently in gravelly Places, and is a much smaller Plant, with lesser and rounder Leaves, next the Stalks; and, in the Composition of the *Syrupus Althææ*, they generally give either the common Burnet, or that and the Meadow Saxifrage, instead of this.

The Roots of Burnet Saxifrage are hot and dry, carminative, expelling Wind, and are good for the Colic, and Weakness of the Stomach; they are, likewise, diuretic, and usually given against the Stone and Gravel, as, also, for the Scurvy, and are an Ingredient in the *Pulvis Ari composita*. *Miller's Bot. Off.*

2. *Tragoslinum*; majus; umbella rubente. T. 309. *Pimpinella Saxifraga, major, umbella rubente*. C. B. P. 159.

3. *Tragoslinum*; alterum; majus. *Tourn. Inst.* 309. *Boerb. Ind. A.* 54. *Pimpinella, Saxifraga minor*. Offic. *Pimpinella Saxi-*

fraga minor, Foliiis Sanguisorbæ. *Raii Hist.* 1. 445. *Synop.* 3. 213. *Pimpinella Saxifraga major, altera*. C. B. P. 159. *Pimpinella Saxifraga major nostras*. *Park. Theat.* 946. *Saxifraga hircina minor* *Foliiis Sanguisorbæ*. J. B. 3. 111. SMALLER BURNET SAXIFRAGE.

It grows in dry Pastures and flowers in June: The Herb is used, which agrees in Virtues with the *Tragoselinum*; majus; umbella candida, to which it may be a *Succedaneum*.

4. *Tragoselinum*; minus. T. 309. *Pimpinella, Saxifraga, minor*. C. B. P. 160. *Saxifraga, hircina, minima*, *Pimpinella crispa Tragi*, J. B. 3. 2. 113. *Saxifraga parva*. *Dod. p.* 315.

It is very well adapted, as *Tragus* says, for breaking and expelling the Stone, being of an hotter Temperament than all the Species of *Apium*. The dried Root may be used with Food, instead of Pepper; for in Taste and Strength it so well answers to Pepper, that it might, fitly enough, be called *German Pepper*: And, in my Opinion, it is more useful and salutary than Pepper, as I have learnt by long Experience. The Herb, Root, and Seeds, have the Virtues of the *Petroselinum*; but are much more efficacious in mitigating and removing Pains. Of the Roots may be prepared Troches, of great Service in a cold Distemperature of the Stomach, or when that Part is affected with gross and viscous Humours. The Root, in what Manner soever taken, whether in Powder, Potion, or Eclegma, is a singular Remedy against all Kinds of Poison; mitigates Pains of the Intestines; is good for the Stone in the Kidneys; provokes the Menstrues, and whatever else requires to be evacuated with the Urine. The same Effects are to be expected from the Seed, and the distilled Water, which latter, also, deterges Spots of the Face, and renders it hard. That it is a Vulnerary, is not so certain, because of its Heat and Acrimony; but perhaps it may be of Service in destroying sordid Ulcers. The Root, according to *Fuchsius*, is of extraordinary Use in preventing and curing the Pestilence, and other contagious Disasters. Taken in Vinegar, it is highly commended in pestilential Distempers. Some exol an Electuary of the Root bruised very small, and made up with Sugar of Roses, against a Phthisis: But, says *J. Baubine*, I can scarce persuade myself, that so hot and acrimonious a Root can be proper in a Phthisis. Others prescribe it for the Colic, I know not how successfully. Externally, it is of Use as a Masticatory, in the Tooth-ach, by extracting Phlegm; and to ripen Buboes, and cancerous Tumors; to increase Milk, and for some other Purposes.

5. *Tragoselinum*; majus; degener; umbella alba. *Pimpinella, Saxifraga, major, degener, seu Foliiis longius dissectis*. *M. H.* 3. 284.

6. *Tragoselinum*; quæ *Pimpinella*; *Saxifraga*; minor; crispa; *M. U. Ic. T.* 5.

7. *Tragoselinum*; parvum; Folio *Apii*; umbella alba.

8. *Tragoselinum*; Folio *Apii*; minimum.

9. *Tragoselinum*; perenne; Folio *Apii* majus. *Boerb. Ind. alt. Plant. Vol. 1.*

It has its Name from *τράγος* (*Tragos*) a Goat, and *σέλινον* (*Selinon*) *Apium*, *Petroselinum*, because the Leaves resemble those of the *Petroselinum*, and the Goats delight to feed upon them; and it is called *Saxifraga*, because it grows out of the Rocks, as if it broke through them. Many think this Name given it because it breaks the Stone, but they are mistaken, for Plants which grow on rocky Mountains, or spread their Roots among Rocks, are of an acrid and aromatic Quality.

It is scarce thought of any Use in Medicine: The first, second, and third Species are called Pepper, because they are so hot as not to be suffered in the Mouth, whence they are proper where heating Things are required, as in an aqueous Dropsy; the second acts very powerfully, and may be of great Force in expelling the Stone, but I do not say that it is always proper to be given. The Plant, in short, is an Aperient, Emmenagogue, Diuretic, and Diaphoretic. The fourth Species is called Pepper, for it exceeds Pepper in Acrimony. *Hist. Plant. ascript. Boerhaave.*

TRAGUS, *τράγος*, (*Hircus* a Goat,) is a Greek Word, signifying that Affection of Youth, about fourteen Years of Age, when the Voice alters to a graver Sound, Hair begins to appear on the Beard and Pubes, and Venerel Inclinations arise, with an Intumescence of the Testes, as in the *Tragos*, or Goat, whence the Name is derived, and in which, during their Time of Rutting, that Intumescence is very remarkable. *Hippocrates* seems by the Word *τράγος* to mean rather this Intumescence of the Testes, than the Alteration of Voice, in those who have their first Venerel Desires and Tuitations, in that Expression, 6 *Epid. Sect. 4.* *Aph. 25.* *τράγος ὁλόσπερος ἀν' ὧν ἔξαι, ἔργον δὲ ἔστιν, ἀσπεν, ἐν δὲ ἐν-ἔνυμος, ἥλιον*, "which *Tragos* (*Testis*) appear jutting out, if it be the Right Testicle it is a Male, if the Left Female;" for he seems here to advise us to observe which of the Testes swells and is prominent; and this Affection he calls *τράγος*. To the same Purpose, with an Eye to this Passage, speaks *Galen*, when he says, *ἐπὶ δὲ καὶ τῶν ἀρχαίων, &c.* "For the same Reason, when the right Testis is better turn'd, and foremost in the *Tragus*, or Intumescence [*τράγος μὲν ἐν τῷ τραγῶν διαστύβει*] it makes Begeters of Males; when slenderer, and last in Intumescence, it disposes for the Generation of Females. Here the Verb *τράγαν* seems to be spoken of that Intumescence of the Testes

"in Animals, at their first Impulses to Coition." The same Author, *Lib. 14. de Usu Partium*, has the following Expression, "ὁ δὲ ὄρχις ὁ δεξιὸς ἔστιν ἀσθενέστερος ἀσπράχτης θάλασσης, &c. But when the Right Testis is of the weaker Construction, the Left is first distinguished by what they call the *Tragus*; and by this we may conjecture, that the Animal will be a Procreator of Females; as, on the contrary, if the Left Testis remained as Nature required, and the Right were first elevated, according to the *Tragus*, that Animal, as far as lay in this Part, would beget Males." But *Galen*, in his Comment on the foregoing Place, 6 *Epid.* seems in the Phrase ἐν τῷ τραγῶν, to join both Affections, the Change of the Voice, as well as the Infecundity of the Testes, for these are his Words; ὅτις ἐν καὶ αὐτῷ πρὸς ἰσχυρότερος ἐλέγχο, τραγὸς ὁπλοῖται ἂν φανῇ ἔξω, &c. "To the same Purpose are these Words of *Hippocrates*. You are to observe which Testis is prominent, if it be the Right, a Male, if the Left a Female (is portended). For when the Members of Generation are first elevated, and the Voice is somehow altered to a rougher and graver Tone, which is what we mean by the *Tragus*, (τὸτο γὰρ τὸ τραγῶν ἐστὶ). *Hippocrates* directs us to observe which of the Parts is more robust, for those Parts which first swell, and grow big, from a Supply of Matter, are certainly the strongest." And, hence it is, I suppose that *Alexand. Aphrodis.* in his *Natural Questions*, expresses this Change of the Voice, not simply by the Verbs τραγῶν, or τραγίζειν, but by βράχχει τραγῶν, to signify the Roughness of the Voice, made by this Alteration.

The Verb, τραγίζειν, as derived from τραγός, is used by *Hippocrates* 6 *Epid. Sect. 3. Aph. 18.* to signify that State of Youth which first begins the Use of Venereal Exercises, when the Voice becomes rougher and more unequal, and in a manner hoarse, and Hemorrhages happen from the Nose, on account of the Increase of Heat in the Blood. These are Symptoms incident to those, who, as *Hippocrates* expresses it, 3 *Aph. 27. πρὸς τὴν ἡβὴν προσέρχεται*, "arrive at Puberty;" which as *Alex. Aphrod. Lib. 1. Qu. 123.* explains it, is about the fourteenth Year.

Some will have τραγός, and τραγίζειν, to be spoken by *Hippocrates*, of young Men, who have experienced the Use of Veneries, and have lecherous Desires, in that respect resembling Goats, as well as in a kind of Rankness of Smell, in which, as the *Latin* Phrase is, *Hircum olent*, they smell of the Goat. Young Men of this Cast, were called by the Antients *Hircosi*, and *Hirquitalli*, and were said *Hirquitallire*, which expresses the Greek τραγίζειν. *Hirquitalli*, in *Festus*, are Boys approaching to the State of Manhood, and so called, he says, from their Goat-like Lust. And hence τραγός seems to signify, also, that rank and goatish Smell under the Axæ, or Armpits, of which *Horace* says,

Gravis hirsutis cubat Hircus in Alis.

Τραγός is, also, a kind of Food prepared of Zea; according to *Galen, Com. 1. in Lib. de Rat. Viſt. in Morb. acut.* or of Olyaa. *Lib. de Alim. Fac.* which *Pliny, Lib. 18. Cap. 10.* calls *Tragum*. Τραγός, also, is reckoned among oleraceous, as well as frumentaceous Foods.

Τραγός, signifies, also, a Disease in Vines, when they bear no Fruit, but abound in Leaves, as appears from *Aristotle, Lib. 5. Cap. 18. de Gen. Animal.* and *Theophrastus, de Caus. Plant. Lib. 5. Cap. 10, 13.*

TRAGUS. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

TRAGUS, in Anatomy, is a Part of the external Ear. See *AURIS*.

TRAGUSSPINOSUS. A Name for the *Kali*; *spinosum*; *Folii longioribus & angustioribus*.

TRAMIS, τραμῖς, is expounded by ὄρρος (*Orrhus*) called ἰπποπόρις, (*Hippopruris*), that is, the Line which intersects the Middle of the Scrotum, and passes through the *Taurus* to the Anus. But *Ruffus Ephesus*, reckoning the Parts of the Pudenda virilia, calls the propending Part, as he expresses it, καύλος and σῆμα, the non-propending, or fixed Part, ὑπέσκημα, and κύσας πρᾶχλος: the Neck of the Bladder, and the Line which intersects them τραμῖς, which, others, he says, call ὄρρος. *Hesychius* makes τραμῖς the Filure of the Anus; so τραμῖν, or τραμῖς, in *Aristophanes*, signifies τὸ πρῖμα τῆς ἔδρας, "the Perforation of the Anus", that is, the Podex, or σφινκτήρ "the Sphincter," according to *Lyfimachus*, as we read in *Erotian*. *Pollux* says, that the Line, like a Suture, under the Penis, which passes through the Middle of the Scrotum, and under the Part called *Taurus*, ταῦρος, is called περίλαον (*Perineum*), τραμῖς, (*Tramis*), and ὄρρος, (*Orrhus*).

TRANSFUSIO.

Transfusion and Infusion may be reckoned surgical Operations, because, as in Bleeding, the Aperture of a Vein is required. By Infusion, is meant the Injection of Medicines into the Blood; and by Transfusion, the Conveyance of the Blood of one Person, or Animal, into the Veins of another. Although these Operations are seldom now performed, yet they were much practised from the Year 1660 to about 1680, and the following were the Reasons that occasioned the Invention of them.

The Generality of Physicians agree, that almost all Diseases proceed from a Disorder of the Blood, which, may, therefore, be sooner, and more easily, corrected by the Injection of Medicines into the Blood, or by the Transfusion of the Blood from a

found Person, or Animal, into the Veins of the Patient. For Medicines taken by the Mouth, are not only changed in the Stomach, and Intestines, but are likewise weakened before they arrive at the Blood. There are, also, some Cases, in which Medicines cannot be taken by the Mouth, as in Apoplexies and the Quinsy, which may be expeditiously remedied by the Infusory Method. Physicians, therefore, imagined that the most inveterate Diseases must yield to this Method, such as proceed from the Leprosy, Gout, Epilepsy, Apoplexy, Consumption, the Pox, Scurvy, malignant and obstinate Fevers, and large Hemorrhages, and that it would even restore Youth to Old-age, and recover the worst Constitutions. But how much soever a Remedy, endowed with such Virtues, might be desired, yet the Event of these Operations, was so far from answering Expectation, that it often produced the worst Consequences. For almost all the Patients, on whom the Experiment was tried, were affected, either, with Stupidity, Foolishness, a Delirium, or Melancholy, or were suddenly deprived of Life. Such fatal Consequences soon brought these Operations into Disrepute, and they are said to have been condemned and prohibited by an Edict of the Parliament of *Paris*.

The Infusory Method is thus performed. A Vein must be opened, generally in the Arm, as in Bleeding: Here the Remedy must be injected, with a Syringe, or with a Clyster-pipe and Bag, as in *Tab. XXXII. Fig. 10.* which must be turned upwards, that the Medicine may the sooner arrive at the Heart, and then the same Manner of Dressing may be used as in Phlebotomy. But whether this Operation should be entirely condemned, or whether it may be useful to inject proper Remedies in an Apoplexy, or Quinsy, when the Case is desperate, as warm Milk, or Broths; or to transfuse the Blood of a sound Person, or Animal, into the Veins of the Patient, after discharging the morbid Blood, remains, in my Opinion, to be determined by future Experience. *Purman* in his *Surgery, Part 3. Chap. 31.* testifies, that he not only cured others in this Manner, but, also, himself of a violent Itch, and an obstinate Fever.

The Transfusion of Blood may be done in this manner. A Vein of the Patient's Arm must be opened, as in *Tab. XXXII. Fig. 11.* or his Hand, as in *Fig. 12.* into which introduce a Pipe of Silver, Brass, or Ivory, keeping the End in the Vein turned upwards: The same should be performed in the sound Person, but so, that that End of the Pipe, which is introduced into the Vein, should be turned downwards, or towards the lower Part of the Vein, then let the smaller of the two Pipes, be inserted into the larger, and as much Blood, as may be thought necessary, will flow from the sound Person, into the Vein of the Patient, and then the Wound may be dressed. If thus the Patient is not recovered, the Operation, after some time may be repeated. But before the Blood be transfused, some of the morbid Blood should be drawn from the Patient, that the new Blood may circulate more freely. Sometimes a Vein is opened in each of the Patient's Arms at the same time, so that the same Quantity of the vitiated Blood, is discharged at one Orifice, that he receives of the sound by the other. *Lamswerde*, in his Notes on *Schulsetus*, may be consulted about this Operation, and *Junken*, in his *Chirurgia Germanica*, p. 487. If it be necessary to convey the Blood of an Animal into the Patient, as that of a Calf, or a Sheep, a Vein or Artery must be opened in their Neck, Leg, or Thigh, and the Operation proceeded in nearly as before. See *Tab. XXXII. Fig. 13.* and *Lamswerde in Append. ad Sculteti Armatum. Chir. & Purmanni Chirurg. P. 3. Cap. 31.* When Pipes of Metal and Ivory were found too stiff, and on that account painful, others were invented of a softer and flexible Kind, to be placed between the two solid ones, made of the carotid Artery, or Ureter of an Ox, Calf, or Sheep, or of the Aspera Arteria of a Fowl; by which means both the Pain and Trouble in Transfusion of the Blood were lessened.

Dr. Lower, in his Treatise *de Corde*, asserts himself to be the Inventor of the Transfusion of the Blood, in Opposition to *Denys*, who in a certain Epistle claims this Honour to himself. Many Experiments of this kind did *Denys* make at *Paris*, but they were attended with very ill Success. *Sturmius* a celebrated Mathematician of *Altorf*, and *Vehrius* a Professor of *Frankfort*, ascribe this Invention to *Maurice Hoffman*, a Physician at *Altorf*. *Muys*, however, contends, that *Libavius* described it at large in 1615, but without informing us in what Book. The Invention of the Infusory Method has been generally attributed to *Wren* a celebrated Englishman. But I think this Method was described before him by *Major*, a Professor of Physic at *Kiel*, in a Treatise published in 1664, this Operation being never before heard of in *Germany*. Those who desire more on this Subject may consult *Majoris Lib. de Chirurgia infusoria*; *Ettmulleri Disputat. de eod. Eltshozii Clysmat. nov. & Purmanni Chirurgia*. The most remarkable Writers on the Transfusion of the Blood are, *Lower de Corde*, *Santinellus in Confusione Transfusionis*, *Manfredus de Sanguinis Transfusionis*, *Sturmius in Philosophia ecclē. Diff. X. Mercklinus de Ortu & Occasu Transfusionis Sanguinis*; and *Lamswerde in Appendice ad Scultetum*, pag. 29. Cases of the Infusory Method, in desperate Diseases, may be seen in *Misc. Nat. Cur. Ann. IX. & X. Heist. Chirurg.*

TRANSLATIO. The same as METASTASIS; which see.

TRANSPIRATIO.

TRANSPIRATIO. Transpiration, or Perspiration. See CUTIS, and PERSPIRATIO.

TRANSPLANTATIO. Transplantation. *Paracelsus*, in many Parts of his Works, mentions, and recommends a Method of curing Diseases, by transplanting them into Vegetable or Animal Substances. A Subject too whimsical to deserve farther Notice.

TRANSVERSALES MUSCULI. The transverse Muscles; a Name for a great many Muscles of the human Body. Thus there are the

TRANSVERSALES ABDOMINIS. See ABDOMEN.

TRANSVERSALIS ANTICUS PRIMUS.

This is a small, pretty thick, and wholly fleshy Muscle, about the Breadth of a Finger, situated between the Basis of the Os Occipitis, and the transverse Apophysis of the first Vertebra. It is fixed by one End, in the anterior Part of that Apophysis; and from thence, running up a little obliquely, it is inserted by the other End in a particular Impression between the Condyle of the Os Occipitis, and the Mastoid Apophysis of the same Side, behind the Apophysis Styloides, and under the Edge of the Jugular Fossula.

For the Uses of this and the following Muscle, see RECTUS ANTICUS.

TRANSVERSALIS ANTICUS SECUNDUS.

This is a small Muscle situated between the transverse Apophysis of the first two Vertebrae of the Neck. It is fixed by one Extremity, very near the Middle of the second Apophysis, and by the other near the Root or Basis of the first; and therefore it is a Muscle of the Neck rather than of the Head.

TRANSVERSALIS COLLI MAJOR.

This is a long thin Muscle, placed along all the transverse Apophyses of the Neck, and the four, five, or six upper Apophyses of the Back, between the *Complexus major & minor*, lying, as it were, on the Insertions of the first of these Muscles.

It is composed of several small muscular Fasciculi, which run directly from one or more transverse Apophyses; and are inserted sometimes in the Apophysis nearest to these, sometimes in others more remote, the several Fasciculi crossing each other between the Insertions of the two *Complexi*, which are, also, crossed by them. They have sometimes a Communication with the *Longissimus Dorsi*; but this is not uniform.

The *Transversalis major*, *Transversalis gracilis*, and the little *Transversales*, acting on one Side, can have no other Use; but to bend the Neck laterally; and to hinder these Inflections, when they act on both Sides. The small *Transversales* may, also, preserve the Capular Membranes of the Joints from being compressed, or otherwise hurt, by the Motions of the oblique Apophyses.

TRANSVERSALES COLLI MINORES. See INTER-TRANSVERSALES.

For the Uses of this Muscle, see TRANSVERSALIS COLLI MAJOR.

TRANSVERSALIS DIGITORUM.

This is a small Muscle, which lies transversely under the Basis of the first Phalanges, and which, at first Sight, appears to be a simple muscular Body, fixed by one End to the great Toe, and by the other to the little Toe.

When this Muscle is carefully examined, we find that it is fixed by a very short common Tendon to the Outside of the Basis of the first Phalanx of the great Toe, conjointly with the Antichenar, and by three different Portions or Digitations to the three interosseous Ligaments, which connect the Heads of the four Metatarsal Bones next the great Toe, laterally to each other. These three Portions are very slender, and gradually cover each other.

This Muscle might be reckoned a second *Antichenar*.

TRANSVERSALIS DORSI MAJOR. See LONGISSIMUS DORSI.

TRANSVERSALES DORSI MINORES.

I have found, says *Winslow*, some particular Muscles of this kind fixed to the Extremities of the three lowest transverse Apophyses of the Back. The rest are all, in some measure, Continuations of the *Transversalis major*; but these few which are distinct, and which lie in the Interstice between two Apophyses, may justly enough be termed *Inter-transversales*.

For the Uses of these Muscles, see SPINALES.

TRANSVERSALIS GRACILIS, SIVE COLLATERALIS COLLI.

This is a long thin Muscle, resembling the *Transversalis Colli major* in every thing but Size, and situated on the Side of that Muscle. It is commonly taken for a Portion or Continuation of the *Sacro-lumbaris*. *Diemerbroek* distinguished it by the Name of *Cervicalis Descendens*; and *Steno*, and others after him, have called it *Accessorius Musculus Sacro-lumbaris*. See its Uses under TRANSVERSALIS COLLI MAJOR. *Winslow*.

TRANSVERSALES LUMBORUM. See SPINALES.

TRANSVERSO-SPINALES COLLI. See SEMISPINALIS.

TRANSVERSO-SPINALIS LUMBORUM. See SACER.

TRAPEZIUS MUSCULUS. A Name for the CUCUL-
LARIS.

TRASI. See TRAGI.

TRAUMA, τραῦμα. A Wound. See VULNUS.

TRAUMATICA. Vulnerary Medicines. See ASTRINGENTIA.

TRAUMATICUM DECOCTUM. A Vulnerary Decoction.

Take of Sarsaparilla, two Ounces; of the greater Comfrey, and Liquorice-roots, each six Drams; of white Dittany, two Drams; of stoned Raisins, two Ounces; of the Shavings of Hartshorn, half an Ounce: Boil them in a sufficient Quantity of Spring-water, to strain off four Pounds; adding towards the latter End, of the Leaves of St. John's-wort, Agrimony, Plantain, and Ground-ivy, each half an Handful; of the Flowers of the great Daisy, one Handful; of Nettle-seed, two Drams: Strain out the Liquor for Use.

ANOTHER VULNERARY DECOCTION.

Take of the Tops of St. John's-wort, *Paul's Betony*, both Sorts, Periwinkle, Agrimony, each two Handfuls; Roots of China, Comfrey, white Sanders, Nephritic-wood, each an Ounce; Dates cut, thirty; Liquorice, an Ounce and an half: Infuse all for twelve Hours in a sufficient Quantity of Lime-water; and strain to four Pounds; and thereto add Syrup of Mouse-ear, and of the Juice of Fluellin, each two Ounces. Mix, and keep in a cold Place for Use.

TRECHON, τρέχων. Quicksilver. *Nicolaus Myrepsus, Sect.*

3. C. 97.

TRECHYSMA, τρέχυσμα. The same as TRACHOMA.

TREMATE *Brasiliensis*. *Marcgrav. Tremate Pisoni Frutes Brasiliensis flore composito, in pappo abeunte. Raii 1783.*

This Shrub in Figure resembles the Pomegranate-tree; its Bark resembles that of Elder; its Wood is white, and contains a Marrow. Its Leaves are of a dark-green Colour, and, when triturated, smell exactly like Storax; and are used by the *Brasilians* in Pains and Redness of the Eyes. *Raii Hist. Plant.*

TREMOR. See PYRETOS.

TREPANATIO. The Operation of Trepanning. See CAPUT.

TREPANUM. The same as TEREbella.

TREPONDO. Three Pounds.

TRIANGULARIS. Triangular. A Name of several Muscles. Thus the Deltoide Muscle is call'd the Triangularis Humeri. There is, also, the

TRIANGULARIS STERNI. See STERNO-COSTALES.

TRIANGULUS. See TRIGONOS.

TRIBADES. See MALTHACOS.

Tho' the Clitoris is commonly concealed within the Lips of the Pudenda; yet in some Women it becomes so far prominent, that they are either, by ignorant Persons, thought to be transform'd into Men, or make Attempts to converse in a criminal manner with other Women. The unhappy Females, who pollute themselves in this manner, are by the *Greeks* call'd *Tpιδάδες*, and by the *Latins* *Fricatrices*, who, according to *Celsus Aurelianus*, in *Lib. 4. Tard. Pass. Cap. 9.* are fonder of associating themselves with Women than with Men.

Hemica Schuria, a Woman of a masculine Turn of Mind, being weary of her Sex, dress'd herself like a Man, and serv'd in Quality of a Soldier for some time under his Serene Highness *Frederic Henry Prince of Orange*, in the Siege of *Boisleduc*. But returning Home, she was accus'd of uncommon and preternatural Lust, since her Clitoris sometimes appear'd so far without the Lips of the Pudenda, that she frequently attempted that Species of criminal Dalliance with other Women, which the *Greeks* call *Κετροειζεν*. She could, also, perform what the *Greeks* call *Τριβαν* with such a Degree of Vigour and Virility, that she pleas'd a certain Widow, of whom she was excessively fond, so well, that, if the Laws of the Land had permitted, she would have married her, perhaps more cheerfully than she had done her deceas'd Husband, by whom she had six Children.

This Woman, in external Appearance had the same Configuration of the Parts of the Pudenda with other Women. But, according to the Declaration of three Midwives, internally, a little before the urinary Passage, there was evidently perceiv'd a certain glandulous Caruncle, call'd the Clitoris, which tho' in other Women it hardly exceeds the Bulk of a Nail, was yet said to be half a Finger long in her, and in Thickness to resemble the Penis of a Boy.

This Clitoris, tho' not always, yet sometimes, appear'd without the Lips of the Pudenda, especially when the discharg'd her Urine with Difficulty, or was under the Influence of strong Inclinations to her unnatural Crime; at which time her Clitoris protuberated half a Finger's Length, or sometimes more, accord-

ing to the Strength of her Inclinations. *Johannes Poponius*, a celebrated Lawyer, in *L. 22. Tit. 7. Arest. 11.* is of Opinion, that such Women ought to be punished by Death. But *Henrica Schurta* had a milder Judge, and, being only whipt with Rods, was banish'd far from the Partner of her Crimes; who was, also, punish'd, tho' allow'd to remain in the City. *Talpū Obferuat. L. 3. C. 35.*

TRIBE, *τρίβη*, (from *τρίβω*, a Verb, besides its usual Significations of rubbing, breaking, and the like, importing, in a metaphorical Sense, Exercise and Employment) is Practice, Use, Exercise. *Τρίβη μέλα λόγῳ* is Exercise or Practice founded on Reason, and oppos'd to *λογισμὸς πειθάνῳ*, a Persuasion grounded on mere Ratiocination. *Hippocrates, Lib. Præcept. prope Initium.* In the same Treatise, towards the End, *τρίβη* and *δυσμάτων ἰσογίη*, that is, Exercise, or Practice, and the Knowledge of Precepts or Rules, are set in Opposition; as are, also, in the Words which follow, *δυσμάτων πολυχεσίη*, a comprehensive Knowledge of Precepts, and *χειροτερίβη ἀπρεμύτης*, the Usefulness and Stability of manual Operations and Practice. *Τρίβη*, in this Sense, is express'd by *Hippocrates*, in this same Treatise, and in *Lib. περί εὐνοίας*. by *πρήγμωσις*, Actions, Practice. *Quintilian, Lib. 2. Cap. 16.* renders *τρίβη* by *Usus*, Use. *Roefus.*

TRIBOS, *τρίβος*, from *τρίβω*, to rub, in *Hippocrates*, signifies a well-trodden and frequented Path; but, in a metaphorical Sense, is taken for a Place much wore by long Attrition, or become callous, as we read in *Galen, Com. 1. in Lib. de Art.* Hence the Head of the Os Humeri, when it has continu'd long in a Place, whither it is remov'd by Luxation, and has work'd itself by continu'd Attrition into a kind of Settlement, is said by *Hippocrates, Lib. de Art. τρίβον ποιεῖσθαι*, "to make a Tribos." And in the same Treatise we read *ὅταν μὲν ἐν τρίβον λάβῃ τὸ ἄρθρον ἐν τῇ σαρκί*, "when the Joint shall acquire a Tribos (a Settlement by Attrition) in the Flesh;" where he writes, that *τρίβος* is spoken by way of Metaphor taken from Places much worn by the Feet of Travellers. Again, in *Möchlic*, it is said, *τὸ ἔθος τρίβον ποιεῖ*, by which Words we are to understand, that Use induces a Callus on elapsed Joints. But in *Lib. xli. ἰσπίων*, *τρίβος*, according to *Galen*, is that Part of a Member with which it operates when inflected, extended, or resting on one Side. *Τρίβος*, also, signifies that Part of the Body which is rubbed, or with which we act, or on which we stand, or lay any Strefs, whether standing, walking, sitting, or lying; as the Soles of the Feet, when we stand or walk; the Buttocks, when we sit; and the Back, and hinder Parts of the Head, when we lie in a supine Posture. Some call that Part, on which the Strefs is laid, *Mora*, Rest, because we rest, in a manner, on it; others, *Samira*, or *Callis*, a Foot-way, or Path, from its being, like these, subj-cted to continual Impressions.

TRIBULUS.

The Characters are;

The Root is annual; the Leaves are like those of the *Lentula*, or *Cicer*. The Flower is rosaceous and pentapetalous; the Fruit cruciform, or turbinated, composed of a Multitude of small muricated Particles collected into an Head, in each of which are oblong Seeds disposed in their proper Cells.

Boerhaave mentions but one Sort of *Tribulus*; which is, *Tribulus; terrestris; folio Ciceris; fructu aculeato. C. B. P. 350. Emac. Boerb. Ind. A. 298. Tribulus terrestris. Offic. Ger. 1066. Emac. 1246. Park. Theat. 1097. Raii Hist. 2. 1344. J. B. 2. 352. CALTrops.*

It grows in *Italy*, and flowers in *July*; and the Herb and Seed are used.

The *Tribulus* refrigerates and inspissates, cures Inflammations, Ulcers in the Mouth, and Putrefaction of the Gums. The Seed is commended against Poisons, and restores those who are bitten by Serpents. *Dale.*

This Plant, is refrigerating, aperient, astringent, and, taken inwardly, a Vulnerary: Hence it is of Service in a Diarrhoea, and the Stone. *Hist. Plant. adscript. Boerhaav.*

TRIBULUS AQUATICUS, *Nuces aquatica. Offic. Ger. 676. Emac. 874. C. B. P. 194. J. B. 3. 775. Raii Hist. 2. 1321. Tribulus aquaticus major. Park. Theat. 1248. Tribuloides vulgare aquis innascens. Tourn. Inst. 655. WATER-CALTrops.*

The Root of this Plant grows deep under Water, being jointed, and full of Fibres at every Joint. The Leaves are somewhat like Poplar-leaves in Shape, being roundish and indented about the Edges, each standing on a long Foot-stalk. The Flowers arise immediately from the Root, being small and white, growing on separate Stalks; and are succeeded by large round prickly Heads, of a blackish Colour when ripe, containing a large eatable Kernel; it grows in standing Pools and Lakes in *Italy* and *Germany*, but no-where in *England*.

They are eaten as other Nuts in the Places where they grow; but as they are rarely to be met with here, so I never knew them applied to any physical Use. *Miller's Bot. Off.*

Tribulus aquaticus is, also, a Name in *Boerhaave* for several Sorts of *Paranagiton*; which see.

The Nuts, while new, are good against the Stone. The Herb is endu'd with the same Virtues as the *Tribulus terrestris*. *Dale.*
TRICA LUMBORUM. A Species of *PLICA POLONICA*: *Blancard.*

TRICAUDALIS. A Name for the *TRICEPS AURIS*.

TRICEPS AURIS, or *RETRAHENS AURICULAM*. The Name of a Muscle of the external Ear, called by *Winslow* the Posterior. See *AURIS*.

TRICEPS PRIMUS.

This, with the two following Tricipital Muscles, are fleshy and flat, and of different Lengths, situated between the Os Pubis, and the whole Length of the Os Femoris. The first and second cross each other in such a manner, as that the Muscle which is the first on the Os Pubis, becomes the second on the Os Femoris, and the second on the Os Pubis is the first on the Os Femoris. The third Muscle keeps its Rank.

The *Triceps Primus* is fixed above, by a short Tendon to the Tuberosity or Spine of the Os Pubis, and to the neighbouring Part of the Symphysis, its Fibres mixing a little with those of the *Pectineus*. Thence it runs down, increasing in Breadth; and is inserted by fleshy Fibres interiorly in the middle Portion of the *Linea Femoris Aspera*.

At the lower Part of this Insertion, a Portion of the Muscle separates from the rest, and sends off a long Tendon, which, together with a like Tendon from the *Triceps Tertius*, is inserted in the inner Condyle of the Extremity of the Os Femoris.

TRICEPS SECUNDUS.

This Muscle is fixed above by fleshy Fibres, below the superior Insertion of the *Triceps Primus*, in all the Outside of the inferior Branch of the Os Pubis as low as the Foramen Ovale; but seldom so low as the Branch of the Os Ischium. This Insertion is broader than that of the former Muscle.

From thence it runs down, and is inserted in the upper Part of the *Linea Aspera*, between the *Pectineus* and *Triceps Primus*, mixing a little with each of these Muscles. This Insertion appears sometimes divided.

TRICEPS TERTIUS.

This Muscle is fixed above by fleshy Fibres to the anterior Part of all the short Branch of the Ischium, and to a small Part of the Tuberosity of that Bone. This Insertion covers some Part of the Tendon of the *Semi-membranosus*, and is covered by that of the *Semi-nervosus*.

From thence it runs down, and is inserted by fleshy Fibres in the *Linea Aspera* almost from the little Trochanter, down to the Middle of the Os Femoris. It goes lower down than the first *Triceps*, sending off a separate Portion like that of the Muscle last-mentioned.

These two Portions join together, and form a common Tendon, which, running down to the lower Extremity of the Os Femoris, is inserted in the back Part of the Tuberosity of the inner Condyle. This separate Portion is sometimes large enough to be taken for a distinct Muscle, in which Case we have a *Quadriceps* instead of a *Triceps*.

In all this Progress this Muscle is joined to the *Vastus Internus* by a perforated Aponeurosis, through which the Blood-vessels pass.

The three *Triceps* Muscles join in the same Use, that is, to move the Thigh inward, and bring the two Thighs near each other; as when, in riding, we press the Thighs close against the Saddle; when, in sitting, we hold any thing close between the Knees; when we cross the Thighs; or when, in standings, we bring the Legs close together, in order to jump.

The Use of these Muscles is, also, to hinder the Thighs from separating more than is convenient, especially in great Efforts and Jerks. This might happen, for Instance, when, in mounting an Horse, or laying the Leg over any Height, we raise one Thigh hastily, and support the Body on the other. It might, also, happen by the Weight of the Body alone, when, in standing, we separate both Legs at once, or jump hastily to one Side.

This Use of bringing the Thighs together, and hindering their Separation, has Place in all possible Situations of the Body or Thighs; that is, in standing, sitting, and lying, and when bent, extended, or turned backward, or outward. This shews the great Necessity of providing for this Function, not only by a strong moving Force, but, also, by distributing this Force in such a manner as that it may be able to act through almost all the Degrees of a very long Lever of one kind.

The longest Portion of the *Triceps Tertius*, being inserted in the Side of the inner Condyle of the Os Femoris, seems to counterbalance the other Portions, which are inserted more posteriorly in the *Linea Aspera*. *Winslow.*

TRICHIASIS, *τρίχιασις*, from *τρίχῆς*, an Hair, is a Disorder of the Eye, consisting in an Irritation thereof by the Eye-lashes; or, according to the Author of the *Definitiones Medicae*, it is *πλεονέκτων πλῆθος, ὃ τῶν ἐν αὐτῇ τριχῶν γένεσις παρὰ τὸν ὀφθαλμὸν*,

"a Falling of the Eyelids, and a preternatural Generation of Hairs in them." He makes three Sorts of *τριχίασις*, to which he gives the Name of *φάλαγγσις* (*Phalangosis*), *πρόσις* (*Prosis*), and *υπόσις* (*Hypophysis*); to which some, he says, add *δυσίχια* (*Dysichia*). See these Words in their proper Places. In *Lib. de R. V. I. A.* this Disease is called *Trichosis*, as, also, by *Advarias*.

Trichiasis, also, signifies an Affection of the Urine, when something like Hairs is seen floating in it. Thus *Galen, Com. ad 4. Aph. 76.* says that "the more modern Physicians call that Disorder, when something like Hairs, especially white ones, appear in the Urine, by the Name of *Trichiasis*." Some call it *Piliuicium*, or Pissing of Hairs; whence, in the Additions to the Book *de Natura humana*, they are called, *τριχουδία σαρκία σπινδα ἐν τῷ ἐνθίμῳ ζυγέζοντα*, "mixture Pieces of Flesh, like Hairs, mixed with the Urine;" and the same thing is expressed 14 *Aph. 76.*

Trichiasis, in *Erotian*, is called an Abscess about the Breasts of Women, when he expounds *τριχιάσις* in *Hippocrates*: Whence I am persuaded, that *Erotian* read that Passage, *Lib. 2. περί γυναικ.* as follows: *ὁύσαν γυναῖκα ὁ μαστός τριχιάσις*, "when the Woman shall have her Breast affected with a *Trichiasis*;" instead of which, it is written every-where, "*τριχὺς γυνή*," shall become rough; so that *Trichiasis* is a kind of Austerity of the Breasts, when they are affected with capillary Fissures, or rugous Inequalities, like very fine Scissures; in which Sense, *Trichiasis*, or *Trichismos*, signifies a very fine Species of Fracture, resembling a Hair; and, under this Notion, *Erotian* ought rather to be read with *ἀπὸ τριχίας* than *ἀπὸ τριχίας*, "an Abscess."

Trichiasis signifies, in the last Place, the *Pilare Malum*, as *Gaza* renders it, or the hairy Evil, which *Aristotle, Hist. Animal. Lib. 7. Cap. 11.* calls *Trichia*, *τριχία*, where he says, by way of Description, "the whole Breast is of so fungous a Substance, that if the Woman happens to swallow an Hair in drinking, she is affected with a Pain in her Breast, which ceases not, till the Hair is discharged either spontaneously, or by Pressure, or is sucked out with the Milk." *Foesius.*

Few Physicians have had an Opportunity of observing the *τριχίασις*, or a Discharge of Hairs by Urine; and fewer still, a periodical Return of this Disorder. A memorable Case of the last-mentioned Kind I had in the Son of a Gentleman of Distinction, who was afflicted for more than four Years with a *Trichiasis*, which return'd every fourteen Days with a considerable Difficulty in discharging his Urine, and so great an Uneasiness of Body, that he could hardly lie in Bed.

Every Hair in Length equal'd sometimes half, and sometimes a whole Finger's Length; but they were so cover'd and wrapt up in Mucus, that they were rarely discharg'd separately, but, as it were, wrapt up. Every Paroxysm lasted almost four Days; and tho' during these he continually render'd his Urine with Difficulty, yet he pass'd the intermediate Days without any Pain, or Discharge of Hairs by Urine, till the fresh Paroxysm returned. *Tulpius Observat. Medic. L. 2. C. 52.*

TRICHOMANES.

The Characters are;

The Leaves consist of roundish Lobes, which are, in a manner, conjugated; and the Fruit is like that of the Filix, or Fern.

Boerhaave mentions two Sorts of *Trichomanes*; which are, 1. *Trichomanes*; five Polytrichon; *Officinatum*. *C. B. P. 356. Tourn. Inst. 539. Boerb. Ind. A. 25. Trichomanes. Offic. Capillus Veneris, Pharmacopolis. Trichomanes. Park. 1051. Raii Hist. 1. 140. Synop. 46. Trichomanes mas. Ger. 985. Emac. 1146. Trichomanes five Polytrichum. J. B. 3. 754. Trichomanes, Polytrichum, Callitrichum. Chab. 556. ENGLISH BLACK MAIDENHAIR.*

The Root of this Maidenhair is composed of small Strings or Fibres, from which spring several Leaves about a Span long, having a slender shining black Stalk, set on both Sides with small roundish Leaves, sometimes a little crenated about the Edges, and sometimes not; whose under Part is covered, at the latter End of the Year, with small dusty Particles, which is the Seed. It grows in hollow shady Lanes, and on old stone Buildings, being to be gathered in September or October.

This is what is commonly made use of in the Shops for the true *Capillus Veneris*, or Maidenhair, there being but a little of that to be had: It is reckoned to be much of the same Nature with the true; and to be pectoral, and good for Coughs and Consumptions; to help the Stone, Gravel, and Stoppage of Urine; and to be, in all Cases, a fit Succedaneum for the true *Capillus Veneris*. *Miller's Bot. Off.*

In the English Shops it is a Succedaneum for the *Adiantum verum*, or *Capillus Veneris*, which grows not spontaneously in England; and is supposed to have the same Virtues, and *Tragus* ascribes the same Effects, to it. The Herb, boiled in Wine or Hydromel, and drank, removes Obstructions of the Liver; cures the jaundice; cleanses the Lungs; helps Difficulty of Breathing; purges Melancholy by Urine; mollifies hard Tumors of the

Spleen; expels Poison, and the Stone; and provokes the Menstrues. The same Decoction, or the Powder of the Herb, or an Eclegma, or Syrup prepared of it, or the distilled Water, stops all sorts of Fluxes of the Belly, and cools Inflammations of the Liver. A Lixivium of the Leaves restrains the Falling off of the Hair, the Head being washed therewith; and cures the Bites of Serpents, and other Animals. Some Farmers and Graziers make a singular Use of the *Trichomanes*, in curing the Diseases of their Swine. But let the Skillful judge, says *J. Baubine*, whether an astringent, cold, and dry Herb can perform such Effects as are ascrib'd to the *Trichomanes*. The chief Virtues of this Plant, and which are allow'd it by all, were in its being adapted to the Cure of Pulmonic Fevers, the Gravel in the Kidneys, and the Strangury.

2. *Trichomanes*; foliis eleganter incis. *T. 539. Adiantum mas. Tab. Ic. 797. Boerb. Ind. alt. Plant.*

This Plant is, also, called *Polytrichum*, from *πολύς* (*Polys*), much, and *τριχίς* (*Trichis*), Hair; as much as to say, a capillary Herb, because it is one of the Plants which go by the Name of *Capillary*.

These Plants have their Seed-vessels in the back Part of the Leaf; the *Trichomanes* have all the Properties of the *Polypodium*, except its cathartic Quality; it is aperient and pectoral, and of Service in Diseases of the Spleen, and Obstructions of the Menstrues. *Hist. Plant. adscript. Boerhaav.*

TRICHOPHYTES, *τριχοφύτες*, from *τριχίς*, the Hairs, and *φύω*, to grow.

TRICHOPHYLLON. A Plant, whose Leaves are small, and resemble Hairs, according to *Blancard*. But it seems rather to imply what Botanists call a capillary Plant.

TRICHOSIS, *τριχώσις*. The same as TRICHIASIS.

TRICHOTON, *τριχότων*. The Hairy Scap.

TRICOCOS. The Medlar. *Blancard.*

TRICOR. Gold. *Rulandus.*

TRICOTYLOS, *τρικότυλος*. A Measure of three Corylæ.

TRICUSPIDES VALVULÆ. Three Valves plac'd at the Mouth of the Right Ventricle of the Heart, just at its Junction with the Auricle. See *COR.*

TRIDACTYLES. A Name in *Boerhaave* for several Sorts of *Saxifraga*.

TRIENS. Three Ounces.

TRIFOLIATA PALUDOSA. A Name for the *Menyanthes*; *palustre*; *latifolium*; *triphyllum*.

TRIFOLIUM.

The Characters are;

The Flowers are papilionaceous, or nearly so, obvolv'd, together with the Ovary, in a simbrated Vagina, and disposed in Spikes. The Ovary becomes a Capsula, which is concealed in the Calyx, and full of Seed; which is, for the most part, Kidney-shaped; and, when ripe, closely adheres to the Capsule: The Fruit itself is of a wonderful Variety of Forms; the Leaves are disposed by Threes, rarely by Fours or Fives.

Boerhaave mentions thirty-six Sorts of *Trifolium*; which are,

1. *Trifolium*; montanum; purpureum; majus. *C. B. P. 328.*

2. *Trifolium*; Hispanicum; angustifolium; spicâ dilute rubente. *C. B. P. 328. Lagopus, angustifolium, folius, Hispanicus. Clus. H. 247.*

3. *Trifolium*; montanum; spicâ longissimâ, rubente. *C. B. P. 328. Lagopus major, alter. Dod. p. 578.*

4. *Trifolium*; lagopoides; hirsutum; angustifolium; Hispanicum, flore ruberrimo. *M. H. 2. 141. Lagopus minor, flore ruberrimo. Park. Theat. 1107.*

5. *Trifolium*; montanum; angustissimum; spicatum. *C. B. P. 328.*

6. *Trifolium*; arvense; humile; spicatum; five *Lagopus*. *C. B. P. 328. Tourn. Inst. 405. Raii Synop. 3. 330. Boerb. Ind. A. 2. 31. Lagopus Pes Leporinus. Offic. Lagopus vulgaris. Park. Theat. 1107. Raii Hist. 1. 948. Lagopus trifolius quorundam. J. B. 2. 377. Lagopus five Pes Leporis. Ger. 1023. Emac. 1193. HARES-FOOT.*

This Plant seldom rises very high, but spreads out into many slender Branches, having small narrow hairy Trefoil-leaves set at every Joint: On the Tops of the Branches, grow short round Heads composed of small papilionaceous pale-purple Flowers, each set in a soft woody Calyx, making the Heads appear soft and downy. The Seed is small, lying at the Bottom of the Calyx; the Root is little, and perishes yearly. It is found frequently among Corn and in Fallow-fields, and flowers in June and July. The whole Plant is used, though not very often.

Hare's-foot is drying and binding, accounted good for a Diarrhoea and Dysentery, and to stop the two great Flux of the Catamenia, and the *Fluxus Albus*, and Spitting of Blood. It helps the Ulceration of the Bladder; Strangury, and Heat, and Pain, in making Water. It is sold in our Shops for the *Hispidula*. *Miller's Bot. Off. and Dale.*

7. *Trifolium*; pratense; flore monopetalo. *Tourn. Inst. 404. Boerb. Ind. A. 2. 31. Trifolium, Lotus Herba, agrestis. Offic. Trifolium pratense. Ger. 1017. Emac. 1185. Trifolium pratense purpureum.*

purpureum. C. B. P. 327. Raii Hist. 1. 943. Synop. 3. 328. *Trifolium pratense purpureum vulgare*. Park. Theat. 1110. *Trifolium purpureum vulgare*. J. B. 2. 374. *Triphyllodes pratensis flore purpureo*. Pont. Anth. 241. **COMMON TREFOIL.**

The common purple Trefoil has three oval Leaves growing on the Top of pretty long hairy Foot-stalks; they are of a lighter Green underneath, and deeper above, having a white Spot in each Leaf. The Stalks grow to be a Foot or more in Height, with but a few, and those shorter Leaves; but having a Couple of small ones at the Bottom of the Flowers, which consist of round Spikes of small purple papilionaceous Flowers, set each in an hairy five-pointed Calyx; in which, afterwards, grow little short Pods, including two or three small, round, yellowish Seeds. The Root is long, slender, and spreading; it grows everywhere in the Fields and Meadows, flowering in May and June. The Leaves and Flowers are used, tho' but seldom.

They are drying and binding, and good for all Kind of Fluxes, as, also, for the Strangury, and Heat of Urine, made into a Cataplasm with Hog's Lard. They are reckoned good for Tumors and Inflammations. *Miller's Bot. Off.*

It is hardly ever used in Physic. *Tragus* prescribes the Flowers and Seeds, boiled in Wine, to ease acute Pains, and cut the glutinous Matters in the Intestines. He recommends them, also, boiled in Water or Oil, and apply'd in form of a Cataplasm, to resolve Tumors, where there is no Inflammation. *Martyn's Tournefort.*

8. *Trifolium*; *purpureum*; *majus*; *foliis longioribus* & *angustioribus*; *floribus saturatioribus*. *Raii Syn.* 194.

9. *Trifolium*; *pratense*; *album*. C. B. P. 327.

10. *Trifolium*; *quadrifolium*; *hortense*; *album*. C. B. P. 327. *Boerb. Ind. A. 2.* 31. *Trifolium purpureum*. *Offic. Trifolium pæum fuscum luxurians quaternis, quinis & senis foliis*. *Tourn. Inst.* 406. *Trifolium affine quadrifolium Pæum Lobelii*. J. B. 2. 380. *Raii Hist.* 1. 942. *Quadrifolium fuscum*. *Park. Theat.* 1112. *Lotus quadrifolia*. *Ger.* 1028. *Emac.* 1198. **PURPLE WORT, and PURPLE-GRASS.**

It is found in Meadows, whence it is taken, and carefully cultivated in Gardens; it flowers in Summer, and the Herb is used.

The Juice expels phlegmatic Humours from the Intestines, cures Ulcers of the Mouth and Tongue, is a Preservative against the Small-pox, and is vulgarly esteemed a present Remedy for the Purple Fever of Children.

11. *Trifolium*; *fragiferum*; *friscum*; *folio cordato*; *flore rubro*. *M. H.* 2. 144.

12. *Trifolium*; *femen sub terram condens*. *H. R. P.*

13. *Trifolium*; *pratense*; *luteum*; *capitulo Lupuli*; *vel agrarium*. C. B. P. 328.

14. *Trifolium*; *pratense*; *hirsutum*; *majus*; *flore albo sulphureo*, seu *ἀρχολευν*. *Raii Synop.* 193.

15. *Trifolium*; *flosculis albis*, in *glomerulis oblongis*, *asperis*, *cauliculis proxime adnatis*. *Raii Synop.* 195.

16. *Trifolium*; *lupulinum*; *alterum*; *minus*. *Raii Synop.* 195.

17. *Trifolium*; *stellatum*. C. B. P. 329. *Prodr.* 143.

18. *Trifolium*; *siliquis Ornithopodii*; *nostras*. *Raii Syn.* 195.

19. *Trifolium*; *pratense*; *folliculatum*. C. B. P. 329. *M. H.* 2. 144.

20. *Trifolium*; *globosum*; *repens*. C. B. P. 329. *Prodr.* 143.

21. *Trifolium*; *elegans*; *flore inverso*. *Barrell. Obs.* 73. *IC.* 872.

22. *Trifolium*; *Alpinum*; *flore magno*; *radice dulci*. C. B. P. 328.

23. *Trifolium*; *Africanum*; *fruticans*; *flore purpurascens*. *H. A. 2.* 211.

24. *Trifolium*; *Bitumen redolens*. C. B. P. 327. *Tourn. Inst.* 404. *Boerb. Ind. A. 2.* 32. *Trifolium bituminosum*. *Offic. Ger.* 1019. *Emac.* 1187. *Raii Hist.* 1. 943. *Trifolium Asphaltites sive bituminosum*. *Park. Theat.* 716. *Asphaltites sive Bituminosum odoratum & non odoratum*. J. B. 2. 366. *Trifolium Asphaltites sive bituminosum*, *Oxytriphylum & Menianthes dictum*. *Chab.* 160. **STINKING TREFOIL.**

This is a shrubby Plant, a Cubit, or a Cubit and an half, in Height, with stiff, hoary, and, also, blackish, striated Stalks, or Sprigs. The Leaves are, at first, round; but grow, by Degrees, long and acuminate; they are hoary also, and hairy; have the noisome Smell of Bitumen, and are glutinous to the Touch. The Flowers are not quite collected into a Body, but disposed on an oblongish Head, and are of a purple-violet Colour, and seated in oblong, striated, villous Calyces. The Seed is black, rough, hairy, and ends in a foliaceous Point; it has the same Smell as the rest of the Plant, and a medicated Taste.

I have, for a long time, says *Ray*, cultivated a Plant resembling this now described in all respects, except in that its Leaves are quite destitute of Smell, but the Flowers have a sweet, tho' faint Scent. The Reason of this is given by *C. Baubine*, when he says, that the Seed of this Trefoil from Italy, sowed in Germany, produces a Plant of a bituminous Smell; but the Seed of a Plant grown in Germany, being sown again, brings forth a Plant deficient in Taste and Smell; and if the Sowing were repeated, it is probable, that the Produce would degenerate into a Plant destitute of all Smell and Taste.

It grows plentifully in Italy, Sicily, and in Languedoc, and Provence, on rocky Hills not far from the Sea; but is cultivated with us in Gardens, and flowers in August; and the Root, Leaves, and Seed, are used.

The expressed Oil of the Seed is highly commended for the Palsy. *D. Soam. Raii Hist. Plant.*

The Leaves and Seed, taken in Water, are effectual against the Pleurisy, Dysury, Epilepsy, Dropsy, and female Disorders, and provoke the Menstrues; they, also, cure the Bites of Serpents. The Root is alexipharmic. - *Dale from Dioscorides.*

25. *Trifolium*; *Bitumen redolens*; *angustifolium*.

26. *Trifolium*; *stellatum*; *glabrum*. *Raii Synop.* 194.

27. *Trifolium*; *flosculis albis*, in *glomerulis oblongis*, *asperis*, *cauliculis proxime adnatis*. *Raii Synop.* 194.

28. *Trifolium*; *capitulo oblongo*, *aspero*. C. B. P. 329.

29. *Trifolium*; *Epithymi capitulis inter genicula*; *annuum*.

30. *Trifolium*; *minus*; *supinum*; *capitulis densiori lanugine candicantibus*. *Triumf.*

31. *Trifolium*; *minus*; *supinum*; *flore flavescente*; *capitulis globosis*, *parvis tomentosum*.

32. *Trifolium*; *foliis parvis*, *lanuginosis*; *flore pallide rubello*; *capitulo globoso*, *lanuginoso*, *molli*.

33. *Trifolium*; *capitulo spumoso*, *lævi*. C. B. P. 329. *Prodr.* 140.

34. *Trifolium*; *cum glomerulis rotundis ad caulium nodos*. *Raii Synop.* 194.

35. *Trifolium*; *clypeatum*; *argenteum*. *Prosp. Alpin. Exot.*

This is a very beautiful small Plant, almost trails on the Ground, resembles the *Trifolium pratense*, and grows in my botanic Garden at Padua, from Seed which I procured from Candy. It bears a silver-coloured Flower, void of Smell, but of a moderately acrid Taste. These Flowers, which are collected into a sort of silver-coloured Heads, are succeeded by black, oblong, broad, thin, foliaceous Seeds, in Shape very much resembling the old Venetian Bucklers. The Plant is annual, and the Seeds come to Maturity in Summer, and thrive well enough in the Soil of Padua.

The Flowers, Leaves, and Seeds, are moderately heating, drying, deterring, and digestive; and a Decoction, prepared of them all, is a potent Anodyne in Pains proceeding from Flatuofities. *P. Alpinus de Plant. Exot.*

36. *Trifolium*; *Alopecuron*; *spicâ globosâ*. *Barr. Ic.* 497. *Boerb. Ind. alt. Plant. Vol. 2.*

It is called *Trifolium*, from its three Leaves; and *Lagopus*, from *λαγώς* (*Lagos*), a Hare, and *πὺς* (*Pys*), a Foot; Hares-foot, because the Spikes on the Tops of the Branches represent the Figure of an Hare's Foot.

This Plant, especially the seventh, eighth, and ninth Species, affords plentiful Fodder for Cattle; and much better than Grass, and the Cattle are rendered much stronger by it, because it remains longer in the Stomach. The twenty-fourth and twenty-fifth are called Bituminous, because they have the Smell of a Species of *Bitumen Judaicum*; whence they afford, by Infusion, a very penetrating Oil. *Hist. Plant. adscript. Boerb.*

Trifolium is, also, a Name for several Sorts of *Melilotus*, *Medica*, and *Lotus*; all which see.

Trifolium acetosum. See **ACETOSELLA.**

Trifolium album. A Name for the *Dorycenium*; *Monspeliensium*.

Trifolium arborescens. A Name for the *Cytisus*; *glabris foliis*, *subrotundis*; *pediculis brevissimis*.

Trifolium frutescens. A Name for the *Medicago*; *trifolia*; *frutescens*; *incana*.

Trifolium fruticans. A Name for the *Jasminum*; *luteum*; *vulgò dictum bacciferum*.

Trifolium Halicacabum. A Name for the *Vulneraria*, *pentaphyllos*.

Trifolium Hepaticum. A Name for the *Hepatica*; *trifolia*; *cæruleo flore*.

Trifolium Lusitanicum. A Name for the *Sinapisrum*; *Lusitanicum*; *triphylum*; *flore rubro*; *siliquis corniculatis*.

Trifolium palustre. A Name for the *Menyanthes*; *palustre*; *latifolium*; *triphylon*; and for the *Menyanthes*; *palustre*; *angustifolium*; *triphylon*.

Trifolium siliqua falcata. A Name for the *Medicago*; *annua*; *trifolii facie*.

TRIGLA, *τρίγλα*. The Mullet.

TRIGLOCHINES, *τρίγλωχινες*. The same as **TRICUSPIDES**.

TRIGONA, *τρίγωνα*. The Name of certain narcotic compound Medicines mentioned by *Galen*.

TRIGONOS, *τρίγωνος*. The Name of a Troche, described by *Galen*, *de Comp. M. S. L. Lib. 7. C. 5.* and *Paulus Aegineta*, *L. 7. C. 12.*

TRIMESTRIS. This is an Epirhet for Wheat, Meal, or Barley, which frequently occurs in medicinal Authors. It imports, that the Grain has been but three Months in the Ground. I cannot, with *Columella*, and *Bapt. Porta*, believe, that this is a distinct Kind of Wheat; but rather think, that Husbandmen, after a bad Autumn, sow it by way of Recompence; that some of the Nations about the Alps, because their Wheat cannot bear the Rigours of the Winter, and the Showers, they delay the Sow-

ing of it till the Spring; not because they imagine, that it is a peculiar Kind, and would not thrive, if it was sown in another more indulgent Soil, and elsewhere in Italy. Thus the *Triticum Trimestre* is unknown in most Countries; and Wheat for several Years sown in the Spring, constitutes a certain particular Kind; for the Continuation of a Thing changes its Nature. Hence the Wheat, which has the Epithet *Trimestre* bestowed on it, differs not from the common Wheat in Species, but only in a certain Weakness of Constitution. *Raii Hist. Plant.*

TRINCIATELLA. A Name for the *Sonchus*; *levis*; *angustifolius*.

TRINITAS. A Name for the *Trifolium*; and, also, for the *Viola Tricolor*, according to *Blancard*.

TRIOBOLON. *τριόβολον*. The Weight of three Drains.

TRIOMPHYLLON. The Name of a Compound Medicine in *Mesue*. *Castellus*.

TRIOPHYLLUS ANTIDOTUS. The Name of an Antidote described by *Nicolaus Myrepsus*, *Secl. 1. C. 212*.

TRIORCHIS. *τριόρχης*. A Person who has three Testicles; of which there have been some Instances. *Triorchis* is, also, a Sort of Hawk, called a Buzzard.

TRIOSTEOSPERMUM. *Doctor Tinkar's Weed*, or false *Ipecacuanha*.

The Characters are;

It hath a tubulous Flower consisting of one Leaf, divided into five roundish Segments, and inclosed in a five-leaved Empalement, having another Cup resting on the Embryo; which, afterwards, becomes a roundish, fleshy Fruit, inclosing three hard Seeds, which are broad at their upper Part, and narrower at Bottom.

Miller mentions but one Sort of this Plant; which is,

Triosteospermum latiore folio flore rutilo. *Hort. Elth.*

This Plant is a Native of *New England*, *Virginia*, and some other Northern Parts of *America*, where it has been frequently used as an Emetic, and is commonly called *Ipecacuanha*. One of the first Persons who brought it into Use, was *Doctor Tinkar*, from whence many of the Inhabitants call it by the Name of *Doctor Tinkar's Weed*. The Leaves of this Plant greatly resemble those of the true *Ipecacuanha*, but the Roots are very different; and, by the most authentic Account we have of the true Sort, it differs in Flower and Fruit from this Plant.

It grows on low marshy Grounds, near *Boston* in *New England*, very plentifully; where the Roots are taken up every Year, and are continued in Use amongst the Inhabitants of *Boston*. *Miller's Dictionary*, Vol. 2.

TRIPALE. See **KANDEL**.

TRIPETALOUS FLOWERS are such Flowers as consist of three Leaves, which are called Petals, to distinguish them from the Leaves of Plants. *Miller's Dict.* Vol. 1.

TRIPHYLLON. Trefoil.

TRIPLOIDES, according to *Blancard*, is the Name of a chirurgical Instrument for elevating a large Depressure of the Cranium. See **CAPUT**.

TRIPOLIS, or **TRIPOLITANA TERRA**. See **ALANA TERRA**.

TRIPOLIUM. Offic. *Tripolium majus & minus*. J. B. 2. 1064. *Tripolium vulgare majus*. Ger. 333. Emac. 413. *Tripolium majus five vulgare*. Park. 673. *Tripolium majus ceruleum*. C. B. 267. *After maritimus ceruleus Tripolium dictus*. *Raii Synop.* 80. *After maritimus purpureus Tripolium dictus*. *Raii Hist.* 1. 270. *After maritimus palustris ceruleus Salicis folio*. *Tourn. Inst.* 481. **SEA STARWORT**.

It rises from a fibrous Root to the Height of a Cubit, or a Cubit and an half. The Leaves are pretty like those of the *Limonium majus*, narrower, but almost equal in Length, with the strait Fibres of the Plantain leaf, smooth, thick, fat, sometimes inclining to a ceruleous Colour, and disposed about the Stalks and Branches in an irregular manner. The Flowers grow on the ramous Top of the Stalk, adhering to the Extremities of the Sprays; and are of a purple or ceruleous Colour [an Edge or Border of small purple Leaves surrounding a middle yellow tufted Boss], and vanish into Down.

The *Tripolium majus & minus*, differing only in Size, are here put together. The *Tripolium Flore nudo* has been known to grow about *Bristol*, in great Plenty.

It grows, as *Lobel* truly observes, on the Sea-shores of *England* and *France*, and by the Banks of Rivers exposed to the Ebbing and Flowing of the Tide. We observed a smaller Species in the salt Marshes, not far from *Montpelier*. *Raii Hist. Plant.*

Two Drains of the Root, which is white, sweet-scented, and hot in Taste, purges off Water and Urine by Stool; it is, also, an Ingredient in alexipharmic Compositions. *Dioscorides*, Lib. 4. Cap. 135.

TRIQUETRA OSSA. Triangular Bones found in some Skulls. See **CAPUT**.

TRISCA, **TRISCHA**, or **TRISSIA**. The Name of a Fish, the same as **MUSTELA**.

TRISPASTUM APELLIDIS SEU ARCHIMEDIS. The Name of a Chirurgical Machine, described by *Oribasius*, in his *Treatise de Machinamentis*, Cap. 26.

TRISPERMON. The Name of a Cataplasma consisting of the Seeds of Cumin, Apium, and Bay-berries.

TRISSAGO. See **CHAMÆDRYS**.

TRISTITIA. Sorrow. This relates to Medicine only, as it relaxes the Fibres, and is hence the Cause of various Distempers.

TRISTO, according to *Paracelsus*, is the material Fire contained in all the four Elements, and producing the proper Effects of each Element.

TRISULCÆ. The same as **TRICUSPIDES**.

TRITÆOPHYES, *τρίταοφύες*, from *τρίταος*, tertian, and *φύς*, importing Similitude of Nature, or Original, is an Epithet of a Fever, much of a Nature with a Tertian, and taking its Rise from it. It seizes the Patient on the third Day, and arrives almost at its Height, or Perfection, so as to be distinguished from a Tertian, simply so called, a perfect Tertian, a lengthened Tertian, and a Semitertian, and to be a Sort of a Medium between them, as we are informed by *Galen*, *Com. 2. in Lib. 6 Epid.* where he, also, says, that *τρίταοφύς* may be, also, a general Epithet of all Fevers, which return with their periodical Fit, or Accession, every third Day. But, in his *Com. 1. in 1 Epid.* though he distinguishes the *Tritæophyes*, from a Semitertian in Name, yet he seems, in some measure, to join them together, as, also, *Lib. de Temp. Morb.* For it is of those Kinds of Fevers, or Mixtures of Tertians and Semitertians, that *Hippocrates* seems to speak, *1 Epid.* where he says of them, *τὸ μὲν ὅλον ἐκ ἐκλείπεται, παραξύνόμενοι δὲ τριταοφύα τριτον, "they were not wholly intermittent, but had their Paroxysms, or Fits, after the manner of a Tritæophyes."* And again, *ibid.* *ὅτι δὲ ἐκλείπεται, &c.* The Fevers were continual, and never intermittent, but had Paroxysms after the manner of the *Tritæophyes*. Here *Galen*, on the Place last-quoted, expounds the Word *τρίταοφύς*, of a kind of Conjunction of a Tertian and Semitertian.

Erotian, explaining the Fevers called *τρίταοφύς*, from *6 Epid.* tells us, that he thinks the Word *τρίταοφύς* may be supposed to be used by some, instead of *τρίταος*, for the Smoothness or Elegance of the Term; but he seems to be rather of the Opinion of *Philonides Siculus*, who will have the *Tritæophyes* to be a Fever which gives Signs of its approaching Paroxysms, but whose Intervals are regular, as it never arrives at Perfection; and that it takes its Name from its great Similitude to a Tertian; and that it is, also, called a small Semitertian. In *6 Epid. Sect. 2. Aph. 15.* it is said, that the Night preceding a Fit of the *Tritæophyes* is very troublesome. In *4 Epid.* the *Tritæophyes* is mentioned with the *Epidiodes*; and *Coac. 33.* a *Tritæophyes*, attended with an Anxiety, is said to be malignant. *Ibid. 37.* we read of a wandering or uncertain *Tritæophyes*. And again, *ibid. 26.* we meet with *τρίταοφύα, πύα*, "Rigors, such as are incident to a *Tritæophyes*." *Foesius*.

TRITÆOS, *τρίταος*. A Tertian.

TRITARII. The same as **DIATRITARII**. See **DIATRITOS**.

TRITICOSEPTIUM. A Name for the *Triticum*; *spica Hordei Londinensis*.

TRITICUM.

The Characters are;

The Flowers are hermaphrodite, and apetalous, consisting of simple masculine Stamina, furnished with their proper thin and slender Testiculi, within which is seated the Ovary, furnished with a Pair of scirrhous and recurve Tubes, which are each defended by two petaloidal Leaves, often awned, by means of a long, sharp, slender Appendix, which is sometimes hairy, sometimes smooth; they are, besides, surrounded with two hollow carinated Leaves, instead of a Calyx. These are sustained by one Pedicle, a Number of which, growing to an Axis, constitutes a dense Spike. The Seeds are large and oblong.

Boerhaave mentions eleven Sorts of *Triticum*; which are,

1. *Triticum*; *Hybernum*; *aristis carens*. C. B. P. 21. *Theat.* 351. *Tourn. Inst.* 512. *Boerb. Ind. A. 2. 155.* *Triticum*. Offic. *Triticum spica mutica*. Ger. 58. Emac. 65. Park. *Theat.* 1120. *Raii Hist.* 2. 1236. *Synop.* 3. 386. *Triticum five filigo spica mutica*. Merc. Bot. 1. 75. *Triticum vulgare, glumas trititando deponens*. J. B. 2. 407. *Frumentum, Triticum*. Chab. 173. **WHEAT**.

This is the most common Wheat that is sown with us, of which there are two Sorts, white and red; they grow alike, having an hollow Stalk, with usually four Knots taller than Barley, but not so tall as Rye; the Spikes are three or four Inches long, without Awns or Beards, containing a longish, round, white, or reddish Grain, easily rubbed out from the Ear. Wheat is sown in Autumn, and reaped in July or August following.

Wheat is most generally used, and the best Grain we have in *England*; the Bread made of it being more pleasant and nourishing, than of any other Grain. It is more used for Food, than Medicine, tho' a Poultrice made of it, boiled in Milk, eases Pains, and ripens Tumors and Impostumations; and a Piece of roasted Bread, dipt in Wine, and applied to the Stomach, is good to stay Vomiting. Bran is sometimes made use of in Cataplasms, and applied hot in Bags, for Pains in the Sides.

There was formerly kept, in the Shops, an *Emplastrum de Crusta Panis*; but it has been out of Use a great while. *Miller's Bot. Offic.*

Wheat,

Wheat, the more ponderous, the better it is, other Properties being alike; for which Reason our *London* Corn-factors sometimes buy Wheat by the Weight: It has something of Viscidity, and an obstruent Nature. The Characters of the best Wheat are, that it be new, of perfect Maturity, of a yellow Colour, very dense and ponderous; that, when macerated in Water, it swells very much, and very speedily; that it yields a great Quantity of Flour, and is free from all Mixture and Defects, as Tares, Cow-wheat, Blights, or Rust.

Among all Sorts of Corn, proper for Food, Wheat is esteemed the most excellent, not only for its highly nutritive Quality, but for its medicinal Uses, both internal and external, in many Diseases. C. B.

Of the Flour of Wheat, well fermented, is made the best Bread; and *Pliny* says, that *Amylum* is, also, prepared of it. Of the same, boiled in Water or Milk, are made the most convenient Pap-meats for Infants, which afford the best Nourishment, and are commended in a canine Appetite, and Impotence. They are of great Use, also, in Affections of the Fauces and Breast, Exulcerations of the Kidneys and Bladder, Fluxes of the Belly, and especially the Dysentery, being prepared as before, or of Broth, with an Addition of Butter. The Eating of raw Wheat causes Inflamations of the Belly, and is not easily digested. *Galen* condemns the Use of boiled Wheat in Food; but we have often eaten it seasoned with Butter, and sweetened with Sugar, without the least Inconvenience.

Cato's Method of preparing the *Grana triticea* (which is the Name he has for a wheaten Pritan, or a Sort of Spoonmeat of it) differs but little from that of our Preparation of wheaten Puls, or Spoon-meat, which we call Frumenty. "Put, he says, half a Pound of pure Wheat into a clean Mortar; wash it, and cleanse it carefully from the Husks; this done, after washing it thoroughly, put it into a Pot with pure Water, and boil it; when it is boiled, add thereto Milk, by little and little, till it comes to the Thickness of a Cremor."

As to its external Use, there is prepared a Collyrium, in which Wheat is an Ingredient, for Weakness and Dimness of Sight, and to remove Specks and Films; for which latter Purpose, the expressed Juice of Wheat is, also, effectual. Wheat-flour, dissolved in warm Bean-water, clears the Face from Wrinkles. *Galen* mentions a Medicine of *Crispus*, prepared of Wheat, for a recent Lichen on the Chin, or any other Part of the Face.

Put a good Number of Grains of Wheat upon an Anvil; then take a Plate of Brass, or Iron, for it is all one, heated in the Fire, and lay it upon the Wheat; the hot Liquor, which by this means comes from the Wheat, must be taken off, and rubbed upon the Lichen. By this Remedy alone, we have known many cured; and is not only good for a Lichen of the Face, but for all Sorts of Herpes and Imperigo, as we have experienced. The same is effectual in sinuous Ulcers, Chaps of the Feet or Hands, proceeding from Cold; and to render the Skin smooth, and free from Asperities.

Wheaten-flour, mixed with Oil, and applied in the Form of a Cataplasma, tho' better with boiled Water, and an Addition of Oil, mollifies the Hardness of the Breasts, and ripens Impostumes of the Liver, Spleen, and other Parts. Flour boiled in Vinegar, and apply'd, is effectual in Contractions of the Nerves, and for hanging Breasts. Crude Wheat chewed, and applied to the Place, is said to be effectual for the Bite of a mad Dog; the same ripens Abscesses of the Eyes.

To provoke Excretion by Stool, make a Paste of two Parts Flour, and one Part Salt, with the White of an Egg; and, reducing it to the Form of a Suppository, rub it over with Oil or Butter, and intrude it into the Anus. For the Gout, it is a good Remedy to put the Feet and Legs up to the Knees into Wheat, by which *Sextus Pompeius*, as *Pliny* relates, was freed on a sudden; but the Cure would succeed better, if the Wheat were first tossed in a Vessel, and heated at the Fire.

For all Pains of the Joints, of what Kind soever, is prepared a Cataplasma of Wheaten and Barley-meal, with the Flowers of Chamomile and Roses, each two Ounces, boiled in Water; to which afterwards is added, of the Oils of Chamomile and Roses, each one Ounce: It is to be apply'd hot.

The Ferment or Leaven of Wheaten-meal is endued with the Virtue of heating, extracting, and maturing; it wastes Callosities in the Soles of the Feet, and with Salt maturates and opens a Furunculus, and other Sorts of Tubercles.

Bran is of manifold Use; it serves instead of Soap, to scour the Hands, being mixed in the Water; and, besides, renders the Hands soft and white. Water, in which, when heated, Bran has been infused for a Day and a Night, is good to deterge the Furfur of the Head; and a Gargarism of the Decoction of Bran mitigates the Pain and Asperities of the Fauces.

Bran boiled in Water, then put into a Bag, squeezed dry, and apply'd hot, removes the pungent Pains of a Pleurisy, if the Bag, when cooled, be heated in the same Water, then again squeezed and apply'd, and this Method be several times repeated.

It is certain, that Bran has an absterfivè Virtue, by which the Intestines are stimulated to Excretion. Bread, therefore, which is made of Flour not thoroughly cleansed from the Bran, provided

it be duly fermented, seems to us to be more wholesome, and, also, more savoury, than what is made of pure Flour, or Siligo. For outward Use, Crums of Bread serves for much the same Purposes as Wheaten-flour. *Galen* writes, that a Cataplasma, prepared of Bread, is more digestive than one of Wheat, because Bread has a Mixture of Salt and Leaven; and his Opinion seems consonant to Reason, and is confirmed by Experience.

Far is of two Kinds, native and factitious. The first is a Sort of frumentaceous Grain; the latter seems to be taken, by *Pliny*, for the Meal, Puls, or decorticated Grain of the *Far*; where he tells us, from *Verrius*, that, for three hundred Years, the Romans used nothing but *Far*, prepared of *Frumentum*. *Far*, according to *Aetius*, is any Kind of *Frumentum*, or frumentaceous Grain, first decorticated, and cleansed from the Husks, and afterwards broken into some Parts, and dry'd.

Athera, *Puls*, and *Gluten*, as prepared from Wheat, differ only in Consistence. For the first, see the Article *ATHERA*. The *Gluten*, or Paste, as prepared of the Flour of Wheat, is more thick and solid than the *Athera*, and serves to conglutinate Papers; it is esteemed good for an Hæmoptoe, on account of its being an Agglutinant. *Puls* is a middle Preparation between them, as being thicker, and more solid, than the *Athera*, and more liquid than the *Gluten*; consequently, it is less obstruent of the Viscera, than the *Gluten*; but has more of that Quality, than the *Athera*. A Kind of *Athera*, or rather *Puls*, is that Sort of Food, which, *Galen* tells us, is made of Wheaten-flour mixed in great Proportion with Milk, an Aliment which all Lower Germany very frequently uses at this Day [I suppose he means the *Puls* which we call Hasty-pudding]. This is a Food of good Juice, and very nutritive; but hurtful to those who daily use it; for it causes Obstructions in the Liver, and generates Stones in the Kidneys, as we are taught by *Galen*. *J. Baubine*.

Tragus is a factitious Thing. It was made of several Sorts of Corn, or frumentaceous Grain; as appears by comparing together, those Places of *Dioscorides*, *Galen*, and *Pliny*, where they treat of it. It differs from the *Chondrus* and *Alica*, principally in the Way of Preparation; for the *Chondrus* was completed with Gypsum and Sand, the *Alica* was cleansed with Chalk, but the *Tragus* was excorticated by Maceration in Water alone. *Raii Hist. Plant.*

Among the Preparations of this Grain may, perhaps, be reckon'd the *Vermicelli* made at *Genoa*, so called from their Likeness to small filamenous Worms. They are of two Kinds, the white and the yellow, and are used in the Kitchens of the Nobility and Gentry for Broths and Soops, and are thought to have an analeptic Virtue. *Dale*.

For other Preparations of Wheat, with their Uses and Virtues, see the Articles *ARTOS*, *PANIS*, *ALICA*, *AMYLUM*, *FURFUR*, *FARINA*.

2. *Triticum*; spica multiplici. C. B. P. 21. *Theat.* 371. *M. H.* 3. 175.

3. *Triticum*; spica *Hordei Londinensis*. *Raii Synop.* 3. 387. *Tourn. Inst.* 512. *Boerb. Ind. A.* 2. 155. *Zeopyrum. Offic. Zeopyrum seu Triticospeltum.* C. B. P. 22. *Theat.* 423. *Park. Theat.* 1123. *Hordeum nudum.* Ger. 66. *Emac.* 72. *Hordeum nudum five Gymnocritum.* J. B. 2. 430. *Raii Hist.* 2. 1908. NAKED BARLEY.

The Spike, or Ear, of this Grain is bearded like that of Barley, but the Corns are redish, sharp at both Ends, sulcated on one Side, and shewing a longish Bud proceeding from the Mucro, or Point on the Side opposite, covered with a simple Husk, which is more easily rubbed off, than that of Wheat. The Rows of Grain, if an Observation may be taken of them, seem to be four; to which we may add, that the Leaves are broad, and much envelope the Stalk. *Raii Hist. Plant.* p. 1908.

It is sown in Germany, where it serves to make Bread, and other Sorts of Food, and is no less used than Barley.

The *Gymnocritum* is of a refrigerating Quality, like the *Hordeum*, or Barley, being administered in Broths.

4. *Triticum*; siligineum. C. B. P. 21. *Theat.* 355.

5. *Triticum*; spica & granis rubentibus; culmo rubro.

6. *Triticum*; spica & granis rubentibus; culmo luteo.

7. *Triticum*; majus; longiore grano, glumis foliaceis incluso. *M. H.* 3. 175.

8. *Triticum*; spica quadrata; villosa, breviori.

9. *Triticum*; spica quadrata; villosa, longiori.

10. *Triticum*; spica albicante; granis rufescentibus; five *Triticum mixtum.* *M. H.* 3. 175.

11. *Triticum*; aristis circumvallatum; granis & spica rubentibus; glumis lævibus, & splendentibus. *Raii Synop.* 244.

The following Grasses are reckoned, by *Boerhaave*, among the Species of Wheat.

1. *Gramen caninum*; Spicæ *Triticæ* aliquatenus simile. See *AGROSTIS*.

2. *Gramen latifolium*; spica *triticea*, latiore, compacta. C. B. P. 8. *Prodr.* 17. *l. J. B.* 2. 477.

3. *Gramen*; caninum; longius radicatum majus. C. B. P. 1. *Theat.* 12.

4. *Gramen*; caninum; longius radicatum minus. C. B. P. 1. *Theat.* 12.

[Y +]

5. Gra-

TRO

5. Gramen; caninum; maritimum; spicatum. C. B. P. 1. *Theat.* 14.

6. Gramen; caninum; maritimum; spicâ foliaceâ. C. B. P. 2. *Theat.* 15.

7. Gramen; maritimum; vulgari canino simile. *Park. Lob. M. H.* 3. 178.

8. Gramen; geniculatum; parvum; arenosorum aggerum maritimorum Zelandiæ, longius radicans. *Lob. M. H.* 3. 178.

9. Gramen; angustifolium; spica Tritici muticæ simili. C. B. P. Prodr. 17. *Theat.* 132. *Boerb. Ind. alt. Plant.*

TRITICUM INDICUM. A Name for the Mayz; *granis aureis.*

TRITICUM TEMULENTUM. A Name for the *Lolium, verum; Gesneri; Lolium; album.*

TRITICUM VACCINUM. A Name for the *Melampyrum; comâ purpurascens.*

TRITIO. Triture.

TRITOMA. An Instrument us'd in Disorders of the Ears. *Castellus from Albucasis.*

TRITORIUM. A Chymical glass Instrument, open at both Ends, like a Funnel; narrow at the Top, but more so at the Bottom, but wide in the Middle. Its Use is to separate Liquors of different specific Gravities; for when the heaviest is run out, the inferior Orifice is stop'd, and the lightest is kept in the Vessel.

TRITURA. Triture.

TRITURATIO. Triture, or Trituration.

This is principally employ'd to reduce hard Substances to fine Powders, either by the Mortar, or by way of Levigation upon a Marble. There is little Difficulty in this, besides the Labour.

Trituration has a great Share in some Instances, in raising or depressing the Efficacy of what comes under its Management. For, in grinding, all those Bodies whose Efficacy consists much in the peculiar Shape and Points of their component Parts, the more and finer they are broke, the less will they operate: Thus may Calomel be render'd much gentler, and made capable of being given in much larger Quantities, only by long rubbing in a glass Mortar: For the continual Triture has the same Effect upon it, as repeated Sublimation, which is only breaking of the saline Spicula more and more, until it becomes almost plain Mercury. But in resinous Substances, particularly those which are purgative, as Jalap, Scammony, &c. the finer the Powder they are reduced into, the greater is likely to be their Efficacy: As the Sense which the Stomach and Bowels have of them, is in Proportion to their Contacts, therefore, the more the same Quantity is divided, the further will it diffuse itself, and vellicate the Fibres; that is, in other Words, it will work the more.

TRIUMFETTA.

The Characters are;

It hath a Flower consisting of several Petals, which are placed circularly, and expand in form of a Rose; From whose Empalement arises the Pointal, which afterward becomes an hard spherical burry Fruit, inclosing four angular Seeds.

Miller mentions two Sorts of *Triumfetta*; which are,

1. *Triumfetta fructu echinato racemoso. Plum. Nov. Gen.*

2. *Triumfetta fructu echinato racemoso, minor. Miller.*

The first of these Plants is very common in the Island of *Jamaica*, and several other Parts of *America*; but the second Sort is more rare, being found in but few Places. The Seeds of this Kind were sent to *England* by Mr. Robert Miller, who discovered the Plant on the North Side of the Island of *Jamaica*.

The Flowers of these Plants are small, and of a yellow Colour, somewhat like those of *Agrimony*; for which the Plant has been by some ranged under that Genus. These Flowers are produced in Branches, at the Extremity of the Shoots; but as they are not very beautiful, so they are seldom preserved, but in such Gardens, where Variety is principally intended.

The first of these Sorts rises to the Height of six or seven Feet, and the Stem becomes woody. Toward the Top it divides into several Branches, each of which produces a Spike or Bunch of Flowers. The Leaves of this Sort are pretty large, and shap'd like those of the larger *Malvinda*.

The second Sort seldom rises more than three Feet high, and has smaller Leaves than the first. The Stem of this Sort is woody, but it doth not branch so much as the former, and is in every respect a much less Plant than that. *Miller's Dictionary.*

TRIXAGO, the same as *Triffago*. See *CHAMEDRYS*.

TROCHANTERES. Two Processes of the Thigh-bone are thus call'd. One is the greater; the other the lesser *Trochanter*.

TROCHILODES, *τροχιλάδης*. An Epithet for the round Part of the Arm, in *Galen de Usu Partium, L. 2. C. 15.*

TROCHILUS. The Wren.

TROCHISCI.

The Form of Troches, is in all respects blamed by some Commentators on the officinal Dispensatories, particularly by *Sassenus*, who wonders how it came to be contrived at all: But

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there are certainly some good Reasons for it, as it either better preserves those things against their Time of Use, which would decay in Powder; or assists in a particular manner of taking them, by gradually dissolving in the Mouth.

The *Trochisci Hysterici* are an uniform and efficacious Composition; but still seem to give place to those *de Myrrha*, which are of the same Intention, and something preferable in two respects: For every Ingredient in them fully coincides with the main End, and they are more ready in this Form for extemporaneous Occasions, than the same things could be in any other, or in their natural Productions. The *Trochisci de Terra Japonica*, are not yet come much into Acquaintance; but are so easily made, and so much pleasanter to take, than any other of this Form in the like Intention, that they are much to be preferred to the *Trochisci Gordonii*, and *de Terra Lemnia*. The *Trochisci Bechici albi* and *nigri* are both calculated likewise to dissolve gradually in the Mouth, and for the same Intention; the former are by much more grateful, but the latter more efficacious. The *Trochisci Albandal* might be mention'd among those for inward Use; but they are so much in Neglect, unless in a few officinal Prescriptions, that it is hardly worth Inquiry, whether the Reduction of the Colocynth from six Ounces to six Drams, in the last Alteration of the College, be Mistake or not. The *Trochisci albi Rhasis* are purposely contrived for cooling Lotions, and are principally used in Solution, with Plantain or Rose-water, against Inflammations, and hot Defluxions upon the Eyes; the usual Quantity is about half a Dram to two Ounces of Water, which, when dissolved, looks white as Milk. The *Trochisci de Plumbo*, are designed for the same Purposes; but are a much coarser Medicine, and therefore hardly ever prescrib'd.

There are many things, which might be contrived into this Form for extemporaneous Uses, in the manner of the *Trochisci Bechici*, and several Medicines are reduced under the Title of Lozenges; but the same Intentions are answerable by things in other Forms, with more Certainty; and few caring to be troubled with them, they are hardly ever met with in regular Prescriptions; though, for the Preservation of some things for present Use, it is a very serviceable Form, as hath been already observed, concerning the Troches of Myrrh, and some other officinal Compositions of the like Nature. *Quincy's Praelect. Pharm.*

TROCHISCI ALBI RHASIS.

The white Troches of Rhases.

Take of Cerufs washed with Rose-water, ten Drams; of Sarcocolla, three Drams; of Starch, two Drams; of Gum Arabic, and Tragacanth, of each one Dram; of Camphire, half a Dram: And make them all together into Troches with a sufficient Quantity of Rose-water.

These are dissolv'd in White-wine, Rose-water, or any other Liquid, to make Collyria for the Eyes. They assuage Inflammations, and sometimes repel hot corrosive Rheums. The same are sometimes used for Injections in Gonorrhœas to cool the Urethra, and defend it against the Corrosions of the gleet Humours. Two Drams dissolved in two Ounces of Liquid, is the usual Proportion of Mixture; with which the affected Part is to be frequently washed.

TROCHISCI ALEXITERII. See *ALEXITERIA*.

TROCHISCI ALHANDAL. See *ALHANDAL*.

TROCHISCI ALIPTÆ MOSCHATÆ. See *ALIPTÆ*.

TROCHISCI ALKEKENGII. See *ALKEKENGII*.

TROCHISCI APOPLECTICI.

Lozenges against the Apoplexy.

Take Ambergrise, half a Dram; Oil of Rosemary, Cinnamon, Nutmeg, of each two Drops; Oil of Cloves, and Marjoram, of each one Drop; Spirit of Lavender, eighty Drops; fine Sugar, four Ounces: Make into Lozenges with a sufficient Quantity of the Mucilage of Gum Tragacanth.

These are proper to chew, and roll about in the Mouth frequently, by such who are subject to apoplectic Disorders: For this way the warm Aromatics more immediately penetrate the Fibres, than when swallowed at once into the Stomach.

TROCHISCI BALSAMICI.

Balsamic Lozenges.

Take Balsam of Tolu, Orrice-root, of each one Ounce; Gum Tragacanth and Arabic, of each half an Ounce; Flowers of Benjamin, two Drams; white Sugar-candy, one Pound. When all are reduced to fine Powder, make them into a Paste, with Mucilage of Quince-seeds and Rose-water for Lozenges.

These

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These make a most grateful and efficacious Remedy in all Kinds of Coughs, but particularly those from tickling Defluations and Rheums. They will, also, greatly contribute to restore decaying Lungs, and Persons almost worn out in Consumptions. On no Account can they disagree; and almost in all Cases will they prove of great Service. They may be, also, used at Pleasure.

TROCHISCI BECHICI ALBI. See BECHICA.
TROCHISCI BECHICI NIGRI. See BECHICA.

TROCHISCI DE BENZOINO.

Troches of Benjamin.

Take Sugar-candy, one Pound; melt it in Rose-water; then taking it from the Fire, dissolve in it strained Storax, one Ounce; which stir well together; and, when almost cold, sift in fine Powder of *Benjamin*, six Drams; Aloes-wood, half an Ounce; Orrice-root, one Ounce; Musk, one Scruple: And with a sufficient Quantity, if any be wanting, of the Tragacanth, Mucilage, and Rose-water, make them into a Paste.

This is an admirable Balsamic, and would be of great Service to such who are subject to Diseases of the Breast, and inclinable to Consumptions, if frequently taken. They give, also, a very agreeable Sweetness to the Breath. They may be used at Discretion. If the Aloes-wood was omitted, they would be never the worse, but rather more grateful. These are from the *Pharmacopœia Regia*.

TROCHISCI DE CARABE.

Troches of Amber.

Take of Amber, one Ounce; of burnt Hartshorn, Gum Arabic, red Coral, Gum Tragacanth, Acacia, Hypocystis, Balaustines, Mastich, Gum-lacca washed, and black Poppy-seeds, of each two Drams and two Scruples; of Frankincense and Saffron, of each two Drams; of Opium, one Dram: And make them all into Troches with a sufficient Quantity of the Mucilage of Fleawort-seeds made in Plantain-water.

This Composition is ascribed to *Mesue*, and seems designed against Hæmorrhages, and principally Spitting of Blood.

TROCHISCI CEPHALICI.

Cephalic Lozenges.

Take *Pulvis de Gutteta*, and native Cinnabar, of each half a Dram; Oil of Rosemary, and Nutmegs, of each two Drams; fine Sugar, two Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity.

TROCHISCI CYPHEOS PRO MITHRIDATICO. See CYPHI.

TROCHISCI AD EMULGENDUM SALIVAM.

Lozenges to occasion Spitting.

Take Pellitory of *Spain*, in fine Powder, half an Ounce; Mastich, two Drams; Oil of Cloves, and Marjoram, of each two Drams. Make into Lozenges or Pellets, with a sufficient Quantity of the best-scented yellow Bees-wax.

These may be of Use to such who want a Discharge of Rheum from the Glands about the Mouth, and cannot comply with the Custom of smoking Tobacco for that Purpose. For a great many Complaints arise from those Parts being overcharged with Moisture, for which this would be a convenient Drain; the Heat of it irritating the Glands to the Discharge of their Contents.

TROCHISCI GORDONII.

Gordon's Troches.

Take of the Four greater cold Seeds blanched, of the Seeds of white Poppies, Mallows, Cotton, Purslain, and Quinces, of Myrtle-berries, Gum-tragacanth, and Arabic, of Pistachios and Pine-nuts cleansed, Sugar-candy, Liquorice, Barley, Mucilage of Fleawort-seeds, and sweet Almonds blanched, of each two Drams; of *Armenian Bole*, Dragon's-blood, Spodium of Ivory, and red Rose-flowers, of each half an Ounce: Let them be made into Troches, *S. A.* with a sufficient Quantity of the Mucilage of Gum Tragacanth.

It was originally prescribed by *Gordonius, de Passionibus Reum, Cap. 10.* It is intended for some Distempers of the Kid-

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neys, and urinary Passages; but it is not often described, and for that Reason it is seldom to be met with in the Shops.

TROCHISCI HEDYCHROI GALENI AD THERIACAM. See HEDYCHROI.

TROCHISCI HEMOPTOICI.

Lozenges against Spitting of Blood.

Take Japan Earth, two Drams; astringent Saffron of Steel, one Dram; Sugar of Lead, and Starch, of each half a Dram; fine Sugar, four Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity to make them into Lozenges.

These may be taken at Discretion, by any who are subject to spit Blood; and they will, also, do Service in any Sort of Fluxes, whether of the Belly, or other Parts.

TROCHISCI HYSTERICI.

Hysteric Troches.

Take of Asafoetida, and of Galbanum, of each two Drams and an half; of Myrrh, two Drams; of Castor, one Dram and an half; of the Roots of Asarum, long Birthwort, of Savine, Motherwort, and Calamint, of each one Dram; and of Dittany, half a Dram: Let the Gums be soaked in the Juice or Decoction of Rue, and strained and boiled up to the Thickness of Honey; and then add the other Ingredients, finely powdered, so that the Whole may be made into Troches, *S. A.*

They are well contrived to the Purpose their Title denotes; and are very effectual in all uterine Disorders, to allay Vapours, Convulsions, to promote the Menstrues, to assist Delivery, and all that belongs to rectifying the Diseases of those Parts. They are conveniently reducible into Powder, for any extemporaneous Form; and may be given from five Grains to one Scruple for a Dose.

TROCHISCI DE LIGNO ALOES.

Troches of Aloes-wood.

Take of Aloes-wood, and red Roses, of each two Drams; of Mastich, Cinnamon, Cloves, *Indian Spikenard*, Nutmegs, Carrot-seeds, the greater and lesser Cardamoms, Cubebs, Gallia Moschata, Citron-peels, and Mace, of each one Dram and an half: And make them into Troches with the Pulp of Raisins, half a Scruple of Ambergrise; and Musk may be added at Pleasure.

TROCHISCI DE MYRRHA.

Troches of Myrrh.

Take of Myrrh, three Drams; of the Leaves of Rue, Horse-mint, and Cretic Dittany, of Cumin-seeds, Asafoetida, Sagapenum, *Russian Castor*, and Opopanax, of each two Drams: Let the Gums be dissolved in a Decoction of Mugwort, and the rest be thrown in, so that the Whole may be made into Troches, with a sufficient Quantity of the Juice of Mugwort, *S. A.*

These were first prescribed by *Rhazes, Cap. 9. ad Almanso-rem*, against Obstructions of the Menstrues. This Medicine is so approved as to be pretty much called for in common Prescription, and esteemed beyond the Hysteric Troches before directed for the same Purposes.

TROCHISCI ODORATI.

Perfumed Lozenges.

Take Musk, and Ambergrise, of each six Grains; grind them fine with a little white Sugar-candy, and ten Drops of Spirit of Roses; then put to them Powder of Orrice, four Ounces; Starch, two Ounces; fine Sugar, four Ounces; and Gum Tragacanth, a sufficient Quantity.

These are of no great Service, unless to those few who delight in Sweets, and to disguise a stinking Breath.

TROCHISCI PARALYTICI.

Lozenges against the Palsy.

Take Sugar in fine Powder, one Ounce; compound Spirit of Lavender, sixty Drops; Oil of Rosemary, four Drops; with a sufficient Quantity of Mucilage of Gum Tragacanth.

These may be given at Discretion, to such who are inclinable to nervous Disorders, as they are best liked.

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TROCHISCI PERUVIANI.

Peruvian Lozenges.

Take of *Peruvian Bark*, one Ounce; reduce it into a most fine Powder; Balsam of Tolu, two Drams; of Gilead, half a Dram; Sugar, half a Pound; Mucilage of Gum Tragacanth; a sufficient Quantity to make them into Lozenges.

They who can take these, will find Service from them in all hectic Indispositions, and beginning Consumptions.

TROCHISCI SIVE SIEF DE PLUMBO. See SIEF DE PLUMBO.

TROCHISCI DE RHABARBARO.

Troches of Rhubarb.

Take of choice Rhubarb, ten Drams; of the Juice of Eupatorium (that is, of the *Ageratum Mefues*) inspissated, of each half an Ounce; of red Roses, three Drams; of Asarum-root, Madder, and Spikenard, of the Leaves of Wormwood, of the Seeds of Anise and Smallage, of each one Dram: And, with the depurated Juice of Eupatorium, make them into a Mass for Troches.

TROCHISCI RESTRINGENTES.

Restringent Lozenges.

Take Japan Earth in fine Powder, one Ounce; Gum Tragacanth, three Ounces; Oil of Cinnamon, one Dram; Sugar of Roses, two Pounds: Make them into a Paste with Mucilage of Quince-seeds made very strong.

These are great Restorers of a weak Stomach and Bowels, and such as are subject to Indigestion, Vomiting, and Fluxes. They may be taken at Discretion, and by continu'd Use they have been known to recover some from Weaknesses, under which they have been just sinking; and for the Fluor Albus, and other female Complaints, there is not a more pleasant and effectual Remedy; as, also, in old Gleet, where no Malignity remains.

TROCHISCI DE SCILLA AD THERIACAM. See SCILLA.

TROCHISCI STOMACHICI.

Stomach Lozenges.

Take Spanish Angelica-root in fine Powder, one Dram; Oil of Cinnamon, Nutmeg, and Cloves, of each two Drops; Oil of Mint and Wormwood, of each one Drop; fine Sugar, four Ounces: Mucilage of Gum Tragacanth, made with Orange-flower-water, a sufficient Quantity.

These are good to warm the Stomach, and dissipate such Flatulencies, which sometimes communicate their Disorders a great way further, and so are of Service to the Head.

TROCHISCI DE TERRA JAPONICA.

Troches of Japan Earth.

Take of Japan Earth, two Ounces; of white Sugar, sixteen Ounces; of the Mucilage of Gum Tragacanth made in Plantain-water, a sufficient Quantity to make them into Troches.

These were not in any Dispensatory before, and are not only easy to preserve and take; but, also, more effectual to all the Intentions of a Restringent, than many others.

TROCHISCI DE TERRA LEMNIA.

Troches of Lemnian Earth.

Take of Lemnian or Seal'd Earth, of Armenian Bole, Japan Earth, Acacia, Hypocystis, Gum Arabic roasted, Dragon's blood, roasted Starch, red Roses, Anthora, or, in its Defect, red Rose-seeds, Blood-stone, red Coral, Amber, Balaustines, Spodium of Ivory, Purslane-seeds somewhat roasted, Olibanum, calcined Hartshorn, Cypress-nut, and Saffron, of each two Drams; of black Poppy-seeds, Gum Tragacanth, and Pearls, of each one Dram and an half; of Opium, one Dram: And make them all up together into Troches, with a sufficient Quantity of the inspissated Juice of Plantain.

This is design'd much for the same Purpose as the *Trochisci de Carabe*, and the *Trochisci Gordonii*, that is, to stop Hæmorrhages, especially Spitting of Blood.

TROCHISCI; SIVE SIEF DE THURE. See SIEF DE THURE.

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TROCHISCI E VIOLIS SOLUTIVI.

Solutive Troches of Violets.

Take of Violet-flowers moderately dry'd, six Drams; of gummy Turpeth, one Ounce and an half; of the Juice of Liquorice, Scammony, and Manna, of each two Drams: To the Violets well beat, put the Manna, the Juice of Liquorice; and add the Turpeth, and Scammony in fine Powder; and when they are all well mixed together, make them into Troches with a little Syrup of Violets, if it be wanted.

TROCHISCI DE VIPERA AD THERIACAM.

Troches of Vipers for the Theriaca.

Take of Viper's Flesh, after the Skin is stripped off, the Fat and Entrails being taken out, and without the Head and Tail, eight Ounces; of the finest wheaten Bread, or rather Biscuit, powdered and sifted, two Ounces: Let them be formed into little Troches, by anointing the Head with Opobalsam, or Oil of Nutmegs by Expression; then dry them upon the Bottom of a Sieve inverted in some open Place, where the Air hath Passage thro'; and turn them often, till they are thoroughly dry.

TROCHITES. The Name of a Stone shaped like a Top (*Trochus*) with which Children play. It is without-side of a cineritious Colour, but white within.

TROCHLEA. A kind of cartilaginous Pulley, through which the Tendon of one of the Muscles of the Eye passes. See OCULUS.

TROCHLEARIS MUSCULUS. That Muscle of the Eye, whose Tendon passes thro' the TROCHLEA. See OCULUS.

TROCHOIDES, τροχοειδής, from τροχός, a Wheel. An Epithet for a Species of a Articulation, when one Bone enters into the Cavity of another, like an Axis into the Cavity of a Wheel, as it happens in the Articulation with the first and second Vertebrae of the Neck.

TROCHOS, τροχός, from τρέχω, to run, is a Course; but, in Hippocrates, seems to mean a curve or circular Course, as oppos'd to a strait one, which he calls *Dromos*, δρόμος. Thus, *Lib. de Insomni.* we read, δει δὲ ἀμφότερας τὰς ἀντιστάσεις ποιεῖσθαι, καὶ τοῖσι δρόμοις τοῖσι τε καμπύλοις χεῖσθαι. "Re-volutions must be made both Ways, and Running must be used both strait forwards, and in curve or circular Lines." In the same Treatise, he advises to use τοῖσι τροχοῖσι ὀξεῖσι, "swift, circular Courses, or Running at the Rings," which is repeated in the same Book. In *Lib. 1. περὶ διαίτης*, we read δρόμος ὀξεὺς καὶ καμπύλος, "swift and wheeling Races;" and *Lib. 2.* he seems to let τὸς δρόμους μακρὰς, "long Courses," and καμπύλους τοῖς τροχοῖς, "crook'd with or after the manner of the Trochus," in Opposition. Τρόχοι, in Galen's Exegeſis, are expounded by δρόμοι (*Dromoi*) strait Races; in which Sense the Word seems to be used, *Lib. 2. & 3. de Dieta.*

TROCHUS is the Name of a Shell-fish, resembling in Shape a Top; which is alkaline and absorbent, like other Sea-shells.

TROCTOS, τροκτός, from τρώγω, to eat, is the same as τροξιμος (*troximus*) eatable, esculent: But the Word is most commonly apply'd to such Foods as are eaten crude; for Instance, such as are eaten in Sallads, and serv'd up in second Courses, as dry'd Grapes, Figs, and the like, and, also, to *Tragemata*. Galen, in his Exegeſis, expounds τροκτός by ἐσθιόμενα, "eaten raw."

TROGLE, τρώγλη, is a Cavern or Cavity made by Erosion. *Helychius* expounds τρώγλαι by τρύπαι, (*Trupæ*) Perforations, and τρώγλαι by τρώγλαι, Holes eaten. In *Moschion, Cap. 126.* the Incisures made by Leeches are called τρώγλαι. *Hippocrates, Lib. de Carn.* calls the Passages, Perforations, or any other sort of Cavity, containing Humidities, *Trogle*, τρώγλαι, where he says, τὸ δὲ κοιλώδες τρώγλαι ἐγὲ ννοῖο, ἐν δὲ τῇσι τρώγλαι ταύταισιν τὸ ὑγρὸν, ὥσπερ καὶ ἐν τῇσι φλεβῖν τῇσι μεγάλαισιν. "The glutinous Substance pass'd into Perforations, in which "Perforations is contained an Humid, as there is in the large "Veins."

TROGLODYTES, τρωγλοδύτης. The Wren is call'd *Passer Troglodytes*. See PASSER.

TROGLODYTICA MYRRHA. The best Species of Myrrh; so call'd from the Country where it was produc'd.

TROLLIUS FLOS. A Name for the *Helleboro-ranunculus; flore luteo globoso.*

TRONOS, or TRONOSSA. The choicest Species of Manna. *Paracelsus. Rulandus.*

TROPHIODES, τροφιῶδες, in Galen's Exegeſis, is expounded by ἐχόν ἐμπεριέχονα τινα πτηνύετα, "containing some Matters of "a compact Substance," carry'd off (in the Urine); for the Word is spoken of the Urine, *7 Epid.* in a Passage to which Galen had certainly a Regard in his Exposition, where it is said ἐκταῖν ἔρπονεν ἀβρίον πρὸς τροφιῶδες, "on the sixth Day the "made

made Water freely and plentifully with something of a compact Substance," which floated in it.) Here by *τροφιῶδες*, and *ἔργος τροφιῶδες*, and *ἔρα τροφιῶδες* in the same Book, is to be understood Urine, which has swimming in it something of a dense and compact Substance, or some thick and condensed Corpuscles like an Enzorema, [see that Word] compacted into a globular kind of Form, as is observ'd under a great Redundance of Crudities, and in Fevers of a bad Kind; and indicates a great internal Burning, and vehement Exagitation of Nature, with an extraordinary Mixture of Flatuositities, of which we have frequent Instances in the *Epidemics*. We meet with *τροφιῶδες ἔργον*, also, *Coac.* 578. but the Reading seems to be corrupted, if we consult the *Prorrhetica*. And *Coac.* 604. we read of *τροφιῶδες διαχωρήματα*, by which must be understood, Excretions of a dense and concreted Substance. But the Reading appears to me very suspicious; and it appears from the *Prorrhetica*, that we are to read *ἐκ σφοδρώων* (not *τροφιῶδων*) *ὑπὸ αἵματι ὑποπύκνους*, "a sublivid Sediment of Excretions attended with Gripings;" which almost constantly accompanies liquid Stools, especially if it be considered, that the sublivid and muddy Sentiment proceeds from a great internal Heat, and a kind of Torrefaction, as *Galen* observes in *Prorrhet.* 156. and indicates a Distemperature of the Liver, and that such Excretions are usually attended with Gripes.

Τροφιῶδες is reckon'd by *Galen* one of those Words which are obscure, and but seldom used; and he derives it from *τρέφωμαι* (*trephomai*) which he expounds by *πύκνυνται*, to be compacted. *Eustathius* expounds *τρέφωμαι* by *πύκνυνται*, and *Hesychius* explains *τρέφω* by *πύκνυναι*, and *τρέφω* by *οἰκίζω*, in like manner, that is, by *πύκνυνται*. *Galen*, also, *Com.* 3. in *Prorrhet.* where he explains *σφοδρώδες ἔρα*, to be the same as in his *Exegesis* he makes *τροφιῶδες* to be, expounds *διασφύρεσθαι* by *πύκνυνται*, and tells us, that in *Homer* *διασφύρεσθαι* κυκλωδὲς signifies *περιπύκνυνται*, where *διασφύρεσθαι* and *περισφύρεσθαι* seem to be put for *διασφύρεσθαι* and *περισφύρεσθαι*, as in *Homer*, *Odyss.* 8. where we read *κατέσσει* *περισφύρεσθαι* *κεύσαλλος*, *Hesychius* reads *περισφύρεσθαι*, and expounds it by *περιπύκνυνται*. And in *Iliad.* 6. μάλα δ' ὦκα *περισφύρεσθαι* κυκλωδὲς, *Herodian* reads *περισφύρεσθαι*, which Reading is approv'd by *Eustathius*. *Erolian* says that *τρέφω* with the *Attici* signifies *πύκνυνται*, when he expounds *τρέφω* by *πύκνυνται*, and observes further, that *τρέφω* is *πύκνυνται*, and derived from *τρέφω*, but *Hesychius* better derives it from *τρέφω*, and says that it signifies *πύκνυνται*. The same Author expounds *τροφιῶδες* by *παχύνεται*, to be incrassated.

TROPHOS, *τροφός*. The Name of a Sort of Liniment mention'd by *Paulus Aegineta*, *L.* 4. *C.* 40.

TROPICUS MORBUS. A Chronical Disease.

TROXIMOS, *τρέξιμος*. The same as *TROCTOS*.

TRUNCULI. The Extremities of Animals, as the Feet, Ears, and Head. *Peritoeos*.

TRUTTA. *Offic.* *Schrod.* 5. 334. *Bellon.* de *Aquat.* 181. *Mer.* *Pin.* 188. *Trutta fluviatilis*. *Aldrov.* de *Pisc.* 585. *Salv.* de *Aquat.* 96. *Gesn.* de *Aquat.* 1005. *Rondel.* de *Pisc.* 2. 169. *Jonf.* de *Pisc.* 85. *Raii* *Ichth.* 199. *Ejulf.* *Synop.* *Pisc.* 65. **THE TROUT**.

The Trout is a Fish of excellent Taste, and is covered with small Scales, usually streaked with red. There are several Species of this Fish, which live in various Places, and differ in Colour and Size. Some are found in deep and rapid Rivers, others in Lakes; some are of a blackish Colour, others reddish, and rather of a gold Colour. There is another Sort, which is larger than the rest, named the Salmon-trout, because it resembles a Salmon, but is not so large; it is more valued for the Delicacy of its Taste, than the other sorts of Trout.

This Fish swims with much Agility and Swiftneſs, and is said on hearing Thunder to be so astonished, as to become immoveable. It feeds upon Worms, Slime, Mud, Insects, and small Fishes, which it pursues with so much Eagerness, from the Bottom to the Surface of the Water, that it sometimes throws itself into the Boats passing near it.

Trouts, besides being well tasted, produce good Juice, because they are always in Motion, feed upon good Food, and usually swim in clear and running Streams: Thus they acquire less gross and viscous Humours, eat short, and are easily digested; but they soon putrefy and corrupt, and therefore should be eaten without Delay, after they are brought out of the Water.

The Trout contains much Oil, volatile Salt, and Phlegm; and agrees with any Age and Constitution. In Summer it is most delicious, but in Winter it is deprived of almost all the Excellency of its Taste. It may be boiled, fried, roasted, or baked; and some salt it for Exportation.

There is another kind of Trout, somewhat different from those already mentioned, which is called in *Latin* *Thymallus*, a *Thymi Odore*, because it smells like Thyme. It is delicious Food, easy of Digestion, has good Juice, and so wholesome, that in some Places they allow sick Persons to eat it. Its Shape resembles that of the common Trout, and it, also, lives in clear and running Waters: It feeds upon the same Food, and in some Countries is more valued for the Goodness of its Taste than the

other sorts. Its Fat is good to remove Prints of the Small Pox, Deafness, Noises of the Ears, Specks, and Catarrhs of the Eyes.

The Fat of the first-mentioned Species is of a lenifying and dissolving Nature; good for the Piles, and other Distempers of the *Artes*, Ulcers in the Breast, and Fissures in the Nipples. *Lamery on Foods*.

TRYBION, *τρυβιον*, in *Hippocrates* *περί γυναικ. εἰς*. is by Translators render'd *Glandula*, a Pessary; but the Place, *τρυβιον ποιήσας*, "having made of them a Pessary," seems suspicious and corrupt, as appears from the Asterisk in the *Asulan Manuscript*, and for *τρυβιον ποιήσας* we are to read, in my Opinion, *τρίβων λείον ποιήσας*, "tritulating and levigating," that is, the Medicines before-mention'd, which are to be involv'd in fine Wooll for a Pessary. *Foesius*.

TRYBLION, *τρυβλιον*, in *Hippocrates*, *Lib.* *περί ἀφόρων*, is the Kettle, Dish, or Can, in which the Matter for Suffumigation is placed. In some Authors it is the same as *ἐξύβαρον*, *Oxybaphon*, or *Acetabulum*. The Word is often used by *Hippocrates*, *Lib.* *περί τῶν ἐν ἱδρὶ παθόντων*. In the spurious Additions to *Lib.* 1. *περί γυναικ.* we read *ἐλθε τρυβλιον πλείον*, which the Translators render an Hemina, or Acetabulum, full of Salt. *Foesius*.

TRYCHOS, *τρυχός*, is a worn and ragged Piece of Cloth, called, also, *ράκος*, a Rag. In *Aristoph.* *Acharn.* a Person calls a Fragment of Tragedy, *τα ράκια* of Tragedy, and the *ράκιον* of the old Drama, *τὰ ποία τρυχή*, "a kind of Tryche;" where the Scholiast observes, that *τρυχή* is the Tragedian Word for *ράκιν*, *Rhache*, "Rags." The Person here represented intends to laugh and jest at the worn and threadbare Habits of the old Comedy, and the ragged Dresses of the modern Tragedy, in which *Euripides* introduced his Heroes in poor, mean, and pitiful Habits.

Τρυχός *ἰδιότις μακρὸν*, in *Theophrast.* *Hist. Plant.* *Lib.* 3. *Cap.* 9. is the long Panicle of the *Ægilops*, and is the same with those Substances which *Pliny*, *Lib.* 18. calls *Panos arentes mustoso villo canos*, "dry'd Panicles, appearing hoary with their mossy Capillaments;" for whatever is of a round oblong Figure is called by *Pliny*, *Paniculus* and *Panus*, as well as what hangs down from the Boughs of the *Picea* and *Rubus*.

Τρυχίον is a Diminutive of *τρυχός*, and signifies the same as *ράκιον*, "a small Rag;" and is frequently used by *Hippocrates de Morb. Mulier.* and is sometimes expressed by *ράκιον* and *ἰδιότις*, all signifying a thin linen Rag, fit for wrapping up Medicines in the Form of a Pessary.

TRYGE, *τρυγή*, is expounded in *Hesychius*, *ὁ πυρός, καὶ ἡ κριθή, καὶ πᾶς ἄλλος καρπός, καὶ ποία βέλανη*, "Wheat or Barley, and all other sorts of Fruit, and a kind of Herb." *Eustathius* expounds *τρυγή* by *ὁ δὲ δμησίριανος καρπός*, "Corn or Grain for Bread." Hence *τρυγαβέλιον* signifies a Granary, or Repository for Corn.

TRYGEPHANIOS, *τρυγηφάνιος δίνος*. A kind of secondary Wine, made by expressing the Husks of Grapes, after the first Juice is press'd out.

TRYGIS, *τρυγίς*, in *Lib.* 2. *περί διαίτης*, is the *Tragus*, or *Olyra*, tho' *Calvus* renders it *Semen*.

TRYGODES. An Epithet for a Species of *Collyria* mention'd by *Galen.* de *C. M. S. Loc.* *Lib.* 4.

TRYPANON, *τρυπανον*. The same as *TEREBELLA*.

TRYPHEROS, *τρυφερός*, tender, soft, delicate, or mild. This is the Name of several Medicines describ'd by medicinal Writers. Thus *Scribonius Largus*, N° 230. mentions two mild Cauterics by the Names of *Tryphera*, or *Triphera*. *Galen* describes a *Collyrium*, and a *Pastil* or *Troche*, with this Epithet; the first in *L.* 4. *Cap.* 7. de *C. M. S. L.* the last in *L.* 7. *C.* 4. of the same Work.

In the *Augustian Dispensatory*, I find the following Medicines describ'd under the Title of *Tryphera*.

TRYPHERA PERSICA MESUÆ, which is thus prepared.

Take of the Juice of the best Endive three Pints; of the Juices of Smallage and Hops, each two Pints; of the Juice of Nightshade, nine Ounces; and of the Juice of Barberries, three Ounces: Pour all these upon recent, or dried, Violets and Roses, of each three Drams; of Sena-leaves, two Ounces; of Agaric, one Ounce; of damask Prunes, fifty; of Dodder, half an Ounce; of the Citrine, Chebule and Indian Myrobalans, rubbed with recently expressed Oil of sweet Almonds, each two Ounces; and of Indian Spike, three Drams: Let them boil on a slow Fire, till only two Pints of the Liquor are left: Then add of Dodder of Thyme, forty Drams: Then boil all together, and take the Vessel off the Fire; strain the Liquor, and in one Half of it, dissolve, of Tamarinds, three Ounces; of Manna, an Ounce and an half; of the Pulp of Cassia, four Ounces; and of the Conserve of Violets, one Pound: Strain the Whole, and cleanse it from Seeds and Sordes. To the other Half of the strained Liquor, add, of the finest white Sugar, three Pounds; and of Wine-vinegar, one Pint; boil over a gentle Fire, and pour it upon that which was dissolved in the Juices; mix all together, and boil to the Consistence of Honey; Then sprinkle into the Preparation the following Ingredients, reduced

reduced to Powder; of the best Rhubarb, two Ounces; of Citrine Myrobalans, an Ounce and an half; of Chebule, and Indian Myrobalans, each an Ounce; of the Belleric, and Emblic Myrobalans, each half an Ounce; of the Seeds of Fumitory, the Trochisci Diarhodon, Mace, Mastich, Cubebs, Spodium of Ivory, and yellow Sanders, each two Drams; of the Kernels of the Four greater cold Seeds, each two Drams and an half; of Aniseeds, half an Ounce; and of Indian Spike, two Drams. Make into an Electuary, in the Form of an Opiate.

This Medicine is said to be good in acute Fevers, in an hot Intemperature of the Stomach and Liver, and in all Disorders arising from a preternatural Heat of the Humours. It extinguishes Thirst; cures a Jaundice accompanied with Heat; dissolves those Suffusions which arise from bilious Vapours, and are offensive to the Sight. It, also, purifies the Blood; for which Reason it is, by *George Agricola*, and others, highly recommended in pestilential Fevers, and the Plague.

TRYPHERA MAGNA NICOLAI is thus prepared.

Take of Opium, two Drams; of Cinnamon, Cloves, Galangals, Indian Spike, Zedoary, Ginger, Costus, Styrax Calamita, Cyperus, Calamus Aromaticus, Root of Illyrian Orris, Hogs Fennel, the Acorus, or greater Galangals, the Bark of Mandrake, Red-roses, Celtic Spikenard, Pepper, Anise, Smallage, Parsley, Fennel, Carrot, the Sinous, Henbane, Hyssop, the Seeds of Ocymum, each one Dram, and of the purest Honey, ten Ounces and an half.

These Preparations are called *Triphera*, because they enliven the Colour of the Body, render the Breath sweet, and have a beautiful Appearance. They correct Putrefactions of the Humours, restore a due Succulence to the Body, and, like other Cosmetics, contribute much to augment Beauty. And this Preparation is in a peculiar Manner efficacious in Disorders of Women, arising from Coldness of Constitution. It may be, also, injected into the Uterus with Oil of Nutmegs.

TRIPHERA MINOR PHÆNONIS MESUÆ is thus prepared:

Take of Chebule, Belleric, Indian and Emblic Myrobalans, and of Nutmegs, each five Drams; of the Seeds of Water-creffes, of Asarabacca, Persian, or Cretan Origanum, Pepper, Frankincense, Bishops-weed, Ginger, the Fruit, or Leaves of the Tamarisk, Indian Spikenard, Camels Hay, each four Drams; and of the Scoriz of Iron or Steel, macerated for five Days in Vinegar, twenty Drams. Let the Myrobalans be moderately roasted with recent fresh Butter, and let the other Ingredients be covered with Oil of sweet Almonds: Then add of Musk, one Dram; and of the finest Honey, two Pounds, nine Ounces, and six Drams: Make into an Electuary.

This Preparation corroborates the Stomach, Liver, Kidneys, and Bladder; checks immoderate Discharges of the Hæmorrhoids and Menfes; corrects a Corruption of the Humours, Crudities, and Putrefactions in the Stomach; renders the Colour good, and the Countenance beautiful.

TRIPHERA SARACENICA MESUÆ is prepared in the following Manner.

Take of the five Kinds of Myrobalans, each five Drams; of Cinnamon, the three Species of Pepper, Secacul or Eryngo, Indian Leaf, or Mace, Indian Spike, both Species of the Cardamoms, Cassia Lignea, Indian Scitaragia, or Dittander, Cyperus, Smallage, Seeds of the Ash-tree, Cloves, both Species of the Bean, and of Ginger, each two Drams; of Nutmeg, Mace, and excorticated Sesamum, each three Drams; of both Species of Almonds, each five Drams; of Aloes-wood, Rhubarb, Rue, Fennel-seeds, and Mastich, each two Drams; of the Ocymus Caryophyllatus, dried Mint, and Cretan Origanum, each half a Dram.

Let the Myrobalans, when triturated, be fried with recent fresh Butter, obtained from Cows Milk; and the other Ingredients with Oil of sweet Almonds; and with a third Part of fine Honey, make into an Electuary. This Preparation, by its Heat, is beneficial to the Liver; assists Digestion; dissipates Flatulencies; removes putrid Matter lodged in the Stomach, or any other of the Viscera. It, also, enlivens the Colour, sweetens the Breath, removes Weariness, preserves Health, when present; and prevents the Generation of Diseases.

TRYPHONIS EMPLASTRUM. *Scribonius Largus* mentions several Plaisters under this Title. N° 203, 205, and 210.

TRYPHOS, τρυφός, in *Hippocrates*, signifies a Piece, or Fragment. Thus, *Lib. 2.* (περί γυναικ.) τρυφός ἀποφύας διαγὰς is a red-hot Sheard, or Fragment of a Pot, in which the Matter for Suffumigation is laid. Instead of this, *Lib. 1.* περί γυναικ. we find, ἐσπῆσαν γυψίδος καὶνὴν διατρυφόν, a new earthen Pot, heated red-hot, directed for that Purpose.

TRYX, Τρυξ, is the Lees of Wine or Oil; the Lees of which last are, also, called ἀμύρνη, *Amorga*. *Hippocrates*, *Lib. 1.* περί γυναικ. advises dry Tryx of old Wine, in Pessaries, and Collutions of the Uterus.

Τρυξ, 5 *Epid.* signifies, also, black Bile, which is, as it were, the Lees of the Blood; and 7 *Epid.* and *Coac.* we read Τρυγέσας σπύς, feculent Spitting.

TSHINKA. *Popoua Indis.* *Pison.* *Caryophyllus Regius.* Worm. *Caryophyllus ramosus, vel dentatus.* Jo. Bod. a Stapel. *Spicatus.*

The Dutch call this the Royal Caryophyllus, because it is valued by the petty Kings and Nobles of the *Molucca* Islands, even to Superstition; not so much for its Taste and Fragrance, though it excels others even in these respects, as on account of its singular Form, and extraordinary Rarity; for they say, that there are but two Trees of it to be found, and those in the Island of *Makian*. One of these Trees is bigger than the other, but both of them like the other caryophylliferous Trees, except in Tallness.

I am of Opinion, that these Trees are not a different Species, but belong to the Order of monstrous Vegetables; and that their Fruit is no other than the common aromatic Caryophyllus, divided into more Horns, which grow out by degrees, but want of the floriferous round Cup. It is no Wonder, therefore, that the Species is extinct. *Raii Hist. Plant.*

TSJAKELA. H. M. *Ficus Malabarica, semel in Anno fructifera, Fructu minimo.* A Species of *Ficus*, or Fig-tree, growing in *Malabar*. Of the Bark of the Tree the Natives make Strings for their Bows, and of the same prepare a red Colour, for dyeing what they call *Panos de Cambacci*, or *Cambayan* Cloths.

The Virtues are the same with those of the

Atty-Alu, or *Ficus Malabarensis Folio oblongo acuminato; Fructu vulgari amulo.* D. Syen. *Annot. in H. M.* The Fruit, like the Fig, is full of small, thin, oblong, Grains, in numerous Series, and, when ripe, Ants are found in them. The Natives feed on this Fruit, but not on the Fruit of the other Species.

The Decoction of the Root, or the Juice which flows from an Incision made in the Tree, and received in a Vessel set under it, serves to purify the Blood, to rectify Disorders of the Liver, and to heal Chops and Fissures of the Hands, Mouth, and other Parts: The Bark in Decoction serves for the same Purposes, and, being bruised, is successfully applied to Ulcers, and to the Part affected with the *Morbis Sacer*, called by the Portuguese, *Cobrella*. The Fruit binds the Belly, and is good to correct Phlegm, and the Distemperature of the Humours.

We shall here take notice of another Species of *Indian* Fig-tree, which, as well as the former, was omitted under the Article *Ficus*, to which it was referred; and that is the

Are-Alu. H. M. *Ficus Malabarensis; Folio cuspidato; Fructu rotundo; parvo, gemino, D. Siem.* This is a tall Tree with thick and shady Leaves, and growing in sandy and rocky Places, like the *Atty-Alu*, and has a Root like the *Per-Alu*. [See these *Alu's* below]. The Leaves are inspissated, and not so thick as those of the *Atty-Alu*; the Fruit grows in Pairs, close together, at the Origin of the Leaves; and are small, round, with a small Umbilicus in the Vertex, but containing no Ants, but numerous Grains, of the Size of those of the *Atty-Alu*, and inclosing a blackish minute Seed. The rest of the *Alu's* mentioned by *Ray* are,

Atty-Alu, H. M. *Ficus Malabarensis; Folio densiusculo nitente; Fructu parvo rotundo coronato.* This is a tall Tree, but less than the other Species of *Alu*. It is propagated by Fibres shooting downwards from the Branches. The Leaves have an astringent and bitterish Taste. The Fruit grows either single, or two or three together, and that either out of the Bosoms of the Leaves, or here-and-there out of the Boughs, and is small, round, with an eminent Umbilicus on the Vertex, of a yellow Colour when ripe. The Grains are like those of the *Atty-Alu*.

An Infusion of the bruised Bark in Milk, being first strained, is exhibited for the Vertigo. A Decoction of the Leaves in Oil is serviceable in the Cure of Ulcers, the Body being thoroughly anointed with it.

Itti-Are-Alou, H. M. *Ficus Malabarica, Folio mali cotonei; Fructu exiguo plano rotundo sanguineo. D. Commelin. Arbore de Raiis minor Lusitanis.* This is a tall Tree, running into a Multitude of Branches, which, after the Tree has lived forty or fifty Years, shoot forth a sort of slender Fibres, or Filaments, and those single, downwards, which, taking hold of the Earth, there take Root, and grow up into new Trees, which again propagate themselves in their Season, by other Fibres shooting downwards from their Branches, and so successively *ad infinitum*, so that sometimes one Tree has been found to occupy the Space of an Italian Mile in Compass, by this successive Propagation of its Shoots; and it has been difficult to know the Original, or first Parents, but only by the Thickness of its Trunk, which sometimes can scarce be fathomed by three Men; and not only the lower Branches send out Fibres, but the highest do the same, by which means one Tree makes a very thick Wood, which after remains for several Ages. The Inhabitants make themselves Passages under these Trees, and cut them into Arbours, and close and shady Walks, well defended from all Heat of the Sun, by the close Connexture and Luxuriance of the Branches; and so extensive, that a thousand Persons may repose themselves under the Shade of one such Tree. The Leaves are

are like those of the *Itty-Alu*, but less; the Fruit is small, flat, oblong, first green, then of a sanguineous Colour, both within and without, and full of Grains, like the common Fig, and sweet like that, but not so savoury; so that they are rather Food for Birds than Men.

It grows in all Parts of *Malabar*, and is green and fructiferous throughout the Year. Of the Bark, Leaves, and Root, boiled in Oil, is prepared a vulnerary Balm: Of the Bark, boiled in Butter-milk, is prepared a Collution for the Mouth, which absterges Aphthæ, heals flaccid and corroded Gums, and fastens loose Teeth. The Tree is not much different from the preceding, except in Bigness.

Tsjerou-meer-alou. This is less and lower than the preceding, but grows and propagates itself in the same manner, and the Leaves and Fruit are much like those of the other, only less; and the Virtues are the same as those of the preceding, except that of the Root boiled in Water, with Lime and Turmeric, is prepared a Bath for the Epilepsy, and the Leprosy.

Peralu. H. M. *Ficus Malabarensis; Folio crassiusculo majori; Fructu gemino intense rubente*. D. Syen.

The Liquor of the Filaments, which hang down from the Boughs, drank only in Water, or given in Decoction, mitigates the Heat of Fevers, and purifies the Liver and Blood. The Bark of the Tree, bruised, and applied to the Part affected, cures the *Morbus Sacer*.

Atty-meer-Alou, or *Alu*. H. M.

This is a Tree of a vast Bigness, with a thick Trunk; whence it shoots some slender and single Fibres downwards, which, adhering to the Tree, renders it vastly thick: By those Fibres taking Root in the Ground this Tree is propagated.

The Tree takes its Beginning from the Trunks of some Trees, or from Rocks, or the Gaps and Fissures of some old Walls, from whence it comes forth like a *Convolvulus*; after this the Root and Trunk shoot forth some thin Filaments, by which the Trunk is considerably increased. By the same Filaments it is settled in the Earth, and propagated far and wide, while the Tree, whence it had its Original, dies. This is the largest of all the Trees hitherto discovered in the *Indies*, and lives some Centuries. In *Kandante*, a Province of *Cochin*, near the Temple of *Beykan*, is a Tree of this Kind, which is fifty Geometrical Feet in Circumference, and is said by the Natives to be of two thousand Years standing.

The Juice of the Leaves cures burning Fevers, and the Fruit stops all manner of Fluxes of the Belly.

Hondir-Alu is a tall Tree, and propagates itself in the same Manner as the preceding. The expressed Juice of the tender Leaves is an excellent Remedy for corroded Gums, and other Affections of the Mouth, being used as a Collution. Of the same, prepared with fresh Butter, is prepared a Digestive, which is useful in cleansing and consolidating Ulcers. Of the Roots and Leaves, boiled together in Water, is prepared a Bath, which is said to be effectual towards curing the Epilepsy and Leprosy. *Raii Hist. Plant.*

TSJAMBOU. See JAMBOS.

TSIAPANGAM. See LIGNUM CAMPESCANUM.

TSIELA. *Ficus Malabarica; Fructu Ribesii Forma & Magnitudine*; is a large Tree, seven Feet in Height, with a thick Trunk, eighty Feet in Compass, and numerous Branches spreading circularly. The Fruit adheres to the Boughs among the Leaves, being without Pedicles, in Shape and Size resembling Currants, full of small, reddish Grains, as all the Fruits of the *Alu* and *Teregam*, and without Taste or Smell.

The Bark of the Root, boiled with long Pepper in common Water, cures an inveterate Cough, and other pulmonic Disorders. The expressed lacteous Juice of the Root and Fruit is an effectual Remedy in Diseases of the Eyes. *Raii Hist. Plant.*

TSJEM-TANI. *Myxa pyriformis Officulo trispermo*. This is a Tree of vast Bigness, growing in *Malabar*.

The Bark of the Tree is heating, incites viscous and pituitous Humours, attenuates, strengthens the weakened Viscera, and purges the Water from Hydropics. The same, with the Pulp of the Fruit, reduced to Powder and exhibited, cures an intermittent Fever; the Kernels of the Fruit, if eaten, loosen the Belly. *Raii Hist. Plant.*

TSJERIAM-COTTAM. H. M. *Frutex Indicus Bacciferus; Fructu racemoso, cuspidato, Ribium simili, monopryeno*. It is an evergreen Shrub of *Malabar*, whose Fruit is not much unlike our Currants.

Of the Leaves boiled in Water is made a Collution for the Mouth, which cures loose and tumid Gums; and of the Bark boiled in Whey, with the Seeds of Cumin, is prepared a Gargarism, which is said to be a potent Remedy for the Aphthæ. *Raii Hist. Plant.*

TSJEROM-KARA, *Malabarensibus*. H. M. *Baccifera Indica Flosculis ad Fœtorum Exodum confertis, Fructu dicocco*. It is a little low Tree, or rather Shrub, seven or eight Feet high, growing in *Malabar*, with a Trunk of a moderate Thickness, and a Multitude of small ash-coloured Branches, armed with rigid Spines, which are circularly disposed. The Root is reddish, sweet-scented, and bitter; the Flowers are small, greenish, scentless, and are seated in a small green Calyx, divided into five acuminate Lobes, and are succeeded by flat, round, dicoccous Berries, crowned with a broad Umbilicus at Top, and full of a green, humid, and bitter Pulp, within which are lodged two oblong Seeds, placed at Distance from each other.

Of the Leaves, boiled in Water, is prepared a Collution for the Mouth, and for the Aphthæ. The Decoction of the bruised Root in Water opens Obstructions of the Liver, purges the Blood, and exhilarates the Patient. *Raii Hist. Plant.*

TSJEROE-KATOU, *seu Cheru*. H. M. *Prunifera Malabarica; Fructu racemosa parvo, acris Succo tinctorio*. This is a very tall and beautiful Tree, with a thick Trunk, and numerous Branches, spreading far and wide. The Wood is whitish, close, covered with a dusky, and lanuginous Bark, which wounded, discharges a reddish, glutinous, strong-scented, very acrid, and caustic Tear, which grows black with long standing in the Sun. The Root is whitish, covered with a dusky Bark, scentless, and of an unctuous, acrimonious, and caustic Taste; as are, also, the Leaves, which emit a reddish, acrimonious, and burning Juice, which exulcerates the Skin, like the *Ranunculus*. The Flowers are of a beautiful, white, tender, sweet-scented, hot and acrid Taste, and pentapetalous. To the Flowers succeed small, round, oblong Fruit, exactly resembling those large cerulean Grapes, which the Greeks call *βύρασι* (*Bumasi*) both in Size and Shape: They are first green; a little before Maturity, glaucous and lanuginous; but, as they ripen, become of an arro-cerulean Colour, and glabrous, and full of a brownish, succulent, glutinous, acrid, and caustic Pulp, inclosing an oblong Stone, containing a whitish, unctuous, bitterish, and sub-acrid Kernel, in Shape something like the Kernel of a Filbert.

It grows in all Parts of *Malabar*, and is usually cultivated in Fields where Rice or Corn is sown, in order to keep off the Birds, by its deleterious Quality.

The Tear of the Cortex, or the acrid, and glutinous Juice of the Fruit, with a Mixture of Lime, are used by the Painters in staining their Cottons with an indelible Colour. The Decoction of the Fruit, drank, cures the Itch, Leprosy, Pain of the Head from a cold Cause, the Vertigo, tormenting Pain of the Colic, and other Disorders, proceeding from viscid, pituitous, and flatulent Humours. The expressed Juice of the Fruits, and the Bark of the Tree, by Application, cures the Tooth-ach, and opens cold Tumors, by corroding the Skin, and raising a Blister.

This Tree is very strong Poison to some among the *Indians*, who swell, in every Part of their Body, at a strange Rate, from but a slight Touch of it; but this Symptom is immediately mitigated by taking Milk, Butter, or Oil. *Raii Hist. Plant.*

TSJEROE-POEAM. H. M. *Baccifera Malab. racemosa, tripetala, Fructu oblongo tricocco, Calyce excepto*. This is a small low Tree, with a slender, whitish Trunk, cover'd with a blackish Bark, green on the Inside, and furnished with many geniculated Branches. The Root is yellowish, cover'd with a reddish Bark, and of an unpleasant Smell and Taste, as are, also, the Leaves, which are oblong-round, acuminate, smooth, of a Dark-green, and shining on the upper Face, and greenish and lanuginous beneath, and tripetalous: From whence arises a slender, oblong Pointal, of a green Colour inclining to yellow, and with a round Apex. The Flowers are succeeded by oblong-round Berries, tricoccous, green, lodged in Calyces, and containing Seeds of a whitish-green Colour, having their Cells separated by membranaceous Pellicles.

Of the Flowers, Fruit, and Bark, boiled in Oil, a Liniment is prepared, which, apply'd to the Part, is said to cure the Headach. The fresh Leaves, bruised, and apply'd to the Place affected with an Erysipelas, are reported to remove the Disorder. *Raii Hist. Plant.*

TSJOCATTI. H. M. *Frutex baccifer Malab. Fructu calyculato, tetracocco, umbellato*. It is a little low Tree, about twelve Feet high, with a slender Trunk, and a Multitude of small ligneous Boughs. The Wood is whitish, cover'd with a reddish Bark. The Root is whitish, bitter, and aromatic. The Leaves are oblong-round, acuminate, slightly crenated, thick, dense, glabrous, of a blackish Green on the upper Face, and greenish beneath. The Flowers are yellowish, scentless, and are disposed on the Top of the Boughs in the Form of an Umbella. The Berries are tetracoccous, and sometimes pentacoccous, first greenish, but when ripe, red and shining, and inhering in a blackish red Calyx; their Taste is an acid Bitter; and they contain, for the most part four whitish Kidney-shaped Seeds of a bitter-sweet Taste.

The Decoction of the Leaves in Whey is very much commended for the Cardialgia. The same boiled in common Water with the Flowers and Fruit, and the Mouth washed therewith, cures Erosions of the Gums, and fastens loose Teeth. Of the Root boiled with Cumin-seed in Milk, is made a Drink, which is a potent Anti-emetic; and the same, worn as an Amulet upon the Belly, is said to mitigate the Pain of the Colic. *Raii Hist. Plant.*

TUBA. A Trumpet. Acoustic Tubes are Instruments contriv'd to assist Hearing. See AURIS.

TUBÆ FALLOPIANÆ. The Fallopian Tubes, Appendages of the Uterus thus call'd. See GENERATO and UTERUS.

TUBEL. The same as *Squamæ Aris*, Scales of Copper. *Rulandus*.

TUBELECH. The same as **DUELECH**.

TUBERA. Fungi, or Mushrooms. Round Tumors on the Body, are, also, thus call'd,

TUBERARIA MAJOR, Myconi. J. B. The Name of a Species of *Cistus*, call'd by *Caspar Bauhine Cistus, Folio Plan-ruginis*.

TUBERCULUM. A Tubercle, or small Tumor. See **NEVUS** and **TUMOR**.

For Tubercles in the Auditory Passage, see **AURIS**.

For Tubercles on the Eye-lids and Eyes, see **OCULUS**.

For Tubercles of the *Vagina*, see **VAGINA**.

TUBEROSA. The Tuberosé.

TUBULARIA.

The Characters are;

It resembles a *Madrepora*, consisting of a Multitude of small Tubes elegantly compacted together.

Boerhaave mentions but one Sort of *Tubularia*; which is, *Tubularia*; purpurea. *T. Corallii affinis*; *Alcyonium*; *fistulosum, rubrum*. J. B. 3. 808. *Boerh. Ind. alt. Plant.*

There are no Virtues ascrib'd to this Lithophyte.

TUBULI *Arundinacei ad Asthma.* C. B. *Tabaci Haytinorum, quos Mexicani vocant POCYLT.* Fr. Hernandez.

They give the Name of *Tabacos* to those hollow and perforated Fragments of Reeds, which are a Span and half long, and smutted on the Outside with Charcoal, but have their Cavities filled with *Teli*, that is, Tobacco, Liquid Amber, *Kochicozell*, and sometimes other hearing Plants and Spices. These being set on Fire, at the End which is full, by the other the Fume is attracted and swallow'd; by which means, as by a Suffumigation, Sleep is induced, and all Sense of Labour and Lassitude is remov'd. By the same Remedy are mitigated all kinds of Pain; especially of the Head; Phlegm is expectorated; the Asthmatic are relieved; and the Stomach is corroborated. But we are to beware, lest the excessive Use of these *Tubuli*, or *Tabacos*, should induce an hot Distemperature of the Liver, with a Cachexy, and other incurable Distempers. *Rati Hist. Plant.*

TUBULUS MARINUS. A Name for the **ANTALIUM**.

TUBUS. A Tube, or Pipe. This Name is apply'd to many Conduits in the Body.

TUCUM. The Name of a Species of Palm, which grows in *Brazil*.

TUINAMTHIBA. A Name for the *Corallodendron*; *triphyllon*; *Americanum*; *spinosum*; *Flore ruberrimo*.

TULIPA.

The Characters are;

The Flower is liliaceous, hexapetalous, Pitcher-shaped, naked, single on the Top of a Stalk, erect, and furnished with six Stamina, and embracing the Ovary, which becomes an oblong Fruit, full of flat Seeds, lying one on another in a double Row, and furnished with a remarkably hairy Tube. The Stalk is surrounded by broad Leaves; the Root bulbous, tunicated, with its sessile Part fibrous.

Boerhaave mentions twelve Sorts of *Tulipa*; which are,

1. *Tulipa*; *præcox*; *rubra*; *flavo per oras discurrente*. C. B. P.

2. *Tulipa*; *præcox*; *alba*; *varia*. C. B. P. 59.

3. *Tulipa*; *præcox*; *lutea*; *varia*. *Clus. Hist.* 140.

4. *Tulipa*; *præcox*; *lutea*. C. B. P. 57. *Tourn. Inst.* 373. *Boerb. Ind. a. 2. 138. Tulipa. Offic. Tulipa præcox tota lutea.*

Ger. 117. *Emac.* 138. *Tulipa præcox flava*. J. B. 2. 666. **THE TULIP.**

It grows in Gardens, and flowers in the Spring; and the Root, which is used, is by some affirmed to have the same medicinal Virtues as the *Battata*, or *Pastinaca latifolia*.

5. *Tulipa*; *præcox*; *rubra*. C. B. P. 50.

6. *Tulipa*; *præcox*; *purpurea*. C. B. P. 57.

7. *Tulipa*; *præcox*; *flore Amethystino*. T. 373. *Lilio narcissus, purpureo-violaceus*. Lob. Ic. 129.

8. *Tulipa*; *præcox*; *alba*. C. B. P. 57. *Lilio-narcissus, niveus, totus*. Lob. Ic. 131. J. B. 2. 666.

9. *Tulipa*; *flore pleno*; *centifolia*; *præcox*.

10. *Tulipa*; *pumilio*; *præcox*.

11. *Tulipa*; *serotina*.

12. *Tulipa*; *dubia*. *Boerb. Ind. alt. Plant.*

Tulipa is a Turkish Word, signifying a Turbant. This beautiful Plant, which was first described by *Gesner*, was brought into Europe from *Constantinople*, in the Year 1590. The Dutch, and especially those of *Harlem*, have often given an hundred Ducats for the Root of a Tulip. There are no Plants so variable and transmutable in their Colours, as a Poppy, and a Tulip; and those Colours are chang'd by transplanting; and, if the Seeds of one Tulip are sown, they produce Flowers of all sorts of Colours.

This Plant seems to be of a fine, gentle emollient Virtue, like other Bulbs; but the Price has been an Impediment to its Use. In some respects it resembles the Onion, but its Bulb is not so aromatic. The Bulb gently roasted is said to afford good Nutriment, and to provoke Lust. *Hist. Plant. adscript. Boerhaav.*

TULIPA CAPENSIS. A Name for the *Hemanthe Africanus*. **TULIPIFERA**, of *Tulipa*, a Tulip, and *fero* to bear. **THE TULIP-TREE.**

The Characters are;

The Flower consists of several Leaves, which expand in such a manner, as, by some thought, to resemble a Tulip; the Pointal rises in the Centre of the Flower, surrounded by a great Number of Chives; and afterwards becomes a squamous Fruit, or Cone growing erect. To these Marks may be added, the Leaves, for the most part, being angular, the upper Part is hollowed, as if cut off with Scissars, terminating in two Points.

Miller mentions two Sorts of *Tulipifera*; which are,

1. *Tulipifera*; *Arbor Virginiana*. H. L. **THE VIRGINIAN TULIP-TREE.**

2. *Tulipifera*; *Virginiana, laurinis Foliis, averla parte Rore cæruleo tinctis Condi-baccifera*. *Pluk. Phys.* **THE LAUREL-LEAVED TULIP-TREE.**

The first Sort is very common in *America*, where it grows to a great Magnitude; but in *England* there are, at present, but very few of them, which have arrived to any considerable Stature. This Sort was formerly kept in Pots and Tubs, and housed in Winter with great Care; in which Management the Plants made but poor Progress, nor would ever have produced Flowers. But, about fifty Years ago, there was one of these planted out, in a Wilderness, in the Gardens of the Right Honourable the Earl of *Peterborough*, at *Parsons Green* near *Fulham*, which soon convinced the Curious of their Mistake in the Culture of this Tree, by the great Progress it made; and in a few Years after it produced Flowers. This Tree is yet standing, and annually produces a great Quantity of Flowers; though some of the Branches begin to decay, which perhaps may have been occasioned by its being too closely surrounded by other Trees, whose Roots are so much entangled with those of this Tree, that they draw the Nourishment of the Ground from it. In some Years this Tree produces Cones, but they have not ever been perfected so as to contain good Seeds.

There are some other Trees of this Kind, which have produced Flowers several Years, though I believe none of them are very large; the biggest I have seen (excepting that at *Parsons Green*) is not more than twenty-five Feet high; whereas my Lord *Peterborough's* is upwards of fifty Feet high, and is proportionably large in the Trunk; but this has a naked Body near forty Feet high, all the Branches growing near the Top of the Tree, which might be occasioned by being so closely surrounded with other Trees; for I have observed, where-ever they have a more open Situation, they are subject to extend their Branches, and do not aspire upwards very much, though they generally have one upright Shoot in the middle, much after the Manner of the Plane-tree, whose Manner of Growth is very like that of this Tree.

The Flowers, which these Trees produce, are by no means like those of the Tulip, though many Persons have been so incurious as to imagine they are so; especially the Inhabitants of *America*, who first gave the Name of Tulip-Tree unto this Plant, by which Name it has been since called by the Inhabitants of *Europe*, who received it from them, with the Plant, many Years since; but I have not heard, that any of these Trees have flowered in any Part of *Europe*, except in *England*.

Mr. *Catesby* in his *Natural History of Carolina*, &c. says, there are some of these Trees in *America*, which are thirty Feet in Circumference; that the Boughs are very unequal and irregular, making several Bends or Elbows, which makes the Trees distinguishable at a great Distance, even when they have no Leaves upon them. They are found in most Parts of the Southern Continent of *America*, from the Cape of *Florida* to *New-England*, where the Timber is of great Use.

The Laurel-leaved Tulip-Tree is at present very rare in *England*, though formerly there were several of these Trees in the Garden of the Bishop of *London*, at *Fulham*; and those of the Dutchess of *Beaufort*, at *Chelsea*; but these have been since lost, so that there are very few of them to be seen in the *English* Gardens. The largest Tree of this Kind, which I know at present, is in the Gardens of Mr. *Peter Collinson* at *Peckham*, which has produced a great Number of Flowers the three Years past.

Though I have inserted this Tree under this Title, (which is the Name, by which it was first brought into *England*) yet it does not strictly belong to this Place, there being a Genus under which this Plant should be ranged, which was established by Father *Plumier*, by the Name of *Magnolia*, in Honour to the learned Botanist *Peter Magnol*, Professor of Botany and Physic in the University of *Montpelier*. This Plant is curiously figured in the third Part of Mr. *Catesby's Natural History of Carolina*, by the Name of *Magnolia Lauri Folio subtus albicante*: He describes it to be a small Tree, seldom growing more than sixteen Feet high; that the Wood is white and spongy, covered over with a white Bark: The Leaves are in Shape like those of the common Bay, of a pale-green Colour, and white on their Backsides. In May they begin to produce their Flowers, which are white, and very fragrant; these are continued the most Part of Summer, during which time the Woods are perfumed with their Odour. When the Petals of these Flowers are decayed, the Pointal becomes a conical Fruit, about the Size of a large Walnut, thick set with Knobs or Rifings, from each of which

which, when the Fruit is ripe, are discharged flat Seeds, of the Bigness of French Beans, having a Kernel, within a thin Shell, covered with a red Skin. These red Seeds, when discharged from their Cells, fall not to the Ground, but are supported by small white Threads, of about two Inches in Length, which make a very beautiful Appearance. The Fruit is at first green; when ripe, red; and, when declining, turns brown. The Tree grows naturally in moist Places, and often in shallow Water; and, what is very extraordinary, they being removed on high dry Ground, become more regular and handsome, and are more prolific of Flowers and Fruit. They usually lose their Leaves in Winter, unless it be moderate: It is called by some, *The Sweet Bay*.

There is, also, another Sort of this Tree, which hath been lately brought into England, which is called, by Father Plumier, *Magnolia amplissima flos alba, fructu ceruleo*. This is esteemed one of the most beautiful Trees in America, where they usually grow in moist swampy Woods; and often rise to the Height of sixty Feet, or more: The Leaves are much larger than those of our common Laurels, and are of a light-green Colour; the Flowers, I am told, are very large, of a whitish Colour, and very fragrant: The Fruit is shaped like that of the former Sort, but is much larger, and emits the Seeds in like Manner; so that it is in Beauty from May to November; and the Leaves, always remaining green, afford an elegant Prospect in Winter: They are of quick Growth, and generally rise with strait Stems, which is a great Addition to their Beauty; and, since they are hardy enough to endure the Cold of our Climate in the open Ground, I doubt not, but, in a few Years, we shall have the Pleasure of seeing its beautiful Flowers, there being several Trees planted in the Gardens of some curious Persons near London, where they have borne the Cold of the three last Winters, without Shelter; and make considerable Progress every Year. *Miller's Dictionary, Vol. I.*

TULPBLOOM. A Name for the *Lepidocarpodendron*; *foliis angustis, brevioribus, salignis; calycis squamis elegantissime ex roseo, aureo, albo, atro rubro variegatis; florum plumis albis.*

TULOS. *Tulas*. A Callus.

TUMBABA, or TUMPABAR. Live Sulphur. *Rulandus*.

TUMBALUM, or TUBEL. The Scales (*Squama*) of Metals.

TUMBIL. Earth. *Rulandus*.

TUMOR.

By a Tumor, Physicians mean any Part of the Body that is preternaturally enlarged, or swelled; and its Situation and State may be known, both by seeing and feeling. But, although it has been usual to refer Excrescences, such as Warts and Corns, with other similar Pustules in the Nostrils and *Pudenda*, to the Class of Tumors; yet as these Excrescences do not grow beneath the Skin, but without, or upon the Skin, they may be properly distinguished from Tumors.

Tumors are of different Kinds, and assume different Names, according to the Causes, whence they proceed; and the particular Places, in which they are situated. Some are called *hot*, others *cold* and *watery*; some *windy*, others *scirrhus*; and some *benign*, others *malignant*. Some Tumors are contained in a membranous Bag, like a proper Coat, and, therefore, are called *encysted* Tumors. If a Tumor appears in the Arteries, they are called *Aneurisms*; if in the Veins, *Varices*; if in the Veins of the Anus, or *Intestinum Rectum*, the Disorder is termed *Hemorrhoids*; if in the Scrotum, Insides of the Thighs, or Navel, they assume the Appellation of *Hernias*, or *Ruptures*: But if any Pus, or Matter, be formed in a Tumor, it is called an Abscess. When a Tumor rises on the Bones, it is named *Exostosis*.

All these various Sorts of Tumors are generally subdivided into several other Species. Thus, the hot and burning Tumors, which are the same with Inflammations, when they are violent, and rise externally, are termed *Phlegmons*; if smaller, and gentler, they are called *Furuncles*. When the inflammation is not seated deep in the Flesh, but only spreads superficially upon the Skin, it is commonly named an *Erysipelas*. A Tumor, or Inflammation, on the Extremities of the Fingers, is termed a *Paronychia*, or *Whitlow*; but in the Insides of the Thighs, in the Groin, or under the Arm-pits, a *Bubo*; but near the Ears, a *Parotis*: But if, from extreme Cold, violent Inflammations be raised in the Hands or Feet, they are named *Perniones*, or *Chilblains*. Other Inflammations assume different Appellations, according to the different Parts of the Body which they affect. Thus, in the medicinal Writers, we frequently read of Inflammations in the Breasts, Eyes, Testicles, Arms and Legs.

THE METHOD OF TREATING ENCYSTED TUMORS.

If Tumors, or Tubercles, arise in the Body, contained in certain Coats, they receive the Appellation of encysted Tumors, which are generally unaccompanied with Pain, of the same Colour with the rest of the Skin; and sometimes harder, and sometimes softer. This Species of Tumor is produced by certain Obstructions in the Glands, or in the Fat, and appear in almost all Parts of the Body, particularly in the Head, Face, and Neck, (see *Tab. XXXIII. Fig. 13.*) frequently occasioning a prodigious Deformity. The Coat, which is often very thick, is formed either

by the obstructed Gland, or by some Cell of the Membrana Adiposa: They are, at first, small; and, generally, moveable; but, in time, they gradually increase; and, sometimes, arrive to an enormous and surprizing Size. Their Substance is sometimes thinner, and softer; and, at other times, harder and thicker. Their Figure is very various; some have the Shape of Filberts, Acorns, Balls, Walnuts, or Eggs; sometimes they assume the Form of a Pear, like a fleshy Excrescence suspended, as it were, by a Stalk; some have a broad Base, and some resemble a Fist, some a Head; with many other Shapes: Some grow so very large, as to weigh many Pounds; others adhere firmly to the adjacent Parts; and, at last, become entirely immovable; and, others resemble a Callus, or a Cartilage, in Hardness; some, however, continue always moveable; and some always soft. Encysted Tumors are, also, distinguished by the different Nature and Consistence of the Matter, which they contain. When the Matter of a Tumor resembles a Pulver, it is termed *Atheroma*; when like Honey, *Meliceris*; when it is like Fat, Suet, or Lard, *Steatoma*; when it resembles an indurated Gland, *Scirrhus*; and, when it seems to be a fleshy Substance, it is called *Sarcoma*. In some Patients, as *Celsus* observes, they are found like Concretions of Hair. These Tumors are, also, variously denominated, according to their various Situations. When one arises in the Scalp, it is by some named *Talpa*, *Testudo*, or *Lupia*; in the Neck, *Struma*, or *Scrofula*; but, if they appear in the Hands, or Feet, especially near the Tendons of the Muscles, they are called *Ganglia*.

Encysted Tumors may be easily known from others, by seeing and feeling them; but, they are not so easily distinguished from one another, unless we are able, by the Touch, to discover some Difference in the Consistence of the Matter, whether it be hard, thick, and tenacious; or, soft, thin, and liquid; for, as the Colour of the external Skin suffers little or no Alteration by these Tumors, we can learn little or nothing from it: Nor is it a Matter of great Importance, to know the Nature of the included Matter before the Cure, the Hardness only excepted; for, whatever Matter they contain, the Method of Cure is nearly the same. It is, however, necessary to be observed, that the Scirrhus and the Sarcoma, are the hardest of this Species of Tumors; next to these, is the Steatoma; the rest are softer, and, sometimes, differ a little in their Treatment, according to their different Degrees of Consistence. Those Tumors of the Neck, which are called *Scrofulous*, or *Strumous*, are, generally, said to be indurated Glands; but I have frequently observed Steatomas, and other encysted Tumors, to proceed from the Fat of the Neck: For it seems scarcely possible, that these small Glands, situated in the Sides of the Neck, should, sometimes, increase to so monstrous a Size, as to hang down over the Belly; which is frequently the Case with the *Tyrolese*, who are troubled with this strumous Affection, which may easily happen, when the Disorder is lodged in the Fat. But, besides these, there are sometimes smaller and harder Tumors in the Neck, which proceed from the Induration of these Glands, which then belong to the scirrhus Species.

If the Pain of encysted Tumors be not violent, if their Bulk and Hardness be not formidable, they are attended with little Danger. Whence it is not surprizing, that some, especially among the poorer Sort, bear them as long as they live, rather than submit to the Severity of surgical Operations. But if, as it sometimes happens, their Size should greatly increase, so as to weigh ten, twenty, or more Pounds; if they should begin to excite Pain; as is commonly the Case in scirrhus Tumors; they not only produce a monstrous Deformity, but intolerable Uneasiness; and, unless seasonably extirpated, they induce a Consumption and Weakness, or a Cancer; and the greatest Danger of Death. But, in the Cure of these Tumors, the Use of the Knife is almost always necessary; for they are not easily digested, or brought to a Suppuration. If they are recent, soft, moveable, and small, they may be readily and safely extirpated with the Knife; but not without Danger, if they are large, hard, and resist the Touch; especially if they be situated near the larger Veins and Arteries, or about the Nerves, Tendons or Joints; or if the Patient be worn out with Infirmities, or old Age; The Surgeon, therefore, must regulate his Method of Cure according to the Nature of the Disorder, and Circumstances of the Patient.

Of these Tumors, various Methods of Cure have been instituted. Many Surgeons direct them to be immediately extirpated by the Knife; but, according to the Precept of *Hippocrates*, I would not leave mild Means unattempted: For, when the Tumor is recent, and the Patient is of a lax, delicate Habit, it seems expedient to attempt Resolution or Suppuration, before the Application of the Knife. But, when the Tumor is inveterate and hard, external Remedies ought not to be applied; which would be so far from promoting Digestion, especially in a Scirrhus, or Steatoma, that they would increase the Tumor, and make it degenerate into a Cancer; whereas, without topical Applications, the Patient might have been supported under them many Years. In such Cases, therefore, immediate Recourse must be had to the Knife. But, if the Timidity of the Patient will not permit him to yield to the Knife, so that he will allow of nothing but external Remedies, digestive Plaisters may be properly applied; such as the Plaister of *Ammoniacum*, of *Galbanum*, of Frogs

with Mercury, of Diachylon with Mercury, the *Emplastrum Oxycroceum*, *Mynsicht's* diaphoretic Plaster, the *Emplastrum Diasaponis five miraculosum*, and the like. *Scultetus* asserts, that he has cured various Tumors, of the melicerous Kind, with the *Ceratum Diasapinos*. But, before a Plaster of this Kind is applied, the Tumor ought to be anointed with the Peruvian Balsam, the Oil of Soap, or Petroleum. By these means, when the Tumors are not inveterate, nor of the larger Size, they may be again discussed; and, for the more readily answering of this Intention, it may be expedient frequently to rub the Part with a warm mercurial Ointment; especially if the Tumor be of the scirrhus Kind.

When nothing can be effected by Plaisters, or digestive Medicines, Suppuration must be attempted; especially if the Tumor be still soft, as in an *Atheroma*, or *Meliceris*. The Plaster of Diachylon with the Gums, and digestive and emollient Cataplasms, frequently applied to the Tumor, excellently answer this Intention; especially, if the Middle of the Part affected be several times well moistened every Day with the strongest Spirit of Sal Ammoniac; and, as soon as the included Matter is perceived to have ripened, the Tumor should be opened by a large Incision, and the Pus discharged. After this Operation, the Tumor, with its Bag, must be removed by the Application of strong Digestives, or of mild corrosive Medicines; for, if any of the Coat should remain, after the Abscess is healed, a Relapse will gradually ensue; and, therefore, it is extremely necessary to apply, daily, a Diachylon-plaster, till the Detersion of the Wound be completed: Thus, whatever prternatural Substance remains in the Wound, will be more expeditiously softened, and the Wound more conveniently healed.

If, by these means, neither Discussion, nor Suppuration, can be obtained, but the Tumor rather gradually increases, lest it should become too much enlarged and be concreted with the neighbouring Parts, or degenerate into a Cancer, so as to yield to no Medicine, or Operation, they ought to be immediately extirpated. But these encysted Tumors ought to be extirpated by different Methods, according to their different Natures. Those which have a slender Root, and hang, as it were, by a Stalk, cannot be more expeditiously removed than by a Ligature, like Warts, or other Excrescences; by which means, in a few Days, it will drop off, as it were, spontaneously; or it may be extirpated with the Knife; and the Wound may be dressed, and healed, like other Wounds: But if, by the Incision, a large Artery should be wounded, the Hemorrhage may be stopt with some styptic Medicine, or the actual Cautery; or the Artery may be taken up with a Needle and Thread. Lastly, these Tumors may be removed with corrosive Medicines daily applied round the Root, and retained by Plaisters, till it falls off; or, the greatest Part of the Root being consumed, it may be conveniently cut through.

When the Root of the Tumor is broad, recourse must be had to Incision, or Escharotics, although the latter be generally preferred. The Incision may be thus performed: The Skin must be divided longitudinally, through the Middle of the Tumor; but, if this Wound be not sufficiently large, another Incision must be made transversely, in the Form of a Cross; then, with the Knife, and Fingers, the Tumor, with its Coat, must be carefully separated from the Skin and Flesh, keeping the Coat entire, that the Tumor may be extracted whole. That this may be done more commodiously, an Assistant should draw, asunder the Lips of the Wound, with Hooks; and the Blood, as it flows, should be wiped up with a Sponge, that it may not hinder the Operation. As soon as the Coat of the Tumor appears, which is, usually, whitish, and stretched, the Surgeon must keep it raised with his Left Hand, if it be small; but, if it be too large to be held in the Fingers, another Assistant ought to keep the Tumor raised with a Hook, (See Tab. XXIX. Fig. 2.) or with the Forceps represented in Tab. XLIV. Fig. 1. or with a crooked Needle and Thread: Thus, the Tumor, being cautiously separated from the contiguous Parts, it may be extracted entire. The Task is easily performed, if the Tumor be moveable; but, if fixed, the Operation requires both Pains and Skill. Particular Care must be taken, not to wound any of the principal Parts that may be situated near the Tumor; and, if the Tumor is to be taken from the Leg, or Arm, where a large Artery or Vein must be divided, the Tournequet ought, first, to be applied to the Limb. These Directions being duly observed, Tumors of this Kind, weighing several Pounds, may be extirpated, not only from the fleshy Parts, but, also, when they adhere to the Bones and Jaws.

The Tumor being rightly extracted; if the Wound be small, and the Hemorrhage slight, the Lips must be brought into Contact with the Fingers, Lint and Compresses must be applied, and the Whole secured with a Bandage: Thus will the Wound be healed in a few Days. But, if the Hemorrhage be large, it must be stopped, as in other Wounds, principally by the Application of Lint, Compresses, and Bandages, by Astringents, by a Ligature, or the actual Cautery. But, when, in the Operation, either by Negligence, or Accident, the Coat, including the Tumor, particularly, of the softer Kind, is wounded, as may sometimes happen in preventing the Eye from being injured, when the Tumor is in the Eye-lid, or by cautiously avoiding a large Vein or Ar-

tery in any other Part of the Body, particular Care must be taken, that the Coat be entirely extracted; otherwise the Tumor will easily return. In a Scirrhus, Sarcoma, or Sreatoma, when the glandular, fleshy, or pinguicous Substance is hard, though the Coat be wounded, the Matter will not flow out: Wherefore the whole Tumor, with its Bag, must be carefully extracted, as we have already directed; so that none of the Coat may be left behind. In other Tumors, where the Matter is soft and fluid, if the Coat be wounded or lacerated, the Contents are immediately discharged; then all that can be extracted of the remaining Bag, must not only be removed with the Knife and Scissars, but, if any Fragments should happen to remain, they must be extirpated with corrosive Medicines; such as red Precipitate, with burnt Alum, or the *Unguentum Egyptianum* mixed with a Digestive: And then the Wound may be healed like other Wounds, without the Danger of a Relapse.

When, in the Extirpation of encysted Tumors, Escharotics are preferred to the Knife, the *Lapis Infernalis*, Butter of Antimony, or the like, may be applied: But, in my Opinion, when the Tumors are large, hard, of a cancerous Disposition, inveterate, and painful, the Method by Escharotics is often dangerous, because a Scirrhus is easily changed into a Cancer: And in other Cases they cannot be totally consumed without intense Pain, large Effusions of Blood, with great Decay of Strength, or the Loss of Life. It is, therefore, safer to extirpate large hard Tumors by Incision, though sometimes they may be happily removed by Escharotics. But if the Tumors be of softer Kinds, such as the *Atheroma* or *Meliceris*, I frequently use this Method, opening the Integuments and Bag with a Caustic, or with a Knife, in the Middle of the Tumor, and discharging the contained Matter; then by promoting Suppuration, and the Use of Corrosives, I extirpate the Bag; and de-terge and incarnate, as in other Wounds. This Method I think milder than removing the entire Coat by Incision. *Heist. Chir.*

For PHLEGMON, see INFLAMMATIO.

For Abscesses, see ABSCESSUS.

For Tumors and Inflammations of the Breasts, see MAMMÆ.

For Inflammations of the Testicles, see TESTICULI.

For Erysipelatous Tumours, see ERYSIPELAS.

For Furuncles, see FURUNCULUS.

For Bubos, see BUBO.

For Carbuncles, see CARBUNCULUS.

For Chilblains, see PERNIO.

For the Gangrene and Sphacelus, see GANGRÆNA.

For Burnings, see AMBUSTIO.

For scirrhus Tumors, see SCIRRHUS.

For cancerous Tumors, see CARCINOMA.

For cedematous Tumors, see OEDEMA.

For fungous and dropical Tumors of the Joints, see FUNGUS.

For fleshy Tumors, see NÆVUS.

For Tumors of the parotid Glands, see PAROTIS.

TUNA. A Name for the *Opuntia*. Indian Fig.

TUNETANUS FLOS. A Name for the *AFRICANUS FLOS*.

TUNICA. A Name for the *Caryophyllus*; *altiss*; *major*.

TUPA-IPU. A Species of large Onion, which grows in *Brasil*, called by the Portuguese *Cebola Albarã*.

TUPHUS, or TUFUS. See TYPHUS.

TUPIEWA. A Name for the *SCOPARIA*.

TURAS. The secret Effect of the Water; as *Thonus* is that of the Earth; and *Samies* that of the Air. *Paracelsus*.

TURBEDON. The Arabic Name for TURBITH.

TURBINATA OSSA. The turbinated Bones of the Nose.

TURBINATUM. The Pineal Gland.

TURBITH and TURPETHUM. Offic. *Turbith Alexandrinum Officinatum*. Ger. 335. Emac. 415. *Turbith Officinatum*, Park. Theat. 1610. *Turpethum repens foliis Althææ, vel Indicum*. C.B.P. 149. *Convolvulus Indicus, alatus, maximus, foliis Ibisconnonnibil similibus, angulosis*. Raii. Hist. 2. 1882. Tourn. Inst. 84. *Convolvulus Zeylanicus alatus maximis foliis, Ibisconnonnibil similibus angulosis*. *Trassawalu*. *Turbith Arabum legitimum & Officinatum*. H. Mus. Zeyl. 26. TURBITH.

This is a Root about a Finger thick, brown on the Outside, and whitish and somewhat resinous within; of an hot Taste.

Herman, in his *Catalog. Hortens. Lugd. Bazar.* gives a Figure and Description of it. He says, the Root is long and spreading; when broken, yielding a milky Juice, which soon hardens into a resinous Substance. It shoots forth many long, trailing, and climbing Branches, that twist one about the other like the great Bindweed; the Leaves are soft and downy, and in Shape like those of Marshmallows. The Flowers come forth among the Leaves, several together, on long Foot-stalks, of a white Colour, in Shape like those of the great *Convolvulus*, of which it is a Species. It grows plentifully in *Ceylon* and *Malabar* in the *East-Indies*; from whence the Roots are brought to us, being the only Parts used.

Turbith is a pretty strong Cathartic, purging tough serous Humours from the remote Parts; and thereby helps the Dropsy, Gour and Rheumatism; and is put into several of the stronger purging Compositions.

The *Pulepis Diaturpethi compositus* takes its Name from this Root. *Miller's Bot. Off.*

Turbith Gallorum. A Name for the *Seseli*; *que Ferula facie*; *Thapsia*.

TURBOTUS. The Turbot. See **RHOMBUS**.

TURCHOS. Offic. Worm. Musf. 106. Charlt. Foss. 39. Boet. 265. De Laet de Lap. 87. *Turchesia*. Aldrov. Musf. Metall. 902. **THE TURQUOIS.**

This is a precious Stone of the opaque Kind, and variegated with Streaks of green, white, and blue. There are two Species of it, the Oriental, and the Occidental: The former is more blue than green, and is found in *Persia* and the *East-Indies*. There are two Sorts of it; one, which always retains its Colour, and is called the Turchois of the old Rock; and another, which loses a little of its Colour, becomes greenish, and is called the Turchois of the new Rock.

The occidental Turchoise is of a Colour partly green, and partly white: It is found in *Spain*, *Germany*, *Bohemia*, and *Silesia*.

Sometimes Turchoises are found as large as an ordinary Nut, but very rarely; since their Bulk is generally no greater than that of a very small Nut.

This Stone is thought proper to fortify the Sight, and the Spirits of the Brain; but this pretended Virtue is not to be confided in. If it is reduced to a fine Powder, and exhibited internally, it operates like other alkaline Substances; absorbs Acids, and stops Fluxes; Hemorrhages, and Vomiting. The Dose is from six Grains to one Scruple. *Lemma des Drogues*.

The Virtues of this Stone are very great in Falls; a memorable Instance of which is related by *Boetius* concerning himself. *Scylla* would have it to be a Sort of Fish's Tooth. Dr. *Woodward* is of Opinion, that the Stones which the Jewelers call Turquoise, are only Fragments of Bones ting'd with a bluish Colour in the Veins of Copper Mines, where they are found: These Stones are polished by the Lapidaries, and set in Rings. *Woodw. Attempt. F. 2. Brown's Travels. Dale*.

TURCHOSA. A Name for the **TURCHOIS**.

TURDUS. Offic. *Turdus vulgaris*. Mer. Pin. 176. *Turdus visivorus minor*. Bellon. des Oyle. 326. *Turdus simpliciter dictus*. Aldrov. Ornith. 2. 600. *Turdus minor alter*. Gefn. de Avib. 690. *Turdus muscus*. Schw. A. 361. *Turdus simpliciter dictus, sive Visivorus minor*. Raii Ornith. 188. **THE MAVIS**, or **THRUSH**.

These Birds, when stuffed with Myrtle-berries, and roasted, are said to be exhibited with Success to those who labour under Fluxes. *Plin. Bellon.* In the Time of the Plague they are, by *Alexand. Bened.* said to be highly beneficial when macerated in Vinegar. The Powder of these Birds is, by *Gainarius*, recommended against the Effects of the *Napellus* or Monkhood. *Dale*.

Turdus is also a Name for a Fish, which Authors thus distinguish.

TURDUS. Offic. Charlt. Pisc. 13. Bellon. de Aquat. 258. Mer. Pin. 186. *Turdus vulgarissimus*. Raii Ichth. 319. Ejsd. Synop. Pisc. 136. *Turdus primus*. Rondel de Pisc. 174. Aldrov. de Pisc. 21. Jonf. de Pisc. 26. *Turdus primus*. Gefn. de Aquat. 1016. **THE WRASS**, or **OLD-WIFE**.

This Animal is found in the main Ocean, and in the *Mediterranean*. *Alexander Trallian* highly recommends it in the Epilepsy and Pleurisy. *Dale*.

TURNERA.

The Characters are;

It hath a funnel-shaped Flower, consisting of five Leaves, which are fastened to the Calyx, which is monopetalous, and divided into five Parts at the Top: Under the Flower-cup there are two Leaves, which join at the Bottom, and surround the Cup: From the Centre of the Flower-cup arises the Pointal, which is divided into three Parts to the Bottom, and surrounded by five Stamina. This Pointal afterwards becomes an almost spherical Fruit, which is divided into three Parts, and filled with roundish Seeds, which are fastened to the Piacenta by slender Threads.

Miller mentions two Sorts of *Turnera*; which are,

1. *Turnera frutescens ulmifolia*. Plum. Nov. Gen. 15.
 2. *Turnera frutescens, folio longiore & mucronato*.
- These Plants are both of them Natives of the warm Parts of *America*. The first Species was found by F. *Plumier* in *Martinica*, who gave it the Name of *Turnera*, from Dr. *Turner*, a famous English Physician, who lived in Queen Elizabeth's Reign, and wrote an Herbal, in which he has principally figured and described the useful Plants.

The other Species was discovered by Sir *Hans Sloane*, Baronet, who has figured it in his Natural History of *Jamaica*, under the following Name; *Cistus urtica folio, flore luteo, vasculis trigonis*. But both these Sorts were observed by Dr. *William Houstoun*, in several Parts of *America*. *Miller's Dictionary, Vol. 2.*

TURNESIUM. *turnesior*. The Name of a Weight mentioned by N. *Myrepsus*. *Scet. 8. C. 116*. But it is not known what Weight he means.

TURPETHUM. Turbith.

TURPETHUM MINERALE. Turpeth, or Turbith Mineral. See **MERCURIUS**.

TURREIS. The Name of a Stone, which is said to preserve the Bones from being fractured in a Fall.

TURRITIS.

The Characters are;

The Pod is pretty flat; the Seed is not marginated, but in other respects like the *Leucoium* and *Hesperis*; the Pods end in a pyramidal Form.

Boerhaave mentions four Sorts of *Turritis*; which are,

1. *Turritis*; foliis inferioribus cichoraceis, cæteris perfoliatis. T. 224. *Brassica sylvestris, foliis circa radicem cichoraceis*. C. B. P. 112. *Sinapi album*. Lugd. 1688.

2. *Turritis*; quæ *Barbarea muralis*. J. B. 2. 869. *Erysimo similis hirsuta alba*. C. B. Prodr. 42.

3. *Turritis*; vulgaris; ramosa. T. 244. *Bursa Pastoria, sive Pilosella siliquosa*. J. B. 870.

4. *Turritis*; folio *Leucii* *Tourn. Inst. 224. Boerb. Ind. A. 215. Camelina*. Offic. Ger. 213. Emac. 273. *Camelina sive Myagrum alterum amarum*. Park. Theat. 868. *Myagrum siliqua longa*. C. B. P. 109. *Myagro affinis planta siliquis longis*. J. B. 2. 894. Raii Synop. 3. 298. *Erysimum Galeno & Theophrasto*. Raii Hist. 1. 811. **TREACLE WORMSEED.**

This is sometimes found in purrid Places, and flowers in June and July. The Herb itself is used, which kills and dislodges Worms, corroborates the Stomach, expels Poison, is beneficial to paralytic and epileptic Patients, and cures Ulcers of the Mouth. *Dale*.

Besides the foregoing Species of *Turritis*, *Dale* mentions the following Sort; which is,

- TURRITIS.** Offic. Ger. 212. Emac. 272. Raii Hist. 1. 799. Synop. 3. 293. *Tourn. Inst. 223. Turritis vulgarior*, J. B. 2. 836. Park. Theat. 852. *Lobelia Brassica sylvestris hispida, non ramosa*. C. B. P. 112. *Leucoium flore albo, siliquis uno versu dispositis, & reflexis*. Ejsd. 243. **TOWER MUSTARD.**

This is found in sandy Hills, and flowers in June. The only Part of it used, is the Herb itself, the Juice of which is, by some, recommended for curing Ulcers of the Mouth, and killing Worms. *Dale*.

TURSIO. The Porpoise.

TURTAS, *turtas*. A sort of Tart, made of Dates, Meal, and Water, and baked under the Embers. *Erosian*.

TURTUR. Offic. Schrod. 5. 324. Mer. Pin. 175. Bellon. des Oyle. 310. Aldrov. Ornith. 2. 505. Gefn. de Avib. 277. Schw. A. 362. Charlt. Exer. 85. Jonf. de Avib. 64. Raii Ornith. 183. Ejsd. Synop. 61. Will. Ornith. 134. **THE TUR-TLE-DOVE.**

This Bird, and its Fat, are used. In Virtues it agrees with the Pigeon, especially in stopping Dysenteries, and immoderate Discharges of the Menfes. The Fat, collected when the Animal is roasting, is, according to *Schroder*, properly used as an Ointment in Disorders of the Kidneys, Abdomen, Breast, and Groins. *Dale*.

TURUNDÆ. Tents.

Tents are sometimes used in dressing Wounds, and are made of scraped Lint artfully rolled up, with a broad Head like a Nail. Their Length and Thickness are different, according to the different Sizes of the Wound for which they are designed. See *Tab. XXIII. Lit. K, L, M, and N*. This sort of Tents are principally used in deep Wounds and Ulcers; for by their Assistance, 1. Remedies may not only be conveyed to the innermost Recesses and Cavities of the Wound; but, 2. they prevent the external Parts of the Wound from coalescing, before the Bottom appears to be healed. 3. By their Means, also, Wounds may be conveniently cleansed from Blood, and other Sordes. But they must not only be fitted to the Wound, but, also, made extremely soft, that they may not increase the Pain of the Wound. That they may not obstruct the Healing of the Wound, if it appears to be sufficiently deterged, and that the Cavities are gradually uniting, the Tents should be lessened in Size, and, as soon as possible, entirely laid aside. And it is not improbable, that the Neglect of this Caution induced some Surgeons, both ancient and modern, of no mean Reputation, to forbid entirely the Use of Tents: Among these are *Magatus* and *Belloste*.

Some Tents are, also, made of Linen Rags, not scraped, but entire, twisted together in a conical Form, with a Thread fastened at its Basis; but the small End should be a little scraped, to render it softer, that it may not increase the Pain. The Thread is fastened to the Basis, that the Tent may be easily extracted, if it should accidentally drop into the Cavity of the Abdomen or Thorax. See *Tab. XXIII. Fig. O*. This Kind of Tent is principally used in Wounds which penetrate into the Cavity of the Abdomen and Thorax, lest they should heal, before the Blood, and other purulent Matters, be evacuated.

A third Kind of Tent is made for dilating the Orifice of a Wound, lest it should be too narrow, that the Blood, Sanies, or any extraneous Substance lodged within the Wound, may be more easily extracted, or that Remedies may be more conveniently admitted. These Tents are generally made of a Piece of Sponge prepared in a peculiar Manner; or of the dried Roots of *Gentian*, *Turnep*, *Calamus aromaticus*, or *Comfrey*; which

which are of such a Nature as to imbibe the Matter that flows to them; and, being by these means swelled, they dilate the Orifice of the Wound. Not unlike Tents are those Tubes or Pipes of Lead or Silver, which are sometimes used for discharging Blood or Pus out of narrow Wounds or Ulcers; and sometimes for evacuating dropical Waters, and Urine. Their Size and Figure vary according as the Nature of the Wound may require. See *Tab. XXIII. Lit. P, Q, R, S, T, V, X.* Tents are rejected by *Magatus* and *Bellofse* in *Fistulas*. See *FISTULA*.

Garengeot's Objections to Tents in Wounds of the Abdomen are considered under the Article *ABDOMEN*.

For the Use of Tents in the Cure of Inguinal Ruptures, see *BUBONOCLE*.

The Reasons against the Use of Tents in Lithotomy are taken Notice of under the Article *LITHOTOMIA*.

TURUNDULA. A small Tent.

TUS. The same as *THUS*.

TUSAI. A Name for several Species of *Corona Imperialis*.

TUSSEDO. A Cough.

TUSSICULARIA. Medicines which excite a Cough. *Cal. Arelianus*.

TUSSILAGO.

The Characters are;

The Root is very creeping; the Flower consists of very numerous Barbulæ, stands on a single Stalk, and is included in a Calyx, which has a multifid Base.

Boerhaave mentions two Sorts of *Tussilago*; which are,

1. *Tussilago*; vulgaris. *C. B. P.* 197. *Tourn. Inst.* 487. *Boerb. Ind. A.* 101. *Tussilago*, *Farfara*. *Offic. Tussilago*. *J. B.* 3. 563. *Ger.* 666. *Emac.* 811. *Park.* 1220. *Raii Hist.* 1. 259. *Synop.* 78. *COLTS-FOOT*.

The Roots of *Colts-foot* are thick at the Head, from which run several Strings. The Flowers spring up about the latter End of *February*, or the Beginning of *March*, on Stalks about two or three Inches long, beset with sharp-pointed scaly Leaves; they are yellow, radiated, and in Shape like *Dandelion*, which turn into Down like them: The Leaves spring up, after these are gone, somewhat roundish, but angular, and indented about the Edges, hollowed-in next the Stalk, in Shape like *Butterbur*, but much less, whitish underneath, having the upper Part green, but covered with a cottony Skin, that is easily wiped off. It grows in moist watery Places, and flowers early in the Spring. The Leaves and Flowers are used.

They are pectoral, and accounted good for Diseases of the Lungs and Breast, as Coughs Consumptions, and Shortness of Breath; and are frequently put into pectoral Apozems: The dry Herb, cut small, is smoked among Tobacco for Coughs, and other Affections of the Lungs. *Miller's Bot. Off.*

Colts-foot-leaves are bitter, glutinous, and a little styptic; they have the Taste of an *Artichoke*, and give but a very faint Tincture of Red to the blue Paper. There seems to be in this Plant a Salt resembling that of *Coral*, involved in Sulphur, and a great deal of viscous Phlegm. The Leaves and Flowers are very sweetening, moderately aperitive, and dedicated (if I may so say) to the Diseases of the Breast, which are occasioned by acrid and saltish Serosities. The Leaves are prescribed to asthmatic Persons, to smoke after the manner of Tobacco. *Mr. Boyle* advises to mix with those of *Colts-foot*, Flower of Sulphur, and some powdered Amber: He affirms, that this Medicine has cured several of the Phthisick. In the Time of *Dioscorides*, they made those that were afflicted with these Distempers, receive the Smoak of the Leaves of this Plant at their Mouths. The Flowers and Leaves are used in the pectoral Decoctions, and Lohochs to make one spit; there is a Syrup and a Conserve made of these Flowers. The following Pilsan is very good for a dry Cough.

Pour four Quarts of boiling Water upon four Handfuls of the Leaves of *Colts-foot*, and three Pugils of the Flowers; two Pugils of the Tops of *Hyssop*, one Ounce of *Raisins*, and three Spoonfuls of *Narbonne Honey*; boil it a little; take the Pot from the Fire; cover it, and strain the Pilsan when it is cold. *Martyn's Tournefort*.

Hillierius informs us, that he restored many Children labouring under an Atrophy, only by the Leaves of *Colts-foot*, which he ordered to be cut down like other Pot-herbs, made up with a farinaceous Puls, fried in Butter like Sage, and used for a long Time, as we are informed by *D. Same ex Observat. Hieron. Reusneri. Raii Hist. Plant.*

2. *Tussilago*; Alpina; rotundifolia; glabra. *C. B. P.* 197. *M. H.* 3. 130. *Boerb. Ind. alt. Plant. Vol. 1.*

This Plant, in all Probability, is called *Tussilago*, from the Word *Tussis*; because it is good for a Cough. It receives the Name *Bechion* from the Greek Word βήχης, which corresponds to the Latin *Tussis*. It is called *Ungula Caballina*, or *Calceum Equinum*, because its Leaf, in Shape, resembles an Horse's Foot. It receives the Name of *Farfara*, or *Farfarella*, because its Leaves resemble those of the white Poplar, or appear to have

Meal sprinkled on them. It is, also, called *Filius ante Patrem*, because in the Months of *February* and *March*, when its Leaves have not appeared, it suddenly sends forth its Flowers, which hardly continue above two Days.

The Flowers, Roots, Stalks, Leaves and Fruit, are used in Medicine. They are of a penetrating, heating, and lenitive Quality; for which Reason they incide thick and pituitous Humours contained in the Lungs; and are good in Coughs, Consumptions, and Pleurifies. The recent Leaves bruised in a Mortar, and boiled with double the Quantity of Sugar, are excellent in a Phthisis, an Exulceration of the Kidneys, a long-continued ulcerous Gonorrhœa, and Disorders of the Stomach arising from Phlegm. *Colts-foot* is accounted alexipharmic, because it excites Sweat. The recent Leaves, applied externally, are beneficial for the Cure of Ulcers and Inflammations. Its Juice drank for some Days, is said to cure quartan Agues. *Hist. Plant. adscript. Boerhaav.*

TUSSIS. A Cough.

A Cough and an Asthma are so nearly related, and so frequently complicated, that the one can hardly be without the other: A Cough, then, is a violent Expulsion of a foreign Matter from the Bronchia of the Lungs, by means of their increased contracted, or convulsive Force, accompanied with a violent Expiration.

As I intend to give the History and Pathology of this Disorder, I shall begin with a Description of those Parts, which most immediately concur to the Production of a Cough, that thus we may discover the true Essence of this convulsive Motion, and be able to understand its several Differences. The primary Seat, then, of a Cough is, that large Canal, by means of which we breathe, and which is divided into two Parts, the *Aspera Arteria*, and the *Bronchia*: The latter of these are distributed through the Substance of the Lungs, whilst the former reaches from the Lungs to the Fauces. The Origin of the *Aspera Arteria*, which is called the *Larynx*, is a Canal, beginning at the Fauces, and form'd of five Cartilages, connected by three Membranes, the exterior of which is nervous; that in the Middle fleshy, and the internal glandular: The superior Aperture of this Canal is call'd the Glottis, which is covered with a cartilaginous Covering, called the *Epiglottis*: The *Larynx* is succeeded by a cartilaginous and membranous Tube, call'd the *Aspera Arteria*, which, being wider at the Beginning, and gradually becoming narrower, in its Progress to the Lungs, is, near them, divided into two Ramifications, call'd the *Bronchia*. These Ramifications are divided into numberless other, which are distributed through the Substance of the Lungs, and which consist of cartilaginous Segments, and contractile Membranes; then they terminate in small Vesicles, like Clusters, which adhere to these small bronchial Ramifications, and constitute the most considerable Part of the Lungs.

All these pneumatic Canals, from Beginning to End, are surrounded with a Membrane, consisting of longitudinal and annular Fibres, and furnish'd with many excretory Ducts and Glands; the Number, Situation and Figure of which is exquisitely delineated by *Morgagni advers. Tab. XI. Fig. 1.* These Glands pour into these Canals, subservient to Breathing, a thin, roscid, mild, and lymphatic Humour, which, also, in all Probability, drops from those Glands, which externally adhere to the *Epiglottis*, the *arytenoide Cartilages*, and the Extremities of the *Bronchia*. These Glands are represented by *Heister* in *A. N. C. Cent. 7 & 8. Ob. 63.* Provident Nature has bestowed on these Ducts, Vessels of various Sorts, especially of the arterial Kind, distributed from the bronchial Artery: This bronchial Artery takes its Beginning from the Trunk of the *Arteria Magna descendens*, above the Arch of the superior inter-costal Arteries; and is divided into three Ramifications, one of which runs externally upon the *Aspera Arteria*, whilst the other two distribute many Ramifications through the whole Substance of the Membranes of the Trachea, and of the pulmonary *Bronchia*. These Ducts, also, receive venous Vessels from the bronchial Vein; the Ramifications of which, being propagated in the same manner with the Arteries, at last, by a large Ramification, terminate in the Trunk of the *Vena cava descendens*, and the *Azygos*: Both these Species of Vessels were discovered and are accurately described by *Mr. Ruysch*, in *Epist. 4.* And lastly, the Ducts, subservient to Respiration, receive Nerves from the *Par vagum*, and the inter-costal Nerve.

The primary Use and Function of these Canals is, to afford a commodious Ingress of the Air to the Lungs, and a free Return of it thence, in order to facilitate the Circulation of the Blood, so necessary to Life and Health: For this Purpose, these Ducts are furnish'd, first, with a large Number of Glands, not for secreting an excrementitious Liquor, for this Part is by no means naturally destin'd for the Excretion of the Sords, but the Design of those Glands is, to discharge a thin Lymph, which, by a mild and continual Lubrication, cherishes the Membranes of the Trachea and *Bronchia*, lest they should become dry by the continual Action of the Air in Inspiration; and, when this Lymph has perform'd its Office, it is resolv'd into Exhalations, and carried off with the expired Air, after the manner of cutaneous Perspiration. For the same Purpose, these Ducts, subservient to

Respiration

Respiration, are furnish'd, secondly, not only with nervous Coats, exquisitely sensible, but, also, with muscular Coats, possess'd of longitudinal and annular Fibres, by means of which they are capable, not only of constrictory, but, also, of a dilatatory Motion, which provident Nature has bestow'd on all the nervous and membranous Ducts of the Body, as we find in the Ureters, the biliary Ducts, the Stomach, and Intestines: Nor is this Motion without its peculiar Advantages; for it greatly contributes, not only to promote the Ingress and Egress of the Air, but, also, to the Secretion of the Lymph from the above-mentioned Glands, and to the Circulation of the Blood, through the bronchial Vessels. But, thirdly, tho' these membranous Ducts are not of themselves sufficient for the Business of Respiration, yet they are so necessarily connected with the other Parts, subservient to the same Purpose, such as the Lungs, the Pleura, and the Diaphragm, together with the intercostal and abdominal Muscles, that 'tis almost impossible, that when one Part acts, all the others should not, also, begin to act.

When these Parts are in their due and proper Condition, Respiration is carried on in a natural Manner: But when any one of them recedes from its natural State, Respiration is forthwith injured and perverted. Without considering other Disorders of Respiration, we only now treat of a Cough, which always arises from a preternatural State of some of the above mentioned pneumonic Canals. I don't hesitate to affirm, that what in the Stomach produces a Vomiting, in the Bronchia gives rise to the Cough; that is, an Inversion of their tonic Motion; for I am of Opinion, that under a Cough, the bronchial Ducts, being constricted from their inferior to their superior Parts, force their contain'd Air quickly and impetuously upwards, as if they were to expel something foreign: But since, when these are disorder'd, 'tis necessary the other Parts of the Breast destin'd to Respiration, and intimately connected with these, should, in consequence of the strict Consent between them, become Partakers of their inordinate Motions, it is sufficiently obvious, why the more violent a Cough, which is a preternatural Expiration, is, the more violently the Breast, the Abdomen, and the whole Body should be convulsed. In consequence of this Consent, it also frequently happens, that when the Stomach, the Diaphragm, the Oesophagus, the præcordial Nerves, and those distributed from them, or the pituitary Membrane of the Nostrils, are, by any Cause, vellicated, the Ducts, subservient to Respiration, being by that means affected, a Cough is excited.

If, therefore, a spasmodic, and convulsive Disorder of these Ducts, is the remote Cause of a Cough, their Vellication must necessarily be the immediate Cause of such a convulsive Disorder, and consequently of the Cough. Every Cough, therefore, has its Seat in the Breast, tho' its productive Causes are not always lodg'd there. And this Diversity of remote Causes, which concur to the Production of a Cough, produces a great many different Species thereof.

Nor do we intend to consider that Species of Cough, which, as a terrible Symptom, accompanies various Disorders: Of this Kind is a Phibiscical Cough, which arises from a Colligation of the Vesicles, and bronchial Vessels, produced by an Ulcer of the Lungs; and, consequently, has, for its Foundation, a Solution of Continuity. In this Species of Cough, an ulcerous and foreign Matter is not conveyed through the pulmonary Glands, but thro' the corroded, lacerated, and gaping Cavities of the Bronchia; and, by vellicating the nervous Membranes, produces the Cough. To the Class of symptomatic Coughs, also, belong those which happen in Astmas, Peripneumonies, Pleurifies, a Scirrhus, and Impostumation of the Lungs, or an Inflammation of the Diaphragm and Liver. Of the symptomatic Kind, are, also, those Coughs, which arise from a Wound inflicted in a Nerve or Tendon about the Neck; as, also, those which succeed Convulsions, Epilepsies, and hysterical Disorders: For these Species of Coughs are, for the most part, produced by a Vellication of the Bronchia, only induced by Consent, since the Cause of the Disorder is lodg'd in a Place more or less distant from the Præcordia.

Nor shall we, at great Length, consider that Species of Cough, which arises from a Falling of any foreign solid or fluid Body into the Aspera Arteria, thro' the Aperture of the Glottis: These Accidents are very terrible, and often fatal, by inducing a sudden Suffocation, memorable Instances of which are found in *Marcelli Donati Hist. Med. Mirab. Lib. 3. cap. 7.* To this Species of Coughs, belong those produced by Tumors, Stones, and other preternatural Things, adhering to the Aspera Arteria and Bronchia. Hence Authors, of undoubted Veracity, assure us, that Stones, and other small Bodies, like Hail, have been thrown up in Coughing. See *Alexander Trallian, in Lib. 5. Paulus Aegineta, Lib. 3. Cap. 28 and 31. and Pet. Borelli, in Obs. Cent. 1. Obs. 67.*

Nor are we to consider those Coughs, which are produced by the Fumes of Lead, Metals, and, especially of acid Minerals long inspired with the Air; to which the Diggers and Refiners of Metals, Porters, who use much Litharge, Masons, and those who deal much in Quick-lime, are principally subject, since these Coughs are easily accounted for; because, when the me-

tallic, and almost corrosive Particles, enter the Ducts subservient to Respiration, and possess'd of an exquisite Sensibility, they insinuate themselves intimately into them, and constrict them violently, which proves the Cause of a dry Cough, complicated with an Asthma.

Nor does that slight and short Cough, which, in Persons otherwise sound, is produced by a Suppression of Transpiration, come under our Consideration. Coughs of this Kind are produced, when Persons, especially of pituitous Habits, suddenly expose their Heads or Breasts, when warm, and under a gentle Perspiration, to Cold; in consequence of which the acrid Serum, repelled from the Skin, falls upon the Aspera Arteria and Bronchia. Coughs of this Kind are, also, produced, in old Persons, when they sleep in cold Places, especially in the Night-time; or freely expose themselves to a cold and Winter Air: This Species of Cough is, also, a Concomitant of a Coryza; and is soon cured, either by keeping warm, or, perhaps, more expeditiously, by the Exhibition of proper Diaphoretics. To this Species of Disorders, also, belongs the Falling of the Mucus from the Nostrils to the Fauces and Larynx: But this Mucus is, however, easily expectorated in the Morning.

But we shall treat, at greater Length, of that Cough which is a primary Disorder, violently affects the whole Body, and racks the Patient, not only by its Vehemence, but, also, by its long Continuance: This we call a rheumatic Cough; for it has for its Cause an inverted Motion of the Humours, from the Circumference of the Body to the Lungs, and a Congestion of them therein. Nor is it ever free from Horripilations, and febrile Commotions, principally observable towards the Evening. This Species of Cough is either dry or moist, according to the Habit of the Patient. The moist Species is incident to sanguineous and phlegmatic Persons; to Persons whose nervous, fibrous, and muscular Parts, are soft; to those who abound with serous and pituitous Juices, such as Women rather than Men; and Infants, Children, and old Persons, rather than young and adult Persons: But the dry Cough is more incident to hypochondriac, scorbutic, and cachectic Persons; to such as are of a rigid Habit of Body; to those who have a weak nervous System, disposed to spasmodic Motions; and to such as abound with an acrid Serum.

The highest Degree of a rheumatic Cough is called a convulsive or Chin-cough. This rages with such unbounded Fury, and agitates the Patient with such Concussions, that he frequently seems to be in Danger of a Suffocation. Sometimes, especially in the Beginning, it is dry; and none, or at most a very small Quantity of thin Serum, more or less acrid, is expectorated: At other times it is moist; and then, after violent Efforts, a sublivid, and often an highly tenacious Mucus is expectorated. Under this Species of Cough the Patient's Extremities become cold; he is costive, discharges thin Urine, and his vital Juices, being too copiously and impetuously conveyed to his superior Parts, fill his Head and Breast: Hence, under the Paroxysm, his Face is red, his Veins tumid, and his Pulse strong and quick; his Eyes are prominent, and discharge Tears; his Eye-lids swell, and sometimes, when he sneezes, the Blood bursts from his Nostrils. Sometimes, also, the small Vessels of the Lungs are ruptured, and a Spitting of Blood succeeds. This Species of Cough is frequently accompanied with an Hiccup, and troublesome Vomiting; some Patients involuntarily discharge their Fæces and Urine; and others, especially Children, in coughing, contract Hernias; or, according to *Hippocrates in Aph. 46. Sect. 6.* become gibbous. In *M. N. C. Cent. 1. Obs. 1.* we have a memorable Instance of one of the Bodies of the Vertebrae of the Back, broken through the Middle, by the Vehemence of a Cough of this Kind. It is, also, to be observed, that an Apoplexy may be produced by the excessive Vehemence of a Cough. And *Boyle* observes, that by such a Cough a sudden Loss of Memory, as, also, a Palsy of the Hands, and other Limbs, were produced.

The material Cause of a convulsive, or Chin-cough, resides in the thin, acrid, and almost caustic Humour deposited on the highly sensible Coats of the Ducts destin'd for Respiration. This Humour is either lodged only in the Larynx, and Aspera Arteria, in which Case it produces a continual and ungrateful Titillation of the Fauces; or it is more deeply seated in the pulmonary Bronchia; and then it excites the most atrocious Efforts of Coughing. This Humour is generated by the acrid and impure Sordes, either not sufficiently expelled to the Surface of the Body, or repelled by any Cause, especially Cold, and consequently congested in the Lungs. Hence we learn, that a Suppression of the Itch, Tinea, and Achors of the Head, the Gutta Rosacea, as, also, a too hasty Consolidation of Ulcers, or the Repelling of the Gout, are succeeded by a Chin-cough: And there is no other Reason, why the Measles are preceded, accompanied, and succeeded with long continued Coughs of this Kind, than that the acrid morbillaceous Matter is retired to the Ducts subservient to Respiration, and violently vellicates them. See *A. N. C. Dec. 3. Obs. 11.*

A rheumatic and convulsive Cough, arising from a common Cause, some Fault of the Air, for Instance, frequently rages epidemically in various Countries. It seizes principally in the Au-

sum and Winter, especially if the Winter, after a South Wind, and a moderate Warmth, suddenly becomes intensely cold, and nipping North Winds begin to blow. But this Cause only excites a rheumatic Cough in impure Habits; whilst in others it only, for the most part, produces one of the catarrhus Kind: Hence we generally observe, that the Cause of these epidemic Coughs is an Air replete with pernicious ferid Clouds, or impregnated with other acrid and often poisonous Particles, the Causes, also, of exanthematous Fevers; which Particles, when drawn in with the Air, not only produce a violent Cough, but also Aphthæ, which render it more intolerable, than it would have otherwise been. Besides, in the Spring these several Coughs sometimes rage epidemically, and are accompanied with an Hoarseness; and at this Season they derive their Origin from the saline and acrid Exhalations contained in the Air, by the Heat of the Sun raised from the Earth after Winter, and insinuating themselves through the Glands of the Ducts subservient to Respiration. See *Hippocr. Epidem. Lib. 6. Sect. 8. Sennertus de Febribus, Lib. 4. Cap. 17. Sydenhami Opera.*

Let this suffice, with respect to the highest Degree of a rheumatic Cough, the Causes of which are generally external. But there are other Coughs, which are more properly called rheumatic, which proceed from an internal Cause, and which are not only long protracted, but, also, very uneasy to the Patient, since they are complicated with rheumatic Pains of the Breast and Head, Hemicranias, Tooth-achs, Punctures of the Sides resembling a Pleurisy, and Defluxions of an acrid Matter from the Head to the Fauces. Coughs of this Kind are principally incident to cachectic and scorbutic Constitutions, in consequence of a Suppression of oedematous Swellings of the Feet, or any other Tumors: And this preposterous Practice brings on so violent a Cough, and Difficulty of Breathing, that the miserable Patient seems to be in Danger of being suffocated. Coughs of this Kind are very common in old Persons, who abound with impure Juices; and in such Patients it is produced by external Cold, admitted principally to that Region of the Back, where the first Vertebra of the Loins, and greater Mesenteric Plexus of Nerves, are found; nor is it owing to any other Cause than a Conveyance of the acrid Serum from the external Parts of the Body to the Lungs. This Species of Cough, in pituitous and old Patients, who live delicately, use a sedentary Life, and have neglected usual Venesection, is frequently of the moist Kind, and produces a critical Effect; since by its means the whole Mass of Blood and Humours, though not without considerable Uneasiness, is excellently purged from the Redundance of impure Serum; so that when the Cough is removed, the natural Strength returns, and the Sleep, Appetite, and perfect Health, are restored.

To the Class of rheumatic Coughs, also, belong those of the stomachic and hypocondriac Kinds: The Cause of the former of which is lodged in the Stomach; and that of the latter, deeper in the Hypochondria and Intestines: And both these Species of Coughs are produced, partly by a Consent of the Nerves, and partly by a rheumatic Defluxion of Serum on the Lungs. The stomachic Cough discovers itself by peculiar Signs, which are a Nausea, a Cardialgia, a Loss of Appetite, a defective Digestion, a Sense of Weight in the Stomach: And the first Stimulus to Coughing is perceived about the Pit of the Stomach. The hypocondriac Cough, on the contrary, is accompanied with Flatulences, Spasms of the Intestines, and the other hypocondriac Symptoms. The stomachic Cough is produced by a bilious, acrid, and acid Sordes, which is lodged in the Stomach, especially in its superior Orifice, and in the Oesophagus, and which vellicates the nervous Coats of these Parts, which are closely connected with the Ducts subservient to Respiration. Hence this Species of Cough is accompanied with frequent Vomiting. It is most troublesome, when the Stomach is empty; and is familiar to those labouring under a Tertian, especially of the continual Kind, as we are informed by *Hippocrates in Epidem. Lib. 2.* The hypocondriac Cough is produced by thick, impure, and serous Humours, by the Force of Spasms, and abdominal Flatulences, conveyed to the Breast and Lungs; and it is the more violent, if an excessive Cold, or the Influence of exorbitant Passions, have preceded, as the occasional Causes. But it is to be observed in general, that every periodic Cough derives its Origin from Sordes lodged in the Stomach, or rather in the Duodenum.

We must, also, consider an habitual Cough, which may be justly called one of the catarrhus and rheumatic Kind. This Species principally depends on a Relaxation of the Glands situated in the Fauces, Palate, and Larynx, and is protracted for many Years with a continual Expectoration. It is accompanied with a defective Digestion, and a successive Consumption of the whole Body. It is incident to serous Patients, to those who lead a sedentary Life, and to such as are addicted to Lucubrations, and drinking of Wines.

As for the Prognostics of Coughs, a dry Cough generally passes into one of the moist Kind, which, when of long standing, becomes habitual, spoils the Digestion, and induces a cachectic State, and a slow Fever. A moist Cough, passing into

one of the dry Kind, and leaving a Sense of Weight in the Breast, subjects the Patient to the Danger of a putrid or an hectic Fever, according to *Lommius, in Observ. Medicin. Lib. 2.* Convulsive and Chin-coughs are dangerous in Infants, because they easily induce a Suffocation, especially in difficult Dentition, and the Measles. In Children they produce Distortions of the Back, and Hernias; in pregnant Women, Abortion; and in Adults, a Spitting of Blood, and a Phthisis. That Coughs of this Kind are, also, sometimes productive of a sudden Suffocation, we are inform'd by *Willis, in Pharm. ration. p. 2. Sect. 1. Cap. 6.* and *Hildanus, Cent. 2. Obs. 68.* Coughs succeeding a Scirrhus of the Lungs, or any other of the Viscera, are generally incurable by any Remedies whatever. And those Coughs which are produced by a Repulsion of exanthematous Eruptions, cease when these Eruptions are again recalled. *Lommius*, in the Part above quoted, informs us, "That all Coughs, which deprive the Patient of Sleep, are bad; and that such as are long-continued, frequent, violent, and accompanied with a Defluxion, that is, habitual, rheumatic Coughs, are productive of bad Effects." Coughs happening to dropical Patients, are bad Signs, according to *Hippocrates in Sect. 6. Aphor. 35.* On the contrary, a moderate Heat in the Night, an equable Sweat or Moisture over all the Body, a copious Discharge of Urine, a due Solubility of Body, tranquil Sleep, and an easy Expectoration, are sure Signs, that the Cough is in a fair Way of being removed.

The CURE.

In the Cure of a rheumatic Cough, four Intentions are to be pursued: For, in the first Place, we are to correct the peccant Matter, dispose it for Elimination, and, if necessary, promote Expectoration. Secondly, we are to derive the Afflux of the Serum from the Præcordia, and invite it to other more proper Emmunctories. Thirdly, we are to check the exorbitant Commotions of the Body. And, fourthly, we are to restore Strength to the weakened Parts.

If, therefore, the Bronchia are obstructed by a tenacious, coagulated Mucus, this Mucus is to be incided, resolved, and softened. This Intention is excellently answered by the resolvent Roots; the best of which are, the Root of Florentine Orris; the Root or Fæcula of Arum; and, what is very powerful in fusing tough and tenacious Humours, and procuring Expectoration, five of six Grains of Squill-root, exhibited with a little Nitre, as also Oxy-mel of Squills, Essence of Gum Ammoniac, anisated Spirit of Sal Ammoniac, Milk and Flowers of Sulphur, and Sperma Ceti.

An highly thin, acrid and saline Humour is disposed for Elimination, by incrassating Medicines, and such as correct the Acrimony of the Lymph. These Intentions are excellently answer'd by Decoctions prepared of Barley, Shavings of Hartshorn, Roots of Vipers-grass, and Liquorice; by Cremor of Barley and Water Gruel, prepared with sweet Almonds, and Currants; by a Decoction of Turneps, prepared with Sugar; by Jellies of the Horns of Deer, and other Animals; by Broths prepared of Fleashes and Milk; by Lohochs of the Lungs of Foxes; by the Syrups of Poppies, Colts-foot, and Mountain Diacodium; by Sperma Ceti exhibited with Milk; and, above all, by Oil of sweet Almonds recently expressed without Fire, and exhibited either alone, or with Syrup of Maiden-hair, or Julap of Roses. Thus,

Take of the Oil of sweet Almonds, and of the Syrup of Maiden-hair, each one Ounce; of Sperma Ceti, three Drams; and of Saffron, fifteen Grains: Mix all together; and exhibit.

The same Intention is, also, excellently answered by Infusions of Paul's Betony and Hyssop; the Flowers of Mallows, Elder, red Poppies, Sage and Daisies; the Roots of Liquorice; the Seeds of Fennel; and the Bark of Sassafras. When a catarrhus Cough is become habitual, and accompanied with Loss of Appetite, and a Consumption, the Cure is to be attempted by Asses Milk, or Whey, or the *Selteran* Waters, mixed with an equal Quantity of Milk.

When there is too great a Congestion, Afflux, and Defluxion of Serum in the Breast, as happens in a very moist, pituitous and long-protracted Cough, it is expedient to derive this Serum from the Præcordia and pulmonary Vessels, partly by the Anus, the proper Emmunctory of mucus Sordes, and partly by the Skin, the proper Outlet of the thinner and more subtle Humours. As in all Coughs, so more especially in those of the convulsive and rheumatic Kind, a due Solubility of Body is of great Advantage, for procuring which, correcting the Acrimony, and mildly, though copiously, and, without any Trouble or Loss of Strength, evacuating the serous Sordes, I have found none of all the Laxatives more effectual than Magma, two Ounces of which may be exhibited in some proper Infusion or Decoction, and the Dose repeated as the Situation of the Patient requires. I generally dissolve two Ounces of it in eight Ounces of the Water of Paul's Betony, or the Flowers of the Egyptian Thorn, with a gentle Heat, adding afterwards one Dram of the *Terra foliata*

foliata Tartari, and a few Drops of the Oils of Cedar, Anise, or Mace. *Gabelboverus*, also, in *Cent. 4. Obs. 7.* recommends several Ounces of Manna to be exhibited for the successful Cure of Coughs. The same Laxative may, also, be exhibited in an Infusion of Paul's Betony, or in Milk. This Intention is, also, answered by solutive Syrup of Roses, recently extracted Cassia, the laxative Decoctions, and Raisins impregnated with Rhabarb. And if the Stomach cannot bear these Laxatives, the redundant Serum and Mucus are, by Clysters, to be evacuated through their proper Emunctory, which is principally in the large Intestines.

By restoring the equal Circulation of the Blood through the whole Body, and especially by inviting the Serum to the subcutaneous Glands, its Afflux to the Præcordia is prevented. This Intention is answered by warm pectoral Infusions of the Flowers of Mallows and Violets, the Leaves of Hyssop and Sage, the Seeds of Fennel and Anise, and Cinnamon. These Infusions are to be drank in the Morning in Bed, observing a proper Regimen, and keeping the Body always in an equal Heat. The same Intention is, also, answered by the diaphoretic and bezoardic Powders prepared of Crabs-eyes, the Pulvis-Marchionis, prepared Amber, diaphoretic Antimony, or, in its stead, *Poterius's* Antihætic, uncalcin'd Hartshorn, and Cinnabar, with the Addition of a few Grains of the express'd Oil of Nutmegs, or of the Oil of Saffron. To these Powders we may, also, add Flowers of Sulphur, if the Cough is produced by a Retropulsion of Achors, or an Itch.

The third Intention is to check the exorbitant Commotions of the Body; which is to be attempted in the very Beginning, for fear of greater Danger. Among the Remedies answering this End, the best is Saffron, which is highly friendly to the Breast, and its Extract with the bezoardic Powders. Some, also, order Oak-moss to be added both to the Powders, and to the Decoctions. The same Intention is, also, answered by the *Pilule de Syrace* mix'd with the *Pilule Aloephanginae*, and exhibited in the Evening, ordering at the same Time Expectorants; such as Oil of sweet Almonds, and Sperma Ceti. This End is, also, answered by the anodyne mineral Liquor, or the Liquid Laudanum of *Sydenham*, united with Spirit of Hartshorn, so much extol'd by *Boyle*. If the Disorder does not yield to these, we are to have recourse to more powerful Anodynes; such as the *Pilule de Syrace*, the *Pilule Starckeyanzæ*, the *Pilule Wildergansii*, and Preparations of the Theriaca.

Nor for allaying the Vehemency of a Cough are we to condemn Topics; since, in a Cough of the phthisical Kind, great Relief is afforded by applying the Emplastrum Diasulphuris Rulandi to the Breast. In a convulsive, or Chin-cough, excellent Effects are produced by anointing the Præcordia with the Unguentum potabile rubrum, mixed with Spirit of Wine. The anointing the Sides of the Thorax with the pectoral Ointment in the Pharmacopœia Augustana, is of great Efficacy in allaying Coughs, mitigating Pains of the Breast, and promoting Expectoration. In all rheumatic Coughs I have, from long Experience, found the following Plaister very beneficial.

Take of the best Myrrh, Bdellium, and Amber, each half an Ounce; of Sperma Ceti, human Fat, Wax, and red Lead, each two Ounces; of Venice Soap, three Drams; of Saffron, one Dram; and of Camphire, half a Dram: Mix for a Plaister to be applied to the Breast, Neck, and Spine of Back.

In the Decline of the Disease, the fourth Intention is to be pursued, and the weakened Parts corroborated, because Coughs easily recur. For this Purpose I recommend the Essence of Amber, and the Spirit of Hartshorn mixed with Tincture of Tartar, or the anodyne Liquor; with the Addition of a few Drops of the Oil of Sassafras-wood; as, also, the Essence of Cascarella. I have often observed happy Effects produced by a few Drops of the Balsam of Life, exhibited with Extract or Tincture of Saffron. In the End of the Disorder, in order to corroborate the Stomach, I generally prescribe the following Electuary:

Take of the Conserve of red Roses, two Ounces; of the Conserve of Rosemary, one Ounce; of prepared Amber and Nutmegs, each three Drams; and of the Syrup of Citron or Orange-peel, a sufficient Quantity.

Crato, in *Lib. 37. Consil.* extols Amber with a Decoction of Raisins, and very justly, since that Medicine is possessed of a corroborative, and, at the same time, of a laxative Virtue. But the genuine Essence of Amber is far preferable to Amber itself. The Stomach is, also, excellently corroborated by old and generous *Falernian Wine*, which the Antients, and especially *Pliny*, greatly extolled. *Hippocrates*, in *Lib. de Vita Acutorum*, greatly recommends the Use of sweet Wine for old Persons. Water of Paul's Betony, and of Hyssop distilled with Wine, and edulcorated, adding a little Saffron, is very proper

for the same Purpose. In order to strengthen the Glands of the Fauces and Bronchia, from which the Humour continually falls down to the Larynx, and Aspera Arteria, I have always, with great Success, sprinkled upon the Head a Powder prepared of Amber, Benjamin, Mastich, Flowers of Roman Chamomile, and Clove-gilly-flowers. The Mouth is, also, to be frequently gargarised either with *French Brandy*, or with a Decoction of Sage, Hyssop, and Red-rose-flowers, in Wine.

In preventing and curing Coughs of all Kinds, a proper Regimen is of the last Importance. The Air, then, ought to be neither too cold, nor too hot; but in such a State as to preserve the Body in a perpetual breathing Sweat. The Night Air is particularly hurtful; and bad Effects are produced by cold, cloudy, and rainy Weather; as, also, by excessive Heat; but, most of all, by Northerly Winds. Those who are frequently subject to Coughs and Catarrhs, ought to abstain from such Aliments as are high-salted, indurated in the Smoak, too strongly seasoned with Aromatics, as, also, such as are acid and austere; because these render the Blood, and its Serum, acrimonious and impure. They are, also, to have a due Regard to what they drink; for no Malt Liquor is proper, and much less acid Wine. For Drink, such Persons ought rather to use Barley-water, or Puffin, or a Decoction prepared of the *China Root*, Raisins, and the Roots of Vipers-grass, or Hydromel, which *Gabelboverus* orders in the following Manner:

Take of despumated Honey, four Ounces; of Spring Water, three Quarts; of Liquorice, five Drams; six Figs; of the Seeds of Fennel, and Roots of Burnet, each two Drams; of the Flowers of Mallows, one Handful; of the Flowers of Sage, and Violets, each one Pugal; and of Cinnamon, two Scruples: Mix, and boil to the Consumption of half a Quart.

Scorbutic Patients, afflicted with a Cough, may, for Drink, use pure Spring-water, not too cold, either alone, or corrected with sweet Almonds, or fine Wheaten Bread. The common People, with great Success, in violent epidemical Coughs, pour boiling Water upon the Bran of Wheat, and drink the Infusion when cold.

The Prevention of Coughs, in a great measure, depends upon a proper Use of the Non-naturals. Those Persons who, when recovering from a Cough, drink Wine, expose themselves to the Cold, or indulge themselves in exorbitant Passions, are forthwith seized with a more violent Cough, than that which they before laboured under. Old Persons ought to guard against Cold of the Feet, and especially of the Back; and because in the Winter rheumatic Disorders are easily contracted, the Head, the Neck, and the Regions of the Præcordia and Loins, as, also, the Feet, in old Persons, who are subject to a Cough, are to be carefully fortified against the Cold with warm Linen and Cotton, in order to preserve a moderate and equal Perspiration; for when any one of these nervous Parts is affected and penetrated by the Cold, especially by Northerly Winds, all the rest, in consequence of their mutual Consent, are preternaturally affected. It is, also, necessary to keep the Body sufficiently soluble, and the Perspiration free; for which Purpose moderate, but frequent Exercise is healthy during fine Weather. Those who are pietiboric, ought at stated Times, and especially about the Equinoxes, to use Venesection, or Scarification. When the Cough is epidemical, we ought to guard against its Tyranny by a proper Regimen of light Aliments, and preserving the Excretions free and uninterrupted.

In all Coughs we are to deal cautiously with Expectorants, sweet Substances, and incrassating Decoctions; lest, as is customary among the common People, by exhibiting these alone, and in too large Quantities, we should still farther relax the Lungs, and excite a greater Afflux of Humours to them. And in stomachic and hypochondriac Coughs, we ought totally to abstain from such Medicines, because they spoil the Digestion, and by that means pave the Way for a Cachexy and Dropsy.

A Chin-cough, arising from a Retropulsion of exanthematous Eruptions, indicates the recalling of the peccant Matter to the Surface of the Body. For this Purpose nothing is more effectual than *Æthiops Mineral*, or Flowers of Sulphur internally exhibited with diaphoretic Antimony, or the bezoardic Powder, especially at Night: Nor, besides Frictions, and Bathing of the Feet, is there a more effectual Remedy for drawing the Serum from the Breast, than Vescicatories; provided the Delicacy of the Age would but permit their Use. In the Chin-coughs of Children it is of considerable Service to anoint the Soles of the Feet with Hogs-lard.

In Coughs arising from a Repression of cedematous Tumours of the Feet, besides Clysters, inciding and diaphoretic Medicines, and such as derive the Motion of the Humours from the Breast, gentle Diuretics are of singular Service; such as the Tincture of Tartar, the tartarised Tincture of Amber, and the visceral Elixir mixed with the pectoral Elixir. But acrid saline Substances, and drastic Diuretics, are not to be used, because they

they carry off the sweet Serum; whereas the others carry off the acrid Serum through the urinary Passages.

I have frequently seen a long-continued Cough, arising from a scorbutic State of the Blood and Humours, cured by an internal Exhibition of Whey and Powders prepared of Crabs-eyes, the Pulvis Marchionis, prepared Amber, diaphoretic Animony, Extract of Saffron, and the aqueous Extract of Calcarilla, interposing a Laxative of Rhubarb, and ordering for common Drink cold Water, corrected with sweet Almonds; or the *Selleriean* Waters, mixed with *Moselle* Wine; or a Decoction with Water of such temperate Species as have a Tendency to depurate and sweeten the Blood. I have, also, towards the Evening, exhibited the Pilulæ Aloephanginæ, mixed with the Pilulæ de Stryace, and ordered the Application of the above-described Plaster to the Breast.

If the Cough is excited by the acid and bilious Sordes in the Stomach, nothing is more efficacious than Absorbents; such as Crabs-eyes, and prepared Amber mixed with the Arcanum duplicatum, with the Addition of a few Drops of the Oil of Mace: To these we are, also, to join mild Laxatives prepared of Manna and Rhubarb. The stomachic Cough of Children is removed by a gentle Emetic, if nothing contraindicates that Practice.

In a Cough arising from an Obstruction of the Viscera of the Abdomen, which is called an hypochondriac Cough, those Medicines are most proper, which recal the suppress'd Excretions of Blood. Happy Effects are, also, produced by Antispasmodics, and bathing the Feet: But nothing is so effectual as tepid mineral Waters, mixed with Goats, or rather Asses, Milk, and drank with a proper Regimen.

A long-continued Cough, tending to a Consumption, is most effectually cured by Asses Milk, provided the Body is duly prepared for drinking it: And this Method of Cure succeeds best, if long Journeys, Changes of Air, and Corroboratives, are joined with it: Nor, if the Cough is very moist, has any thing a more happy Influence, than a proper Abstinence from Aliments, especially from Flesh.

It is always expedient to mix Anodynes, such as the Pilulæ de Cynoglossio, and the Pilulæ de Stryace, with equal Quantities of Laxatives, such as the Pilulæ Aloephanginæ, or the Pilulæ Cratonis de Succino, and to exhibit them in Conjunction at Bed-time; for when Anodynes are exhibited alone, I have observed, that the Cough is suppress'd, and an Asthma produced by a too great Congestion of Humours, and a Weight about the Breast.

As an intense Cold, so also an excessive Heat, is prejudicial to Persons afflicted with a Cough. Hence Infusions, if excessively hot, exasperate the Cough; for which Reason all the Liquors the Patient drinks ought to be only tepid.

Venefections are beneficial to plethoric Persons, whose Veins are tumid and prominent, like Cords; or who have their Excretions suppressed: They are, also, an excellent Preservative even in old Persons past the seventieth Year of their Age; nor can we be without Venesection, when the convulsive Cough is so intolerably violent, that in Children, and young Persons, a Rupture of some of the Vessels is to be dreaded from it. *Sydenham* affirms, that he cured a Cough of the convulsive epidemic Kind, only by Venesection, repeated Purging, and Vescicatories.

Celsus, in *Lib. 4. Cap. 4.* when treating of the Cure of a Cough, gives the following Directions: "The Patient is to drink a Decoction of Hyssop every other Day, and read with a loud Voice, which is first hindered by the Cough, but the Reading afterwards overcomes the Cough; then the Patient must walk, use Exercise, and long-continued Frictions of his Breast; then he is to eat fat Figs. In a moist Cough, strong Frictions, especially of the Head, with hot Substances, are beneficial: A poach'd Egg may, also, be exhibited, with the Addition of a little Sulphur; and for Drink he is to use tepid Water." And I must own, I am of Opinion, that it is best to follow the Advice of *Galen* in curing a Cough, who tells us, that we are to prescribe Things light, simple, and most familiar to Nature, rather than compound active Medicines, prepared in the Shop. Thus I remember, among the common People, to have seen an obstinate chronic Cough, not only alleviated, but, also, totally removed, by a Decoction of dried Turneps; or of the Stalks of red Colewort; or of the Bran of Wheat, mixed with Sugar. If the Matter of the Fluxion is thin, copious, and acrid, which is known from the Redness of the Eyes, the Titillation and Sense of Biting in the Throat, and the saltish Taste in the Mouth, the Juice of *Spanish* Liquorice, despumated Honey, an inspissated Mass consisting of Jelly of Hartshorn, and Decoction of Liquorice, and Oil of sweet Almonds, mixed with Syrup of Poppies, and gradually swallowed, afford immediate Relief. No less common and excellent a Remedy, is the Yolk of a new-laid Egg, mixed with Sugar-candy and Saffron, drinking after it a Dish or two of Bohea Tea; as, also, fresh Butter, with Sugar and Milk, with an Infusion of Paul's Betony, and the Flowers of red Poppies.

When the Epiglottis, the first and primary Instrument of the Voice, is so relaxed, and deprived of its Tone, that the Voice becomes hoarse, it is expedient frequently to gargarize the Mouth

with a Gargarism prepared of nervous Ingredients; such as the Flowers of Rosemary, Lavender, and common Chamomile, the Tops of Thyme and Origanum, Sage and Myrrh, boiled in Wine: Externally I use, with great Success, to apply to the Larynx a Bag consisting of the above-mentioned Ingredients, with an Addition of Amber and Stryax Calamita. *Hippocrates*, in *Lib. de Visu Acutorum*, would not have hoarse Persons purged; but rather chose to cure the Coldness and Moisture of their Constitutions, by drying their Heads, and the other Parts affected, by the Use of Topics. *Hoffman*.

In 1675, the Season having continued unusually warm, like Summer, till towards the End of October, and being suddenly succeeded by cold and moist Weather, a Cough became more frequent, than I remember to have known it at any other Time; for it scarce suffered any one to escape, of whatever Age or Constitution he were, and seized whole Families at once; nor was it remarkable only for the Numbers it attacked, (for every Winter abundance of Persons are afflicted with a Cough) but, also, on account of the Danger that attended it. For as the Constitution both now, and during the preceeding Autumn, eminently tended to produce the epidemic Fever, and as there was now no other Epidemic existing, which by its Opposition might, in some measure, lessen its Violence, the Cough made Way for, and readily changed into, the Fever. In the mean while, as the Cough assisted the Constitution in producing the Fever, so the Fever on this Account attacked the Lungs and Pleura, just as it had affected the Head even the Week preceding this Cough; which sudden Alteration of the Symptoms occasioned some, for want of sufficient Attention, to esteem this Fever an essential Pleurisy or Peripneumony, though it remained the same as it had been during this Constitution.

For it began now, as it always did, with a Pain in the Head, Back, and some of the Limbs; which were the Symptoms of every Fever of this Constitution, except only that the febrile Matter, when it was copiously deposited in the Lungs and Pleura, through the Violence of the Cough, occasion'd such Symptoms as belong to those Parts. But nevertheless, as far as I could observe, the Fever was precisely the same with that which prevailed to the Day when these Coughs first appeared; and this, also, the Remedies, to which it readily yielded plainly, shewed. And tho' the pungent Pain of the Side, the Difficulty of breathing, the Colour of the Blood that was taken away, and the rest of the Symptoms that are usual in a Pleurisy, seemed to intimate, that it was an essential Pleurisy; yet this Disease required no other Method of Cure, than that which agreed with the Fever of this Constitution, and did no ways admit of that which was proper in the true Pleurisy. Add to this, that when the Pleurisy is the original Disease, it usually arises betwixt Spring and Summer; whereas the Distemper we now treat of, began at a very different Time, and is only to be reckoned a Symptom of the Fever which was peculiar to the present Year, and the Effect of an accidental Cough.

Now, in order to proceed in a proper manner to the particular Method of Cure, which Experience shews to be requisite both in this Cough, and in those which happen in other Years, provided they proceed from the same Causes, it is to be observed, that the Effluvia, which used to be expelled the Mass of Blood by insensible Perspiration, are struck in, and thrown upon the Lungs, from the Stoppage of the Pores by Cold; and, by irritating the Lungs, immediately raise a Cough. And the hot and excrementitious Exhalations being by this means detained in the Habit, a Fever is easily raised in the Mass of Blood, when either the Vapours are so copious, that the Lungs are unable to expel them, or the Inflammation is increased by the adventitious Heat arising from the Use of over-heating Remedies, or too hot a Regimen, so as suddenly to cause a Fever in a Person who was already too much disposed to this Disease. But of whatever Kind the Stationary Fever be which prevails the same Year, and at that particular Time, this new Fever soon assumes its Nature, and becomes of the same Kind, and is every-where subservient thereto; tho' it may still retain some Symptoms belonging to the Cough, whence it arose. In every Cough, therefore, proceeding from this Cause, 'tis sufficiently apparent, that Regard must not only be had to the Cough, but, also, to the Fever that so readily accompanies it.

Relying on this Foundation, I endeavoured to relieve such as required my Assistance by the following Method: If the Cough had not yet occasioned a Fever, and other Symptoms, which, as we said, usually accompany it, I judged it sufficient to forbid the Use of Flesh-meats, and all Kinds of spirituous Liquors; and advised moderate Exercise, and the Benefit of the open Air, with a Draught of a cooling Pectoral Pisan, to be taken between whiles. These few Things sufficed to relieve the Cough, and prevent the Fever, and other Symptoms, usually attending it. For by the Abstinence from Flesh, and spirituous Liquors, along with the Use of cooling Medicines, the Blood was so cooled, as not easily to admit of a febrile Impression; and by means of Exercise those hot Effluvia of the Blood, which strike in, and occasion a Cough, as often as the Pores are stop'd by sudden Cold, are commodiously

modicly exhaled in the natural and true Way, with Advantage to the Patient. *Sydenham.*

TUTENAG. Speitre, or Zink.

TUTIA. Turry. See CADMIA.

TYLLI GRANA. The Seeds of the lesser *Ricinus*. *Castellus*, from *Gregor. Hymman.*

TYLOMA, *τύλωμα*. A Callus.

TYMPANIAS. *τυμπανίας*. The same as TYMPANITIS.

TYMPANITES. A Tympany.

In no Part of the human Body are so great Disorders produced by Flatulences, which are nothing but Vapours and Exhalations, possessed of an expansive and elastic Quality, than in the Cavities of the Stomach and Intestines; where being, as it were, pent up in a Prison, they violently distend these Canals which are possessed of Sensation and Motion, destroy their Tone, produce great Pain and Anxiety, and by these means greatly injure all the several Functions of the Body.

If the Stomach is preternaturally distended by Flatulences, very violent Symptoms are produced, such as intolerable Uneasiness about the Præcordia, accompanied with a Difficulty of Breathing, an Oppression of the Breast, Inquietude, a Coldness of the Extremities, and an uncommon Loss of Strength. In this State the Patient's Countenance becomes contracted and livid, and sometimes the Fauces are so contracted, as to render Deglutition difficult; and Palpitations of the Heart, Flushings, Dimness of Sight, Vertigos, and other Symptoms of the like Nature, are brought on. Flatulences of this Kind, are known by a Tumour about the Pit of the Stomach, towards the Right Side, which is often discovered by the Touch; as, also, by a frequent and violent Eructation, by which the Symptoms are considerably mitigated.

The Causes of the terrible Symptoms produced by a violent Inflation of the Stomach, are these: 'Tis certain from Anatomy, that the Stomach is an highly nervous Part, and that the Ramifications of the eighth and intercostal Pairs of Nerves, are copiously distributed thro' its nervous Coat; and as these Ramifications run off to all the nervous Parts of the Body, and such as are subservient to Sensation and Motion, 'tis not to be wondered at, if, in consequence of this close Communication, violent Disorders should, also, be produced in all the other sensible Parts of the Body. And these Symptoms are accompanied with an Expansion of the Stomach, by which the expansive and constrictory Motion of the Diaphragm, on which Respiration depends, is hindered. And since by these means the Cavity of the Thorax is lessened, the Lungs cannot duly expand themselves. Hence the free Passage of the Blood from one Ventricle of the Heart to the other is obstructed.

The Intestines, which are furnished with the same Kind of Coats and Ramifications of Nerves and Blood-vessels, with the Stomach, are, also, subject to similar flatulent Distensions; and, if the Whole of the large and small Intestines are violently distended by Flatulences, there is not only a Tumour of the whole Abdomen, but, also, a considerable Pain, especially about the Navel, where the small Intestines are situated, accompanied with an obstinate Costiveness, Inquietude, Anxiety, Refrigeration of the Extremities, and Loss of Strength; in which Case the Disorder is called a flatulent Colic. When this Flatulence is not transitory, but protracted for some Months or Years, an hard Tumour of the Abdomen is produced, which, when struck, sounds like a Drum, and is for that Reason called Tympanites; a Disorder hardly curable by any Medicines, especially when accompanied with an *Ascites*, and an Extenuation of the superior Parts.

The proximate Cause of these Flatulences is twofold; the one, which is material, consists in the easy and copious Generation of these Flatulences, and is owing to Aliments, especially of a tenacious mucid Kind, and such as are fit for inducing Flatulences, such as Pot-herbs, the several Species of Radish, Pease, Beans, dry'd Sea Fishes, Summer Fruits, all fermentable and sweet Aliments, Preparations of Honey, Ale prepared of Wheat, farinaceous and wheaten Aliments; Paps, especially prepared of Miller; and the Fat of Mutton, especially if cold Liquors are drank after them. But it is to be observed, that these Aliments, whether moist or dry, are injurious in proportion to the Quantity taken.

The other, which is the formal Cause of these Flatulences, consists in a considerable Weakness of the peristaltic Motion of the Intestines, which depends upon an obstructed Influx of the nervous Fluid, and arterial Blood, into the Intestines; for as this peristaltic Motion, when in its natural State, not only resists the Vapours generated in the Intestines, in consequence of their Moisture, but, also, without any Trouble, propels and eliminates them, so, on the contrary, this Motion, when the Tone and Strength of the Viscera are weakened, and their Membranes rendered flaccid, becomes incapable of any longer performing its proper Office. Besides, the Aliments, before they are convey'd to the Intestines, remain for a considerable Time in the Stomach, and are resolv'd into Vapours. Hence, in the adjacent *Duodenum* and *Jejunum*, on account of the Acrimony,

there is a particular Spasm produced, which constricts the Right Orifice of the Stomach or *Pylorus*, and by Constrict the Left; so that the Vapours cannot be discharg'd, but violently exercise their elastic Force on the nervous Coats of the Stomach; and when this Distension is removed by a greater Influx of the nervous Fluid, and the Tone of the Stomach is for a time restored, the Flatulences are with great Impetuosity discharged upwards.

As it is so, we may easily conceive, that whatever depraves the peristaltic Motion, also contributes to the Generation of Flatulences. Hence the Reason is obvious, why Men of lax, spongy, and phlegmatic Habits of Body, Women, old Persons and Infants, are highly subject to Flatulences. And because, under an inordinate constrictory and dilatatory Motion of the Intestines, the Vapours continually generated in the Intestines, cannot be freely transpir'd, but produce a great deal of Mischief, we may easily understand why, by exposing the Abdomen and Limbs to the Cold, by walking upon cold Floors, immersing the Hands in cold Water, or drinking cold Liquors when the Body is over-heated in the Summer-time, flatulent Colics, and Gripes of the lower Abdomen, are so frequently produced; for all these Things have a remarkable Tendency to weaken the Tone of the Intestines.

But other more powerful Causes, by destroying the Tone of the Intestines, concur to the Production of Flatulences; for 'tis certain from Experience, that dangerous Inflations of the Abdomen are principally incident to those whose Strength is impaired, and their Blood and nervous Fluid impoverished by a previous Disease; such as a Dysentery, an acute, a variolous, or a chronical intermittent Fever; excessive Hemorrhages, Wounds, the hæmorrhoidal Discharge, Abortion, difficult Labours, or an immoderate Evacuation of the Menes or Lochia, especially if the Patients, without paying a due Regard, to their Strength, eat too copiously. Hence we may learn, what Judgment is to be form'd, when, as it often happens in acute and dangerous Disorders, about the critical Times, uneasy Distentions of the Præcordia, accompanied with Rumblings, and a Fluctuation of Flatulences in the lower Abdomen, are perceiv'd; for they are generally a Sign of Death, not only because they indicate an extreme Loss of Strength, but especially because they in a great measure obstruct Respiration. These Inflations of the Abdomen, proceeding from a total Destruction of Strength, are by the Liquors and Medicines taken by the Patient, whilst alive, generally so increased, that the Abdomen is, by proper Means, to be compress'd, for fear it should break.

'Tis, also, certain from Experience, that violent and long-contin'd Spasms of the *Prima Viæ* are succeeded by a want of Tone and a Flaccidity of the Intestines, a Weakness of their peristaltic Motion, and violent Inflations. Hence a spasmodic Colic is frequently succeeded by one of the flatulent Kind; which, when not rightly treated, and when anodyne Portions are exhibited in order to mitigate the Pain, frequently and easily degenerate into a Palsy. For the illustration of this, *Wesper's* Experiments in *Tr. de Cicuta aquatica*, in order to demonstrate the Effects of Poison, are of singular Service; for by exhibiting Arsenic to Dogs, he first observed violent Vomings, and spasmodic Contractions of the Stomach. Then the Stomach, becoming flaccid, was afterwards incredibly distended by Flatulences. This is, also, evinced by dissecting those who are taken off by any acrid Poison, which operates by producing violent Spasms; for, upon making an Incision in their Abdomen, their whole Intestines, by means of the Flatulences, burst forth in such a manner, that there is hardly a Possibility of replacing them. From a due Consideration of what has been said, we may clearly understand, why acrid Purgatives, and Emetics, Dysenteries, and spasmodic and hæmorrhoidal Colics generally leave a remarkable Weakness of the *Prima Viæ*, which greatly tends to produce Inflations of the Abdomen.

It frequently happens, that both Spasms and Flatulences afflict the Intestines; and whilst the Spasms contract their Coats, the Flatulences contained in their Cavities, attempt a violent contrary Expansion. This principally happens, when the flatulent Matter is possessed of a certain bilious Acrimony, as is observable in sucking Children, who are violently rack'd by Gripes and Rumblings, which discover themselves externally by their vehement ExploSIONS, whilst the Fæces of the Patient are green by the Admixture of an acid corroding Substance, which, like *Aqua Fortis*, consumes fine Linen Cloths. The same is, also, observed, when tenacious mucous Fæces mixed with Bile, and resembling the Yolk of an Egg, are discharged: The thick and mucous Humours, which are in Infants raised in a moist and mucilaginous Cough, and which, by being swallowed, obstruct the Stomach and Intestines, are, also, frequently the Cause of copious Flatulences, accompanied with Gripes.

Having already considered those Flatulences which equally distend the whole Intestines, we now come to treat of those particular Inflations and Spasms, which, in the Course of our Practice, we have observed only to afflict certain Parts of the Intestines. It is, the more, to be observed, that Disorders of this Kind are principally

principally incident to hypochondriac Patients, and hysteric Women; when, for Instance, the Stomach is inflated without any Expansion of the Intestines. This principally happens, when the Spasm possesses the *Duodenum*, or Beginning of the *Jejunum*. The *Ileum*, also, without any Inflation of the Stomach, and large Intestines, is, in Children afflicted with Worms and *Hernias*, frequently found greatly expanded, and painful towards the Navel. And in hypochondriac Patients, and those labouring under the *Hæmorrhoids*, when the *Intestinum Rectum*, and inferior Part of the *Colon*, in consequence of the Stagnation of the Blood, and its obstructed Discharge thro' the hæmorrhoidal Veins, are violently constricted, and rendered narrow by the Spasms, the superior Part of the *Colon*, and especially its Flexure in the Left Side, and about the lumbar Region, is greatly expanded. Hence arises a pressory Pain, which is commonly, tho' falsely, ascribed to some Disorder of the Spleen. It sometimes, also, happens, that the Flexure of the *Colon* in the Right Hypochondrium, about the Liver, and Region of the Stomach, is greatly elevated, and produces troublesome Symptoms; the Cause of which is, in my Opinion, lodg'd in the Beginning of the *Colon*, which is situated in the Confiner of the *Os Ileum*, the Valves of the *Colon*, and the *Intestinum cæcum*, since this Part of the *Colon* is deprived of its due Tone, and systaltic Motion; in consequence of which the Excrements are forced upwards, a Circumstance which greatly contributes to the Generation of Flatulences; and not only a spasmodic Stricture, and subsequent transitory Inflation seize a certain Portion of the Intestines, and are the Causes of the most violent Symptoms, but, also, a certain Narrowness, Hardness, or Callusity, arising from various Causes, affect particular Parts of the Intestines, and, by perverting their whole peristaltic Motion, give Rise to the most violent Symptoms. But Causes of this Kind can be only discovered by dissecting the Patients after their Death. See *Walsberi Dissert. de Angustia Intestinarum*.

We now come to consider that Species of Flatulence, in which there is not a transitory, but a permanent and continual Inflation of the Abdomen, and which is called a Tympanites; which *Celsus*, in *Lib. 3. Cap. 12.* defines, "A Tumor and vehement Distention of the Abdomen, accompanied with frequent Rumbings, produced by the Motion of the Flatulences." This Disorder discovers itself by the following Signs: For the most part, after a Pain and Tension about the Left lumbar Region, and an obstinate Costiveness, the Abdomen is violently distended. Flatulences and Eructations are now and then violently discharged upwards: The Pulse is unequal, the Appetite languid, and the Thirst increased; and, about the *Præcordia* and Navel, a sensitive, corroding, and punctory Pain, accompanied with a certain Heat, is perceived. The Patient can lie on neither of his Sides, nor does the Tumor ever subside, when he lies on his Back.

The Cause of this continual uneasy and dangerous Inflation of the Stomach and Intestines, is by *Willis*, *Bagliivi*, and others of the Moderns, justly ascribed to be a spasmodic Stricture of the intestinal Coat, by the long Continuance of which, the Pores and Passages of the Intestines, through which the Vapours transpire, are straitened and obstructed; so that the retained Vapours, by their elastic Force, in consequence of an Admixture of the Air, afterwards produce a violent Distention of the Intestines. And that the genuine Cause of this Disorder consists in such a Stricture, seems to be pretty plainly indicated by *Hippocrates*, in *Aphor. 11. Sect. 4.* where we are told, "That those who have Gripes in the Abdomen, and violent Pains about the Navel and Loins, which can neither be removed by Medicines, nor any other Means, fall into a Tympanites, or dry Dropsy."

This Disorder is both by the Antients and Moderns, accounted a Species of Dropsy, because, especially as a Symptom, it is often complicated with an Ascites; whereas, nevertheless, it is absolutely a distinct Disease, and accompanied with no Extravasation of Water in the Abdomen. Thus *Dolæus*, in *Encyclopæd. Lib. 3. Cap. 9.* informs us, That in a Girl of nine Years of Age, who died of a Tympanites, he found not one Drop either of Serum or Water in the Abdomen. And in *M. N. C. Decur. 1. Annot. Obs. 85.* we have an Account of a Boy who died of a Tympanites; and, upon dissecting his Body, his Stomach was found preternaturally distended with Flatulences, and contained a small Quantity of a viscid Humour: But his whole Intestines were pellucid, and in many Places, when prick'd, collaps'd; without the least Appearance of a single Drop of Water. *Valesius* also, in *Comment. in Lib. 4. Hippocrat. de Victus Rat. in acut. and Collatus in Adversar. Lib. 2. cap. 40.* observes, That, upon the Aperture of a similar Carcase, a very inconsiderable Quantity of Water was discharged; but a gross Flatulence being evacuated, the whole Abdomen suddenly subsided. *Platerus*, also, in *Obs. 53.* informs us, that in a Boy who died of a Tympanites, the Intestines were so distended, as in some Places to be as large as a Person's Thigh, and that, being broken by Compression, they discharged the Fæces with a considerable Impetuosity. But in other Parts they were so contorted and wreathed up, that neither the Flatu-

lences, nor the Excrements, could find any Passage downwards. A large Number of oblong Worms were, also, found in his Intestines.

A Tympanites without a Dropsy, is most incident to Women, especially after Labour; when the Lochia are either too scantily discharged, or by Cold, or the Influence of Passion, totally suppressed. The same happens when after Labour, the Abdomen not being duly compressed and swathed, any Error in Regimen is committed; or, when in the Beginning of their Lying-in, the *Præmia Viæ* are not sufficiently purged from their Sordes: For, in these Cases, Women have generally for a long time, an hard and inflated Abdomen, accompanied with considerable Uneasiness, Difficulty of Breathing, Anxiety, and obstinate Costiveness. I have often observed the same Symptoms produced by a difficult Labour, if the Secundines have not been totally removed; or if, in extracting them, the Uterus has been wounded. Imprudent Treatment after Abortion, also, lays a frequent Foundation for a Tympanites; the Cause of which is, in my Opinion, a perverse and disturbed Motion of the Blood, through the Vessels of the Uterus and Intestines: For if, in consequence of any Disorder of the Uterus, the natural Motion of the Blood, or its critical Excretion, are not duly carried on, by reason of the subsequent Stagnation, the free Circulation of the Blood will be, by Consent of the Parts, hindered thro' the abdominal Viscera, especially through the Intestines, where a Portion of the Blood or Serum remaining, distorts and constricts their tender and sensible Fibres, and renders them harder and more tense; so that the Perspiration of the Intestines cannot afterwards be freely and duly carried on. When this happens, the Flatulences are generally rather the Effect than the Cause of the Tympanitis.

These Inflations of the Abdomen are frequently observed in Infants and Children, especially if they are afflicted with Worms; as, also, after the Measles and Small Pox: And unless Misfortunes of this Kind are seasonably encountered with proper Remedies, the superior Parts become extenuated, and an hectic Heat supervening, the Patients die. By the Voracity, also, of Infants and Children, when the Stomach and its Tone are weak, Tumours of this Kind are often produced, and various Causes may concur to their Production; for as the Measles, Small Pox, or a continual Fever, in consequence of the Loss of Strength, and the Exhaustion of the spirituous Fluid, are succeeded by a considerable Weakness of the peristaltic Motion; and since, by reason of the Dyscrasy of the Blood and Humours contracted by the Disease, the Coats of the Intestines and Peritonæum, are spasmodically constricted by an acrid Serum, which hinders the Discharge of the Flatulences, it easily happens that a Tympanites is produced. Sometimes, also, there is an infarction of the mesenteric Glands, and lacteal Vessels, which not transmitting the chylous Juice, accumulates Sordes in the *Præmia Viæ*; and these Sordes are resolved into Flatulences, and partly carried off by Stool.

But not only hysteric Women and Infants, and Children labouring under Worms, or spent by previous Disorders, are subject to a Tympanites; but, also, those who are inclined to that Species of Dropsy called an Ascites: The principal Cause of which seems to be, that in such Patients, where the abdominal Viscera, especially the Liver, do not duly perform their proper Offices, the Bile becomes peccant both in Quantity and Quality, and is therefore deprived of its Qualities necessary for Digestion; for the Bile is a genuine and natural preservative Medicine: For by its alkaline, sulphureous, and saponaceous Principle, it not only promotes the intimate Solution and Digestion of the Aliments; but, also, by its moderately sulphureous and balsamic Bitterness, it gently stimulates and corroborates the Coats of the Intestines; by which means it preserves the peristaltic Motion entire; for when this Motion is perverted or disturbed, the whole Oeconomy of the vital Motions, together with the salutary Excretions, is, also, disturbed and perverted, as we generally observe in hypochondriac Patients.

For the Illustration and Confirmation of this Doctrine, let us consider a very singular Case, related in the Philosophical Transactions of the Royal Society of London in the Year 1730. N^o 414. A Soldier received a Wound; of which, after the Appearance of various Symptoms, he died on the seventh Day: Upon laying open his Body, no internal Part was found hurt, except his Gall-bladder; which being gently perforated, in the Bottom, was collaps'd and flaccid, in consequence of a total Effusion of the Bile: Though no Signs of the slightest Inflammation appeared in any of his Viscera, yet his Intestines were highly inflated, distended, and tinged of a yellow Colour by the discharged Bile, which was effus'd all over the Abdomen. The external Wound was dry, and free from Tumor; nor, during the Patient's Life, was it accompanied with any Sign of Inflammation; so that it is surprising that a Wound apparently so slight, unaccompany'd with a Fever, or any other violent Symptoms, should so soon prove mortal.

Among the memorable Symptoms afflicting this Patient, we ought first of all to consider the Inflation of his Abdomen, which

which immediately succeeded the Wound, and remained without any considerable Increase or Decrease, and even appeared after Death; so that the Patient appeared to have been affected with an Ascites, or a Tympanites. Yet during this Distention of his Intestines, which was the Cause of the Inflation of his Abdomen, he could discharge no Eructations nor Flatulences either upwards or downwards; and though he eat and drank sufficiently, yet he had not one Stool through the whole Course of the Disorder, nor could his Body be rendered soluble by the strongest Purgatives and Clysters: His Urine was in small Quantity, yellow, as it were tinged with Saffron, and without any Sediment. But nothing of a febrile Heat was observable in all his Body; for his Pulse was not quick, but rather equal and strong, till a little before his Death, when it became unequal: Nor was his Tongue black, hard, and rough, as it generally is in Fevers, especially of the inflammatory Kind; but it was dry, for want of a due Quantity of Saliva. And though, during his Disorder, he slept but about half an Hour at very distant Intervals, and could not be disposed to sleep by the Use of Opium, yet the smallest Signs of a Delirium did not appear; and thus he died without any more violent Symptoms, except an Hiccup and a gentle Effort to vomit, which, seized him the Day before he died.

From this Description of the Case, and its concomitant Symptoms, we shall draw something for the Establishment of our Doctrine. Hence, then, we learn, how much a laudable Secretion of the Bile contributes to the Preservation of Health, and how much its Defect or Peccancy tend to induce the most violent Disorders, especially a Tympanites; for in this Patient's Case, no other Cause than the Effusion or total Defect of the Bile, produced the Inflation of the Intestines; by which, being distended beyond their proper Sphere of Elasticity, they totally lost their peristaltic Motion; and when this Motion was destroy'd, not only the natural Motion of the Chyle through the lacteal Vessels was hindered, but, also, the Secretions in the other Viscera weaken'd, and at last destroy'd. Hence Death must of Necessity soon ensue.

As for the Prognostics of a Tympanites, it is justly reckoned a dangerous Disorder, since the Patients are oftener observed to die than recover. Hence *Puerarius in Additam. ad Burnettii Thesaur. med. Tom. 2. Lib. 8.* ingenuously confesses, that he never knew a Patient afflicted with a Tympanites recover; because this Disorder indicates an obstinate Constriction of the Pores, an hardly dissoluble Incarceration of the Flatulences, and a violent Distention of the Parts, accompanied with a Privation of their Tone. When a Tympanites is accompanied with, or supervenes a Dropsy, it hardly admits of a Cure, because the violent Distention of the abdominal Muscles and Intestines, by compressing the Veins, renders the Circulation of the Blood very languid and weak, produces a costive State, and suppresses Perspiration. A simple Tympanites, when inveterate, and not quickly cured, in Women and Infants, passes into an obstinate chronic Disorder, which proves mortal.

On the contrary, that Distention of the Abdomen, which is called a flatulent Colic, is not naturally very dangerous, and is easily cured; when, by proper internal and external Remedies, the lost Tone of the Intestines is restored. But if Spasms concur to produce the Flatulences, as it generally happens in Women whose Menes are not duly discharged, or in those who labour under a Stone in the Ureters, or biliary Ducts; or, if spasmodic Symptoms supervene Efforts to the hæmorrhoidal Discharge, then the Cure is somewhat more difficult, because the Force and Operation of the Medicines ought partly to allay the Spasms, and partly to restore the Tone of the Intestines; which Intentions, however, seem inconsistent with each other.

In curing Flatulences of the Stomach and Intestines, the Physician's principal Intention is, to promote a Discharge of the Vapours by the Anus, and to attenuate, and gently carry off by Stool the tough and viscid Matter which contributes to the Generation of the Flatulences. For this Purpose, we are, first of all, to use derivative, discutient, and evacuating Clysters; such as those prepared of Hyssop, Clary, Flowers of common and Roman Chamomile, Tops of Yarrow, Juniper-berries, and the larger carminative Seeds, with Veal-broth, adding a sufficient Quantity of Sal-gemma, Sal-ammoniac, or Epsom Salt, and the Oil of Chamomile. But it is to be observed, that one or two Clysters are not sufficient for removing the Disorder; but they are to be frequently repeated.

With these we are to interpose Laxatives, possessed of a carminative, and at the same time of a somewhat anodyne Quality; such as the balsamic Pills, prepared in my Method, or that of *Becher and Stahl*. Or if the Patient is strong, and the Inflation a real Tympanites, I generally exhibit two Parts of the *Extractum Panchymagogum Cralli*, with one Part of the *Pilule Willegansii*, or of the *Pilule Starckii*, or *Pilule de Styrate*, in some not very spirituous carminative Water.

After these, we are to use Medicines possessed of a moderately balsamic Principle, and a volatile, oleous, and aromatic

Salt, commonly called Carminatives: But the Operation of these Medicines is not to be so explained, as if, by their subtle, volatile Salt, they attenuated the Matter of the Flatulences, and rendered it thinner; but rather, because, by invigorating the Tone and Systole of the intestinal Coats, they hinder the Stagnation of the Flatulences, move them from their Seat, and render them more capable of being easily eliminated, or prevent the Generation of new Flatulences: For as the destroy'd peristaltic Motion of the Stomach and Intestines is the principal Cause of Flatulences, so all Medicines, which have a remarkable Virtue in strengthening these Parts, are most proper for the Removal of this Disorder. The best and most approved of this Kind, are Powders prepared of the Roots of Wake-Robin, Zedoary, and white Burnet; the digestive Salt of *Sylvius*, or vitriolated Tartar; Cumin-seeds; the Tops of the lesser Centaury, and dried Orange-peel, each one Dram; and six Drops of the genuine Oil of Chamomile, or of the Oil of Cedar, or of the Oil of Orange-peel; to which, if there is a Suspicion of an Acid lodged in the *Prime Viæ*, we may commodiously add Crab-eyes.

To this Class of Medicines we may refer the following in a liquid Form.

Take of the Essence of Orange-peel, and of the carminative Essence of Zedoary of *Wedelius*, each half an Ounce; of the Spiritus Nitri dulcis, or of any anodyne Liqueur, and of the Spiritus de Tribus, each two Drams: Mix, and exhibit forty Drops for a Dose:

Take of the carminative Water of *Dorncrellius*, of the Waters of common Chamomile and Zedoary prepared with Wine, each one Ounce; of the Spiritus Nitri dulcis, of the pure Oil of Caraway, eight Drops, mixed with two Drams of Sugar.

Nor are we to neglect external Remedies, such as Liniments apply'd by way of Ointment to the whole epigastric Region: The principal Ingredients of these Liniments ought to be, boil'd Oils of Chamomile and Rue, Oil of Nutmeg, and Peruvian Balsam; with which we may mix, the Oils of Juniper, Caraway, Anise, or Cumin: But, instead of all others, we may use the Liquid Balsam of Life, which, when mixed with three Parts of Hungary Water, and applied by way of Ointment to the Abdomen, or laid on with a warm Linen Cloth, is found of great Efficacy.

If a flatulent Distention of the Abdomen proceeds partly from a long-continued spasmodic Stricture of the intestinal Coats, and partly from their preternatural Tension and Hardness, and if these are supported by the Stagnation and bilious Acrimony of the Humours, we are to deal very cautiously with hot, aromatic, volatile, and sulphureous Carminatives, such as the distill'd ethereal Oils of Juniper and Caraway; since these, by increasing the Elasticity of the Flatulences, and the Turgescence of the Humours, render the Inflation more obstinate, and the Symptoms more dangerous; for they excite a preternatural Heat, accompanied with an insatiable Thirst, an Anxiety, and great Difficulty of Breathing. Hence *Fienus*, in *Lib. de Flatibus, Cap. 12.* mentions a Girl miserably afflicted with a Tympanites, who, by the Use of an hot Electuary prescribed by the Physician for the Distension of the Flatulences, fell into a new, and at the same time so large an Inflation, that the whole Breast was surprisingly distended, and the miserable Patient soon after died. To this Purpose, also, *Helmot.* in *Lib. de Flatibus*, tells us, "That if Flatulences are Vapours and Exhalations, Pain and Flatulences must be more excited, and a Distention of the Parts produced, by the Exhibition of hot Substances; because, by this means, the Vapours must be increased, and the Pains and Distentions multiplied."

All Purgatives, even Preparations of Sena and Aloes not excepted, are carefully to be avoided, because they dry the Intestines, and render their Fibres tense, constricted, and hard. But they are still more injurious and dangerous, if, by repeated Doses of them, any one attempts the Evacuation of the Flatulences. We rather recommend Preparations of Manna, with Cream of Tartar dissolv'd in Whey, or the *Sedlitz* Waters; nor omitting, at the same time, emollient, and gently discutient Clysters.

When Spasms copiously generate Flatulences, which frequently happens in a plethoric hæmorrhoidal State, to young Persons and Adults, Preparations of Nitre, join'd with detergent and refrigerating Salts, are most safe. Good Effects are, also, produced by the mineral Liqueur; Citron-juice, with Salt of Wormwood; Oil of sweet Almonds; Emulsions of the Four cold Seeds; the *Pilule Sybii*, and the *Pilule Starckii*: Venesection is, also, sometimes beneficial. Hence *Carolus de la Font*, Professor in the Academy of Avignon, in *Dissert. de Hydrope Tympanite*, gives us an Instance of a Person by him cured of a Tympanites, by Tincture of Roses, impregnated with a few Drops of the Spirit of Vitriol, and a Julap, prepared of the Waters of Purslane Succory,

Succory, and Water-Lilies, together with the Syrups of Water-Lilies and Poppies, Sal Prunellæ, and Spirit of Sulphur; interposing now-and-then a temperate Emulsion, or a Decoction of Barley, with Syrup of Lemons, and Sal Prunellæ; and an Opiate composed of mineral Crystal, Crabs-eyes, Vitriol of Mars, and Conserve of Roses.

When these violent and obstinate abdominal Distentions happen after difficult Labours, Lying-in, Abortion, or an irregular Discharge of the Menstrues, the Pills made in Imitation of those of *Becher*, of bitter Extracts and temperate resinous Gums, with a small Portion of Aloes, exhibited in a proper Order, and in due Doses, are of singular Efficacy. The same happy Effects are, also, produced by temperate balsamic Elixirs, prepared of the same Ingredients; for these, by their mild, sulphureous, and balsamic Virtue, restore the lost Tone and Strength of the Stomach and Intestines, and produce happy Effects, especially when the Bile is defective, or too strong, provided they are not exhibited in too large Doses: But if the Patient is too long habituated to them, they, in Process of Time, by drying the intestinal Coats, produce preternatural Straitness in particular Parts, and often bring on fatal Symptoms.

Clysters are of great Efficacy, not only to prevent Flatulences, but, also, remove them, both in their Beginning and State. But if the Spasms exert their Tyranny in the small Intestines, Clysters are not sufficient; but we are to prescribe Preparations of Manna; Cassia; Epsom Salt; Sedlitz Salt; and Goats Whey, prepared with Cream of Tartar, or vitriolated Tartar. The proper Use of hot and cold medicinal Waters is, also, of great Use in hypochondriac Patients afflicted with Flatulences.

Among the external Remedies for violent Inflammations of the Abdomen, the Antients most esteemed dry Fomentations; and, especially Sand dried by the Fire, or the Heat of the Sun. Hence they recommend this Remedy in various Parts of their Works. See *Celsus*, Lib. 3. Cap. 21. And *Pliny*, in *Histor. natural.* Lib. 21. Cap. 6. informs us, "That Sea-sand, especially when small, and rendered hot by the Sun, is of singular Service in drying the Bodies of dropical Patients." *Celsus Aurelianus*, in Lib. 3. *Tard. Pass.* Cap. 8. is, also, of Opinion, That warm Fomentations of Sand ought to be used in dropical Cases. But, as other Things successfully used by the Antients, are by us neglected, so, also, this Practice is discarded, though it seems to have a pretty effectual Tendency to answer its Intention: For the warm Sand, not only by the Compression occasioned by its Bulk, checks and confines the Inflation, but, also, by its dry Heat attenuates the peccant and stagnant Humours, so as to restore a free Circulation of the Juices: By this means, also, the Pores of the Skin are opened, and Perspiration assisted. It is a common Practice at present to apply dry and hot Oats, included in a Bag, to the Regions of the Stomach and Navel; because Oats are possessed of a dissolving and discutient Virtue. Besides these Measures, I have, also, known the Soap-plaster well impregnated with Camphire, and soften'd with Oil of Henbane, afford considerable Relief when applied to the Abdomen. The Galbanum-plaster is, also, little inferior to it in Efficacy. *Frederic Hoffman*.

TYMPANUM. The Drum of the Ear. It, also, imports a Part of a surgical Machine, in *Oribasius*, de *Machamentis*, Cap. 4.

TYPHA.

The Characters are;

It has the Appearance of the Arundo; the Flower is male, consisting only of naked and very dusty Stamina, which are closely compacted into a slender Spike. The Ovaries, which are collected into a very close Spike, are closely lodged under the former Spike, and are of a thin Contexture, and furnished with a Multitude of Filaments: Both Spikes are extended in one continued Length in the Figure of a Club.

Boerhaave mentions three Sorts of *Typha*; which are,

1. *Typha*; palustris; major. C. B. P. 20. *Theat.* 337. *J. B.* 2. 539. *Tourn. Inst.* 540. *Boerb. Ind. a.* 2. 167. *Typha*. *Offic.* Ger. 42. *Emac.* 46. *Raii Hist.* 2. 1312. *Synop.* 3. 436. *Typha palustris maxima*. *Park. Theat.* 1204. **CATS-TAIL, or REED-MACE.**

This Plant is found in Marshes, and on the Brinks of Rivulets. The only Part of it used is its Flower, which, when mixed with well-washed Hogs-lard, cures Burns. *Dale*.

2. *Typha*; palustris; clavâ gracili. C. B. P. 20. *Theat.* 340.
3. *Typha*; palustris minor. C. B. P. 20. *Theat.* 341.

Boerb. Ind. alt. Plant.

TYPHA AROMATICA. See *ACORUS VERUS*.

TYPHLINIDIA. τυφλινίδια. A Sort of pickled Fish mentioned by *Oribasius*, *Collect. Medicinal.* L. 2. C. 58.

TYPHODES, τυφώδης πυρετός. The same as **TYPHOS**.

TYPHOMANIA, τυφωμανία, from τυφός, and μανία, in *Galen's Exegetis*, is expounded by μικρὸν ἐκ φρενιτικῆς καὶ λιθάρης πάθημα, "a Disorder complicated of a Phrensy and a Lethargy." But in some Copies of *Galen* it is written τυφλομανία, as well as in 4 *Epid.* where they read ἀλλὰ τυφλομανία, to which Place *Galen* seems to have an Eye in his *Exegetis*; though it be there read in the Nominative Case. We, however, read τυφωμανία, in both Places, and understand it of an Affection compounded

of a Phrensy and a Lethargy; in which the Patients are delirious, and labour under a sleepy Coma, from a Mixture of Bile and Phlegm, according to *Galen*, *Com. 1. in Proorrh.* where he says, ἐνὸς μὲν ἐν ὅτῳ ἀρχὴ τέλει ἵπτε παρρησίου καὶ τὸ κῶμα διατείνεται μικρὸν, &c. "When a Delirium and Coma continue to the End, I call it a Disorder complicated of a Phrensy and a Lethargy, which by some is called τυφωμανία, as in *Hippocrates*, de *Morbis*." From hence arises a Suspicion, that the Books de *Morbis*, as now extant, are not entire; and that *Galen*, in his *Exegetis*, had a Regard to some Passage therein which is now wanting; for we find no mention of *Typhomania* in these Books, nor in the Book de *Morbis internis*. This Affection, thus complicated of a Phrensy and a Lethargy, may be called a lethargic Madness or Delirium, or a mad and delirious Lethargy, according to the Author of the *Definitiones medicæ*; though for τυφωμανία we there read corruptly τυφωρία (*Typhoria*), which corrupt Reading is followed by the Translator. *Galen*, *Lib. de Comate*, Cap. 4. and *Com. 1. in Proorrh.* tells us, that this Disorder is called *Typhomania*; but in his *Isag. Pulf.* and *Lib. 4. de Caus. Pulf.* he tells us, that it is a Disease which wants a Name, and therefore he defines it by some proper Characters; which is a Custom he himself, however, *Lib. de Comate*, Cap. 4. ascribes to ignorant Physicians. This Variety of Opinions about the Name, and the Disorder signify'd by it, might, perhaps, give Occasion to *Hippocrates*, 4 *Epid.* to call it, as it were, to prevent Mistakes, ἀλλὰ τυφωμανία, "a true Typhomania."

TYPHONIA. The same as **TYPHOMANIA**.

TYPHOS, τυφός. Of this Disorder, according to *Hippocrates*, there are five Species: The first is a legitimate continual Fever, which impairs the Strength, is accompanied with Pains of the Belly, and a preternatural Heat of the Eyes; hinders the Patient from looking steadily on any Object whatever; and renders him unable, in consequence of the violent Pain, to answer any Question that is asked him; though he begins to speak, and fix his Eyes attentively on Objects, when he is at the Point of Death.

The second Species of Typhus begins with a Tertian or Quartan Fever, which are succeeded by a Pain of the Head. In this Disorder the Patient discharges a large Quantity of Saliva and Worms from his Mouth: His Eyes are painful, his Countenance pale, and his Feet, and sometimes his whole Body, seiz'd with soft Swellings: His Breast and Back are now-and-then painful, his Belly rumbles, his Eyes are fierce, he spits a great deal, and his Saliva adheres to his Throat, which renders his Voice tremulous and faint.

The third Species of Typhus is known by intense Pains in the Joints, and sometimes over all the Body: The Blood, contaminated by the Bile, becomes hot, and stagnates in the Limbs; whilst that Portion of the Bile which is retained in the Joints, becoming indurated, like Gravel-stone, the Patient grows lame.

The fourth Species of Typhus is known by a violent Tension, Elevation, and Heat of the Abdomen, succeeded by a Diarrhoea, which sometimes terminates in a Dropsy, and is sometimes accompanied with a Fever.

The fifth Species of Typhus is known by a Paleness, and kind of Transparence of the whole Body, as if it was a Bladder full of Water, though without any Inflation. On the contrary, the Body is extenuated, dry, and weak, especially about the Clavicles and Countenance: The Eyes are very hollow, and the Body sometimes black. The Patient rarely winks with his Eyes, and feels the Bed-clothes with his Hands, as if he wanted to catch Knaps of Wool, or Straws. He is more uneasy after eating, than when he was in a State of Health. He loves the Smell of an extinguished Lamp, and is often troubled with Pollutions, both when asleep and awake.

TYPOS, τύπος. The Form, or Type of a Disease; importing the particular Manner of its Remission, and Exacerbation.

TYRANNIS, τυραννίς. The Name of an Antidote in *Galen*. *L. 2. de Antidot.* C. 10.

TYRBE, τυρβή, is a Perturbation, or Confusion. Thus, *Lib. de Fract.* πᾶσαν γὰρ αὐτὴν τυρβὴν παράγει τῇσιν ἐπιστάσεσιν, "should cause a Disorder in the whole Disposition of the Bandage." Here τυρβή is by *Erosian* expounded τυραχὴ, a Perturbation, or Confusion. The same is the Sense of the Word in *Lucian*, *Polybius*, and *Aristophanes in Vespis*.

TYRIA. The same as **OPHIASIS** in the Arabic Authors. See **ALOPECIA**.

TYR-ASIS, τυρίασις. The **ELEPHANTIASIS**, or Leprosy.

TYRIUM EMPLASTRUM. The Name of a Plaster describ'd by *Aetius*, *Tetrabib.* 4. *Serm.* 3. C. 12.

TYROS, τυρός. Cheese.

TYROSIS. A Disorder of the Stomach proceeding from Milk coagulated therein.

TYRRHENICUM EMPLASTRUM. The Name of a Plaster mentioned by *Aetius*, *Tetrabib.* 4. *Serm.* 3. C. 14.

TYRUS. A barbarous Word, importing a Serpent, or Viper.

V.

VACCA. The Cow. See Bos.

VACCARIA. A Name for the *Lychnis*; *segetum*; *rubra*; *foliis Perfoliata*.

VACCINIA. See *Vitis Idæa*.

VACCINIA NIGRA. A Name for the *Vitis Idæa*; *foliis oblongis*; *crenatis*; *fructu nigricante*.

VAGINA. The Passage from the external *Pudenda* to the Mouth of the *Uterus*. See *UTERUS*. The Name is, also, applied to other Parts of the Body, as to the *Capsula Glissonii*, which is called *Vagina Portæ*.

DISORDERS INCIDENT TO THE VAGINA.

The Method of dividing preternatural Cohesions in the Genitals of Women.

Some Girls are born with the Orifices of the *Pudenda* so conglutinated, that they are unable to discharge their Urine, whence they continue, for the first Days after their Birth, perpetually crying, without any Evacuation of Urine. In this Case, the Child must inevitably perish, if not speedily relieved by Incision. Some have the *Urethra* open, for the free Discharge of the Urine; and others, but a small Perforation, by which the Urine is made with the greatest Difficulty, and only by Drops; and, in both these Cases, the *Vagina* may be preternaturally closed, by the *Hymen*, or some other Membrane; by which means, as they begin to ripen, and arrive at the Age of Puberty, when the menstrual Flux begins to flow, it has no Passage left for its Discharge, nor can they admit of Coition: And thus, from the menstrual Blood being collected in the *Vagina*, are produced violent Pains, Tumors of the *Abdomen*, Faintings, *Deliria*, and other most malignant Symptoms. This Disorder has been observed by many Physicians, who have denominated Girls, in this Condition, *Atreta*, which denotes *imperfecta*. It appears, that *Aristotle* was acquainted with this Disorder, when he says, "That in some Girls the Mouth of the Womb continued closed, or conglutinated, from their Birth to the first Appearance of the menstrual Discharge; which endeavouring to force its Way, violent Pain is excited, and the Part either bursts spontaneously, or must be separated by the Surgeon. Sometimes the Death of the Patient has ensued, when the Passage has been opened violently, or could not be divided at all." Other Girls have the Mouth of the *Vagina* closed with a Membrane, which, however, is furnished with one or more Perforations proper for discharging the menstrual Flux, but will not admit of connubial Embraces; and therefore the Disorder is seldom discovered, before they are married. Various Cases of these Kinds are described by *Roonhuysen*, *Lib. 2. de Clausura Uteri*, *Obs. 1. Benevenius de abdit. Morb. Caus. Cap. 28. Cabrolus Obs. Anatom. 23. Fabricius ab Aquapendente, in Oper. Chir. de Hymene imperforato. Hildanus, Cent. 3. Obs. 60. Schenck, Lib. 4. de Part. Genital. Solingen, in Obs. 5. Meckren, Obs. Chirurg. 55. Mauriceau, in his Obs. sur la Maladies des Femmes grosses; Ruysch, in his Obs. Chir. 32. and by Saviard, in his Obs. Chirurg. 4.*

This Disorder differs, in different Patients: In some there appears the Mark of a Perforation, or Passage, whereby the Urine may be easily discharged, and which, at the same time, leads to the *Vagina* and *Uterus*: In others, no such Perforation can be observed, because of the Thickness and Density of the obstructing Membrane, or the firm Coalition of the *Vagina*, which renders the Cure either impracticable, or extremely difficult. Sometimes, in new-born Infants, a copious Collection of Urine, perhaps, in the *Vagina*, or in Adults, who have the urinary Passage open, the menstrual Blood, so distend the *Labia Pudendi*, as to shew the natural Passage of the *Vagina*, and, also, of the *Urethra*, according to the Observations of many of the above-mentioned Authors. Sometimes these Cohesions are not only formed in the Fœtus before the Birth, as *Aristotle* and *Celsus* have observed; but they, also, happen in Adults, after an Exulceration of the Orifice of the *Vagina*, especially after a difficult Birth, when the Parts are so violently lacerated, inflamed, and exulcerated, that its Sides either entirely coalesce, or only a small Perforation remain, for the Discharge of the menstrual Blood, but not sufficient to admit of Copulation. In new-born Infants, therefore, it prevents the Discharge of Urine; but, in Adults, it obstructs the, 1. Menstrual Flux. 2. Coition. 3. Conception. And, 4. The Birth. Its Cure, therefore, is extremely necessary.

These Disorders are discovered, in new-born Children, when they retain their Urine for the first Days after their Birth, and by seeing and feeling the Part; but in Adults, when the *Vagina* is obstructed by a Membrane, it appears from a Defect of the menstrual Discharge, intense Pains about the Pubes, Loins, and Belly, a Paleness of the Face, and Swelling of the Abdomen; and, most certainly, by feeling and inspecting the Parts: But in those who have a small Perforation in the *Hymen*, sufficient to permit the menstrual Discharge, when Copulation is found to be obstructed, difficult, and imperfect. With regard to the Prognostic, if the obstructing Membrane be thin, it is generally broken in the first Act of Coition; or, if this Remedy should not be sufficient, it may be easily removed, by the Knife. But if the Cohesion of the Parts is strong, and lies deep, or if the Obstruction be made by a thick fleshy Substance, the Cure is difficult; not only because the Bladder, or neighbouring Intestine, are in danger of being wounded, as *Roonhuysen* acknowledges once to have happened to himself; but the Cure often does not succeed, because of the great Difficulty of preserving a sufficient Wideness of the Passage.

In order to the Cure, it is, in the first Place, necessary, to consider, carefully, the Nature and State of the Disorder: If there appears any Mark of the *Urethra*, and the *Vagina*, so that they are only obstructed by a Membrane, this Membrane must be opened in both these Passages, if both are closed, by a rectilinear Incision, from the superior to the inferior Part; or, as *Celsus* advises, by a crucial Incision, according to the natural Aperture of the Part; but if a small Opening be left in the upper or lower Part of the Orifices of these Passages, the Membrane may be divided with a Pair of Scissars, or with a Director, and falciform Knife, taking care not to injure the urinary Passage, much less the Bladder: Then, if it appear necessary, the whole Membrane may be extirpated; afterwards, a proper Tent, anointed with Basilicon, or some digestive Ointment, must be introduced into the Wound for a few Days; and, to prevent its falling out, secured by a Bandage; then a Tent, spread with a drying Ointment, as that of Cerufs, or *Diapompholyx*, must be applied, as before, and continued till no Danger appears of a new Cohesion of the Parts: But if the Membrane be thick, or if the Obstruction be formed by a fleshy Substance, so that no Appearance remains of the natural Passage of the *Vagina*, a careful Inquiry must be made, whether the Cavity may not be perceived by the Finger; if it can thus be discovered, with great Caution make a rectilinear Incision, sufficiently large, in the proper Place, as before directed; then laying hold of it by the Extremity, with a Forceps, or Hook, let it be extirpated, that the Passage may be sufficiently opened: Proceed, in the rest of the Cure, as before directed, excepting that, towards the Conclusion, when the Wound begins to heal, a leaden Pipe, of a sufficient Size, spread with a cicatrizing Medicine, must be introduced; and this Medicine must be continued, till a Cicatrix be induced.

Sometimes new-married Women, and even those who have lived Years in the matrimonial State, have the Orifice of the *Vagina* so contracted, either by an Exulceration, or some other Cause, that they cannot admit of conjugal Embraces, although the menstrual Blood may be freely discharged. In this Case, it may be adviseable, as I have happily tried the Experiment, to enlarge the Aperture, by making Incisions, of a sufficient Depth, in its Sides, and lower Parts, and by Abscission of the superfluous Parts of the Lips; and then a large Tent, with dry Lint, twisted, must be introduced: Afterwards, in the subsequent Dressings, which must be repeated twice every Day, excepting the Day of Operation, lest the retained Matter, and *Sordes*, should occasion a troublesome fetid Smell, apply to the Sides of the Wound a vulnerary Balm, and then a proper Pessary, made of prepared Sponge, or the swelling Roots, for the more convenient dilating of the Part, and let this Treatment be continued, till it begins to heal: And, lastly, a leaden Pipe, spread with some deficcative Medicine, must be introduced every Day, till the Part is healed, and no more Danger of Cohesion remains. When the Constriction of the Orifice of the *Vagina* has not been from the Birth, but produced by some external Causes, I have successfully experienced the Method of Cure here laid down. *Saviard* relates a like Case, in his *Obs. Chirurg. 32.*

Cabrolus relates a remarkable Case of a Patient about eighteen or twenty Years of Age, whose urinary Passage was entirely obstructed by a thick Membrane; and her Urine, being, probably,

dably, conveyed by the *Urachus*, was constantly discharged by the Navel, which hung down about the Length of four Inches, like the Comb or Beak of a Turkey-cock; and exciting almost an intolerable fetid Smell, as of putrid Urine. To remedy this most troublesome Disorder, *Cabrolus* first made an Incision into the Membrane which obstructed the Urethra; and, in order to preserve a free Passage for the Urine, he introduced a leaden Pipe as far as the Bladder. Next Day he made a Ligature with a strong waxed Thread, as is commonly done in cutting Ruptures, upon the protruded Part at the Navel, by which the Urine had been hitherto evacuated, and extirpated it below the Ligature: He then applied to it the actual Cautery, and, after the Eschar was removed, he deterged the Ulcer, and induced a Cicatrix with desiccative Medicines, as in other Ulcers: Thus he completed the Cure in twelve Days. The same Method may be followed in like Cases, only omitting the actual Cautery, which is not here very necessary, and greatly intimidates the Patient, and all who are present.

THE METHOD OF OPENING THE VAGINA, WHEN THE OBSTRUCTION IS DEEPLY SEATED.

Besides these Disorders already explained, Women are sometimes subject to have the Vagina preternaturally obstructed, by a Membrane deeply seated; or by an entire Cohesion of its Sides; and thus the Discharge of the menstrual Flux being prevented, most acute Pains of the Belly and Hips, Swellings of the Abdomen, with *Nausea*, Extenuation, Watchings, and the other Symptoms above-recited, and sometimes even Madness, are induced. Sometimes the Disorder is born with the Patient; but frequently it arises from an external Cause, especially a difficult Birth, when, after a violent Laceration and Inflammation, the Vagina becomes exulcerated. Instances of this Kind are given by *Roonhuysen*. *Benevinius* relates a Case of this Nature that proceeded from a Venereal Cause: And *Becker*, one from the Small-pox. Frequently the obstructing Membrane is situated near the Orifice of the Vagina; sometimes about the Middle; at other times near the Uterus. Sometimes the whole Vagina, or great Part of it, is concremented, or, at least, filled up with a thick fleshy Substance; and if this Concretion reaches deep, difficult and dangerous is the Cure; because the Bladder, and *Intestinum Rectum*, as we before observed, are very subject to be injured. Sometimes the Membrane does not entirely obstruct the Vagina: And sometimes the Cohesion of its Sides is not total, but a Perforation is left for the Discharge of the Menstrues. Women, however, in this Condition, are capable of but an imperfect Coition; and hence new-married People, especially if they are prone to Superstition, frequently imagine themselves bewitched; or the Husband may think his Wife incapable of Conception; and therefore, meditate a Divorce, though sometimes such Women have become pregnant. *Becker* relates a particular Story of a wanton Girl, who had been born with an obstructed Vagina: She being convinced by repeated Trials, that she was incapable of being deflowered, enticed many vigorous young Fellows to lie with her; and when she had disappointed their Hopes of Enjoyment, and deprived them of their Money, she ridiculed them as insignificant Bedfellows for a Woman. But at length she committed herself to the Care of a Surgeon, to have this Impediment removed; and he soon so completely remedied his Patient, that she, both as a Fee, and a Testimony of the happy Cure, in a proper Time presented him with Twins, he himself being the Father.

With regard to the Cure of this Disorder, it may be easily effected in young Girls, when the preternatural Membrane is thin, and not very remote from the Orifice of the Vagina, and if, as was above observed, the Incision be cautiously performed. But, in Women this Operation cannot be so conveniently performed, unless the Membrane be distended by the menstrual Blood, as it has been performed by the above-mentioned, and others. *Amyand*, in the *Philosophical Transactions*, No 422. gives the Case of a Woman whose Vagina, after Delivery, was so obstructed with concremented Caruncles, that the Efflux of the menstrual Blood was not only prevented, but, by its collecting in the Vagina, the Urethra was compressed, and a Suppression of Urine ensued. All these Authors relate, that immediately after the Incision, not only a surprising and copious Discharge is made of inspissated Blood, and a fetid Liquor, but the Patient is relieved from all the Miseries she before suffered, and even from imminent Death: And, lastly, the Wound has been brought to a Cicatrix, almost without the Use of any other Remedies than proper Tents, Pessaries of Wax, and leaden Pipes. But, if the Membrane be thicker, and deeply seated in the Vagina, whether it be furnished with a Perforation or not, the Operation must be performed in the same manner: But greater Caution is required, as the *Intestinum Rectum*, and Bladder, are more exposed to Injuries; the rest of the Cure may be continued, as before directed: But greater Care is, also,

necessary, in preserving a sufficient Wideness in the Passage. Nor will it be improper to use here a *Speculum Uteri*, for the more accurate Inspection of the Parts, and the more wary Performance of the Incision.

If Women in their Pregnancy, or in Labour, be afflicted in this manner, a timely Remedy must be applied; lest the Difficulty of the Birth should induce the most violent Disorders. If a pregnant Woman be thus affected, the Membrane should be extirpated long before the time of Travail; for then the Fœtus, lying behind the Membrane, may be easily wounded with the Knife. But if the Cure, by Ignorance or Negligence, be delayed to the time of Labour, the Operation must, even then, be performed, but with the utmost Caution, to prevent any Injury happening to the Child. A small Wound must, therefore, be first made in the preternatural Membrane, with a Knife armed with a Button, see *Tab. XXVI. Fig. 4-5.* or a Director may be used; or a proper Forceps; or the common surgical Knife, which must be applied with extreme Care. *Mauriceau* advises, that the Midwife should forcibly divide this Membrane with her Fingers; but, as the Consequences attending Laceration may be extremely dangerous, I think Incision preferable.

It remains to be observed, that if the Vagina be not obstructed by a Membrane, but by a thick fleshy Substance, deeply seated; or if the Sides of the Vagina are concremented, the Operation must be both difficult and dangerous; from which, therefore, we ought rather to refrain, as *Benevinius* formerly did. But when the Operation is performed, in Cases less dangerous, unless the Part be long kept distended with Spongetents, proper Pipes, or Pessaries, it will, soon after the Cure, easily contract again, so as not to admit conjugal Embraces. And upon this account I have not only been obliged to repeat the Operation, but *Roonhuysen* has done the same, who advises Surgeons particularly to attend to these Circumstances. But when there is an Adhesion of the Sides of the Vagina, deeply situated, as I once observed in a Butcher's Wife, in whom the Disorder proceeded from a difficult Labour, the Incision is extremely dangerous; from which I therefore abstained, in this Case, contrary to the earnest Intreaties of both her and her Husband, who were desirous of having Children. But if the Vagina be obstructed by a thick fleshy Substance, though the Incision should be made, yet the Flesh becomes so luxuriant, or indurated and callous, that not only part of the Lips must be extirpated, where it can be done with Safety, for which Purpose the Affair must be duly considered, by Inspection, Feeling, and a *Speculum Uteri*; but the fungous Flesh must be consumed by corrosive and desiccative Medicines, and repressed by proper Tents, and leaden Pipes, till the Passage be sufficiently enlarged, and the Sides perfectly healed; otherwise the Vagina will easily reunite, and render all this troublesome Procedure ineffectual. In Cases of this Kind, *Roonhuysen* and *Becker* may be consulted, who illustrate this Affair with various Observations and Examples. *Roonhuysen*, also, delivers a Method of opening the internal Orifice of the Womb, when obstructed: But as almost all Access is denied to this Part, this Operation appears scarcely practicable, and extremely dangerous; nor does it seem possible to preserve the Opening. *Heister-Chirurg*.

THE METHOD OF REMOVING TUBERCLES, CARUNCLES, AND OTHER EXCRESCENCES OF THE VAGINA.

Sometimes Excrecences of different Kinds, Sizes, and Figures, grow not only on the external Parts of the Vagina, but, also, internally, both in the anterior and posterior or superior Parts. Some of these Excrecences resemble a Mushroom; others, a Fig; others, a Pear; and some, the Clapper of a Bell: And sometimes they increase to such a surprising Degree, that those of the last-mentioned Figure will reach to the Knees; which are not only great Obstructions to Copulation, and the Birth; but occasion intense Pain, and even threaten a Gangrene or Cancer, if not timely removed: When they are very large, they are, by some, called *Sarcomas of the Womb*. *Celsus* and *Tulpius* call them simply *Fungi*; but *Solingen* terms them *Fici*; adding, though improperly, the Epithet *cancerous*, because they admit of an easy Cure. The nearer they are situated to the Orifice of the Vagina, the more easily are they removed; but the Task is very difficult when they lie deep; so that *Tulpius* calls it a very uncommon Operation. Some have taken Excrecences of this kind for a Falling-down of the Womb, but without Foundation.

The same Method of Cure must be followed here, that is generally observed in removing Tubercles and *Sarcomas*, or fleshy Excrecences, by the Ligature; by the Knife, or both; or by corrosive Medicines. But particular Care must be taken, not to mistake a *Prolapsus Uteri* for an Excrecence of this kind.

But, because these Disorders of the Vagina are not only nearly related to a Polypus of the Nostrils; but are sometimes so deeply situated, near to the Uterus, and sometimes proceed from the Uterus itself, that they cannot be extirpated by the Methods above proposed, *Fabricius ab Aquapendente*, and *Dionis*, thought it necessary to use the Forceps recommended in extracting Polypuses of the Nose, (see *Tab. XL. Fig. 9. 10. 11.*) with which Instrument the Excrescence may be twisted off. But, before this Method be attempted, particular Circumspection must be used, to see whether the Patient is not exposed to greater Injuries by the Operation. *Voelters*, a German Surgeon, informs us, that he has removed many of these Excrescences, of various kinds, with a red-hot Knife; but I am so far from recommending his Example to others, that I rather think it ought to be abhorred, as cruel and dangerous. *Solingen* relates, that he happily extirpated a cancerous Excrescence in the Vagina of a Woman, who recovered in a short time. *Obs. 29.* But he gives no Account how he performed the Operation; nor any Reason why he called the Disorder *cancerous*. *Heist. Chir.*

THE METHOD OF TREATING A PROLAPSUS UTERI, OR FALLING-DOWN OF THE WOMB.

That a *Prolapsus Uteri* is an Impossibility in Nature, was not only alleged, but obstinately maintained, by some Physicians of the last Century: Among these were *Mechren*, *Roombuyssen*, *Van Horne*, *Barbette*, *Vander Beche*, *Kerkringius*, *Verduc*, and others. But that the Uterus is sometimes protruded from the Abdomen, through the external Orifice of the Vagina, is manifest from the Observations of the most experienced Physicians, both ancient and modern: Of this Number are, *Aetius*, *Aegineta*, *Rosset*, *Fabricius ab Aquapendente*, *Berengarius*, *Paré*, *Hildanus*, *Solingen*, *Mauriceau*, and many others. The celebrated *Ruyseh*, in his *Obs. 1. 7. 9. and 10.* has clearly explained this Affair, and illustrated it with elegant and distinct Figures; two of which we have represented in *Tab. LV. Fig. 2. and 3.* Next to him is *Saviard*, a Surgeon of *Paris*, who gives ten Cases observed by himself; then *Jo. Mau. Hoffman*, a Physician of *Altorf*; *Schacherus*, a celebrated Physician of *Leipsic*; *Slevogtius*, *Vaterus*, and *Buggravius*, who all certified the Truth of this Disorder, and described it from Cases of which they were Eye-witnesses. And I myself have seen Instances of this kind. When the Womb only bears down upon the Vagina, it is called a *Descensus Uteri*; but when it is protruded without the Vagina, it is denominated a *Prolapsus*, or *Procidencia Uteri*. Of the *Prolapsus Uteri* there are two Kinds; one happens without an Inversion of the Womb, when the internal Orifice of the Uterus appears at the Extremity of the prolapsed Part, as in *Fig. 2. Lit. C*; the other with an Inversion of the Womb, when the internal Orifice of the Uterus does not appear (see *Fig. 3.*), as has been testified by the above-quoted Authors.

An inverted and non-inverted Uterus may be distinguished, as we just now observed, by the Orifice of the Womb, which appears when the Uterus is not inverted, as in *Tab. LV. Fig. 2. C*; and by this Sign, also, it may be known from a Bearing-down, or from fungous Excrescences of the Vagina. But it is not unworthy of Observation, that *Widemannus* not only described, but beautifully and clearly delineated, a singular *Prolapsus* of the whole internal wrinkled Coat of the Vagina, with an Orifice so nearly resembling that of the Uterus, that none could have doubted it, before the Body was opened; when the Uterus was found in its proper Place, and only the wrinkled Coat of the Vagina prolapsed. And that Physicians may more prudently distinguish these Disorders, and not rashly mistake a *Prolapsus Vaginae* for a *Procidencia Uteri*, I thought it not improper to represent the Figure given us by *Widemannus*, in *Ephem. Nat. Cur. Cent. VIII. Obs. 98.* though not so large as the Life. See *Tab. LV. Fig. 4.* The Appearance, therefore, of an Orifice in such a *Prolapsus* (see *Lit. F*) is not an infallible Sign of a *Prolapsus Uteri*, as has been generally represented; but the prolapsed Part must be carefully considered, till it can be certainly known, whether it be the *Vagina* or *Uterus*. *Widemannus*, indeed, produces no pathognomic Sign, by which the Vagina, in this Case, may be assuredly distinguished from the Uterus; but he says, that when he introduced his Probe into the Perforation *F*, which so nearly resembled the Orifice of the Uterus, that it penetrated much deeper than the Cavity of the Womb, almost the Length of half a Foot: But whether this Sign always appears, remains to be proved by future Experiments. This Observation of *Widemannus* ought to be frequently read, and carefully considered.

A *Prolapsus* of the Uterus, and one of the Vagina, are difficult to be certainly known, as well as to be distinguished from one another. We have a remarkable Instance of this kind in the Physicians and Surgeons of *Tholouse*, and many of those at *Paris*, who imagined a Girl about thirty, who,

from her Childhood, had been troubled with a *Prolapsus Uteri*; to be an Hermaphrodite; and publicly declared, that in this Hermaphrodite the Male Sex was predominant. Upon this Declaration, the Parliament of *Tholouse* ordained the reputed Hermaphrodite to lay aside female Apparel, and assume a masculine Dress, under a severe Penalty, if she refused. But when *Saviard* had narrowly examined her at *Paris*, he found her to be really a Girl, and, by restoring the Uterus to its natural Situation, metamorphosed her into her proper Sex; and, by the King's Command, she was ordered to dress accordingly. The inconsiderate Judgment of the *Tholousians* more plainly appears from this diverting Relation, of *Saviard*, in *Obs. 15.* who assures us, that she had no Resemblance either of a *Penis* or *Testicles*, Appendages which, in my Opinion, are absolutely necessary to the Formation of a Man; besides her Breasts were large, and her Face was entirely female, without a Beard.

This Disorder proceeds from a Relaxation and Weakness of the Ligaments of the Uterus and Vagina; whence it is observed frequently to follow a difficult Birth, or other violent Efforts; though Virgins and Girls are sometimes affected with it. Another Species of *Prolapsus* is, when the prolapsed Uterus is inverted like a Bag, with its interior Side turned outwards, and then the Orifice of the Womb does not appear, but is concealed in the Vagina. See *Fig. 3. B.* Of this Kind of *Prolapsus* we have, among others, a remarkable Instance, described by *Genselius*. In this Case, the prolapsed Uterus resembles a Mole, or a bloody and unseemly fleshy Excrescence; and, therefore, it is not surprising, that some unskilful Surgeons and Midwives have mistaken the Disorder, and by rude Treatment, endeavouring to extract the Womb by Force, bring the Patient's Life into extreme Danger. This miserable Disorder seldom happens, except when the Uterus is extracted with the Secundines; or immediately after a difficult Delivery, when the internal Orifice of the Womb is so dilated, that the Body of the Uterus is easily transmitted through it; or, lastly, when the Patient is so strained by the Labour-pains, or by the Continuance of the Throes after Delivery, that, by a vehement Effort the Uterus slips through its internal Orifice, and is forced without the *Labia Pudenda*. But from whatever Cause the Disorder proceeds, unless it be quickly restored to its natural Situation, as the above-mentioned Authors have observed, a sudden Death is generally the Consequence; and, therefore, any Delay must be extremely dangerous.

In this Species of a prolapsed Uterus, the Surgeon or Midwife must, in the first Place, take care that the Patient evacuate her Urine, lest the Repletion of the Bladder should obstruct the Reduction of the Uterus: Then the Patient being laid on her Back, with her Hips elevated, and Thighs distended, the Secundines, if they still adhere, must be cautiously removed by the Fingers, and the Uterus, with all possible Expedition, gently restored, by the Hand, to its former Situation. This Operation may be most conveniently performed, by tenderly returning into the Vagina the lower Part of the prolapsed Uterus, at *Fig. 3. C.* with the three first Fingers, and, then, with the whole Hand, into its natural Place in the Cavity of the Abdomen; then, contracting the Hand into the Form of a Fist, it must be retained there, till the Uterus is reduced to its usual Figure, and, then, gently contracted: These Particulars are more easily executed immediately after the Delivery, while the Orifice of the Womb, and the Vagina, are preternaturally dilated. The Uterus being thus replaced, and reduced to its former Figure, the Patient should be laid on her Back, in Bed, and earnestly exhorted to keep her Legs close, and to dispose herself for Rest; for by procuring Rest, and keeping this Posture, the Cure may often be completed, without any other Assistance. Nor will it be improper to close up the Orifice of the Vagina with Compresses, and a proper Bandage, lest, by Strefs of Pains consequent to the Birth, by Coughing, or by Sneezing, the Uterus should be again prolapsed: Thus will the Orifice of the Uterus be gradually contracted, so as to afford no Passage for the Uterus, and, consequently, the Disorder be removed. If the Uterus be not quickly returned, according to *Hildanus*, *Stalpart*, *Ruyseh*, *Saviard*, and other Authors above-quoted, sudden Death must be the Consequence: For the Orifice of the Womb is, by Degrees, so constricted by the superior Part of the Uterus, that an Inflammation is induced; and the Reduction of the Womb becomes impracticable; and a Sphacelus is occasioned by the stagnated and corrupt Blood, and the Patient suffers a miserable Death. But if the Case be not desperate, when the Surgeon is called, Care must be taken to free the Uterus from its Inflammation, and to restore it to its proper Place with all possible Expedition: For this Purpose it is, in the first place, necessary to bleed her copiously; and then she should discharge her Urine, that no Obstruction may be occasioned by the Distention of the Bladder: Then let the Patient be laid in the same Posture as is above directed; and then let the Uterus be carefully fomented with warm Milk and Water, and

and anointed with Butter, or warm Oil; or let digestive and emollient Fomentations, or Cataplasms, be so long applied, till the Part becomes soft and slippery, and capable of being replaced by the Method already directed. For unless this Reduction can be seasonably accomplished, the Preservation of the Patient becomes impracticable; nor will the Extirpation of the Uterus, by Ligature or Abcision, as some have imagined, ought avail. *Ruyssch* relates a Case, in which a Surgeon removed by Ligature a prolapsed Uterus, but without Success; for the Patient soon died.

But here I think it may be worthy of Consideration, whether Scarification may not be advantageously attempted in such desperate Cases, when the Uterus is swelled and inflamed, as in other violent Inflammations of a cancerous Disposition, which to me seems not improbable.

That Species of Prolapsus in which the Uterus is not inverted, but its internal Orifice appears, which is not always the Consequence of a difficult Birth, but is often produced by a Weakness of the Ligaments, is not attended with such unhappy Consequences. By the Appearance of the internal Orifice of the Womb, this *Prolapsus Uteri* may, also, be distinguished from fungous Excrescences, or Tubercles of the Vagina, as was already observed. In this Case the Danger of an Inflammation, or Sphacelus, is not so much to be apprehended, as in the former Kind. This Species of *Prolapsus Uteri* is not only incident to Women after a difficult Labour, but, also, to others, to the chaste Virgins, and even young Girls, according to the Observations of *Mauriceau*, *Saviard*, and others. But if this Disorder be for some time neglected, not only great Uneasiness is occasioned, but a Difficulty of Urine, violent Pains of the Hips, Exulcerations of the prolapsed Uterus, and an Inflammation followed with a Sphacelus, Scirrhus, or Cancer. And the longer the Use of proper Remedies is delayed, the more difficult is the Reduction of the Uterus, because it becomes swelled and enlarged, and cannot be retained in its natural Situation, without proper Instruments. For a Relapse can scarcely be prevented, either in Walking, or in some Commotion of the Body; or in Sneezing and Coughing, especially if not sustained by a proper Bandage or Instrument. But if the prolapsed Uterus be affected with a Cancer, or Gangrene, the Reduction ought not to be attempted: For *Ruyssch* informs us, in *Obs.* 9. that, after it is replaced, more intense Pains, and other malignant Symptoms, are induced.

If, therefore, there be no Appearance of a Gangrene, or Sphacelus, two Intentions are necessary to be answered in the Cure: 1. That the Uterus be restored to its proper Place. 2. That a Relapse be prevented. With regard to the first Intention, if the prolapsed Uterus has not been of long Duration, or greatly increased in Bulk, it may be easily replaced by the Method already directed: Let the Head be laid low; the Buttocks elevated; the Legs spread wide; and the Womb gently replaced with the Fingers, or a strong Wax-candle. It has been often observed, that Women troubled with this Disorder can replace the Uterus themselves, without any Difficulty. But if the Disorder be inveterate, and the Uterus enlarged, so that it cannot be without Difficulty reduced, dige-
rent Fomentations must be applied, and the Bladder and Intestines emptied, that it may be the more easily restored to its natural Situation. But as the Uterus can scarcely be sustained by the Coats of the Vagina, and its own relaxed, debilitated Ligaments, great Care, as well as proper Bandages and Instruments are required to prevent a Relapse. For this Purpose it will be expedient to rest some Days in Bed, and to convey the Steams of strengthening Suffumigations through the Vagina, with a proper Funnel and Pipe (see *Tab.* LV. *Fig.* 14.): Aromatic and astringent Fomentations, prepared with Spirit of Wine should, also, be injected with a Syringe. Then putting a Compress on the external Orifice of the Vagina, carefully apply the T Bandage. When the Uterus is greatly swelled, it ought to be fomented with Digestives, till its Bulk be diminished, and then it may be replaced. If the Uterus be exulcerated, as frequently happens, the Reduction of it ought not to be delayed upon that Account: For *Saviard* observes, that these Ulcers are much easier healed when the Part is restored to its proper Situation, than when it is preternaturally prolapsed. This Author, also, relates an Instance of a *Prolapsus Uteri* in a Virgin, who had, at the same time, a Stone in her Bladder: In this Case he first replaced the Uterus, and then extracted the Stone, and relieved her from both Disorders, only using a Pessary. See his *Obs.* 15.

If the Disorder is already become so inveterate and obstinate, that the Uterus cannot be retained by the Methods already proposed, there remains but one Resource, to which Recourse is commonly had; and that is, to repress the Vagina, by introducing a Pessary. The best Sort of Pessaries are made of Box, Ash, or other hard Woods, or of Cork, and covered with Wax, having a Perforation in the Middle. (See *Tab.* LV.

Fig. 6. 7. 8. 9.). Without the Wax they would swell, rot, and produce many Inconveniences, so as not to be, without Difficulty, extracted, and, perhaps, by Pieces. Those who can afford the Expence, may have them made of Ivory, or of Silver or Gold excavated: Thus a Pessary of a proper Size and Shape, must be carefully pressed by the Fingers, deep into the Vagina, even to the Orifice of the Uterus, that it may not easily fall out; having a String fastened to it, (see *Tab.* LV. *Fig.* 6. and 10.) by which it may be extracted and cleaned. The String should, also, be tied to any Belt about the Waist, lest, by happening to fall out, when the Patient walks, it should indecently drop upon the Ground. A Pessary is judged to be of a proper Size, when it is not easily admitted at first, that it may more firmly remain, and better repress the Uterus; but, in some Cases, Pessaries twice as large as these are required. The Perforations in Pessaries are designed for a Passage for the menstrual Blood, and other Sordes, discharged from the Womb; and, therefore, those Pessaries which are of an oval or pyramidal Form, are not so convenient; such as those of a prodigious Size, recommended by *Paré*, *Hildanus*, *Scultetus*, *Roonhuysen*, and others: Besides, these perforated Pessaries will admit the Semen for Procreation, and, also, the strengthening Suffumigations and Injections, so necessary in these Cases. When these Pessaries are rightly made, they are so far from being troublesome, that when once Women have been accustomed to them, they retain them without the least Uneasiness. It is proper to observe, that some Women, who have been affected with this Disorder, have been freed from it upon their becoming pregnant, by reason of the Dilatation of the Womb. See *Pechlinus*, *Obs.* 20. and *Saviard*, *Obs.* 12. But *Mauriceau*, *Schellhammer*, *Hunerwolf*, *Saviard*, and others, prove that this is not always the Case; but the Orifice of the Womb, with the Head of the Fœtus, may be felt without the Vagina.

Saviard prefers a kind of elastic Steel Pessary before all others; but as he gives no Description of it, Nobody can know what he means. But *Goelcke*, in a Dissertation published at Halle, in 1710. describes a new Method of curing a *Prolapsus Uteri*, in which he recommends an elastic Pessary, made of Iron-wire, and wreathed into a conical Form: He, also, gives a small Representation of it; but does not explain its proper Length or Thickness. But in *Tab.* LV. *Fig.* 11, these Faults are corrected, where it is represented of a convenient Size: He directs the Inside to be covered with Lint, and the Outside with thin soft Leather; and orders a String to be fastened on each Side of the Basis of the Cone, that it may be easily extracted. When it is to be introduced, it ought to be a little compressed; so that, after it is placed, it expands itself, by its elastic Force, and is thus firmly retained, without any Danger of falling out: He owns indeed, that he never experienced the Effects of this Pessary, but, as it has all the Qualities necessary for the Formation of a good Pessary, he does not doubt of its Excellency. But as I am afraid, that, in so moist a Place, such a Pessary should soon be corroded by Rust, to which Iron is particularly subject, I have, therefore, always used the wooden Pessaries, represented in *Fig.* 6. 7. and 8. which I have found to answer the End. *Heister Chir.*

THE METHOD OF TREATING A BEARING-DOWN OF THE VAGINA.

A Bearing-down of the Vagina has not only been confounded with a Bearing-down of the Uterus, by ignorant Midwives, but, also, by Physicians and Surgeons of Learning and Experience; and these different Disorders have, likewise, been confounded with the same Denomination: But they may be distinguished from one another; partly by considering the anatomical Structure of the Parts; and partly, by attending to the diagnostic Signs above observed. The Vagina is said to be prolapsed, when the Whole, (as in *Tab.* LV. *Fig.* 4.) or only Part of it, being relaxed, by whatever Causes, hangs without the Pudenda. Sometimes the whole Vagina is prolapsed, and appears like crude bloody Flesh, resembling a thick fleshy Ring, more or less swelled, according to the different Causes of the Disorder, and other Circumstances. If the prolapsed Vagina swells violently, and is attended with Inflammation, as I have sometimes observed, after a difficult Labour, there is immediate Danger of a Sphacelus: If the prolapsed Part be affected with little or no Swelling; or if the Tumor be unaccompanied with Inflammation, the Disorder may long be born, without Trouble, and without Danger. Sometimes a Part of the Vagina is preternaturally prolapsed out of the Pudenda, and may be produced by lifting too great Weights; or by an Effort in a difficult Birth; or by a Congestion of peccant Matter, resembling a large Fungus, or a *Prolapsus Uteri*. Many plain Instances of this Disorder have been observed: And *Meekren* has related, and illustrated with Figures, a very remarkable Case in *Cap.* 54. of his Observations. This kind of Disorder may not only be taken for a *Prolapsus Uteri*; but
rather

rather for a Tumor, as a *Fungus*, *Ficus*, *Sarcoma*, or fleshy Excrescence; and, therefore, it may be thought necessary to remove it by a Ligature, or by Abscission. But to distinguish this Disorder from a *Prolapsus Uteri*, or a Tubercle of the Vagina, it is necessary to observe, that an inverted *Prolapsus Uteri* never happens, unless immediately after Delivery; but Tubercles of the Vagina, or any Part of it, may be produced at any Time besides that of Delivery, and increase gradually, and, as it were, imperceptibly. Though I observed in the Year 1720, in a Lady of Quality, suffering under a difficult Labour, that whilst the Foetus was yet in the Womb, Part of the Vagina was suddenly prolapsed, and within twenty-four Hours a Fungus or Tubercle appeared, equal to the Size of two Fists, which soon became sphacelous; and, though the Child was safely brought forth, the unhappy Mother died within eight Days. Hence, then, it is not surprising, that some Physicians, not having sufficiently considered the Signs by which a *Prolapsus Uteri* may be distinguished from a *Prolapsus Vaginae*, have, therefore, asserted, that a prolapsed Uterus may sometimes not only be extirpated without endangering Life; but that those very Women, though deprived of the Womb, may afterwards conceive and bring forth Children. That, after the Extirpation of a Tubercle of the Vagina, as in Fig. 5. or where the whole internal corrugated Coat of the Vagina falls down, like a *Prolapsus Uteri*, those Women may afterwards conceive, and bring Children, was never denied: But it is absolutely impossible, that, after the Uterus is extirpated, a Woman should conceive; and, therefore, these Relations may justly be accounted fabulous.

How Tubercles resembling a *Prolapsus Vaginae* may be removed, we have already explained: But when the Vagina appears prolapsed, like a large bloody Ring, hard and inflamed, unless it be seasonably restored to its proper Place, there is great Danger of the prolapsed Part being affected with a Gangrene, or Sphacelus: But the Danger is less, if the prolapsed Part be flaccid, and not inflamed. If no Inflammation appears, the Vagina should be restored to its natural Situation with the Fingers, or a thick Wax-candle, and then fomented with strengthening and digerent Medicines: Then the Patient should be ordered to rest in Bed for some Days, keeping her Legs close, or crossed. Mean while the Part should be fomented with Decoctions of strengthening, digerent, aromatic, and astringent Herbs, with Red-wine; or with Lime-water, mixed with Spirit of Wine: Suffumigations, also, of Mastich, Olibanum, Myrrh, Amber, and the like, should, also, be conveyed into the Vagina with a proper Pipe (see Tab. LV. Fig. 14.) and Funnel; then let the Part be carefully bound with the T Bandage. Thus may the prolapsed Vagina be restored to its natural Vigour, especially if the Disorder be recent, and, if proper internal Medicines be exhibited: For this Purpose, the medicated Waters, hot Baths, and chalybeate Waters, are excellent. But if the Disorder be so inveterate as not to yield to the Remedies here proposed; it must, therefore, be palliated, and the Patient be ordered to wear the T Bandage constantly; by which means the Danger of a Scirrhus, or Gangrene, may be averted.

But if the prolapsed Part be seized with an Inflammation, the Inflammation must be removed, not only by the Application of discutient Fomentations and Cataplasms externally, but, also, by the Exhibition of proper internal Medicines, not omitting Venesection, before the prolapsed Vagina can be restored to its natural Position, otherwise a Gangrene might be induced, which would soon be followed by the Death of the Patient. But if the Inflammation be mild, the prolapsed Part may be reduced without Danger, as the natural Heat of the Body will greatly contribute to discuss the Tumor. But if a Sphacelus, or Fungus, already appears upon the prolapsed Vagina, which may be known from its Blackness and fetid Smell, the morbid Part must be scarified; digestive Fomentations and Cataplasms applied; and whatever else is necessary in the Cure of a Sphacelus. *Heister. Chirurg.*

VAGINALIS TUNICA. A Coat of the Testes; another of the Oesophagus, and another of the Spinal Marrow, are called by this Name.

VAGITUS. The Bellowings or Moanings of Children, when out of Order.

VALENTIA SCABIOSÆ. Powers of Scabious.

Take of the Juice of green Scabious, pressed out, and strained through a Cloth, and of Hogs-lard, cleared of its Membranes, each as much as you please: Let the Lard be beat in a Stone Mortar, and the Juice poured in by little at a time, for the Conveniency of Mixture, and giving its Tincture: Then put them together into a proper Vessel, to be exposted to the Sun, and so that the Juice may cover the Lard: After nine Days, put them again into the Mortar as before, and throw away that thin and discoloured

Humidity, which separates upon beating, without rubbing them together; and again, put it into its Vessel for five Days: Afterwards beat it again, and by a little at a time, mix with it fresh Juice of Scabious; and after a fresh Infusion of fifteen Days, in its proper Vessel, in the Sun, let it be cleared before of its watry Humidity. Let it then stand again in the same manner, for fifteen Days longer, with fresh Juice; and, after a little Beating, let it be kept for Use, in a glass or earthen Vessel.

This, we are told by the first Compilers of the College Dispensatory, was the Contrivance of *John Arden*, an experienced Surgeon at *Newark*, in *Nottinghamshire*, who lived in the Reign of *Edward the Third*. After Insertion of this, which they had from an antient Manuscript, they particularly direct to repeat the Processes with fresh Juice, till the Lard looks of a deep Green; and that is made the Measure of the Repetitions necessary.

VALERIANA.

The Characters are;

The Leaves are conjugated: The Stalk is floriferous, and divided as in umbelliferous Plants: Under the Umbellæ, both large and small, are two long small Leaves: The End of the Pedicle shoots forth two small similar Leaves, which supply the Place of a Calyx: From the Centre of the Area of the Pedicle, within these Leaves, proceeds an oblong Ovary, on whose fimbriated Apex grows a monopetalous, Funnel-shaped, naked Flower, furnished with three Stamina, proceeding from the internal Sides of the Flower: The Tube of the Flower, from its lower Part, where it adheres to the Ovary, frequently shoots forth a blind Spur at the Side: The Seed is oblong, depressed, running out narrow, almost flat and downy: From the Centre of the Apex of the Ovary shoots forth a long Tube.

Boerhaave mentions thirteen Species of *Valeriana*; which are,

1. *Valeriana*; major; hortensis. *Boerb. Ind. alt.* 74. *Phu majus, sive Valeriana major.* Offic. Park. 119. *Valeriana hortensis.* Ger. 917. Emac. 1075. *Valeriana hortensis; Phu Olu-satri folio Dioscoridis.* C. B. P. 164. Tourn. Inst. 132. *Valeriana major odorata radice.* J. B. 3. 209. Raii Hist. 1. 388.

GARDEN VALERIAN.

The Root of the Garden Valerian is about a Finger thick, of a brown Colour, growing not deep in the Earth, but spreading itself across, with many large white Strings on each Side, which makes the Root appear, like a large Scolopendra, or Caterpillar with many long Feet, of a very strong Smell, especially when dry: It shoots out several hollow channel'd Stalks, two or three Feet high, having the lower Leaves long and round-pointed; some whole, and others cut in, resembling those of Scabious, but that they are smooth: The Leaves, which grow on the Stalks, are, also, much more cut in: The Stalks are divided towards the Top into several Branches, having, at each Divarication, a long narrow Leaf; and at the Ends grow the Flowers, in a kind of Umbels, each Flower being a small, long, narrow Tub, divided at the Top into five Segments, with as many Apices of a white Colour; they stand on the Rudiments of the Seed, which, when they are fallen, grow larger, being longish, striated with a downy Top. It is usually planted in Gardens, though it grows wild in the *Alpine* Countries. The Roots are principally used.

They are alexipharmic, sudorific, and cephalic; and are accounted useful in malignant Fevers, and pestilential Distempers: They help the Head and Nerves, provoke Urine, and bring down the Menfes.

They are one of the Ingredients of the *Theriaca* and *Mithridate*. *Miller's Bot. Off.*

The Root and Herb are alexipharmic, sudorific, and diuretic: Their principal Use is in Weakness of the Sight, Pestilence, Asthma, inveterate Cough, being boiled with Liquorice, Raisins, and Anise, in the Pleurisy, Obstructions of the Liver and Spleen, Jaundice, Stoppage of the Ureters, Hernia, and the like. Outwardly they strengthen the Sight, absterge Specks, and Films, being boiled in Wine or Water, and instilled by Drops: They ease the Head-ach, provoke the Menfes and Sweating, being used in Baths: In Suffumigations they dry up Rheums, and correct the Malignity of Buboës and Carbuncles, extract Bullets or Arrows, and cleanse inveterate Ulcers. Thus far *Schroder*: And indeed he has said enough, if not too much, in its Praise. It is certainly, however, a potent Diuretic.

The Powder of the Root, which grows spontaneously, before it produces a Stalk, taken once or twice, to the Quantity of half a Spoonful, in Wine, Water, Milk, or any other proper Juice, cures the Epilepsy; for it purges upwards and downwards. *Sylvius* thinks, that more is to be ascribed to this Plant, than to Peony, on account of its abounding with a volatile Salt. It is usual with us in *England*, to apply the bruised Leaves to

Wounds, when but flight; whence it is called by some *Cut-singer*. *Raii Hist. Plant.*

2. *Valeriana*; *sylvestris*; major. *Ger.* 917. *Emac.* 1075. *Park.* 122. *C. B. P.* 164. *Raii Hist.* 1. 388. *Synop.* 3. 200. *Tourn. Inst. Boerh. Ind. A.* 74. *Valeriana sylvestris*. *Offic.* *Valeriana sylvestris magna aquatica*. *J. B.* 3. 209. *Phu Dioscoridis verior*. *Col. Ecph.* 1. 210. **GREAT WILD VALERIAN.**

We have two Species of this great wild Valerian; the first has a Root divided into several white thick Strings, growing more downward, and less spreading than the other; of no great Scent, when just taken out of the Ground, but smelling very strong when dry. The Stalks arise to be about a Yard high, hollow and channelled, having several long winged Leaves, whose Pinnæ are long, sharp-pointed, and serrated about the Edges, high-veined, and somewhat hairy; the Leaves, which grow higher on the Stalks, are narrower, and less serrated. The Flowers are, in Shape, like those of the Garden Valerian, of a pale-purple Colour, and having the like Seed. This grows in Woods, and dryer Places than the other, which is larger, taller, the Root more spread out; the Leaves are larger, smoother, of a deeper shining Green, with broader Pinnæ; the Stalks grow taller; the Flowers are much alike. This grows in watery Places, and near Ditches, both flowering in May. The Root of this has as strong a Smell as the other; they are both used promiscuously, though the former seems to come nearest *Columna's* Figure and Description in his *Phytopinax*.

They are come much into Use of late, in Diseases of the Head, and all nervous Affections. *Miller's Bot. Off.*

The Leaves of this Plant have no Smell, but an herby, saltish, bitter Taste, and give a pretty deep Tincture of Red to the blue Paper; the Roots stain it a little; they are bitter and styptic, of an aromatic penetrating Smell, and something disagreeable. This Plant has a volatile aromatic oily Salt, loaded with a Part of the Acid of the Sal Ammoniac; whereas the artificial volatile oily Salt of this Acid, is detained by the Salt of Tartar.

Thus the wild Valerian is anti-epileptic, sudorific, hysteric, and emmenagogic: It gives great Relief to those troubled with the Asthma, or Vapours: *Camerarius* commends it very much for the Jaundice; and *Fabius Columna* for the Epilepsy; who acknowledges himself to have been cured of the Epilepsy by this Root; and that he had seen several other Persons cured by it: He advises to pull it up before it pushes forth its Stalks, to reduce it to Powder, and swallow half a Spoonful of it in Wine, Water, Milk, or any other Liquor: It may be given to Children, and all Persons that have convulsive Fits. I have seen it have great Efficacy in the hysteric Passion, and most violent Paroxysms of the Asthma. Pour a Pint of boiling Water upon an Ounce of the Roots of this Plant; remove the Pot from the Fire; cover the Infusion well; and give it to drink by Glassfuls. The Extract of these Roots is good for the same Diseases: They give a Scruple of it with a Grain of Laudanum, or else mix the Laudanum with half a Scruple of the Powder of these Roots. *Martyn's Tournesfort.*

It is effectual in Convulsions, Ruptures, and Bruises by Falls, as, also, for Inflammations, and Exulcerations of the Mouth and Gums, and the Aphthæ, *H. Ox.* and cures a Tertian Fever. *Schw. Dale.*

A Dram of the Powder of the dry'd Roots, taken in Wine, purges upwards and downwards. *Dr. Mead*, in his Book *de Imperio Solis & Luna*, highly commends the Root of this Plant against the Epilepsy.

3. *Valeriana*; major; *sylvestris*; montana. *C. B. P.* 164.
4. *Valeriana*; foliis Calcitrapæ. *C. B. P.* 164.
5. *Valeriana*; foliis Calcitrapæ, magis dissectis.
6. *Valeriana*; palustris minor. *C. B. P.* 164. *Tourn. Inst.* 132. *Boerh. Ind. A.* 74. *Phu minus & Valeriana minor*. *Offic.* *Valeriana minor*. *Ger.* 916. *Emac.* 1075. *Raii Hist.* 1. 388. *Valeriana sylvestris minor*. *Park.* 122. *Raii Synop.* 3. 206. *Valeriana minor pratensis vel aquatica*. *J. B.* 3. 211. **SMALL VALERIAN.**

The Roots of this Valerian are long, slender, and creeping, sending out a few small white Fibres. The Leaves which spring from them, before the Stalks run up to Flower, are almost round, but somewhat pointed. The Leaves which grow on the Stalks, are like those of the Garden-kind, but less. We have two Species of this Valerian, one whereof rises higher than the other, having usually three Pair of Leaves set opposite; the Umbels of Flowers grow closer, and the Flowers are a great deal smaller, than the other, which arises not so high, and has usually but two Pair of Leaves on the Stalks. The Flowers are much larger, and like the Garden Valerian, but of a pale-purple Colour, as are, also, the former. They grow both promiscuously in marshy Grounds, and moist Meadows, as in *Battersea Field*, near the *Thames*, in great Plenty, flowering in May.

I know no particular Virtue this Species of Valerian is en-

dowed with, Authors having said but little about it; neither is it ever used in the Shops that I know of. *Miller's Bot. Off.*

The Parts in Use are the Root and Leaves, which as they resemble those of the *Great Wild Valerian* in outward Appearance, so are they supposed to agree with them in Virtues, tho' in an inferior, or milder Degree. *Dale.*

7. *Valeriana*; *sylvestris*; vel palustris; altera; flore minore densius stipata. *Raii Synop.* 98.

8. *Valeriana*; tuberosa. *J. B.* 3. 2. 207.

9. *Valeriana*; rubra. *C. B. P.* 165.

10. *Valeriana*; marina; latifolia; major; alba. *M. U.* 50.

11. *Valeriana*; rubra; angustifolia. *C. B. P.* 65.

12. *Valeriana*; maxima; Pyrenaica; Cascaliz folio. *Fagon. T.* 131.

13. *Valeriana*; Lusitanica; latifolia; annua; lacinizata. *T.* 132. *Boerh. Ind. alt. Plant.*

The first is the true *Phu* of *Dioscorides*, and the Antients; and takes that Name either from the Greek Word *φύω*, (*phyo*) to grow, or spring from, or from *Phy*, a Pontic Word, denoting the penetrating Smell of its Root. But it is erroneously affirmed to be the *Herba Saracenica*, for healing of Wounds; for the Taste shews the contrary; for it is aromatic, penetrating, and somewhat ungrateful Taste, as it is said of the *Nardus* of the Antients; whence it appears to be of an aperitive Quality, and is reckoned among *Aristolochies*, *Emmenagogues*, and *Antiscorbutics*; it, also, exhilarates the Heart, and the Brain; and is effectual in all Disorders proceeding from cold, viscid, and aqueous Humours. A great Author, has talked much of its Virtues against Sorceries and Witchcraft, induced, I suppose, from its extraordinary Efficacy in spasmodic, hysteric, epileptic, and melancholic Cases. These Disorders are called *Lunatic*, and are attended with surprising Symptoms; for which Reason the Antients called them *Morbos Sacros*, Diseases of the Gods. But the Antients made but little Distinction between their Gods and Demons, which might lay a Foundation for this Opinion of the before-mentioned Author. *Hippocrates* says very well of these *Morbi Sacri*, that there are some Diseases very surprising, and therefore called *Sacred*, or *Divine*, not because they came from the Gods, for then all would be *sacred*, but from their surprising Effects; whence this Plant has been esteemed an Antidemoniac, though Rue, also, cures the same Diseases. There are Authors who advise the Root as an Amulet against a Quotidian Fever, and hang it about the Neck for that Purpose. *Fabius Columna*, a Man of the first Rank, and concerned in public Affairs, fell into an epileptic Disorder. Finding no Relief from Physicians, and being fatigued with the long Continuance of the Disease, he betook himself wholly to the Reading of the Antients, in order to examine, whether he could find out by Name a Plant which would cure the Epilepsy; and at length he happened upon this Plant, the second, by the Root of which he was cured. From that time he became an extraordinary Botanist, and assures us, that he knew many epileptic Patients cured by this Plant. He advises to pull up the Root before it begins to sprout, and exhibit the same in Powder to the Patient, for six Days together, in the Morning fasting, in Water, Wine, or Milk: This Medicine provokes Sweat, and frequently gives the Patient a Stool or two, which is a very good Sign. The Roots are very odoriferous, acrimonious, and penetrating; and have a balsamic, and somewhat oily Taste: Whence the *Valeriana* has the same Virtues which we observe in umbelliferous Plants. It is a proper Ingredient in pectoral, stomachic, and uterine Diseases, and is very effectual in a Stoppage of the Menfes, an Ounce or two of the bruised Root being made into an Infusion after the manner of Tea, and sweetened with Honey. It is an excellent Remedy against Worms, and epileptic Fits, in Infants. *Camerarius* highly commends it against the Jaundice, and a violent Asthma, the Infusion of the Root in Water, or the Powder thereof with a Grain of Laudanum, being exhibited. This Plant is effectual, also, against all Sorts of Contusions, the Leaves being bruised in Wine, and applied to the Place affected; the same discuss scirrhus Tumors without Suppuration, and speedily cicatrize Wounds; for which Reason the Peasants in the Country apply the Leaves of this Plant to all sordid Ulcers. The Root is received into all Antidotes; but the first Species is most celebrated, and I can recommend it from an hundred Experiments which I have made of its Virtues. The eighth, ninth, tenth, and following Species, are cultivated in Gardens, being beautiful Plants, and continuing a long time in Flower. *Hist. Plant. adscript. Boerhaav.*

VALERIANA is, also, a Name for several Sorts of VALERIANELLA; which see.

VALERIANA GRÆCA. A Name for several Sorts of POLEMONIUM; which see.

VALERIANÆ RUBRÆ SIMILIS. A Name for the *Limonium*; *maritimum*; *majus*.

VALERIANA URTICÆ FOLIO. A Name for the *Eupatorium*; *Urticæ foliis*; *Canadense*; *flore albo*.

VALERIANELLA.

The Characters are;

The Root is annual and fibrous; the Leaves are conjugated; the Stalk and Branches are divided in two, and appear at Top like an Umbella. The Calyx is monophyllous, small, quinquefid, and closed. The Flower is monopetalous, of various Shapes in different Plants, and furnished with two, three, or four Stamina, growing out of the internal Sides of the Flower, which grows on the Apex of the Ovary. The Ovary grows on the Centre of the Calyx, shoots forth a Tube, and becomes a Fruit of various Forms, inclosing a single Seed.

Boerhaave mentions six Sorts of *Valerianella*; which are,

1. *Valerianella*; *arvensis*; *præcox*; *humilior*; *femine depresso*. *Raii Synop.* 3. 201. *Tourn. Inst.* 132. *Boerb. Ind. A.* 75. *Lactuca agnina*. *Offic. Ger.* 242. *Emac.* 310. *Park.* 812. *Valeriana campestris inodora major*. *C. B. P.* 165. *Raii Hist.* 1. 302. *Locusta Herba prior*. *J. B.* 3. 323. *Locusta Herba, Pes Locustæ*. *Chab.* 437. **LAMBS-LETTUCE, or CORN-SALLAD.**

VALERIANELLA is cooling, and somewhat moistening, being in Temperament and Virtues not unlike Lettuce, and supplies its Room in Winter, and the Beginning of Spring, being pleasantly eaten with Vinegar, Salt, and Oil, like other Salads, among which it is reckoned one of the best. Lambs are mightily delighted and improved, and fattened, by eating this Plant; whence, they say, it takes the Name of *Lambs-lettuce*. *Raii Hist. Plant.*

It grows in Gardens, and among Corn, and flowers in the Spring. *Dale.*

2. *Valerianella*; *arvensis*; *præcox*; *humilis*; *foliis ferratis*. *T.* 132. *Pseudo-valeriana, erecta, serotina, semine umbilicato, hirsuto, pyramidalis*. *M. H.* 3. 104. *Locusta, altera, foliis ferratis*. *J. B.* 324.

3. *Valerianella*; *femine stellato*. *C. B. P.* 165. *Pseudo-valeriana, annua, semine coronato, major, Lustanica*. *M. H.* 3. 104.

4. *Valerianella*; *Cretica*; *fructu veficario*. *T. Cor.* 6.

5. *Valerianella*; *cornucopoides*; *rubra*; *vel Indica*. *M. U.* 53. *Pseudo-valeriana, cornucopoides; annua, purpurea, semine solido*. *M. H.* 3. 104. *Valeriana, peregrina, purpurea*. *C. B. P.* 164.

6. *Valerianella*; *Africana*; *foliis angustis*; *flore macula rubente notato*. *H. A.* 2. 217. *Boerb. Ind. alt. Plant.*

The Plant is called *Valerianella*, that is, *small Valeriana*, from its Resemblance to the *Valeriana*. It grows in warm Places. The first and second Species are called *Lambs-lettuce*, because they contain a very mild Juice in all their Parts, with which Lambs are highly delighted and improved. The Name *Locusta* is given to this Plant from the Resemblance of its Branches to the Legs of a Grasshopper, when going to leap.

The first and second Species are very soft, succulent, mild, pleasant, and nourishing Herbs; whence they are good, mild, light, and nutritive Food for weak Stomachs. *Valerianella* is proper in Cases which require Lenients, Relaxants, or Lubricants; whence it is of Use in the Pleurisy and Nephritis, and, also, to procure Sleep. The crude Juice, or the Leaves, boiled in mild Flesh-broth, are very mild and wholesome Remedies in a Phthisis, where the softest and most lenient things are required. This Plant is, moreover, an extraordinary Demulcent; whence it is of Service in the Strangury, Pissing, and Spitting of Blood, Asperities of the Lungs, Cough, and Pains in the Kidneys, and is a celebrated Remedy for mitigating the Gout. It has the same Effect, whether boiled in Whey, or the expressed Juice thereof taken in good Quantity. It gives extraordinary Relief in hypochondriac Disorders. The Seed is highly aperient, and of excellent Use in the Scurvy, and all Diseases where the Root of the *Bulbocastanum* is of Service; it is, also, commended in a Gonorrhoea and Dysentery. *Hist. Plant. adscript. Boerhaav.*

VALERIANELLA ZEYLANICA. A Name for the *Hydrocotyle*; *Zeylanica*; *Asari folio*.

VALERIANELLOIDES.

The Characters are;

The Root is fibrous and perennial, and is produced from sowing the Seed, which is ash-coloured, oblong, sharp, and small, like the Seed of the Lesser Cumin. The Stalk is ramous, cineritious, covered with a slight Down, and frutescent. The Leaves are conjugated, roundish, scabrous, serrated, upon a long, sulcated Pedicle. From the Wings of the Leaves proceed other conjugated Leaves, similar, and four in Number. The Tops of the Stalk and Branches run into a very long and slender Spike, to which grow on every Side, as it were, engraved, long, monophyllous Calyces, deeply quinquefid, slender, tubulous, and very closely adhering to the Sides of the Spike. These Calyces contain a monopetalous, Funnel-shaped, quinquefid,

expanded Flower, of a pale-bluish Colour. From the Inside of the Tube of this Flower proceed two Stamina. The Ovary is in the Centre of the Calyx, and consists of one long, cylindrical Seed, which has a long Tube with an hemispherical Apex. This Plant grows in *America*. *Boerb. Ind. alt. Plant.*

VALERIANTHEMUM. A Name for the *Rapunculus*; *Valerianoides*; *cæruleus*; *umbellatus*.

VALGUS. Bow-leg'd.

THE METHOD OF REMEDYING BANDY-LEGS IN CHILDREN.

Some Children have their Legs bent in an unseemly manner, either from their Birth, or if they are used by the Nurse to Standing or Walking too early: In some the *Tibia* are crooked, in others the Knees are distorted, in some the Feet, at the Articulation of the *Tibia* with the *Tarsus*, are turned inwards, and they are denominated *Vari*; and in some outwards, who are named *Valgi*. This Disorder requires a different Method, according to its different Degrees and Situation. 1. The most certain and mildest Method of preventing it, is to take care, that tender Children, and those who are otherwise exposed to this Disorder, especially by the Rickets, be restrained from Standing and Walking, but be allowed to lie down, sit, or be carried, either in the Arms, or some Vehicle, till the Bones, as they increase in Age, are strengthened and confirmed. But if the Disorder increase, or is born with the Child, it will be expedient, after the Application of Emollients, according to *Hildanus*, to use certain Instruments, or a kind of Boots, such as *Paré* has delineated, (see *Tab. LVII. Fig. 14, 15.*) made of strong Leather, Wood, or thin Plates of Iron, and adapted to the Size of the Leg. These Boots, being applied to the crooked Legs, especially to those of the *Vari* and *Valgi*, dispose them as they naturally grow, to receive by Degrees a proper Shape. The Boots must be worn Day and Night. But as several Inconveniencies may proceed from the Use of these Boots, especially if they do not fit exactly, Surgeons have thought it expedient to contrive other Instruments for this Purpose, as in *Tab. XXXVI. Fig. 16.* where AA represent the two Sides, made of strong Leather, or thick Pasteboard, or of thin Plates of Iron or Brass, so joined by the Piece BB, that one may answer to the interior, and the other to the exterior Side of the Legs, as in *Fig. 17.* where they are represented applied; and they may be so fastened by the Cord, or Thong, CC, as to be kept on for a considerable time Night and Day, and gradually reduce the crooked Legs to their natural Figure and Position. If the Disorder be not seated in the *Tibia*, but rather in the Ancles, whether the Feet be turned outwards or inwards, these Instruments of *Hildanus*, *Fig. 16. 17.* may be advantageously used; but if, by reason of the Rigidity of the Limb, it cannot easily be turned to its proper Position, let emollient Fomentations, Liniments, and Baths, be used for some Days before the Application of the Instrument. But, if the Disorder be but slight, in my Opinion, the Use of these Instruments should be neglected; which are not only very troublesome, but may, also, be hurtful by binding the Leg too hard, and hindering its Growth. And I have often observed, when the Legs have been moderately bent, and sometimes when they have been greatly incurvated, if the Children be young, and not suffered to use their Feet, but to be carried or wheeled about, that their Legs have been spontaneously restored to their proper Figure. *Hildanus* may be consulted on this Head, who has given the Figures of other Instruments suited to different Cases. *Solingen*, and *Le Clerc*, may, also, be consulted. *Heister. Chir.*

VALIGA. A Name given by some to an Infusion of Jalap, by some called *Rhabarbarum nigrum*, in Spirit of Wine, or, which is better, in Spirit of Citron; then carefully strained, and some time afterwards coloured with a little Saffron; so that it seems to be the same with the *Phalaia* of *Rolsinkius. Castel.*

VALLI. *Noel-valli*, & *Panni-valli*. *H. M. Siliquosa Indica Flore papilionaceo. Siliquis planis brevibus duo aut tria semina isthmia continentibus.* This is an Indian Shrub, which unites itself by its small Branches with the neighbouring Trees; the Leaves are like those of the *Fraxinus*, and have somewhat of an acrimonious Taste; the Flowers are papilionaceous, and void of Smell; the Pods are an Inch in Length, and as much in Compass, very flat, and contain two or three Seeds separated by Isthmuses, or narrow Intervals. The Beans, when parched by the Sun's Heat, are of a cineritious Colour, and an ungrateful Taste. It flowers in *August*, and the Fruit is thoroughly ripe in *December* and *January*.

The Beans, eaten crude, provoke to Stool with Gripings. The Leaves, made into a Cataplasm, cure an Erysipelas. The Bark supplies the Place of Hemp, in making of Ropes. *Raii Hist. Plant.*

VALLUM. The Eye-brow, and a Species of Bandage, are called by this Name.

VALRAT. A Leaf. *Ralandus*.

VALVULA. A Valve. There are many Sorts of Valves in various Parts of the Body. Thus in the Intestines there are the *Valvulae Conniventes*, and the Valve of the *Colon*; see *COELIA*. In the Heart are found Valves at its Orifices. See *COR*; and Anatomists have discovered Valves in the Veins, and Lymphatic Vessels.

VANELLUS. The Lapwing. See *PLUVIALIS*.

VANILIA, BANILIA. Offic. *Vaynillus, Vayniglia*. Mont. Exot. 9. *Vanillia Piperis Arbori Jamaicensis immascens*. Pluk. Almag. 301. *Volubilis siliquosa Mexicana foliis Plantaginis*. Rati Hist. 2. 1330. *Lathyrus Mexicanus siliquis longissimis, meschatis, nigris*. Ammon. Char. Plant. 436. *Aracus aromaticus, Tlilxochitl, seu Flos niger*. Hern. 38. *Lobus oblongus aromaticus*. Cat. Jam. 70. *Lobus aromaticus subfuscus Terebinthi corniculis-similis*. C. B. P. 404. *Lobus oblongus aromaticus, odore fere Belzaniini*. J. B. I. 428. **THE VANELLOES, or BANILAS.**

These are dark-brown flat Pods, or Sheaths, five or six Inches long, and scarce an Inch broad, wrinkled on the Outside, full of a vast Number of small black Grains, almost as fine as Sand, of a pleasant Smell, like Balsam of *Peru*. The Plant which bears these Vanelloes, climbs the Trees like Bindweed; the Leaves are smooth and broad, in Shape like Plantain-leaves, set in an alternate Order; the Flowers are of a dark Colour, which are succeeded by the Vanelloes. They grow in *New-Spain*, and other Parts of the *West-Indies*, from whence they are brought to us.

They are only used with us, as an Ingredient in Chocolate, to which they give a pleasant Flavour. They are commended by *Hernandez*, in his *Descriptio Rerum Medicarum Novae Hispaniae*, Lib. 2. Cap. 15. to be grateful to the Stomach and Brain, to expel Wind, to provoke Urine, and the Menstrues, to promote the Birth, and bring away the After-birth, to resist Poison, and cure the Bites of venomous Creatures. *Miller's Bot. Off.*

VAPORES. Vapours. See *HYSTERICA*.

VAPORARIUM. A Vapour Bath.

VAPORATIO. A Fomentation by the Vapours or Steam of warm Liquors.

VAPPA is Wine deprived of all its spirituous Parts, and what is usually called *dead*. This corrupt State of Wine is frequently, and very properly, by modern Physicians, compared with a particular Corruption of the Blood, when it is in a low, spiritless, and, as we say, a *vapid* State, as the Case is in healthy Persons, when their Spirits are exhausted by immoderate Labour, or in sick Persons labouring under a Quartan, and in cachectic and scorbutic Indispositions. *Castellus*.

VARENI, VARI. Names for a scorbutic Affection, otherwise called *Arthritis vaga*, the wandering Gout, consisting in a wandering, or shifting Pain, affecting the nervous Parts about the Joints, and proceeding from an acid and malignant Acrimony of the nervous Fluid, or serous Lymph, together with an extraordinary Mobility and Vaporosity of the same, on account of the Thinness of its Contexture.

Vareni, with some, signifies a quite different Affection from *Vari*, being the same with the *AMBULO*; which see.

VARICIFORMES PARASTATÆ, in Anatomy, are continuous to the *Epididymides*, and are Vessels so called, because they appear full of Flexures and Contortions, like the *Varices*, for the better Elaboration, as it is supposed, of the Semen.

VARICOSUS, *zigzozedus*, is an Epithet apply'd to several Plexuses of the Vessels about the Pudenda, particularly of the Male. *Castellus*.

VARICULA, a Diminutive of *Varix*, is a Name given by *M. A. Severinus* to an Intumescence of the Veins in the *Tunica Adnata* of the Eye, proceeding from a Distention of them by black Blood. *Castellus*.

VARIEGATIO, Variegation, in Botany, is a Diversifying with several Colours, as is observed in the Leaves and Flowers of Plants.

VARIOLÆ. The Small-pox.

Perhaps from the Time of *Hippocrates* to this very Period, there never happened any thing so remarkable in Physic, as the Appearance of this new and surprising Distemper; the Original of which may be traced up from the *Arabian* Authors much farther backward, than is commonly imagined; even up to the famous Epoch of *Mahomet* himself, in the Beginning of the Seventh Century. The Measles, which no doubt was of the same Age, (called not improperly, by *Avicenna*, *Variola Chole-rica*) they look upon as a Disease so near akin to the Small-pox, that they generally treat of them both together, as if the greater included the less. This was a Distemper, without Dispute, unknown to the *Greeks*, whatever some of the Moderns have said to the contrary; and first observed and described

by the *Mahometans*. And since it is one so extraordinary in its Symptoms, so constant and regular in its Stages, and so universally incident to all Mankind, it were to be wished, that Mr. *Le Clerc* had thought fit to have given us a short Extract, at least, of what these original Writers have said of it; especially, when, in its very Infancy, we may find the Image of this Disease very well painted in their Works, and the Practice clearly enough delivered. That Tract of *Rhazes* alone, intitled, *A Discourse of the Pestilence*, would very fully explain to us the Idea they had of this Distemper, and shew us, that they were not at all acquainted with the Difference of the distinct and the confluent Sort. By the earliest Account we have of the Small-pox, we find, that it first appeared in *Egypt*, in the time of *Omar*, Successor to *Mahomet*; though no doubt, since the *Greeks* knew nothing of it, the *Arabians* brought it from their own Country, and might derive it originally from some of the more distant Regions of the East: For the oldest of their Writers do not speak of it as a Distemper, which had taken its Rise very lately. And as this People in less than thirty Years did propagate its Religion, and Empire, so did it no less this modern Evil, not only through *Egypt*, but *Syria*, *Palestine*, and *Persia*; and a little while after, along the *Asiatic Coast*, through *Lycia* and *Cilicia*: And, in the very Beginning of the next Century, farther into the maritime Parts of *Africa*, and cross the *Mediterranean*, even into *Spain* itself.

Here, indeed, is a new Field in Physic. I will only give you a short Plan of this Disease, as it lies in their own Authors, and especially in one of the oldest and best of them, *Rhazes*; the first, indeed, as he says himself, who wrote any distinct or exact Treatise upon this Subject. To begin then in his Method; as the Evil was unheard of before, so he assigned a Cause as entirely new in Physic, a sort of an innate Contagion. This is a Ferment in the Blood, like that in Must, which purifies itself sooner or later, by throwing off the peccant Matter at the Glands of the Skin; an Hypothesis since applied, though upon very slight Grounds, to Fevers in general, by many Moderns. This Ferment he supposes to be derived from the Mother in the Womb, which is the Reason why the Disease is so universal, and so equally incident to all. It is most epidemical in Spring, and Autumn, especially after a wet Summer, or a warm Winter: Children, and Adults, are most subject to it; old Age but seldom, unless in a very pestilential Season. Corpulent flabby Bodies which abound in Humours, and which have been used to much Wine or Milk, receive the Infection soonest; they who are of this dry Habit of Body, and of a bilious Constitution, are more subject to have a more violent Sort. The *Greek* Translator, who made his Version from the *Syriac*, (the original Language probably in which *Rhazes* wrote) calls this Sort by a Term never heard of, *Eûploia*, which, he tells us, answers to the *Syriac*, *Chaspe* *. This Word, indeed, in that Tongue, as well as in the *Hebrew*, and *Arabic*, signifies *Ἐξάνθημα*, an inflammatory Pustule; and, therefore, *N. Machelli*, who has given us a very elegant Translation of the *Greek*, expresses it properly enough by *Incendium*; but the *Greek*, he says, calls it *Eûploia*. If we go a little farther, and suppose it should be read *Ἐξπλοia*, the Sense of the Author would be entirely preserved, and very little Variation made in the Reading.

The forerunning Symptoms of this Distemper are, an acute Fever, violent Pain in the Head and Back, (the last particularly a sure Sign) Dryness of the Skin, Heaviness, Difficulty of Breathing, frightful Sleeps, Redness of the Eyes, Pricking all over the Body, Yawning, Stretching, Pulsation, and Weight in the Head, Sickness, and Inclination to vomit; Great Pain in the Back, violent Sickness, Restlessness, and Burning all over the Body, and an high flaming Colour, especially about the Throat, Signs of an ill Sort. He calls the Pustules, either *Sublimia*, which must be distinct, pointed, or rising high; or *Lata*, flat and broad, as in the confluent Kind. Many of these Symptoms are common to the Measles; and, if the Heat is more intense, and the Straintness and Oppression extremely great, especially if there be a Cough, and Itching of the Ears and Nose, 'tis rather a Sign of this last Distemper, which is sometimes more dangerous than the Small-pox.

He is very particular in relating the Differences and Prognostics of the Small-pox. If the Eruption is easy, and the Maturation comes on well, and the Fever vanishes, no Danger; otherwise, if the Fever continues after the Eruption. It is a kindly Sort when the Breathing is good, the Pulse regular, the Sense perfect, and the Person can take Nourishment, and Sleep. When the Pustules, containing a white Matter, are large, distinct, and few, and ripen without any great Fever; and even though there be many, and in some Places confluent, yet, if they are for the most part large, and advance kindly, and if, with this, the Strength keeps up, and there be no

* *Caphe*, for *Capheph*, in *Arabic*, signifies an Eruption of Pustules.

Castelli Lexicon, sub Pace 737B.

Oppression or Burning, this is to be reckoned one of the worst Sort. But when they are thick and coherent, so that a great many of them make one by running together, when the Circle of these Clusters is very large, and the Appearance of them like Fat or Suet, when they run like an Herpes, or like what they call a *Formica*, corroding, ulcerating, and contracting the Skin; when they rise like Warts, and have no Matter in them, it is a very malignant Sort; especially, if after the Eruption, they don't come on well, and the Patient be not relieved. If the Fever increases after the Eruption, an ill Sign: So a new Crop of Pustules, as it sometimes happens, shews a great Plenitude of Humours. The Sort is more kindly, when it is not attended with violent Redness; but if with great Paleness, dangerous. If the Eruption is made on the first Day of the Distemper, it shews the Humours to be too brisk and impetuous; if upon the third Day, it denotes they are more tempered and languid; if in the critical Days, by which I suppose he means the fourth and seventh, the Distemper is still milder; if there be great Pain in any Part, and that Part grows greenish or black, and the Strength fails, it is fatal; if the Pustules are extremely little, hard, of a violet, green, high-red, or a black Colour, and don't come to Maturation, it portends Ill: If they continue so throughout the whole Course of the Disease; if the Fever be not removed, and is attended with a Syncope, Sickness, or Trembling of the Heart, nothing to be expected but present Death. Thus far of the Symptoms, and the Judgment to be formed of the Event.

The Cure follows: And the better to judge of this, we must always carry it in our Memory, that *Rhazes* lived and wrote in the warm Climate of *Persia*. He bleeds, or cups immediately, even in Children; and, if the Symptoms be violent, even to Faintness; otherwise, a less Quantity is sufficient. If a Vein in the Arm be not easily found, the *Poplitea* may be open'd: The Room to be kept cool; all the Regimen to be, also, cool; Ptisane the Nourishment, and the Medicines principally Troches of Spodium, (a good Absorbent) and the Juice of Pomegranate, and all other acid and astringent Plants. And the Rule, in using this refrigerating Method, must be with regard to the intense Burning of the Disease, and managed with that Moderation, as not to extinguish the natural Heat. At first he gives Ice-water, till the Patient vomits and sweats; then vaporates with warm Water; and this he reckons the most effectual way to drive out the Pustules: So for Prevention and Preparation, he advises Bleeding, Swimming, using Ice-water, and all the coldest acid Diet, as the Juice of unripe Grapes, Salading, &c. He gives a Receipt made of Acids and Spodium, much in Vogue among the *Indians*, who, it seems, affirmed, that whoever used it would not have ten Pustules in the Whole. The Body, if bound, to be kept open, by some Infusions taken twice a Day; this will make the Pustules fewer; and to be done, if the Distemper be violent. After the Eruption, strong Purging to be avoided, especially towards the Crisis, for fear of a Dyentery; and too great a Flux is to be restrained. If Bleeding has been omitted in the Beginning, then gentle Sweating, and promoting the Eruption. If the Patient be hot, and the Pustules do not advance, the Decoction with Figs, Raisins, Lentils, &c. to be constantly used. If the Disease be slight, and the Oppression little, and the Small-pox be out, Coolers not to be given to any great Degree, for fear of retarding the Eruption; but the Decoction to be continued, with some Saffron, &c. When they are all come out, Vaporations with Water. For Dilution, Water of Barley, Pomegranates, Melons, &c. and other temperate Liquors; and any thing, which more resolves the Humours, is less necessary, especially in the Measles. If the Oppression be very great, and near to a Syncope, dipping in cold Water, and Friction, to drive out the Measles; and to take care there be not too great a Solution of the Fluids, or too profuse a Sweat. After the fifth Day, (reckoning from the first Seizure) if the Pustules don't advance, use those Medicines which promote the Eruption. But this is to be done with Circumspection, and with regard to the Symptoms; especially the Fever, which will be best judged of by the Breathing, and the Pulse. But, if the Pustules are hard and rough, like the Warts, and the Patient languid, it is to no Purpose to attempt any Maturation; for that cannot be done; such a State of the Disease being plainly pernicious. Opiates, above all things, are proper in Want of Sleep, or in case of a Looseness. The Body is open generally towards the End of this Disease, especially in the worst Kind. No Purging before the Crisis; but, if need be, and the Body be dry, purge at the Beginning, and before the Declension; the first to abate the Heat and Beating of the Head; the latter to ease Nature of her Burden, and to carry off the morbid Matter. This to be judged of either before or after Bleeding, by the Body's being weakly, yet bloated, and full of Humours; a lurking Feverishness, and undulating Pulse. In this Case, Purging answers best; but if the Mouth be bitter, if

Vomiting, and great Inflammation, if the Throat is so stuffed, as to endanger Strangling, it is proper to bleed. The Directions are very full, which relate to Gargles, Collyriums, &c. and the preventing any Ulcers, or Pitting, from the Small-pox.

This is the Description *Rhazes* gives of the Small-pox; a very true one, though it does not minutely descend into Particulars; and, for above 500 Years, it was thought so complete, that succeeding Writers scarce added any thing to it: Till at last, indeed, they came to distinguish the several Stages of this Distemper, and observe the very Days in each of them with great Exactness. However, even since that Time to our own, though the modern Authors have enter'd into a more precise Detail of the Appearances, and the Symptoms, which attend the Disease; yet, as far as regards the practical Part, we see here the Foundation of every thing they have advanced. To instance in a few Particulars:

The *Arabians* have rightly distinguished between the two Sorts of Small-pox, and between each of them, and the Measles; and have described not only the regular Sorts, but have taken Notice of the anomalous too. They have, also, observed, where one Crop has succeeded another.

At the Beginning, and sometimes even after the Eruption, they prescribe Evacuations, both by Bleeding and Purging. And, indeed, they thought, that the good or ill Event of the Distemper, depended so much upon the Treatment they used at the first Seizure, or in the first Days of it at least, that they are extraordinarily careful and exact in the Regimen, which they order to be extremely cool, as was most proper and suitable in so sultry a Climate as theirs was. Their Practice surely was founded upon good Grounds; though others have followed it in an extravagant manner, and even exceeded what they did in Nations, where neither the Nature of the Disease, nor the Constitution of the Air, required it. Even our Countryman *Sydenham* carried this Notion to an Extremity in the first Edition of his Works; though afterwards he was so wise as to retract a great deal of what he had said; and came into the moderate Method, as, without Dispute, more agreeable to Reason, and to the Temper of our own Island.

We may observe, that their whole Management, both as to Diet and Medicine, in this Stage, ran upon Dilution; which they thought the most effectual Means to produce a kindly Eruption, and to keep the Pustules out. And as to this last Point, however cooling their Regimen in general was, they made no Scruple to use warm and generous Cordials, when Nature seemed to want Assistance, or when they apprehended any Danger of their striking in. To the same End, when there was any great Disorder and Ferment in the Humours, which ought to be allay'd, or any terrible Symptom, which hindered the Maturation of the Pock, they had recourse to that sovereign and divine Remedy, Opium; a Remedy often used by them in this Case; though *Sydenham* seems to have been the first, who ever gave the least Hint of such a Practice among ourselves.

Here, too, you will find, that in the Declension of the Disease, when Nature has discharged all she can, and is ready to sink under the Load of the morbid Matter, they took the proper ways to relieve her by Art; and for that Purpose direct us, how to apply both Bleeding and Purging, in such a Case of Extremity. *Freind's Hist. of Physic.*

HISTORY OF THE DISEASE.

When the Small-pox proves epidemic, and is mild and regular, it usually begins about the vernal Equinox; but, when it is not only epidemic, but irregular and dangerous, it appears about *January*. The Small-pox is of two Kinds, the *distinct*, and the *confluent*; which though they differ not essentially, are easily distinguished by some considerable Symptoms peculiar to each Kind.

The *distinct* Kind begins, (1.) with a Chills and Shivering, immediately followed by (2.) extreme Heat, (3.) violent Pain in the Head and Back, (4.) Vomiting, (5.) and in Adults, a great Tendency to Sweat; (6.) Pain in the Parts immediately below the *Scrobiculum Cordis*, if they be pressed with the Hand; (7.) Sleepiness and *Stupor*, especially in Children, and sometimes Convulsions, which happening after Dention, I always suspect the Small-pox to be approaching; and the Eruptions, appearing in a few Hours after, generally confirm the Prognostic; and I have frequently observed, that the Small-pox immediately succeeding such Fits throws out large Eruptions, is of a mild and favourable Kind, and seldom proves confluent. It may be proper to observe here, that in such whose Blood is of a looser Texture, and easily admits of a Change, it sometimes happens, that the Course of Separation is performed by degrees, without any considerable Sickness previous to the Expulsion of the Matter, and Eruption of the Pustules.

The *distinct* Small-pox come out mostly on the fourth Day inclusive, from the Beginning of the Illness, and sometimes a little

little later, but very rarely sooner; at which time the Symptoms are usually much abated, or even entirely vanish, so that the Patient seems tolerably well; only Adults can scarcely be prevented from sweating, however thinly they are covered; and this Disposition continues till the Eruptions begin to ripen, and then disappear spontaneously. The Eruption proceeds nearly in the following manner: First, a kind of pale-red Pustules, as large as the Head of a small Pin, appear dispersed, first on the Head, Neck, and Breasts, and afterwards on the whole Body. During this Stage of the Disease, the Throat is affected with a Soreness, that increases proportionably as the Pustules rise, which, growing every Day larger, and sharper at the Top, diffuse a Redness and Inflammation over the Skin and Flesh of the Parts adjacent.

This happens about the eighth Day from the Beginning of the Disease, which time I always particularly observe; for then the Spaces between the Pustules, that appeared before of a pale White, begin to grow red, and swell in proportion to the Number of Pustules; and are affected with a Pain, and, as it were, a Laceration of the Parts, which continually increasing, promotes the Inflammation and Swelling; so that, in the Progress of the Disease, the Eye-lids are so distended, as sometimes to render the Patient blind; and they shine, and nearly resemble an inflated Bladder. Sometimes the Blindness is induced sooner, a great Number of Pustules fixing on the Eyes from the Beginning of the Eruption; next, the Face, the Hands, and Fingers swell in proportion to the Quantity of the Pustules. The Pustules on the Face, that till this Day were smooth and red, now grow rough and whitish, which is the first Sign of a beginning Suppuration; and they, also, gradually discharge a yellow Matter, in Colour resembling an Honey-comb. The Inflammation of the Hands and Face, being arrived at its Height, produces in the Spaces between the Eruptions, a florid Colour, like that of Damask-roses; and the more mild and genuine the Disorder is, the more the Eruptions, and their intermediate Spaces approach this Colour. As the Pustules in the Face appear rougher and yellower every Day as they ripen, those of the Hands, and other Parts, appear smoother and whiter.

On the eleventh Day, the Swelling and Inflammation manifestly abate, and the Eruptions both of the Face, and the rest of the Body, being come to their Maturity, and just Bigness, equal to that of a large Pea, dry and scale off; and, in this kind of Small-pox, they commonly disappear on the fourteenth and fifteenth Day. But the Eruptions of the Hands generally prove more obstinate than those of the other Parts; and, being yet fresh and white, remain a Day or two after the rest. Those of the Face and Body scale off, but these of the Hands burst, and so vanish. The Pustules of the Skin are succeeded by a Scurf, or branny Scales, and these sometimes by Pits, or Pock-marks; for when the Pustules first fall off, no Unevenness is perceived in the Skin; but these Scales often coming on, and falling off alternately, at length those Pits are produced, which frequently appear long after the Recovery of the Patient; tho' the distinct Small-pox very rarely leaves any Marks behind it. The Patient is either quite costive, or has few Stools, during the whole Course of the Distemper.

That Species of the Small-pox, which we call the *confluent*, is attended with the same Symptoms in common as the *distinct*, only they prove more violent; and by that Sign the *confluent* Kind may be distinguished from the *distinct*, even before the Eruption. Nevertheless, the Patient is not so ready to sweat in the *confluent* Kind as in the other; and a Looseness sometimes precedes, and continues a Day or two after the Eruption; a Symptom which I have not hitherto met with in the *distinct* Small-pox.

The *confluent* Small-pox generally comes out on the third Day, sometimes earlier, but scarcely ever later; whereas the *distinct* appears on the fourth Day, or later; but very rarely before; and the sooner the Pustules come out before the fourth Day, the more they run together. However, though this be true in general, and the *confluent* Kind scarcely ever appears so late as the fourth Day; yet, sometimes, the Eruption is deferred, by some violent Symptom, to the fourth or fifth Day. Thus, 1. Sometimes, by a sharp Pain in the Loins, resembling a Fit of the Stone. 2. Sometimes in the Side, like a Pleurisy. 3. Sometimes in the Limbs, as in a Rheumatism. Or, lastly, 4. In the Stomach, attended with great Sickness and Vomiting. In these Cases, which, however, are not common, I have observed the Small Pox to come out later than ordinary, as being retarded by the considerable Violence of the Symptoms, which, being more severe than usual, when they arise in the very Beginning, manifestly indicate the subsequent Small Pox to be of the *confluent* Kind, and not void of Danger.

Though the first Symptoms of the *distinct* Kind vanish immediately after the Eruption, yet, in the *confluent* Kind, they afflict the Patient several Days after the Pustules appear.

Sometimes this sort comes out like an *Erysipelas*, and sometimes like the Measles, from which they are difficult to be distinguished, without carefully attending to the different Times of the Eruption in these Diseases, and other Circumstances, in which they differ extremely. As the Distemper increases, the Pustules, especially of the Face, do not rise plump, as in the *distinct* Kind, but run together; and appear, at first, like a red Bladder, covering the whole Face, and making it swell sooner than in the *distinct* sort, till, at last, they appear like a thin white Pellicle, closely adhering to the Face, and rising little higher than the Surface of the Skin.

After the eighth Day, this Pellicle grows every Day gradually rougher, as appears by the Touch, and inclines to a brown, and not to a yellow Colour, as in the *distinct* Kind: The Roughness and Colour of the Skin daily increase, till, at length, the Pellicle falls off in large Scales; but, when the Disease has been very severe, it usually sticks to some Part of the Face, till after the twentieth Day. The more violent the Distemper proves, the nearer the Eruptions, as they ripen, incline to a dark-brown Colour; and the longer they are in falling off, if left to themselves; but the less they run together, the yellower they are, and the sooner they scale off. When this Pellicle, or Scab, which covers the Face, first falls off, it leaves no Roughness behind; but it is immediately succeeded with branny Scales, of a very corrosive Nature, which not only make larger Pits than the *distinct* Kind generally do, but, also, much disfigure the Face with unseemly Scars: And, in the *confluent* Kind, if the Disease has been very violent, the Skin of the Shoulders and Back sometimes scales off, leaving these Parts bare.

It must be observ'd, that this Disease is not to be esteem'd dangerous from the Number of Eruptions scatter'd over the Body, but only from that in the Face; for if they be very thick in the Face, though there are but few, and those of the *distinct* Kind, every-where else, the Patient is equally endangered, as if all the Limbs were extremely full. But, on the contrary, though every Part besides be full, if there be but few in the Face, the Danger is less. In this manner, therefore, must we judge of the Kind.

In the *confluent* Small Pox I have always observ'd, the Eruptions in the Hands and Feet were larger than those of the other Parts, and were gradually less and less, the nearer they approached the Body.

The *confluent* Small Pox is attended with two other considerable Symptoms: 1. A Salivation, or Spitting, in Adults. And, 2. A Looseness, in Children. The former is so constant an Attendant on this Disease, in Adults, that I never met with but one Patient who was free from it; but the Looseness does not so certainly affect Children. The Evacuation made by these Symptoms is as necessary as either the Eruptions, or the Swelling of the Face and Hands.

The Salivation sometimes begins as soon as the Eruptions appear, and sometimes not till a Day or two after: The Matter is for some time thin, easily and plentifully expectorated; and this Salivation resembles that raised by Mercury, only the *Saliva* is not so fetid: But, towards the eleventh Day, the *Saliva* now becomes more viscous; is raised with great Difficulty; the Patient is thirsty, coughs often whilst he drinks; and the Liquor flies out at the Nostrils; from this Day the Salivation generally stops; though sometimes but rarely, after it has ceased for a Day or two, it returns: At the same time, the Swelling of the Face begins to abate, but then the Hands commonly swell, or, at least, ought to do so.

The Looseness, in Children, appears not so soon as the Salivation in Adults; but, whenever it begins, unless it be stoppt by Art, it attends the Distemper throughout.

In both Kinds of the Small Pox the Fever rages most from the Beginning to the time of the Eruption, after which, it abates, and continues much more moderate, till the Suppuration begins, which being finished, it ceases entirely.

I have always observed, when the Disease proved very violent, that the Patient had a Kind of Paroxysm towards Evening, at which time the more dangerous Symptoms arose, and raged most severely.

IRREGULAR SYMPTOMS, ARISING FROM UNSKILFUL TREATMENT.

The irregular Symptoms which happen on the eighth Day, in the *distinct* Kind, and on the eleventh, in the *confluent*, always calculating from the first Beginning of the Distemper, most eminently concern the Life or Death of the Patient, it being apparent, that most of those who perish by either Species, die on one of the above-mentioned Days.

In the *distinct* Kind, as the Patient, if an Adult, usually sweats freely, he conceives Hope of Recovery, thinking the Malignity of the Disease will thus be expelled through the Pores of the Skin; and therefore diligently promotes the Sweat, by a
hot

hot Regimen. But those Particles being, at length, expelled by Sweat, which should have served to raise the Pustules, and swell the Face, on the eighth Day; the Face, instead of being swelled, appears flaccid; and the intermediate Spaces, instead of being inflamed, appear white, or pale, whilst the Pustules look red, and continue elevated, even after the Death of the Patient. The Sweat, which had flowed freely to this Day, now ceases suddenly and spontaneously, and can't be raised again by the warmest Cordials. In the mean time, the Patient is seized with a Delirium, great Restlessness and Sickness, a Frequency of making Urine in small Quantities, and expires in a few Hours. But it must here be observed, that, if the Eruptions be few, the Disease happens in the Winter, and in a Person in Years, or if Bleeding has been previously used, this hot Regimen does not then so certainly hinder the Swelling of the Face, and, consequently, hasten Death, as where the Eruptions are many, the Patients in the Prime of Life, and no Blood has been taken away.

But, in the *confluent* Kind, the Danger is greatest, and the greatest Number die on the eleventh Day: For as the Salivation, which had hitherto preserved the Patient, commonly ceases spontaneously about this time, unless the Swelling of the Face continues longer, and that of the Hands, now manifestly beginning, supplies its Place, Death must certainly ensue. For it must be considered, that, in this Kind of Small Pox, where the Eruptions are so small, not only the Salivation, but, also, the Swelling of the Face and Hands, is absolutely required, in order to a proper Discharge of the morbid Matter; and if either be wanting, or disappear too soon, the Patient must perish immediately. But it happens too frequently, in this hot Distemper, that the Texture of the Blood is so much weaken'd, and broke, and so highly inflamed, by an over-hot Regimen, as to be no longer able to perform the Expulsion of the inflammatory Particles in a slow and gradual manner (not to mention now the Mischiefs proceeding from forcing Sweat improperly); whence either the Face and Hands do not swell at all, or the Swelling vanishes with the Salivation. For though the Swelling of the Face ought to abate a little on this Day, yet it should not go off entirely, till a Day or two after; the Swelling of the Hands, in the mean while, continuing, and increasing, which is one of the most certain Signs of Recovery, as the contrary is of imminent Danger.

The *Saliva*, on this Day, becomes so viscid, and tough, as to endanger Suffocation; and, when the Patient drinks, the Liquor falls down the Windpipe; whence it is thrown up through the Nostrils with a violent Cough: He is seized with a Hoarseness, a great Stupor, and Drowsiness; and, being wholly oppressed by the Violence of the Disease, generally sinks under the Difficulties on this Day.

There are, also, other Symptoms, which happen in any Stage of the Distemper, and which are equally common in the *distinct* and *confluent* Kinds of the Small Pox. Thus a *Delirium* sometimes seizes the Patient, occasioned by the excessive Ebullition of the Blood; and the Heat is so intolerable, that he endeavours furiously to get loose from those who confine him in Bed. Sometimes the same Cause produces a Kind of *Coma*, so that the Patient almost continually dozes, unless he be constantly roused.

Sometimes, also, in this Disease, as in the Plague, the Texture of the Blood, being dissolv'd by the Violence of the Inflammation, purple Spots appear in the Spaces between the Eruptions, which are generally Forerunners of Death: This Circumstance happens oftener, when the Constitution of the Air chiefly favours this epidemic Disease. Sometimes black Spots, scarce so large as small Pins Heads, and depressed in the Middle, appear on the Tops of the Eruptions, in different Places; which, as they proceed from too much Heat, at length, by the Use of a cooler Regimen, acquire a brown, and afterwards a yellow Colour, which naturally belongs to the genuine and regular Small Pox; and the nearer the Eruptions, when come to Suppuration, resemble this Colour, all the Symptoms become proportionably milder, and *vice versa*.

The Blood of young, and of vigorous Persons, is sometimes so much inflamed, in this Disease, especially if too liberal an Use of Wine, or any spirituous Liquor, has preceded, as to break through the Arteries into the Bladder, and so occasion bloody Urine; which is one of the most dangerous Symptoms of this Distemper.

Sometimes, but not so frequently, a Flux of Blood from the Lungs, proceeds from the same Cause: But either of these Hæmorrhages usually happen in the Beginning, before the Eruptions appear, which would prove particularly *confluent*.

Sometimes, also, especially in young Persons, there happens a total Suppression of Urine, either at the Height or Declension of the *distinct* Kind.

Other Symptoms arise, when the Patient has been injured, 1. By too intense Cold. 2. Improper Bleeding in a very large

Quantity. Or, 3. Over-purging. Whence the Eruptions sometimes suddenly sink, and a Looseness comes on, which, in Adults, proves highly dangerous, the variolous Matter being thereby struck in, so that Nature is utterly unable to expel it: By these means, also, the Swelling of the Face and Hands is check'd.

But the Symptoms, which proceed from taking Cold, seldom appear, if compared with those that arise from the hot Regimen: For as this Disease may deservedly be reckon'd among those of the most inflammatory Kind, a Mistake, on this hand, happens much more frequently than on the other.

The Essence of this Disease seems to be an Inflammation of the Blood and Juices, (yet of a different Kind from other Inflammations) in removing which, Nature, during the first two or three Days, endeavours to correct and digest the inflamed Particles, which, being afterwards thrown out on the Surface of the Body, she further ripens, and, at length, totally expels them, in the Form of small Abscesses. Hence, in order to lay a Foundation for the Method of Cure, it must be remarked, that this Disease has two Stages; the first is that of the Separation, the second that of the Expulsion.

1. The Separation is mostly accompanied with a febrile Ebullition, and is ordinarily finished in three or four Days, during which time, Nature is employed in collecting the inflamed Particles that disturb the Blood, and, expelling them to the fleshy Parts; which being over, the former Calm returns. 2. The Expulsion next succeeds, which is performed during the Remainder of the Disease, by means of those small Abscesses in the Flesh, which, like other Abscesses, undergo the States of Crudity, Suppuration, and Exsiccation; and if these States are finished in a suitable manner, the Danger is past; but, if otherwise, all is disordered. The Expulsion requires a much longer time than the Separation, this being performed in a thin fluid Body, but that in a dense Substance, at a greater Distance from the Fountain of Life.

Hence the Indications are, 1. That such an equable Ebullition of the Blood be maintain'd, that it may neither finish the Separation too hastily, by rising too high; nor retard, or render it incomplete, by sinking too low. 2. That the Abscesses or Eruptions be carefully kept up, so that, running through their proper States, they may, at length, entirely discharge the Matter they contain, and vanish.

With regard to the first Indication, great Caution is requir'd, especially during the Separation, that the Ebullition may not rise too high, either from heaping too many Cloaths on the Patient, over-heating the Air, by keeping too large a Fire in the Room, or using heating Medicines and Cardiacs, especially if the Patient be in the Prime of Life, or if his Blood be too much enriched by spirituous Liquors, or if it be the Spring Season, or, at least, only the Beginning of Summer; otherwise, the Separation, which should be carried on slowly, and gradually, for the better promoting an universal Despumation, will hence be hurried on too fast, and thus either there will not be a sufficient Number of Particles collected, or, perhaps, some Particles may be brought to Secretion, which Nature would not, otherwise, have secreted, were she not forced beyond her just Limits, and made to injure herself: For when such Particles are separated, as are unfit for Separation, the Motion of others, that have a Tendency to it, is hindered, by their mixing with these; and thus they are rendered less fit for Expulsion.

It seems agreeable to Reason, that the more time Nature employs in perfecting the Separation, provided the Ebullition does not entirely subside, so much the more certainly and universally it is completed; upon which the Success of the subsequent Cure must needs principally depend, as a different Event must manifestly ensue from the contrary Method. For as over-early Fruit does not come to Perfection, so no Good arises from the hot Regimen, but it frequently produces an immediate Delirium, or profuse Sweats arise, whereby such Particles are separated as are unfit for Secretion, and not agreeable to the Nature of *Pus*; or else the Eruptions, being driven out too much by Cardiacs, and a hot Regimen, become of a terrible and fatal *confluent* Kind.

From the other Method I have never observed any Mischief; for Nature, left to herself, finishes her Work in a proper time and manner, so as to need no Assistance, at least in the Young and Robust.

But the Danger of raising the Ebullition, by a hot Regimen, is not greater than the Danger of depressing it by Bleeding, Emetics, Cathartics, Clysters, and the like Evacuations: For, by them, not only the Ebullition is too much diminished, by means of which the Parts, intended for Despumation, should have been carefully separated; but the Matter, also, is wasted, which should continually serve as Fuel to the Secretion once begun: Whence it frequently happens, that the Eruptions, which came out kindly in the Beginning, and, perhaps, so much the better from the previous Use of the above-mentioned Evacuations,

cuations, sink soon after, as if they were suddenly struck in ; occasioned, principally, by a want of a fresh Supply of Matter to succeed the former, and finish the Separation. We shall, afterwards, shew, that Bleeding and Vomiting are necessary, in the *confluent* Kind.

To proceed to the second Indication : As it has been shewn, that it is highly dangerous to keep the Patient over-warm, during the time of Separation, whilst the Fever is present, and the Eruptions scarcely appear ; so an Error of this Kind is equally dangerous, at any time of the Disease, and especially towards the Beginning of the Expulsion, whilst the Eruptions are yet in a State of Crudity. For though the tumultuary Motion of the Blood be considerably abated, upon the Separation and Translation of the Matter to the fleshy Parts ; yet, being still weak, and having scarcely acquired a new State and Texture, it is easily affected by the immoderate Heat arising from all Parts ; and, upon the least Occasion given, becomes inflamed with a Tendency to a new Ebullition, which does not promote Separation, that Business being already finished, but produces dangerous Symptoms, disturbs the Eruption begun, and proves detrimental, by putting the Contents of the Pustules into violent Motion. By these means, either the Particles, already secreted, and deposited in the Habit, being hurried away by the violent and rapid Motion of the Blood, are absorbed by it ; or the fleshy Parts, being heated beyond the Degree requisite for Suppuration, do not finish it so completely : Or, lastly, perhaps, upon the coming of this new Disorder, the Texture of the Blood, and the Tone of the fleshy Parts, suffer so great an Alteration, that they cannot overcome the Matter expelled, and digest it in the usual Way of Abscesses.

But we must not be so intent upon preventing an immoderate Ebullition of the Blood, as to check the Eruption of the Pustules, by exposing the Patient to the Injuries of the Cold : The fittest Degree of Heat, to promote their Expulsion, is the natural one, as this is suitable to the Temper of the fleshy Parts ; and to exceed, or fall short of it, is dangerous, on either hand.

From what has been deliver'd, it seems manifest, that this Disease is a very dangerous one, and the Method of Cure difficult to be ascertained.

If the Eruptions recede, or the Swelling of the Face and Hands fall, either from unseasonable Bleeding, or taking Cold, recourse must be had to Cardiacs ; but we must be careful of giving them too freely, lest a new Ebullition should be suddenly raised ; the Blood being, yet, weak, and easily affected by a hot Stimulus.

As soon as the Signs of the Disease appear, I confine the Patient within Doors, forbid the Use of Wine and Fleishmeats, and allow Small Beer, moderately warm, with a Toast, for common Drink ; and sometimes suffer it to be drank at Pleasure : I, also, direct Water-gruel, Barley-broth, roasted Apples, and other Kinds of Aliment, that are neither remarkably heating, nor cooling, nor hard to digest ; nor do I much disapprove of Milk, with roast Apples bruised in it, provided it be given warm, and sparingly. I immediately caution against a hotter Regimen, and the Use of all Cardiacs.

Bloody Urine, purple Spots, and other mortal Symptoms above specified, happen only from a too early Confinement in Bed, especially in young Persons : I do not, therefore, direct the Patient to be put to Bed till the fourth Day ; at which time, if the Eruption does not come kindly forward, it is proper to give some gentle Cardiac, at least for once, to drive out the Pustules. Among the Medicines that produce this Effect, those called Purgatives, or Opiates, such as Liquid Laudanum, Diacordium, and the like, given in a small Quantity, mixed with some proper Cordial Water, are the most efficacious : For as they abate the Ebullition of the Blood, Nature expels the morbid Matter with greater Ease and Convenience. But I would not advise the giving a Cardiac before this Juncture, even though there be a Looseness, that should require such a Remedy ; for the Looseness goes off spontaneously, as does a Vomiting, when Nature expels the variolous Matter by the Skin.

But if I am called to a strong young Man, who, besides, has been addicted to a free Use of Wine, or any other spirituous Liquor, I think, for him to keep from Bed, and refrain from Cordials, not sufficient to check the Ebullition of the Blood, unless Bleeding in the Arm be, also, used : For the Motion of the Blood, being rendered so violent by its Inflammation, it frequently bursts through the Vessels into the Bladder, or occasions purple Spots, and other malignant Symptoms, which destroy the Patient.

As soon as the Pustules appear, I examine carefully, whether they are of the *distinct* or *confluent* Kind, as they differ extremely from each other : If, therefore, upon considering the Symptoms above-enumerated, they appear of the *distinct* Kind, I take care, that the Patient be refreshed with Small Beer, Wa-

ter-gruel, Barley-water, or the like, in the manner above directed ; and, if it be Summer, the Weather exceeding hot, and the Pustules few, I see no Reason why the Patient should be confined in Bed, but, rather, that he may rise, and sit up a few Hours every Day, provided the Injuries, arising from the Extremes of Heat or Cold, be prevented, both with respect to the Place where he lies, and the manner of Clothing : For when the Patient sits up between-whiles, the Distemper finishes its Course with greater Ease, and, also, more expeditiously, than if he had been constantly kept in Bed ; which not only prolongs the Illness, but, likewise, promotes the febrile Heat, and occasions a painful Inflammation, upon the Rising of the Pustules : But if the Coldness of the Season, or a numerous Eruption, makes it necessary for the Patient to keep his Bed constantly, I take care to prevent his lying warmer, or with more Cloaths on him, than he used to do whilst in Health ; and that only a moderate Fire be made in the Room, Morning and Night, unless it be the Winter Season. Neither do I require, that he should lie always in the same Place in Bed, lest a Sweat should be raised, which can't be promoted without very great Danger.

In the Declension of the Illness, when the free Exhalation of the *Effluvia*, proceeding from the Matter, now chang'd into Pus, is prevented by the Hardness and Dryness of the Pustules, it will be proper to give five or six Spoonfuls of *Canary*, or some other mild Cardiac ; lest these putrid *Effluvia* return again into the Blood. At this time, also, and not before, Cardiacs, and a warmer, and more cordial Diet, may be allow'd ; as Sugar-sops, Oatmeal-caudle, and the like. Nor will any thing further be needful, in the kindly *distinct* Species, provided the Patient will conform to this temperate Method and Diet ; unless, perhaps, Restlessness, Watchings, or other Symptoms, threatening a Delirium, should occasionally require an Opiate.

This is the true and genuine Method of treating this Kind of Small Pox ; but if, through the Prejudices or Obstinacy of the Friends, or Diffidence of the Patient, this Regimen be opposed, I esteem it safest to bleed ; which though it is, in its own Nature, prejudicial in this Kind of Small Pox, as it disturbs the Separation, and lessens the Supplies intended to keep up the Eruptions and Swelling, yet it makes some little Amends for the Injuries of the subsequent hot Regimen ; and therefore renders this Method, which I would not use without Compulsion, less dangerous.

Greater is the Danger in the *confluent* Small Pox, which proceeds from a greater Inflammation of the Blood, and therefore more Caution is required, not to heat the Patient. But though this Kind naturally demands greater Cooling than the other, yet, in order to promote the Swelling of the Face and Hands, (without which Death must ensue) and the Elevation and Increase of the Eruptions ; and, also, because the Patient, on account of the painful Ulcerations, cannot sit up, it is proper he should keep his Body, and even his Hands, in Bed, provided he be lightly covered, and allowed to turn himself therein, as he pleases : And, in the Declension of the Distemper, upon the Approach of the suppurative Fever, he must not only be allow'd this Liberty, but admonished to make use of it ; and must be turned often, Night and Day, to moderate the excessive Heat, and prevent Sweat, by which the Humour is discharged, wherewith the Small Pox should be diluted, to render them mild.

As the Salivation, which constantly attends this Kind of Small Pox, is one of Nature's principal Evacuations, and is here substituted instead of that which should have been made by Pustules, (for the Evacuation by Pustules does not proceed so well in this low and flat Sort, as in the other) we must diligently endeavour to keep it at its Height, and prevent its untimely Stoppage, either from the Use of heating Medicines, or by forbidding the free Use of Small Beer, or some such Liquor. Now as the Spitting, in its natural Order, is to begin as soon as the Eruptions appear, and abate on the eleventh Day, but not entirely vanish till a Day or two after, so, if it ceases before that Day, the Danger is great : For as the Swelling of the Face, by which some Part of the morbid Matter is evacuated, always vanishes on that Day, if the Salivation stops at the same time, the Patient is infected by the variolous Matter, now become corrupt, as by a Poison ; and there being no way left for it to pass off, the Danger is imminent, unless, as it sometimes happens, the Swelling of the Hands be so considerable, as to snatch the Patient from impending Death. This Salivation may be promoted by drinking Small Beer freely, or some other Liquor, that neither heats, nor excites Sweat.

Besides these, in order to check the violent Ebullition, and promote the Spitting, Opiates are more proper than any other Remedies ; and though, by their incrassating Quality, they may seem, in some measure, to hinder the Expectoration, yet I have long shaken off that Prejudice, and given them in this Disease with great Success, provided the Patient was above Fourteen.

For as the Blood of Infants and Children, who generally sleep tolerably well throughout this Disease, ferments more gently, it stands less in need of such a Check; besides, by the Use of this Kind of Remedy, the Looseness, which Nature appoints to be an Evacuation for Children in this Species of the Disease, is stop'd, to the Detriment of the Patient.

In Adults, the frequent Use of Opiates is attended with the following Advantages: 1. By procuring moderate Rest, they abate the violent Ebullition of the Blood, and prevent a Delirium. 2. They promote the Swelling of the Face and Hands. 3. They support and prolong the Swelling to its natural Period. 4. They promote the Salivation, which, though it may be stop'd in some Subjects for a few Hours, by means of so powerful an incrustating Medicine; yet the Strength being increased by these new Helps, Nature resumes fresh Vigour, and happily finishes the Work. 5. I have observed, that the Spitting, which usually abates about the eleventh Day, and sometimes earlier, to the great Detriment of the Patient, by giving Opiates a few times, has been raised anew, and not ceased before the fourteenth Day, and sometimes later. I usually give about fourteen Drops of liquid Laudanum, or an Ounce of Syrup of white Poppies, in a little Cowslip-flower water, or some such distill'd Water, to Adults, every Night after the Eruption is over, to the End of the Disease. And as in the worst Kind of Small Pox a hot Fit, attended with Restlessness, Anxiety, and other Symptoms, generally come on in the Evening; this may, in some measure, be prevented, by administering the Opiate at Six or Seven at Night.

As a Looseness as certainly accompanies the *confluent* Small Pox in Children, as a Salivation in Adults, I take care by no means to check this Looseness; and direct the Children to be kept sometimes in the Cradle, and sometimes taken up, allowing them the same Diet, if they be weaned, as I directed for Adults.

In the Declension of the Disease, when the Face is stiff, occasioned by the Eruptions becoming crusty, hard, and dry, I anoint it frequently with Oil of sweet Almonds, as well to ease the Pain, as to promote a freer Exhalation of the hot *Effluvia*. I use no Endeavours to prevent the Pitting of the Face, as Oils, Liniments, and the like; these only causing the Scurf to scale off more slowly, which is gradually succeeded by unseemly Scars. But the Patient need not be very anxious about these, when, by reason of a previous temperate Regimen, the Eruptions, having been little irritated, have contracted no caustic Quality.

Now though this Method, provided it be carefully and prudently suited to particular Circumstances, will render the Disease very gentle and safe; yet, in some Cases, I find it necessary to use a different Treatment.

First, therefore, if in the *distinct* Kind, by means of an over-hot Regimen, and continual Sweats, the Face does not swell on the eighth Day, but is flaccid, and the Spaces between the Eruptions look pale, whilst the Pustules appear in great abundance; besides using my utmost Endeavours by a more temperate Regimen, to check the violent Motion of the Blood, I immediately direct an Opiate to be given, which, by gently procuring Sleep, (unless the Brain be over-heated) and, consequently, moderating the Tumult raised in the Blood, seasonably determines it, together with the Heat, to the Face, as the Nature of the Disease demands.

But if the Mischief, hence arising, has proceeded so far, that the Sweat, which had hitherto flowed plentifully, ceases spontaneously, the Patient is seized with a Delirium, complains of great Sickness, and makes Urine often in a small Quantity; in this Case, the Danger of Death being imminent, I conceive he can only be reliev'd, either by giving Opiates freely, or taking away a large Quantity of Blood, and exposing his Body to the open Air. Nor will what I have now propos'd seem imprudent, and unreasonable, if we attend to those who have escap'd imminent Death, by the plentiful Bleeding at the Nose, suddenly arising: Besides, it must be considered, that, in this dangerous Extremity, Death does not ensue, because the Eruptions strike in; for they appear red and plump, even when the Patient is expiring; but because the Face does not swell. Now whatever tends to abate the Heat of the Blood, and I conceive, that none will deny that Bleeding, and moderate Cooling, have this Virtue, must necessarily help to promote the Swelling of the Face, as much as the Use of Opiates, and apparently for the same Reasons.

But I would not be understood to advise Bleeding immediately, in every *Delirium* happening in the Small Pox, since no Symptom oftener occurs in this Disease: But, 1. In that only which happens because the Face does not swell, that is, in the *distinct* kind, the Eruptions being, at the same time, pretty numerous; or, 2. Where the Motion of the Blood is become so violent and immoderate, by means of a very hot Regimen, and the Use of Cardiacs, as to render it unsafe to wait till it can be reduced to a due Temper, by Opiates, and other pro-

per Medicines. In such Cases, also, it has frequently seem'd sufficient to me, for the Patient to rise and sit up awhile in his raving Fit; by which Expedient I have saved several from Death. And, besides those I have seen, there are numberless Instances of Persons, who, by these means, have been snatched from imminent Danger. For some delirious Persons, deceiving their Nurses, and getting out of Bed, have remained exposed to the cold Air, even in the Night-time; and others have secretly, or by Intreaty, procured cold Water to drink; and thus, by an happy Mistake, saved their Lives, when despaired of.

I shall here set down the History of a Case, which I had from the Person concerned: He told me, that when he was a young Man, he went to *Bristol*, and was there seized with the Small Pox, about Midsummer, followed soon after with a Delirium: His Nurse, going into the City, left him in the mean while to the Care of some other Persons, intending to be back soon; but, making a pretty long Stay, the Patient in the mean while died, as the Attendants thought; who, considering the Heat of the Season, and his Corpulence, that the Body might not smell, took it out of Bed, and laid it naked on a Table, throwing a Sheet over it. The Nurse at length returning, and looking on his Face, she imagined she saw some small Signs of Life, and, therefore, put him to Bed again directly, and brought him to himself; and he recovered in a few Days.

If the Saliva in the *confluent* Small Pox be render'd so hard and viscid by the preceding Heat, as to endanger Suffocation, which commonly happens on the eleventh Day, a Gargarism must absolutely be used, and great Charge given, to syringe the Throat with it Night and Day. Small Beer, or Barley-water, mixed with Honey of Roses, may be employed for this Purpose, or the following:

Take of the Bark of Elm, six Drams; Liquorice-root, half an Ounce; twenty stoned Raisins; red Roses, two Pugsils: Boil them together, in a sufficient Quantity of Water, to leave a Pint and half; in which, when strained off, dissolve, of simple Oxymel, and Honey of Roses, each two Ounces: Mix the Whole for a Gargarism.

But, if the Patient has been treated in a proper manner, the Salivation, even though it has begun to abate, will so effectually answer its End, as to render this Remedy superfluous. And, in reality, when the Patient is every moment in danger of Suffocation, oppress'd with a *Stupor*, and breathes with the utmost Difficulty, it is not safe to trust to this Remedy. In this Case I have sometimes seasonably and successfully given a Vomit, of the Infusion of *Crocus Metallorum*, in a larger Dose than ordinary, to an Ounce and an half; because the *Stupor* is so considerable, that a smaller Quantity will not operate, but by disturbing those Humours which it cannot eject, greatly endangers the Life of the Patient. Neither can we wholly trust to this Remedy, and, which is truly to be regretted, we are hitherto unprovided with a more certain and effectual one, to conquer this dreadful Symptom, which alone destroys most of those who die on the eleventh Day, in this kind of Small Pox.

As the other Symptoms happening in this Distemper are prevented, so, likewise, most of them are relieved, by a temperate Regimen. For Instance, as the Delirium above-mentioned, proceeding from the too great Heat of the Brain, is removed by cooling the Blood, so, by the same means, a Coma is easily remedied; which seems to be a quite different Symptom. By cooling the Blood in this manner, I have seen purple Spots removed; but have not yet been able, by this or any other Method, to stop bloody Urine, or a violent Flux of Blood from the Lungs; but so far as I have hitherto observed, both these Hemorrhages prognosticate certain Death.

In a Suppression of Urine, which sometimes happens in the Young and Vigorous, from the great Confusion and Disorder of the Spirits, subservient to this Excretion, by reason of the immoderate Heat and Agitation of the Blood and Juices, I have had recourse to all the Kinds of Diuretics; but nothing has succeeded so well with me as taking the Patient out of Bed, who, after walking twice or thrice cross the Room, supported by the Attendants, has immediately voided Urine pretty plentifully, to his great Relief.

But the Symptoms proceeding from the Striking-in of the various Matter from intense Cold, or unseasonable Evacuations, must be remedied by Cardiacs, and a suitable Regimen; which, however, must not be continued longer than those Symptoms last: The principal of these are a Depression, or Sinking of the Pustules, and a Looseness, both in the *distinct* Kind: For, in the *confluent* Kind, neither the Depression nor Sinking of the Pustules, threaten Danger, this being the Nature of the Disease; nor a Looseness in Children, because it promotes their Recovery. In either Case, it is highly proper to give a cordial Draught, made of some proper distill'd Waters, mixed with Diafcoridium, liquid Laudanum, and the like, not only to re-

move the above-mentioned Symptoms; but at any time of the Disease, if the Patient complains of a Pain at the Heart and Sickness. I judge, that the Notion of the frequent Striking-in of the Eruptions, proceeds from hence, that such as have observed the Depression of them, in the *confluent* Kind, esteemed it to be a Striking-in of the variolous Matter from taking Cold; whereas here it is only the Nature of the Disease; and they suspect the same in the distinct Kind, because they look for the Eruption, and Increase of the Pustules, before the due time; not having sufficiently attended to the time wherein Nature usually finishes the Suppuration of this Kind of Small Pox.

When the Patient begins to recover, and the Eruptions scale off, and he has eat Flesh a few Days, for Example, the one-and-twentieth Day, I judge it requisite to bleed in the Arm, if the Disease has been violent: For the Inflammation communicated to the Blood by the Small Pox, whether in Adults or Children, equally indicates Bleeding; as the Foulness collected in the Habit, does Purging; as appears sufficiently both from the Colour of the Blood, taken away after a severe Small Pox; which exactly resembles that of Pleuritis; and, likewise, from the great Inflammations that fall on the Eyes, after it is gone off; and other pernicious Effects, arising from the Blood overheated, and vitiated thereby: Hence, also, it follows, that such as enjoyed a good State before the Attack, are afterwards afflicted with a Defluxion of sharp hot Humours upon the Lungs, or some other Part, for the Remainder of Life. But if the Pustules were few, Bleeding is unnecessary: After Bleeding I purge three or four times.

After the Patient has been long recovered from the confluent Small Pox, and rises every Day, there sometimes happens a troublesome Swelling of the Legs; which either goes off spontaneously, after Bleeding and Purging; or is easily cured by the Use of Fomentations, made of emollient and discutient Herbs, boiled in Milk; as the Leaves of Mallows, Mullein, Elder, Laurel, and Chamomile and Melilot-flowers. *Sydenham*.

These Species of Small Pox, adds Dr. *Sydenham*, prevailed in 1667, 1668, and Part of 1669, which he chose to call *legitimate*, or *regular*, to distinguish them from the other Kinds that succeeded them, in the Years 1670, 1671, and 1672, which he denominated *anomalous*, or *irregular*; and gives us the following Account of them.

The irregular Species of Small Pox was introduced by the Measles, (see *MORBILLI*), and arose in the Beginning of *January*, 1670, much about the same time that the Measles did; and though it was not so epidemic, it, notwithstanding, accompanied that Disease whilst it prevailed, and continued after it went off; as long as this Constitution lasted. Nevertheless it yielded to the Dysentery, which raged in Autumn, this Season being peculiarly disposed to favour it. But in the Winter this Kind of Small Pox returned again, the Dysentery being overcome by the Cold. In this Order did these Distempers succeed each other, through all the Years of this Constitution, except that in Autumn 1672, the last Year it prevailed, the Constitution being then in its Decline, and slowly promoting the Dysentery, which, at that time, was, also, declining, the Small Pox, contrary to Custom, raged, also, at the same time, and prevailed so equally with the Dysentery, that it was not easy to ascertain, which of the two Diseases were most predominant, though, to me, the Dysentery seemed to prevail. This Small Pox, like other Epidemics, was very violent in the Beginning, and increased daily till it came to the Height; after which it gradually decreased, both with respect to the Violence of the Symptoms, and the Numbers it attacked.

I was very much surpris'd, upon the Rise of this Small Pox, when I found that it differed, in several considerable Symptoms, from the Kind produced by the preceding Constitution, already described. Of these different Symptoms I shall now treat, omitting those which were common to both Species.

The distinct Kind of this Small Pox differed from the common distinct one, of the preceding Constitution, only in the following Symptoms: 1. The Eruptions generally came out on the third Day, which indeed is usual in the confluent Sort; whereas, in the distinct Kind of the former Constitution, they appeared not before the fourth Day. 2. They did not grow so big, in the Course of the Disease, as those of that kind. But, 3. Were more inflamed; and, in their Declension, after their Suppuration, frequently looked black. 4. Sometimes, but very rarely, a Spitting happened, as in the confluent Kind, though the Eruptions were very few. Whence it appears, that the Small Pox of this Constitution greatly resembled the confluent Kind; and was attended with a more violent Inflammation, than is usual in the distinct Kind.

The confluent Species of this Constitution, differed from those I had observed in other Years, in several Particulars: 1. The Eruptions sometimes appeared on the second Day; at

others on the third, in Form of an equal redish Swelling, covering the whole Face, and thicker than an Erysipelas; nor could any Spaces easily be perceived between the Eruptions. 2. The rest of the Body seemed to be overspread with an almost infinite Number of red inflamed Pustules, joined together in one. 3. In the intermediate Spaces, especially in the Thighs, little Bladders arose, like those occasioned by Burns, full of a limpid Serum, which flowed out plentifully, upon the Bursting of the Skin, the Flesh underneath appearing black, and as if it were gangrened. This dreadful Symptom happened very rarely, and only in the first Month that this Species prevailed, but proved always mortal. 4. About the eleventh Day, a white shining Pellicle extended itself over the redish Humour, in several Parts of the Face; and, by degrees, over the Whole. 5. Soon after, this Pellicle discharged a shining crusty Matter, not of a yellow or brown Colour, as in the other Small Pox; but of a deep-red, like congealed Blood; which, as the Pustules ripened, grew every Day blacker, till at length the whole Face appeared as black as Soot. 6. And whereas, in the other Kind of confluent Small Pox, the Patient was in most Danger on the eleventh Day, which put an End to the Lives of the greatest Part of those that died; in this Sort, unless an extreme hot Regimen destroyed him in a shorter time, he generally lived to the fourteenth, and sometimes to the seventeenth Day, after which the Danger was over. 7. But those who had the Bladders with the Mortification, died in a few Days after the Eruption. 8. The Fever, and all other Symptoms, which either preceded or accompanied this Species of the Small Pox, were more violent, than in the foregoing Kind; and it had manifest Signs of greater Inflammation. 9. The Patient was more subject to a Spitting. 10. The Pustules were considerably more inflamed, and much smaller; so that it was difficult, upon their first Appearance, to distinguish them from an *Erysipelas*, or the Measles. 11. The Scales remained a long time after the Eruptions vanished, and left more unseemly Scars behind them. It is worthy of Notice, that during the whole three Years which this Constitution lasted, in which the Dysentery raged so epidemically, the Small Pox, when exasperated by an immoderate hot Regimen, sometimes terminated in a Dysentery.

But this Small Pox was not attended with such fatal Symptoms during the whole time of its Continuance; for, after having prevailed two Years, it began to grow milder in 1672, and the Eruptions having lost their Blackness, grew by degrees yellow, like an Honey-comb, which is peculiar to the regular Small Pox, during the Suppuration of the Pustules; so that in the last Year of this Constitution, it proved very mild and gentle, considering its Kind. Nevertheless it is manifestly to be referred to a quite different Species, on account, 1. Of the remarkable Smallness of the Eruptions. 2. The Tendency to a Salivation: And, 3. Other concomitant Symptoms.

As this Species was attended with greater Inflammation than the other, the sole Intention in the Cure must be, to give a greater Check to the violent Ebullition of the Blood. And this is chiefly effected by a temperate Regimen, after exhibiting Opium, as above directed; and allowing the free Use of some Liquor that is not heating, but will rather immediately abate the violent Heat, wherewith this Disease is attended, especially during the time of the Suppuration of the Pustules. The white Decoction, made of Bread, and a small Quantity of burnt Hartshorn, boiled in a large Proportion of Water, and sweetened with Sugar, is beneficial here: But Milk, boiled with thrice its Quantity of Water, is generally a more grateful Liquor, and better answers the End of Cooling: Nor is the Abundance of Liquor only proper to diminish the extreme Heat, which chiefly prevails during the secondary Fever, but it, also, promotes the Salivation, and keeps it up longer than it could be continued, if the Patient were over-heated. And further I have often observed, that cooling Liquors, drank plentifully, have succeeded so well, that, by the Use thereof, the Small Pox, which appeared at the Beginning with the worst Signs of the confluent Kind, has, in the Course of the Disease, been rendered distinct; and the Eruptions, which, as they ripened, would otherwise have first discharged a red, and soon after a black Matter, have looked very yellow; and instead of being inflamed, and very small, proved of a mild and good Kind.

Nor does the menstrual Discharge, which frequently happens in this Disease, forbid, but rather encourage the free Use of these Liquors; especially if it comes at an unusual Time. For Women are endangered here from no other Cause but from the Blood's being too much attenuated, so that it escapes where it can find a Passage; especially when unskilful Nurses add Oil to the Flame, by using an hot Regimen. Now whatever greatly dilutes and cools the Blood, as it checks this Flux, does necessarily, though not immediately, tend to preserve the Eruptions, and the Swelling of the Face and Hands, in their due State; whereas heating Remedies, although they may seem better

better suited to this Purpose, yet, as they promote this Discharge, they fall short of answering the End, even though Astringents be mixed with the Cardiacs.

I lately attended a Lady, who had this dangerous black Small Pox; and though I forbid every thing, at the Beginning, which might agitate the Blood, yet, as she was of a very sanguine Complexion, in the Flower of her Age, and of a lively Disposition, and the Weather, at the same time, very warm, she was suddenly seized, on the third Day after the Eruption, with so copious a menstrual Discharge, at an unusual time, that the Women about her suspected she had miscarried. Though this Symptom was very urgent for several Days, yet I did not, therefore, judge that the Use of the Milk and Water was to be discontinued; but rather esteemed it necessary to be drank plentifully now, and, also, through the whole Course of the Disease; particularly on the coming on of the Suppuratory Fever. This Liquor she often declared, was particularly grateful to her, promoted the Spitting, and both cooled and refreshed her. But, when the Face began to harden, lest the Patient should be injured by the putrid Vapours proceeding from the purulent Matter of the Eruptions, which had a very fetid Smell in this worst Kind of Small Pox, a few Spoonfuls of mulled Sack were directed to be taken once a Day, or as often as she perceived any Sickness at her Stomach. By the Use of these few Things, along with a quieting Draught every Night, she recovered, without having been attacked with a Delirium, or any other dangerous Symptom, except the Hæmorrhage. The Face and Hands swelled sufficiently; the Eruptions were as large as this Kind of Small Pox would permit; the Salivation was easy and copious to the End; and though the Eruptions in the Face, seemed blackish whilst they ripened, yet they were yellow in most other Parts.

But how much soever this Kind of Small Pox, peculiar to this Constitution, exceeded those of other Constitutions in point of Heat and Inflammation, yet, when the Eruptions were distinct, or few, Experience shewed it to be needless to drink so copiously of the above-mentioned Liquors. But it sufficed if the Patient drank Small Beer, as the Thirst required, and supped Water-gruel and Panada, and sometimes eat a roasted Apple; and if he exceeded Fourteen, took a Dose of *Diacodium*, when he was sick, or delirious for want of Rest. And I did nothing more, when the Pustules were few, except keeping the Patient in Bed.

The same excellent Physician, in his Epistle to Dr. Cole, dated Jan. 20. 1681-2. gives us farther Observations on the Small Pox; which, he informs us, are the Result of longer Experience.

Previous to these Remarks, says he, I must observe, that a Species of intermitting Fevers, which arose in 1677. still prevailed in 1681. These Fevers, throughout those Years in which they reigned, like all Epidemics, principally raged in those Seasons, that conspired most with their Nature; but, upon the Approach of another Season, yielded to such Epidemics, as that Season principally favoured. Thus, upon the coming in of Winter, they always yielded to the Cough, and peripneumonic Fevers, and, also, to the Small Pox; but, upon the Return of the Spring, they re-appeared. So, in the Year 1680. when these Intermitments had prevailed universally during the Autumn, the Small Pox succeeded them in the Winter, and spread much. But in 1681. the Intermitments returned, though they did not spread so epidemically, their Violence being abated; so that the Small Pox, in some Places, appeared along with them. But, at the Beginning of Summer, the Small Pox increased every Day, and, at length, became epidemical.

It now appeared to me manifestly improper to confine the Patient constantly in Bed, before the total Eruption of the Pustules; for the Spring and Summer having been the driest Season that any Person could remember, the Blood was, by these means, deprived of the greater Part of the Humidity, which the Air otherwise usually communicated to it: Whence the then reigning Small Pox was accompanied with a more considerable Inflammation than ordinary; and the other Symptoms thence arising were more violent. This I conceive was the Cause that purple Spots frequently preceded the total Eruption of the Pustules; and that the violent Inflammation which expelled them, by dissolving the Texture of the Blood, suddenly destroyed the Patient, before the due Expulsion of the morbid Matter. The Disease proved the more destructive, because the Eruptions more readily run together; the Intemperature of the Air now doing the same Mischief spontaneously, which ignorant Practitioners ordinarily occasion, by using an hot Regimen and Cardiacs, at the Beginning of the Distemper: For the Danger of the Small Pox is least, when the Eruptions are few; and greatest, when they are numerous; but the bloody Urine, and purple Spots, destroy the Patient, before the total Eruption of the Pustules.

It is easy to account for the Patient's being more or less endangered, in proportion to the Paucity or Number of the Eruptions; for as every Pustule is, at first, a Phlegmon, though of a very small Size, and soon impostumates, so a secondary Fever, which depends on the Matter hereafter to be produced, must needs be more or less violent, at the Height of the Disease, according to the Quantity of Matter to be suppured, which is usually completed in the mildest Species of the confluent Small Pox, on the eleventh Day; in the middle Sort, on the fourteenth; and the worst, on the seventeenth Day.

Now a Phlegmon in the Arm, or any other Part, will occasion a Fever whilst it suppurates; the Blood being inflamed by the purulent Particles, which are received into the Mass from the Veins, according to the Laws of Circulation; and thus giving Rise to the Fever: Hence the Physician has more Reason to foretel Death, on one of the above-mentioned Days, when the Face, at the Beginning of the Disease, appears totally covered with small Eruptions, resembling the Filings of Steel, on account of the extreme Violence of the succeeding Fever, which necessarily rages in proportion to the Quantity of Matter thrown out of these innumerable Impostumes into the Blood. And it is easy to foresee the Destruction of the Patient some Days before it happens, though he think himself in a fair Way.

If, therefore, the Danger of the Patient proceeds only from the Abundance of the Eruptions, I use all my Endeavours to repress them, which is the Way to relieve the Patient; every thing being doubtful and dangerous, when this Species of the Disease is confirmed; so that, if the Patient should escape, it may rather be ascribed to some Bleeding at the Nose, or other accidental Alteration, happening in the Course of the Disease, than to the Care of the Physician. Now such an extraordinary Eruption of the Pustules proceeds from the too sudden Assimilation of the variolous Matter; which seems principally to arise, either from the over-hot and spirituous Constitution of the Patient, or from his having raised the Fermentation too high, by a too early Confinement in Bed; the Use of hot Cardiacs, or any spirituous Liquor.

The immoderate Assimilation of the variolous Matter, however, cannot be more effectually promoted, than by the Patient's confining himself in Bed unseasonably, that is, before the sixth Day from the Beginning of the Illness; or the fourth inclusive from the Eruption, when all the Pustules are come out, and no more are expected. And though the moderate Warmth of the Bed, even after this Time, does in some Measure contribute to the Rise of the Delirium, Watching, and other Symptoms, yet these are of such a Nature, that they readily yield to proper Remedies; whilst the imminent Danger of Death, that happens on the eleventh Day, from the great Abundance of the Pustules, cannot be prevented or removed by Medicine.

The Patient, therefore, is here to be diligently admonished, by no means to keep his Bed in the Day-time, till towards the Evening of the sixth Day; whereby the Eruptions will be fewer, and he will be greatly refreshed. But, after this time, if the Pustules be very numerous, he will scarce be able to leave his Bed at all, on account of the Pain thence arising, and a greater Disposition to Fainting, upon sitting up; so that having frequently remarked this, I imagined, that Nature, in the common Course of the Disease, first pointed out the Time, when a total Confinement in Bed becomes necessary.

For the Essence of this Disease seems to consist in a peculiar Inflammation of the Blood; in the Course of which, Nature is employed for some Days, in the Beginning, in preparing and moulding the inflamed Particles, for their readier Expulsion to the external Parts; at which time the Blood being disturbed, a Fever must needs be occasioned. For the agitated Particles, hurrying in a tumultuary manner through the Vessels, necessarily cause a Sickness at the Stomach, sharp Pains in the Head, and all the other Symptoms preceding the Expulsion, according as they are carried to this or that particular Part. But when the Eruption is over, the fleshy Part becomes the Seat of the Disease; and, as Nature has no other Method of expelling the peccant Matter from the Blood, but by raising a Fever, so, likewise, it does not free the fleshy Parts from any extraneous Body, but by Impostumation: Thus, if, by Accident, a Thorn, or the like sharp-pointed Body, be lodged in the Flesh, unless it be immediately extracted, the Parts around soon impostumate. Hence, when their Particles are lodged in the Flesh, they at first occasion very small Phlegmons, wherein they lie concealed; which increasing every Hour, and becoming more inflamed, at length come to Suppuration, when a Part of the Matter must needs be absorbed by the Blood, which returns by the Veins; and if too large a Quantity thereof be received into the Mass, it is not only productive of a Fever, which the debilitated Patient is unable to bear, but, also, taints the whole Mass. Besides, by the extreme Heat of the Fever,

Fever, during the last Days of the Illness, the Salivation, which ought always to accompany the confluent Small Pox, is stopped too soon; whence immediate Death ensues. But, if only a small Quantity of the purulent Matter be received into the Blood, the Violence of the secondary Fever is easily checked by the increasing Strength of Nature, and, the Pustules drying away gradually, the Patient soon recovers.

Hence it is manifest, that if these hot and spirituous Particles be quickened by hot Medicines, and especially by a constant Confinement in Bed, the assimilating Virtue, which they already possess in too great a Degree, will necessarily be heightened and increased. Besides, the Blood, and other Juices, being hereby heated, yield more readily to the stronger Impression of the Particles; whence more Eruptions appear than should. Whereas the moderate cooling Regimen, and the free Use of the Air, not only abate the Force of the hot tumultuary Particles; but, also, thicken and strengthen the Juices; whence they are better enabled to resist the morbidic Spirits, and support their Violence: And hence no greater Quantity of variolous Matter is prepared, than is natural in this Disease.

A too early Confinement in Bed produces, besides the Assimilation of too large a Quantity of the morbidic Matter, and the immoderate Exaltation of the Ferment of the Disease, bloody Urine, and purple Spots, especially in Summer, and in Persons in the Vigour of Life. I conceive, that both these Symptoms proceed from the Heat and Commotion raised in the Blood, by hot and spirituous Particles, by which it is exagitated, and considerably attenuated, so that it bursts the Vessels, causing bloody Urine, when it forces its way through the Kidneys; and purple Spots, when it is strained through the Extremities of the Arteries, terminating in the Muscles and Skin, which resemble so many Mortifications in those Parts wherein the extravasated Blood is coagulated. And though both these Symptoms might have been easily prevented by a cooling Regimen and Diet, yet, when they actually appear, all Remedies prove ineffectual.

It is not only unsafe to keep the Patient always in Bed the first Days of the Illness, but sometimes necessary to expose him to the open Air; especially if it be the Summer-season, and he not past the Prime of Life, or if he has been accustomed to spirituous Liquors; and, particularly, if the Disease proceeds from hard drinking.

I have hitherto found, that Bleeding, though it be used early, does not so effectually check the over-hasty Assimilation of the variolous Matter, as cooling the Blood by the Air received by Inspiration, especially if the Patient be put to Bed immediately after the Operation, and injured by hot Cardiacs; the Blood being by these means, more disposed to receive the Impressions of the adventitious Heat, than it was before Bleeding. And one of the worst Cases I ever met with in the confluent Small Pox, happened in a young Woman soon after her Recovery from a Rheumatism, by the usual Method of copious and repeated Bleeding, who died on the eleventh Day. From this Instance I first learned, that Bleeding did not contribute so much to keep the Small Pox within its due Limits, as I had imagined; though I have frequently observed, that repeated Purging, while the Blood remains uninfected, generally renders the subsequent Small Pox of a mild and distinct Kind.

To this Method it is objected, that sitting up in the first Days of the Disease hinders the Eruption of the Pustules, and of course prolongs the Sickness, and other Symptoms, which indeed I own, and Experience confirms it. But then it must be inquired, whether it is most dangerous to give a little Check to the variolous Matter, and thus prolong the Sickness by keeping back the Eruption; or to urge the Ferment of the Disease, and assimilate so large a Quantity of variolous Matter, as to endanger the Life of the Patient by the secondary Fever. I conceive it will appear, upon duly considering the Matter, that very few have died merely because the Small Pox did not come out sooner or later; unless, perhaps, a few of those, whose Blood, being inflamed by excessive Heat and Motion, circulated with such Velocity, as not to allow sufficient Time for the morbidic Matter to be expelled slowly; which is an Argument in favour of my Opinion.

For we may be assured, though nothing be done, that the variolous Matter will at length be conquered by Nature, and driven to the Skin; especially as the Coarseness of the Patient to this time, promises a certain, though a late Eruption of the Pustules afterwards. But of the many dangerous Symptoms which ensue, when the Eruption is unseasonably promoted, I shall only mention the principal: 1. The Number of Eruptions is too much augmented; and thus the secondary Fever is proportionably increased. 2. Bloody Urine, and purple Spots are produced. 3. The immoderate Exaltation of the Ferment frequently increases the Force of the variolous Matter so much, that the Patient sinks at the Beginning of the Disease; when the morbidic Matter cannot disentangle itself, and come out, by

reason of the confused and irregular Motion raised in the Blood.

If it be demanded, why a proper Separation of the variolous Matter may not be as well promoted at the Beginning of the Disease, by refreshing the Patient with the moderate Warmth of the Bed, as without it; I ask, by way of Reply, whether Experience does not testify, that a Person in Winter, whilst he lies in Bed moderately covered, without a Fire in the Room, is much warmer than when he sits up in it well clothed? And if the Difference here be remarkable, I next inquire, which of these Methods is best adapted to check the immoderate Motion of the variolous Ferment?

But what has principally imposed upon the Unattentive in this Case is, their having observed a Tendency in the Patient to spontaneous Sweats; which continually flowing whilst he remained in Bed, greatly abated the feverish Heats, otherwise than in those who did not sweat. Let us therefore consider, why we so solicitously endeavour to check the Fever, since it is the Instrument which Nature ordinarily and principally uses in preparing and expelling all kinds of noxious Matter, which lurk in the Blood. It is evident, that whilst we carefully promote Sweat, in order to lessen the Fever, we thus drive out a crude and indigested Humour, like unripe Fruit, and afterwards cause a Fever; the Serum of the Blood, with which the Blood itself, and those newly generated hot variolous Particles are diluted, is expelled, whilst the Particles, being freed from the Serum wasted by the Sweat, have their Violence and Activity increased.

But it is to be observed, that I injoin the Patient to refrain from Bed, on Supposition only, that the approaching Small Pox is of the confluent Kind. For in the distinct Species, if it can be certainly foreseen, the Patient need neither be confined to Bed, nor enjoined to sit up, as the Paucity of the Eruptions prevents all Danger either way.

Hence, then, it appears to me from frequent Experience, that he who refrains from Bed in the Day-time, at the Beginning of the Disease, abstains entirely from Flesh, and drinks only small Liquors, is abundantly safer than he who confines himself immediately in Bed, and takes hot Cardiacs. And the Patient finds a singular Refreshment from the Admission of fresh Air, every time he is taken out of his warm Bed; which all those, whom I was suffered to treat in this manner, thankfully acknowledged. Whence it should seem, that more regard is due to the Appetites and Longings of the Patient, if they be not very irregular, or immediately destructive, than is due to the more precarious and fallacious Rules of the Healing Art.

But, how advantageous soever it may be, in general, to keep the Patient from Bed at the Beginning of the Disease, yet sometimes he must be wholly confined to it before the Eruption. Thus, when a Child, after Dentition, is suddenly seized with Convulsions, we are to consider, that this probably arises from the Endeavour of Nature to drive out the Eruptions of the Small Pox, Measles, or Scarlet Fever, though they yet lie concealed in the Skin. In this dangerous Case, a Blister must be immediately applied to the Neck, and the Child put to Bed, and a Cordial exhibited with a small Quantity of an Opiate; by which the Cause of the Disease may be more forcibly expelled, and the Disturbance, also, quieted, which gave Rise to the Fit. Thus, for a Child of three Years of Age, I prescribe five Drops of Liquid Laudanum in a Spoonful of Plague-water, or the like. I suspect, that Thousands of Children, besides some Adults, have been destroyed for want of considering, that these Convulsions are only the Forerunners of the above-mentioned Diseases; whereas inconsiderate Practitioners, taking these Fits, which are really symptomatical, for essential Diseases, and attempting the Cure by a frequent Repetition of Clysters, and other Evacuations, hinder the Eruption of the Small Pox, and prolong the Fits, which they so solicitously endeavour to conquer, and which would otherwise assuredly vanish spontaneously, upon the Appearance of the Pustules. Besides, the Small Pox, that is preceded by Convulsions in Children, is generally distinct; so that the Patient may be put to Bed with much less Danger in the Beginning of the Disease.

But I have observed, that the Small Pox, which immediately succeeds comatous Disorders, proves very confluent; in which Case I rather order a Blister, and the Opiate described above, than let the Patient keep his Bed before the Eruption. But sometimes, though very rarely, I have known the Fits of Intermittents preceded by such Convulsions; and have often seen them begun, and terminated, by comatous Disorders, both in Children and Adults: But both these Symptoms require no particular Treatment, it being only necessary to oppose the Fever, which is the primary and essential Disease. For, if I were to attend principally to these comatous Disorders accompanying the Fever, and accordingly endeavour to conquer them by Bleeding, Purging, and repeated Clysters, I should heighten the

the Fever, and consequently increase the Coma, so as to convert it into a fatal Lethargy; whereas, if I use all my Efforts to cure the Fever, the other Symptoms proceeding from it will easily vanish.

Though the Patient may sometimes refrain from Bed in the Day-time, yet in extreme Sickness, an high Fever, enormous Vomiting, a Vertigo, rheumatic Pains of the Limbs, and the like Disorders, he cannot be indulged this Refreshment, these Symptoms indicating the contrary; which, if they be violent, especially in the young and sanguine, prognosticate, that a large Quantity of variolous Matter is generated in the Body, and threaten great Danger from the tumultuary Eruption of the Pustules, which will prove very confluent. In this Case, therefore, as all Endeavours must be used to check the immoderate Ferment, which will rage more by the continual Warmth of the Bed, and yet the Patient cannot be kept up by reason of extreme Sickness, it is indispensably necessary to bleed first in the Arm, and a few Hours after to give a Vomit of the Infusion of *Crocus Metallorum*, which not only expels the Matter occasioning this unusual Sickness, but refreshes the Patient so considerably, that being much relieved, he is able to refrain from Bed; and, in order to weaken the Force of the Ferment further, it will, also, be proper to give him a large Dose of Spirit of Vitriol in every Draught of Small Beer, till the Eruption be over. Notwithstanding these Evacuations, and the Use of the cooling Drink, the Patient must refrain from Bed in the Day-time, if he can bear to sit up; because these general Remedies do not check the Assimilation of the variolous Matter so effectually, as once cooling the Blood by drawing in the fresh Air, and breathing it out by the Lungs, which alone immediately abates the symptomatic Sickness, as I have often experienced. But this unusual Method is necessary in those only who are in the Prime of Life, whose Blood has been over-heated by Venery or Wine, and in others, (always excepting young Children) who, together with the Small Pox, struggle with the above-mentioned violent Symptoms. For, where the Blood is less inflamed, and the Symptoms milder, as there is much less Danger of assimilating the variolous Matter too hastily, neither the Evacuations, nor the Spirit of Vitriol, need be used.

The Eruption being completed, which happens on the sixth Day from the Beginning of the Illness, or the fourth, inclusive, from the first Appearance of the Pustules, the Patient is not to be longer detained from Bed, as the Case will scarcely admit of its being longer delay'd, if the Small Pox be of the confluent Kind. And let it be remembered, that this is the only Species of which I am now treating; for, if the Eruptions be few and distinct, there is naturally little Danger.

From this time, the Eruptions increase in Magnitude, and inflame the whole Body, especially the Head; so that the Patient, if not a Child, grows restless, and cannot sleep readily, which is next to be carefully attended to in this Disease; for the calmer the Motion of the Blood is, the better the Pustules fill, and come to their due Size; and, on the contrary, the more violent it is, the more the Eruptions sink, their farther Progress being checked; so that the Expulsion of the peccant Matter is not only obstructed, but the Order and natural Progress of every particular Phlegmon is, also, disturbed; whence the Eruptions either do not come to Suppuration in due time, or, instead of Pus, an Ichor is at length generated; and, instead of the yellow Matter, resembling the Colour of an Honeycomb, some black, or other preternatural Humour, unlike the genuine Eruptions of the Small Pox, is discharged. I conceive, therefore, that Opiates are as much indicated in the Small Pox, as any particular Remedy in any other Disease, as they quiet the tumultuary Motion of the Blood and Spirits, which always accompanies the confluent Small Pox. He, therefore, is not enough acquainted with the Nature of this Disease, who esteems these Symptoms to proceed only from the Watchings; for though it may sometimes happen, in Watchings, that the Patient's Spirits may be composed and calm, which frequently proceeds from taking Laudanum, so, also, the Spirits, being sometimes in violent Motion, check the laudable Eruption of the Pustules, though the Patient sleeps much, which is worthy of Observation.

Though I have given Laudanum several Years successfully in this Case, yet I give the Preference to Syrup of Poppies, because I esteem Laudanum more heating; but both may be used for the same Purpose. As to the Dose of this Syrup, it is to be proportioned to the Age of the Patient, and the Urgency of the Symptoms; for what might be too much for one whose Spirits are composed, would be too little for another, whose Spirits are greatly agitated. For Instance, suppose in general, that six Drams is a sufficient Dose, yet in the Small Pox, when the Medicine is required, near an Ounce must be given, in order to obtain the desired Effect; and as much must be prescribed for a Dose, throughout the Course of the Disease. We

speak of Adults now; for in Children, the Dose must be lessened in proportion to their Age. Children, however, have not the same Occasion for Opiates in this Disease, as Adults, because they are more disposed to sleep during the Course thereof; yet, when they are much endangered by the Disease, I should be afraid to refrain from Opiates. But it is difficult to settle the Dose of Opiates; for whether they be required in a tumultuary Motion of the Spirits, a violent Vomiting and Purging, or severe Pain, these being the three Disorders in which Opiates are principally indicated, they are to be exhibited in such a manner, that if the first Dose avails not, it is to be repeated at proper Intervals, till it answers the Intention of the Physician, having less regard to the Quantity taken, than to the Effect it should produce; which being answered, it is to be administered less frequently and copiously. Nor must we forget to interpose such a Space between every Dose, that we may be able to learn, whether the last has taken Effect, before prescribing another; which being obtained, the Dose is to be diminished in the Course of the Disease, as there shall be Occasion.

This Method I shall illustrate by a Case: On April 13. 1681. a Neighbour of mine came to me in Tears, begging, that I would visit her Son about ten Years of Age, who having been ill four Days, she apprehended the Small Pox. The Mother had, by the Advice of some Woman, given him the Countess of Kent's Powder, and other hot Medicines; and had besides, in a manner, buried him under the Cloaths, in order to raise a Sweat, to which the Women have recourse in this Disease, as an assured Remedy. She had, also, given him a large Quantity of Posset-drink, in which Marigold-flowers and Hartshorn had been boiled; which increased the Fever, and caused such a Disturbance of the Spirits, that the Child was very delirious, and could not be kept in Bed by the Attendants. The Pustules did not yet appear, at least very visibly, but lay very thick in the Skin, the Eruption being manifestly hindered by this violent Method, which was intended to promote it. I ordered him to be immediately taken out of Bed, and not to be laid in it again, excepting a-nights, till after the sixth Day: I, also, prescribed half an Ounce of *Diacodium* to be taken directly, which proving ineffectual, I ordered the same Dose to be repeated an Hour after, but unsuccessfully; for the Blood was so violently agitated, that it could not be quieted before he had taken two Ounces and an half; but such a Space was interposed between every Dose, that I might be certain what Effect the last had. Afterwards, I prescribed only half an Ounce, to be given every Night at Bed-time, to the End of the Disease; which proved sufficient to preserve the Calm, that had already been obtained, by a more frequent Use of it; and thus the Patient recovered.

If the Heat and Motion of the Blood and Spirits be extremely violent in the Beginning, an Opiate, though given in the largest Dose, and frequently repeated, will scarcely avail, unless the Patient quits his Bed; for the Warmth of the Bed increases the Heat of the Disease, so as to render it necessary to exhibit the Opiate in a larger Dose, than, perhaps, Nature is able to bear.

I would have this Remedy first exhibited in the Evening, when the Patient is wholly confined to his Bed, that is, the sixth from the Beginning of the Illness; and repeated afterwards, every Evening, till the seventeenth Day, or at least till the Danger be over. For on the sixth Day the fleshy Parts are inflamed; whence the Head begins to be disturbed by the Humours, which are, also, inflamed from this Cause.

But great Care must be had to give the Opiate earlier in this, than in other Diseases; because a kind of Fit of Heat, and Restlessness, always comes on towards Evening; at some times it happens, unless the Opiate be given early at the Decline of the Disease, that the Patient, becoming suddenly somewhat heavier, immediately grows hot, and afterwards complains of Sickness, which soon terminates in Death, to the Astonishment, and contrary to the Expectation of his Friends, who, a little before, conceived great Hopes of his Recovery; and his Death might, perhaps, have been prevented by giving an Opiate directly. On these Days, therefore, but especially on the eleventh Day, I order the Opiate to be given earlier, as at five or six o'Clock in the Afternoon; and a second Dose to be kept in Readiness, lest Sickness should come on suddenly.

Since, therefore, it is so dangerous, either to omit giving an Opiate soon enough, or on the other hand, to give it so early, that its quieting Virtue be spent before the Time comes for repeating it; it is safest, in this Uncertainty, to order an Opiate to be taken at a set Hour, every Morning and Night, at the Declension of the Disease, when there is most Danger. Nor is an Ounce of *Diacodium* always a sufficient Dose at these times; for this Quantity avails no more in a violent Inflammation of the Blood, and a very tumultuary Motion of the animal Spirits, than half an Ounce in a milder Disease. For I have learnt

from repeated Experience, that an Ounce and half is required in the young and sanguine, to mitigate the Violence of the Symptoms wherewith they are seized; and in such Subjects, this Dose may be repeated with Safety and great Advantage, at such times, Morning and Night, till the Patient recovers.

Sometimes, also, I have found it necessary at the Decline of a bad Species of the confluent Small Pox, to exhibit an Opiate thrice in twenty-four Hours, that is, every eighth Hour, on account of the violent Motion, or Disturbance of the Spirits, occasioning some Sickness. But it is to be observed, that if the exhibiting Diacodium so frequently be nauseous to the Patient, which often happens on the above-mentioned Days, Liquid Laudanum must be prescribed instead of it; sixteen Drops of which are equivalent to an Ounce of *Diacodium*.

I am well aware, that it will be objected by those of a different Opinion, that the peccant Matter will be fixed, and the Salivation diminished, by repeating the Opiate so often, and in so large a Dose. But though the Ptyalism will indeed be in some measure abated, it will not, however, cease so entirely, as not to rise again in some Degree, after the Opiate has been taken a considerable time, and its Virtue is nearly spent. Besides, the Patient, being strengthened by the Opiate, will be better able to expectorate the Phlegm; and the Saliva, though less copious, will be better concocted; and the Want of Sputa-tion is abundantly supplied by the Swelling of the Hands and Face, which happens more certainly, and rises higher, from the repeated Use of the Opiate, on those Days wherein these Parts usually swell, that is, the Face from the eighth to the eleventh Day, when it commonly begins to fall; but the Hands from the eleventh Day, till the Pustules upon these Parts be entirely ripe; and the Want of either of these Swellings, when they ought to appear, threatens more Danger than the Stoppage of the Salivation.

But I would not be understood to advise the daily Use of Diacodium, though in a suitable Dose, in young Children afflicted with the confluent Small Pox, unless the Case appear very dangerous; because Children are not so hot as Persons in the Prime of Life; and their tender Age is less able to bear the continued Use of Opiates. Besides Children, thus affected, sleep most Part of the Time spontaneously, and are consequently less sensible of the tediousness of the Disease. Yet when the Eruptions are of a bad Kind, or when they become delirious, Opiates are always indicated; these being certain Signs of the irregular Motion of the Blood, and animal Spirits.

The Method of preventing the over-hasty Assimilation of the variolous Matter, at the Beginning of the Disease, and the Manner of checking the inordinate Motion of the Spirits, arising from the Inflammation of the external Parts, are the two Points wherein the Cure of this Disease consists; as the ill Accidents which succeed for want of preventing these two Dangers, sufficiently occasion those fatal Symptoms, which destroy the Patient.

If there be Occasion for a Blister, it should be made very large, and sufficiently sharp, and applied to the Neck; but neither too early, that it may not cease running before the eleventh Day, which is attended with most Danger; nor deferred to that Day, so as to prove prejudicial at this time, from being laid on too late, by increasing the Heat of the Blood, which is then scarce able to struggle with the secondary Fever. The fittest Time, therefore, to apply a Blister, is the Evening preceding the great Crisis of the Disease, presently after the Opiate which is to be taken at this time. For, if it be applied now, the Pain it causes will go off before the critical Day; and there will then be a Discharge of the peccant Matter, which is necessary to conquer the violent Symptoms happening on this Day. For now the Swelling of the Face first begins to sink, and the Salivation, which had hitherto been copious, to abate; the Humour which occasioned it being thickened, and, with Difficulty, raised. Besides, the Blister supplies, in some measure, the Sinking of the Swelling of the Face, and the Abatement of the Salivation; and, likewise, contributes somewhat to check the secondary Fever, which is then very high, the Blood being in a manner oppressed, and totally infected, with the Abundance of Pus absorbed from such a Multitude of little Imposthumes; so that, in most of the Patients I have treated in this Disease, I have observed, that the Pulse in the Wrist could scarce be felt at this time, though it was easily felt the preceding, and following Day.

But, among all the Remedies that occasion a Derivation, or Revulsion, from the Head, none, in my Opinion, seems to operate so efficaciously as Garlick applied to the Soles of the Feet. The Revulsion it occasions is evident, by the Blisters it frequently raises, and the intolerable Pain it sometimes, though rarely, causes, by inviting the Humours to those Parts, even without raising Blisters; so that, to ease it, I have found it necessary to order a Cataplasm, made of the Crumbs of white Bread, boiled in Milk, to be applied to the Part. In Adults,

therefore, afflicted with the confluent Small Pox, I usually apply Garlick sliced, and included in Linen, to the Soles of the Feet, from the eighth Day, when the Face first begins to swell; and renew the Application every Day till the Danger be past.

I must further observe, that the Patient must be kept from Flesh throughout the Course of the Disease, and only allowed Small Beer for his common Drink. In the mean time, it will be convenient for him to live on Water-gruel, roasted Apples, and the like. But, upon the Approach of the Suppuration, when the purulent Particles return into the Blood, and taint the Mass, it will be proper to give a few Spoonfuls of Wine every Morning and Night. As to the Coverings of the Bed, they are to be entirely the same he made use of in Health; and he is to be permitted to turn himself in Bed as he pleases, for the Reasons already given.

I will subjoin a Case, as a Specimen of this whole Procedure: I was called this Winter, to attend a Gentleman of a very sanguine Constitution, and in the Prime of Life. The Day before I came, he was seized with an high Fever, vomited a considerable Quantity of bilious Matter, and had a violent Pain in his Back. In order to mitigate these Symptoms, he went to Bed, and, by heaping on Cloaths, and taking hot Liquors, spent a Day to no Purpose in endeavouring to force Sweat; the great Tendency to vomiting, and the Purging, though moderate, rendering the Sudorifics ineffectual, and, in the mean time, increasing the Fever. I suspected the Small Pox would shortly appear, and, also, prove very confluent, both on account of his Youth, and the great Inflammation raised in his Blood by the fruitless Attempt to procure Sweat, which, if the Disease had happened in the Summer, would certainly have occasioned bloody Urine, and purple Spots; but chiefly because I have always observed, that in young Persons attacked with excessive Vomiting, Sickness, and extraordinary Pain, the succeeding Small Pox proved highly confluent. For this Reason, judging it requisite to use all Endeavours to prevent the too hasty Assimilation of the variolous Matter, I kept him up till his usual time of going to Bed; and the next Day in the Morning, which was the third, the Small Pox not appearing, I directed eight Ounces of Blood to be taken away from the Right Arm. The Blood was good and florid, having as yet only received the spirituous Miasma, and not that Putrefaction occasioned by a longer Continuance of the Disease. The same Day at five in the Afternoon, I exhibited an Ounce of the Infusion of *Crocus Metallorum*, which operated well, carrying off his Sickness, so that he seemed much better, and willingly refrained from Bed, which he did not care to quit before, by reason of his great Sickness and Giddiness. On the fourth Day in the Morning, I found the Eruptions coming out so copiously, notwithstanding the Endeavours I had used to prevent it, that they threatened the utmost Danger; I was therefore very cautious to keep him up in the Day-time; and advised the drinking of Small Beer acidulated with Spirit of Vitriol. This Advice he followed to the sixth Day, when, though he was not sick, but much refreshed by the Air, yet his Belly was soluble between whites; towards Night he was obliged to go to Bed, which is common in this Case; and therefore he continued therein, by my Consent, during the whole Course of the Disease, the Eruption being now over. Though the Pustules were fewer than I have observed in some that died of this Disease, yet they were more numerous than they generally are in most that recover. I first exhibited this Evening, an Ounce of *Diacodium*, in Cowslip-flower-water, and directed it to be repeated every Night: I likewise advised, that he should have no more Cloaths laid on him, than he was accustomed to in Health; and prescribed for his Diet, Water-gruel, Barley-broth, and sometimes a roasted Apple; and, for his Drink, Small Beer. On the eighth Day I ordered sliced Garlick, folded in Linen, to be applied to the Soles of the Feet, and renewed every Day, till the Danger was past. After this, the Pustules ripened kindly to the tenth Day, when, visiting him in the Morning, though I found him in a fair way, yet I perceived some Signs of the secondary Fever, along with some kind of Restlessness. Apprehending, therefore, the approaching Danger, I immediately exhibited the Opiate above-mentioned, which quieted all the Symptoms; and the same Evening I prescribed an Ounce and half of *Diacodium*. The next Morning, which was the eleventh Day, (the Virtue of the Opiate, he had taken the Night before, being spent) he began to grow restless again; whereupon I gave him the same Quantity immediately, and repeated it in the Evening, and ordered it to be continued Morning and Night, till he was perfectly recovered. The Patient complied, and no dangerous Symptom afterwards appeared, except a Suppression of Urine sometimes, which frequently attacks young Persons in this Disease; but he, however, made Water kneeling in Bed. With regard to the Salivation, though it was checked, in some measure, by the frequent Repetition of Opiates in so large a Dose, yet at distant Intervals, from the Use

of them, he expectorated concocted Phlegm, and his Face and Hands swelled sufficiently at the proper time. On the eighteenth Day he rose from Bed, and then I first allowed him to sup some Chicken-broth; and afterwards he returned by Degrees to his usual manner of Living. On the twenty-first Day, eight Ounces of Blood were taken away from his Arm, which resembled pleuritic Blood, and differed little from Pus. Lastly, he was purged four times at proper Intervals.

It is here to be noted, that as often as the Day, from the Beginning of the Illness, is here mentioned, for Instance, the sixth, the eleventh, and the like, I would not be understood to insinuate, that the confluent Small Pox always comes out on the third Day; because I am well aware, that sometimes, even in the worst Species, the Pustules do not appear till after the third Day. But in general the Eruption happens on the third Day, inclusive, from the Beginning of the Disease. Thus a Person who is seized with the confluent Small Pox on Monday, will find the Pustules appear on the Wednesday following; and the second Thursday after the first Monday, will be the eleventh Day, which is full of Danger, unless the Physician prevents it. And I repeat it once more, that these Observations relate only to the confluent Small Pox.

The same illustrious Author, in another Dissertation, gives us some further Remarks on the putrid, or secondary Fever, happening in the Small Pox, to the following Effect:

I have already shewn wherein the great Difference consists between the distinct and confluent Small Pox; that the distinct Kind is so void of Danger, as to stand in need of very little Assistance from Medicine, unless the Patient happens to promote Sweat in the Beginning, by lying always in Bed. But the youthful Part of Mankind chiefly perish by the confluent Small Pox; when the Patient, who before seemed to be in no great Danger, is often seized on the eleventh Day, or one of the other dangerous Days already mentioned, with an high Fever, very difficult Respiration, and great Restlessness, which suddenly put an End to his Life, to the Astonishment of his Friends, who, till this fatal Period, had Hopes of his Recovery. In this Case it ought to be considered, that this adventitious Fever, which happens in the confluent Small Pox, is a Distemper entirely different from the Small Pox, and that Fever, which either precedes the Eruption, or arises sometimes from the Inflammation of the Pustules at the Beginning: For, properly speaking, it is only a putrid Fever, proceeding from the Transmission of the putrid Particles of the Pustules, now in a State of Suppuration, into the Blood; which, being prejudicial to Nature, at the same time infect the Patient, and occasion a very malignant Fever.

Those, then, are the only proper Remedies, which will most effectually check this secondary, or putrid Fever; and nothing answers this Intention better, than plentiful Bleeding, which clears the Blood of the morbid Particles which nourish the Disease. Nor is this Practice, in my Opinion, in the least contra-indicated by the Distemper, considering the present State of the Eruptions, since, if the Patient should die at this Period, and be interred, yet the Eruptions, being crufted, could not recede, nor grow less. And, in Effect, we have nothing to do now with the Small Pox, but with the putrid Fever, which is a very different Disease.

When, therefore, the Patient is threatened with immediate Death, from the uncommon Violence of the Symptoms; without speedy Assistance, whether it be on the eleventh Day, or afterwards, I order ten or twelve Ounces of Blood to be immediately taken away from that Arm, which hath the fewest Eruptions, as being the fittest for the Operation; for though Opiates, and refraining from Bed in the Day-time, may be sufficient in the Beginning of the Disease without Bleeding, to conquer the Fit which comes mostly towards Evening; yet on these Days of the secondary Fever, plentiful Bleeding alone can be safely depended on; this being the sole Means of quieting the present Tumult. An Opiate is, therefore, to be exhibited in a large Dose, in the Evening, as before; and it is to be repeated from this time, Morning and Night, and sometimes oftener, as there is Occasion: For it must be carefully noted, that the Symptoms in some Persons are so extremely violent, that an Opiate given in a very large Quantity cannot overcome, nor even check them in less than twelve Hours; in which Case it is indispensably necessary to repeat the Opiate in the same Dose every six or eight Hours.

But, as it frequently happens in the Declension of the Distemper, partly from its Nature, and partly from the great Virtue of the Opiate, that the Patient becomes so very covetous, as to be in Danger of Suffocation, and that the Fever rises so high, as to leave little Hopes of Recovery, we must suit the Remedy to the present Exigency; and less Danger will ensue from taking a gentle Purge, than from the Fever much increased by the Retention of the Fæces. I have successfully ordered here, an Ounce and half of lenitive Electuary to be dissolved

in four Ounces of some small distilled Water, as of Succory, of Milk-water, and taken immediately; and, though this Draught may not operate speedily, on account of the usual Costiveness in this Disease, and, also, of the long-continued Use of Opiates, yet being administered in the Morning, it ordinarily gives a few Motions before Night; but, if it should not, the Opiate must be exhibited in the Evening, and indeed earlier, notwithstanding the Purge, if great Restlessness, or Sickness, threaten Danger, lest the Patient, for want of this Assistance, should perish, whilst the Operation of the Medicine is waited for. Nor will so mild a Purge occasion the least Mischief, though it should not work at all; so that, if it does not answer the Intention the first Day, repeat it the next, which will seldom fail to work. But, if it should seem to have procured a sufficient Discharge for the present, and the Patient grows better, the second Draught may be deferred to another time.

In this manner, Bleeding and Purging may be repeated by Intervals, as the Fever and Restlessness seem to require, till the Patient be out of Danger. But, let it be carefully remembered, that a Purge is not to be exhibited till the Declension of the Disease, that is, on the thirteenth, or subsequent Day; and not then, unless some Blood has been taken away upon the first Appearance of the secondary Fever.

Though purple Spots may be removed by duly cooling the Blood; yet both bloody Urine, and a violent Flux of Blood from the Lungs, ordinarily forebode certain Death: Nevertheless, this dreadful Difficulty may, likewise, be overcome, and Life preserved: For as both these Symptoms proceed from the vehement Inflammation, and of course, the exceeding Thinness, or dissolved State of the Blood, such Medicines as cool, and, also, thicken the Blood, by their binding and incrassating Quality, admirably check these Bleedings. For this Reason, after Bleeding once plentifully, give an Opiate.

Take of distilled Water of red Poppies, two Ounces; Liquid Laudanum, fourteen Drops; distilled Vinegar, three Drams; Diacodium, half an Ounce: Mix them together for a Draught.

Then, let the following, or the like Remedies, be used till the Bleeding stops.

Take of the Troches of Lemnian Earth, and Armenian Bole, each a Dram; Seal'd Earth, Blood-stone, Dragons-blood, and prepared red Coral, each half a Dram; Mastic, and Gum Arabic, each a Scruple: Make them into a fine Powder; of which, let half a Dram be taken every three Hours, in a Spoonful of Syrup of Comfrey, drinking after it four or five Spoonfuls of the following Julap:

Take of the best distilled Waters of Plantain, and Oak-buds, each three Ounces; Cinnamon-water without Spirit, two Ounces; Syrup of dried Roses, an Ounce; Spirit of Vitriol, enough to give it a moderate Tartness: Mix the Whole for a Julap.

In the mean time the Opiate above prescribed must be given in the Evening: Emulsions, also, made of the four greater cold Seeds, and white Poppy-seeds, are very beneficial. But, after the Bleeding is stopped, the Distemper is to be treated in all other respects, according to the Method above delivered.

When I order Liquid Laudanum, I mean my own Laudanum, which is prepared in the following simple manner:

Take of Spanish Wine, one Pint; Opium, two Ounces; Saffron, one Ounce; Cinnamon and Cloves, reduced to Powder, each one Dram: Infuse them together in a Bath-heat for two or three Days, till the Tincture becomes of a due Consistence; and, after straining it off, set it by for Use.

I would have the Syrup of Poppies, or Diacodium, thus made:

Take of the Heads of the white Poppy, well dry'd, fourteen Ounces; let them infuse for twenty-four Hours in a Gallon of Spring-water; then boil them well, and press out the Remainder strongly; to which add, twenty-four Ounces of Sugar, and boil them together into a Syrup.

I esteem these two Preparations the best of their Kind, especially the Diacodium, an Ounce of which will do more Service, than two of that which is made with green Poppy-heads, (without pressing the Liquor out so strongly) and a large Quantity sometimes of the black Heads of the wild Poppy, which have little Virtue. Accordingly, whenever I am not satisfied about the Strength of any of these Opiates, I usually order, in their stead, a Grain and half, or two Grains,

of solid *London Laudanum*, dissolved in some proper distilled Water; by which means I avoid making any Mistake, and injuring my Patient.

Helvetius, like other Authors, divides the Small Pox into distinct and confluent. Of the distinct Species he mentions two Sorts, the *simple*, and the *malignant*, which last, he again divides into two Species.

The confluent Small Pox he distinguishes into the *simple*, and the *malignant*; of which last he makes four Species.

THE SIMPLE DISTINCT.

The simple Distinct are distinguished from the other by a Cessation of all the Symptoms after the Eruption. The Symptoms are, a brisk Fever, Drowsiness, Deliriousness, convulsive Motions, Head-ach, Pains about the Region of the Kidneys, a Propensity to vomit, and Vomiting. In this Case the Patient must be bled in the first place. *Helvetius* recommends Bleeding in the Foot, if the Physician is called in late. The Patient must, also, drink a large Quantity of a light Ptisan; and must have an emollient Clyster, made purgative, if occasion requires. He must be supported with Broths made of Veal and Fowls.

When the Violence of the Fever is a little over, he must take a Vomit, and be gently purged in case the Vomit do not work downwards. Nor need one to fear to purge the first or second Day, in case the Symptoms require it.

The Patient's Regimen, after the Eruption, must be of Broths somewhat stronger, to which Beef may be added with Rice. He must, also, take twice or thrice a Day an absorbent Potion, composed of simple Water, and some testaceous Powders, as Powder of Coral, Crabs-eyes, prepared Pearls, Species Confectionis Hyacinthinæ, the Countess of Kent's Powder, and diaphoretic Antimony. In Children subject to Worms or Convulsions, or in case their Stools are greenish or slimy, the *Pulvis ad Guttatam*, Oyster-shells, and calcined Egg-shells, are preferable to those above-named.

If the Pock does not rise, and the Circle at the Base becomes pale, the Patient should take a larger Dose of diaphoretic Antimony, or the Countess of Kent's Powder; or with an Addition of Saffron, or Theriaca. In case the Belly is not relaxed, he must take a Clyster, especially if an Adult, as he may a gentle Narcotic, in case of Want of Sleep, proceeding from Pain and Uneasiness caused by the Pock. These Narcotics should be mixed with some Absorbent, in order to hinder them from growing sour on the Stomach. Whilst the Pustules suppurate, he must not drink such large Quantities of Broths as before; but plentifully of some light Ptisan, with some proper Apozem. When the Suppuration is over, he may come to a stronger Regimen, but continue his Ptisan, and take a Clyster every Day. As soon as ever the Pock falls off, the Patient must be purged, which must be often repeated to hinder ill Consequences.

THE DISTINCT MALIGNANT.

In the *Distinct malignant*, the Patient has a burning and continued Fever; a great Oppression; a dry and burning Skin; a considerable Pulsation in the Carotid Arteries; a Stiffness of the Tendons; the Eyes animated and sparkling; and the Vessels of the *Tunica Conjunctiva* red and distended; a considerable Pain in the Small of the Back and Head, oftentimes without Deliriousness, and without Heaviness or Inclination to sleep. These are the Symptoms before the Eruption. These Symptoms generally cease after the Eruption; but the Fever soon after returns, and brings on frightful Dreams, Deliriousness, Inquietudes, Bleeding at the Nose, more particularly at the Increase of the Fever, often profuse Sweats, notwithstanding which, the Skin remains burning, and dry.

Frequently upon the Skin, between the Interstices of the Pocks, red Spots appear, which make a sort of universal Inflammation.

The Fever, and other Symptoms, increase at the Suppuration, as, great Agitations, violent Deliriousness, and convulsive Motions; notwithstanding which, the Pock remains elevated, and of a good Kind. As the principal Danger in the Small Pox is the inflammatory Fever, so the greatest Care ought to be taken to diminish this, especially at the Suppuration, when there is the most Danger, the Symptoms then increasing considerably. For answering this Intention, the Physician must order the Patient to be bled in the Arm, if he is sent for before the Eruption, or when the Eruption is but just begun. But in case he is called in too late, he must not neglect Venesection immediately in the Foot. For this Species of Evacuation, besides the Advantage common to it, and Venesection in the Arm, which is diminishing the Quantity of the Blood, is excellently calculated for making a Revulsion, and by that means keeping the Brain, and Parts adjacent, free from Inflammation. But Bleeding in the Foot is never so effectual,

unless the Blood-vessels of the Body are first sufficiently emptied. Mean while, Care must be taken to dilute the Humours, by a plentiful drinking some proper Ptisan, and diluting Apozem, every third Hour, and to ease the Intestines by some proper Clyster. But the principal Care must be to observe the Diminution of the Fever, and then exhibit a Purge, and, also, a Vomit. *Helvetius* prefers soluble Salt of Antimony; but the Emetic must not be given till the Vessels are emptied enough; afterwards, if the Evacuation is not large enough, a Purge must be given; after which, some absorbent Draughts every third Hour. If more Evacuation is required, a Purge, Vomit, or both, may be repeated, to hinder Returns of the Fever, colliquative Sweats, Hæmorrhages, Suppression of Urine, &c. *Helvetius* orders a febrifuge Ptisan of the *Peruvian Bark*, with the Leaves of Borrage and Bugloss; but never when the Skin is burning, and the Tongue dry, nor continued past the fourth Day. Sometimes the Patient must be bled twice or thrice in one Day, and be purged the next; and even sometimes take a Vomit, or a Purge, some few Hours after the last Bleeding, according as the Symptoms are violent, the Quickness of their Increase, the Ardour of the Fever, and the quick Returns of it; so that there is but little Interval between. If all this should have been neglected at first, before the Eruption, they must be put in Practice the three first Days of the Eruption. And though the Effects are more uncertain in this latter Case, yet all the Ill that happens from it is, that the Circles are paler, and the Eruption more slow. A gentle slow Eruption is better than a precipitated one. When the Symptoms do not demand the Ptisan of the Bark, the principal Care must be to dilute the Blood, and evacuate its Salts by the urinary Passages, to keep up a free Transpiration, and to keep the Intestines relaxed. *Helvetius* recommends diaphoretic Antimony for this Purpose, and says, he uses it in the *distinct simple* Small Pox, when, being called in too late to purge, he observes any Symptom, which ought to determine him to purge. In case diluting Apozems do not keep the Intestines relaxed enough, Clysters must be used; or two, three, or four Grains of soluble Salt of Antimony, dissolved in four Doses of the Apozem, which he recommends, and says, it may be used from the Eruption to the Suppuration, the Fever of which it diminishes. If a Looseness happens after the Eruption, and immediately before the Suppuration, or whilst it last, if the Stools are crude, serous, and greenish, they must be corrected by Absorbents. In case the Looseness appears crude and serous before, or at the Beginning of the Eruption, Absorbents must be deferred till after some proper Cathartic. But, if the Looseness is bilious, and of a good Kind; if it do not stop the Eruption, or the Fever do not increase, it is very salutary, though it happens at the time of Suppuration: And should it cease too suddenly, it must be provoked again. But if the Evacuations are too large, they may be moderated. *Helvetius* thinks Clysters very proper thro' the whole Course of the Disease, if the Patient has his Belly swelled, if he finds a Working of his Intestines, and Uneasiness. The Patient ought, also, to drink a large Quantity of Liquors. In case of Watchings and Inquietudes, a gentle Narcotic may be used, provided that there are no considerable Complaints of the Head, no Deliriums, Convulsions, Giddiness, nor Heaviness; provided, also, that the Watchings, &c. are not caused by the Violence of the Fever: In which Case only, Syrup of white Water-lily should be tried. But in case they are so violent as to oblige to have recourse to a Narcotic, *Sydenham's Liquid Laudanum*, or some other Composition charged with Aromatics, which correct the Opium: For *Helvetius* has often remarked, that Opium, or the *Syrupus à Meconio*, by themselves, have often caused troublesome Drowsiness, and increased the Delirium.

At the Suppuration the diaphoretic Antimony must be left off, and the Apozem taken alone, or with some testaceous Powder, and diluting Liquors must be drank in great Plenty; the Broths the same as prescribed before. When these Deliria, Convulsions, &c. grow violent, they are mortal. In case an Epispastic can be applied twelve or fourteen Hours before these Symptoms are grown considerable, it is the best thing that can be applied, both to stop and prevent the ill Consequences. In case the Fever returns, after the Suppuration is ended, Emetics and Cathartics succeed best; if the Pus is too thin, and hinders the Suppuration, the Pocks must all be cut, and, mean while, Cathartics and Lenients must be used.

The second Sort of the *distinct Malignant* is, when there is a strong Fever with Purples, and a Multitude of little Vesicles, fill'd with a limpid Serum, more particularly on the Breast, and very few Pocks: This must be treated after the manner of *malignant Fevers*.

THE CONFLUENT SIMPLE.

In the *confluent Simple* the Fever ceases, for the most part, after the Eruption, but returns violently at the time of Suppuration;

ration, and sometimes with an Inflammation. Though it is difficult to tell if the Lymphatics have been obstructed from the Beginning, or not; the following are, however, Signs of it, especially if they all, or most part of them, appear at once, though some separately may appear without any Obstruction.

If the Patient was not blooded at first, and has taken strong Cordials.

If he is too drowsy after the Eruption.

If he feels a continual Humming, and Noise, in his Ears.

If, during his Drowsiness, he has slight and frequent Wanderings.

If he is uneasy, and tosses about.

If his Belly remains puffed, and swelled, although it has been evacuated by Clysters.

If the Tongue is very dry.

If his Urine is made in a small Quantity, and that high-colour'd.

If the Pock is flat, and sunk in the Centre.

Though there is no Reason to suspect any Obstruction from the Beginning, yet there is great Danger at the Suppuration; and the only Reason one can have to hope for Recovery, is, the Management of the Patient from the Beginning. Convulsions and Raving are very bad Accidents; and, if they come on a sudden, at the latter End of the Suppuration, and after proper Evacuations by Bleeding and Cathartics, they almost always prognosticate a near and inevitable Death: But if proper Evacuants have not been us'd, they are less dangerous, there being a Possibility of preventing the ill Consequences by Bleeding, Cathartics, &c.

This Sort of Small Pox is not near so terrible as the *distinct malignant*: It is, however, very dangerous, about the Time of Suppuration. When the Patient is first seiz'd, he must be blooded in the Arm, once or twice, if he is past Twenty, and of a sanguine Constitution; and afterwards must be blooded in the Foot.

Afterwards, Cathartics and Emetics must be us'd, but with this Precaution, that as there is not now, as in those of the *malignant* Kind, any Fever independent and distinct from the Small Pox to combat, for that Reason the Evacuations must be less: After proper Evacuations, the three principal Views must be, to dilute the Blood; to promote a large Quantity of Urine; to attenuate the Bile, and make it fit for Secretion: For no Part of the Body is so subject to be disorder'd in this Sort of Small Pox, as the Glands of the Liver, which often causes irregular Fits of a Fever, Hæmorrhages, Vomiting, Weaknesses, &c. To satisfy these Intentions, the Patient must take fifteen or twenty Grains of diaphoretic Antimony, and half a Grain of soluble stibiatis Salt, in four Ounces of some proper diluting Apozem. When the Suppuration begins, the diaphoretic Antimony and Salt must be discontinued, and the Apozem given alone, or with some simple testaceous Powders.

It sometimes happens, that, at the first Days of the Eruption, the Pock is not elevated as it ought, but is sunk at the Centre: In this Case, the diaphoretic Antimony must be us'd without the soluble stibiatis Salt; and, if that is not sufficient, some Kermes Mineral, the Countess of Kent's Powder, or the Species for the Confection of Hyacinth, may be join'd to it. If the Urine is thick, of an ardent or deep-colour'd Yellow; one must have recourse to *Glauber's Sal Mirabile*: Clysters are, also, very useful: The Regimen must, also, tend to dilute and sweeten the Blood. Often, at the End of the Suppuration, arrive, a brisk Fever, Hæmorrhages, Convulsions, a profound Heaviness, Weaknesses, or Syncope, and Inclination to vomit: In this Case, if the Patient has not had necessary Evacuations, and these Symptoms have not yet appear'd in the Course of the Disease, he must be immediately blooded in the Foot, even though the Pock is still suppurating. In case the Symptoms require it, it may be safely repeated, using, at the same time, diluting Apozems.

When these Symptoms are preceded by a distinct Fit of Shivering, a Pilsan, of the *Peruvian Bark*, must be us'd; but after Bleeding, and when the Fit is considerably diminish'd. In case the Patient has a Propension to vomit, or Weakness, Eruption, or a swell'd Stomach, he must take a Vomit after Bleeding; but not unless the Diminution of the Fever, and the End of the Fit, permit.

On the contrary, if the Symptoms have been eas'd by Bleeding and Diluters, the Patient must wait for his Cathartics and Emetics, till the Suppuration is entirely ended.

Sometimes these Accidents do not appear, till the Pock is dry'd, and the Suppuration ended: To avoid a Return of the Fever, the Patient must be purged, or vomited, immediately after Bleeding: This Practice has always succeeded perfectly well with *Helvetius*.

But if these Symptoms appear'd at first, or in the Course of the Distemper, one can expect no Success from these Methods,

but must have recourse to Vesicatories, the only Remedy that can be of Service; which will not avail, unless applied, at least, twelve or fourteen Hours before the Symptoms are at their Height. Bleeding, after the Suppuration, succeeds, in this Sort, oftener than in the *malignant* ones.

THE CONFLUENT MALIGNANT, CALLED CRYSTALLINE.

All the four Sorts of the *confluent malignant* Small Pox have this common Symptom; the Fever never ceases throughout the whole Course of the Distemper: The first Sort is distinguish'd by the Pocks, which are clear, transparent, and full of a limpid Serosity; wherefore they are call'd *crystalline*.

Though it is difficult to distinguish this Sort at first, yet it may be guess'd at, by a brisk Fever, a considerable serous Looseness, a great Headach, and great Thirst; the Skin of a white pale, and all the Parts a little swell'd: At the Eruption, the Pock appears of a paler red, rises sooner, and higher, and becomes larger than in the other Sorts; the Circle at the Base remains always paler; the Pellicle, which contains the Humour, is very thin; often many Grains join, and form a Sort of Bladder full of Serosity, which, if pierced, and the Liquor let out, looks pale at Bottom: All the Parts, in general, have an extraordinary cedematous Swelling; and, at last, the *malignant* Fever manifests itself, by Symptoms proper to it, or a miliary Erysipelas. As the Blood, in this Sort of Small Pox, is too fluid, there is no Occasion to bleed so much as in the other Sorts: But as the Head is always disorder'd, there is a Necessity for bleeding in the Foot, which has seldom Occasion to be repeated. One of the principal Accidents is, a Flux of a crude, serous Matter, of a green or whitish Colour; in which Case the Patient must be gently vomited. *Helvetius* recommends one Ounce of the Magisterial Syrup, and ten or twelve Grains of Ipecacuanha, mix'd up with some spirituous Cordial; after which, some Bolus, of the testaceous Powders, must be given: The next Day, or Day after, some gentle and astringent Cathartic; after that, a Draught, with some testaceous Powders, or very gentle Astringents, and in a small Quantity; for the Flux must be moderated only, not stop'd; inasmuch, that, in case it should stop, or diminish so much that the Belly becomes swell'd, it must be promoted by proper Clysters. If there is any Occasion for Narcotics, only the *Syrupus de Nymphaea* must be us'd.

In case the Fever and Looseness return towards the End of the Suppuration, (for during the time of Suppuration the aforesaid Conduct must be observ'd) proper Cathartics must be us'd, but defer'd longer than in the other Sorts; because the Humour suppurates slower: When the Suppuration is entirely ended, the Pus should be let out of the Pock all over the Body, the Face excepted. During the whole Course of this Distemper, as the greatest Danger proceeds from a total Dissolution of the Juices, so the Design ought to be, to give them a Consistence. The Patient should never take, at the same time, Emulsions, or milky Liquors, and Acids; nor Acids, and testaceous Absorbents.

THE SECOND SORT OF THE CONFLUENT MALIGNANT.

The Accidents that appear before the second Sort of the *confluent malignant*, are much the same as those preceding the first Sort of the *distinct malignant*; but the Fever is generally brisker, and the Returns of it longer, and more violent; but it is not always attended with Vomitings, or a Propensity thereto, with Drowsiness, Wanderings, and other terrible Symptoms. The principal of the Symptoms are, a Beating of the Carotid Arteries, a Redness of the Eyes, and Stiffness of the Tendons.

The Eruption is often sudden, the Figure of the Pocks more irregular than in the other Sorts, are flat in the middle, and have their Circles of a deep Red: They rise but indifferently, especially on the Face, which puffs and swells from the very first Day of the Eruption; the Cuticle of the Face rises, and appears all one Pock, flat, and of an even Surface. If there is any Interval betwixt the Pocks, it is mark'd with erysipelatous, and, often, purple Spots; the Skin is dry, and very burning; sometimes there are abundant Sweats, though the Skin remains still very hot; the Urine is in a very small Quantity, and of a high-colour'd Yellow; the Pulse is either hard and small, or very large, and very much elevated; the Eyes sometimes are red, sparkling, and incapable of suffering the Light, sometimes very heavy, and the Pupil dilated more than usual: The Patient has violent Headachs, especially if he has neither Drowsiness nor Wanderings: Inflexibility of the Tendons, convulsive Motions, and Deliria, are more frequent, and considerable, than in the other Sorts; the Patient, in this, must be blooded, and purged, as soon as possible: If, after a sufficient Evacuation, the Fever remains still very strong and ardent, diluting Apozems must be given alone; if it remains brisk, but less violent, with diaphoretic Antimony, and soluble stibiatis Salt; but

if the Fever is but moderate, and the Pock remain sunk in the Centre, half a Grain or a Grain of Kermes Mineral must be given, instead of the Salt. If the Intestines are too much relax'd, some of the Species of the Confection of Hyacinth, or Confection of Kermes, must be added to the Apozem; or the Powders may be taken separately, drinking a Glass of Ptisan after it, in case there appears any Danger of too great a Relaxation of the Intestines. If, at the Suppuration, the Accidents return, notwithstanding all these Precautions, the Effects of Bleeding and Cathartics would then be fatal; the only Things that can be of Service, are Vescicatories.

About the End of Autumn, in the Year 1719, a Small Pox, of the *confluent* and *malignant* Kind, appear'd at Paris, and rag'd with such Violence, that no Remedies could afford Relief to those who labour'd under it: The Symptoms could not be hinder'd, either from appearing, or returning again in the very Beginning of the Suppuration; and though the Suppuration does not generally begin till the fifth, or End of the fourth Day, in this Species it often began on the End of the third. Nothing was capable of stopping the rapid Course of the Symptoms, and few Patients were so happy as to escape their Violence, in whatever Method they were treated, but generally died on the fifth or seventh Day of the Eruption, and, sometimes, at the Beginning of the Suppuration. The only Difference we could then observe, was, that those who were blooded and purged in the Beginning, were more calm, and less agitated, during the first Days of the Disorder: But this was a fallacious Respite, always succeeded by fatal Consequences, and only capable of imposing on those who had not had an Opportunity of observing a great Number of such Patients. The Pain, and other Symptoms, were less violent, but the Death of the Patient was not less certain.

In reflecting upon the Causes of this terrible Disorder, I imagin'd, that the excessive Heat and Drought, which had lasted, without Interruption, from the middle of the Spring, had induced a Change in the Blood, by depriving it of its most serous Parts; a Misfortune which may easily happen in France, where the Inhabitants generally neglect to defend themselves from the Heat of the Sun, and to correct their Blood by proper Aliments.

The Characters and Obstinacy of some other Diseases, which then rag'd, made us conjecture, that all the Fluids of the Body, and especially the Lymph, were much inspissated, and wanted a sufficient Quantity of that aqueous Vehicle which is so necessary for their free Circulation: We, also, observ'd, that, in this Pock, of the *confluent* and *malignant* Kind, the Spit discharg'd during the Ptyalism was more thick and viscid, than at other Times. The Neck, the Face, the Hands and Arms of the Patients, were violently inflat'd, and far more firm and hard than they usually are on the like Occasions. When the Inflation was arriv'd at its greatest Height, and the Fever of the Suppuration begun, the Spots disappear'd gradually more and more, till, at last, nothing at all was expectorated; a Symptom which always prognosticates a speedy Death. These Observations laid a Foundation for our suspecting,

1. That Symptoms, so terrible and frequent, depended on the Inspissation of the Lymph; which, being depriv'd of its Serosity, circulated slowly in the Vessels, and especially in those of the Head.

2. That this Lymph was very susceptible of Rarefaction, and greatly dispos'd to obstruct the Vessels; a Circumstance which interrupted the Circulation of the Fluids, and, in a few Days, prov'd fatal to the Patient.

The Remedies generally us'd, on Occasions of a like Nature, such as spirituous Cordials, and others, seemingly calculated to attenuate the inspissated Lymph, excited too great a Rarefaction in that Juice, and put all the Fluids into too violent a Motion; they augmented the Fever, threw all the solid Parts into a fatal Rigor, and, instead of rendering the Lymph fluid, they thicken'd it more, and often hasten'd the Death of the Patient.

As aqueous and diluting Medicines were incapable of penetrating this inspissated Lymph, so neither could they subdue the Symptoms of the Disease; nor could a Cure be expected from any other mild and temperate Medicines, which were too weak to attenuate and colliquate the gross tenacious Lymph. We, therefore, thought, we had Reason to have recourse to Vescicatories, as seemingly best calculated to answer the several Intentions of Cure; and though the Success of these Remedies, when us'd, did not answer our Expectation, yet we concluded, that the Error must have consisted in applying them too late: For both Reason and Experience evince, that Vescicatories generally evacuate but a small Quantity of Serum; that they operate much less powerfully by their attractive Quality, than by their acrid Salts, which mix with the Blood, and effectually attenuate the Lymph, without exciting violent Commotions in the Fluids. Hence Vescicatories must be applied in the first Days of the Disorder, to prevent, if possible, the Obstruction

of the Glands and Vessels; for if such an Obstruction is once form'd, and arriv'd at a certain Height, Vescicatories do not operate efficaciously, even though they should procure a Discharge of a large Quantity of Serum.

These Reasons influenced us to apply Vescicatories on the first, the second, or the third Day of the Eruption; by which means, we found the Appearance of fresh Symptoms prevented: But, for fear of exciting a too violent Irritation, we always delay'd the Application of the Vescicatories, till the Operation of the Purgative was entirely over: And this Caution is so much the more necessary, because the Vescicatories might be misplaced by the Motion the Patient must necessarily use during the Operation of the Medicine. In order to hinder these Plaisters from communicating a preternatural Heat to the Urine, the Patient must be order'd to use no other Kind of Drink than a Ptisan prepar'd with Mallows, or Barley.

But the Use of Vescicatories ought not to supersede that of simple Apozems, with which we may mix diaphoretic Antimony, or Absorbents, or stibiated Salt, according as the State and Condition of the Patient shall require.

But if the Body is not kept sufficiently soluble, Irritations of the Bladder are to be dreaded, and some other Symptoms, which, however, are of a far less dangerous Nature than those intended to be remov'd by the Vescicatories.

It is to be observ'd, that, in the Small Pox, Vescicatories adhere with Difficulty, and act but slowly, on account of the Inflammation produced in the Skin by the Pusules: For which Reason, the Plaisters us'd in this Disorder must be newly made, richly impregnated with Powder of Cantharides, sufficiently moisten'd with Vinegar, and secur'd by proper Bandages: These Vescicatories ought to be left on the Part for about twenty-four Hours, after which, we are to cut off not only the Blisters which are elevated, but, also, the Whole of the Epidermis, which is separated from the Skin.

The Dressing is to be of the ordinary Kind, with fresh Butter and Beet-leaves.

It frequently happens, that the Part of the Skin from which the Epidermis is remov'd, becomes dry, in a very short time, a sure Proof of the small and inconsiderable Effects the Vescicatories have produced on the Lymph.

To remove this Misfortune, instead of Beet-leaves, we are to apply a Plaister prepar'd of an Ounce of suppurative Ointment, and two Scruples or a Dram of the Powder of Cantharides. When a sufficient Discharge is made from the Part, we are to remove the Plaister, and dress with fresh Butter and Beet-leaves.

If Vescicatories have been applied from the first, one may judge of their good Effects, by the following Symptoms:

If the Spitting is more abundant, and more fluid.

If the Pock, sunk before, now rises.

If the swell'd Parts grow less firm, and yield to the Touch.

Two Inconveniences may happen from these Vescicatories: 1. That the Humour in the Pock remains too clear, and fluid. And, 2. That the Fever of the Suppuration is prolong'd. To prevent the first, all the Pocks, unless those on the Face, must be cut; which Method, sometimes alone, makes the Fever cease; if it does not, gentle Cathartics must be us'd. The Regimen must be incrassating. There is no Danger in using these Vescicatories, even to Women who have actually their Menes.

THE THIRD SORT OF THE CONFLUENT MALIGNANT.

The third Sort of the *confluent malignant* is preceded by the same Symptoms as the other *malignant* Kind; but the Eruption begins on the second Day. The Pock is of a black Colour, and but little elevated; when open'd, a black, and very livid, Blood issues out, and the Bottom appears gangren'd. The Patient generally makes bloody Urine; many render it by Stool, and some by the Nose, others by the Mouth, in Spitting, Coughing, or Vomiting; some by the Eyes. The Intervals between the Pocks are of an obscure Black, the Fever is brisk, and the Returns violent: They are almost always mortal.

If the Physician is call'd in time, he must begin the Cure by bleeding often in the Arm: If the Patient spits or vomits Blood; if he has with these a Bleeding at the Nose, violent Headachs, Convulsions, Drowiness, and Wanderings, the Patient must be purged gently, as soon as possible: If there is no Evacuation of Blood by Stool, or Vomit, he must, also, be vomited: After the Effect of each Cathartic, or at the Interval betwixt each, he must take some acid Potion. Sydenham recommends Spirit of Vitriol. If, by these Methods, the Patient can be brought to the End of the Suppuration, which seldom happens, the Patient must take some gentle Cathartic, after which, he must conform to an incrassating Regimen; and the Cure must be ended by some Antiscorbutic.

THE FOURTH SORT OF THE CONFLUENT MALIGNANT SMALL POX.

This Species of Small Pox partakes of the Nature both of the *confluent* and *distinct malignant* Kinds, though it has a greater Affinity to the latter Species, since it hardly differs from it, and ought to be treated in the same manner.

The following Symptoms are favourable, in the *malignant* Sort of Small Pox:

If the Fever, and all the Symptoms which preceded the Eruption, abate at the Eruption.

If the Eruption is gradual.

The Elevation of the Pock, and the Redness of the Circle at their Base.

The Whiteness and Consistence of the Liquor contain'd in the Pock.

A Softness of the Skin and Tendons.

A gentle Transpiration.

A moist Heat.

A large Quantity of Urine, and that of a good Colour.

No Disturbance in the Head, Breast, or Belly.

A Cessation of all the Symptoms which generally accompany the *malignant* Fever, join'd to the Small Pox.

Division of the bad Symptoms which appear in the Small Pox, into those before the Eruption, those at the Eruption, and those at the Suppuration.

BEFORE THE ERUPTION.

An Inflammation of the Eyes.

A violent Beating of the Carotid Arteries, if compar'd with the Pulse.

A dry, hard, burning, and painful Skin.

AT THE TIME OF THE ERUPTION.

A too sudden Eruption of the Pocks, in which most of them appear in twenty Hours.

A considerable Swelling of the Face and Head.

A Stiffness of the Tendons, without Convulsions.

Profuse Sweats.

A Depressure, and want of Elevation, of the Pock.

An erysipelatous Inflammation in the Interstices between the Pocks.

A small Quantity of Urine, and that thick and cloudy.

A too large Quantity and Crudity of Urine.

An involuntary Fluxion of Tears, from one or both the Eyes, without any considerable Inflammation of the Eye-lids, or when the Patient winks with one Eye oftener than with the other, or can't endure the Light.

Such a *Confluence* of the Pocks, as the whole Face seems to be but one, is very dangerous.

When the Ptyalism, which happens at the Beginning of the Eruption, is thick and glutinous.

AT THE SUPPURATION.

If, at the Suppuration, all the Accidents, which ceas'd at the Eruption, return with Violence, the Patient is in great Danger.

When the Pus is clear; not so ill in the crystalline Sort, as the others.

The Blackness of the Pock is a very bad Sign, unless, upon Opening, some Drops of Blood are mix'd with the Pus, and the Skin at the Bottom appears of a vermilion Red; but if it is of a blackish deep Red, it is very bad.

When the Pock sinks suddenly, or the swell'd Parts sink.

When the Stools are greenish, and serous, it is bad; when thick, bilious, and like a Pus, it is a good Symptom, provided the Pock does not fall.

When the Ptyalism ceases suddenly, and, at the same time, the Glands of the Throat swell, there is no Hope.

A Pomatum, to be us'd in the Small Pox.

Take two Ounces of the Oil of the Four cold Seeds; of *Sperma Ceti*, two Drams; and of Virgin Wax, three Drams: Melt all in *Balneo Mariae*, and strain; then slice it down with a wooden Spoon, and put it, by small Portions, into a marble Mortar: Beat the Whole, for three or four Hours, with a wooden Pestle, pouring now-and-then upon it a little pure Spring-water: Then add some Drops of the Oil of Citron, or a few Spoonfuls of Orange-flower-water.

When this Pomatum is to be us'd, we are to take some of it on the Point of a Feather, and gently anoint all the Pustules on the Face.

We may begin to use it when the greatest Part of the Pustules, being suppurated, appear white, which generally happens about the End of the seventh Day; though there would be no Danger in using it before the End of the Suppuration. This

Liniment may be repeated frequently every Day, and ought to be applied as often as the Face becomes dry, in order to hinder, as much as possible, the exterior Pellicle of the Pustules from becoming hard and dry too soon.

In preparing this Pomatum, it is absolutely necessary to beat it very long, in order to procure an intimate Incorporation of its Ingredients, and render it as white and light as possible.

It may be preserv'd for several Days, without Corruption, provided it is kept in a cool Place: If it should become too thick, it must be again beaten in the Mortar, observing, now-and-then, to mix some Drops of Water with it. But if it should become yellow, or contract a bad Smell, we must use it no more, but make a fresh Pomatum of the same Kind. *Helvetius.*

The Small Pox is a Disorder very frequent among Infants; and though it is so accurately describ'd by *Sydenham*, that his Account of it deserves to be read with the greatest Care, yet I shall specify some Things which evince, that the Small Pox may be reduced to the same Simplicity with the other Diseases, and that something is, as yet, wanting, in the Method of Cure.

The Small Pox is generally epidemical, beginning first in the Spring, increasing in the Summer, languishing in the Autumn, generally disappearing in the subsequent Winter, and next Spring returning in the same Order. The sooner it begins before the End of the Winter, the more malignant is its Nature; and, the later it begins, the more mild and benign the Disorder is. Hence it is obvious at what particular Season of the Year it is most dangerous.

It seizes Persons of all Ages, and Sexes, but especially Children, provided they have not before labour'd under it. The more Age has dissipated the Fluids, and corroborated the Solids, the more violent the Disorder: Hence the Small Pox is milder, and more easily cur'd, in Children, Women, and those of soft or lax Habits, than in those accusom'd to Labour, full-grown, and old Persons.

Though this Disorder is epidemical, it is, nevertheless, convey'd from an infected to a sound Person, by a certain Contagion, which, being lodg'd in the Air, is with it communicated to the Lungs, Fauces, Nostrils, Oesophagus, Stomach, and Intestines; so that the Disorder seems, at first, to arise from a small Quantity of poisonous, or peccant Matter.

This contagious Matter, when mix'd with the Fluids, immediately produces certain Effects, which mutually succeed each other, such as Horripilation, Rigor, an acute Fever, an intense and perpetual Heat, a preternatural Splendor of the Eyes, arising from a Defluxion of a hot and subtil Liquor; an intense Pain of the Head and Limbs, but especially about the Parts below the Pit of the Stomach; a Vomiting, and Nausea; an insupportable Inquietude; a Stupor; a Drowsiness; and, in Infants, epileptic Fits.

In the Beginning of this Stage of the Disease, the Blood, taken from the Patient's Veins, is beautiful, and resembling that of a sound Person; but, on the third or fourth Day, it appears like pleuritic, or inflam'd Blood, and the more it assumes this Appearance, the longer, or more violent, the Disorder has been.

This Stage continues in Proportion to the Variety of epidemical Causes, the Violence of the Disease, the Habit of the Patient, and the various Seasons of the Year. The longer this Stage naturally is, the milder it will be, through all its Stages; and the shorter, the more violent.

Hence this Stage of the Small Pox seems to consist in an increas'd Velocity of the Fluids, by means of an inflammatory Stimulus mix'd with all the Parts of the Blood.

The Small Pox, therefore, which bears an Affinity to all acute inflammatory Disorders, is, in this Stage, with Difficulty distinguished from them: A Knowledge that the Disease rages epidemically; that the Patient is disposed to it; that there is a previous Contagion, and the Symptoms of it produced, evince, that the Small Pox is present, and that the Pustules will succeed in its other Stage, to be afterwards described.

When the first Stage of the Disease is known, the sole Intention of Cure seems to consist in removing the inflammatory Stimulus, curing the present Disorder, hindering its farther Progress, and preventing a future Suppuration and Gangrene.

The inflammatory Stimulus may be removed, by Correction with Specifics, or by an universal antiphlogistic Method.

The specific Correction of the inflammatory Stimulus ought to be obtained by Remedies opposite to the contagious Poison, so small a Quantity of which, admitted into the Body, produces all the other Symptoms of the Small Pox.

A strict Comparison of the History of Antidotes, and the Nature of the Small Pox, afford some Reason to hope that such a Remedy may be found, and that great Advantages may arise to Mankind from it.

The Success of Antimony and Mercury, by Art rendered highly penetrating, not corrosive with a too saline Acrimony, but duly mixed with each other, induces us to seek for such a Remedy in these two Medicines. Thus,

Take of unwashed diaphoretic Antimony, six Drams; of *Mercurius Dulcis*, half a Dram; and of the best *Sal Polychrestum*, one Dram: By long Trituration reduce to a fine Powder; to be divided into twenty-four equal Doses; one of which is to be taken every three Hours, drinking after it four Ounces of recent Whey. Or,

Take of the Flowers of Sulphur, one Dram; of Cinnabar of Antimony, one Scruple; and of nitrated diaphoretic Antimony, and *Sal Polychrestum*, each one Dram and an half: Reduce to a fine Powder; to be divided and taken in the same manner with the former.

In the Small Pox we may, also, use the universal antiphlogistic Method, and take those Measures which, in all inflammatory Disorders, are found effectual for hindering the Inflammation from degenerating into Pus, or a Gangrene. Nor, as these Measures prove successful in other Disorders, is it to be doubted, but they would, also, do so in this. Hence it is not impossible that a variolous Fever may be often present, without the Small Pox.

That the universal antiphlogistic Method may be observed, it is necessary, first, that the Patient should have a sufficient Quantity of Blood taken from him. Secondly, That the whole Skin, Fauces, Oesophagus, and Intestines, should be frequently relaxed with Clysters and Fomentations. Thus,

Take of the Flowers of Mallows, Marshmallows, Dandelion, Mullein, and Soapwort, each half an Ounce; and of Linseed-meal, two Drams: Boil in twelve Ounces of Water, for a Clyster; to be injected every twelve Hours.

Woollen Cloaths, also, wet in the same Decoction, are to be applied warm to the inferior Parts of the Body; such as the Feet, Hams, Groins, Thighs, and Legs: The Mouth, Fauces, and Nostrils, are, also, to be washed and moistened with the same Decoction. Thirdly, The Patient must drink large Quantities of thin, acidulated, or nitrated farinaceous Water; he must, also, drink antimoniated Nitre, or the *Sal Polychrestum*, in Milk and Water. Thus,

Take of the recent Flowers of the wild Poppy, and Elder, each one Ounce; and of entire Oats, half an Ounce: Boil in a sufficient Quantity of Water, with each twenty Ounces of which mix, of sublimed Nitre, that is, such as has been separated from diaphoretic Antimony by washing and Crystallization, half an Ounce; of recent Citron-juice, one Ounce; and of the Syrup of Violets, one Ounce and an half: Of which Preparation the Patient may drink as much as he pleases.

Fourthly, The Patient's Aliments ought to be light, the Air drawn into his Lungs pretty cool, and his Body must be kept well covered, and perspirable. For Aliments of this Kind, see the Article FIBRA.

Though in the Small Pox the Intention of Cure, and especially the Method of obtaining it, already mentioned, are rarely thought of; yet such Measures have accidentally proved successful, even when Physicians have been ignorant of the Disease.

When this Disorder finishes its first Stage, which is that of Contagion, it enters upon another, which may be described thus: The Skin, first, of the Head and Face, then of the Hands and Arms, and, lastly, of the Trunk and interior Parts of the Body, is infected with small red Specks, like those produced by the Bites of Gnats; soon after, all the Symptoms are mitigated, and every Hour the red Pustules are continually enlarged in Bulk, and Number: They are, also, more elevated and inflamed, till, at last, the Skin becomes tense: Heat and Pain are produced, and the Circulation of the Blood, and Perspiration of the Humours, are retarded. Hence arise the greater Repulsion of the Humours to the internal Parts; the Fever; the Anxiety; the Difficulty of Breathing; the Pain of the Fauces; the Quinsy; the *Diarrhæa*; the Dysentery; the Discharge of bloody Urine; the Spitting of Blood; and the hot, red, and painful Inflammation of the Skin lying between the Pustules; which, when they have continued four, five, or six Days, are absolutely suppurated, and converted into as many small Abscesses. I call this Stage of the Disease the Progress of the Inflammation into an Abscess: This Stage lasts, according to the Variety of epidemical Causes, the Temperature of the Patient, the Violence of the Disease, the Regimen, and the various Seasons of the Year, for the most part, four or five Days; so that on the eighth Day, from the Beginning, there is

generally a Suppuration, at which time the Blood is highly inflamed.

If the Contagion is violent, the Pustules numerous, adjacent to each other, and, as it were, intermixed, all the Signs of the Inflammation great, the Patient of a saline oleous Temperament, in the Vigor of his Age, and accustomed to delicate Living; if the Regimen and Remedies greatly increase the Circulation of the Humours, and if the Summer is very hot; then, towards the End of the Inflammation, red Vesicles, distended with Lymph, appear, and are Marks of a gangrenous State of the Juices. Hence the Skin becomes unfit for the Circulation and Exhalation of the Fluids, which are, for that Reason, more repelled to the internal Parts. Hence arises the excessive Salivation, and the Swellings of the Hands and Feet.

From what has been said, we may learn the Diagnostics and Prognostics of the second Stage of the Small Pox; as, also, the Nature of the Disease, and its Symptoms, which are generally circumscribed within these Rules.

The milder the Stage of the Contagion is, the gentler, also, that of the Inflammation will be.

The more slowly the Pustules make their Eruption, and, consequently, the longer the State of the Contagion is, the Disorder is proportionably slighter.

The larger, fewer, more distant, more remote from the Face, the whiter, and, at last, yellower the Pustules are, or the more slowly they proceed, the better, and more favourable, they are.

The more numerous, small, and intricate, the Pustules are, the more there are on the Face, the more brown or black, or the quicker their Progress, the worse they are.

The more the Matter of the Pustules resembles mild and perfect Pus, the better it is.

The more the Matter of Pustules resembles a gangrenous Ichor, the worse it is.

The redder the Interstices between the Pustules are, and the more hot, tense, and tumid, about the Time of Suppuration, it is so much the better, on account of the Circulation still remaining in these Parts.

The more the Parts lying between the Pustules are pale, or blackish, the worse; since these Signs prognosticate a mortal Quinsy, or a Peripneumony, unless a copious Salivation, or an excessive Tumor of the Hands, should come on: For the Circulation of the Blood is retarded here, and, consequently, increased towards the internal Parts.

If, in the Places between the Pustules, purple-coloured Spots appear, a mortal Gangrene is denoted.

The Intentions of Cure to be pursued in this Stage of the Small Pox, are various, according to the Degrees and Duration of the Disease: For, in the first Beginning of the apparent external Inflammation, Care seems requisite, to prevent degenerating into a Suppuration, concerning which, we have already treated: Or, if this Caution is neglected, we are to take care that the Suppuration be as small as possible, far from the Head, and slow; which End is obtained, first, by the lightest Aliments, and such as resist Putrefaction. See FIBRA. Secondly, By diluting, mild, and somewhat acid Liquors, such as those already mentioned. Thirdly, By deobstruent, aperient, and diluting Liquors, continually drank in large Quantities. Thus,

Take of the recently extracted Juices of Succory, Lettuce, Dandelion, and Fumitory, each two Ounces; of the Roots of Vipers Grass, four Ounces; and of pure Nitre, one Dram and a half: Mix all together, and let the Patient take one Ounce every Hour of the Day. Or,

Take of China Root, and the Roots of Sarsaparilla, and Grass, each two Ounces; of the Roots of Vipers-grass, eight Ounces; and of Elder-flowers, one Ounce: Boil for an Hour, in a sufficient Quantity of Water, to six Pints; of which let the Patient take five Ounces every Hour.

Fourthly, By bathing the Feet twice a Day, and continually fomenting them with a tepid Fomentation; applying, at the same time, epispastic Plaisters to the Soles of the Feet, and the Hams. Thus,

Take of the Melilot Plaister, of *Galbanum*, and *Sagapenum*, each one Ounce: Mix all, spread upon a Piece of Leather, and apply to the Soles of the Feet. Or,

Take of the Crums of stale Bread, six Ounces; of Rue, a Handful; of bruised Mustard-seed, six Drams; and of Salt, and Vinegar, each four Drams: Mix all together, and apply to the Soles of the Feet, and the Hams.

Fifthly, By a somewhat cold Regimen, and especially by the Admission of a pretty pure and cool Air; taking care, particularly, to guard the inferior Parts of the Body from Cold.

Sixthly,

Fifthly, These Measures are to be taken in the very Beginning of the Disorder. And, sixthly, If the Disease is intolerably violent, Opiates are to be used in the Afternoon, at Five o'Clock; taking care not to neglect the other Circumstances prescribed. Thus,

Take of the Syrup of white Poppies, one Ounce: Make into a Draught. Or,

Take of pure *Laudanum*, one Grain: Reduce to the Form of a Pill. Or,

Take of pure *Laudanum*, one Grain; and of distil'd Mint-water, half an Ounce: Mix for a Draught.

After this second Stage of the Small Pox, there succeeds a third, which is that of the Suppuration; in which the Disease is gradually increased, and perfected. During this Stage, the purulent Pustules are daily increased, and then, being matured, become white, or yellow, and break on the third or fourth Day of this Stage: Then the whole Face and Skin abound with a moveable *Pus*, whilst the external Parts are dry'd, and such of them as are disengaged from Pustules, inflamed. Hence, by the Obstruction of the Circulation and Perspiration, by the Irritation of the nervous and membranous Systems, and the Absorption of the *Pus* into the Veins, a malignant Fever, accompanied with the most terrible Symptoms, is produced. If this purulent Matter is mixed, and circulates long with the Blood, hence, according to its Congestion in various Parts of the Body, it produces various, and hardly surmountable Effects, such as a *Delirium*, a *Phrenitis*, a *Peripneumony*, a *Pleurisy*, a *Vomiting*, a *Dysentery*, an *Hepatitis*, *Apostems*, *Carbuncles*, Tumors of the Joints, Abscesses, Stagnations of the Fluids, a tabid Disposition, a *Phthisis*, and many other terrible Disorders.

But if the variolous Matter is subtle and acrid, and the Disease violent, the Skin, Fat, and Muscles, are corroded, whilst broad malignant Ulcers are formed, which often penetrate to the Bone, and leave unseemly Cicatrices behind them.

In this Stage of the Small Pox, a Discharge of the *Pus* to the external, and a Repulsion of it from the internal Parts, are to be obtained; which Ends are best answered by relaxing the Skin with tepid and relaxing Fomentations, carefully and constantly renewed; by frequently washing and gargarizing the Mouth and Fauces; by liberal Draughts of warm, cardiac, detergent, aperient, and antiseptic Liquors; by mild, diluting, emollient, and laxative Clysters, daily injected, and long retained; by living upon Broths prepared of Flesh, and seasoned with Salt and Acids; and by the moderate, though not too frequent, Use of generous Wines; exhibiting, at the same time, proper Doses of Opium, against the violent Shocks of the Disorder. The Liquors and Medicines proper for these Intentions are already specified under this Article.

If the Disease is violent; if there is a gangrenous Ichor, instead of *Pus*; if almost the whole Skin is covered with Pustules; it is sufficiently obvious, why the Small Pox is productive of so unhappy Effects, and even of Death: But this will be best understood by him, who, from Anatomy, knows, that not only the external Skin, but, also, the Eyes, all the Membranes of the Nostrils and Mouth, the *Aspera Arteria*, the *Bronchia*, the *Oesophagus*, the Stomach, the Intestines, the Liver, the Spleen, and the Lungs, are full of these Pustules: For the Person who knows this, understands the Reasons of what has been said, perceives what is necessary to the Cure, and whether the Violence of the Disease, and the Death of so many Patients, always happening after the Use of common Means, are not Circumstances which ought to excite the Care and Industry of the Physician in the Beginning of the Disease, since, by the common Method, accidental Cures are only produced, by the Force of Nature. Inoculation seems to be a Practice sufficiently certain and safe. *Boerhaave*.

Boerhaave's Judgment, with respect to the ordinary Method of treating the Small Pox, is very remarkable. His Words are, "Vulgata quippe Methodo nullus nisi sponte emergit:" By the common Method, accidental Cures are only produced, spontaneously, that is, by the Force of Nature. I will not presume to determine how far this Assertion is true; though I should sooner believe it of this Distemper, than of almost any other I am acquainted with; and candid Physicians are sensible that it is not entirely without Foundation. Whoever, therefore, proposes a more certain, and less exceptionable Method, deserves, at least, that his Sentiments should be examin'd with Candor; and, if Experience gives a Sanction to the Novelty, the Inventor merits all Kinds of Acknowledgments from Mankind, for the important Discovery.

As I had heard of considerable Successes in the Treatment of the Small Pox, attending a Method within these few Years introduced by *Dr. Thompson*, I judg'd it my Duty to enquire of

himself what that Method was, and upon what Observation, it was founded. The *Doctor* has been so obliging to me, and the World, as to communicate what I ask'd, without Reserve; and has given me Leave to make publick the following Treatise on this hitherto invincible Distemper; which I hope and believe will be agreeable to all those who consider Truth as the End of their Researches, and prefer the Welfare of Mankind, and Improvement of Physic, to all less generous Considerations.

The Small Pox is a Disease, that, at this time, is spread, in a manner, over all the known World, seizing, first or last, all Sorts of People, not sparing either Sex, Constitution, Climate, or Age; and whether it be from a Violence peculiar to the Disease, or from the various or improper Methods of Treatment, I cannot say, but, at least, every Day's Experience shews us, that it is, at this time, more universal than the Plague, and not much inferior to it in Danger. The many Authors who have treated expressly upon this Subject, the many Revolutions which have happen'd, both in the Theory and Practice, the Controversies yet subsisting, and the Points in Debate of such Consequence, their Opinions being so extremely wide from each other, that any Physician, who attempts the Cure of this Disease, should he not be entirely in the Right, would be so far from relieving the Patient, that he must rather join with the Disease, and render it more fatal, are the Motives that have induced me to give the Observations I have made in the Course of my Practice, concerning the Small Pox, which was, as it appears from History, unknown till the seventh Century, but now has taken such Root in the World, that it is even become hereditary to us.

The Small Pox, not being described by any of our *Greek* or *Roman* Physicians, proves almost to a Demonstration, that it never appeared either in the *Greek* or *Roman* World. Such Authors as *Hippocrates*, *Aretaeus*, *Celsus*, and *Caelius the African*, (rather *Soranus the Ephesian*) who were so excellent in the descriptive Part of Physic; inasmuch that I might say, we have rather the most finished Pictures of Diseases, than Histories (for they excelled in Description, as they did in Poetry, Sculptures, and Painting); it was impossible this Disease, had it then existed, could have escaped their Attention: Yet it is not impossible, but it might have then existed, in some other Parts of the World: And there have been those Physicians, who have endeavour'd to trace it from *India*, from thence to *Arabia*; but we all know it appeared in *Egypt*, brought there by the *Arabians*, when they conquered that Kingdom, during the Caliphate of *Omer*; from thence it spread where-ever they carried their Arms, their Religion, and their Commerce; through *Egypt*, *Syria*, *Palestine*, *Persia*, *Lycia*, along the maritime Parts of *Africa*, from thence into *Spain*, and afterwards diffused itself, by the Progress of our *European* Discoveries, Wars, and Trade, over almost all the known Parts of the World. *Rhazes*, who flourished in the Ninth Century, a *Syrian* by Birth, *Arabian* by Extraction, and *Mahometan* by Religion, appears to be the first Writer we have extant, who treats of this Disease.

We have had, at least, a thousand Authors, who have treated of the Small Pox: Those for the first five hundred Years varied but very little; neither can I say there have appeared any controversial Writings, among Physicians, of Moment, till *Sydenham*, the great Observer, arose. The Practice for a Century or two before his Time was a common beaten Path, supported only by some foolish *Hypothesis*, or empirical Receipts. They aimed chiefly, with Cordials, and other means, to promote the Eruption: Hence they imagined a kind of Poison expelled from the vital Parts to the Circumference. In the Course of Maturation, or the Filling of the Small Pox, the same Method was continued, lest the Poison should revert again to the noble Parts. The Reasons which induced Physicians to this Comportment in their Practice, seem to me to be these: They observed, during the first Stage of this Distemper, that is, till the last Day of the Eruption, their Patients to be agitated with great Inquietudes, and the Symptoms to be extremely high, which generally abated, when the Small Pox was entirely out: Wherefore, by promoting the Eruption (which they thought could not be done, but by Warmth, and hot Medicines) they imagined the Poison expelled; and expected the Symptoms would abate, which appeared to them a Demonstration of an Expulsion of morbid Matter. But how great will *Sydenham* appear, when we show the Motives which led that great Man to a Method of Practice, which entirely overthrew the vicious Practice that then prevailed with respect to this Distemper? He took Nature for his Guide, depending chiefly upon Observation and Experience, supported by Reason. He observed, that, among common People, where nothing was done, that the slower, and the later the Eruptions appeared, the more favourable was the Sort; and laid down this as a kind of Aphorism, that if the Small Pox appears the first Day of the Sickness, it might be looked upon as a kind of Plague; if it came

out on the second Day, extremely dangerous; if on the third, less so; if on the fourth, the distinct Sort, and generally without any Danger. From whence he justly concluded, that the Physicians were entirely in the wrong to hasten the Eruption, which a prudent Man would dread to see till the fourth Day.

Sydenham had his Followers: The Populace, who think they have a Right to give their Opinions in Physic, made this Distinction; the cool Regimen, and the hot; observing one Set of Physicians confining their Patients immediately to their Beds, and giving them Medicines of the warmest Kind, in order to drive out the Small Pox; the others leaving, as it were, the Eruption to Nature alone; and sometimes taking a little Blood away, as their great Master *Sydenham* directed. We shall omit speaking of the Variety of empirical or quack Medicines, since they generally were of the stimulating and heating Kind, that were given, in order to promote either the Eruption, or, after they were out, to ripen and carry on Maturation; for I allow of no peculiar Virtues in any Medicines, but in the Application, according to the Intention of an understanding Physician. *Sydenham*, then, made no farther Discoveries in the Small Pox, if we except the elegant Description he gives of the Disease, than during the first Period, that is, till the sixth or seventh Day, when the secondary Fever begins to arise. At this Period he took Notice, that towards the seventh Day, at Night, all of a sudden, notwithstanding the Symptoms were appeased, the Pulse became regular, and all the Small Pox out over the whole Body; the Water well coloured, or thick; the Eyes cool, and not with that fiery Lustre as before; the whole Storm allayed, that agitated the Sick, during this first Stage of the Small Pox: He observed, and, perhaps, this Observation may be looked upon as one of the most important in Physic, that, upon the coming on of the secondary Fever, it came not on by degrees, but like a Storm, which begins at once like a violent Hurricane; the Patient becomes suddenly light-headed; the Eyes blood-shot, streaming with Water; the Urine pale; the Pulse quick and hard; a sore Throat, &c. Here again he departs from former Physicians: He orders his Patient to be taken out of Bed, to be kept cool; the Feet bathed in warm Water, and Opiates repeated from time to time, till this Kind of Phrensy, and other violent Symptoms, cease. He then falls into the Practice of the Physicians he opposed, from this Time to the next remarkable Stage of the Small Pox, by allowing some cordial Medicines to keep up, as they term it, the Pock; but upon the Face subsiding, the Spitting growing more viscid, and, at last, stopping, on the tenth or eleventh Day, he falls into the most fatal Mistake, as well as others, and thinks there can be no Safety, if the Spitting returns not again, and the Hands swell, unless these Points are obtained by the Administration of the strongest and most powerful Medicines; and this fatal Mistake is owing to an *Hypothesis*, which involved at that time all the World, and even *Sydenham* himself. For they supposed an essential Poison peculiar to the Small Pox, which, till this time, spent itself by Salivation, and the Swelling of the Face, reverted back to the nobler Parts; that Nature being weak and debilitated, unable to expel this morbid Matter, falls under the Weight, and the poor Patient expires. Notwithstanding he was unable to obviate this last terrible Stage of the Disease, and reasoned and acted but as others did, however, like an able Mariner, who had made many Discoveries, and wanted still more to complete his Voyage, announces, like a Prophet, those Dangers he was unable to shun; and points out those Rocks, against which he and the rest had been shipwrecked. He says, and, in this Part, he even excels the *Greeks* in Description, that if the Spitile grows thick and ropy, and stops entirely, the Face, which was elevated and swelled before, suddenly falling, and the Hands not swelling, the Patient necessarily dies: But if the Face continues elevated beyond such a time, the Spitting continuing, also, beyond such a Period, the Patient certainly lives.

We may compare what *Sydenham* did, to what my Lord *Verulam*, that noble and illustrious Observer of Nature, did on another Occasion: He not only made surprising Discoveries himself, but he laid down a Plan, and recommended a Continuation of Natural History to Posterity to trace out, it being impossible for the short Life of one Man to compile so immense an History, as the boundless Field of Nature affords. The Honourable Mr. *Boyle* began where the other left off, and happily executed the Plan the other great Philosopher had laid down.

Sydenham then, having made many Discoveries, in regard to the Small Pox, looked upon it as a true inflammatory Fever; every Pustule he considered as a phlegmonous Tumor; he conducted his Patient extremely well to the Beginning of the secondary Fever; but when that rose too high; when the Matter was ill concocted; the Face sinking; the Spit growing viscid, and, at last, stopping; like a Prophet indeed, he an-

nounces the Danger, though his incomparable Skill in Physic, great as it was, could not avert it.

Thus Physic stood, after his Death, with regard to the Small Pox, till *Helvetius* appeared, who found, that, at the Turn of the Pox, when those fatal Symptoms, which *Sydenham* took Notice of, presaged certain Death, there had been no other Means used than by giving the Patient the strongest Cordials, which always failed; he introduced, therefore, Purging; a Method as essentially different from the then established Doctrine in the last Stage of the Small Pox, as *Sydenham's* was, with respect to the first: Here, then, they promoted, and raised a Fever, which was too high already; there he restrains it by Purging. But *Helvetius* being led through a kind of Hypothesis to these Motives, and not from any Experience or Reason, no Wonder he remained still in the Dark, unable to unveil the Difficulties attending this Disease. He divides the Small Pox into several Species, and notwithstanding his being sensible of its being an Inflammation *sui Generis*, yet is very far from treating it always as such. I can find nothing remarkable in what he has done, unless the Purging at the Turn of the Small Pox. This Method Dr. *Freind*, in England, followed, and took a great deal of Pains to establish this Doctrine here among us. It was with the utmost Difficulty he carried his Point: This Practice being so extremely wide of what was then so firmly established for many Ages, the giving of Cordials to promote the Eruption; as the Patient sunk under the Load, still the more Cordials were given: And thus they continued augmenting their Doses, till the Patient was burnt up. This was the Doctrine and Style of the Physicians, which the Standers by, and the Women, came readily into. Nurses, then, found it no hard matter to conceive the Force of their Doctrine: They saw it only consisted in confining a Person to a warm Room, always in Bed; and with the greatest Diligence taking Care, that the Patient might not be exposed to the Air; and all this, lest the Eruption should fall back; and giving the Patient continually a Set of Cordials, to strengthen, support, and keep the Disease from the Heart. This Jargon squared with the common People; and, as they found one half of the Cure depended upon Nursing, they claimed soon the Province of being Doctors in this Distemper. No Wonder, when *Freind* introduced this French Custom of Purging, and at a Period of the Disease, when they imagined, that, if ever, Cordials were of Use, they were at that time, when the Patient was languishing, and dying, on the eleventh Day, that his Method of Purging was so great a Contradiction to their Method, that they thought it downright Murdering the Sick. *Freind* wrote to support this new Practice; and the Drs. *Mead*, *Frewin*, and *Cade* came into it. As a Controversy arose, *Woodward* and others opposed it. However, the Physicians, from that time to this, have ventured, in extreme Danger, in the last Stage, to give a Dose of purging Physic; and sometimes to take away a little Blood. But as *Freind* reasoned, also, on an Hypothesis, and considered a Poison to be carried off by Purging, he ventured not to give such a Medicine as long as there was any Swelling, and till the Spitting was in a manner over. Thus he stayed till the Patient was upon the Point of expiring, before he began this Method, which was generally too late. Besides, this Hypothesis detained him in a most profound Ignorance of the Nature and Cure of this Disease; for he reasoned thus: While there is any of the morbid Matter passing off the usual Way, by the Swelling of the Face, however little, as well as by the Spit, however viscid and detaching, we are to expect no farther Assistance this Way, when we once begin Purging: For the Whole depends, then, upon carrying off the morbid Matter by Stool: He considered the Patient in a depressed State; not depressed by the Violence of a Fever: For, if he had considered this Case, as that of a Person sinking in a common Pleurisy, from the Height of the Inflammation, he would have avoided this Error. While he purges, he fears his Patient may sink, and so supports him with Cordials. By these means he is lost and puzzled, not acting rationally, as in an Inflammation well known, such as a Pleurisy; where Physicians consider a depressed and undulating Pulse, clammy Sweats, great Weakness, &c. as Signs of the Effect of an high Inflammation; they consider the Patient oppressed by the Violence of the Fever: Nay, should a Looseness appear, it alters not the Case, their whole Aim is at curing the Inflammation by Evacuations, whence they justly expect the Pulse to rise, become fuller and more distinct, which, in Reality, if the Patient be recoverable, always happens. *Freind*, and his Followers, then reasoned not in the Small Pox, as *Sydenham* did in a Pleurisy; but the Expulsion of the morbid Matter was what he chiefly aimed at; which Hypothesis kept him from the true Knowledge of the Nature of this Disease. And, notwithstanding he followed *Helvetius*, in Purging in the last Stage of the Small Pox, which Evacuation, I must own, is one of the proper Means

Means to limit the Fever: Yet, as what he did, proceeded from Hypothesis, and not from Reason, he deserves no just Praise, because Hypothesis kept him in the Dark, from knowing at what Time a Medicine should be given; how often it should be repeated; or what kind of Purges were preferable; or what other Means would more effectually oppose that Fever, which, if not checked betimes, most certainly destroys the Patient. His considering Purging in the Small Pox, without knowing the Reason for acting so, is, after all, but a kind of Empiricism; for he depends upon the specific Force of one Medicine: Whereas, had he been led by Reason, he would have known, that, by subduing the Fever, he obtains his Ends; and that this Point may be obtained by various Means: For whatever Medicine that has Power to effect this, will both prolong the Spitting, and the Swelling of the Face, the two principal Objects, in the last Stage of the Small Pox, deserving the Attention of the Physician: For, if these two Circumstances succeed, the Patient certainly lives.

Boerhaave is the next Author who has wrote expressly on this Disease; an Author of the most profound Erudition, and extensive Practice, who, after having read, as he says, a thousand Authors, gives it as his Opinion, that there are scarce any worthy to be read, unless the second *Hippocrates*, *Sydenham*.

Boerhaave has gone farther towards a Discovery of the Nature and Cure of the Disease, than all the Physicians who preceded him: He considers the Disease as a true Inflammation: He not only thought it improper to force the Small Pox out; for he very well knew, the sooner the Eruption appeared, the more fatal: But he, also, ventured to restrain a too sudden Eruption: And he even ventures farther, and recommends it to Physicians hereafter, to attempt to cure this Disease in the very first Stage, by preventing even a Suppuration of the Pustules. And he reasoned thus: In a Pleurisy, in a Quinsy, and other inflammatory Fevers, is not the Physicians Attention principally to resolve the Tumors; and do not they labour all they can to prevent the Formation of Matter; why then do we suffer Matter to be formed in this Distemper? And is not the Resolution of such Tumors, by the Power of Medicines, in other Words, the curing of such Distempers?

Although *Boerhaave* reasoned so justly, yet he either was not capable of bringing this to bear, or the Disease is impossible to be subdued, without taking its usual Course, that is, by Suppuration: Yet this Advantage accrued from such Reflections, by endeavouring to prevent the Eruption, which could not be retarded, generally, beyond the fourth Day; yet the Violence of the Fever was so far abated, though not to be extinguished, that it produced the Eruption later, and, of consequence, with fewer Pustules; and for the same Reason, the Suppuration was kinder; and, therefore, the Disease less dangerous.

It seems wonderful to me, that so great a Man, who reasoned with such Precision, and practised with so much Judgment, had not thoroughly comprehended this Disease.

Upon the Rise of the secondary Fever, as that increased, and the Spit became more viscid, the Face subsiding, he abandons, as it were, his former Reasons and Method of Practice; his Views are now entirely for promoting Salivation: And, in order to promote this great End, he thinks some Means may be found out. Antimonial Medicines he seems to think the most probable to effect it. Although he mentions no morbid Matter, yet what he proposes, implies as much. He must suppose, that the Spitting carries off some Poison, or morbid Matter, as People think a Salivation answers the same Purpose in the Venereal Disease.

Here then he falls into an Hypothesis, which points out to him the Use of an empirical Medicine; for had he reasoned as justly on this Stage of the Disease, as he did on the first, he would have found, that the limiting the Violence of the Fever, let the Medicines or Methods be what they will, that controul it, would have carried on the Salivation, and answered this Point, as it did in the first Stage of the Disease, when the Inflammation being abated, the Pustules rose higher, and suppurated with kinder Matter.

Authors, who have wrote since, as they have said nothing worth our Notice, but what they have gleaned, and generally misapplied, from the Writers I have already mentioned, we shall pass over in Silence; and come to the History of this kind of universal Disease.

The Small Pox, in general, is of the inflammatory Kind, having all the Signs in common with other Inflammations; but in Species it differs essentially from all these Diseases. But in order to prove that it is an Inflammation, it will be proper here to determine the true Signification of the Word *Inflammation*, by giving as clear a Notion of it as the Nature of the Thing requires: Besides, it will be necessary to lay this down as a kind of Theorem, agreeable to the Custom of Mathematicians; because, when we have a perfect Notion of an Inflammation in general, we shall then proceed, by way of Analogy,

to treat of the Nature and Cure of this particular Species of inflammatory Fever.

A Tumor, from whatever Cause, that arises upon an human Body, attended with Pain, Pulsation, Heat; the Part being, also, discoloured; the Blood, at the same time, sized; the Urine generally higher coloured; the Pulse quicker than ordinary, and often harder: These Symptoms arising still higher, such a Tumor, if not opposed, passes on to Matter, or ends in Sphacelation, which is an entire Corruption of the Part affected: Such a Tumor is called by Surgeons *Phlegmonous*, a Term imported into our *English* Tongue, that signifies burning or inflammatory. As there is always a Fever attending the Progress of such Tumors, such Fevers are called *inflammatory*; and as the Blood is always sized, in proportion to the State of such Tumors, such Blood may be properly called *inflammatory*. And as the Blood is one of the most distinguishing Signs of an Inflammation, it will be proper to shew the various Changes in this vital Fluid, during the Course of such Tumors. Whether a Tumor arises from a Contusion, fractured Bones, from the Poison of Serpents, from Contagion, or from whatever internal or external Quality or Cause, the Moment it begins to be formed, that Moment the Blood begins to be changed. If ten thousand Men were let Blood, and not one of them had the least Appearance of Size in their Blood, and presently after, if some Cause or other should produce an inflammatory Tumor, the Blood soon becomes sized, and, as that Tumor hastens on to Matter, or Sphacelation, that Size increases according to the Progress and State of the Tumor: So that in the time of Suppuration, the Size of the Blood will be more in Quantity than it was the Day before; and more that Day than the first of its Beginning. But, in a State of Mortification, the Quantity of the Size will still be in proportion equal to that calamitous State of an Inflammation. As to the Colour of the Size, there is, also, something necessary to be observed: The yellow Colour shews more of Heat, or Fire, or Inflammation; than the pale; the green, more than the yellow; and the dark, more than any. The Consistence of the Size, which is always upon the Surface of the *Craassamentum*, or Cake, which swims in the Serum, the more viscid and tenacious, the less Fire; the more dissolved (which sometimes is like a Jelly half boiled) infinitely the more Danger: For when it is thus in a State of Dissolution, the Parts inflamed always mortify; and, when it is in this State, the inferior Parts of the *Craassamentum* are a black putrid Gore, and, also, in a State of Dissolution. What I have here said, with respect to the Blood, is the Result of above a thousand Observations, on all Kinds of Inflammations in general.

This is the clearest Notion I am able to give of an Inflammation; and I may venture to say, is what may be the most certainly known in the whole Practice of Physic. I have fixed this, as it were a Basis, to build the whole Superstructure upon; and what I thought absolutely necessary, because I shall have perpetual Recourse to it, in order to prove what I am about to treat of.

The Small Pox, then, answers, in general, to these Signs of an Inflammation; and, therefore, ought to be looked upon, and treated, in general, as such: But as it differs, also, specifically from all other Diseases, it, also, requires a particular History, and Method of Cure.

The Small Pox being an inflammatory Disease, it is certain that the Body must be disposed to receive an Inflammation; and whatever Cause hath Power to produce an Inflammation, may possibly produce this Species of it. The Disease, then, may be produced from violent Exercise, Change of Air, particular Climates, drinking spirituous Liquors: For those Causes productive of Inflammations, in such as have had the Distemper, also, produce the Small Pox instead of such Inflammations in those who have not had this Distemper: History proves this to be true; and daily Observation still confirms it the more. Who has not observed, that, upon hard Drinking, upon Change of Air, upon violent Exercise, People have fallen into the Small Pox, Pleurisy, Quinsys, or other Inflammations? But why these Causes should produce the Small Pox in some Subjects, and not in others, is, I must confess, as yet inexplicable to me; and will, perhaps, be for ever a Secret to others. When there is some particular Constitution of Air producing Inflammations, in general, it, also, produces the Small Pox at those Seasons; and as these are epidemical, so are, also, those: This explains the Reason, why the Small Pox begins at those Times of the Year, which the Physicians call an *irregular Season*; I mean in the Winter, the very Beginning of the Spring, or even in the Autumn; for we should naturally expect it from the Middle of the Spring to the latter End of the Summer; for, at this Season of the Year, we observe Fevers to be generally of the inflammatory Kind. In those Countries where the Plague, and malignant Fevers, are stationary, according to the Climate and Disposition of the Air in those Countries, we observe

serve the Small Pox to be, also, epidemical, and generally fatal. And, perhaps, under the Appearance of the Small Pox, they sometimes have the Plague.

Sydenham observed this in our own Kingdom; and Prosper Alpinus, in Egypt. We have had many Physicians, who have laboured to solve the Phenomena, and to shew what there is in Man which disposes him to the Infection of this Disease, which, when he has once had it, returns no more. Fuller, Drake, Helvetius, and many more, have ventured to assign such physical and mechanical Reasons, that, out of pure Respect to their Characters, I am even ashamed to mention. And what they have said, with respect to the morbid Matter, seems, in my Opinion, to be just as much to the Purpose. What we have here taken Notice of, enables us to prognosticate, what Seasons, and what Constitutions, are most probable to produce this Disease, and to whom the Small Pox is generally most fatal.

Since every Person in the World that is seized with the Small Pox, although his Blood was not inflamed before, must necessarily now undergo a State of Inflammation; and which generally begins to appear so upon the second or third Day; therefore, all such as are of an inflammatory Habit of Body, whether hereditary or acquired, must, of consequence, be disposed to have this Malady in an higher Degree than those of a contrary Disposition. Such People, who labour under any inflammatory Disease, must, of course, be still in greater Danger; because, if the Small Pox seizes upon such, before such Maladies are spent, they must expect the most fatal Sort, because then, the Patients must struggle with two Diseases; the former, and the Small Pox, both at the same time: For upon the second or third Day, the Blood, that was inflamed by the preceding Disease, now begins to acquire another Degree of Inflammation, peculiar to the Small Pox, which will then be as Fire added to Fire. But there are some again, in more danger on account of the Parts of the Body, that were before in a State of Inflammation before the Small Pox begins, that is, such whose Lungs or Brain, or Throat, are particularly inflamed, when this Malady first seizes: For as no Person dies of an Inflammation, till the Throat, Lungs, or Brain become affected; and, as no Person passes through the Small Pox, without these noble Parts being, in a most particular manner, inflamed more or less, so such must be exposed to the greatest Danger, since, besides undergoing the Small Pox, they must, also, undergo at the same time, a true Peripneumony, a true Quinsy, or a true Phreny; that is, they will have the Small Pox complicated with an Inflammation of the Throat, Lungs, or Brain. And I believe no one ever died of the Small Pox, but of one or other of these Diseases.

In the latter Stages of Life, or in such Constitutions, with whom Contusions, Fractures, Dislocations, and Ulcers, are more subject to inflame; in these, phlegmonous Tumors are more difficult to resolve; which, of consequence, proves, that in such the Small Pox must be raised to an high Degree: Therefore, Women, before the Menstrues are over, have it more favourable than after; Women, than Men; and Children, than Men or Women: And this is so, generally speaking; not but particular Cases are Exceptions to this Rule.

Occupations of Life, attended with Labour, as Watching, Fatigue, Encampments, Sieges, bad Air, Diet, or whatever Accidents attending War, provided they excite Heat, inflame. If the Small Pox seizes at such times, and such Constitutions, it must be of a bad Kind. Such Seasons of the Year, such Climates, such Dispositions of Air, producing malignant Fevers; if the Small Pox comes on at such Times, in such Climates, it always runs very high.

Sydenham, as I said before, observed, that to those who had the Small Pox during the Years 1639 and 1669, when malignant Fevers raged in London, it was very fatal. And Prosper Alpinus says, that, in Grand Cairo, in Egypt, during the time of the Year, when the Plague rages in that populous City, the Small Pox is commonly attended with purple and livid Spots, emulating even the Plague in Degree of Inflammation and Putrefaction. From hence we may certainly conclude, that all such People who are subject to Diseases, not attended with fixed and inflamed Blood, such as the aguish, hysterical, or flatulent Constitutions; those who have suffered the Loss of much Blood, either from Wounds, the Menstrues, Hemorrhoids, Miscarriages; or those whose Blood is impoverished by too low a Diet, can never have the Small Pox to an high Degree, provided such Causes just precede the Disease. We shall now shew the Signs and State of the Disease which precede the Eruption.

The Fever preceding the Eruption we will call *variola*, (for, till the Eruption appears, it cannot properly be called the *Small Pox*), arising from some Infection, communicated by the Air, or the Touch of a variolous Subject, Fear, or some other Cause, which hath Power to produce this Species of Inflammation, which begins generally with Shiverings, Rigors,

Paleness of the Lips, Lividness of the Nails, with other inflammatory Symptoms. Sometimes this Disease arises by way of Revolution, from some other Disease to this, as a common Cold, a slight Pleurisy, or Quinsy, the Measles, the Chicken Pox: And if it comes on before these Diseases have spent themselves, yet are we able to distinguish the Origin of the variolous Fever: Suppose a Person some Days ill of some one or other of these preceding Maladies, notwithstanding the usual Symptoms peculiar to these continuing, especially Heat, and a feverish quick Pulse, the Patient is suddenly seized with Shiverings, Rigors, or a violent cold Fit, like an Ague, the Lips and Nails are pale or livid; and although the Hands and Feet are extremely cold and chilled, yet is the Pulse, although quick before, now become much more so, inasmuch that we might plainly perceive the Addition of a new Fever. These following Symptoms preface a future Eruption of the Small Pox; Headach, Lassitude, the Limbs cramped, painful, heavy; the Patient is thirsty, extremely sick, or vomits; if Women or Children, the Matter thrown up is generally green, resembling an hysterical Case; the Eyes glaring, the Lids edged round with an Inflammation, resembling a Person who had drank much, unable to bear the Light; the Face glowing, great Heat and Dryness over the whole Body, Costiveness. But if the Inflammation runs very high, the Patient purges; the Stools are generally dark and fetid; Pains in the Small of the Back, across the Loins, and an unusual Weight; Oppression at the Pit of the Stomach. These last Symptoms, when attended with Nauseas, with a drowsy soporiferous Aspect, are the most distinguishing Signs, which Signs Physicians call *Pathognomonic*, distinguishing essentially this variolous Fever from all others; unless we except the Measles and Chicken Pox; where indeed the Symptoms are somewhat equivocal: But the Violence and particular Duration of these Symptoms will always distinguish the Small Pox from these.

There is one Symptom yet, which Sydenham observed, but that is peculiar to Children, I mean, a Convulsion Fit; but an extraordinary Drowsiness must precede the Fit, and a more than ordinary Lustre in the Eyes; such a Fit announces the Eruption to be near at hand. During the variolous Fever, if the Patient is inclined to sweat, it rather prefaces the distinct Kind. But we are not to depend too much on this Symptom; for the confluent Kind hath sometimes followed.

These are the Symptoms which precede the Eruption, and, also, continue increasing, and rising higher, till the Small Pox be, in a manner, entirely out; and the Pulse is remarkably quicker the last Day but one of the Eruption, than at any other time.

There is no Disease demands so much of the Physician's Attention, in observing the Time, Circumstances, and peculiar Stages, so remarkable as they really are in the Small Pox. Hence the most certain Indications arise, pointing out when we are to act, and when we are not. From hence we, also, may attain to a degree of Knowledge, so as to prognosticate either the Life or Death of the Patient.

The time of its first Appearance is, of all, the most important, and, therefore, first to be well consider'd; and as it is a Point of the greatest Moment, I wonder Authors have been so loose in the Calculation of the Time. If the Small Pox appears the first Day of Sickness, it is mortal; if on the second, not much safer; if on the third, dangerous; if on the fourth, or a little later, the Small Pox is generally of the *distinct* Sort, and without Danger. The summing up, and dating the Time of the Eruption, we will illustrate, by this Example.

A Man is seiz'd with a variolous Fever at three, five, six, or eight in the Morning, at Noon, or at six at Night, or at any time between twelve in the Morning and twelve at Night; the Day consisting of twenty-four Hours, or a natural Day. If the Small Pox begins to appear at Ten at Night, and the Patient sicken'd at Three, Five, or Eight, in the Morning, Physicians say, the Small Pox came out the first Day; but if the Patient sicken'd at Noon, Six in the Evening, or Eleven at Night, and the Small Pox begins to appear at Six the next Morning, at Noon, or at Eleven at Night, Physicians say, it broke out upon the second Day. If the Patient sickens, for Example, April 1. at Three in the Morning, Six in the Evening, or Eleven at Night, and the Small Pox appears April 3. at One in the Morning, Four in the Afternoon, or Ten at Night, they still say, the Small Pox came out on the third Day. If a Patient sickens on Monday Morning at Two, One in the Afternoon, or Eleven at Night, and the Small Pox makes its Appearance on Thursday, about Two in the Morning, Five in the Afternoon, or Ten or Eleven at Night, we fix the Eruption to the fourth Day. Any one may see how loose and equivocal these Calculations, hitherto establish'd by Physicians, are. Hence, their not having fix'd the Time of the Eruption exactly enough, has been the Occasion of the prognosticating the Small Pox to be a kind Sort, when it was not; to be the *confluent*, when

when sometimes it happen'd to be the *distinct*: And as, therefore, fixing the Time of Eruption with great Precision, is one of the greatest and most certain Indications in our Practice, the Omission of this hath too often been the Occasion of fatal Mistakes in Practice: Let us now shew the Incertitude of this rambling Method of reckoning the Eruption, and establish as exact an Account of the Time of the Eruption, as the Nature of the Thing will bear. In order to this, we must come to a Calculation by Hours.

A Patient sickens at Two in the Morning; the Small Pox appears at Eleven at Night; it comes out the first Day, the Patient having been sick twenty-one Hours, and no more, before the Eruption: Suppose, again, he sicken'd at Six in the Evening, and the next Morning it appear'd at Five; Physicians will tell you, it came out on the second Day; yet the Patient, all the while, was only sick eleven Hours before the Eruption; and, consequently, the Eruption appear'd sooner by ten Hours, in this Case, than in the other; which Case was call'd Eruption on the first Day. Again, a Man is seiz'd with the Small Pox about Eleven, for Example, on *Monday* Night; it makes its Appearance on *Wednesday* Morning, about Two; the Small Pox, in the common way of reckoning, appear'd on the third Day; yet, after all, the Person was ill of the variolous Fever but three Hours above one natural Day. Suppose one sicken'd of the Small Pox at Two on *Tuesday* Morning, and it made its Appearance on *Thursday* Night at Eleven, it is said to come out on the third Day; in this Case, the Patient labours under a variolous Fever the Space of sixty-nine Hours, in the former only twenty-seven Hours; and, consequently, there is forty-two Hours Difference: We may from hence conclude, how uncertainly Physicians must prognosticate from such an erroneous manner of calculating the Time of the Eruption.

Let us fix this as a Truth in general, to be regarded, that by how much the later the Small Pox makes its Appearance, by so much the kinder, and more distinct; and that the former manner, of calculating by Days, is too equivocal to be depended upon: We will, also, fix upon this for such a Compass of time, to be call'd late or early: If the Small Pox makes its Appearance before the first twenty-four Hours of Illness are expir'd, we are to expect the Disease to prove as fatal as the Plague: If from thirty to thirty-five Hours after the first Illness, extremely dangerous: After forty, to forty-seven or forty-eight Hours, less so, but rather the Flux Sort, than not: If it appear after seventy to eighty Hours, commonly the *distinct* Sort.

Having now fix'd the Time of the Eruption, and shewn the Signs or Symptoms which precede this Stage; we shall now give a History of the Signs and Symptoms attending the whole Course of the Eruption. According to the Violence of the variolous Fever, the Eruptions appear sooner or later, and they are of the *distinct* or the *confluent* Kind; that is, they are more or less in Number; or they are so few, that they are scatter'd over the Body, like so many Grains of Corn sown and springing up distinct from each other; or, otherwise, in Heaps, or Clusters, the Roots being entangled together. Now the Small Pox, in the thick Sort, when they first appear, are extremely small; but, as they grow, their Bases enlarge; so that, as these spread, several Pimples, that were distinct Yesterday, To-day become complicated; as so many small Grains of Quicksilver strew'd thick upon a Table, if each Globule was to swell and extend, they must run into one-another. After this manner, we say, the Small Pox runs together; hence we call it the *distinct* Sort, or the *confluent*; and as it is impossible for a very great Number of these Pustules to be upon the Body, without running together, because they are all in a State of growing and extending at the Basis, after four or five Days, they must take up greater Spaces: We may conclude, then, the Fluxing is but the Effect of the Number of the Eruptions. But there is, indeed, something here worthy a Distinction (for I think we cannot be too exact in the Description of this Disease); although we are principally to depend on the Number of the Pustules, yet the Distribution of them over the Body deserves some Attention: In one Subject there may be a greater Number of Eruptions, and those, by their Situation, distinct from each other; in another Case fewer, and yet they run together, are complicated, or flux, viz. as, in the Field sown by a skilful Farmer, a greater Quantity of Wheat arises distinct; in that sown carelessly, and in Heaps, it arises in Parcels entangled and matted together, with great Spaces between. Now should the Small Pox on the Face, or Body, appear in this *confluent* manner, it should be call'd the flux Sort. It is of much Importance what Parts of the Body are infected more or less: The Small Pox fluxing upon the Face and Head, although the other Parts of the Body were exempt from the Disease, yet is the Case not without Danger: But if the Face be entirely cover'd, and the Body too, the Danger must be still the greater. We are not to be surpris'd at the Danger being greater, when the Face and Head are principally affected; because all Phy-

sicians very well know, that a Turgency of the Vessels about the Brain must give us just Cause to fear a fatal Event.

Having thus given an Idea of what the *distinct* and *confluent* Sorts are, let us trace and describe these Eruptions from their first Appearance, till they are entirely out, and spread over the whole Body. This Period of Time, hitherto, has been said to take up the Space of three Days; but this demands as scrupulous an Inquiry as the variolous Fever did: For Example, the Eruptions begin to appear this Day at Three in the Morning; Physicians tell you, they will be all come out on the third Day, dating the first Day of their beginning to mature, the fourth Day after the Appearance of the Small Pox; they, therefore, allow three Days for the Eruption.

The following Example will sufficiently shew the Fallacy of this way of calculating, as well as the Necessity of a more exact History of the Breaking-out of the Pox: Suppose a Physician attends a Patient on *Monday* Night, about Eleven of the Clock, and discovers the Small Pox just appearing; he returns again on *Wednesday*, no matter what Hour, whether in the Morning, or Eleven at Night; he declares the Eruption entirely over, assigning this Reason, it appear'd on *Monday*; and this being the third Day, the Eruption must be complete. How equivocal is this, as to Time? As if the Appearance of the Small Pox at One in the Morning, Two in the Afternoon, or Eleven at Night, his visiting on *Wednesday*, early in the Morning, or late at Night, made no Difference! when it is visible that there may be even twenty-three Hours taken out of the first Day, and as many out of the third Day, which, together, make up forty-six Hours: Therefore their asserting, that the Small Pox is three Days in coming out, concludes as equivocally, as to Time, as if seventy-two Hours and twenty-six Hours differ'd not at all. Now there is nothing more uncertain, or, rather, impossible, than to fix one certain Period of time for the Eruption; because it is an Effect flowing from a peculiar Cause, which varies perpetually, and therefore the Eruption must vary accordingly. An inflammatory Fever is that Cause which runs higher, or not, and acts with more Force in one Constitution than another. A Man may, with as much Propriety, ask how long it will be before this Tree buds, when it will blossom, or the Fruit ripen? And although there must be necessarily a certain time, yet that time will vary, and be circumscrib'd, according to the Climate it flourishes in, and the Soil that nourishes it, added to the Culture and Skill of the Gardener. As the Violence of the variolous Fever caus'd the Eruption of the Pustules sooner or later, according to the Degree of its Inflammation; so the same Cause either forces it out by Degrees, or suddenly: Thus some little hard Pimples appear on the Forehead, Nose, Cheeks, then upon the Breast, the Hips, Thighs, over the Trunk of the Body, and, last of all, upon the Legs, especially about the Feet: Or this Cause acts with more Energy; and then they break out over the whole Body, like a Rash; or the Fever being rais'd to an immense Degree, either from some peculiar Habit of Body, pestiferous Air, or hot Medicines, and then the reverse appears, the Pimples are few in Appearance, rather a Blush upon the Face, the Skin arid and dry, and, upon a closer Inspection, there appear Numbers sticking in the Skin, unable to break forth; purple or livid Spots are sprinkled over the Body, but more about the Breast, Neck, Loins, and Hips, than any-where else: The Patient often makes bloody Water, and these two last Symptoms may be foretold by another Symptom, which is this, an excessive Pain across the Small of the Back.

As the Fever is higher in some Constitutions than others, and therefore occasions the Appearance of the Small Pox sooner or later; so, also, there are some Parts of the Body where this Inflammation exerts itself with greater Force, which is the Occasion of the Eruptions appearing sooner or later, in greater Numbers, or not, according to the Situation of that Fire, or Inflammation. We can compare the Time and Course of the Eruption to nothing more aptly, than to a Field sown with Corn; although sown at the same time, yet the Grain comes up, or is retarded, ripens, or is backward, according to the Situation, the Soil, or Manure, of the different Parts of the Field.

The fixing the Course of the Eruption to three Days, indiscriminately, in all Constitutions, as hath been done hitherto, is, for the Reasons I have given, without any solid Foundation; but, nevertheless, there is a certain Period of time necessary for an entire Eruption: Yet that varies, according to the Force of the Fever, and which Time, also, may be calculated: But, certainly, such Calculation, by Days, would render this Part of the History of the Small Pox as obscure, and equivocal, as Physicians have been in calculating that Period of time from the first Attack of the variolous Fever, to the first Appearance of the Small Pox.

In the *confluent* Sort, we may look upon the Eruption to be entirely over between the fifth and the sixth Day, counting from the first Day of Sickness; the *distinct* Sort demands six natural

natural Days. We must expect some Cases where the Small Pox is retarded, or a new Eruption added to the former, occasion'd by some Accidents, or improper or rash Methods pursu'd. The Fever, and other variolous Symptoms, which ran very high before the Eruption, and, rising with greater Violence till the midst of the Eruption, now begin to relax, and entirely abate upon the total Eruption of the Pock, I mean in the *distinct* Sort, and ought, also, to be so in the *confluent*, if the Physician does his Duty. The Equality of the Pulse, upon the sixth Day, resembling that of Health, will be the distinguishing Sign of this second Stage, which may be look'd upon as the most remarkable Stage in the Small Pox: Here, then, is a Pause; the Patient seems to rest, for a time; he is easy; the first Fever, which was without Intermission, ceases now, and is the only time of Intermission Nature has allotted, till the Disease be entirely over; it may be look'd upon as a Calm between two Storms; but this Calm precedes the most violent Storm, which is to come: The Patient reposes thus for six, ten, or twenty Hours; and then, sooner or later, according to the Violence of the Disease, all on a sudden, the secondary Fever comes on, by flow Degrees, if it be a benign Sort; or it bursts out, like a Hurricane, if the Inflammation be high; the Eyes becoming suddenly bloodshot, or streaming with Water; the Pulse quick; the Throat sore; the Urine crude, pale, or of a Straw-colour; the Patient, agitated with great Restlessness and Inquietude, burning with Heat, starts from the Bed; unable to bear Confinement, he seeks the Air; endeavours all he can to free himself from this ardent Heat; he becomes delirious, and often even phrenetic.

This last Symptom is the most violent during the Course of the Disease, as well as the most obstinate: The secondary Fever, which is the Fever of Maturation, begins, as I have said, about the sixth or seventh Day; and, according to the Violence and State of the Inflammation, the several Eruptions begin to spread, grow redder, rise with a Point, elevated or depress'd; they hasten on to Matter sooner or later; the Matter is benign, well-concocted, or sanious, or full of Water, like a Blister rais'd by Fire; they bleed; or, lastly, if the Inflammation be carried to the highest Degree, these small Tumors, or Eruptions, pass beyond the State of Suppuration; they are burnt at top, as if sear'd with an Iron; the Skin, or Spaces between the Clusters, is no longer florid, of a Rose-colour, but dark, purplish, or black, or cover'd over with innumerable small Pimples, or erysipelatous; the Skin arid, stretch'd, or distended, like a Piece of Parchment; or a considerable Tumor arises, cover'd over with Numbers of the Eruptions, resembling a true Anthrax, or pestiferous Boil. No Wonder Sydenham call'd every Eruption a phlegmonous Tumor, since, most certainly, it is so; and all the Phenomena correspond, in every Degree, with a Tumor of that Species.

The Eruptions in the Small Pox arise, take their Course, and are subject to all the Variations, several Appearances, and Terminations, agreeable to all common inflammatory Tumors in general: Now all these Changes and Variations are purely the Effects of the Cause I mention'd before; the Fervor, Inflammation, or Fire of this Fever.

Physicians, not apprehending that an Inflammation was the Cause of the several Changes and Appearances of the Symptoms in this Disease, and not discovering that such *Phænomena* only shew'd that the Disease differ'd more or less, as to Heat, Inflammation, or Fire, but differ'd not at all in Nature or Kind; divided the Small Pox, as it were, into different Diseases: For Instance, *Helvetius* distinguishes many Kinds of this Disease; one, whilst they have a Spotted Fever attending; another, a Quinsey, or an Intermittent, &c. Their not knowing the Nature of the Small Pox, but dividing it essentially into different Classes, their conceiving a Complication of Diseases with the Small Pox, differing essentially from it, led them to a Practice extremely dangerous, and often, I fear, fatal: But, above all, they err'd most in not distinguishing the Nature of the Small Pox: For although many knew this Disease to be an Inflammation, yet, led by some Hypothesis or other, they consider'd a Pleurisy, or Quinsey, as Diseases differing in Kind from that of the Small Pox; and this one Example of their Practice proves the Fallacy of their Theory, as well as the Danger of their Practice. Let one of these Physicians attend a Patient in the Small Pox, complicated with an Inflammation of the Throat, Lungs, or Pleura; if the Small Pox be past the Eruption, would they venture to cure that Inflammation of the Lungs, or Pleura, by the usual means? No, they dare not: For should they bleed, or purge, they imagine the morbid Matter, peculiar to the Small Pox, would be struck in from the Circumference to the nobler Parts; which is a Demonstration, that they are entirely ignorant of the Nature of the Disease.

The Small Pox, in its Nature, then, is wholly of the inflammatory Kind, and can only differ, according to the several Constitutions, Air, and Climate, of People: Wherefore we

will go on with a History of this Disease, considering all the Accidents and different Appearances of this Distemper, as the Effect of more or less of the Degree of Inflammation, in the same manner as if we were treating of a Pleurisy, or common Tumor. We do not say these differ in any other manner than this: If the Inflammation be very high, such a Tumor will be hard to resolve; and those Tumors which are hard to resolve, rather incline to mortify, than suppurate kindly. Upon this Foundation, and no other, I shall go on to describe the Small Pox, and attempt the Method of Cure. I shall consider every Pustule as a common inflammatory Tumor, subject to all these several Stages, in common with such Inflammations, which are all the Distinctions this Disease admits of.

Now we are got to the total Eruption of the Small Pox, from henceforth we are to look upon the Progress of the Eruptions, and their several Changes and Appearances, as the most distinguishing and pathognomonic Signs, enabling us to presage either a fortunate or fatal Event.

Let us first describe the *distinct* Sort, where the Inflammation is not high, where the Eruptions pass gradually to a proper State of Maturation. As, even in this, they make their Appearance not all at the same time, so they rise, and go on to Suppuration, in the same Order, and Succession of Time: So those on the Face necessarily are ripe two or three Days before those on the Feet. When they come to the highest State of Maturation, they begin to dry, and therefore must begin to sink, of course; those on the Face come to this State about the ninth or tenth Day, dating the time from the first Day of Sickness; of course, those about the Feet and Legs arrive not to that State till the eleventh, twelfth, or thirteenth Day. What, then, have Authors hitherto meant, in fixing the Turn to one certain Day? When, it is visible, the Small Pox is as long in turning, as in coming out. That Period of the Disease, call'd the Turn, is a Point of the highest Importance, because it is, at that time, those who perish by the Small Pox generally die, unless it be when bloody Urine is made, and then they generally die on the seventh Day; but the Turn of the Small Pox cannot be limited to any one Day, unless they all made their Appearance on the same Day; here is another Circumstance which alters the Turn, and makes it impossible to fix this Change to a certain Day, any more than they could the Day of the Eruption: For the Eruption appears sooner or later, as the Fever is more or less violent; so, also, the Eruptions turn sooner or later, according to the Force of the Inflammation.

The Order, and several Stages, of these Eruptions, through which they pass, will be best understood by the following Description, which will illustrate that Period of the Small Pox call'd the *Change*, a Time more equivocally and uncertainly describ'd than any other Stage of the Disease. To do this, we must describe the Course of one single Eruption; for it would be impossible to describe the Whole at the same time, because some are just appearing, when others begin to mature; some in the highest State of Maturation, while others are drying; these drying, and others are scabbing, and falling away.

First, they are small, upon the Eruption, red, watery, and hard; to be felt, rather than seen; the pathognomonic Distinction, with respect to the Measles, which are an Efflorescence. It grows larger, rises sharper, and spreads at the Basis, making so little a Progress for two or three Days, that one would scarcely think it would ever come to any thing; but, on the fourth Day after its first Appearance, it begins to look white; is much larger, but often depress'd, and flattish at the Top: It grows now larger, whiter, and very much inflam'd at the Bottom; the Skin round it, for some Distance, is extremely florid, like a red Rose-leaf: The Matter now seems to be perfect Pus; but white and thin, and this in six Days from its first Appearance; it is then swell'd, and comes to the highest State of Inflammation: The Matter now begins to grow thicker, and something yellower, and that in the middle of the Pustule; and, at last, thickens into a yellowish Scab, the Inflammation still continuing about the Basis of the Eruption; and this, also, takes up about three Days time; and, when it is thus scab'd, the Pustule can be no longer in a State of Inflammation; and, of course, the Swelling subsides, which puts a Period to the Disease.

The secondary Fever, that began with the Maturation of the Eruption, rises gradually, and is a concomitant Symptom with the several Stages of the Pustules, as the Pustules are of the Fever. We are but to suppose all the Eruptions, in any particular Case, to resemble this I have describ'd, and we have an Idea of a distinct and kind Sort.

In such a distinct Sort as this, the secondary Fever arising about the seventh Day, the Small Pox, also, beginning to fill at the same time, the Fever still increasing as the Eruptions go on to Maturation, the Fever, of consequence, will be rais'd to the highest Degree at that time the greatest Number of the Eruptions

Eruptions are at the highest State of Maturation: So that if all the Eruptions of the Body were to come out at one and the same time, and all the several Parts of the Body were of equal Heat and Warmth, the Pustules would then, on the ninth Day, be all in the highest State of Maturation; that is, they would begin to dry all at the same time, and we could then fix the Turn not only to one certain Day; but, as it happens quite otherwise, we cannot fix the Time of the Turn to such or such a Day, much less such an Hour of a Day, as some pretend to do. As the Small Pox even takes up two or three Days in coming out on the Face, so some of these begin to turn two or three Days before others do; henceforth I would lay down this as a Maxim; as soon as ever any of the Eruptions begin to dry, I say, the Small Pox begins to turn, and that the Turn of the Small Pox continues two, three, or four Days; and that the Height of the Turn will be about a Day and a half after the Beginning of the Turn; and at this time the Fever ascends to the highest Pitch.

From the History I have now given of the *distinct* Kind, we find ourselves no longer puzzled about fixing the Time of the Turn, even in the *confluent* Kind, or the Time of its Eruption: For as the Eruption takes up two or three Days, so, also, does the Turn: But the Eruption, the Maturation, and Turn, are all controul'd and govern'd by the Inflammation, Fire, or Heat, peculiar to the Constitution, as will be illustrated by the History of the *confluent* Kind.

Let us now describe the *confluent* Sort, and by it will be shewn all the Variations, Changes, and Distinctions, peculiar to the Small Pox in general.

The Fever not running very high, yet high enough to produce the *confluent* Sort, the Symptoms attending this Stage of Maturation, in that Case, with respect to the Eruptions and the Fever, resemble, exactly, those of the *distinct* Sort, (only they begin to turn rather sooner on the Face, because the Fever, or Inflammation, was something higher; but they take up a much longer time in turning, because there are a much greater Number of the Eruptions) if we except a Looseness in Children, and the Spitting in grown People.

Spitting, or Salivation, is the most extraordinary Symptom: It begins, generally, with the secondary Fever, and, sometimes, before the Eruption be over: It is more fluid, and copious, the first two or three Days, than afterwards; for as Maturation goes on, the Fever, also, ascending, the Spittle becomes thicker, more viscid, decreasing daily; but if the secondary Fever be carried immensely high, the Spitting ceases, and the Patient dies: But if the Fever of Maturation becomes not higher than necessary to produce a laudable and kind Suppuration, the Spitting goes on to the thirteenth, fourteenth, fifteenth, and, sometimes, to the twentieth Day; that is, till the Small Pox is entirely dry over the whole Body.

It will be necessary here to give three distinct Histories of three different Subjects labouring under this Disease, from the coming on of the secondary Fever; as, also, the Beginning, Progress, State, and Declension, of the Eruption.

The first shews the kind and *distinct* Sort; the second a benign, but flux'd Pox; the third the flux'd or *confluent*, the most fatal; with all the several Accidents and Variations this Disease admits of.

About the sixth Day of the Disease, in the *distinct* Sort, the secondary Fever comes on; the Pulse begins to quicken, and becomes harder; the Face begins to look more florid and red, the Urine something higher colour'd than natural, with a Cloud suspended in the Middle, or subsiding to the Bottom. This Night, that is, the first Night of Maturation, the Patient is restless, and sleeps with more Difficulty than at any other time in the Disease; the Eyes often water, or are bloodshot. The seventh or eighth Day the Face swells more than at any other time, the Eyelids swelling first of all, and are generally blown up, and shining like a Bladder, and are generally clos'd, at this time. The Pustules on the Face are large, and begin to look white on the Top; the Interstices, that is, the Skin between the Pustules, seems to be extended, inflamed, of a red florid Colour; and some few Pustules, even now, begin to dry about the Nose, Cheeks, or Forehead; the Pulse still quickens, and grows harder; the Voice something alter'd, as if the Patient had a Cold; the Mind dejected, and sometimes Sighs break out; the Urine rather paler, and less turbid. The Eruptions on the Breast, which are fewer than on any other Parts of the Body, are as forward, very near, as those on the Face; those on the Arms are now very large, whitish a-top, and very much inflam'd at the Bottom; those on the Hands and Feet come on but slowly. On the ninth Day the Face appears to be swell'd to the utmost; the Eruptions are now larger, and the Matter extremely white, and the Skin, or Interstices, still more inflam'd, and redder, many on the Face drying on this Day; and some few beginning to dry on the Breast; the Eyelids of a darkish red; the Pulse now extremely quick, and very hard; the Water

paler, thinner, and clearer, than at any other time: Those on the Arms very much inflam'd, and the Interstices, or Skin, between the Pustules, almost as much inflam'd as on the Face; and, if there are many Eruptions, the whole Arms seem to swell. At this time, some little Rigors appear, now-and-then. On the tenth, the Symptoms are much the same as the Day before; the Pulse as high, and as quick; the Water as clear, the Face as much swell'd, only the Eye-lids begin to subside a little; many more drying on the Face, and turning to a yellowish Scab. Sometimes the Face sinks a little on this Day, which, if it does, the Hands begin to puff up, and swell on the Back. On the eleventh, the Face begins to fall, especially about the Cheeks and Eyes, the Hands swelling more; those on the Hands are quite green, but full ripe, as they were on the Face, on the eighth and ninth Day; the Pulse now begins to become more regular, not so quick, nor hard, as on the two preceding Days; the Urine not so thin, or so pale, but with a Cloud suspended, turbid, or with a Sediment. On the twelfth the Face continues sinking, drying, scabbing; the Patient has, perhaps, the Eyes still clos'd up, not so much of the Swelling, which now seems to be gone, as the Matter's gluing up the Lids; as the Face sinks, the Hands continue swell'd; the Interstices between the Eruptions not so florid; the Skin not so much extended, not so hard, more pliable and soft to the Touch; that is, the Inflammation remits round the Basis of each Pustule; those on the Hands are still full and white, but the Matter begins to thicken, the Pulse more regular, even than the Day before. On the thirteenth the Hands fall; and if the Feet, as sometimes they do, that is, if there are many Eruptions on the Instep, puff up, and swell, as the Hands subside, and at this time the Eruptions on the Feet are at the highest State of Maturation: And as those Pustules on the Face, after they came to Maturation, turn'd and dry'd into a yellow Scab, these, upon the Body, break, and dry away: Upon this Day they are generally turn'd all over the Body, unless some few on the Hands, and those on the Feet: So that here we may say, the Distemper ends; inasmuch that the secondary Fever, which began about the sixth or seventh Day, and continued rising gradually till the tenth, when it came to the highest Pitch, and continued, as it were, so for about twenty Hours, and afterwards sunk by Degrees, upon the thirteenth or fourteenth vanishes entirely. As there is no more Matter to be form'd now in any Pustules, so all the Eruptions take the same Course, ending in Matter, unless those at the Bottoms of the Feet, where the Skin, being thick, hard, and callous, resists the Eruption of the Pustules, and is the Cause of their ending in yellowish or dark Warts, resembling so many Corns. There is this Distinction to be made between Children and grown People: In those the Urine is more turbid, not straw-colour'd, but rather white, the Body not so costive; in these, when the Fever is highest, the Water is clear, of a Flame or Straw-colour; in both, at the Declension of the Disease, the Urine becomes thick and turbid.

The *confluent*, when it is kind, differs not at all from the *distinct* Sort, if we except the Spitting, or Salivation, which continues during the whole Course of the secondary Fever. As the Fever, in this *confluent* Sort, ascends from Day to Day, and comes to the highest State about the tenth or eleventh Day; so the Spitting, which began with the secondary Fever, every Day, as the Fever increases, lessens in Quantity, and becomes constantly more and more viscid; of course, as the Fever, on the eleventh Day, is at the highest Pitch, the Spittle must be, also, at this time, extremely viscid, and therefore hard to be brought up. If it ceases at this time, the Patient generally dies. The Pulse, the Urine, and the Eruptions, were the only Signs we could form Predictions from in the *distinct* Sort; but they are not the only Signs in the *confluent*, since the Spitting, a Symptom the most considerable, always attends the Maturation of the Pustules in the flux Sort, which is over either on the thirteenth, fourteenth, or fifteenth Day.

We have describ'd the second Stage of a regular and kind Small Pox; but it will be necessary here to shew the various Symptoms. We shall now give the History of this.

The Eruptions, and other Circumstances, of this Disease vary according to the Force of the Fever, the Inflammation, or Fire, in the Constitution; so that it is impossible for any Man in the World to have the Small Pox, if some Cause or other did not inflame his Blood. Neither is it possible for any of these Eruptions, Symptoms, Circumstances, or Variations, during the Course of the secondary Fever, to exist; but what are natural to the Distemper, and which are equally essential to all phlegmonous Tumors in general. Therefore all these Phenomena arise, change, or fall, according to the Degree of Inflammation, in such a particular Man, at such a particular Time, whether his Diet be high or low; whether he is an *Egyptian* or *Indian*; let the Medicines, Regimen, Diet, Air, be whatever they will; neither will Constitution, Sex, Age, or Climate, avail; the Small Pox will be always the same; it can

only differ as to Degree of Inflammation: So that, the Physician, who had known this, might have given an History of the Small Pox, that would have taken in People of all Degrees, Countries, Ages, Sexes, and Constitutions. Let us return back to the Beginning of the secondary Fever in the confluent Sort, of an higher Degree than what we have already described. This Fever coming on, as I shew'd before, not arising by Degrees, but all at once, like a Storm or Hurricane, altho' the whole Body at this time labours under an Inflammation, yet this Inflammation, as a real Fire, burns and destroys, and acts with greater Violence on some Parts of the Body than others. About the sixth Day of the Disease, the Head seems to be the principal Seat of the Inflammation; for the Patient suddenly becomes furiously light-headed, the Eyes streaming with Water, blood-shot, glaring; the Sick has a fierce Aspect; the Spitting, the constant Attendant on Maturation in the Flux Sort, more copious, and more fluid in the Beginning, than afterwards; but if the Inflammation be very high, it is even viscid at this time; a Quinsey, also, attends, a Strangury, and sometimes bloody Water, which is the most fatal Symptom of any in this Disease, and, therefore, a Mark of the highest Inflammation; a short dry Cough, with Stitches, and what is spit up from the Lungs, not seldom streaked with Blood. For when the Lungs are much inflamed, the Patient, also, spits the Matter flowing from the Lungs, as in a common Cold, Pleurisy, or Peripneumony, and the Spittle varies, is cruder, or more digested, or tinged with Blood, agreeable to the several Stages of these Diseases; or from the salival Glands, or Parts peculiar to a common Salivation raised by Mercury, or produced by the Small Pox. This Spittle is, also, more or less fluid, or extremely viscid, just agreeable to the State of the Inflammation. Another Mark of high Inflammation at this time are, profuse Sweats: If the Fever is not extremely high, the Patient is costive; otherwise has a Looseness, the Stools black and fetid; if the Fever, or Inflammation, be still higher, they are tinged with Blood; or the Inflammation ascending still higher, a Bloody-flux may be produced. The Pulse, if the Inflammation be tolerable, is quick, hard, and full; if raised higher, it quickens more, is still hard, but not so full. If the Lungs be principally inflamed, the Pulse undulates; if the Brain, depressed, small, and threading; the higher the Inflammation is, the colder and paler are the external and extreme Parts; and even sometimes to that Degree as to produce a cold clammy Sweat: The Tongue and Voice faltering, the Lips trembling, or convulsed, as, also, what Physicians call *Subsultus Tendinum*. The Urine being of a Flame-colour, is a Mark of high Inflammation; but the crude Straw-colour marks an higher Degree; and, that the Head will be principally affected. Next to the making of bloody Urine, there is no Symptom more fatal than Spots appearing between the Eruptions of the Small Pox; the Red less dangerous than the Purple; and the Purple less than the Black: For, if the Patient recovers, these Spots return from Black to Purple, from Purple to Red, and from Red to the natural Colour of the Skin. Although these *Purples*, as they are called, are Marks of the highest Degree of Inflammation, yet, if it is possible for any Symptom to exceed these, it is when the Skin, upon several Parts of the Body, especially the Legs and Thighs, in great Patches, is black and hard, as if burnt with a hot Iron, or Lightning. If the Inflammation in the flux Sort, on the sixth or seventh Day, be higher than it should be, the Face begins to swell soon, the Pulse is quicker on that Day than it ought to be, and the Spittle too viscid: If the Inflammation be in an higher Degree at this time, the Pustules, that came on and ripened slowly, are now many of them even passed Maturation; many of them scorched or burnt at Top, as if seared with an Iron: The Skin of the Forehead, Arms, and other Parts, either hard, stretched, of a darkish red, and sometimes covered between the Pustules, with very small Eruptions like a Rash; or else, the Skin is of a palish, livid, cadaverous Aspect. With these Symptoms the Patient may live from Day to Day, that is, from the sixth to the seventh, from the seventh to the eighth, and so on, always in Danger, but does not die till the Face begins to sink; and then, if it sinks suddenly, the Spitting ceases, the Voice alters, he grows hoarse, unable to swallow, and then he dies; or should the Face not swell at all, as sometimes it happens, yet he struggles through these horrid Symptoms, as long as the Pulse continues any thing full, and the Spitting, however viscid and decreasing, perseveres; but, whenever the Pulse quickens excessively, and sinks, and the Spitting stops, then he perishes, which generally happens about the eleventh Day. If the Patient survives beyond this Day, as the Face dries, it turns not, as in the kinder Sort, to a yellowish Scab, but a black dark Crust. If the Patient dies upon the tenth, twelfth, or even later, on the fifteenth, or twentieth Day, a Looseness, profuse Sweats, or an intolerable Smell, or Stench, resembling a putrefied Carcase, precedes the fatal Event.

It will be proper to mention here the Disposition of Mind in the Course of the Disease: If the Patient appears to be lively, far from dejected, but speaks with Alacrity; and some Degree of Boldness, it is a Mark of the Height of the Fever, and very near allied to Lightheadedness; on the other hand, a Sighing, and great Dejection of Mind, a sorrowful, mournful, and weeping Aspect, are Marks of the highest Degree of Inflammation.

Thus have we given an History of the several Stages of the Small Pox; and it appears from this History, there can be no Changes or Variations, but what flow from one Cause, that is, Fire, Inflammation, or Heat, however produced; that there can be no Diseases complicated with the Small Pox, but of the inflammatory Kind; so that this Disease will be the same in all Countries, and have the like Nature and Symptoms, in all Ages, Constitutions, and Sexes. The Eruptions of the Small Pox may be not improperly compared to some particular Kind of Fruit; the Maturation of this Fruit depending upon a certain Degree of Heat, it will be ripened gradually, or very soon, or not at all; it may be blighted or burnt up, just according to the Disposition of the Climate, the Soil, or Culture, or Skill of the Planter, whether it be planted, inoculated, or grows spontaneously.

We come now to treat of the Cure of this Disease; and, as we have endeavoured to shew the several evident Causes that produce the Small Pox, or have Power to raise it to an high Degree, so as to render the Distemper fatal to many; and, if it be true, that such Causes, which I have mentioned, are found to have that Force or Power to dispose an human Body to Inflammation, Fire, or Putrefaction, the Consequence of these; and, if it be certain, that the Small Pox is a Disease founded upon an Inflammation, and one of the most eminent among the Diseases of the inflammatory Kind, which I am convinced it is, and of which, the History I have given is a full Demonstration; it necessarily follows, that if we could evade those Causes productive of Inflammations, in general, we evade the Small Pox; or, should we not be able to evade those Causes, could we at least find means to resist and oppose such Causes, that is, prevent such Causes to produce their usual Effects; could we obtain this, could we prevent this, an human Body would not suffer an Inflammation; and, therefore, we prevent the Small Pox. But should the Art of Physic, or the Sagacity of the Physician, not always extend so far as to avert such Causes, or so far oppose them, as entirely to destroy their Effects, yet if we prevail so far as to lessen those Causes productive of Inflammations, or considerably lessen their Effects, we should then have Power to dispose an human Body to a less Degree of Inflammation; and of consequence, to render People less subject to the Small Pox; or, should they have it, less fatal. To be able to effect this, and lay down such Rules that are certain, either to prevent People from falling into the Distemper, or to controul the Violence of it, and render it more supportable, and more benign, it was necessary for us to collect such Observations as were sufficient to prove, that such evident Causes would always produce, raise, and exasperate this Disease; and, that it was only an Inflammation, tho' *sui Generis*: It will be now necessary to shew, what are those Means that have, also, Power to avert, oppose, or controul this Disease; which, if we are able to do, we are able to cure the Small Pox.

Whether the Physician obtains his Ends by the Use of Medicines, Choice of Air, Diet, Exercise, Repose, indulging of Sleep, Watching, or manual Operation, or some, or all of these together, it matters not. For by whatever Means the Physician obtains his Point in View, they are just and necessary, and are all confined within the Verge of his Prescription. Whatever there be within the whole Compass of Nature, that can possibly affect an human Body, ought, if possible, by the Physician, to be taken Notice of and observed; because, every Moment there may be something that offends, and, therefore, to be opposed. Of what Extent then are the Physician's Views? How can he be confined to one Medicine, or such a particular Method of Cure? Curing then does not consist perpetually in prescribing this or that Medicine; not but they are sometimes necessary. The Physician as often prescribes happily, and gains his Ends, by forbidding the Use of such Medicines, or ordering such and such things to be avoided, which were injudiciously directed. Suppose an ignorant Person confined to the Bed in a small Room, covered with a Load of Cloaths, and a great Fire, taking every Moment strong Broths, or Wine; his Pulse becomes quick, and the Man is all on Fire, as well he may be: A Physician comes; he orders the Fire to be put out, the Gloaths to be taken off; he suffers him to cool by Degrees, and the Man is well. I mention this, because I would be rightly understood, that I am not going to lay any Stress upon particular empirical Medicines; for that would be Quackery: I would endeavour to shew a rational Comportment, a

Conduct to be observed by all Physicians, the various Methods, Regimen, and Medicines, to be used in all Constitutions, Climates, Ages, and Sexes. We insist rather on such Rules as direct us what not to do, than on those which shew us what to do.

But, before we come to those particular Precepts concerning the curative Part, it will be necessary for me to lay down some Rules concerning the Effect of Medicines, as well as the Motives a Physician acts from in the Choice of his Medicines: For unless the Physician acts by Motives that are rational and just, he can never judge and determine on the real Virtue and Force of a Medicine. The present State of Physic, built unhappily upon the sandy Foundation of *Hypothesis*, and the general Propensity to Empiricism, that is, the Use of Quack-medicines, deserves a more exact Scrutiny into the Efficacy of Medicines.

Thus have I hitherto confined myself, before the Cure, to a bare historical Account of the Small Pox, and divided the History of it into several Stages; having, also, given my Opinion concerning the Nature of the Disease, as well as the several Maladies that are often complicated with it: Hence the Nature of the Disease (or, at least, as I imagine) appears to be fully proved to be an Inflammation *sui Generis*; yet we have an Opportunity to confirm and illustrate this essential Point, I mean, the Nature of the Disease, in considering the Regimen, Medicines, Diet, &c. which I propose; the Result of which will still add a greater Weight, if possible, to the Doctrine I have already laid down, concerning the Nature of this Disease in particular, as well as all other Inflammations in general. This will be then proving *a posteriori*, what I have asserted; and I may venture to say, there cannot be a more certain Method found out to discover the Nature of a Disease, than by that of observing, with the greatest Attention, the Power and Efficacy, as well as various Effects of Medicines on human Bodies; which cannot be determined, unless the State and Circumstances of the Sick, existing at those particular Times, are duly considered, when such or such Medicines were administered. The Operations then of such Medicines will best shew the Nature of the Disease.

As the descriptive Part, then, of this Treatise on the Small Pox took in an Account of the Seasons of the Year, the Climates, Ages, Sexes, and Constitutions of People, which have an Influence so as to raise or oppose this Disease; as, also, what those Diseases were which dispose Men to imminent Danger, should they then have the Distemper, as well as the various apparent Causes productive of the Small Pox; this may be said to regard what precedes the Distemper. Next to this, we described what preceded the Eruption; then, whatever relates to the Small Pox, during the whole Course of the Eruption, till that Period of the Disease be over.

I have next described the Rise of the secondary Fever, the Maturation of the Pustules, till they are fully ripe, till they dry and fall away, which is the last Stage.

This Order then should be observed in the curative Part, and such Precepts proposed concerning those Medicines, as well as Regimen and Diet, that may have Power sufficient to resist, or mitigate, to controul, or conquer, a Disease hitherto, in a manner irresistible.

But, to obtain the End we have in View, let the Means or Method be whatever it will, (whether by Diet, by Regimen, by Medicine; whether by Exercise, Repose, the Change of Air or Climate, by Watching, or indulging of Sleep, or, lastly, by what other Means soever) provided they are found to have Power to prevent, to restrain, or subdue an Inflammation, they are certainly necessary: If it be true, that the Small Pox is nothing but one of the Species of Inflammations, of consequence, all such Methods and Means are absolutely necessary to be put in Execution.

But we are forced by Necessity to prove what those things are that raise an Inflammation, as, also, what those things are which produce contrary Effects; or we prove nothing certain to our Point. And there is nothing so uncertain in Physic, as the Knowledge of the real Effect of that almost infinite Number of Medicines we have of late Years introduced among us, concerning which there are many things very confidently and falsely asserted.

Boerhaave himself laments this deplorable Branch of our Art, and is even unwilling himself to give particular Receipts when he treats of Diseases. And well he might: For the Effects of Medicines rather arise and take their Force from the Judgment of a Physician in their just Application, than from any Virtues inherent in themselves. An Example will illustrate this, and confound all the Empirics in the World. A Dispensatory will tell you, that Opium will put a Man to sleep; that a Tincture of *Hiera Picra* will purge; that *Mercurius Dulcis* will abate the Inflammation of a Wound; that Broom-ashes will promote

Urine; that the Bark is an Astringent: It is true, these Medicines are found to have such Effects; but that is, when they are applied in such particular Cases, in such particular Constitutions, in such particular Diseases; nay, limited to such particular Stages of Diseases. Let but such Cases, such Constitutions, such Stages of a Disease vary, behold these Effects of Medicines vanish in a Moment, and quite the contrary arise. Half a Grain, or a Grain of Opium, given to a Man upon his coming out of a tepid Bath, having been cupped or bled, the Body not costive, will dispose that Man to sleep: But where the Body is costive, the Constitution adust, inflammatory, being heated with Exercise in an hot Summer's Day, in such a Case the same Quantity of Opium will be found to have a quite contrary Effect; the Person, instead of being drowsy, and inclined to sleep, watches, and becomes delirious, for want of Sleep. Aloes, infused in Wine, purges easily a Person of a cold flatulent Constitution, where there is no Inflammation: But with such whose Blood is much inflamed, who are costive, and whose Urine is high-coloured, should Aloes infused in Wine, or Brandy, be given in such a Case, it would not purge at all; and the oftener this Medicine is repeated, the more it would act as an Astringent, and the more obstinately costive would the Body be rendered; the Person must certainly die of an Inflammation of the Bowels before the Medicine will be found to have the Effect of Purging. The Bark given after the hot Fit of an Ague is spent, is an Astringent; but given during the hot Fit, it generally purges: When it binds, or is an Astringent, it puts a Stop to the Distemper; when it purges, it has no such Effect. A Wound growing foul, and obstinate to heal, requires the Administration of some Medicines, in order to lower the Inflammation, and bring it to digest: If you bleed such a Man, and give him fifteen or twenty Grains of *Mercurius Dulcis*, prescribing a low Regimen, and let the Mercury purge freely, as it generally will, if there be not an high Inflammation in his Blood, and no great Costiveness preceding, the Mercury will be found to check the Inflammation of such a Wound: But should it be given where there is a great Inflammation in the Blood, the Body very much bound, the Person exposed to the cold Air, or shut up in an hot Room, the Mercury will then have a quite contrary Effect; it will be found to add not only a new Degree of Inflammation to the Wound, but may, also, inflame the Bowels, Stomach, the Throat, or the Mouth, and even to such a Degree as if burnt with an Iron. Who has not observed the Mouth ulcerated deeply, and in a very little Time, by Mercury's being given injudiciously? Broom-ashes, being given to an hydropical Woman, of a cold phlegmatic Constitution, no Fever or Inflammation attending, would promote Urine to a great Degree, that is, would be, as the Apothecaries call it, *diuretic*; but given in a Dropsy, where the Liver, or any other Part of the Bowels is ulcerated, tabid, or highly inflamed, if so, there must then be a Fever, and the Blood will be, also, much inflamed; this Medicine will then have no such Effect, but quite the reverse; the Urine will be less and less, higher coloured one Day than another, as the Fever rises from this alkaline Medicine, till the Patient dies of a Mortification.

This I think sufficiently proves, that the Effect and Property of Medicines, as the *Subject* varies upon which they act, vary also; and as this Subject, or particular Body admits of infinite Variations, so do Medicines. Who is there then that can limit the Effects and Properties of Medicines? Or who is there, that can tell how far their Virtues may extend? We can only determine their Powers and Efficacy, in some particular Cases, at such particular Times, and in such particular Constitutions.

The more we consider Physic in this Light, the more we still recede from Empyrism: For rational Physic and Empyrism are as inconsistent, as common Sense and Reason are with Enthusiasm.

We shall now proceed to point out a certain Method of Cure: But the Means, or Instruments, necessary to effect this End, must be proved to have such Force and Efficacy, that may avert, restrain, or conquer, an Inflammation; since those Accidents and Changes in the Small Pox depend upon an Inflammation, and are the necessary Consequences thereof: And, at the same time that we prove such Medicines, Regimen, Diet, &c. to have such Virtues, being applied at such particular Times and Circumstances of the Disease, we shall, also, demonstrate what those Medicines, Regimen, and Diet are, that act upon an human Body so as to create, raise, and exasperate an inflammatory Disease. This a Physician ought to know, because it is as incumbent upon him, and of as much Consequence in the Cure of his Patient, what to forbid him not to do, as what he is to do; that is, to know what to forbid him the Use of, as well as what to prescribe: For that Physician often happily directs, who only prohibits the Use of such and such things, and prescribes nothing.

First, then, in order to prevent the Small Pox, could we propose something that hath Power to destroy the Infection exciting this Species of Inflammation, we prevent the Small Pox. Or, could we find out some Means or other, that hath Power over an human Body, so as to prevent the usual Effects flowing from such a Cause, we then resist that Cause: Altho' the Cause be not destroyed, nevertheless the Effects can never arise: If so, we equally obtain our Ends. We observe the Waters of a smooth and tranquil Sea soon arise, and swell, and roll, from a sudden Storm of Wind. Were it in the Power of any to stay that Storm of Wind, the Sea would be calm and not agitated: Or, suppose there were some Means to add a vast Weight to those Waters, superior to the Force of a Storm of Wind; if so, that Sea would be still and calm, notwithstanding the Winds were uncontrollable, yet they would blow without Effect, and have no more Power over the Waters, than if they blew over a dry barren Piece of Land. Causes exciting the Small Pox are infinite. Some are evident, but many more unknown to us as yet; but whatever they are, they must first raise an Inflammation in the Blood before this Disease can appear, since all Mankind have their Blood inflamed before the fourth Day.

Since many then of these Causes which produce the Small Pox are hidden Causes, it is impossible to endeavour at any Means to destroy those Causes: Yet could we propose such Means that have Power to prevent the Body's being subject to an Inflammation, we could then resist those Causes productive of the Small Pox, by hindering those Causes to have their usual Effects. Hence then, we have Indications sufficient for our Conduct in avoiding this Distemper. The Diet should be cooling, diluting, and subacid, &c.

In short, every Method must be tried that can lower and impoverish the Blood: Or, were it possible even to give a Disease, such as a true intermittent Fever, or any Distemper of a contrary Nature from that of the Small Pox; for two Diseases, differing essentially in Kind, cannot exist at one and the same time. A Person who would avoid the Small Pox, ought to choose such Air, or Climate, where inflammatory Diseases are less frequent, for I believe there is not a Climate wholly exempt, especially such Places where inflammatory Diseases are epidemic, and at that Time stationary. A Man would be most likely at such Times, and in such Places, to be subject to the Small Pox, and that Constitution of Air productive of the Plague, spotted Fevers, or whatever other Fever of the inflammatory Kind at that Time epidemic, whether in a Camp, a besieged Town, in the hot Months of *June, July and August*, will add so much Fever, or Inflammation, to the Small Pox, as to render it fatal. Neither will it be sufficient to avoid violent Exercise, an high Regimen, strong spirituous Liquors, the Mind's being agitated with Passions, or depressed by too reclusive a Life, intense Thought, Application to Business, or hard Study; the Constitution is even to be lowered from that of a vigorous State of Health: For a florid healthy State is very nearly allied to what we may call the *first Degree of Inflammation*. A Man who would avoid the Small Pox, should betake himself to a lower and more cooling Regimen in his Diet than usual; the Liquors, small, diluting, and of the acid Kind; Repletion prevented by Bleeding, and cooling Physic; the Mind kept in a profound Repose; gentle Exercise: By these Means the Constitution will be reduced, as I would have it, rather to the State of a convalescent, than one in a perfect State of Health. The cold Bath, in this Part of the World, hath been esteemed of late Years, by Physicians of Eminence, as a powerful Means to prevent the Return of inflammatory Diseases: Therefore it must be of Force, to oppose, in some Degree, the coming on of this Disease, since it is of the inflammatory Kind; even a perfect State of Health is thought to be too near a State of Inflammation to receive the Small Pox, either by Inoculation, or Infection. With how much Attention, then, ought we not to examine, whether a Patient, who would avoid the Small Pox, or have it in a favourable manner, is not already affected with some inflammatory Disease or other? And, if there should be any such Diseases, they are instantly, if possible, to be cured, lest the Small Pox should come on, and affect the Patient with a Complication of Diseases, which would be, in such a Case, as so many Fires multiplied by one another.

Now there are a thousand Medicines that will raise an Inflammation in the Blood; and the Cause, the morbid Matter, whatever it be, acts as these Medicines, by raising an Inflammation: Why then should there not be some Medicines, or Means, powerful enough to prevent an Inflammation? Certainly there are; altho' not always powerful enough to prevent, yet they are always found powerful enough to restrain or lower an Inflammation: Therefore, it is in our Power to prevent many from falling into this Disease; and even those that do, by ob-

serving proper Rules and Methods, will seldom be exposed to Danger, the Disease not ascending to an high Degree of Malignity.

In Diseases, such as the Plague, Small Pox, or spotted Fever, it is not sufficient to begin to oppose the Disease, when the Disease begins; we are, if possible, to prepare the Body, and prevent the Disease: For such as these, in some particular Climates, Seasons of the Year, and Constitutions, concur in such a manner, that Inflammations of so high a Degree strike instantaneously like Lightning; they consume and burn with such Rapidity, that the Body is wounded, and some Parts destroyed on the first Attack. Whoever, then, stays till the Disease begins, generally comes too late. It is with us often as with those at Sea: A good Sailor, from what he has diligently observed, can by certain Signs foretel an approaching Storm: He lies by, furls his Sails, and prepares himself for the Reception of a furious Blast of Wind, which might otherwise, in an Instant, shatter and tear his Vessel to Pieces. Thus then, the Means I have proposed, in order to avert or prevent the Small Pox, or, at least, prepare the Body, so that the Disease may be more gentle and benign, seem not to be very extraordinary, particularly to those, who have great Confidence in the Pomp of Medicine. Could we persuade Mankind to believe, that the Virtues of Medicines depend wholly on the Judgment of the Physician, we should have no Empirics. What, can living lower than usual, changing of Air, a little Blood taken away, or a little gentle Physic; can such common Means as these have such powerful Effects? Those who are well acquainted with Physic know, that they have. But these Powers and Virtues depend upon the particular Circumstances of Time. There is nothing more easy than to prove this. Suppose the Sagacity of a Physician extended so far as to know, that such a Man would in ten Minutes fall down in an Apoplexy from a Fulness of Blood might not the Loss of only eight or ten Ounces of Blood from the Arm, or the Feet, preserve that Man? After the Vessels of the Brain are lacerated and broke with a Profusion of Blood pent up, the Bleeding to fifty Ounces would have no Effect. What, if a Man were seized with a Shortness of Breath, a Suffocation with an unusual Heat in the Chest, the Cheeks more than usually florid, Signs marking the Distention of the Lungs, from too great a Fulness of Blood? At this time the poor Man, being ignorant of the State he is in, finds himself dispirited, drinks a Glass of strong Wine, or Brandy, or a Glass of Water, with perhaps forty or fifty Drops of Spirit of Hartshorn, or some such fiery Medicine: Upon this he vomits Blood, he is seized with a cold shivering Fit like an Ague, he spits Matter, and at last dies of a Consumption. Had a Physician, in such a Case, directed only a Glass of Water, and the abstaining from every thing that could heat or inflame, it is not improbable but that Nature alone, unopposed by Medicine ill applied, having only the Disease at that time to struggle with, might free herself. It is then the Timing and the Application of Medicines, or the Means we have proposed, that gives the Force and Efficacy. Bleeding a few Ounces, a Cordial, a few Drops of Hartshorn, a Fire in the sick Man's Room, may be said to be of no great Consequence: There are such Circumstances of a Disease, there are such Times, and such Occasions, when they are not of any great Moment, nay, of no Effect: But there are Times, when such things will absolutely kill, or absolutely cure.

We are every Moment to consider Nature, and the Disease, opposing each other, as Weights in a Scale: We are to add, to her Side, that she may preponderate; and there are such Times, when the least Weight is of the greatest Moment, and will turn the Scale. A Cypher in Arithmetic, placed among Figures, affects those Figures just according to the Position or Application of that Cypher; the Value still rising, or decreasing, according as it is placed: So do Medicines, Diet, Exercise, Regimen, &c.

As I have already, under the Article INFLAMMATIO, treated largely of the Treatment due to an Inflammation; a Repetition of what is said there would be superfluous: The prudent Physician, upon whose Conduct and Abilities much depends, will judge the Occasions of preventing and checking a threatening Degree of Inflammation, and will discern the Seasons when Remedies are to be applied, and of what Sort they ought to be.

OF INOCULATION.

As Inoculation for the Small Pox has raised the Attention of all Nations, it cannot be thought improper, for the sake of young Beginners, to describe the Method of this Operation, which may be so beneficial to Mankind.

The Design, then, of Inoculation, is, to communicate a mild Species of the Small Pox to Infants, or Adults; and the Method is, to make a small Incision in the Arm, or Leg, with a Knife; and therein insert some of the purulent Matter, taken from

from Patients labouring under a mild Kind; then dress the Wound with Lint, and a Plaister. Dr. Harris, in *Dissert. Chirurg.* orders only the *Cuticula* to be abraded, and the Matter to be spread on the naked Skin. After the Operation, the Patient should keep himself moderately warm, and observe a proper Regimen; by which means, the Disorder will appear in about seven Days, without any dangerous Symptoms; and, if assisted by a regular Diet, and moderate Warmth, generally goes through all its Stages with Success. Experience evinces, that this Distemper is never caught a second time after Inoculation; which is a sufficient Reason for the Opinion of those who assert, that this Operation might be of universal Benefit to Mankind, by saving the Lives of some, and preserving a Beauty of Countenance, and Strength of Sight, in others.

We learn, from History, that *Inoculation* has, for a long time, been practis'd by the *Greeks* and *Turks*, though it is of modern Date in *Europe*; and was first encourag'd by the *English*, who met with so much Success, that King *George II.* without any Hesitation, had the Operation perform'd on all his Children: So that the *Germans*, especially the Inhabitants of *Hanover*, *Onolsbac*, and *Pyrmont*, came very readily into it.

Some, I confess, amongst the *French* and *English*, have, in their Writings, condemned this Practice, as fatal to Mankind, and unbecoming a Christian; but these Objections have been long ago fully answered by Men of great Learning. If the Reader desires a more particular Account of this Operation, he may consult *Pylarinus* an *Italian*, *Maitland* an *Englishman*, and the celebrated *Vaterus* of *Wirttemberg*; and the *Acta Erudit. Lips.* An. 1723, 1725, &c. *Acta Natur. curios.* Vol. I. Obs. 75. and the *Acta Uratistavienfis*; where this Subject is handled at greater Length. The Practice of *Inoculation* has, also, the Sanction of Experience, the best Master and Instructor in every Science. For my own Part, I am so far from thinking *Inoculation* fatal, that I am convinced it might be thoroughly beneficial to Mankind: For, in my Opinion, the Small Pox proceeds from a peccant Matter intermixed with the Blood from the very Day of our Birth, and which generally breaks out in every Person sooner or later; and the sooner, generally the better; for this Distemper is often fatal to Persons advanced in Years: So that the *Virus* seems to increase with the Patient's Age. And this seems the very Reason why the Small Pox is more favourable to Infants than Adults. If, therefore, the Disorder be procured from a mild Kind, and the Venom discharged from the Blood, while it is small in Quantity, and the Infant young, I make no doubt but many Children, especially those of Princes and Noblemen, might be preserved, not only from the most malignant Symptoms, but even from Death. When this Distemper is received from a natural Infection, it often proves very mortal; on the contrary, if procured by Art, the Patient is prepared by a proper Diet and Medicines, and usually finds it less severe. It is unnecessary to produce any further Reasons in Justification of this Practice, as these must be sufficient to convince every reasonable Man. *Heister. Chirurg.*

VARIUS, seu *Phoxinus levis*. J. Jonst. Is a small River-Fish, which the *Italians* call *Morella*, and the *French* *petite Truite*, "a small Trout." It is scarce above a Digit in Length, its Skin even, smooth, and polished. It is of various Colours, whence it has its Name; yellow on the Back, silver-coloured on the Belly, purple on the Sides, and marked all over with black Spots; the Flesh is soft, tender, and good to eat.

As to its medicinal Virtues, it is pectoral, restorative, and aperitive. *Lemery des Drogues.*

VARIX, plur. **VARICES**.

By the Name *Varices*, among Physicians, are meant those unequal, nodous, and blackish Tubercles of the Veins*, which are subject to rise in any Part of the Body; but most frequently in the Feet, about the Anles; though sometimes higher, as about the Legs, Thighs, and other Places, as the *Scrotum*; and even in the Head and Belly, as *Celsus* observes, *Lib. 7. Cap. 31.* This Disease most frequently infects pregnant Women, but is incident to any other Persons, especially those who abound with thick Blood, or are affected with a Pain of the *Hypochondria*, an Obstruction of the Liver, or a *Scirrhus*. The more the *Varices* increase, the more painful and troublesome they become, on account of the more violent Tension of the Membranes; and, sometimes, they even come to a Rupture, and discharge Plenty of Blood, or degenerate into malignant Ulcers, as I have sometimes observed. The smaller Kinds of *Varices* usually create but little Uneasiness; and are, therefore, neglected by the Patient, as not requiring the Assistance of the Surgeon.

In order, however, to prevent a small, and, at first, inconsiderable Evil, from increasing by degrees, and growing formidable, to the great Detriment and Annoyance of the Patient, it will be advisable to open a Vein, with all Speed, and take away a Quantity of Blood; and, after that, to prescribe a proper Regimen of Diet: This done, it will be convenient to secure the

diseased Feet in the most careful and exact manner, with a repellent, or, as it is commonly called, expulsive Bandage [*Tab. XXIV. Fig. 1. F*]; and whenever you perceive it to slacken, in any measure, or become loose, to straiten it anew, and never to remove, or throw it off, while you are under the least Apprehensions of an Increase of the Disorder. The Antients, as we learn from *Celsus*, freed their Patients from the *Varices* by a speedy Cauterisation, or Excision; but we Moderns use a milder way of proceeding: If the *Varices*, then, are increased to a considerable Bigness, we apply the Bandage before-mentioned for the Constriction and Strengthening of the Veins, which are dilated beyond their just Measure, moistening the Fillet with red Wine warm, or a Decoction of Astringents, or of Vinegar and Alum; and binding, also, a thin Plate of Lead upon the Part affected. *Dionis* assures us, that there is no Method more effectual for repressing the *Varices*, than by Stockings made of Dog-skins, or other Skins fit for the Purpose, and so contrived, as, by Help of a Cord, to be straitened, and drawn as close as the Patient can well suffer it; by which means, the Legs may be kept under a close and exact Constriction, both Day and Night. The Form of those directed by *Dionis*, is represented *Tab. LVII. Fig. 11.* Such Spatterdashies may, also, be made, in the same Fashion, of grey linen Cloth, which is strong enough, as I have seen them myself. The most effectual Remedy against the *Varices*, in the Opinion of *Harris, Dissertat. Chirurg. 8.* is Tincture of Myrrh, if the Part affected be frequently anointed with it, and then covered with *Rulandus's Emplastrum Diasulphuris*: And if there be, afterwards, a Bandage applied, or a Constriction of the Place effected, by means of Stockings, in the manner before described, the greater is the Success to be expected from this Remedy.

Where the *Varices* are increased beyond Measure, and swelled to so enormous a Degree, as to threaten a Rupture, and a dangerous Hæmorrhage is to be feared, or if they grow intolerable to the Patient on any other Account, recourse must be had to the Knife, and Section must be used. In this Operation we make a longitudinal Incision into those Tubercles of the Veins which are most swelled, or which excite the greatest Pain; and after evacuating the thick Blood, to the Quantity of eight, ten, or twelve Ounces, according to the various Habits of the Patient, we dextrously cover the Wound with Lint dipt in Bole Armoniac and Vinegar; and upon this applying a leaden Plate, we secure the Whole with a Bandage. If the Operation be rightly performed, there generally succeeds a Coalition of the Veins, in much the same manner as after Phlebotomy, and the Vesicles are strenghten'd by their Cicatrices; so that the same Place is scarce ever infested with *Varices* afterwards. The antient Surgeons, as we said, cured *Varices* by Cautery or Excision. See *Celsus, Lib. 7. Cap. 31.* The Method in which the latter was performed, was thus: First, They cut the Skin upon the distended Vein; then took hold of the vitiated Part of the Vein with an Hook, and with a Knife cut it quite off, and separated it entirely from the Body, after which they healed up the Wound with a Plaister. *Gouey*, in *Chirurgie veritable*, declares himself of Opinion, that the quickest, and, at the same time, the safest Method of curing *Varices*, is to pass a crooked Needle with a double waxed Thread, quite under the distended Vein; and by drawing the same into a Knot, to make a firm Ligature upon the Vein, then immediately to make an Incision with the Knife into the tumid Vein, and discharge a sufficient Quantity of the thick Blood: This done, the Wound is to be treated with some digestive Ointment, and the Patient is to keep his Bed, till the Wound is almost conglutinated. The antient Method by Cautery was first to cut the Skin, then lay open the Vein; and this done, gently to press the same with a slender, blunt, red-hot Iron; the Lips of the Wound being held asunder with Hooks, to prevent their being burnt, (*Celsus*, in the Place before-quoted): When this was over, they treated the Wound with Remedies adapted to Combuitions. *Harris*, indeed, judges all Methods of Excision and Burning not only rash, but cruel; it must, however, be confessed, that the Molestations and Pains, created by the *Varices*, are sometimes so violent, that a Rupture may be dreaded, and that in the Night, (of which I know a very remarkable Instance) with Danger of Death; for which Reasons the Assistance of such potent Remedies, as the Knife and Needle, is on such Occasions necessarily required.

But by whatever means the *Varices* are cured, it seems highly necessary, in order to prevent the Return of so troublesome a Disorder, to use the proper Cautions of avoiding too gross and plentiful Feeding, and to drink smaller Liquors; such as Water, Water-gruel, Tea, Coffee, or Infusions of other proper Vegetables. The Body, also, is very frequently to be exercised; the Feet are every Day to be well rubbed; and Phlebotomy is to be administered at least twice in the Year, that is, in Spring and Autumn. The same Precautions are to be observed

served by those who are but newly or slightly affected, and are willing to avoid greater Inconveniencies, not to be removed but by the Knife and Fire. *Muys* has a singular Instance of a Varix, combined with Ulcers, which he opened once every Year, and discharged a Pound of Blood; by which Means the Eruption of the Ulcers was prevented. See his *Chirurg. Rational. Dec. 1. Obs. 6. Heisteri Chirurg.*

VANUS. A Pimple on the Face. See **FURUNCULUS.**

VAS. A Vessel either for mechanical, chymical, culinary, or any other Uses. In Anatomy, all the Parts which convey a Fluid are called *Vessels*, as the Veins, Arteries, and Lymphatics.

VASTUS EXTERNUS.

This is a very large fleshy Muscle, almost as long as the Os Femoris, broad at the Extremities, and thick in the Middle, lying on the Outside of the Thigh.

Its upper Insertion being something tendinous, is in the posterior, or convex rough Surface, of the great *Trochanter*: It is, also, fixed by a fleshy Insertion along the Outside of the Os Femoris, for above two Thirds of its Length downward, in the corresponding Part of the *Linea Aspera*, and in the neighbouring Portion of the *Fascia Lata*.

From all this Extent, the fleshy Fibres running downward, and a little obliquely forward toward the *Rectus Anterior*, terminate insensibly in a kind of short Aponeurosis, which is fixed in all the nearest Edge of the Tendon of the *Rectus*, in the Side of the Patella, in the Edge of the Ligament of that Bone, and in the neighbouring lateral Part of the Head of the Tibia.

The Body or Belly of this Muscle grows bigger gradually, from its upper Extremity to the Middle; and from thence diminishes again by Degrees. Its lowest Fibres run in a little behind the *Rectus*, and are inserted there.

VASTUS INTERNUS.

This Muscle is very like the former, and situated in the same manner, on the Inside of the Os Femoris.

It is fixed above by a short flat Tendon, in the anterior rough Surface of the great *Trochanter*, and, by fleshy Fibres, in that oblique Line which terminates the Basis of the Collum Femoris anteriorly, on the Foreside of the Insertions of the *Psoas* and *Iliacus*; in the whole Inside of the Os Femoris; and in the *Linea Aspera* on one Side of the Insertions of the three *Tricipites*, almost down to the internal Condyle.

From all this Extent the Fibres run downward, and a little obliquely forward; and the Body of the Muscle increases, in the same manner as the *Vastus Externus*. It terminates below in an Aponeurosis, which is fixed in the Edge of the Tendon of the *Rectus Anterior*, in the Side of the Patella, and of its tendinous Ligament; and in the Side of the Head, or upper Extremity of the Tibia.

The two *Vasti* and *Crureus* ought to be looked upon as a true *Triceps*; the Uses of which, in relation to the Bones, are only to extend the Tibia on the Os Femoris, and the Os Femoris on the Tibia. The Extension of the Tibia on the Os Femoris happens, principally, when we sit or lie, and that of the Os Femoris on the Tibia, when we stand or walk. All the three Muscles move the Patella uniformly, in the Direction of the Os Femoris, on the Pulley at the lower Extremity of that Bone. The external or broad Portion of this Pulley, and of the Patella, answers to this Direction, and seems to be more exposed to the Action of these Muscles, than the internal and narrow Portion, on which the necessary Obliquity of that Pulley depends.

The Insertion of both the *Vasti* immediately in the Head of the Tibia, prevents the Patella from being luxated laterally on some Occasions, in which the Muscles may act with more Force on one Side than on the other, or remain without Action, in which Case the Patella is loose and floating.

To be convinced of this Inaction, and of the Moveableness of the Patella at the same time, let us either in Sitting or Standing, with the Leg extended, rest the Leg only upon the Backside of the Heel, so as that the whole lower Extremity may be supported on the Heel, and on the Head of the Os Femoris, the Knee, and the Body of the Os Femoris, resting on nothing, and the Extension being made only by the Weight of the Bones, without any Assistance from the Muscles. If in this Situation we lay the Thumb on the Basis of the Patella, and the fore Finger on the Apex, and press these two Parts alternately, the Patella will be perceived to be raised and depressed.

In the Description of these Muscles, I forgot an Observation which I have made on the Insertion of several Fibres immediately in the Capsular Ligament of the Joint of the Knee. I have seen these Fibres run down, as if they came principally from the *Crureus*; and their Insertion in the Ligament was oblique, and made by degrees.

By the Insertion of these Muscles in the Patella, their Line

of Direction is removed to a greater Distance from the Centre or Axis of Motion of the Joint, which facilitates their Action, and defends their common Tendon from Compression and Contusions. *Winslow.*

VASUM, in *Scribonius Largus*, is a Vessel.

VATICANÆ PILULÆ. The Name of some purging Pills, described in the Old London Dispensatory, thus:

Take of Calamus Aromaticus, Anise, Mastic, Ginger, Cinnamon, Zedoary, the lesser Cardamoms, Mace, Nutmegs, Cloves, Saffron, Cubebs, Aloes-wood, Turbith, Manna, Agaric, Sena-leaves, Cassia-wood, and all the Species of Myrobalans, each one Scruple; of the Leaves of Scordium, and Carduus Benedictus, each half a Dram; and of the best Rhubarb, one Ounce, two Scruples: Reduce to a fine Powder: To which add of the best Aloes, two Ounces, four Scruples; and of the Solutive Syrup of Roses, and Violets, each a sufficient Quantity: Make into a Mass of Pills, according to Art.

VAYNILLAS. The same as **VANILIA.**

UCAUNA. A Sort of Cray-fish of an olive Colour, mentioned by *Lemery*, in his Treatise on Drugs, which, he says, is pectoral and aperient.

VEEL-GUTTA is, according to *Blancard*, a Name for the **OREOSELINUM.**

VEGETATIO. Vegetation. See **BOTANY.**

VEHICULUM. A Vehicle, in Pharmacy, is any Liquor in which a Medicine is given to a Patient, in order to render the Exhibition more grateful and commodious.

VELONÆ. Certain Fishes mentioned by *Oribasius, Collect. Medic. Lib. 2. Cap. 58.* whose Beaks, he says, are horny, and that they afford a very bad Juice.

VENÆ. The Veins.

The Veins are only a Continuation of the extreme Capillary Arteries, reflected back again towards the Heart, and uniting their Channels as they approach it, till at last they all form three large Veins; the *Cava Descendens*, which brings the Blood back from all the Parts above the Heart; the *Cava Ascendens*, which brings the Blood from all the Parts below the Heart; and the *Porta*, which carries the Blood to the Liver.

The Coats of the Veins are the same with those of the Arteries, only the muscular Coat is as thin in all the Veins, as it is in the Capillary Arteries; the Pressure of the Blood against the Sides of the Veins being less than that against the Sides of the Arteries.

In the Veins there is no Pulse, because the Blood is thrown into them with a continued Stream; and because it moves from a narrow Channel to a wider.

The Capillary Veins unite with one another, as has been said of the Capillary Arteries.

In all the Veins which are perpendicular to the Horizon, excepting those of the Uterus, and of the *Porta*, there are small Membranes or Valves; sometimes there is only one; sometimes there are two, and sometimes three placed together, like so many half Thimbles stuck to the Sides of the Veins, with their Mouths towards the Heart. In the Motion of the Blood towards the Heart, they are pressed close to the Sides of the Vein; but if Blood should fall back, it must fill the Valves; and they, being distended, stop up the Channel, so that no Blood can repass them. *Keil's Anatomy.*

The Blood, distributed to all Parts of the Body by two Kinds of Arteries, the Aorta, and Pulmonary Artery, returns by three Kinds of Veins, called by Anatomists *Vena Cava*, *Vena Porta*, and the *Pulmonary Vein*.

The *Vena Cava* carries back, to the Right Auricle of the Heart, the Blood conveyed by the Aorta to all the Parts of the Body, except what goes by the Coronary Arteries of the Heart: It receives all this Blood from the arterial Ramifications, in Part directly, and in Part indirectly.

The *Vena Porta* receives the Blood carried to the floating Viscera of the Abdomen, by the Coeliac Artery, and the two Mesenteric Arteries; and conveys it to the Hepatic Vein, and from thence to the *Vena Cava*.

The Pulmonary Vein conveys to the Pulmonary Sinus, or Left Auricle of the Heart, the Blood carried to the Lungs by the Pulmonary Artery.

To these three Veins two others might be added: Those which belong particularly to the Heart, and to its Auricles, and the Sinuses of the Dura Mater.

In describing the general Course of the Veins, we may either begin by their Extremities in all the Parts of the Body, and end by the Trunks carried all the Way to the Heart, according to the Course of the Blood; or we may begin by the great Trunks, and end by the Ramifications, and Capillary Extremities, according to their several Divisions and Subdivisions.

This last Method is most convenient, and makes it a very easy Matter to pursue the first, whenever we think it proper to do it; and, for these Reasons, I have chosen to follow it, in this Description.

We commonly talk of the *Vena Cava* in general, as if it were but one Vein at its Origin, or had but one common Trunk; whereas it goes out from the Right Auricle of the Heart, by two large separate Trunks, in a Direction almost perpendicularly opposite to each other, one running upward, called *Vena Cava superior*; the other downward, called *Vena Cava inferior*.

It may, however, be said, that these two Veins have a Sort of Continuity, or a small Portion of a common Trunk, fixed to the Edges of the Right Auricle, as if three Quarters of the Circumference of a large strait Tube were cut off, and the Edges of a small Bladder applied to the Edges of the Opening, thus made in the Tube.

The Right Auricle may, also, be looked upon as a muscular Trunk common to these two large Veins, and may be called the Sinus of the *Vena Cava*; but, in this respect, the Name of *Sinus Pulmonaris* agrees still better to the Left Auricle.

The superior *Vena Cava* is distributed, principally, to the Thorax, Head, and upper Extremities, and but very little to the Parts below the Diaphragm.

The inferior *Vena Cava* is distributed, principally, to the Abdomen and lower Extremities, and but very little to the Parts above the Diaphragm.

The Antients called the superior *Vena Cava*, *Ascendens*; and the inferior, *Descendens*; having regard only to the great Tubes, and to their Division into Trunks and Branches. Several Moderns have retained those Names, but in a contrary Signification, to accommodate them to the Motion of the Blood, which descends by the *Cava Superior*, and ascends by the *Cava Inferior*.

But to avoid the Mistakes that may happen in Reports made of Wounds, or other Diseases, and of what is observed in opening dead Bodies, and in other Cases of these Kinds, it is best to retain the Distinction of *Vena Cava superior* and *inferior*.

The Trunk of each of these two Veins sends off, much in the same manner with the Arteries, a certain Number of principal or capital Branches, which are afterwards ramified in different manners. Each Trunk terminates afterwards by a Bifurcation, or a Division into two subordinate Trunks, each of which gives off other principal Branches, ending in a great Number of small Trunks, Branches, and Ramifications.

They have, also, this common to them with the Arteries, that the greatest Part of the capital Branches are in Pairs; as well as the subordinate Trunks. The Ramifications of each subaltern Trunk, taken by itself, are in uneven Numbers; but they make even Numbers with those of the other like Trunk. The *Vena Azygos*, and some other small Veins, are Exceptions from this Rule.

Before I go on to the particular Description of each of these Veins, many of which have proper Names, I shall give a general Idea of their Distribution, and an Enumeration of their principal Ramifications. But I shall say nothing of the Coronary Veins of the Heart, because they are not immediately joined to any other Vein. I begin by the superior *Vena Cava*.

VENA CAVA SUPERIOR.

The superior *Vena Cava* runs up from the Right Auricle of the Heart, almost in a direct Course, for about two Fingers-breadth, lying within the Pericardium, in the Right Side of the Trunk of the Aorta, but a little more anteriorly.

As it goes out of the Pericardium, it is inclined a little to the Left Hand, and then runs up about an Inch, that is, as high as the Cartilage of the first true Rib, and a little higher than the Curvature of the Aorta. At this Place it terminates by a Bifurcation, or Division into two large Branches, or subordinate Trunks; one of which runs toward the Left Hand, the other towards the Right.

These two Branches are named *Subclaviae*, as lying behind, and, in some measure, under, the *Clavicula*, both in the same manner. They are of unequal Lengths, because the Trunk of the *Vena Cava* does not lie in the Middle of the Thorax, but toward the Right Side, where the Left Subclavian arises as well as the Right, and is, consequently, longest.

The Trunk of the superior Cava, from where it leaves the Pericardium to the Bifurcation, sends out anteriorly several small Branches, which sometimes arise separately, and sometimes by small common Trunks: These Branches are, the *Vena Mediastina*, *Pericardica*, *Diaphragmatica superior*, *Thymica*, *Mammaria Interna*, and *Trachealis*, the last of which go out sometimes behind the Bifurcation.

All these small Branches from the Trunk of the *Cava superior* are termed *Dextrae*; and their Fellows on the other Side,

called *Sinistrae*, do not arise from the Trunk, because of its lateral Situation, but from the Left *Subclavia*.

Posteriorly, a little above the Pericardium, the Trunk of the superior Cava sends out a capital Branch, called *Vena Azygos*, or *Vena sine Pari*, which runs down on the Right Side of the Bodies of the Vertebrae Dorsi, almost to the Diaphragm; giving off the greatest Part of the *Venae Intercostales*, and *Lumbares Superiores*.

The two *Subclaviae* run laterally, or toward each Side, and terminate as they go out of the Thorax, between the first Rib and Clavicula, immediately before the anterior Insertion of the *Musculus Scalenus*.

The Right Subclavian, which is the shortest of the two, commonly sends out four capital Branches; the *Jugularis externa* and *interna*, the *Vertebralis*, and *Axillaris*, which last is rather a Continuation than a Branch of the Subclavian.

The Left Subclavian, being longer than the Right, gives off, first of all, the small Veins on the Left Side, answering those on the Right Side, that come from the Trunk of the superior Cava; as the *Mediastina*, *Pericardica*, *Diaphragmatica superior*, *Thymica*, *Mammaria Interna*, and *Trachealis*.

Next to these small Veins, called *Sinistrae*, it detaches another small Branch, called *Intercostalis Superior Sinistra*, and then four large Branches, like those on the Right Subclavian, as the *Jugularis Externa* and *Interna*, *Vertebralis*, and *Axillaris*, which are all termed *Sinistrae*.

The external Jugular Veins are distributed principally to the outer Parts of the Throat, Neck, and Head; and send a small Vein to the Arm, named *Cephalica*, which assists in forming a large one of the same Name.

The internal Jugular Veins go to the internal Parts of the Neck and Head, communicating with the Sinuses of the Dura Mater, and in several Places, with the external Jugular Veins.

The Vertebral Veins pass through the Holes in the transverse Apophyses of the Vertebrae of the Neck, sending Branches to the Neck and Occiput, they form the *Sinus Venales* of these Vertebrae, and communicate with the Sinuses of the Dura Mater.

The Axillary Veins are Continuations of the *Subclaviae*, from where these leave the Thorax, to the Axillae: They produce the *Mammariae Internae*, *Thoracicae*, *Scapulares*, or *Humerales*, and a Branch to each Arm, which, together with that from the external *Jugularis*, forms the *Vena Cephalica*.

Afterwards the Axillary Vein terminates in the principal Vein of the Arm, called *Basilica*; which, together with the *Cephalica*, is distributed, by numerous Ramifications, to all the Parts of the Arm, fore Arm, and Hand.

VENA CAVA INFERIOR.

The Portion of the inferior *Vena Cava* contained in the Pericardium is very small, being scarcely the twelfth Part of an Inch on the fore Part, and not above a Quarter of an Inch on the back Part. From thence it immediately perforates the Diaphragm; to which it gives the *Venae Diaphragmaticae Inferiores*, or *Phrenicae*.

It passes next behind the Liver, through the great Sinus of that Viscus, to which it furnishes several Branches, termed *Venae Hepaticae*.

In this Course it inclines a little toward the *Spina Dorsi* and *Aorta Inferior*, the Trunk and Ramifications of which it afterwards accompanies in the Abdomen, all the Way to the *Os Sacrum*; the *Arteria Coeliaca*, and the two *Mesentericae*, only excepted.

Thus the inferior Cava sends out on each Side, in the same manner with the Aorta, the *Venae Adiposae Renales*, *Spermaticae*, *Lumbares*, and *Sacrae*. Having reached to the *Os Sacrum*, it loses the Name of Cava; and, terminating by a Bifurcation, like that of the descending Aorta, it forms the two *Venae Iliacae*.

These Iliac Veins having given off the Hypogastricae, with all their Ramifications, to the Viscera of the Pelvis, and to some other external and internal neighbouring Parts, go out of the Abdomen, under the *Ligamentum Fallopii*, and there take the Name of *Venae Crurales*.

Each Crural Vein sends off numerous Ramifications to all the lower Extremities; besides the *Vena Saphena*, which goes out near the Origin of the *Cruralis*, and, running along this whole Extremity, detaches many Ramifications, all the Way to the Foot.

VENA AZYGOS and VENAE INTERCOSTALES.

The *Vena Azygos*, or *sine Pari*, is very considerable, and arises posteriorly from the superior Cava, a little above the Pericardium.

It is immediately afterwards bent backward over the Origin of the Right Lung, forming an Arch which furrounds the great Pulmonary Vessels on that Side, as the Arch of the Aorta does those

those of the Left Side; with this Difference only, that the Curvature of the *Azygos* is almost directly backward; whereas that of the Aorta is oblique. From thence it runs down on the Right Side of the *Vertebrae Dorsi*, on one Side of the Aorta, and before the Intercostal Arteries; and, getting behind the Diaphragm, it terminates by a very sensible Anastomosis; sometimes with the *Vena Renalis*, sometimes with a neighbouring Lumbar Vein, sometimes immediately with the Trunk of the *Cava Inferior*, and sometimes otherwise.

I have seen this Vein extremely large, resembling the Trunk of the inferior Cava, from the Diaphragm, to the Origin of the *Renales*, the true Cava being through all this Space very narrow, or of the Size of an ordinary *Azygos*.

The *Vena Azygos* sends out, first of all, two or three small Veins from the Top of the Arch, one of which goes to the *Aspera Arteria*; the others partly to the *Aspera Arteria*, and, partly, to the Bronchia, by the Name of *Venae Bronchiales*, accompanying the Ramifications of the Bronchial Artery.

Afterwards the *Azygos* detaches from the Extremity of the Arch, a small Trunk common to two or three small Veins, called *Intercostrales Superiores Dextrae*, which bring back the Blood from the first three Series of Intercostal Muscles, and from the neighbouring Part of the Pleura.

These Intercostal Veins send Branches through the Intercostal Muscles to the *Serratus Superior Posticus*, and to the *Serratus Major*, and afterwards they run along the Interstices between the Ribs, communicating with the *Venae Mammariae*.

They, also, send small Branches backward to the Vertebral Muscles, and Canal of the Spine, where they communicate with the Venal Circles, or Sinuses, which bring back the Blood from the *Medulla Spinalis*.

As the *Azygos* runs down, it sends off the inferior Intercostal Veins on the Right Side, one going to each Series of Intercostal Muscles: These Veins run along the lower Edges of the Ribs, and perforate the Muscles by Branches, which go to the posterior and external Part of the Thorax.

They communicate with the *Venae Thoracicae*, and most commonly with the *Mammaria Interna*; and, lastly, more or less with each other, by perpendicular Branches, near the posterior Extremities of the Ribs.

The *Azygos* sends off, likewise, the Left Intercostal Veins, but seldom the whole Number; for the superior Veins come often from the Left Subclavian. The inferior Intercostal Veins, to the Number of six or seven, sometimes more, sometimes fewer, come often from the Trunk of the *Azygos*; and running between the Aorta and *Vertebrae*, to the Substance of which they give small capillary Twigs, they send off almost the same Ramifications with the Veins on the Right Side, and likewise some to the *Oesophagus*.

Sometimes these Intercostal Veins come from a small common Trunk, which goes out from that of the *Azygos*, and, passing between the Aorta and *Vertebrae*, is bent downward along the Left Side of the *Vertebrae*: In which Course it detaches the Intercostals laterally. This small Trunk is in some Subjects bifurcated upwards and downward, as it sends off the Intercostals; and, in others, there are two small common Trunks.

Lastly, There is sometimes an entire *Azygos* on the Left Side, which proceeding from the Arch of the ordinary *Azygos*, is afterwards distributed in the same manner as the other, on the Right Side: But this Disposition, likewise, varies very much.

The *Azygos*, having reached below the last Rib, sends off a large Branch, which, bending outward, perforates the Muscles of the Abdomen, is ramified between their different Planes, and communicates with the like Ramifications of the last, or last two Intercostal Veins.

Sometimes it sends off the *Vena Diaphragmatica Inferior*, and, also, gives downward to the first, or first two transverse Apophyses of the *Vertebrae Lumbares*, a Branch which forms the first *Venae Lumbares Dextrae*.

These Communications between the last Intercostal, and first Lumbar Veins, are very irregular, being sometimes by a Series of opposite Angles, sometimes by *Arculae*, and sometimes by a reticular Texture. Sometimes the Extremity of the *Vena Azygos* communicates either mediately, or immediately, with the *Vena Adiposa*, and even with the *Vena Spermatica*.

VENAE PECTORALES INTERNAE.

The *Pectorales Internae* are small Veins disposed in Pairs, towards the Right and Left Hand, behind the *Sternum*, and Parts near it, including the *Diaphragmatica Superiores*, or *Pericardio-diaphragmatica*, *Mediastinae*, *Mammariae Internae*, *Thymicae*, *Pericardicae*, and *Gutturales*, or *Tracheales*.

All these small Veins are divided into Right and Left; and these are both distributed much in the same manner; but they differ in their Origin, because of the Inequality in the Bifurcation of the *Cava Superior*.

The Right *Vena Mediastina* goes out anteriorly from the Trunk of the superior Cava, a little above the Origin of the *Azygos*; the Left comes from the *Subclavia*.

The Right superior *Diaphragmatica*, or *Pericardica Diaphragmatica*, comes anteriorly from the Root of the Bifurcation near the *Mediastina*; and is distributed by several Branches to the upper, fore, and back Parts of the *Pericardium*, communicating with those of the Left *Diaphragmatica*, and accompanying the Nerve of the same Name. The Left superior *Diaphragmatica* comes from the Left *Subclavian*, a little below the Origin of the *Mammaria*.

The Right internal *Mammaria* arises anteriorly from the *Vena Cava*, a little below the Angle of the Bifurcation: It runs along the nearest internal or posterior Edge of the *Sternum*; and on the cartilaginous Extremities of the Right Ribs, together with the Artery of the same Name. Having reached near the Diaphragm, it sends it a Branch, which runs toward the tendinous Plane, and communicates with the common diaphragmatic Veins.

Afterwards this Mammary Vein gives small Branches to the *Mediastinum*; and others, between the Ribs, to the Integuments; of which those that pass between, and under, the Cartilages of the last true Ribs, run down on the inner or posterior Side of the *Musculi Recti Abdominis*, being ramified among their fleshy Fibres, and communicating, really, with the Epigastric Veins; by several small Twigs.

The Left internal *Mammaria* arises anteriorly from the Left *Subclavian*, opposite to the Cartilage, or anterior Extremity of the first true Rib.

The Right *Vena Thymica*, when it arises separately, goes out from the Bifurcation; and when it is wanting, the *Thymus*, from whence it takes its Name, is furnished by the *Gutturalis*, or some other neighbouring Vein: This Vein often reaches no lower than the inferior Part of the *Thymus*; and the Left Vein of the same Name comes from the Left *Subclavian*, almost opposite to the *Sternum*.

The Right *Pericardica* seems to go out rather from the Origin of the Right *Subclavian*, than from the Trunk of the superior Cava; but in this there are many Varieties. It goes to the upper Side of the *Pericardium*, and other neighbouring Parts. The Left *Pericardica* comes sometimes from the Left *Subclavian*, before the *Mammaria*; and sometimes from the *Mammaria*, or *Diaphragmatica Superior*, on the same Side.

The Right *Gutturalis*, or *Trachealis*, goes out from the upper Part of the Bifurcation, above the *Mammaria* of the same Side, sometimes more backward, and sometimes from the *Subclavia*: It is distributed to the *Glandulae Thyroidae*, *Trachea Arteria*, *Musculi Sterno-hyoidae*, *Thymus*, and *Glandulae Bronchiales*: It communicates by lateral Branches, more or less contorted, with the internal Jugular Vein, and sometimes by another Branch, with a small Vein, which the internal Jugular sends to the *Glandula Thyroides*. The Left *Gutturalis* comes from the upper or posterior Part of the Left *Subclavian*, near its Origin.

The smallest internal Pectoral Veins do not always arise separately, but have sometimes a small common Trunk, especially on the Right Side; and, of all these small Veins, the *Mammaria Interna* is the most considerable.

VENAE SUBCLAVIAE.

The Right *Subclavian Vein* is very short, and its Course very oblique; so that it appears to arise higher than the Left Vein: It sends off, first of all, four large Branches, the *Vertebralis*, which is the first and most posterior; the *Jugularis Interna* and *Externa*, and the *Axillaris*.

The Left *Subclavian* seems to ascend but very little, after the Bifurcation; because it runs farther, and more transversely, than the Right: And in this Course it covers the Origin of three large Arteries, which come from the Curvature of the Aorta: It sends off four large Branches, besides the small Pectoral Veins, and receives the *Ductus Thoracicus*.

It, also, gives off, before its principal Division, a small Trunk for the Left superior Intercostals, which are sometimes six in Number, and communicate with the inferior Intercostals, and with a Branch of the *Vena Azygos*. This small common Intercostal Trunk furnishes, also, the Left *Bronchialis*.

Each *Subclavian Vein*, near the Middle of the *Clavicula*, sends off a Branch, called *Cephalica*, which descends near the Surface of the Body, between the *Deltoides* and *Pectoralis Major*, and reaches the Arm.

VENAE JUGULARES EXTERNAE.

Each external Jugular Vein arises from the *Subclavian*, on the same Side; sometimes from the *Axillaris*, and sometimes from the Union of these two Veins. The Right and Left do not always arise in the same manner; for sometimes the Right comes from the *Subclavian*, and the Left from the internal Jugular,

gular, on the same Side: They run up between the *Musculus Cutaneus*, and *Sterno-mastoideus*, being covered by the former, and crossing over the latter.

Sometimes they are double from their very Origins; and when they are single, each of them divides afterwards into two, one anterior, and the other posterior, or rather superior. The anterior Vein goes to the Throat and Face, running up toward the Angle of the lower Jaw; and the posterior goes to the Temples and Occiput.

VENA JUGULARIS EXTERNA ANTERIOR.

The anterior external Jugular Vein is often a Branch of the *Jugularis Interna*; and sometimes arises from the Communications of the two *Jugulares*, in such a manner as that it cannot be said to belong more to the one than to the other. Sometimes, but very rarely, it comes from the *Vena Axillaris*.

It runs up toward the lateral Part of the lower Jaw, between the Angle and the Chin, like a *Vena Maxillaris*; and sends several Branches forwards, backwards, and inwards.

Posteriorly it gives, 1. A large Branch on the Side of the upper Part of the Larynx, which communicates with the *Jugularis Interna*; and, likewise, with a large short Branch of the posterior external Jugular. 2. A small Branch which has the same Communication, but which is not always to be found. 3. Another small Branch, a little below the lower Jaw, which communicates with the posterior external Jugular.

Anteriorly it sends several Branches to the Muscles of the Larynx, *Sterno-hyoidæi*, *Thyro-hyoidæi*, and to the Integuments; and below the Larynx, it sends communicating Branches to the anterior external Jugular of the other Side.

A little higher, opposite to the *Cartilago Thyroides*, it gives off a transverse Branch, which runs on the anterior and lower Part of the *Musculi Sterno-mastoidei*; and communicates with the Jugular of the other Side, though not always by a Vein of the same Kind.

The superior and inferior transverse Branches communicate on each Side, by Branches more or less perpendicular; and send a small Branch to the *Musculus Quadratus* of the Chin, to the *Musculus Cutaneus*, and Integuments.

It sends another large Branch anteriorly towards the Symphysis of the lower Jaw, which, after having supplied the Maxillary Glands, is distributed to the Digastric Muscle, to the Chin and under Lip.

Interiorly at the same Place, it sends out a large Branch, which furnishes the *Glandulæ Sublinguales*, runs down toward the *Cornua* of the *Os Hyoides*, to communicate with some Branches of the *Jugularis Interna*, and sends several Branches to the Tongue, called *Venæ Raninæ*: It gives off, also, a small Branch, which running upon the *Musculus Labiorum Triangularis*, to the Commissure of the Lips, is distributed to the neighbouring Parts.

The same Branch which gives out the *Venæ Raninæ*, detaches another to the lateral Parts of the *Septum Palati*, which is distributed to the *Amygdalæ*, and to the Uvula; and sends Branches forward to the Membrane, which lines the Arch of the Palate. Another Branch goes out from it to the *Pterygoidæus Internus*, *Peristaphylini*, and *Cephalo-pharyngæi*.

Afterwards the Trunk of the anterior external Jugular Vein runs up on the *Musculus Triangularis*, where it receives the Name of *Vena Triangularis*, in a winding Course, from the Angle of the lower Jaw to the great or internal Angle of the Orbit, sending Branches on each Side to the Muscles and Integuments.

These Branches communicate with each other, especially one which passes under the *Zygoma*, behind the *Os Male*, to the inferior Orbital or *Spheno-maxillary* Fissure; and another small Branch, which runs along the inferior Portion of the orbital Muscle, to the small or external Angle of the Eye, where it communicates with the Temporal and Frontal Ramifications.

It is here to be observed, that, under the Angle of the lower Jaw, there is a great Variety of Communications between the external and internal jugular Veins; and, also, a great Variety in the Distribution of these Veins.

Almost all the Ramifications, which, at this Place, go from the external jugular Vein, to be distributed on the upper Part of the Throat, and on the Face, in some Subjects, arise, in other Subjects, from the internal Jugular; and, sometimes, one Part of them comes from the external Jugular, the rest from the internal.

The Trunk of the *Vena Angularis*, having reached the Bones of the Nose, sends out a Branch through the lateral Cartilages of the Nose, which is distributed to the *Nares*; and another, which runs down, in a winding Course, to the upper Lip.

At the great, or inner Angle of the Eye, the same Trunk sends off several other Branches; the first of which goes to the Root of the Nose, and communicating with its Fellow, from

the other Side, gives several small Veins to the Holes of the *Osse Nasi*.

The second Branch runs up on the Forehead, by the Name of *Vena Frontalis*, antiently *Præparata*; and is distributed to each Side, communicating with its Fellow, when any such Vein is found.

The third Branch enters the Orbit, in a winding Course, on one Side of the cartilaginous Puddle, and communicates with the Sinuses of the *Dura Mater*, by the orbital Sinus of the Eye.

The fourth Branch goes along the *Musculus Superciliaris*, and the upper Part of the *Orbicularis*, to the small, or external Angle of the Eye, to communicate with the *Vena Temporalis*; and with that Vein which runs along the lower Part of the orbicular Muscle, with which it forms a kind of Circle.

VENA JUGULARIS EXTERNA POSTERIOR, SIVE SUPERIOR.

The posterior, or superior external jugular Vein, runs up toward the parotid Gland, and lower anterior Part of the Eye, giving out several considerable Branches toward each Side.

At its Origin it sends out, posteriorly, a principal Branch, with its Ramifications, to the Muscles which cover the *Scapula*, and Joint of the *Humerus*, commonly called *Vena Muscularis*, and which might be named *Superhumeralis*.

A little higher, it gives off the *Vena Cervicalis*, which goes to the vertebral Muscles of the Neck; this Vein communicates with the *Humeralis*, by several *Aræolæ*, or venous Meshes, and they are both ramified in different manners.

These Ramifications and Communications are, in Part, covered by the *Musculus Trapezius*, and communicate, also, with some Branches of the *Vena Occipitalis*, and with a Branch of the superior intercostal Vein, which perforates the first intercostal Muscle.

Near the cervical Vein, but a little more outward, it gives off, sometimes, the small *Vena Cephalica*, which runs down between the *Pectoralis major* and *Deltoides*, and unites with the *Vena Cephalica* of the Arm.

Backward it detaches the *Vena Occipitalis*, which is distributed on the Occiput, and, sometimes, comes from the *Vena Vertebralis*, or *Axillaris*. It, also, sends out a small Vein, which enters the *Cranium* by the posterior mastoid Hole, and terminates in one of the lateral Sinuses of the *Dura Mater*. This Branch comes, sometimes, from another Vein.

Having reached as far as the parotid Gland, it forms Communications with the anterior external Jugular, under the Angle of the lower Jaw, and then passes through the parotid Gland, between that Angle and the Condyle, giving off a large Branch which communicates with another Branch common to the internal and anterior external Jugulars.

Sometimes there are several Branches, which, having run a very little Way, unite together, and represent the short large Branch, forming *Aræolæ*, or Meshes, through which the Nerves pass.

Afterwards, it passes before the Ear, taking the Name of *Vena Temporalis*, which is distributed to the Temples, and lateral Parts of the Head, towards the Occiput and Forehead. Sometimes the temporal Vein has two Origins, whereof one is from the *Jugularis interna*.

The temporal Vein of one Side communicates above, with its Fellow on the other Side; before, with the *Vena Frontalis*; and behind, with the *Vena Occipitalis*. Opposite to the Ear it gives out a large Branch, one Ramification of which runs under the lower Edge of the *Zygoma*; and, then returning, communicates with another Ramification from the same Jugular, a little below the Condyle of the lower Jaw, forming a kind of Island irregularly round.

Behind this Condyle, it gives Branches to the Temporal Muscle, to the neighbouring Parts of the upper Jaw, and to the Inside of the lower Jaw, almost in the same manner as is done by the Arteries.

Only one of these Branches runs from without inward, between the Condylode and Coronode Apophyses, to be distributed to the *Musculus Temporalis* and *Pterygoidæi*, sending off a Ramification to the Masseter, in its Passage.

VENA JUGULARIS INTERNA.

The internal Jugular Vein is the largest of all those that go to the Head, though not so large as it seems to be when injected.

It runs up behind the *Sterno-mastoideus*, and *Omo-hyoidæus*, which it crosses, along the Sides of the *Vertebra* of the Neck, by the Edge of the *Longus Colli*, to the *Fossula* in the *Foramen Lacerum* of the *Basis Cranii*.

The first Branches which it sends off, are small, and go to the *Thyroide* Glands: About two Fingers-breadth, higher up, it detaches a middle-sized Branch, which runs laterally toward the Larynx, and may be named *Vena Gutturalis*.

This guttural Vein divides, principally, into three Branches, the lowest of which goes to the *Thyroides* Gland, and neighbouring Muscles; the middle Branch to the *Larynx*, and *Musculi Thyroidæ*, and the third runs upward, to the great Communication between the two *Jugulares*. In this, however, there is some Variety, and I have seen the Left guttural Vein go out from the *Axillaris*.

About the same Distance upward, almost opposite to the *Os Hyoides*, the internal Jugular gives another Branch, which sends Ramifications to the Muscles belonging to that Bone, and others, which communicate with the foregoing Branch: This other Branch runs upward toward the Parotid Gland, and Angle of the lower Jaw, where it sends communicating Branches forward and backward, to the two external Jugulars.

It is at this Place, also, that the internal Jugular sometimes produces the *Vena Maxillaris Interna*, and all its Ramifications.

The internal Jugular sends another Branch backward, which is distributed to the *Occiput*, where it communicates with a Branch of the *Vertebralis*, and through the posterior *Mastoide* Hole, with the lateral *Sinus* of the *Dura Mater*: This Communication is sometimes by an *Anastomosis*, with a Branch of the external Jugular, or of the *Cervicalis*, which goes thither.

Afterwards it reaches the *Foramen Lacerum* of the *Basis Cranii*, bending a little, and sending off small Twigs to the *Pharynx*, and neighbouring Muscles.

VENA VERTEBRALIS.

The vertebral Vein arises posteriorly from the *Subclavia*, or *Axillaris*, sometimes by two Stems, sometimes by one, which soon afterwards divides into two.

The first and principal Stem gives out a Branch called *Vena Cervicalis*, which is distributed to the neighbouring Muscles, and afterwards runs up through the Holes of the transverse Apophyses of the *Vertebrae Colli*. This cervical Branch comes sometimes from the *Axillaris*.

The other Stem of the vertebral Vein runs up on the Side of the *Vertebrae*, and, having reached the fourth, or, sometimes, higher, it runs in between the transverse Apophyses of that *Vertebra*, and of the fifth, to join the first or principal Stem.

Thus the vertebral Vein accompanies the Artery of the same Name, sometimes in one Trunk, sometimes in several Stems, through all the Holes of the transverse Apophyses of the *Vertebrae Colli*, all the way to the great *Foramen Occipitale*, communicating with the occipital Veins, and small occipital Sinuses of the *Dura Mater*.

In its Passage it gives off one Branch, which enters by the posterior *condyloide* Hole of the *Os Occipitis*, and communicates with the lateral *Sinus* of the *Dura Mater*; but it is not always to be met with.

As these Veins run through the Holes in the transverse Apophyses, they send Branches forward to the anterior Muscles of the Neck, and to the small interior Muscles of the Head.

Other Branches go, also, outward, and backward, to the *Musculi Transversales*, and *Vertebrales Colli*, and inward to the great Canal of the spinal Marrow, where they form Sinuses, which communicate with those on the other Side.

These vertebral Sinuses are pretty numerous, and placed one above another, all the way to the *Occiput*; the lower communicate with the upper, and at the great Foramen of the *Os Occipitis* there is a Communication between them and the occipital Sinuses of the *Dura Mater*.

VENA AXILLARIS.

The Subclavian Vein, having sent off the Branches already described, goes out of the Thorax, and passes before the anterior Portion of the *Musculus Scalenus*, and between the first Rib and the Clavicle, to the *Axilla*: Through this Course it takes the Name of *Vena Axillaris*, and gives off several Branches, the principal of which are, the *Venæ Musculares*, *Thoracicae*, and *Vena Cephalica*, which is sometimes double.

The first Veins which it sends off, are the *Musculares*, distributed to the middle Portion of the *Musculus Trapezius*, to the *Angularis*, *Infraspinatus* and *Subscapularis*; and as some of these Branches go to the Shoulder exteriorly, others interiorly, the *Venæ Scapulares* are distinguished into external and internal.

A little before the *Axillaris* reaches the *Axilla*, it sends out the *Venæ Thoracicae*, one of which is superior, called, also, *Mammaria Externa*, and the other inferior: It likewise sends Ramifications to the *Musculus Subscapularis*, *Teres major*, *Teres minor*, *Supraspinatus*, *Latissimus Dorsi*, *Serratus major*, *Pectoralis minor*, *Pectoralis major*, and to the Glands of the *Axilla*; and, sometimes, gives a communicating Branch to the *Vena Basilica*.

The *Axillaris*, having reached the Side of the Head of the *Os Humeri*, produces a very considerable Branch, named *Vena Cephalica*; and afterwards runs along the Arm, by the Name of

Vena Basilica, which, however, appears, sometimes, to be rather a Branch, than a Continuation, of the Trunk of the *Axillaris*; in which Case, the *Cephalica* and *Basilica* might be look'd upon as two principal Branches of the axillary Vein.

VENA CEPHALICA.

The cephalic Vein, which is a Branch of the *Axillaris*, at a small Distance from its Origin, joins the small *Cephalica*, which runs down from the *Subclavia*, or *Jugularis externa*, having, till then, run near the Surface of the Body between the *Deltoides* and *Pectoralis major*, and, sometimes, these two Veins communicate before their Union.

The great *Cephalica* runs down between the Tendons of the last-mentioned Muscles, and along the outer Edge of the external Portion of the *Biceps*, communicating several times with the *Vena Basilica*, and sending small Ramifications, on each Side, to the neighbouring Muscles, Fat, and Skin. Some Branches go out from its upper Part, which, lower down, unite again with the Trunk.

A little below the external Condyle of the *Os Humeri* it detaches a Branch backward, which runs up between the *Musculus Brachialis* and the upper Portion of the *Supinator Longus*; and afterwards bends back between the *Os Humeri* and *Anticonæus Externus*, where it communicates with some Branches of the *Basilica*.

Having reached very near the Fold of the Arm, it is divided into two principal Branches, one long, the other short: The long Branch is named *Radialis Externa*, and the short one may be called *Mediana Cephalica*, to distinguish it from another *Mediana*, which is a short Branch of the *Basilica*, and therefore ought to be called *Vena Mediana Basilica*.

The external radial Vein runs along the *Radius* between the Muscles and Integuments, giving off Branches toward both Sides, which communicate with other Branches of the same Vein, and with some from the *Basilica*, forming *Areolæ*, much in the same manner as the *Saphena* does in the lower Extremity.

The *Mediana Cephalica* runs down obliquely toward the middle of the Fold of the Arm, under the Integuments, and over the Tendon of the *Biceps*, where it joins a short Branch of the same Kind from the *Basilica*, which I have already named *Mediana Basilica*. These two *Medianæ* unite in an Angle, the Apex of which is turned downward.

From this angular Union, or *Anastomosis*, a considerable Branch goes out, which runs down on the fore Arm, uniting on one Side with the *Vena Cephalica*, and communicating, on the other, with the *Basilica*, by several irregular *Areolæ*. The Name of *Mediana* is given to this large Branch, as well as to the two other short ones, by the Union of which it is formed; but, that they may not be confounded, this large Branch may be termed *Mediana major*, or *media*, the Names already given to the other two being retained.

From this Union of the two lateral *Medianæ*, and, sometimes, from the Origin of the *Mediana Media*, which is the true *Mediana* of *Riolanus*, a Branch goes out, which runs down on the Inside of the fore Arm, opposite to the interosseous Ligament, and is called *Vena Cubiti Profunda*. It goes to the neighbouring Muscles, and communicates with the other Veins of the fore Arms. The *Mediana Cephalica* sometimes sends down a long Branch, called *Radialis Interna*, which lies almost parallel to the *Radialis Externa*.

Afterwards, the *Cephalica*, having reached the Extremity of the *Radius*, is distributed, by numerous *Areolæ*, almost in the same Course with the radial Artery.

A particular Branch goes out from it, which runs more or less superficially between the Thumb and *Metacarpus*, by the Name of *Cephalica Pollicis*. The *Areolæ* furnish the interosseous Muscles and Integuments, and communicate with a small Branch from the *Basilica*, called, by the Antients, *Salvatella*.

VENA BASILICA.

The Antients termed the basilic Vein of the Right Arm the Vein of the Liver, or *Vena Hepatica Brachii*; and that of the Left Arm the Vein of the Spleen, or *Vena Splenica Brachii*: It has sometimes a double Origin, by a Branch of Communication with the Trunk of the *Axillaris*.

It sends off, first of all, under the Head of the *Os Humeri*, a pretty large Branch, which passes almost transversely round the Neck of that Bone, from within backward, and from behind outward, running up on the *Scapula*, where it is ramified on the *Deltoides*, and communicates with the *Venæ Scapulares externæ*. This Branch may be named *Vena Subhumeralis*, or *Articularis*, as the Artery which lies in the same Place, they both having much the same Course.

This articular Vein sends down two principal Branches, one of which runs along the Inside of the Bone, to which, and to the

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the *Pericæstum*, it gives small Veins: The other turns forward, toward the middle of the Arm, between the Bone and the *Biceps*, and communicates with the *Cephalica*.

Below the Neck of the *Os Humeri*, near the Hollow of the *Axilla*, and behind the Tendon of the *Pectoralis major*, the *Basilica* sends out a considerable Branch, which runs down on the Side of the brachial Artery, and furnishes the neighbouring Muscles on both Sides. This Vein is named *Profunda Brachii*, or *Profunda superior*.

Immediately afterwards, the *Basilica* detaches two or three small Veins, which run down very closely joined to the brachial Artery, surrounding it, at different Distances, by small Twigs, which communicate with each other: These Veins might be named *Venæ Satellites Arteriæ Brachiales*.

These small Veins, which often arise from the *Profunda Superior*, communicate with the *Basilica* and *Cephalica*; and, having reached the Fold of the Arm, they divide like the Artery; and the same Divisions are continued along the whole fore Arm, through all which Space they accompany and surround the arterial Branches, in the manner already said.

Afterwards the *Basilica* continues its Course along the Inside of the *Os Humeri*, between the Muscles and Integuments, forming many Communications with the *Vena Profunda*, *Satellites*, and *Cephalica*, and supplying the Muscles and Integuments.

Having reached the inner Condyle, and having sent off obliquely, in the Fold of the Arm, the *Mediana Basilica*, it runs along the *Ulna*, between the Integuments and Muscles, a little toward the Outside, by the Name of *Cubitalis Externa*, still communicating with the *Profunda*, *Satellites*, and *Cephalica*.

Having detached the *Mediana Basilica*, it sends out another Branch, which runs down along the Inside of the fore Arm near the *Ulna*, and communicates with the *Mediana major*. This Branch may be named *Cubitalis Interna*.

The *Basilica*, having, at length, reached the Extremity of the *Ulna*, sends several Branches to the convex Side of the *Carpus*; one of which, named *Salvatella*, goes to that Side of the little Finger next the Ring Finger, having first communicated with the *Cephalica*, by means of the venal *Areolæ*, conspicuous on the Back of the Hand: In the other Fingers this Vein follows nearly the same Course with the Artery.

In general, the external or superficial Veins of the fore Arm are larger than the internal, but they are accompanied only by small Arteries; whereas the deep Veins accompany large Arteries.

VENA CAVA INFERIOR.

The inferior *Vena Cava*, having run down about a quarter of an Inch from the Right Auricle of the Heart, within the *Pericardium*, as has been already said, pierces that Membrane, and the tendinous Portion of the Diaphragm, which adhere very closely to each other.

At this Place it gives off the *Venæ Diaphragmaticæ*, or *Phrenicæ*, which are distributed to the Diaphragm, and appear principally on its lower Side, one toward the Right Hand, and one toward the Left: The right Vein is more backward, and lower, than the left; the left is distributed partly to the *Pericardium*, and partly to the Diaphragm; and sometimes they send Ramifications to the *Capitulæ Renales*, much in the same manner as the *Arteriæ Phrenicæ*.

The inferior *Cava*, having perforated the Diaphragm, passes through the posterior Part of the great Fissure of the Liver, penetrating a little into the Substance of that *Viscus*, between the great Lobe and the *Lobulus Spigelii*, being, however, covered but very little, on the back Side, by the Substance of the Liver, till it reaches the *Lobulus*.

In its Passage it sends off, commonly, three large Branches, called *Venæ Hepaticæ*, which are ramified in the Liver. Sometimes there are only two, and sometimes four.

Besides these large Branches, it sends out some other small ones, either before, or immediately after, it goes out of the Liver; which, according to some Anatomists, answer to the Branches of the hepatic Artery, as the large Branches do to those of the *Venæ Portæ*.

In the *Fœtus*, as the *Vena Cava* passes by the Liver, it gives off the *Ductus Venosus*, which communicates with the *Sinus* of the *Vena Porta*, and, in Adults, is changed to a flat Ligament.

After its Passage through the Liver, the *Vena Cava* turns from before backward, and from right to left, toward the *Spina Dorsæ*, placing itself on the right Side of the *Aorta*, which it accompanies from thence downward.

Having got as low as the *Arteriæ Renales*, it gives off the Veins of the same Name, termed, formerly, *Venæ Emulgentes*, and which are the largest of all the Veins that go from the *Cava Inferior*, from the Liver to the Bifurcation.

The right renal Vein is the shortest, and runs down a little

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obliquely, because of the Situation of the Kidney: The left Vein, which is the longest, crosses on the fore Side of the Trunk of the *Aorta*, immediately above the superior mesenteric Artery; and both Veins accompany the renal Arteries.

They send up the *Venæ Capitulæ*, which go to the *Glandulæ Renales*; and downward, the *Venæ Adiposæ*, which go to the pinguious Covering of the Kidneys; and, ordinarily, the left renal Vein furnishes the left spermatic Vein: Afterward, they run to the *Sinus*, or Cavity of the Kidneys, in the Substance of which they are distributed, by numerous Ramifications.

A little below the renal Veins, the Trunk of the *Cava* sends out anteriorly, toward the right Side, the right *Vena Spermatica*. The left spermatic Vein comes, commonly, though not always, from the left *Renalis*; both Veins accompany the spermatic Arteries to the Parts to be mentioned hereafter.

In their Passage they send several small Branches, on each Side, to the *Peritonæum* and *Mesentery*; where they seem to be joined, by *Anastomoses*, with the *Venæ Mesaraicæ*, and, consequently, with the *Venæ Portæ*.

They sometimes send a considerable Branch over the iliac Muscle, which, afterwards, dividing into two, one Branch runs up to the *Membrana Adiposa* of the Kidneys, the other runs down on the last-mentioned Muscle.

About the same Height with the spermatic Vein, the inferior *Cava* sends off posteriorly, in some Subjects, a Branch which runs upward, and communicates with the *Vena Azygos*. Sometimes this Branch goes out from one or other of the *Renales*, and appears to be a true Continuation of the Extremity of the *Azygos*.

The *Cava* sends, also, off posteriorly, the *Venæ Lumbares*, which commonly arise in Pairs, in the same manner as the Arteries of the same Name go out from the *Aorta*. These may be divided into superior and inferior Veins.

Their Origins vary in different manners: Sometimes the *Cava* gives off a Branch to each Side below the first *Vertebra* of the Loins, which, like a common Trunk, furnishes the lumbar Veins: This Branch communicates with the *Azygos*.

Sometimes a considerable Branch goes out from the lower Extremity of the *Cava*, near the Bifurcation, principally on the right Side; which, afterwards, running up between the Bodies and transverse *Apophyses* of the *Vertebræ*, detaches the *Venæ Lumbares*, and communicates with the *Azygos*.

Sometimes a like Branch comes from the Beginning of the left *Vena Iliaca*, and, running upon that Side in the same manner, produces the *Lumbares*. This Branch, also, communicates with the *Azygos*, and with the superior or descending *Ramus Lumbaris*.

The *Venæ Lumbares*, on one Side, communicate, by transverse Branches, with those of the other Side, and, also, with each other, by Branches more or less longitudinal. The first and second often go from the *Azygos*, and thereby they communicate with the intercostal Veins.

The lumbar Veins send small Capillaries, in their Passage, to the Substance of the Bodies of the *Vertebræ*; and they are distributed to the Muscles of the Abdomen, *Quadratus Lumborum*, *Psoas*, and *Iliacus*. They send Branches, also, to the neighbouring vertebral Muscles, and to the Canal of the Spine; and communicate with the venous Sinuses, in the same manner as the Intercostals.

The inferior *Cava*, having reached as low as the last *Vertebra* of the Loins, and near the Bifurcation of the *Aorta*, runs in behind the right iliac Artery, and there is divided into two subaltern Trunks, called the right and left iliac Veins.

The Extremity of the Trunk of the *Vena Cava* passes, in some Subjects, behind the Origin of the right iliac Artery; in others, it is the left iliac Vein which passes there, and, consequently, crosses the right iliac Artery: Afterward, the left iliac Vein accompanies the inside of the left Artery, till it goes out of the Abdomen: Therefore the iliac Veins lie on the Insides of the Arteries at this Place.

From this Bifurcation of the *Vena Cava*, and, often, from the Origin of the left *Iliaca*, the *Vena Sacra* goes out, and accompanies the Artery of the same Name in its Distribution to the *Os Sacrum*, to the Nerves which lie there, and to the Membranes which cover both Sides of that Bone.

VENÆ ILIACÆ.

Each original iliac Vein is divided, on the Side of the *Os Sacrum*, much after the same manner as the Arteries, into two large Trunks, or secondary iliac Veins: This second Bifurcation is about a Finger's-breadth below that of the iliac Arteries.

One of these Trunks is named *Vena Iliaca Externa*, or anterior; the other *Interna*, or posterior. The external Vein is, also, named, simply, *Iliaca*; and the internal, *Hypogastrica*. The external Vein seems to be the true Continuation of the Trunk,

Trunk, and the *Hypogastrica* only a Branch. I here speak of adult Bodies; because, in the *Fœtus*, there is a considerable Variation.

These Veins follow nearly the Course and Distribution of the iliac Arteries, except that the hypogastric Vein does not send off the *Vena Umbilicalis*. The external iliac Veins lie more or less on the inside of the Arteries, in the manner already said; but the hypogastric Veins, in the Bottom of the *Pelvis*, lie almost behind the Arteries, on the same Side.

From the common Trunk of the iliac Veins, and, sometimes, from the Origin of the *Iliaca Externa*, a particular Branch goes out, which is distributed to the *Musculus Psoas*, *Iliacus*, and *Quadratus Lumborum*; and, afterwards, sends a Branch on the fore Side of the last transverse *Apophysis* of the Loins, to communicate with the last lumbar Vein.

The external Iliac, a little before it leaves the Abdomen, near the *Ligamentum Fallopii*, lying upon the *Psoas* and iliac Muscles, gives off almost the same Branches with the Artery of the same Name, and follows the same Course: The principal Branches are these:

A little before it goes out of the Abdomen, it sends off, from the Outside, a small Branch, which runs up along the *Crista* of the *Os Ilium*, and gives Branches, on each Side, to the lateral and posterior lower Portions of the *Musculi Abdominis*, and to the *Musculus Iliacus*.

From the inside, before it leaves the Abdomen, it sends off the *Vena Epigastrica*, which, having furnished some small Ramifications to the neighbouring conglobated Glands, runs up along the inside of the *Musculi Recti*, on which it is ramified both ways; as, also, on the broad Muscles of the Abdomen, by other small Branches, which penetrate, from within, outwards.

Afterwards, the *Vena Epigastrica* runs upward, and joins the Ramifications of the *Mammaria*, by an equal Number, accompanying the epigastric Artery; from the inside of the epigastric Vein a Branch is, sometimes, detached to the *Musculus Obturator Internus*, where it joins another Branch, named *Vena Obturatric*.

Before the iliac Vein gets from under the *Ligamentum Fallopii*, it sends several small Ramifications to the neighbouring lymphatic Glands; and, immediately afterwards, losing the Name of *Iliaca*, it takes that of the *Cruralis*.

VENA HYPOGASTRICA.

The hypogastric, or internal iliac Vein, runs behind the Artery of the same Name, making the same kind of Arch, from which the following Branches go out.

From the posterior, or convex Part of the Arch, it gives a Branch to the superior lateral Part of the *Os Sacrum*, which is distributed to the *Musculus Sacer*, or *Transverso-spinalis Lumborum*, and other Muscles thereabouts, and to the Cavity of the Bone, which it enters through the first great Hole.

A little lower, on the same Side, it sends out another, which is distributed much in the same manner with the former, and enters the second Hole.

From the external lateral Part of the same Arch, a little anteriorly, it sends out a large Branch, which runs behind the great sciatic *Sinus*, and is distributed to the *Musculi Glutæi*, *Pyriformis*, and *Gemelli*.

Lower down, the same lateral Part of the hypogastric Vein gives out another large Branch, which, having run a little way, detaches several Ramifications; and, afterward, reaching the *Foramen Ovale* of the *Os Innominatum*, perforates the obturator Muscles, communicates with the crural Vein, and is distributed to the *Musculus Pectineus*, *Triceps*, and neighbouring Parts. This Vein is termed *Obturatrix*, from its passing through the Muscles of that Name.

Among the Branches sent off by the *Vena Obturatric*, before it perforates the Muscles, one is situated exteriorly, which runs toward the sciatic *Sinus* to the *Musculus Iliacus*, the superior Part of the *Obturator Internus*, and to the *Os Ilium*; near its Symphysis with the *Os Ischium*.

Interiorly, the same obturator Vein sends off another Branch, which is distributed to the Ureters, Bladder, and internal Parts of Generation in both Sexes. It communicates with the spermatic Veins, and is more considerable in Women than in Men.

Lastly, The hypogastric Vein runs backward, and goes out of the *Pelvis*, above the Ligament which lies between the inferior lateral Part of the *Os Sacrum*, and Spine of the *Ischium*; and, as it goes out, it is ramified, principally, upward and downward.

It sends a large Branch upward, to the lower Part of the *Os Sacrum*, and two, or more, downward; which, running behind the same Ligament, are distributed to the Buttocks, *Anus*, neighbouring Portion of the *Musculus Pectineus*, and to the external Parts of Generation, nearly in the same manner with the Artery which accompanies them.

The Veins that go to the *Anus*, are termed *Hæmorrhoidales*

Externæ; and they that go to the Parts of Generation, *Pudicæ Internæ*. The external *Hæmorrhoidales* communicate with the internal Veins of the same Name, which come from the small *Vena Mesaraica*, one of the Branches of the *Vena Portæ*, as we shall see hereafter.

VENA CRURALIS.

The crural Vein goes out under the *Ligamentum Fallopii*, on the inside of the crural Artery, and immediately gives small Branches to the inguinal Glands, the *Musculus Pectineus*, and Parts of Generation: These last are named *Pudicæ Externæ*, and evidently communicate with the internal Veins of the same Name.

About an Inch below, where it leaves the Abdomen, the crural Vein produces a large Branch, which runs down anteriorly between the Integuments and the *Sartorius*, following the Direction of that Muscle, almost all the way to the inside of the Thigh.

This Branch, having afterwards got beyond the Condyles of the *Os Femoris*, runs down between the Integuments and inner Angle of the *Tibia*, to the fore Part of the inner Ankle, and is distributed to the Foot: All this large Branch is named *Vena Saphena*, or *Saphena major*.

After the Origin of the *Saphena*, as the Trunk of the crural Vein runs down, it sinks in between the Muscles, and is distributed to all the inner or deep Parts of the lower Extremity, accompanying the crural Artery to the very Extremity of the Foot, being all along more considerable than the Artery, both for Capacity, and Ramifications, a Thing very common in the Veins.

As the *Saphena* is a Vein of very large Extent, I shall here describe it all together, and afterwards return to the *Vena Cruralis*.

VENA SAPHENA.

The *Vena Saphena*, in its Passage from the Inguen to the Foot, is covered only by the Skin and Fat; immediately after its Rise, it gives small Veins to the inferior inguinal Glands; and then it gives out others more anteriorly, which, running under the Integuments, communicate with each other by numerous *Aræolæ*, or Meshes: Sometimes these Communications come all from the Ramifications of one Branch.

The *Saphena*, having run down on the Thigh, as low as the Middle of the *Sartorius*, sends off to the same Side several Branches, which communicate with each other, and with the superior Branches already mentioned; and, as they run down, they communicate again with the Trunk of the *Saphena*.

These two Sorts of Communications furnish a third collateral Kind; from which, also, particular Branches are detached, which communicate with each other at different Distances all the Way to the Knee.

Between these upper and lower Branches, the *Saphena* sends backward a particular Branch, which, after being distributed to the Integuments which cover the *Gracilis internus* and *Triceps*, turns backward; and, a little below the Ham, runs in among the Muscles situated there, and communicates with another Branch, which may be termed *Saphena minor*.

Afterwards the Trunk of the great *Saphena* runs down on the Inside of the *Tibia*, lying always near the Skin; and, at the upper Part of that Bone, it sends Branches forward, outward, and backward.

The anterior Branches go to the Integuments on the upper Part of the Leg; the posterior, to those which cover the *Gastrocnemii*, and communicate with the little *Saphena*; and the external Branches are, also, distributed to the Fat and Integuments; and, having reached as low as the Middle of the *Tibia*, it sends a communicating Branch to the Trunk of the great *Saphena*.

From this Communication, a Branch goes out anteriorly, which runs along the Integuments of the *Tibia* all the Way to the outer Ankle, having in its Passage communicated again with the great *Saphena*.

As the *Saphena* runs down on the Inside of the *Tibia*, it sends out a Branch near the Middle of that Bone, which runs up behind the Tendons of the *Sartorius*, *Gracilis Internus*, and *Semi-nervosus*, then between the *Tibia* and upper End of the *Soleus*, and is joined by an Anastomosis with the Crural Vein.

It, also, detaches to the fore Part of the *Tibia* some Branches irregularly transverse, which, having been distributed to the *Periosteum* and Bone, communicate with other Branches already mentioned.

At the lower Part of the *Tibia*, the *Saphena* produces a considerable Branch, which runs obliquely forward over the Joint of the *Tarsus* toward the outer Ankle, sending off several Ramifications, which communicate with each other, and with the Trunk of the *Saphena*.

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Lastly, the Extremity of this Trunk passes on the fore Side of the inner Ankle, and runs irregularly under the Skin, along the Interstice between the first two metatarsal Bones toward the great Toe, where this Vein terminates.

Having got below the inner Ankle, it sends a Branch outward and forward, which runs under, and, in some measure, accompanies the anterior Tibial Artery. Interiorly it sends another Branch, almost from the same Place, which passes under the Foot, communicating with the external Tibial Vein by irregular Arches, from which Veins are sent to the Toes.

Lastly, before the *Saphena* terminates at the great Toe, it detaches a kind of transverse Arch over the *Metatarsus*, which communicates by several Branches with that Arch which lies on the Joint of the Tarsus, and sends others to the Toes. This Arch gives off, also, another Branch, which runs up behind the outer Ankle, and communicates with the *Vena Tibialis externa*.

CONTINUATION OF THE VENA CRURALIS.

The Crural Vein having sent off the *Saphena*, and the small Branches for the *Pectineus*, as has been said, runs down on the Thigh behind the Crural Artery. Opposite to the little Trochanter, it produces two large short Branches, or one which afterwards divides into two, whereof one is anterior, the other posterior.

The anterior Branch runs more or less transversely forward, to be distributed to the *Vastus Internus*, lower Part of the *Pectineus*, and of the second *Triceps*, and to the other two Muscles of the same Name, running in between them as it goes from one to the other.

The posterior Branch, runs more or less transversely backward, and furnishes the *Glutæi*, *Vastus Externus*, and Beginning of the Biceps.

A little below these two Branches, about the upper Extremity of the *Vastus Internus*, the Crural Vein produces a Branch, which runs down on the Side of the Trunk, covering the Crural Artery, almost as low as the Ham, where it is again united to the Trunk by an Anastomosis; and sometimes it is continued separate a little Way down on the Leg. It has the Name of *Vena Sciatica*, from the Sciatic Nerve which it accompanies.

On the Outside of this Anastomosis, the Crural Vein gives off a Branch, which runs backward between the Biceps and neighbouring Muscles, and so downward on the back Side of the Leg a little exteriorly, and very near the Skin, all the Way to the outer Ankle. This Vein is termed *Saphena minor*, or *externa*.

SAPHENA MINOR.

The little *Saphena*, having got near the Integuments in its Course downward, gives out a Branch, which runs backward, and communicates with the great *Saphena* about the Middle of the back Side of the Thigh.

Immediately above and below the Ham, this Vein sends out other Branches, which, also, communicate with the *Saphena major*; and, having run down about one third Part of the back Side of the Tibia, it sends off another Branch, which is afterwards reunited to the Trunk.

About the Beginning of the *Tendo Achillis*, the little *Saphena* runs outward in the Integuments, toward the outer Ankle, where it terminates in cutaneous Ramifications sent to every Side.

VENA POPLITEA.

The Crural Vein having detached the little *Saphena*, runs down between the Biceps and the other Flexors of the Leg, closely accompanied by the Crural Artery, between which and the inner Condyle of the *Os Femoris* it is situated.

A little above the Ham, it takes the Name of *Vena Poplitea*, and, as it runs down betwixt the two Condyles, it gives Branches to the Flexor Muscles above-mentioned, to the lower and posterior Parts of both *Vasti*, and to the Fat which lies above the Interstice of the two Condyles.

It, also, gives off several other Branches, one of which runs up laterally between the outer Condyle and the Biceps, and then turning forward, is ramified in the same manner with the Artery. Another Branch goes backward, sending Ramifications to the Beginning of the *Gastrocnemii*; after which, it runs down on the back Side of these Muscles, to the *Tendo Achillis*.

Near the internal Condyle, the *Poplitea* sends some lateral Branches to the Extremities of the neighbouring Muscles, especially those of the *Semi-nervosus*, and *Semi-membranosus*. Lastly, it sends a Branch toward the external Condyle, which having run for a small Space on the *Peroneus Longus*, goes back again into the Trunk.

The *Vena Poplitea* runs down immediately behind the Muscle of the same Name, at the lower Part of which it sends

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off several Ramifications to each Side, which divide and unite again in different Ways and Degrees, and afterwards it loses its Name, being divided into three considerable Branches, called *Tibialis anterior*, *Tibialis posterior*, and *Peronea*, of which the *Tibialis posterior* is most frequently a Continuation of the Trunk, and the other two like Branches.

VENA TIBIALIS ANTERIOR.

The anterior Tibial Vein, having distributed some small Branches from its very Beginning, to the Muscles behind the Heads of the two Bones of the Leg, perforates the interosseous Ligament from behind, forward, and runs between the superior Portions of the *Musculus Tibialis Anticus*, and *Extensor Digitorum communis*.

As soon as it pierces the interosseous Ligament, it distributes small superficial Branches to the Head of the Tibia and Fibula, which run to the Joint of the Knee, and communicate with the lateral Branches of the *Vena Poplitea*.

Afterwards it divides into two or three Branches, which run down together on the fore Side of the interosseous Ligament in Company with the anterior Tibial Artery, which they surround at different Distances, by small communicating Circles.

These Branches, having reached the lower Extremity of the Leg, unite in one, which afterwards divides into several, the Ramifications of which are distributed to the Foot.

A particular Branch goes out from the reunited Portion, which at the lower Part of the Leg, perforates the interosseous Ligament from before backward, and communicates with the *Vena Tibialis posterior*.

VENA TIBIALIS POSTERIOR.

The posterior Tibial Vein gives off, from its Beginning, a Branch toward the Inside, which is distributed to the *Gastrocnemii* and *Soleus*. This Vein is named *Suralis*.

Afterward the posterior *Tibialis* runs down between the *Soleus* and *Tibialis posterior*, giving Branches to each of them. It is divided in the same manner as the *Tibialis anterior*, into two or three Branches, which as they run, surround the corresponding Artery, by small communicating Circles formed at different Distances.

It continues this Course in Company with the Artery as low as the outer Ankle, furnishing the *Musculus Tibialis posterior*, and the long Flexors of the Toes. At the lower Part of the Leg, it communicates with a transverse Branch of the *Saphena*, and with the anterior Tibial Vein, in the manner already said.

Lastly, it passes on the Inside of the *Os Calcis*, under the Sole of the Foot, where it forms the *Venæ Plantares*, by dividing into several transverse Arches, which communicate with each other, and with the *Saphena*, and send Ramifications to the Toes, nearly in the same manner as the *Arteria Plantaris*.

VENA PERONÆA.

The *Vena Peronea* is, also, double, and sometimes triple. It runs down on the Inside of the Fibula, almost in the same Direction with the *Arteria Peronea*, which it, also, surrounds at different Distances, by communicating Branches, after the manner of the *Tibialis posterior*.

It runs down as low as the outer Ankle, communicating several times with the *Tibialis posterior*, and sending Ramifications to the neighbouring Portions of the *Musculi Peronei*, and long Flexors of the Toes.

The last of these Communications makes the *Venæ Plantares* in some Subjects, to appear rather to come from this Vein, than from the *Tibialis posterior*, from which they commonly rise.

VENA PORTÆ.

The *Vena Portæ* is a large Vein; the Trunk, which is situated principally between the Eminences on the lower or concave Side of the Liver, called *Portæ* by Anatomists; and from thence this Vein has got the general Name of *Vena Portæ*, or *Vena Portarum*.

It may be considered as made up of two large Veins, joined almost endwise by their Trunks; from each of which, the Branches and Ramifications go out in contrary or opposite Directions. One of these Trunks adheres to the Liver, and is ramified in that Viscus, its Branches accompanying the whole Distribution of the Hepatic Artery.

The other Trunk is without the Liver, and sends its Branches to the Viscera, supplied by the rest of the *Arteria Cœliaca*, and by the two *Mesentericæ*, that is, to the Stomach, Intestines, Pancreas, Spleen, Mesentery, and Omentum.

The first Portion of this Vein may be termed *Vena Portæ Hepatica*, superior, or minor, the Trunk of which is commonly known by the Name of *Sinus Vena Portarum*. The other Portion may be called *Vena Portæ Ventralis*, inferior, or major; and this is what I am now to describe.

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The large Trunk of the *Vena Portæ Inferior*, or *Ventralis*, is situated under the lower or concave Side of the Liver, and joined by an Anastomosis to the Sinus of the *Vena Portæ Hepatica*, between the Middle and Right Extremity of that Sinus, and consequently at a good Distance from the Left Extremity. From thence it runs down a little obliquely from Right to Left, behind or under the Trunk of the *Arteria Hepatica*, bending behind the Beginning of the *Duodenum*, and under the Head of the *Pancreas*, its Length being about five Fingers Breadth.

Having reached to the Head of the *Pancreas*, this Trunk loses the general Name of *Vena Portæ*, and terminates in three large principal Branches, which are distributed by numerous Ramifications to the Viscera already named. The first Branch is termed *Vena Mesaraica*, or *Mesaraica major*; the second, *Splenica*; and the third, *Hæmorrhoidalis interna*, or *Mesaraica minor*.

The *Vena Mesaraica major* appears to be a Continuation of the Trunk of the *Vena Portæ inferior*. The *Splenica* is a capital Branch of that Trunk; and the *Hæmorrhoidalis Interna* has sometimes a common Origin with the *Splenica*, and sometimes is no more than a Branch of that Vein. In some Subjects the *Mesaraica major*, and *Splenica*, appear to arise by an equal Bifurcation of the Trunk of the inferior *Vena Portæ*, and in others, the *Hæmorrhoidalis* arises from the very Angle of that Bifurcation.

The inferior *Vena Portæ*, before the Formation of these three Branches, sends off from the Trunk several small Ramifications, which are commonly the *Vena Cystica*, *Hepatica minor*, *Pylorica*, *Duodenalis*, and sometimes the *Gastrica recta*, and *Coronaria Ventriculi*.

All these small Veins sometimes arise separately; and in other Subjects, some of them go out by small common Trunks. It sometimes happens, that several of them do not come immediately from the Trunk of the *Vena Portæ*, but from one of its great Branches.

The Cystic Veins run along the *Vesicula Fellea* from its Neck to the Bottom; and as they are often no more than two in Number, they are called *Cystica Gemellæ*, a Name given, also, to the Arteries which accompany them. They go out from the Right Side of the great Trunk near its Beginning, sometimes separately, sometimes by a small and very short common Trunk.

The small Hepatic Vein is commonly a Branch of one of the Cysticæ, or of their common Trunk.

The *Vena Pylorica* arises from the great Trunk, almost opposite to the Origin of the *Cystica*, and sometimes is only a Branch of the Right *Gastrica*. It passes over the *Pylorus* to the short Arch of the Stomach, where it is joined by Anastomosis with the *Coronaria Ventriculi*.

The Duodenal Vein, commonly called *Vena Intestinalis*, goes out from the great Trunk near the *Cystica*, and sometimes from the small common Trunk of these Veins. It is distributed principally to the *Intestinum Duodenum*, and sends, also, some Ramifications to the *Pancreas*. There is another Vein called, also, *Duodenalis*, which is a Branch of the *Gastrica* of the same Side.

The *Vena Gastrica*, or *Gastro-epiploica Dextra*, and the *Coronaria Ventriculi*, come more seldom from the Trunk of the *Vena Portæ*, than from its great Branches, with which I therefore choose to describe them.

V E N A M E S A R A I C A M A J O R .

The inferior *Vena Portæ*, having given off the *Splenica*, changes its Name to that of *Mesaraica*, or *Mesaraica major*, which often appears to be rather a Continuation of the Trunk, than one of the great Branches.

It bends towards the superior Mesenteric Artery, sending off two Veins; and, afterwards running up over that Artery, it accompanies it in those Portions of the Mesentery and Mesocolon, which belong to the small Intestines, the *Cæcum*, and Right Portion of the Colon. As it runs down, it forms an oblique Arch, almost like that of the Artery, which is, also, ramified on both the convex and concave Sides, but not so regularly.

The first particular Branch from this Trunk is called by *Riolanus*, *Vena Colica*. It goes out from the anterior Part of the Trunk, before it joins the Artery, and runs directly to the Middle of the Colon, where it divides to the Right and Left, and forms Arches. On the Left-hand it communicates with the superior or ascending Branch of the *Hæmorrhoidalis*; and, on the Right, with the second Branch of the *Mesaraica*.

This second Branch is a little under the first, or *Colica anterior*, and something more toward the Right-hand. It may be named *Gastro-colica*, and is soon divided into two Branches, one superior, the other inferior.

The superior Branch of the *Vena Gastro-colica*, sends small Veins to the Head of the *Pancreas*, and forms the *Vena Gastrica*, or *Gastro-epiploica dextra*, which goes from the *Pylorus*

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to the great Curvature of the Stomach, and communicates with the *Gastrica Sinistra*. In its Passage it supplies the Stomach and Omentum, and communicates with the *Pylorica*, *Coronaria Ventriculi*, &c. and sometimes it forms the *Pylorica*.

The inferior Branch of the *Vena Gastro-colica*, which may be called *Colica dextra*, goes to the Right Portion of the Colon; and from thence to the upper Part of that Intestine, where it is divided archwise, and communicates with the Right Branch of the *Colica anterior*, and with a Branch of the *Vena Cæcalis*, as we shall see hereafter.

The Trunk of the great Mesaraic Vein sends out sometimes, opposite to the *Gastrica*, a particular Branch to the Omentum, called *Epiploica dextra*. But almost immediately before it ascends over the Mesenteric Artery, it produces two large Branches very near each other, which pass behind and under the Artery, being distributed to the *Jejunum*, and Part of the *Ileum*, by numerous Ramifications, which form Arches and Areolæ like those of the Artery.

Afterwards the Trunk of the *Mesaraica* passes over the superior Mesenteric Artery, to which it adheres very closely, and from the convex Side of its Arch sends out several Branches almost in the same manner with the Artery; but with this Difference, that oftentimes the Branches do not arise immediately from the Vein in so great Numbers; and each of them sends out many more Ramifications.

From the concave Side of the Mesaraic Vein, a little below the Origin of the second Branch from the convex Side, arises a Branch called by *Riolanus*, *Vena Cæcalis*, which runs to the Beginning of the Colon, crossing one of the Branches of the superior Mesenteric Artery.

This Cæcal Vein divides by two Arches, the uppermost of which communicates with the lower Branch of the *Vena Gastro-colica*; the other, after having sent Ramifications to the *Intestinum Cæcum*, and *Appendicula Vermiformis*, communicates below, with the Extremity of the great Mesaraic Vein.

V E N A S P L E N I C A .

The Splenic Vein is one of the three great Branches of the *Vena Portæ*, and may be said, in some measure, to be a subordinate Trunk of that Vein. It runs transversely from the Right to the Left, first under the Duodenum, and then along the lower Side of the *Pancreas*, near the posterior Edge.

In this Course it gives off several Veins, viz. the *Vena Coronaria*, *Ventriculi*, *Pancreatica*, *Gastrica*, or *Gastro-epiploica Sinistra*, and *Epiploica Sinistra*. It, also, often gives Origin to the *Hæmorrhoidalis Interna*, the third capital Branch of the *Vena Portæ*.

It terminates afterwards by a winding Course, being divided into several Branches that go to the Spleen; one of which produces the small Veins, called by the Antients *Vasa Brevia*.

The *Coronaria Ventriculi*, so called, because it surrounds, more or less, the upper Orifice of the Stomach, runs along the small Arch of that Viscus toward the *Pylorus*, where it joins and becomes continuous with the *Vena Pylorica*. In its Passage it gives several Ramifications to the Sides of the Stomach, which there form numerous Arcolæ, and communicate with the Veins of the great Arch.

It arises pretty often from the Beginning of the *Splenica*, and sometimes from the Left Side of the Extremity of the great Trunk of the *Vena Portæ*, behind the Hepatic Artery; and, in that case, it is the most considerable of all the small Veins that go out from the great Trunk.

The *Vena Pancreatica* are several small Branches sent by the *Splenica* to the *Pancreas*, along its lower Side. There are other small Pancreatic Veins, which do not arise from the *Splenica*, as has been said in the Description of the *Gastro-colica*, one of the Branches of the great Mesaraic Trunk.

The Left Gastric, or *Gastro-epiploic* Vein, goes out from the *Splenica* at the Left Extremity of the *Pancreas*; from whence it runs to the great Extremity of the Stomach, and along the great Arch, till it meets the *Gastrica dextra*, which is continuous with the *Sinistra*.

In its Passage, it gives several Branches to both Sides of the Stomach, which are distributed by numerous Ramifications, form many Areolæ; and communicate with the Branches of the *Coronaria Ventriculi*.

At a small Distance from its Origin, this Gastric Vein sends out a Branch, which is distributed to the Omentum; and on this Account it has been called *Gastro-epiploica*. This Branch seems to communicate with the *Hæmorrhoidalis interna*.

The *Vena Epiploica Sinistra* arises at the small Extremity of the *Pancreas*, and is ramified on the Omentum all the Way to the Colon, where it communicates with the *Hæmorrhoidalis interna*. When this Vein is wanting, the Branch of the Left *Gastrica* supplies its Place. It sometimes comes from the most anterior Branch, which the *Splenica* sends to the Spleen.

Lastly,

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Lastly, The *Vena Splenica* reaches the Fissure of the Spleen, which it enters, through its whole Length, by several Branches, almost in the same manner as the splenic Artery. It is from the most posterior of these Branches that the Veins are sent off to the great Extremity of the Stomach, formerly known by the Name of *Vasa Brevia*, which communicate with the *Coronaria Ventriculi* and *Gastrica Sinistra*.

VENA HÆMORRHOIDALIS INTERNA, SIVE MESARAICA MINOR.

The internal hæmorrhoidal Vein is one of the three great Branches of the *Vena Portæ*, coming ordinarily from the Beginning of the *Vena Splenica*, and sometimes from the Extremity or Angle of the Bifurcation of the great Trunk of the *Vena Portæ*.

At a small Distance from its Beginning, it gives to the *Duodenum* a second *Vena Duodenalis*, which is sometimes more considerable than the first, or that which comes from the great Trunk of the *Vena Portæ*.

Afterwards it is divided into two Branches, one superior, or ascending; the other inferior, or descending: The first runs to the upper Part of the Arch of the Colon, where, after many Ramifications, it communicates with a Branch of the great *Mesaraica*, with the Ramifications of the *Gastro-epiploica sinistra*, and with those of the neighbouring *Epiploica*.

The inferior Branch runs down on the left Portion of the Colon, on the lower Incurvations of that Intestine, and on the *Rectum*, all the way to the *Anus*. In this Course it supplies the *Mesocolon*, and forms Arches, which send out numerous small Ramifications, which surround these Intestines: It seems, also, to communicate, by some capillary Twigs, with the left spermatic Vein.

This Vein has been named *Hæmorrhoidalis*, from the Tumors often found at its Extremity next the *Anus*, which are called *Hæmorrhoides*. The Word *Interna* is added to distinguish this Vein, from the *Hæmorrhoidalis externa*, which comes from the *Vena Hypogastrica*, and with which this Vein communicates by capillary Ramifications. The Name of *Mesaraica minor* agrees to it very well, because of its Situation, with respect to the inferior mesenteric Artery, which is, also, less than the superior.

Winflow.
VENA MEDINENSIS. See DRACUNCULI.

VENÆ SECTIO. See PHLEBOTOMIA.

VENATIO. Hunting. This, considered as an Exercise, is, perhaps, the best that can possibly be contrived, for strengthening the general Habit, and procuring Health and Vigor. The Season of the Year, the Time of the Day destined for this Amusement, and the Motion necessary on this Occasion, are all admirably adapted to the Restoration and long Continuance of Health: It is, besides, of no small Importance, to have the Mind recreated, at the time the Body is exercised; for this admirably assists the due Circulation of the Fluids through the minute Canals destined for their Conveyance: And, I believe, there are few People not utterly abandoned to Idleness and Debauchery, of some Kind or other, who do not perceive a spontaneous Flow of Spirits, when they ride on Horseback at or about the rising of the Sun, when they respire the purest Air, when Variety of perpetually changing Scenes present themselves, and when the Mind is agreeably agitated concerning the Event of the Chase.

— *Vocat ingenti Clamore Cithæron,
Taygetique Canes, Domitrixque Epidaurus Equorum,
Et Vox Assensu Nemorum ingeminata remugit.* Virgil.

I am sensible, that, by saying thus much in favour of Hunting, I may, possibly, expose myself to the Ridicule of those who esteem it meritorious to laugh at every thing laudable and manly. But I presume I may, without Offence, remind these, that it is more prudent to make use of the most delightful Means of preserving entire, the vital, animal, and, in consequence of this, even the intellectual Faculties, than to undermine the Pillars of Health, by Indolence, Taverns, Brothels, and Physic.

VENEN Sinensium. Martin. Atl. Sinens. *Lusitanis Jambos*.

This is a thorny Tree, bigger than the Lemon-tree, and which bears white Flowers, of a very pleasant Smell. The Fruit is as big as a Man's Head, with a Rind like that of a Quince, and a reddish Pulp, which has the Taste of Grapes before they are quite ripe. This Fruit, hung up in a House, or under Covert, will keep good for a Year.

The Tree grows in the Province of *Fokien* in *China*. They extract a very fragrant Water from the Flowers, and from the expressed Juice of the Fruit they prepare a Liquor which serves them for Drink. *Raii Hist. Plant.*

VENENUM. Poison.

Quick Poisons, when, by Ingestion, or Application, they become the Causes of Diseases, either through their own proper Force, or by first inducing a Corruption of the infected Parts,

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indicate, 1. A Removal of the *poisonous Cause*. 2. A Correction of the *Poison* already received, or unavoidably to be received. Or, 3. An Expulsion of it from the Body. 4. A Mitigation of the Symptoms. And, 5. A fortifying of the Body against the Force of any future Ingestion, or Application of the *Poison*.

The Cause which propagates the *Poison*, and communicates it to the Body, or which mixes its *Miasmata* (contagious Taint) with the Atmosphere, or conveys them, when applied to the Body, within the same, if sensible, and known, is easily removed,

1. By taking out of the way the poisonous Matter, either, (a) First, by Combustion, in kindling large and clear Fires; or (b) by correcting the Air, the Vehicle of those *Miasmata*, which is generally best effected by the thick Vapours that proceed from the kindling or heating of such Things as have a Virtue opposite to the known *Poison*. Thus, for Instance, in the Pestilence, against the caustic, alkaline, and putrid Exhalations, proper Remedies are, Fumes of Vinegar, Spirit of Salt, and Gunpowder; against *poisonous acid* Exhalations, the dispersed Odours of oleous alkaline Spirits are a good Preservative. Another way (γ) is, by altering, dissipating, renewing the Air by a Wind procured by Art, especially if such Wind could, at the same time, by the Method of *Hippocrates*, be transmitted through great Fires, kindled up for the Purpose. The last Means (δ), to be mentioned under this Head, is, by flying the Contagion, or removing our Habitation to the other Side of some high Mountain.

2. The Cause is removed by expelling or correcting the *poisonous Matter*, which, either by Ingestion, or Application, infects the Body.

The *Poison* itself, when known to be present, is corrected by the Application of such Things as render unactive those Qualities by which it injures the Body.

These Qualities, (1.) in many *Poisons*, are scarce hitherto known, but only by their deleterious Faculty, which hardly discovers itself but by the Death of the infected Subject. The same noxious Qualities, (2.) in other *Poisons*, manifest themselves by their surprising, and hardly explicable Effects; (3.) in some *Poisons* by Effects which occur in other known Diseases; and (4.) in some others these Qualities are understood *a priori*, as they call it, being very easily foreseen from a Knowledge of the Nature of the *Poison*.

The first Sort of these *Poisons* just mentioned, and which are said to be *hurtful to the whole Substance*, indicate such Remedies as are exactly opposite to them, and as little understood, with regard to the Reason of their Effects, as the *Poisons* themselves: These Remedies go by the Names of *Antidota*, *Antidoti*, *Alexicaca*, *Alexipharmaca*, and *Theriaca*; and being known only by Experience, are to be learnt from the Accounts of *Poisons*.

The second Kind of *Poisons*, which are said to be pernicious from an occult Quality, require Remedies, equally unaccountable, called *Specifics*, scarce to be found, unless by mere Chance: The best Account we have of these Medicines, also, is to be met with in the History of particular *Poisons*.

The third Sort of *Poisons*, which, before they kill, produce such morbid Effects as corrupt the Fabric of the Body after the manner of some known Diseases, require such Remedies as are observed to be effectual for the Cure of such Diseases as distinguish themselves by the like Effects.

Poisons of the fourth Kind, which are known as applied, or to be applied to the Body, necessarily require such Medicines as are of present and ready Efficacy in subduing the known Malignity: Those Medicines, for the most part, owe their Virtue to an opposite Malignity, which would render them quite pernicious to the Body, if it were not for the *Poison* before received.

Hence we see, that the Nature and Properties of *Poisons* are learnt from natural and medicinal History, in Conjunction with the Knowledge of Mechanics and Chymistry, not omitting Anatomy, which represents to our View the Effects of *Poisons*. From the Knowledge acquir'd by these Studies, are we furnish'd with Indications, in such Cases.

From these Indications, thus supplied, we come to know the Matter, Preparation, Dose, Application, and Management, of the Corrective.

Primary, and almost general, or universal Antidotes, against all Sorts of *Poisons*, and, for that Reason, highly useful, where it is known that *Poison* is given, but not what particular *Poison* are, principally, pure Water, a very little hotter than our Blood in its healthy State, plentifully, speedily, and for a good while together, received by the Mouth, injected in Clysters, and properly applied; a mild Lixivium, composed of common Water, and *Venice Soap*, used in the same Manner, Quantity, and Time, with the Water before-mentioned; or pure Water, rendered sapogaceous with Oxymel, and used as before; mild, recent Oils, expressed

expressed from smooth, fat, and farinaceous Seeds, speedily, copiously, for a long time together, swallowed, injected, applied; or the Oils of fresh-kill'd Animals, boil'd with all the Speed possible, in Plenty of Water, and used in like manner; Vinegar, also, which is of general Use in many sudden Cases; and, in the last Place, Opium. As for an universal Prophylactic, or Preservative, against all Sorts of *Poisons*, none has been hitherto discovered; and it is even inconsistent with the Nature of Things.

In exhibiting a special, or singular Antidote, the highest Prudence is requir'd: For since every particular Antidote is endow'd with a peculiar Virtue of correcting this or that *Poison* only, they have, for the most part, as much Violence, or rather more, than the Thing they are to subdue: When these two Things, therefore, the *Poison* and the Antidote, enter into Conflict within the Body, they destroy one another, and, being render'd unactive, cannot do much Mischief; but if Antidotes are found alone, or in a separate State from the Matter on which they are to act, they often prove equally noxious with the *Poisons* against which they are exhibited.

All these Antidotes, whether universal or singular, may and ought to be prepared, applied, and directed, in such a manner, that they may be enabled, speedily, constantly, and without Diminution of Strength, to make their way to the Places where the *Poison* is lodged, and there subdue it. The Physician, therefore, ought, on all Occasions, to have ready present to his Mind a general List, comprehending all the Diversities of Applications, of which the primary are, Suffumigations of the Air, dry or moist Vapours for the Lungs, Potions, Clysters, Epi-thems, Baths, Fomentations, Injections for the Uterus, Bladder, Fauces, and other Parts.

Poison received is expelled out of the Body, 1. By diminishing the Resistance at the Place by which it may, with most Safety, be discharged, where it does least Mischief, where it is nearest to an Outlet, where it is least hurtful to the vital *Viscera*; for then it will, either by the vital Forces, or the Strength of the Medicines, be propelled to the Place required, and thence be discharged. This, in former Times, was effected by what was then esteemed very strange, and unaccountable; but is now, through the Industry of M. Redi, easily understood, the Suction of the *Marfi* and *Psylli* (two Nations famous for extracting *Poisons* by Suction with the Mouth); but is now performed by means of large and strong Cupping-glasses, applied with much Flame, and often renewed; by warm, and highly-emollient Fomentations; by Leeches, Scarifications, Frictions, Heatings, Plaisters. 2. By magnetic Attraction, in which a certain Substance attracts *Poison* by a singular Virtue, and relieves the Patient; as we find it recorded of the Flesh of the venomous Beast, the Stone of the Ceraustes, and of other Serpents, and the like. 3. By such Medicines as are very potent Diluents and Movers: Of this Nature are quick Emetics, and Cathartics, very strong Sudorifics, and, perhaps, diuretic Diluents. Hence, *Diascordium*, *Mithridate*, *Theriaca*, *Orvietan*, and *Opiates*, are of Service, though not entirely to be depended on, either as universal Therapeutics, or Prophylactics. 4. By a Separation of the affected Part, with as much Speed as possible, to prevent the Spreading of the Infection; and this is best effected by a Cautey of a hot Iron.

Those severe Symptoms, which are the sensible Effects of *Poisons*, are, according to the Doctrine of Pathology, easily enough reduced under proper Classes, and, in that Case, may be cured, as if they were each of them some single Disease.

The Body is fortified against the Application of *Poisons*, 1. By a free Use of Antidotes universal and singular, which may sometimes be safe, when the Nature of the *Poison*, against which they are given as Preservatives, is foreknown. 2. By anointing the Part of the Body which is exposed, with oleous Lenitives. 3. By preserving all the Parts of the Body in equal Perpiration. But, as yet, we are acquainted with no universal Prophylactic, as we observed before, tho' there are several extolled as such.

What has been spoken, hitherto, of *Poisons*, is applicable, also, to the Pestilence, and other contagious Disorders; and may, probably, be best understood from the following, perhaps, not ill-composed Synopsis of *Poisons* and Antidotes.

First, then, some *Poisons* are manifestly to be reduced under Acrids, but such as have a peculiar Acrimony, which is phlogistic, caustic, effective of a Gangrene, and septic: The chief of these are, Cobalt, yellow and red Arsenic, white Arsenic Sublimate, Realgar, *Lapis Armenus*, *Lapis Lazuli*: These, by Application, either internal or external, inflame, corrode, excite Pains, burning Heats, Drynesses, first, in the Parts first injur'd; and, soon after, in the whole Body. Hence, they create very acute inflammatory Disorders in the Mouth, Fauces, Oesophagus, Stomach, and Intestines; excite Nausea, Vomiting, Dysentery, Cholera Morbus, and the Ileus; and produce a Paleness, and Lividness; whence proceed Vertigos, Convul-

sions, and Death; or, if this be escaped, a Wanness of Colour, Palsies, and Contractions. Remedies, here indicated, are, warm, acidish, honey'd Water, most speedily, copiously, and for a long time used, in Potions, Clysters, and Baths. If the *Poison* can be expelled by Stool and Vomiting, it is so much the better, and the Remedy is to be the oftener repeated. Fat Broths, Milk, Oil, oleous Substances, Butter, are of Service here; and, after that, we must, for a long time, employ relaxing, soft, fat, acidulated Substances, both by Ingestion, and in Baths.

Among Vegetables of this Quality, the principal are, *Aconitum*, *Anacardium*, *Anemone*, *Apium Rissus*, (the Herb which excites the *Rifus Sardonicus*) *Apocynum*, *Arum*, *Azedarach*, *Cataputia*, *Chamaelaea triccocos*, *Chamaeleon niger*, *Clematidis*, *Colchicum*, *Corona Imperialis*, *Cyclamen*, *Dracontium*, *Elatarium*, *Esula*, *Euphorbium*, *Flos Africanus*, *Grana Nubia*, *Helleborus albus*, *niger*, *viridis*, *Hermodactyli*, *Hyacinthi*, *Laureola*, *Mezeræum*, *Mel venenatum*, *Napellus*, *Nigella Sylvestris*, *Oleander*, *Ranunculi*, *Ricinus*, *Scammonium*, oleous Seeds by long Corruption become acrimoniously rancid, *Tithymali*, *Thapsia*: The Effects of these Simples are like those of the Substances before-mentioned, and the Indications are exactly the same.

There are, 2. Other violent and acrimonious *Poisons*, but which are, at the same time, of a sort of viscid Quality, by which they stick in the Stomach, and thence affect the Brain and Nerves after a singular manner. Of this Kind are, the *Chrysomela*, the *Cicuta major*, the *Cicuta minor*, *Petroselinum similis*, the *Cicuta aquatica*, *Gesneri*, *Crocus*, *Datura*, *Hyoscyamus*, *Nux Vomica*, *Oenanthe Apii Folio Succo viroso*, *Opium*, *Solanum*, *Melanocerasos*. The Effects of these are, Vertigo, *Scotomia*, *Delirium*, Madness, Nausea, Vomiting, Dysentery, terrible Convulsions, Apoplexy, and Death. The Indications here are, the most speedy Exhibition of a very quick Emetic, an immediate Ingestion of vast Quantities of aqueous, oleous, honey'd, acidulated Liquors, by Potion, Clysters, Baths, and continually repeated. The Disorder being mitigated, and repressed, Sweating is strongly to be provoked by theriacal Medicines, and the same is to be frequently repeated; and this must be followed by a soft and thin Diet.

In the third Place (3.) There are acrid *Poisons*, which have a manifest Acidity; for Instance, (a) Spirit of Salt, Spirit of Nitre, Aqua-regia, Aqua-fortis, Spirit of Sulphur, Spirit of Vitriol. (b) The same Acids, united with metallic Bodies, and by that means extremely powerful, as are, for Example, a Solution of Gold, and of its Crystal; a Solution of Silver, its Vitriol, and Lapis Infernalis; a Solution of Copper, and the Salt thence proceeding; a Solution of Quicksilver in Spirit of Nitre, in Spirit of Salt, in Aqua-fortis, in Aqua-regia, or its Calcination with Oil of Vitriol, red, white, green Precipitate, corrosive and sweet Sublimate, Calx, Turpeth; an Impregnation of Antimony with Aqua-regia, and the escharotic Calx hence produced: These Kinds of *Poisons* produce abominable Tastes in the Mouth, acid Fetors, Inflammations, gangrenous Eschars, Nausea, Vomiting, Dysentery, Cholera Morbus, most severe Gripes, Cardialgia, Ileus, Colic, Tumors of the Glands, a cadaverous Smell, Salivation, Syncope, and Death. In these Cases are required Dilutions by aqueous Liquors; Obtundents, as Oils; Alteratives, as saponaceous or highly alkaline Lixivia; the strongest Absorbents of Acids; and, lastly, when the Violence of the Disorder is abated, the frequent Use of Oil, fat Broth, and the like Emulsions.

Fourthly, (4.) There are *Poisons* manifestly acrid, which are known to be alkaline: Such are the Ashes of burnt Vegetables; the Alkali thence produced; the same render'd igneous with the Calx of burnt Stone; Eggs, Humours, Flesh quite putrefy'd; the Salts thence separated; the same render'd igneous by Sublimation with a fixed Alkali, Lime, Lapis Calaminaris, Chalk, Iron, and the like. The Symptoms proceeding from those *Poisons*, are, a very quick, violent, and igneous Inflammation, Erosion, Gangrene, very burning Pains in all Parts, unquenchable Thirst, Convulsions, very high Fevers, a cadaverous Smell, an intimate Dissolution of the Humours, a Putrefaction of the same, and of the Viscera, and, lastly, Death. The Cure is effected by aqueous relaxing Diluents, oleous Obtundents, pinguious and earthy Substances, by Inversion, or Alteration, by means of diluted, volatile, and easily moveable Acids. After these the Diet must for a long time consist of acidulous, oleous, and emollient Foods.

Some *Poisons* there are, (5.) Which are frequently mortal, by their singular Acrimony; yet so as that this Acrimony shall scarce manifest itself otherwise than by its deleterious Effects on the human Body: Such are Copper, burnt Calx of Copper, Calx of Copper by Corrosives, *Flos Aëris*, *Squama Aëris*, *Crocus* of Antimony, Calx of the same prepared by burning, and the Glass made of it; the pure Flower of Antimony, prepared by Fire alone, or by the Help of Sal Ammoniac, and

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and then washed. By these Kinds of Poisons are excited a Nausea, Vomiting, Dysentery, Cholera Morbus, excessive Purgation, severe Pains in the Viscera, Spasms, Tetanus, Syncope, dreadful Anxiety, and Death. The Cure is performed by an immediate Ingestion of Diluents, Emollients, Obtundents, Acids, and honied Substances, above, and below, and the same externally applied; and the Use of them continued in this manner for a long time together: After these, Opiates and oleous Substances are of Service.

Among acrid Poisons may be reckoned (6.) Those which are merely mechanical, as the Diamond, Mountain Crystal, Filings of Iron, Filings of Brass, feathered Alum, pounded Glass, and the like. These prick the Nerves, and wound the Vessels, and, by so doing, excite Convulsions and Hæmorrhages, whence proceed Ulcers, and the like Mischiefs. In these Cases the Indication is a speedy and copious Use of Oil and Butter.

In the seventh Place (7.) There are Poisons which kill in a quick or slow manner, by Constriction, Incrustation, Obstruction, or Exsiccation: Of this Nature are, perhaps, Quicklime, and Lime slak'd; also, Gypsum, Lead in the Ore, the Filings, Scales, Calx, Glass, of the same; White-lead, Red-lead, Litharge, the Ashes of burnt Tin, Earth of Sinope, the Seed of Psyllium, the Sponge of the Cynosbatus, Funguses, Agaric, Mistleto: These Substances conglutinate, and cause a Constriction and Strangulation; by which means they excite terrible Disorders, which, after long and miserable Languishing, terminate in Death. Remedies here indicated as necessary, are Emetics, Cathartics, Diluents, spirituous Acids, spirituous oily Alcalis, with all manner of saponaceous Things, to be immediately, and for a long Time, used.

Eighthly, (8.) There are some Poisons of an heteroclite Sort, directly destructive of all the vital Functions, whose Efficacies and Effects have not as yet been well explained; these prove mortal, whether inwardly taken, or outwardly applied, or by a Stroke inflicted. Under this Class are to be reduced Cantharides, the Spider, Tarantula, Asp, Viper, Cerastes, Prestes, Seeps, Scorpion, mad Dog, Toad, Buprestis, Stellio or Lizard, Salamander, Lepus Marinus, Passinaca Marina, and the like: The Poisons of these Animals produce various, surprising, and scarce explicable Effects, which end at last in Death. Indications on this Head are, if the Poison be taken inwardly, to evacuate the same immediately by Vomiting; to dilute it, in an extraordinary measure, by aqueous Ingestions; to mollify it, in an high degree, by relaxing, emollient, and oleous Remedies; and to resist the Putrefaction by spirituous and saline Acids. If the Poisons are communicated by external Stroke, Bite, or Application, Extraction of the same is indicated at the Place affected by means of Suction, Scarification, Cauterizing, Mollifying, Fomenting; also, Sweat is to be powerfully provoked by penetrating diluent Antidotes, which resist Putrefaction; and the Force of the Venom is to be weaken'd by acid saline Medicines, or by specific Antidotes.

In the last Place (9.) There are Substances which suffocate in a Moment under the Form of an Exhalation. Such are, the confined Vapour of Coals, subterraneous Air long confined, Exhalations of Wine under Fermentation, the volatile Farina of a poisonous Fungus, the Fume of Sulphur, and many others of the like Nature, which are best passed over in Silence. These Poisons appear, from what has been said, to apply themselves to the Lungs or Nerves, and will scarce admit of a Cure.

The more remote Causes of Diseases, which come under the Cognisance of the Senses, are easily altered or removed; for they indicate a Change in the Non-naturals.

But if these Causes are less manifest, yet, as they discover themselves by their sensible Effects, they indicate, by these very Phenomena, proper Remedies.

The Course of those Phenomena carefully observed, directs us to the Use of proper Means, Seasons, Order, Manner, and Way, either for the Correction or Expulsion of the proximate Cause of the Disease in the human Body.

The accurate Observation of the same Phenomena teaches us what is wanting, and what Supplements are necessary.

As, also, what Motions are to be excited, continued, suppressed, diminished, with a View to the same End.

An orderly, therefore, and exact Knowledge of Effects in such Cases, directs us in the best manner how to correct or remove the Cause.

Hence we, also, learn, that there are but two Ways as yet known, by which we arrive at the Knowledge of the Cause, and these are what we call the *methodic*, and the *specific*.

The *methodic* Way, in order to attain to the Knowledge of the proximate Cause, that the same may be removed, makes Use of the following Means and Assistances. First, (1.) It is very careful and exact in examining and digesting into Order the Phenomenon before-mentioned, and attentive in observing the Course of Nature. Secondly, (2.) If it observes a Failure of the vital Powers, under the Operation of such Remedies as

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are required for subduing of the Disease, it comes in to their Relief, by the Administration of Cardiacs, or by a Removal of the Impediments which obstruct the Operation of the Medicines designed to evacuate the morbid Matter. But, in the third Place, (3.) When it observes the vital Actions too much exalted; and by that means more likely to perplex Matters, and intangle rather than disengage the Cause of the Disease, it has recourse to moderating means, till their Impetus is restrained; and their Forces reduced within the Bounds required. This Intention is answered by aqueous Diluents, gentle Relaxants, soft glutinous Remedies, such as evacuate the material Cause of the immoderate Exaltation, Opiates, Anodynes. And, lastly, (4.) By neither doing nor changing any thing but what appears necessary from the clearest Indications.

The *specific* Way, as it is called, removes the Cause of the Disease, by a simple Application of something which is known to be effectual for the Purpose, merely by Use, without attending to the four methodical means just mentioned. In this Case you have only to inquire the Name of the Disease, and then administer the *Specific*. Thus it is, for Example, in the Cure of an intermittent Fever by the *Peruvian Bark*, of Pain by Opium, and of every particular Poison, by its known, particular, proper, corrective, attractive, or expulsive Antidote. *Boerhaav. Institut. Med.*

VENER. Mercury. *Rulandus.*

VENEREA LUES. See LUES VENEREA.

VENERIS OESTRUM. See CLITORIS.

VENETICUS, *Venetus*, ἐνέτιος. An Epithet importing a glaucous or faint Sky-colour. Hence *Oculi Veneti* are Eyes affected with a Cataract. *Castellus.*

VENOSA ARTERIA. The same as VENA PULMONALIS. See PULMO.

VENTER, *κοιλία*, is taken in several Senses. With the more modern Anatomists it signifies, in the most extensive Acceptation, a remarkable Cavity, in which any one of the principal Viscera is contained. In this respect the whole Body is divided into three Ventes, the lowermost, commonly call'd the *Abdomen*; the middle *Venter*, call'd the *Thorax*; and the highest, or the Cavity of the Head. *Hippocrates* sometimes uses the Word *κοιλία*, in a more restrained Sense, for the *Abdomen*, and the Cavity of the *Thorax*; and, sometimes, by way of Distinction, he calls the latter ἡ ἄνω κοιλία, the upper *Venter*; and the *Abdomen* ἡ κάτω κοιλία, the lower *Venter*. See 7 *Aph.* 38. with *Galen*, 1 *Com.* and *Lib. 1. de Morb.* But the Term *Venter*, *κοιλία*, is most frequently to be understood, in a still stricter Sense, for the *Abdomen*, or Region between the Diaphragm and Pudenda. Instances of this are needless, as being every-where to be met with. And, in the last, and strictest Acceptation, it is sometimes restrained to the *Ventriculus*, or Stomach, and sometimes to the Intestines: As where we find *Hippocrates* speaking of the Laxness or Afriiction of the *Venter*, *κοιλία*, which are Affections chiefly regarding the Intestines, and, particularly, the great Intestines; whence some, as *Galen*, *Com. 4. in R. V. I. A.* and *Com. in 7 Aph.* 38. tells us, give the Name of *Venter*, *κοιλία*, to the *Colon Intestinum*. The Greek *κοιλία* (*Cœlie*), in a Passage 4 *Epidem.* signifies no more than the Excrements of the Belly; and the *Latin Venter* will bear the same Sense.

With the Chymists, *Venter* is the same as *Terra*, Earth; and *Venter equi* is *Fimus equinus*, Horse-dung. *Theat. Chym.* Vol. 1. p. 201, 378. *Rulandus. Castellus.*

VENTININA. A *Paracelsic* Term to signify the Art of Divining, or knowing by the Winds, the Courses and Dispositions of the Heavens and Stars, with respect to their good or bad Effects upon Mankind.

VENTOSÆ, from *Ventus*, Wind, Cupping-glasses applied without Scarification, so called. *Ventosa* is, also, an Epithet of a Disease, called, by *Avicenna*, *Spina ventosa*, or *Spina ventositas*, being a carious Affection of the Bones, attended with a Putridness. *M. A. Severinus* has an entire Book on this Subject, in his *Treatise de Padarthrocace*. See Os.

Ventofitas, Ventosity, is a Word often put for *Flatulentia*, Flatulence. *Castellus.*

VENTRALIS *Dispositio*, *κοιλιακή διάθεσις*. The *Cæliaca Passio*.

VENTRES, in the Language of some Authors, the same as *Cavitates*, Cavities. *Blancard.*

VENTRICULATIO, in *Cælius Aurelianus*, *Lib. 3. Acut. Cap. 17.* is supposed to be the same as that he calls *Ventriculosa Passio*, *Lib. 4. Chron. Cap. 3.* that is, the *κοιλιακή* of the Greeks, or *Cæliaca Passio*.

VENTRICOSUS, VENTRICULOSUS, is either one with a great Belly, and the same with *μεγαλόκοιλος* (*megalocœlus*) or one labouring under the *Passio Cæliaca*.

VENTRICULUS. The Stomach. See COELIA, and INTESTINA.

VENTRILOQUUS, ἐγγαστριμύθος, a Ventriloquist. See ÆSCULAPIUS.

VENTUS.

V E R

VENTUS. The Wind. The Knowledge of the Nature, Properties, and Virtues of the Winds, is often inculcated by *Hippocrates* as necessary for a Physician. *Ventus* is, also, a Word frequently occurring in the Works of the Chymists: Thus *Ventus albus* is Mercury; *Ventus rubens* is red Orpiment; *Ventus citrinus* is Sulphur; and *Ventus Hermetis*, in *Libavius*, is the Philosophers Stone. *Castellus*.

VENULA, φλεβίον, a Diminutive of *Vena*, a Vein, is a small Vein. The Term φλεβίον, in 6 *Epid. Sect. 6. Aph. 2.* signifies an Artery. See *Galen, Com. in Locum.*

V E N U S.

Tho' the Word *Venus* was originally the Name of a heathen Goddess, celebrated as the Queen of Beauty and Love, yet it afterwards came to signify what we commonly call Venery; an Action which may either promote or destroy Health, according as it is regulated: For it is certain, from Experience, that too great a Retention of the Semen induces a Torpor and languid State of the Body, and often lays a Foundation for terrible nervous Disorders. And whereas the Semen is, as it were, the Flower, and choicest Part of the Blood, and nervous Fluid, so Venery ought to be only moderately used, lest too great an Evacuation of this Substance should prove prejudicial to Health. An Ejection of the Semen requires a sound and vigorous Habit of Body, because it exhausts the Strength, and weakens the Person. Hence *Pythagoras*, when ask'd when Coition was to be used, wisely answer'd, "When you have an Inclination to render "yourself weaker." For this Reason, weak Persons, those who are either too young or too old, and those lately recover'd from a Disease, ought to abstain from Venery: Nor should Persons indulge themselves in Venery after strong Application of Mind, or long Watchings; because these Things have a Tendency to weaken the Body. As Venery only agrees with robust and vigorous Constitutions, so the Use of it is principally beneficial to Health after the Stomach is empty, and Perspiration duly performed, especially if the Person has slept well, us'd the Bath, and taken Aliments of a nutritive Quality, and easy Digestion. It is, also, to be observed, that Venery is more salutary in the Spring, than at any other Season of the Year. All these Things are of such a Nature, as to increase the Strength and Vigour of the Body, and, consequently, favour Venery, or, at least, prevent the bad Effects it might otherwise have. The Person who would often engage in Venery, ought to guard against all Surfeits, Hunger, Labours, excessive Study, Venesections, Watchings, Purges; and every thing which can in the least impair and destroy the Strength. Venery, according to *Celsus*, is beneficial, when it is neither succeeded by Languor nor Pain, but, instead of oppressing, augments the Strength. But it is by no means to be used after Meals, Labour, or Watching. But as Moderation, in every thing, contributes to Health; so, likewise, does temperate Venery: And every one ought carefully to consider what his Constitution can bear. For a very robust Person may safely indulge himself in a Degree of Venery which would remarkably weaken one who has a worse Constitution. Venery, according to *Celsus*, is to be abstained from in the Summer; because, at that time, it is subject to throw the Humours into too violent Commotions. It is, also, found, from Experience, that immoderate Venery weakens the Force and Tone of the Solids, and brings on Colics and Cardialgias. It is, also, certain, from Experience, that Venery both alleviates and removes various Disorders incident to Women: For the male Semen, consisting of a fine elastic Lymph, rarefies and expands not only the Eggs, but, also, the Blood and Juices in the Vessels of the Uterus, the Fibres of which it likewise strengthens. Hence the Reason is obvious, why Venery, or Coition, cures Women, rendered cachectic by a Suppression of the Menfes, and generally restores that salutary Evacuation. "For, says *Hippocrates*, in his Book *de Genitura*, Coition "warms the Blood, and renders the menstrual Discharge "easier." For a Defect of the Menfes frequently happens on account of the Narrowness and Contraction of the Vessels of the Uterus. *Hoffman*.

VER. *Cap.* the Spring. Diseases most incident to this Season of the Year, are Lippitudes, Pustules, Hæmorrhages, Abscesses, Melancholy, Madness, Epilepsies, Quinsies, cold Rheums in the Head, and Distillations: Those Diseases, also, which affect the Joints and Nerves, and have their Paroxysms and Remissions, begin and repeat their Attacks chiefly at this Season. *Celsus, Lib. 2. Cap. 1.*

The most healthy Season of the Year is the Spring; next to that the Winter; the Summer is more dangerous; but the most dangerous of all the four, by many Degrees, is the Autumn. *Ibid. in Init.*

In Spring we must somewhat diminish the Quantity of Food used in Winter, and increase that of our Drink, which, however, must be more diluted, or smaller, than before: We are to eat more freely of Flesh and Greens, and we are to pass from boiled to roast Meat, by Degrees: Venery may

most safely be indulged in this Season. *Ibid. Lib. 1. Cap. 3.*

VERATRUM.

The Characters are;

The Leaves are fibrous, and complicated, as it were, into Folds: The Flowers are roseaceous, hexapetalous, naked, furnished with six Stamina, and collected into Spikes: The Ovary grows in the Placenta, and consists of three Pods, each furnished with its Tube, and becomes a Fruit, consisting of three Sheaths, collected into an Head, and full of oblong Seeds, much like Grains of Wheat, marginated, and surrounded with a foliaceous Wing.

Boerhaave mentions two Sorts of Veratrum; which are,

1. Veratrum; flore subviridi. *Tourn. Inst. 272. Boerb. Ind. alt. 206. Helleborus albus, Elleborus. Offic. Helleborus albus. Ger. 356. Emac. 440. Raii Hist. 1. 168. Helleborus albus flore subviridi. C. B. P. 186. Helleborus albus flore ex viridi albescente. J. B. 3. 634. Helleborus albus vulgaris. Park. Theat. 217. Parad. 346. WHITE HELLEBORE.*

The Roots of white Hellebore are thick at the Head, of a white Colour on the Inside, and very full of Fibres all round, of an hot nauseous Taste; from which spring many large nervous Leaves, of a long oval Form, and a bright-green Colour, encompassing the Stalk, which grows to be two or three Feet high, having smaller and narrower Leaves growing on it, and branching out into several Spikes of imperfect Flowers, each cut into six Segments of greenish, and, in some Plants, of darkish-purple Leaves, succeeded by triangular Seed: It grows in the mountainous Parts of *Switzerland, Austria, and Stiria*; and flowers in *June and July*.

The Roots of this Hellebore, which are the only Parts in Use, are a strong Cathartic, working upwards and downwards with great Violence; and, therefore, but rarely used inwardly now-a-days, though frequently given by the Antients, especially to strong robust Bodies, and in Distempers that needed forcible Evacuations. It is more used as a Sternutatory; it causing violent Sneezing, and, therefore, to be used with Caution, and mixed with milder Ingredients: They are of Service outwardly, in all Distempers of the Skin, as Tetter, Scabs, Itch, and other Deformities thereof.

The only Official Preparation is the *Electuarium ex Helleboro. Miller's Bot. Off.*

The Root of white Hellebore, which is the only Part used in Medicine, purges so violently, both upwards and downwards, that it is rarely used internally; but the black Hellebore takes its Place. However, as *Tragus* says, if it be macerated four-and-twenty Hours in Wine or Oxymel, and afterwards dried, it may be given to the Weight of half a Dram, in Wine, to mad and melancholy Persons. Both Hellebores, says *Gesner*, tempered with Vinegar and Honey, and boiled to a Syrup, are an harmless Medicine, and says, he has often found them, so used, very serviceable in most phlegmatic Disorders, especially of the Head and Thorax, as the Asthma, Dyspnœa, and Epilepsy; for they purge admirably, both by Stool and Urine, and by Diaphoresis, without Perturbation.

In the Use of white Hellebore, says *C. Hoffman*, two things are principally to be regarded; the first is, that the Disease be very obstinate; the other, that the Patient be very strong; for which Reasons, this Root is not to be exhibited to old Persons, or Children; nor to Women of a tender Constitution: A third Requisite might be added, which is, that nothing ought to be done with it till after a careful Preparation, both of the Body and of the Hellebore.

The most antient Way of exhibiting it was with Radish, and this was done three Ways; the first was, by thrusting a Radish through the Root of the Hellebore, and suffering it to remain therein four-and-twenty Hours; after which they threw away the Root, and gave the Radish; or, secondly, they infused the Radish, after it was pulled out of the Root of the Hellebore, in Oxymel, and only gave the Patient the Oxymel; or, lastly, left the Radish in the Root only for a Night, and the next Morning, throwing away the Hellebore, infused it in Oxymel, and gave the Infusion to the Patient. The best Way of preparing it, according to *Parkinson*, is to infuse it in the Juice of a Quince; or put it in a Quince, and so bake it in an Oven, or under the Ashes: For if the Patient be in danger of Suffocation from taking of Hellebore, eating of Quinces, or the Juice or Syrup of Quinces, are a present Remedy. The Root boiled in Vinegar, and held for some time in the Mouth, eases the Tooth-ach: Boiled in a Lixivium, and the Head washed with it, it kills and absterges Lice and Scurf, and has the same Effect, if mixed with some Ointment: It cures the Itch, Tetter, and creeping Ulcers: And, given in Food, is mortal to many Kinds of Animals, as Moles, Mice, Lizards, Birds, and others. The Powder, snuffed up the Nostrils, causes Sneezing, whence it is called in *English Sneezewort*.

The *Spaniards* have a Method of preparing a Poison of the Juice of the Roots, fermented in an earthen Pot, with which they

they poison their Arrows, in order to make the Wounds they inflict with them incurable. What is remarkable in this Poison, is, that, being drank, it is harmless, or, at least, not deadly; but is so only when infused into a Wound, and mixed with the Blood; but the same is true of the Poison of the Viper, which, taken inwardly, is succeeded by no pernicious Symptom, but conveyed to the Blood, through the Orifice of a Wound, or a Puncture, immediately excites most formidable Symptoms, which, if not remedied, will, in a short time, destroy the Patient.

Both Kinds of Hellebore were highly celebrated by the Antients, for curing Maniacs; and at present they are never used but in great and difficult Cases, as the Epilepsy, Vertigo, Mania, Dropsy, Sciatica, Convulsions, and the like. *Raii Hist. Plant.*

2. *Veratrum*; flore atro-rubente. *T. 272. Helleborus, albus, flore atro-rubente. C. B. P. 186. Boerb. Ind. alt. Plant. Vol. 1.*

The Leaves, Roots, Stalks, or Flowers of white Hellebore, applied to the Skin of a living Person, excoriate the Part, and produce an Exulceration: They, also, burn the Tongue. The true *Veratrum* of *Hippocrates* is celebrated on many Accounts. This Plant has a caustic and burning Juice, which attracted into the Nostrils, after the manner of Snuff, excites an invincible Sneezing; whence it appears to be a Ptarmic in the highest Degree. Taken into the Stomach it purges upwards and downwards, with severe Gripings. *Hippocrates* says, that it purges the most remote Parts of the Blood, and, therefore, before its Administration, he caused his Patients to bathe; and ordered them to drink Oil and Honey for some Days; by which means all the Parts being relaxed, he then administered *Veratrum*, and directed Gestation, either on Horseback, or in a Ship: When the Medicine began to work, he ordered his Patients Rest. The same Effect would indeed, in some measure, follow from a right Use of our *Veratrum*: But *Salmasius*, writing of the *Veratrum*, says, that its Leaves are very finely jagged, which makes me doubt whether it be the same with ours. White Hellebore is much stronger than black Hellebore, and sometimes excites Convulsions, unless exhibited with great Prudence: Hence it is never given in Substance but to Persons of the most robust Constitutions; and in melancholy and maniac Cases; and then with great Caution: It is, also, exhibited in Quartan Fevers; in which an Ounce of the Decoction, taken inwardly, has often had surprising Effects. It is a Plant, however, more adapted to Horses than Men; though used as a Sternutatory in soporose Diseases, as the Apoplexy and Lethargy. *Hist. Plant. adscript. Boerhaav.*

Hippocrates purged with white Hellebore, in an immoderate Flux of the Menstrues, before the Use of Astringents and Sweeteners: He, also, used white Hellebore as a Vomit; and gave it to those that were melancholy, or mad.

He, also, gave it in Fluxions, which fell upon the Nose, the Ears, or the Mouth, or caused obstinate Pains of the Head; an unusual Lassitude and Heaviness; a Weakness of the Knees, or Swelling of the whole Body: He gave it, also, to phthical Patients, with a Decoction of Lentils.

He gave white Hellebore, in a Leucophlegmatia, and in the Cholera Morbus.

To some he directed it fasting; but to most, after Supper. *Le Clerc* thinks, because the Hellebore being mixed with the Aliment in the Stomach, would lose a Part of its Stimulus. Sometimes he gave the Herb *Sesamoides*, and Hellebore, together.

In some Cases he gave the *μαλθακὸς ἐλλέβορος*. This *Le Clerc* thinks was some particular Preparation of Hellebore, which took off, in some degree, the Violence of its Operation.

Celsus, Lib. 3. Cap. 26. recommends white Hellebore in an Apoplexy.

It is said by some, that the Use of Hellebore was first discovered by a Man of *Anticyra*, who made an Experiment with it upon *Hercules*, who was mad; and who was cured by it.

Herophylus had a great Esteem for white Hellebore.

Aretæus sometimes purged with Hellebore, and was extremely fond of it.

He says it is not only a Vomit, but, also, the most efficacious and powerful Purge of all others: This good Service it does, he says, is not owing to the great Discharge of Humours it makes; for in the Cholera Morbus, there is the same Sort of Evacuation; nor is it owing to the violent Efforts it causes; for Sailing upon the Sea causes more violent Efforts: But it is owing to a particular Virtue in it, which cannot be enough admired; for though sometimes it purges but little, yet it, nevertheless, cures. In old Disorders, where all other Remedies have failed, Hellebore has succeeded. To those that breathe difficultly, it renders Respiration easy: To such as are pale it gives Colour; and makes those plump that were before lean.

Alexander prefers the *Armenian Stone* to Hellebore, as a Purge, in Melancholy; because it does it safely and effectually, without any ill Consequence, or Danger, which the other rough Medicine too often occasions.

This Medicine, so famous amongst the Antients, was grown into utter Disuse, till *Asclepiodotus* revived it, about the Year 500, and did many wonderful Cures with it, in the most obstinate Cases and Diseases.

Copon gives a very extraordinary Receipt, to feed a Chicken with white Hellebore, and after eight Days to kill it, and make Broth of it, which, he tells us, is a very good gentle Purge.

Gilbertus Anglicus orders Hellebore, Sena, and Spurge, to be distilled with Wine, for a Purge in a Vertigo.

VERATRUM NIGRUM. See *ASTRANTIA NIGRA*. It is, also, a Name for several Sorts of *HELLEBORUS*; which see.

VERBASCULUM CYANOIDES. A Name in *Boerhaave* for the *Cyanus*; *montanus*; *latifolius*.

VERBASCULUM SALVIFOLIUM. A Name for the *Phlomis*; *fruticosa*; *folio subrotundo, brevioris*; *flore luteo*.

VERBASCULUM is, also, a Name for several Sorts of *PRIMUMULA VERIS*; which see.

VERBASCUM.

The Characters are;

The Leaves are alternate, and hoary, or of a smutty Green, and large: The Flower is monopetalous, rotated, pentapetaloid, disposed in a long Spike, and growing very closely to a Stalk, shorter than the Pedicle: The Fruit is ovated, acuminate, and divided by an Interclosure into two Capsules, or Cells.

Boerhaave mentions eleven Sorts of *Verbascum*; which are,

1. *Verbascum*; *mae*; *latifolium*; *luteum.* *C. B. P. 239. Raii Hist. 2. 1094. Synop. 3. 287. Tourn. Inst. 146. Boerb. Ind. alt. 227. Verbascum, Tapsus Barbatus. Offic. Verbascum vulgare flore luteo magno, folio maximo. J. B. 3. 871. Verbascum album vulgare sive Tapsus Barbatus communis. Park. Theat. 60. Tapsus Barbatus. Ger. 629. Emac. 773. MULLEIN.*

The Stalk of Mullein is round and hoary, arising, usually, single, about as tall as a Man: The lower Leaves are large, about a Foot long, and three or four Inches broad, sharp-pointed at the End, slightly indented about the Edges, covered with an hoary Down, or Wooliness: Those which grow upon the Stalk, have their middle Ribs affixed to it for half their Length, which make the Stalk appear winged: The Flowers grow in a long Thyrsus, set thick and close together, each consisting of one Leaf, cut into five Segments, of a yellow Colour, with as many woolly Stamina, having purple Apices: The Seed-vessels are oblong and pointed, opening in two, when ripe, and shewing the small brownish Seed: The Root is generally single, with many Fibres, but not very large, for the Tallness and Bigness of such a Plant. It grows in Highways, and by Hedge-sides; and flowers in July. The Leaves are used.

They are accounted pectoral, and good for Coughs, Spitting of Blood, and other Affections of the Breast: They are, likewise, good for Gripping and Colic Pains, arising from sharp Humours. Outwardly used, in Fomentations or Fumigations, they are reckoned a Specific against the Pains and Swelling of the Hemorrhoids, or Piles. *Miller's Bot. Off.*

The Leaves of Mullein are of an herby Taste, a little saltish and styptic; the Smell like Elder; and give a pretty deep Tincture of Red to the blue Paper: The Flowers give it a deeper: They are, also, styptic, but sweet. It is likely that the Salt of this Plant, in some measure, resembles that of Coral. That of the white Mullein contains a great deal of Acid, and a little Sal Ammoniac; but is united with a great Quantity of Sulphur and Earth; so that it is very lenifying and vulnerary. The Decoction of this Plant is given to drink for the Colic, Dysentery, and Looseness. *Tragus* made use of the Root, boiled in Red-wine. *Matthioli* made a Gargarism for the Throat, with a Decoction of its Leaves and Flowers, and prescribed it for a violent Cough. Mullein is boiled in Cows-milk, for the Tenesmus and Hemorrhoids: The Patient must drink two Glasses of it every Day: Take it in a Glyster, and bathe the Fundament with it: Some add to it the Leaves of Oak and wild Tansey. To stop the Flux of the Piles, and cure the Dysentery, the white Mullein must be boiled in the Water which the Smiths use to quench their Iron in. For the Gout and Inflammation of the Piles, the Juice of the white Mullein is prepared after the following manner:

Bruise the Leaves and Flowers of this Plant; let them rot in wooden Tubs, well covered and plastered: After three Months Digestion, collect the Juice, and express the Faeces, and keep it in Bottles well stopped.

Some leave the Flowers only to rot in Bottles. *Tragus* would have them exposed to the powerful Heat of the Sun: Some bury them in a great Dunghill. It is affirmed that Aloes, dissolved in the Juice of Mullein, and thicken'd to the Consistence of an Extract, do not irritate the Piles, nor cause any Hæmorrhage; but it is more safe to correct it, by dissolving it in Water, and separating the resinous Part that remains upon the grey Paper, by Filtration, and causes the Irritations and Hæmorrhages. They evaporate, afterwards, the filtrated Solution to the Consistence of an Extract. *Tragus* and *Matthioli* say, that the distilled Water of the Flowers of the white Mullein is good for Burns; for the Gout, St. Anthony's Fire, and all cutaneous Diseases. This last Author prescribed for the Piles, a Cataplasm made with the Leaves of Mullein, and Leeks, together with some Yolks of Eggs, and Crums of Bread. *Martyn's Tournefort*.

2. *Verbascum*; *foemina*; *flore luteo*, magno. *C. B. P.* 239.
3. *Verbascum*; *foemina*; *flore albo*. *C. B. P.* 239.
4. *Verbascum*; *mas*; *angustioribus foliis*; *floribus pallidis*. *C. B. P.* 239.

5. *Verbascum*; *Lychnitis*; *flore albo*; *parvo*. *C. B. P.* 240. *Tourn. Inst.* 147. *Boerb. Ind. alt.* 228. *Verbascum album*. *Offic. Verbascum mas foliis longioribus*. *Park. Theat.* 60. *Verbascum flore albo parvo*. *J. B.* 3. 873. *Raii Hist.* 2. 1095. *Synop.* 3. 287. *Verbascum Lychnitis Matthioli*. *Ger. Emac.* 775. **MULLEIN WITH WHITE FLOWERS.**

It grows by the Sides of Paths in several Parts, and propagates itself yearly from shedding its Seed. The first Year it bears no Stalk, but only Leaves scattered on the Ground: When the Stalk is grown it perishes. The Virtues are the same with those of the common and black Mullein. *Ray. Dale*.

6. *Verbascum*; *nigrum*; *folio Papaveris corniculati*. *C. B. P.* 240.

7. *Verbascum*; *nigrum*; *flore ex luteo purpurascence*. *C. B. P.* 240. *Tourn. Inst.* 147. *Boerb. Ind. alt.* 228. *Verbascum nigrum*. *Offic. Ger.* 631. *Emac.* 775. *Verbascum nigrum vulgare*. *Park. Theat.* 61. *Verbascum nigrum flore parvo apicibus purpureis*. *J. B.* 3. 873. *Raii Hist.* 2. 1095. *Synop.* 3. 288. **BLACK MULLEIN.**

This has a Root and Stalk, like those of the common Mullein; only the Stalk is less hairy: The Leaves, also, are less, more rare, and placed alternately: They, also, resemble those of Sage; but are much larger, and fetid.

It grows in several Places in *Cambridgeshire*. And *J. Bauhine* tells us, that it is very frequently to be met with, about *Basil* and *Pompelgard*, on the upper *Rhine*. It flowers in *July* and *August*, and the Root, Leaves, and Flowers are used. The Root is astringent, and of Service in a Looseness. The Leaves and Flowers have the same Virtues with those of the common Mullein. *Ray. Dale*.

8. *Verbascum*; *Blattariae foliis*; *nigrum*; *amplioribus foliis alutis apicibus purpurascens*. *Flor.* 2. 98.

9. *Verbascum*; *foliis nigris*; *amplis*; *flosculis albis*; *apicibus purpureis*; *perenne*.

10. *Verbascum*; *humile*; *Alpinum*; *villosum*; *Borraginis folio & flore*. *H. L.* 619. *T.* 147. *Sanicula, Alpina, foliis Borraginis, villosa*. *C. B. P.* 243. *Auricula Ursi, Myconi, pilosa, caerulea*. *J. B.* 3. App. 869.

11. *Verbascum*; *Orientalis*; *Sophiae folio*. *T. Cor.* 8. *Boer. Ind. alt. Plant. Vol.* 1.

The first, second, third, and fourth Species are reckoned among emollient Herbs. The Leaves bruised, and applied to any Part affected with Pain, remove the same: They are of a demulcent Quality; for which Reason they are an Ingredient in Decoctions, Clysters, and Cataplasms, in all Disorders where Acrimony offends; being of great Service by their insipid, viscous, emollient, and smegmatic Juice. Of the Flowers, with a Solution of Oil of Olives, is prepared Oil of *Verbascum*, which is very good to consolidate Wounds, and to mitigate Pains; and taken inwardly it is a Laxative. The Flowers are made into a Conserve, which is excellent against all Hæmorrhages, Spitting of Blood from Contusions, bloody Urine, immoderate Fluxes of the Menfes, or Lochia, the Tenesmus, Dysentery, and the Falling down of the Uterus and Anus. The Decoction of the Leaves is effectual in the Colic, Diarrhœa, and Dysentery; and a Decoction of the Flowers makes a good Gargarism in the Quinsy, and a violent Cough: The Leaves boiled in Milk, are effectual in the Tenesmus and Hæmorrhoids. The Juice of this Plant is of great Efficacy in the Gout. The Decoction of the Leaves in Water is used in Clysters, as an Emollient for the Hæmorrhoids; and may, also, be injected into the Uterus, for the Purpose of mollifying. The Plant, in short, is emollient, aperient, and relaxing; and therefore enters the Composition of all emollient Clysters and Cataplasms. Outwardly the Leaves and Flowers are useful Topics, in mitigating all Kinds of Pain, particularly in Tumors of the Anus, and in the Hæmorrhoids. *Hist. Plant. adscript. Boerhaav.*

VERBASCUM SYLVESTRE. A Name for the *Polemis*; *fruticosa*; *Salvia folio latiore & rotundiore*; and for the *Pblemis*; *fruticosa*; *Salvia folio longiore & angustiore*.

VERBASCUM TURCICUM. A Name for the *Primula veris*; *Constantinopolitana*; *flore albo*.

VERBENA.

The Characters are;

The Calyx is long, tubulous, and quinquefid; the Flower, also, quinquefid. The Seeds fill the whole Pericarpium: And the Flowers grow in Heads, or Spikes, and not in Whorles.

Boerhaave mentions eight Sorts of *Verbena*; which are,

1. *Verbena*; *Americana*; *altissima*; *Urticæ foliis angustioribus*; *spicis brevioribus*; *floribus caeruleis*. *Flor.* 2. 80. *M. H.* 3. 408.

2. *Verbena*; *Americana*; *altissima*; *Urticæ foliis angustioribus*; *spicis brevioribus*; *floribus purpureis*. *Flor.* 2. 81.

3. *Verbena*; *Americana*; *altissima*; *Urticæ foliis angustioribus*; *floribus albis*. *Flor.* 2. 81.

4. *Verbena*; *Canadensis*; *folio Urticæ*. *Zanon.* 203. *H. R. Par. Flor.* 2. 81. *M. H.* 3. 408.

5. *Verbena*; *Lusitanica*; *latifolia*; *procerior*. *T.* 200.

6. *Verbena*; *communis*; *flore caerulea*. *C. B. P.* 269. *Boerb. Ind. alt.* 187. *Tourn. Inst.* 200. *Verbena*. *Offic. Verbena communis*. *Ger.* 580. *Emac.* 718. *Verbena vulgaris*. *J. B.* 3. 443. *Raii Hist.* 1. 535. *Synop.* 3. 236. *Verbena mas fructu recta & vulgaris*. *Park. Theat.* 678. **VERVAIN.**

The Root of Vervain is white, slender, and full of Fibres, and spreading much about: The Stalk is square and firm, somewhat hairy, and often of a purplish-brown Colour: The Leaves are long, narrow, and sharp-pointed, cut into several Laciniae, somewhat rough and wrinkled, growing two at a Joint: The Flower grows towards the Top, in slender Spikes, being small, and of a whitish-purple Colour, of one Leaf, cut into five Segments; the two uppermost supplying the Place of the Galea; and the three lower, that of the Labella: It being reckoned among the verticillate Plants, having four small longish Seeds, set together in a small Calyx. It grows in Highways near Towns and Villages; and flowers in *July*.

The whole Herb is used, being accounted cephalic, and good against Diseases from cold and phlegmatic Causes: It opens Obstructions of the Liver and Spleen; helps the Jaundice and Gout; and, applied outwardly, is reckoned vulnerary, and good for sore, watery, inflamed Eyes. *Miller's Bot. Off.*

This Plant yields, by the chymical Analysis, several acrid Liquors, a great deal of Oil, and a pretty deal of volatile concrete Salt and Earth: Thus it may contain some Sal Ammoniac, united with a great deal of Sulphur. Vervain is vulnerary, deterfive, aperitive, and febrifugous. For the Green-sickness, drink a Night's Infusion of it in Wine. *Casalspinus* recommends the Powder of it for the Dropsy. The Extract or Juice of Vervain cures intermitting Fevers: A Tea of it is good for the Vapours: The distilled Water, or depurated Juice, cleanses the Eyes, and clears the Sight. A Gargarism of it is good for the Diseases of the Throat. The Cataplasm of its Leaves, bruised with Rye-meal, and the Whites of Eggs, is resolving: The Juice and Infusion of its Tops in Oil cure Wounds. *Martyn's Tournefort*.

The Antients ascribe very many Virtues to Vervain, which are summed up by *Schroder*, as follows: Vervain is cephalic and vulnerary; its principal Uses are in Pains, and other Affections of the Head, from cold Humours, in Affections of the Eyes and Breast, in old Coughs, and the like: In Obstructions of the Liver and Spleen, the Jaundice, Gripes of the Belly, and the Dysentery: It is an excellent Lithontriptic, restrains libidinous Desires, cures a tertian Fever, mitigates the Pain of the Gout, cures Wounds, and facilitates the Birth: Externally it is effectual in the Head-ach, Tooth-ach, Alopecia, Melancholy, Lippitude, Weakness or Redness of the Eyes: In the Quinsy and Hoarseness, a Cataplasm thereof being applied round the Neck: In a Tumor of the Glands of the Fauces, being used in a Gargarism: In Pains of the Spleen, being applied with Hogs Fat; also, in mitigating the Gout, in Abstriction of Wounds, and Absterfion of putrid Ulcers, in the Falling down of the Anus, the Mariscæ; and the like.

Vervain being endued with so many Virtues, it is no Wonder that it was thought by the Antients, to deserve the Name of *ἱερὰ βότανα* (*Hiera Botane*), the *Holy Herb*. For a Tumor of the Spleen, pound Vervain with the Whites of Eggs, and Barley, or wheat Meal, and make them into a Cataplasm, which being wrapt in a thin Linen Cloth, apply to the Part affected upon the Tumor, where it attracts, as it were, the thinner Part of the Blood: Some add Betony. This is a popular Remedy. *Chefneau*.

Vervain, applied upon the Head, or laid under the Pillow, or made into a Plaister, with very strong Vinegar, and Oil of Roses, eases the Pain of the Head proceeding from Wine. *D. Scame. Raii Hist. Plant.*

The

The Root of Vervain is accounted by some as an effectual Amulet against strumous Tumors; and hung about the Neck, by some old Women, as an efficacious Medicine for those Purposes. *Dale.*

7. *Verbena*; *tenuifolia*. *C. B. P.* 269. *M. H.* 3. 419. *Verbenaca supina*. *J. B.* 3. 444. *Dod.* p. 250.

8. *Verbena*; *nodiflora*. *C. B. Prodr.* 125. *l. & Descr.* *Boerb. Ind. alt. Plant. Vol. 1.*

It is called *Verbena*, from *Verrere*, to sweep, because it formerly served to sweep the Altar; and *Peristereum*, from *περιστερα* (*Peristera*) a Dove, because the Doves are delighted with it. There is no Herb so much commended by the Antients as this for vulnerary Purposes, because it expels heterogeneous Particles, whence it is called *Herba Vulneraria*, or a Species of *Siderites*: There is no Plant on which the Poets have more exercised their Talent of Fiction; and none more used in Sacrifices, whence it was called the *Holy Herb*, and *Mensa Jovis*, or *Jupiter's Table*, with which they strewed as well as swept their Altars: Whence the Servant in *Terence* says, *Tolle Verbenam ab Ara*, "Take off the Vervain from the Altar." There is, also, no Plant of which the Magi have related more ridiculous Fables; for Instance, they say, that if any Person describe a Circle about it, and then pluck it with his Left Hand, before he has seen either Sun or Moon, he shall be prosperous in whatever he undertakes; but if he pulls it with his Right Hand, all Things shall happen cross, and contrary to his Desires. These Superstitions are not yet quite eradicated from the Minds of Men; for there are Authors who still say, that Children, by chewing this Herb, will breed their Teeth without Pain; and it is said to be effectual against Convulsions and Inchantments.

Vervain is aperitive, deterfive, depurating, corroborating, and a Febrifuge. The Leaves infused in Wine, are serviceable in the Chlorosis and Jaundice. The Powder of the Leaves is good for the Dropsy; and the Juice cures intermittent Fevers. An Infusion of the Leaves, after the manner of Tea, is good in the hysterick Passion: The Leaves bruised, and applied in the Form of a Cataplasm, are a very good Resolvent in Pains of the Sides, and the Pleurisy. The distilled Water, as well as the Juice, cure Inflammations of the Eyes, and all Sorts of Wounds, increase Milk in Women who give Suck, break and expel the Stone in the Kidneys and Bladder, and give Relief under a flatulent Colic. *Hist. Plant. adscript. Boerhaav.*

VERBENACA RECTA. A Name for the *Verbena*; *communis*; *flore caerulea*.

VERBENACA SUPINA. A Name for the *Verbena*; *tenuifolia*.

VERBERA, *Plagæ*, *Percussiones*. Blows, Stripes, Percussions. They are reckoned among the Causes of Diseases; and sometimes find a Place among Remedies. Thus we are assured by *Rolsinkins*, that a certain Empiric cured mad and melancholy Persons, merely by the Use of Whips and Cudgels.

VERBESINA. See *BIDENS*.

VERDETUM is a green Colour, produced from the Vapour of strong Vinegar, poured on Copper-Plates.

VEREDARI, *Vermes*, Worms. The same as *CUTAMBULI*; which see.

VERETRUM. The same as *PENIS*.

VERGILIÆ. See *PLEIAS*.

VERMES. Worms.

Worms are living Animals, of various Figures, Structures, and Bulks, which are formed in the Intestines, from the Seeds of some Insects, taken with the Aliments. These Animals are nourished and enlarged by a certain putrid Juice, and greatly weaken and injure the Body, and its several Functions.

Tho' Persons at no Period of Life are absolutely free from Worms, yet they are most incident to Infants, and Children between Ab lactation and the fourteenth Year of their Age.

We find from Experience, that, in the human Body, there are various Species of Worms, which, by the antient, as well as modern Physicians, are divided into three principal Kinds: The first are round, smooth, and hardly a Span in Length, by which Marks they are distinguished from other Worms. These have their principal Seat in the superior small Parts of the *Jejunum* and the *Ileum*; thence proceeding, sometimes, to the Stomach, they go as far as the Mouth, or are vomited up: These are generally the Worms which, according to *Hildanus*, in *Cap. 1. Obs. 57.* are principally form'd in Children, and are sometimes found conglomerated in a large Ball, and securely lodg'd in the *Ileum*, whose Membranes they often corrode, so as to penetrate into the Cavity of the Abdomen.

The second Species are those which, on account of their broad Figure, like a Bandage, are call'd Long Worms, or *Tæniæ*. They are so long, as to exceed two, and, sometimes, ten Feet in Length: *Platerus*, in Adults; observed them forty Feet long. See *M. N. C. An. 3. Obs. 29.* and *Bartholin.*

Hist. Anatom. Cent. 3. Obs. 14. These generally possess the whole Tract of the Intestines, but especially the *Ileum*, and are frequently observed without Heads and Tails; for they are not evacuated whole, but in Pieces resembling the Seeds of Gourds, or Cucumbers, which, according to *Spigelius*, in *Cap. 15.* are nothing but the middle gross Nodes of the Worms remaining, after their lateral and membranaceous Parts are consumed by the Putrefaction.

The third Species of Worms are the *Ascarides*, or small slender Animals, which, lodging in the large Intestines, especially the *Rectum*, generally so vellicate it, as to produce a *Tenesmus*. They are, also, frequently discharged, in incredible Numbers, with the Excrements.

Worms in the Intestines are known, if Children start in their Sleep, and are affrighted when waked out of it; if there is an Itching of the Nostrils, a fetid Breath, a Thirst, a Discharge of the *Saliva*, a Paleness of the Countenance, with intermediate Flushings, Coldness of the Extremities, a turbid Urine, an Inflation of the Belly, sometimes an excessive, and at other Times a languid Appetite, irregular Fluxes, and other Symptoms of a like Nature: But as these Signs are common to other Diseases, so there can be no better, nor more infallible Criterion, than the Worms themselves, discharged by Stool.

The Symptoms familiar to Patients of this Kind, are generally very different, according to the Parts where the Worms are lodg'd; but they are frequently so very violent, and sometimes such Convulsions of the Limbs are excited, that the Country People often think the Patient bewitched: But, more particularly, if the Worms are lodged in the Stomach, they produce Nauseas, Cardialgias, Syncope, Tossings of the Body, Grindings of the Teeth, Deliriums, and even Death itself, at last. When they are lodged in the small Intestines, they excite Gripes, biting Pains about the Navel, a voracious Appetite, a Swelling of the Belly, and Fluxes; and when they are lodged in the *Intestinum Rectum*, they produce uneasy Titillations, Corrosion, and an almost perpetual Tenesmus.

Worms are frequently accompanied with putrid, anomalous, and slow Fevers, like those of the quotidian Kind; but these Animals more frequently accompany or follow other Disorders, such as the Measles, and Small Pox; and not only increase the Symptoms, and impair the Strength, but, also, render the Diagnostic, Prognostic, and Method of Cure, highly difficult.

At certain Seasons of the Year, especially in the Autumn, when, under a moist and unequal State of the Air, catarrhal Fevers, Measles, and Small Pox, rage epidemically, Worms are generally most copiously generated; because, at that time, the Strength of the Solids being impaired, more peccant and viscid Humidity, disposed to Corruption, is accumulated in the Body; by which means, the verminous Seed receives more Nourishment and Supply. This is, also, the Reason why Infants, Children, and Women, especially if habituated to a sedentary Life, and a bad Regimen, are more terribly afflicted with Worms than young Persons, Adults, and Men; whose Solids being stronger, and their Circulation brisker, do not so easily generate peccant and viscid Juices.

As for the Causes, certain Aliments favour the Generation of Worms; and these are such as partly produce peccant and pituitous Juices; and partly such as contain the Eggs and Seeds of Insects, which are, with them, conveyed into the Body: Of this Kind are Milk-meats, Cheese, ripe Fruits, Sweet-meats prepared with Sugar and Honey, Pulse, farinaceous Substances, and others of the same Kind; which, above other Substances, contain in them the hurtful Eggs of Animals; without which there can be no Generation of Animalcules in Nature. This is sufficiently proved by the Experiments of *Rhedi* and *Malpighi*; who, in the middle of Summer, put Things subject to Corruption, such as Fishes and Fleshes, into different Vessels, one of which was close shut, and the other left open: In a short time they found the Substances left in the Vessel, to which the Flies and Insects had free Access, full of Worms; whereas, in the Vessel which was shut, they found not so much as one Worm. *Malpighi*, also, informs us, that tho' he frequently buried Pieces of Fleh under the Ground, and suffered them to remain there for a long time, yet he never found Animalcules in them. Now if it is so, the Reason seems plain, why Infants, living upon Milk alone, are not afflicted with Worms till they begin to eat other Aliments contaminated by the Seeds and Eggs of Animals and Insects.

The Symptoms, as we have already observed, differ, according to the Vigor or Tenderness of the Patients, and according to the different Nature of the corrupted Matter, and the Worms. I have, however, often observed, that if exanthematic Fevers, Purples, Measles, or Small Pox, are accompanied with Worms, these Animals not only generally disturb the calm and regular Progress of such Disorders, but, also, induce a Coldness of the Extremities, a Weakness and Inequality of the Pulse, Deliriums, and, often, Death. But this

this happens more frequently in Children than in Adults and young Persons. Round Worms, of a variegated Colour, are almost always a bad Sign; for they often ascend to the Stomach, and, by lancing its Orifices, and sometimes perforating it, produce epileptic Fits, Danger of Suffocation, and even sudden Death. The *Tania*, or long Worms, produce chronical Disorders, and sometimes prove mortal, before it is discovered that the Patient is afflicted with them. The *Ascarides* are less dangerous; because, being lodged in the large Intestines, which are not possessed of such a quick Sense as the others, they do less Harm by their Corrosion. The Symptoms of Patients afflicted with Worms are observed to be increased about Noon, and towards the Evening; because, at these times, the Worms more strongly corrode and bite the nervous Canal of the Intestines, which they find free from Aliments. If dead Worms are evacuated by Stool, they portend Danger, on account of the Putrefaction they discover; but it is otherwise, if they are killed and expelled by Medicines. In violent Disorders, Worms coming from the Mouth indicate that the Patient will die, especially if his Breathing is frequent and cold: Nor do they absolutely predict the Death of the Patient; because there are various Examples of Fevers of all Kinds terminated by the Expulsion of Worms. Thus in *M. N. C. Vol. 3. in Append. Obs. 4.* we are informed, that a tertian and continual Fever were cured by a Discharge of many Worms from the Mouth.

THE CURE.

Tho' Infants afflicted with Worms are in great Danger, yet we are never to despair, provided Remedies proportioned to the Diversity of Symptoms, Constitutions, and Circumstances, are exhibited seasonably, and in a proper Order. But in scarce any Disease are so different and active Medicines extolled, and used by Physicians, as in Disorders where Worms are to be expelled, or killed; for which Reason, I shall briefly shew what Caution, Prudence, and Circumspection, the Physician ought to use in exhibiting them.

First, then, among the Anthelmintics are generally reckon'd Acids; such as the Juices of Citrons, Oranges, Lemons, Currants, Barberries, and Pomgranates, Phlegm and Spirit of Vitriol, Cream of Tartar, Wine, especially tartish Rhenish Wine, and Vinegar: All these may be commodiously exhibited, where Heat, preternatural Warmth, and febrile Commotions, are complicated; for they not only correct the Heat, but, also, excellently resist the Putrefaction, and avert the dangerous Malignity of the Symptoms.

Among the Anthelmintics are, also, reckoned Bitters; such as Wormwood, the lesser Centaury, Scordium, Marsh Trefoil, Rue, and still more, Bitters possessed of a purgative Quality; such as Aloes, Rhubarb, Colocynthida, and the Troches of Alhandal prepared of it. Tho' these Medicines are not absolutely destructive of Worms, since Animals are not only generated in Rhubarb and Wormwood, but, also, according to *Hildanus, Cent. 1. Obs. 160.* in the Gall-bladder; yet it cannot be denied, that Bitters are very effectual against these Animals; because, by their balsamic Quality, they partly correct the crude and viscid Matter with which they are nourish'd; and, by stimulating the Fibres of the Intestines, they sometimes evacuate the corrupted Humours, together with the Worms: They, also, partly correct the Inactivity of the Bile, which, in Children, and moist Patients, is frequently the immediate Cause of Worms.

Among Anthelmintics, great Efficacy is ascribed to oleous Substances, which seems to be confirmed by an Experiment of *Rhedi*; who tells us, that Flies, and other Insects, remained alive after they were immersed in various Liquors; but that such as were immersed in Oil died, and did not recover Life, tho' they were exposed to the Solar Rays. I willingly grant, that all this is consonant to Truth; and that oleous Substances, such as Olive-oil, Rape-oil, and Oil of sweet Almonds, may, with great Success, be exhibited. But it is to be observed, that they are by no means to be exhibited with an Intention to kill the Worms; since a very large Quantity of Oil would be requisite, to reach all the Worms in the whole Volume of the Intestines. Oleous Substances, therefore, are much rather to be exhibited in violent Symptoms arising from Worms; because they relax the spasmodically-constricted Coats of the Intestines, and, as it were, defend and line them with a Mucilage, that afterwards more acrid and purgative Medicines may be exhibited with more Safety. Thus, in order to kill Worms, and mitigate the Symptoms, I have, with Success, in Children, prescribed two or three Spoonfuls, or even an Ounce or two, of the Oil of sweet Almonds, to be taken at Bed-time, or early in the Morning, exhibiting, a few Hours after, Pills prepared of the *Extractum Panchymagogum Crollii*, Resin of Jalap, and *Mercurius Dulcis*.

Saline Substances are greatly celebrated as Anthelmintics, both because they are fatal to the tender Structure of these Animals, and because by stimulating the Intestines, they promote their Discharge, especially if dissolved in a sufficient Quantity of Water. This principally holds with respect to the neutral bitter Salts, especially that of *Glauber*; *Epsom*, *Sedlitz*, *Egra*, and the *Caroline* Salt, which when taken in a proper Vehicle, and used for a considerable time, produce an excellent Effect, especially if Children and young Persons labour under that Species of Worms they call *Tania*, and the broad Kind, because these are not so happily exterminated by Purgatives, which produce Spasms, as by Salts, and saline Springs. Hence the *Sedlitz* Waters, which abound with bitter Salt, are justly extolled for killing Worms. And the same anthelmintic Virtue is ascribed to the saline Springs at *Hall*, by the common People, who now-and-then give their Children large Draughts of that Water against Worms. Nor can we condemn the Practice of the People on the Sea-coast, who, for the same Purpose, drink Sea-water, or, if they are rich, the Broth of recent Oysters, with the Addition of Lemon-juice and Pepper, by which means they expel the Worms, and prevent a Consumption, and various other Disorders incident to Children. It is certain, that Salts, especially of the vitriolic Kind, have long been justly celebrated as Anthelmintics; and the *Pyrmont* Waters, which partake of a subtle Vitriol of *Mars*, are so effectual for the Cure of *Tania*, and turbinated or spiral Worms, that the Patients are in a short time totally freed from all the Symptoms.

If any Disorder admits of Specifics, these are certainly required in killing and eliminating Worms. For these Purposes then, the best Specifics are, among Gums, *Asa-foetida*, *Sagapenum*, *Opopanax*, and *Myrrh*. Among Herbs, *Tansey*, *Scordium*, and *Wormwood*. Among bulbous Roots, the various Kinds of Onions, and *Garlick*. Among Fruits, bitter Almonds, and their expressed Oil. Wormseed, the Seeds of the *Caiputia*, and others of a like Nature. All which by their sulphureous and fetid Smell, are so peculiarly hurtful to Worms as to kill them. And these Specifics are so necessary, that unless they are, in a due Dose, mixed with the above-mentioned Medicines, the desired Effect is rarely produced.

There still remains another not less efficacious Specific taken from the Mineral Kingdom, which is *Quicksilver*; which being in a peculiar manner fatal to Worms, destroys their vital Motion, tho' the Method in which it produces this Effect, cannot be accurately deduced from mechanical Principles. There have already been various Methods of exhibiting this Anthelmintic, which we shall briefly consider. *Helmont* was the first who made an Experiment with this Medicine, whilst he boiled it either in pure Water, or some distilled Water, and with great Success gave the Water thus impregnated with the subtle Particles of the Mercury, to Patients afflicted with Worms. *Henricus Meibomius* followed another Method; for he let *Rhenish* Wine, poured upon *Quicksilver*, stand in a gentle Digestion without any boiling, for twenty-four Hours, and he found his Medicine produce more speedy Effects than the former. The Chymists rather approve of *Mercurius Dulcis* duly prepared: A few Grains of which, according to the State of the Patient, they exhibit with some Purgative, such as sulphurated Scammony, Resin of Jalap, and the *Extractum Panchymagogum Crollii*, made up in the Form of Pills; and this Method they have found attended with Success; or they exhibited it mixed with *Coralline*, either with or without a Purgative. Others, as *Harris*, falling on a safer Method, successfully exhibited *Æthiops Mineral*, prepared of an accurate Mixture of Sulphur and *Quicksilver*. But I intimately mix in a Mortar the well depurated *Quicksilver* with Sugar-candy, and premising the things requisite, I have found, that under a good Regimen, this Preparation was far more efficacious than any others, especially if the Patients, in order to prevent a Relapse, abstain from Flesh, Fish, Milk-meats, sweet Substances, Cheese, and other hurtful Aliments, and use for Drink a Decoction of pure Water, and calcined Hartshorn.

Among other Medicines I have with Success used the following Pills against Worms:

Take of *Asa-foetida*, Extract of *Rhubarb*, *Tansey*, depurated *Aloes*, the best *Myrrh*, and *Mercurius Dulcis*, each one Scruple; and of the Extracts of *Saffron*, and *Castor*, each four Grains; reduce to a Mass: From every Scruple of which make fifteen Pills: By taking five, six, or eight of which, according to the Age, and other Circumstances of the Patient, I have known many thoroughly cured, though before they were miserably tormented.

They who abhor Pills, may have them exhibited in a Syrup, or twice a Day a proper Dose of the following Medicine may be exhibited:

Take

Take of the Liquor of the *Terra foliata Tartari*, one Ounce; and of the Extracts of Rhubarb, Tansey, and Wormwood, each half a Dram: Mix all together.

Nor have I seen less happy Effects produced by the following Powder:

Take of recent white Mechoacan, Wormseed, Coralline, Rhubarb, *Mercurius Dulcis*, Scordium, calcined Hartshorn, and purified Nitre, each half a Dram; and of Camphire, six Grains: Make into a Powder, which is to be distributed into Doses, according to the Age of the Patient; or reduce it to an Electuary.

But it is to be observed, that acrid Purgatives, or hot Remedies, are never to be used where there is a febrile Heat, unless we intend to augment it. We are, also, to abstain from Mercurials, and all drastic Medicines, when the Duodenum is full of a caustic and acrid Bile; for by these means I have not only known the Symptoms augmented, but, also, Inflammations of the Intestines brought on.

Before expelling the Worms from the small Intestines, by Purgatives and Specifics, it is expedient to inject a Clyster of Milk and Honey, that the Worms, being allured by the Sweetness, may quit their Lodgings, and descend more easily to the small Intestines.

If Ascarides are lodged in the Rectum, detergent milky Clysters, in which Tansey, Garlick, or the Leaves of Scordium, have been boiled, produce an excellent Effect; as do, also, the Clysters of Brine, prepared by boiling in it Horehound, the Lesser Centaury, and Scordium, adding to it a sufficient Quantity of the compound Electuary of Hiera.

Emetics are, also, proper, if, after Purging, the Worms are not duly evacuated, because if they are lodged in the Intestinum Cæcum, the Purge cannot always reach them.

Anthelmintics are, also, commodiously exhibited in Electuaries or Syrups, such as that of Succory with Rhubarb. This is sufficiently known to Nurses, who to Children afflicted with Worm, give about a Scruple of Wormseed mixed with Honey in Milk, before the Changes of the growing or decreasing Moon. Nor is this Practice without Success, provided the Wormseed is not rotten.

Sometimes Topics may be usefully joined with internal Medicines: The best Topics are, Epithems prepared of Wormwood, Bulls-galls, Aloes, Coloquintida, the Juice of the Lesser Centaury, and Oil of the Flowers of Spike, and applied to the epigastric and umbilical Regions. The Ointment of Sow-bread, also, answers the same End.

But the Physician ought, above all things, to be certain of the Presence of Worms by infallible Signs, if he intends to exhibit Medicines for killing and evacuating them, lest the Patient labouring, perhaps, under another Disease, arising from a different Cause, should receive more Harm than Good, from his Prescriptions. *F. Hoffman.*

VERMICATA, a Word used by some, who mean by it the same as *Lentiginos*.

VERMICELLI, *Vermicelli*, *Tagliarini*, *Millefanti*; in French, *Vermichel*.

It is a Paste made with the finest Flour and Water, and reduced into Threads of the Figure of Worms, by means of Syringes bored full of small Holes. These Threads, or Filaments, are afterwards dry'd and kept; they are generally white, tho' they are, also, prepared of a yellow Colour, by mixing Saffron, or Yolks of Eggs, in the Paste; sometimes they add Sugar, to make them the more agreeable. This Composition is principally prepared in Italy, where it is much more in Use than in France. They eat it in their Soup.

They reduce this Paste of *Vermicelli* to several other Forms; for they flatten and widen it to the Thinness of a Ribband, two Inches broad. This is what the *Italians* call *Vagne*; they make it into Sticks of the Bigness of a Quill, which they call *Meaton*; and into small Grains of the Bigness of Mustard-seed, which the *Italians* call *Semoule*, that is to say, *fine Flour*; they reduce it, also, into the Form of Beads, and this is what the *Italians* call *Patres*.

Vermicelli ought to be chosen new, well dry'd, and of a beautiful Colour; the white is most in Use. It is a Pectoral, and of a sweetening, restorative, and strengthening Quality.

All the Names of the *Vermicelli* are *Italian*, because this Sort of Paste was invented in Italy; and it takes the Name of *Vermicelli*, that is to say, small Worms, because it is reduced into Filaments resembling those Animals. *Lemery des Drogues.*

VERMICULANS, *σκαλινίζων*, vermiculating, an Epithet of a sort of creeping Pulse. See PULSUS.

VERMICULARIS. A Name for the *Sedum*; *minus*; *terrefolium*; *album*.

VERMICULARIS CRUSTA. The interior villous, and gyrous, or rugous Coat of the Intestines. *Blancard.*

VERMICULATUM. Something in a Plant, which appears red, and glittering like a Rose.

VERMICULUM. Elixir, Tincture. *Rulandus.*

VERMICULUS. A small Worm.

VERMIFORMIS, *σκαλινμοειδής*, Vermiform, or Worm-like, is an Epithet of a Process in the Cerebellum, called *Processus vermiformis*. See CEREBRUM.

Vermiformis Appendicula. See APPENDICULA, and COELIA.

VERMIFUGA. The same as ANTHELMINTICA; which see.

VERMILION, Cinnabar, or Minium. *Rulandus.*

VERMINA, *Verminatio*, *Verminosus*, *σπασμός*, the Gripes. *Vermina*, in *Festus*, are the griping Pains of the Intestines: Pain is, also, called *Verminatio*. See STROPHOS. *Verminosus* is properly spoken of the Matter in which Worms are generated.

VERMIS Cerebri. The Worm of the Brain, that is; the Epidemical Hungarian Fever.

VERNACULUS. The same as ENDEMIUS; which see.

VERNICE. Dry, guttous Vernix. *Rulandus.*

VERNIMBOCK. A sort of Wood, like *Brasil* Wood; used in Dying; and suspected to be what we call *Redwood*. It takes its Name from *Fernambuca*, a Town of the Portuguese, in *Brasil*, whence it is exported. *Raii Hist. Plant.*

VERNISIUM. The same as,

VERNIX, otherwise *Sandaraca*, *Sandarache*, and *Gummi Juniperinum*. *Vernix*, *Varnish*, is, also, a Name given to a certain liquid Composition, which induces a Crust over Wood, which preserves it from Putrefaction. Thus, a Vernix is prepared of Lacca, Mastich, Copal, Succinum, either simple or mixed, and boiled and dissolved in Alcohol of Wine, Oil of Turpentine, or Linseed-oil. *Blancard.*

VERONICA.

The Characters are;

The Leaves, for the most part, grow opposite by Pairs; the Calyx is monophyllous, quinquefid, and expands in form of a Star. The Flower is monopetalous, generally quadrifid, and expands in a circular Order. When the Flower decays, the Ovary becomes a membranaceous Fruit, divided into two Cells, which are shaped like an Heart, and full of Seeds, sometimes small, sometimes of a good Largeness and Thickness.

Boerhaave mentions twenty-six Sorts of *Veronica*; which are,

1. *Veronica*; major; latifolia; erecta. *M. H. 2. 317. It. 2.*

2. *Veronica*; maxima; latifolia; erecta; cœrulea spica longissima.

3. *Veronica*; spicata; longifolia. *T. 143. Lysimachia, spicata, cœrulea. C. B. P. 246. Pseudo-lysimachium, cœruleum. Dod.*

4. *Veronica*; spicata; angustifolia. *C. B. P. 246.*

5. *Veronica*; spicata; angustifolia; flore incanato. *Flor. 2. 104.*

6. *Veronica*; mas; supina; & vulgatissima. *C. B. P. Raii Hist. 1. 851. Synop. 3. 281. Boerb. Ind. A. 224. Veronica mas, Betonica Pauli. Offic. Veronica mas vulgaris supina. Park. Theat. 550. Veronica vulgatio folio rotundiore. J. B. 3. 282. Veronica vera & major. Ger. 502. Emac. 626. MALE SPEEDWELL.*

This is a low creeping Plant, whose Stalks generally lie on the Ground, shooting out Fibres at the lower Joints. The Leaves grow by Pairs, on short Foot-stalks; they are oval, about an Inch long, hairy, and crenated about the Edges, of a pale-green Colour. The Flowers grow on the upper Part of the Stalks among the Leaves, in short Spikes, each of one small bluish purple Leaf, cut into four Parts; to each of which succeeds a Seed-vessel, in Shape of that of Shepherd's-pouch, full of very small Seeds. The Root is a Bush of Fibres; grows in Woods and shady Places, and flowers in June. The whole Herb is used.

This is reckoned among the vulnerary Plants, both used inwardly and outwardly; it is, likewise, pectoral, and good for Coughs and Consumptions; and is helpful against the Stone and Strangury, as, also, against pestilential Fevers. *Miller's Bot. Off.*

The Leaves of Speedwell are bitter, and give a pretty deep-red Colour to the blue Paper, which gives us Reason to believe, that their Salt very much resembles that of Coral; but that of the Speedwell is charged with a great deal more Acid than the ordinary Salt of Coral, and is joined besides with a great deal of Sulphur: For,

By the chymical Analysis, we obtain from this Plant a great deal of Earth, Acid, and Oil.

These Principles render the Speedwell sudorific, vulnerary, detergent, diuretic, and proper to discharge the Lungs of glutinous and purulent Matter. *Tragus* affirms, that in malignant Fevers, two Ounces of the Spirit of Speedwell, mixed with a little Treacle, provoke Sweat copiously. This Spirit is made by distilling Speedwell infused in Wine for some Days.

Take two Ounces and an half of the distilled Water, infuse in it one Dram of the Leaves, and as much of the middle Bark of *Solanum Scandens*, *five Dulcamara* Pin. and give it as an excellent Remedy for Ulcers in the Lungs, Stone, and Vapours.

The Syrup and Extract of Speedwell purify the Blood, and are good for cutaneous Diseases; but the affected Parts must be washed at the same time with the Water of Speedwell, in which some Vitriol has been dissolved. The frequent Use of Clysters, made with one Pound of the Decoction of this Plant, an Ounce of Butter, and as much Sugar, are wonderfully praised for the Colic. Some boil Speedwell and Chamomile in Milk, and afterward add some Sugar. Speedwell is used now-a-days after the manner of Tea. It is mixed, also, with the vulnerary Plants in Broths, Potions, and Ptisans. *Martyn's Tournefort*.

Veronica is an excellent Vulnerary and Sudorific; its principal Uses are in Erosions and Obstructions of the Lungs and Spleen, whence it is of extraordinary Service in the Colic, Phthisis, Scabies, Pruritus, Pestilence, and Wounds. Externally it is much celebrated for absterging Wounds, in Hardness of the Spleen, and the Colic. *Schroder*.

Taken inwardly, it is good against the Cough, and other pulmonary Disorders, and against the Pestilence and contagious Diseases; outwardly, it is effectual in Wounds, Ulcers, Itch, and cutaneous Diseases.

A Decoction of *Veronica*, taken in a good large Dose, freed a Woman from a Stone in the Left Kidney, with which she had been afflicted sixteen Years; the Stone was first protruded into the Ureters, through which it was convey'd to the Bladder, whence by the continued Use of the same Decoction, it was at last ejected by the urinary Passage. *Eph. Germ.*

Veronica is of singular Use in Barrenness. A Lady of the first Rank, after seven Years Barrenness, took, by my Advice, the Powder of *Veronica* in the Water of the same, for many Days together, and very soon after conceived. After this, she advised some others, who were thought barren, to use the same Remedy, which had the desired Success upon ten or twelve of them. The Syrup of *Veronica* is an admirable Remedy in Ulcers of the Lungs. *C. Hoffman*.

The most illustrious *Guntherus* had for some Years laboured under an incurable Ulcer of the Legs, attended with periodical Pains, for which he found no better or speedier Help than Linen Cloths dipt in Water of *Veronica*, and applied to the Place; for the Inflammation, and other Symptoms, usually consequent, immediately ceased.

The Herb is, also, very remarkable for its vulnerary Virtue: A Fistula of the Thorax, which had eluded the Force of Bathing, Fomentation, and all other Kinds of Remedies, was at length perfectly healed by the internal Use of the Water of *Veronica* alone. *Eph. Germ.*

The Extract of *Veronica*, mixed with the Extract of Juniper, is a most efficacious Medicine in Obstructions of the Viscera, and pectoral Diseases; I have often try'd it with extraordinary Success. It expels the morbid Matter by Urine; but Laxatives and Aperitives are first to be premised. *D. Tancred Robinson e Fabr. Hildano*.

I must ingenuously confess, says *S. Pauli*, that after I had in vain try'd various Medicines against the crusty Scabies of Children, I have at last, in Imitation of the Example before related, (of *Guntherus*) directed the Parents to apply Linen Cloths dipt in the Water of *Veronica*, and first compressed to prevent their dropping, to the Arms, and Calves of the Legs of the Children, and by that means have perfectly cured them; but I advised, that the Nurse should, at the same time, drink the Decoction of Fumitory boiled in Whey.

Crato had an extraordinary Esteem for this Herb in the Colic, Stone, and the Pestilence itself; and he prefers the mere simple Decoction of *Veronica* far before all other more generous Medicines for the Stone. *S. Pauli*.

The Use of a Clyster, prepared only of a Decoction of *Veronica* and Sugar, is of more Efficacy than any thing taken at the Mouth. In the Decoction, let there be mixed some Fat of a Sheep's Kidney, or some Fat of a Rabbit, or of a Capon, in order to give it a Lubricity; if these are wanting, a little fresh Butter may be added. *Idem*.

I can safely affirm, that many Persons labouring under the tormenting Pain of the Colic, or Stone in the Kidneys, have often received more Benefit and Relief from the Use of a

simple Clyster, prepared of Cows Milk, and Sugar, in which, after the Example of *Crato*, I have only boiled *Veronica*, or the Flowers of Chamomile, not the *Roman*, but the common, and more temperate Species, than from those prepared with a greater Apparatus; as, for Instance, with Pennyroyal, Origanum, Rue, Calamint, and other Ingredients, which often exagitate the Humours. *Idem*.

7. *Veronica*; major; frutescens; altera. *M. H.* 2. 319. *Chamædrys*, spuria, major, altera, five frutescens. *C. B. P.* 248. *Teucrium*, IV. Clus. H. 349.

8. *Veronica*; major; frutescens; altera; foliis constanter & eleganter variegatis.

9. *Veronica*; minor; virgulosa, feu multicaulis; Pannonica. *M. H.* 2. 320. *Chamædrys*, spuria, minor, latifolia. *C. B. P.* 249. *Teucrium* V. Clus. H. 350.

10. *Veronica*; minor; foliis imis rotundioribus. *Tourn. Inst.* 144. *Boerb. Ind. A.* 225. *Chamædrys spuria latifolia*. *Offic. J. B.* 3. 286. *Chamædrys spuria minor rotundifolia*. *C. B. P.* 249. **BASTARD GERMANDER.**

Cæsalpinus, *Pena*, and *Lobel*, affirm, that it is excellent to open the Bowels, and cure the Green-sickness: It may be used in aperitive Ptisans and Broths, or after the manner of Tea. *Martyn's Tournefort*.

11. *Veronica*; maxima; latifolia; feu folio Quercus. *M. H.* 2. 322. *Chamædrys*, spuria, latifolia, major. *C. B. P.* 248.

12. *Veronica*; tenuissime laciniata; minor. *M. H.* 2. 321. *Chamædrys*, spuria, tenuissime laciniata. *C. B. P.* 248.

13. *Veronica*; aquatica; major; folio subrotundo. See **ANAGALLIS AQUATICA.**

14. *Veronica*; aquatica; minor; folio subrotundo. *T.* 145. *Anagallis aquatica*, minor, folio subrotundo. *C. B. P.* 252.

15. *Veronica*; aquatica; major; folio oblongo. *M. H.* 2. 323. *Anagallis*, aquatica, major, folio oblongo. *C. B. P.* 252. *Berula* major. *Tab. Ic.* 719.

16. *Veronica*; aquatica; minor; folio oblongo. *T.* 145. *Anagallis*, aquatica, minor, folio oblongo. *C. B. P.* 252.

17. *Veronica*; terrestris; annua; folio Polygoni: flore albo. *M. H.* 2. 322.

18. *Veronica*; pratensis; Serpyllifolia. *C. B. P.* 247. *M. H.* 2. 319.

19. *Veronica*; flosculis; caulibus adhærescentibus. *M. H.* 2. 322. *Alfine*, *Veronica* folio, flosculis caulibus adhærescentibus. *C. B. P.* 250. *Alysson*. *Col. Phytob.*

20. *Veronica*; Hederulæ folio. *M. H.* 2. 322. *Alfine*, *Hederulæ folio*. *C. B. P.* 250.

21. *Veronica*; flosculis oblongis pediculis infidentibus; *Chamædrys* folio. *M. H.* 2. 322. *Alfine Chamædryfolia*, flosculis pediculis oblongis infidentibus. *C. B. P.* 250.

22. *Veronica*; flosculis oblongis pediculis infidentibus; *Chamædrys* foliis alternis. *H. L.* 622.

23. *Veronica*; cœrulea; trifido, aut quinquefido, folio. *Flor.* 2. 105. *Alfine triphyllus cœrulea*. *C. B. P.* 250.

24. *Veronica*; Virginiana; altissima; spica multiplici; floribus candidis. *Flor.* 2. 104.

25. *Veronica*; Chia; folio Cymbalaræ; verna; flore albo, umbilico virescente. *T. Cor.* 7.

26. *Veronica*; Orientalis; minima; foliis laciniatis. *T. Cor.* 7. *H. R. D.* *Boerb. Ind. alt. Plant.*

Veronica is commended for subduing Phlegm, for deterring the first Passages, for pulmonary Diseases, the Scurvy, Phthisis, and Stone, being boiled with Liquorice. Infused in Water, it impregnates it with the Smell, Taste, and all the Virtues of the Chinese Tea, and has the same Effects. It relaxes with a moderate Astringent, whence it is recommended in a Scurvy proceeding from Relaxation; thus it is proper, also, in a Pissing or Spitting of Blood, because it has an astringent and somewhat of an aromatic Virtue; it heats, dries, strengthens, and resists Putrefaction.

The thirteenth, fourteenth, fifteenth, and sixteenth Species are scarce inferior to any in Virtues; they are very succulent and bitterish, their expressed Juice absterges and deterges in manner of Soap, and liquefies, not by its aromatic, but saponaceous Quality. Thus it purges Water, and renders the Blood aqueous without Acrimony; and by this means opens, dilutes, and is a Demulcent. Hence it becomes of Service in all Obstructions, and in all Sorts of Scurvy; and, where-ever Opening is required, without inducing a great Heat. For the same Reason it affords us an excellent Remedy against the Stone and Gravel in the Kidneys, and is of Service in the Jaundice, Stoppages of the Liver, and all inveterate Obstructions.

This Plant is very penetrating; for, if it be tasted, it penetrates the whole Mouth, as if it were set on Fire. It affords not much Salt, but a very copious Humour; and has the Virtue, also, of resolving Humours. The Decoction of the Herb in Whey, daily drank, cures the Scurvy, as we are assured by *Eugalenus* and *Sennertus*, and resolves scorbutic Tumors; it is good, also, against the Scabies. The Juice drank

or a long time together, is effectual against the Gout; for let the Patient take but two or three Ounces every Day for a Month together, and all the morbid Matter will be discharged out of the Blood by Urine. The Juice may be preserved a long time in Winter, if to the Quantity of one Ounce you put four Drops of the Spirit of Sulphur by the Bell. It incides viscid Phlegm molesting the Lungs, and is good in Coughs, Colic, Nephritis, Pthtisis, and the Itch; it is excellent in Clysters for the Colic. The Infusion of it in Wine is effectual in the Chlorosis; and the Powder, according to *Cæsalpinus*, cures the Dropsy. The Juice cures intermittent Fevers; the distilled Water depurates the Eyes; and a Gargarism, prepared of a Decoction of the Leaves, cures the Quinsy.

Franeus has written a whole Book of the Virtues of this Plant. The Use of it, after the manner of Tea, is effectual in Obstructions of the Spleen, Pancreas, and Mesentery; it is of excellent Use in the Head-ach and Vertigo, is of Service in the Fluor Albus, and all cutaneous Diseases, as well as a Cancer. I have cured an hundred Diseases with this Plant; for it has the Virtue of dissolving pituitous, viscid, oleous, and almost all other Kinds of Humours. *Hist. Plant. adscript. Boerhaav.*

An Infusion of *Veronica* is recommended by *Heister* to be used warm, as a Resolvent in an *Epiphora*, or *Oculus Lacrymans*; he observes further, in his Note at the Bottom of the Page, that this Infusion of *Veronica* is highly commended by *Schobinger*, a Disciple of *M. St. Yves*, for an incipient *Fistula Lacrymalis*, in his *Treatise de Fist. Lacr.*

Besides the foregoing Sorts of *Veronica*, *Dale* mentions the following;

CHAMÆDRYS SPURIA ANGUSTIFOLIA. Offic. J. B. 3. 285. Raii *Hist.* 1. 847. *Chamædrys spuria major angustifolia.* C. B. Pin. 249. *Veronica supina.* Ger. 503. Emac. 628. *Veronica Teucrii facie.* Park. Theat. 551. *Veronica supina facie Teucrii, pratensis.* Tourn. Inst. 144. **GERMANDER-SPEEDWELL.**

It grows in the Gardens of Botanists, and flowers in June. The Herb is in Use; it agrees in Virtues with the *Veronica*; *mas*; *supina*; & *vulgatissima*; or male Speedwell. An Infusion of its Leaves, is called the *Europeæ.* *Dale.*

VERONICA AQUATICA FOLIO SUBROTUNDO. See **SAMOLUS VALERANDI.**

VERONICA FOEMINA. A Name for the *Linaria*; *hirsuta folio, subrotundo; flore ex herbido flavescente.*

VERRES. A Male Swine. *Verres sylvaticus*, the same as **APER**, a wild Boar.

VERRICULARIS, *μυρβανερσίδης*, a Coat of the Eye so called. See **AMPHIBLESTROIDES**, and **OCULUS.**

VERRISTA, a Name given by *Paracelsus*, to what he calls his *Summum Arcanum*, in Conjunction with his *Granagranâ*, in the Cure of an Epilepsy; but he no-where tells us what they are. *Traët. de Caduc. Matric.*

VERRUCA. A Wart.

A Wart begins in the *Cutis*, and seems to be either an Efflorescence of the Serum of the Blood, which hardening in the Surface of the Skin, makes a dry Tumor, or else some small Luxuriancy of the little Arteries of the *Cutis*, which thrust out themselves, making a petty Sarcoma, which we call a *soft Wart*. According to the Variety of the Tumor, it is sometimes whole with a smooth Surface, sometimes chapt and uneven. According to the manner of their Production, sometimes they arise by a general Exsudation out of the *Cutis*, with a broad Basis, and are called *Verruæ sessiles*; sometimes a few Capillaries putting out together do, after they have grown to a small Length, enlarge themselves into a greater Compass, and make the pensile Tumor we call *Acrochordon*.

There need no Signs to be given of Warts, they being so apparent.

Warts often fall away of themselves.

The Medicines commended in the Cure of Warts are many. Those which are most easy to be had in the Country are, the green Rinds of Willows beaten, the Juice of Marigolds, Celandine, all the Sparges, a Garden-snail sprinkled with Salt. If you rub them with any of these, they will fall off. Oil of Vitriol, or of Sulphur, will certainly destroy them. I have seen some burn them out, by running an hot Needle into the Roots of them. There are other ways, as by rubbing them with raw Beef, and burying it. But when any great one falls into my Hands, I make a speedier Riddance of it by Ligature, or Caustic. Where it is capable of being tied, I make a Ligature; in others, where it is not, the Caustic-stone alone will do it.

A young Lady, having been long vexed with an unseemly overgrown Wart upon one of her fore Fingers, desired my Help. I rubbed the chapt Head of it with a Caustic-stone, till it was soft and black; then scraped it off, and rubbed the remaining Root with some of the same, till I judged it was cra-

dicated; then washed out the Salts, and dressed it with *Unguentum Basilicæ*, with a few Drops of Oil of Turpentine, which made, Separation of the Eschar, and cured it.

In another young Person, where they were small in the Basis, I tied some of them close by the Roots with a Silk; others I snipt off with a Pair of Scissars, not regarding the Dropping of the Blood upon the neighbouring Parts, which is thought to infect them, and beget others. Then I rubbed the Roots of them all with a Caustic-stone, and digested the Sloughs out as abovesaid, and they cicatrized of themselves.

Yet you ought to be cautious how you meddle with those growing upon the Knuckles; for Warts there, being, for the most part, near the Tendons, cannot well be extirpated without offending them; and so are consequently subject to Fluxions, and to corrupt the Cartilages, or Bone.

This was the Case of a Lady of Quality, aged about fifty Years, of a plethoric Body, who had a Wart upon the first Joint of one of her fore Fingers. It was imprudently undertaken by some Pretender to Surgery, and treated as ill; so that, after many Months Endeavours, he was dismissed, and a more knowing Surgeon entertained, who found much Difficulty in the Cure, yet made shift to cicatrize it; but it swelled again, and discharged Part of its Matter by the Side of that Nail. Upon Sight whereof I was consulted, and saw a thin Ichor weeping through the old Cicatrix, at an Opening not bigger than a small Pin-hole. The Lady importuning me to undertake the Cure, I sprinkled the Orifice with Precipitate, whereby I crufted in the Matter to thin the Skin, which the next Day I opened, and, by Search of a Probe, felt the Cartilages rotted. I informed the Patient of the Necessity of making an Incision proportionably large, in order to the Exfoliation, and withal represented the Difficulty; and, offered to her Consideration, the more certain and speedy way, by cutting off that Joint. She with little Demur consented to it. All things being immediately prepared, I chopt off that Joint, dressed it up with *Pulvis Galeni*, and afterwards digested it, and cured it, as hath been shewed in such like Extirpations. *Wiseman's Surgery.*

Warts are known to be small brownish Excrecences in the Skin, and are incident to most Parts of the Body; but most frequently affect the Face and Hands. In their Shape and Size there is a surprising Variety; some are large and depressed, others slender; some again resemble the Figure of a Pear hanging by its Stem. And, indeed, it is not so much on account of any Pain or Danger from them, that they are usually extirpated, as because they are a kind of Deformity and Defecation; and most remarkably so, when conspicuous on the Face, Neck, and Hands, of fair and fine Women. And here, tho' there are various Kinds of Remedies, some sympathetic, and others superstitious and insignificant, which are used by Women, and even by some professing Medicine, for the Removal of Warts; yet, after all, the most expeditious Cure is to be expected from the Hands of the Surgeon.

We, therefore, think it most proper briefly to describe the principal Means, which Surgery employs in extirpating this Kind of cutaneous Defecation. And the Method, which deserves to be first mentioned is, by *Ligature*, or *Vincture*; this is performed upon such of these Excrecences as are slender about the Root, and, in a manner, pendent; by firmly tying about them an Horse's Hair, or a Silken or Linen Thread. The Warts being deprived of the Juices which nourish them, through a Constriction of the Vessels by the Ligature, gradually wither and fall away.

Another Method of Cure is, by the Surgeon's Instrument, in which the Wart is taken up with an Hook, or Forceps, and then very nicely separated with the Scissars. The Wound is treated for some time with an Application of the *Lapis infernalis*, or some other corroding Medicine, that if any Part of a Root should remain, from which a new Tubercle might arise, it might be consumed and destroyed.

If the Warts are of a larger than ordinary Size, recourse must be had to Corrosives. And, that these Medicines may the sooner work their Effect, and consume the prominent Part, it will be convenient, first, to cut off the hard Top of the Tubercle with a Penknife, Razor, or a sharp Pair of Scissars; which done, the Wound is to be every now-and-then treated with Applications of Oil of Tartar *per Deliquium*, or some acid Spirit, of which the mildest is Spirit of Salt. If these prove too weak for the Purpose, it will be proper to substitute some stronger Medicine in their room; for Instance, Spirit, or Oil of Vitriol, Aqua-fortis, or Butter of Antimony. On the other hand, the softer and tenderer Sorts of Warts are sometimes removed only by often rubbing them with the yellow Juice of the *Chelidonium majus*, or the Milk of the *Esula*. But, by way of Caution, the greatest Circumspection is required in the Use of Corrosives about the Eyelids or Eyes, that nothing thereof may enter the Eye, and by that means induce Blindness;

Blindfolds: Care, also, is to be taken, that the Parts adjacent to the Tubercle be not injured by the Corrosive. For this End it will be convenient enough to surround the *Wart* with a waxen Ring, or a perforated Plaster, in which the *Wart* may appear as an Eminence, and thus be corroded with Safety to the covered Parts. The Corrosive may be applied several times in a Day; and, by the same Method, other Tubercles, and the like Kinds of cutaneous Defections, may be removed.

A fourth Method of extirpating *Warts* is, by the Application of a red-hot Iron adapted to the Size of the Tubercle, in such a manner, as to penetrate to the very Bottom of its Root. If there be any other violent Means of extirpating *Warts*, certainly there can be nothing more violent than red-hot Iron, which, tho' it excites indeed a very acute Pain, yet the same is but for a Moment. To the cauterized Place must be applied some Portion of Basilicum, or digestive Ointment, and over that a cooling Plaster; such as, for Instance, the *Emplastrum de Spermate Ranarum*. It can hardly be expressed how happily this Method of Cure succeeds in most Parts of the Body, except the Eyes; for these Excrescences, thus removed, are sure never to return.

There is a fifth Method, which is peculiar to Stage-quacks, and consists in, first, well rubbing and chafing the Tubercle with some emollient Ointment, and afterwards taking it between the Nails of the Thumb and fore Finger, and with great Violence pulling or tearing it off. But as this way of Cure is very troublesome, so it has been found in many Cases to be quite useless. For this Method, by Avulsion, thus practised by these Strollers, seldom succeeds so well, but that the *Wart* pululates afresh, and grows again out of the Place affected, as from a Root left behind.

In the last place, it ought not wholly to be omitted, that sometimes may be observed, especially in the Face, on the Lips, and near the Eyes, a kind of livid and bluish *Warts*, which in their Tendency, are next to a Carcinoma, or Cancer; for which Reason it is much safer to let them alone, than endeavour their Extirpation. For no sooner are they irritated by the Hand of the Surgeon, than they degenerate into a Carcinoma; and, after an Erosion of the Face and Eyes, in a miserable manner destroy the Patient. *Heister Chirurg.*

Of WARTS, and other Tubercles of that Kind, growing on the PENIS.

Tubercles, of what Kind soever, infesting the Penis, are almost constantly the Product of some Venereal Distemper: Their Seat is not always in one Place, but sometimes in the Prepuce, sometimes in the Corona Glandis, and sometimes in the Glans itself. Many of them appear like fungous or spongy Flesh, increase very fast, and now-and-then excite Pains. Remedies best adapted to their Extirpation are gentle Corrosives, such as Powder of Savine, either by itself, or mixed with red Precipitate, and burnt Alum, and twice or thrice sprinkled on the Parts, or worked up with Unguentum Basilicum, or Mundificativum, and then applied. If the Tubercles are harder than ordinary, there seems to be no better Way than gently touching or rubbing them with the Lapis Infernalis, till they quite disappear. If the Root of the prominent Part be but slender, it will be convenient to use the Scissars, or a Ligature, in the manner as was directed for the Extirpation of Warts, and all other Kinds of Tubercles. But if the Tubercles will not conveniently admit of a Ligature, on account of the Width of their Root or Base, and their Extremity be remarkably hard, the prominent Parts are to be all cut off with the Scissars, and after suffering the Blood to flow for some time, the Wound is to be cleansed and fomented with warm Wine; and the Root is to be every Day rubbed with the Lapis Infernalis, till it appears to be quite extirpated. *Scultetus* indeed is said, *Obs. 65.* to have used a red-hot Iron in the Extirpation of these Kinds of Tubercles of the Penis. And *Fabricius ab Aquapendente*, and some others, advise the same: But to me this Method of Cure seems too cruel. We are not, however, to omit this one necessary Observation, that not external Means only, but internal Medicines, and these in the first and principal Place, are to be employed, in order to expel the virulent Venereal Matter; for otherwise, by what outward Means soever the Tubercles are removed, they generally return in a short Time. *Heister Chirurg.*

VERRUCARIA. A Name for the *HELIOTROPIUM*; because it removes Warts; and, also, for a Species of *TITHYMALUS*, by whose lacteous Juice Warts are extirpated. *Blancard.*

VERSIO Chymica is a Change wrought by Chymistry, of manifest Forms into occult ones, which is done by a Corruption of the specific Form, and the Generation of a more general one; that is, by a Conversion of decomposed Elements into compounded ones; and of impure into pure. *Theat. Chym. Vol. I.*

VERTEBRÆ, ὀστέονα. The Vertebrae.

VERTEBRALES MUSCULI. The Vertebral Muscles, that is, the Muscles which assist in moving the *Vertebrae*. Among these are reckoned the *Longus Colli*, *Transversalis Colli major*, *Transversalis Gracilis sive Collateralis Colli*, *Semi-spinalis sive Transverso-spinalis Colli*, *Spinales Colli parvi sive Inter-spinales*, *Transversales Colli minores sive Inter-transversales*, *Obliquus major*, *Rectus minor*, *Sacro-lumbaris*, *Longissimus Dorsi*, *Spinalis Dorsi major*, *Spinales Dorsi minores*, *Transversalis Dorsi major*, *Transversales Dorsi minores*, *Semi-spinalis sive Transverso-spinalis Dorsi*, *Semi-spinalis sive Transverso-spinalis Lumborum*, *Sacer Veterum*, *Spinales & Transversales Lumborum*, *Quadratus Lumborum sive Lumbaris externus*, and the *Coccygai*; which see, under the respective Articles of their Names.

VERTEX. See *CORYPHE*.

VERTIBULUM, from *verto*, to turn, is the round or globous Head of a Bone, which, in Articulation, is inserted into the Sinus, or Cavity, of another Bone adapted to it.

VERTICELLI marini, ὀστέονα θαλάσσια, are tuberosus Zoophytes, which are, also, called *Vertibula*, and *Tethya*.

VERTICILLUM, in Botany, is the Whorle, or Circle of Flowers or Leaves, which surrounds the Stalks or Branches of Plants, so called from its Resemblance to the *Verticillum*, or Whorle of a Spindle. See the Article *BOTANY*.

VERTICILLUM and **VERTICULUM**, are, also, Names for the Vertebrae.

VERTICILLUM Ani, in *M. Aurel. Severinus*, is a Tubercle on the Extremity of the Anus, resembling the *Verticillum*, or Whorle on a Spindle. *Castellus.*

VERTIGO, σίρως, the Vertigo, is a Disease in which the Head seems to turn round. When a Mist, also, seems to be cast before the Eyes, it is called *Scotidinos*, *ὀφθαλμὸς*, or *Scotidinos*, *ὀφθαλμὸς*. *Galen, Com. 4. in Lib. de R. V. I. A.* *Erolian* expounds *σίρως*, by *ὀφθαλμὸς*, as *ὀφθαλμὸς* *δοκίμῃ* *τὰ* *ὀφθαλμὰ*, "An Obtenebration, in such a manner that Objects seem to turn round." The Cause of this Affection is, by *Galen*, in the forecited Place, ascribed to a disorderly Motion of the Spirits, which are generated and reside in the Brain; or of those which ascend thither from the lower Parts. *Castellus.*

This, according to *Willis*, is a Disorder in which visible Objects seem continually to turn round, whilst the Patients are affected with a Perturbation or Confusion of the animal Spirits in the Brain, which hinders their Influx into the Nerves. Hence it is, that the visive and locomotive Faculties often fail to such a Degree, that the Patient is ready to drop down, and complains of Darknes. *Etmuller* divides it into three Kinds; the first of which is a simple Vertigo, in which there is only a transient and short-continued Gyration of Objects. The second is a dark Vertigo, or Scotomia, when the Eyes are darkened, or so affected, as if several Colours were before them: And the third is, the Vertigo Caduca, in which the Patient presently falls down.

A Vertigo may be produced by every Cause which can distend, press, and contract the Arteries; such as sudden Fear, Surprise, Ebriety, and Voracity, by which the regular Influx and Reflux of the Animal Spirits into the Optic Nerves, and Retina, are prevented. Sometimes, also, it may be produced by an Acid, or any other peccant Humour, lodged in the Stomach, and vellicating its Nerves, which communicate with the Retina; for which Reason the hypochondriac and hysteric Passions may produce a Vertigo.

With respect to the Prognostics. If a Vertigo is recent, if it happens seldom, and the Patient is young, the Cure is easy: But if it is original and confirmed; if it happens frequently, or is apoplectic or epileptic; if it seizes old Persons, and is accompanied with great Dimness of Sight, and Inability to stand, the Cure is difficult. According to *Etmuller*, a severe and long-continued Vertigo, in old Persons, foretels an Apoplexy; and in such as are young, an Epilepsy. Sometimes a Vertigo afflicts the fore Part, and at others the back Part of the Head. The former Species is more easily cured than the later, which is very dangerous.

With respect to the Cure, the Regimen in general ought to be the same with that in an Apoplexy, or Epilepsy. If the Patient is plethoric, a due Quantity of Blood is to be taken away; and if a Nausea, Loss of Appetite, or any other Disorder of the Stomach remain, an Emetic is to be prescribed; then Cathartics and Specifics are to be ordered. According to *Mayerne*, Calamus Aromaticus, in whatever Form, is good for a Vertigo, and esteemed a Secret for that Disorder. The same Author informs us, that a German Physician cured a great many of Vertigos, by Pills made of Sugar of Lead, and *Cypressi Turpentine*; four or five Grains of which were to be taken for a Dose; and their Use persisted in for some Days. *Glisson*, as *Bates* informs us, after all other Medicines had failed,

failed, was cured of a severe Vertigo, of three Weeks Continuance, by shaving his Head, and applying to it a Plaister, made of the Flowers of Sulphur, and Whites of Eggs. Some order a Caustic, or a Seton, to be applied to the back Part of the Neck; a Caustery to the Bregma; and Bates's Epileptic Electuary, or Fuller's Peruvian Epileptic Electuary, to be used internally. Willis informs us, that, after he had in vain tried all other Medicines, he with Success prescribed the following Powder.

Take of the Powder of the Roots of Male Piony, two Ounces; of the Flowers of Male Piony, one Ounce; of Peacocks Dung, of the whitest Kind, half a Pound; and of white Sugar, two Ounces: Reduce to a Powder, the Dose of which is to be about the Quantity of a Spoonful, twice a Day, drinking after it a Draught of a Decoction of Sage and Rosemary, impregnated with Coffee.

VERTO, in Dornæus, Rulandus, and Johnson, is the fourth Part of a Pound.

VERVA, in Scribonius Largus, N° 16. is the Name of an Amulet of Ivory, to be worn on the Arm for the Epilepsy.

VERUCLA is the same as the preceding. Rhodius, in Scrib. Largum, N° 16.

VERVEX. A castrated Sheep.

VERUTA Sectio, ἡ ἐκείνη διαίρεσις, from Veru, ὁ ἐκείνός, a Spit, is a Chirurgical Operation, or Section; so called, and directed by P. Ægineta, Lib. 6. Cap. 8. in the Cure of a Distichiasis, to be performed with a σκελίον ἀναρρακίδον, a Knife adapted to Sutures.

VESANIA, according to Blancard, is a Species of Madness proceeding from Love.

VESANUS, according to Paracelsus, Tract. 1. de Morb. Ament. Cap. 5. is one who has contracted Madness from a bad Regimen, or improper Medicines: But Insanus, he says, is the proper Denomination of one mad from the Birth; or whose Madness is hereditary. Castellus.

VESICA. The Bladder. See CALCULUS, and RENES.

VESICARIA is a Name for the Alcea Veneta; and, also, for the Alkekengi; either because its Fruit and Seed are contain'd in Bladders, or because they are good for the Stone in the Bladder. Blancard.

VESICATIO. A Vefication, or raising of Vesicles, a Symptom succeeding Combustions by Fire or Water. The Effects of a vesicatory Remedy are, also, called Vescatio. Castellus.

VESICATORIUM. A Vesicatory. See CANTHARIDES.

VESICULA. A Vesicle, or little Bladder; a Diminutive of Vesica; it is often appropriated to the Gall-bladder.

VESICULÆ SEMINALES.

The Vesiculæ Seminales are soft, whitish, knotted Bodies, about three or four Fingers-breadth in Length, one in Breadth, and about three times as broad as thick, situated obliquely between the Rectum and lower part of the Bladder, in such a manner, as that their superior Extremities are at a Distance from each other, and their lower Extremities united between those of the Vasa Deferentia; of which they imitate both the Obliquity and the Incurvation.

They are irregularly round on the upper Part, and their Breadth decreases gradually from thence: By the Union of their lower Extremities they form a kind of Fork, the Branches of which are broad, and bent like Rams Horns: These Extremities are very narrow, and form a small Neck, which runs behind the Bladder, toward its Orifice, and continues its Course in the Groove of the Prostate, through the Substance of the contiguous Portion of the Urethra, till its Extremities pierce the Caruncula.

The inner Substance of the Vesiculæ is plaited, and in a manner distinguished into several Capsulæ, by contorted Folds: Their external Surface is covered by a fine Membrane, which serves for a Border and Frænum to the Folds, and is a true Continuation of the Cellular Substance of the Peritonæum. The Vesiculæ may easily be unfolded, and all their Contortions straitened; and, by this means, they become much longer than in their natural State.

Their inner Surface is villous and glandular, and continually furnishes a particular Fluid, which exalts, refines, and perfects the Semen, which they receive from the Vasa Deferentia, and of which they are the Reservatories for a certain time. Winslow's Anatomy.

VESPA. Ofic. Mer. Pin. 196. Raii Insect. 250. Jonst. de Insect. 17. Aldrov. de Insect. 198. Mouff. Insect. 41. Charlt. Exer. 37. THE WASP.

The whole Insect is used, and is supposed to open Obstructions of the Kidneys and Bladder, to break the Stone; and is thought by some to agree in Virtues with the Asellus, or Woodlouse. Dale.

VESPA ICHNEUMON.

This is a Fly, with a slender Body, four Wings, and arm'd with a Sting.

It has been observed of the Grana Radicum Breynii, or the Coccus Polonicus, [see the Article KNAWE]; and of the Grana Kermes, or Coccus Baphicus Ofic. [See CHERMES]; that they are Nests of Insects, and not generated of the Plants in which they are found. But since we omitted, under those Articles, to inform the Reader to what Tribe of Insects they ought to be reduced, it is here thought proper to observe, that both of them arise from Eggs deposited, by the Parent Insect, in a Wound they make in the Plant, so as to raise a Tumor: From this Tumor, matured by the Heat of the Sun, arise Insects with six Legs, which are, by degrees, metamorphosed into Wasps, called Ichneumones. This I am induced to believe by two Reasons: The first is, that Breynius himself observes, that Animals of this Tribe are found in the Places where these Cocci grow. Secondly, The Wasps of this Tribe lay their Eggs not only in the Bark of Trees, and the Roots and Stalks, but in the Bodies of Animals, as appears from a Multitude of Observations in Authors, who have written of Insects. We have an Example in Goedartius's Metamorphosis of Insects, in the Eruca Brasicaria, or Caterpillar, which infests Cabbages, where writing of this Sort of Insects, the Author says, that, "After they had lain four Days without Motion, you may see forty or more Worms breaking out of the Skin, on both Sides of every single Insect, which afterwards became so many small Flies." Ray, in his History of Insects, takes notice of the same; and I myself have made the like Observation on the Caterpillar, and other Insects, which become Nests not only of Ichneumon Wasps, but, also, of other Flies.

Some think the Worms hermaphrodite: Of this Opinion was Cheston, because he could never discover any Difference of Sex in them, or observe them joined in Copulation. The Minuteness of the Animalcula might, indeed, be an Hindrance to any Observation of those Parts and Actions; whereas, in Earthworms, House-snails, and the Limax, which are, also, Hermaphrodite, the Manner of their Generation, as being larger Animals, is plain and evident.

Garidellus, in his Histoire des Plantes qui naissent en Provence, has written largely of the Coccus Baphicus, but not so accurately as there was Reason to expect, from a Person who had such Opportunities of making Observations. What the very learned Breynius has written of the Matter, in his Hist. Nat. Cocci Radic. Tinct. I shall relate in his own Words, observing first, that the Coccus Polonicus is to be ranked with the Coccus Radicum; as we are assured by Breynius himself, who, in the Conclusion of his Work, writes thus:

"The Coccus Radicum is an Insect, destitute of Wings, furnished with six Feet, of no distinct Sex, as far as it appears; which, fastening itself to the Tops of the Roots of the Polygonum, and being deprived of local Motion and Sense, under the Appearance of a spherical Grain, seems to acquire the Nature of Vegetables, and increases in Bulk; out of which, after a determinate Time, there comes forth another Worm, or Insect, different from the former, though resembling it in many Properties: This Worm receives no Nourishment, nor Increase, nor appears of a distinct Sex, but brings Eggs to Perfection within itself; and, after a certain Time, is covered with a Down; and, being again deprived of local Motion, is contracted, and expels its Seeds or Eggs, from which, after another determinate Time, by Virtue of the Sun's Heat, are hatched, or produced Worms like those first-mentioned."

Now, though I have not the least Doubt of the Veracity of Breynius, and the Truth of his Observations, yet, since he confesses, that Multitudes of the Ichneumon Wasps, are to be found near the Nests of these Animals, I cannot but suspect, that they owe their Original to them. Garidellus, also, owns that after the Hexaped, or six-legged Insects, perish, these small Flies are produced in the Grains of Chermes. Dale.

VESPERNA, the fourth Meal, or fourth time of Eating, in a Day, and next after the Merenda, or Afternoon's Collation. Castellus.

VESPERTILIO. Ofic. Aldrov. Ornith. 1. 571. Bellonides Oyse. 147. Gesn. de Avib. 694. Jonst. de Avib. 34. Charlt. Exer. 80. Raii Synop. A. 243. Sloan. Hist. Jam. 2. 330. Andira. Pis. (Ed. 1658.) 290. Andira acu. Marceg. 213. Andbura. De Laet. Ind. Occid. 615. THE BAT, or FLITTER-MOUSE.

It appears in Summer Evenings; but in the Winter lies hid in Rocks and Caverns. The Flesh and Blood of this Animal are used; the first of which, being prepared, is good for a Scirrhus, and the Gout; and the Blood cures an Alopecia. Dale from Galen.

Ray justly observes, that this Animal is, by some, erroneously reckoned among Birds, because of its Wings and Flight, since it has neither Feathers nor Beak, nor lays Eggs. *Dale.*

VESTIBULUM. A Part belonging to the Ear, so called. See **AURIS**.

VETERINARIA, *ἡντιατρικὴ*, is that Part of Medicine which treats of the Diseases incident to Horses and Cattle.

VETERNUM. The *Anasarca*. *Junius in Nomenclat.*

VETERNUS. The same as **LETHARGUS**.

VETONICA. The same as **BETONICA**: Betony. It is, also, a Name of the *Caryophyllus altilis major*.

VETTADAGOU, H. M. is a low, bacciferous, Indian Shrub, bearing a whitish, pentapetalous, and scentless Flower, and a round black-purple Berry, containing five solid triangular Seeds, which are first white, then reddish, and at last blackish. It is an Evergreen, and bears Fruit twice in the Year, that is, in *March* and *September*.

Of the Leaves bruised, and boiled in Oil of Sesamum, is prepared a Liquid, which, applied to the Abdomen, is said to give Relief under difficult Labour; and to expel the Secundines, when retained.

The *Kal Vettadagou*, H. M. very much resembles the preceding, only its Leaves are lesser and rounder; the Flowers are red, and the Berries of an Orange-colour, and have an acid Taste. *Raii Hist. Plant.*

VETTI TALL. See **AMVETTI**.

VEXATA, in the Language of *Celsus*, are Contusions or Collisions. Of the Cure of *Vexata* he treats, *Lib. 7. Cap. 1.* See **CONTUSIO**.

UHEBEHASON *Theveti*. J. B. Arbor Brassicæ Folio excellissima Americana. C. B.

This is a Tree of surprising Talness, with Branches stooping one under another, and Leaves like Cabbage-leaves. The Branches are loaded with Fruit, a Foot in Length. The Tree yields, also, a red Gum. When *Thevet* was in *America*, he observed this Tree at the Distance of six Miles, when he looked upon it, he says, as something artificial, and not as a natural Product.

Innumerable Multitudes of Bees have their Aliment from the Fruit, and their Nests in the Holes or Cavities of the Tree, where they raise their Combs, and prepare their Honey. He describes two Sorts of these Bees; the first are of the Size of our ordinary Bees, and make a very good Honey, and a yellow Wax; the other Sort of Bees is less by half, and makes a Honey which excels in Goodness, but a Wax as black as a Charcoal. The Fruit *Uhebaso*, though coveted by the Bees, is not eatable by human Creatures, because it is not easily brought to Maturity. *Raii Hist. Plant.*

VIA. This Word, which imports a Path, or Way, has no peculiar Sense in Medicine, except that the Stomach, Intestines, and their Appendages, are called the *Prima Via*.

VIBEX. A livid, or black Mark, on the Skin, from a Contusion. It is the same as an **ECCHYMOSIS**.

VIBRISSÆ, or **VIBRISCI**. The Hairs which grow in the Nostrils.

VIBURNUM.

The Characters are;

The Flower is monopetalous, rotated, quinquefid, furnished with five Stamina, growing on the Inside of the lowest Part of the Flower, disposed in Umbellæ, and growing on the Ovary. The Ovary has its upper Margin surrounded with a quinquefid Calyx; is furnished with an erect, and, in a manner, triglobular Tube, and becomes a soft succulent Berry, which is compressed, striated, and full of a single stony Seed.

Boerhaave mentions nine Sorts of *Viburnum*; which are,

1. *Viburnum*. *Offic. Parkinson. Theat.* 1448. *Raii Hist.* 2. 1590. *Synop.* 3. 460. *Tourn. Inst.* 407. *Boerh. Ind. a.* 2. 224. *Viburnum vulgo*. C. B. P. 429. *Lantana*, *sive Viburnum*. *Ger.* 1305. *Emac.* 1490. *Lantana vulgo*, *aliis Viburnum*. J. B. I. 557. THE WAYFARING TREE.

Matthioli, who has given the best Figure of this Tree, affirms, that its Leaves are astringent, and good to strengthen the Gums; that its Fruit, reduced to Powder, stop a Looseness; and that Birdlime is made of its Roots macerated in the Ground, and bruised. *Martyn's Tournefort.*

This is an arborecent Shrub, sometimes pretty large, though rather spreading than tall, and consisting of a fungous and medullous Wood. From the Root, close to the Ground, shoot scattering spriggy Branches, an Inch in Thickness, and two Cubits, or more, in Length, covered with a reddish Bafe, sprinkled with a farinaceous Powder, and consisting of but little Wood, and that green, but of a very large white medullary Substance. The Leaves much resemble those of the *Alnus*, or, rather, of the *Sorbus Alpina*, and are opposite, broad, somewhat long, and thick, crenated, hairy, and sprinkled with a white Powder, especially in the lower Part, which, for that

Reason, is whiter than the rest, and of an astringent Taste. The Flowers grow in Umbellæ, smell like Elder-flowers, and are white, caducous, and consisting of five Petals moderately reflexed outwards, in the midst of which arise five long whitish Stamina. The Flowers are succeeded by Berries, which are first green, then red, and, when ripe, black, flattish, sweet, and viscous, and not very grateful, at least, says *J. Baubine*, to my Palate, tho' many in the Country feed on them, and, in order to hasten their Maturity, strew them upon Hay, or Straw, Layer upon Layer, alternately. The Berries contain a broad, compressed, and striated Seed, cover'd with a stony Cortex, or Shell.

It grows frequently in Hedges, especially in a clayey and uncultivated Soil; and flowers in the Summer, earlier or later, according to the Weather, and the Temper and Condition of the Soil. The Berries are generally red in *July*, and ripe in the End of *August*, or Beginning of *September*, as we are told by *J. Baubine*.

The Leaves and Berries are drying, and astringent; whence they are commended for Inflammations of the Tonsils and Throat, the Falling-down of the *Columella*, the Loosening of the Teeth, and Fluxes of the Belly. The Leaves, boiled in a Lixivium, blacken the Hair, and repel an *Alopecia*. Of the Bark of the Roots, macerated under Ground, and now-and-then boiled, and pounded for a long time together, is prepared a Birdlime, which is none of the worst for Fowling. *Matthiol. Dodon.* We doubt, with *J. Baubine*, that *Matthioli* has ascribed many Things to the *Viburnum*, which belong to the *Rhus*; because he once thought them, with *Ruellius*, the same.

Of the small Branches is prepared a very good Water for the Eyes. *Camerarius.*

Our Country People, says *Ruellius*, call it *Viurna*, and use it for binding of Faggots, because of its invincible Toughness. It is applied to the same Uses where-ever it grows, whence skilful Botanists take it to be the *Spiræa* of *Theophrastus*.

It is called *Viburnum à viendo*, "from binding; for *Viburnum* is not a Name given by the Antients to any particular Shrub, but is appropriated, by the Moderns, to the above described, because of the Flexibility or Pliancy of its Branches; whence it is, also, called *Lantana*. *Hist. Plant. adscript. Boerhaav.*

2. *Viburnum*, *Americanum*; odoratum; *Urticæ foliis latioribus*; spinosum; floribus miniatis. P. B. *Prodr.*

3. *Viburnum*; *Americanum*; odoratum; foliis *Urticæ*; floribus miniatis. H. L. *App.* 698. *Camará*. Pifo 177. & *Camará-Tinga*. Id. Ib.

4. *Viburnum*; *Americanum*; odoratum; folio parvo, orbiculato; floribus & baccis foliolis interceptis. C. P. B. *Prodr.*

5. *Viburnum*; Cisti foeminae, five *Salviæ foliis mucronatis*; *Americanum*; odoratum; minus; floribus incarnatis. P. B. *Prodr.*

6. *Viburnum*; *Americanum*; *Salviæ foliis obtusis*; floribus albis. P. B. *Prodr.*

7. *Viburnum*; *Americanum*; Cisti foeminae, seu *Salviæ foliis mucronatis*; floribus luteis. Par. Bat. *Prodr.*

8. *Viburnum*; *Americanum*; folio *Urticæ latissimo*; floribus aureis in globum congestis. H. R. D.

9. *Viburnum*; *Americanum*; folio *Urticæ*; floribus ex auro & roseo mistis. H. R. D. *Boerh. Ind. alt. Plant.*

VICIA.

The Characters are;

The Pod is full of roundish, or angulated Seeds; the Leaves are numerous, pinnated, and generally conjugated, by Pairs, to a Rib, which ends in a Tendril.

Boerhaave mentions twenty-two Sorts of *Vicia*, which are;

1. *Vicia*; supina; latissima; folio non ferrato. T. 397. *Faba sylvestris, fruticosa rotunda atro*. C. B. 338. *Bona sylvestris*. Dod. p. 516. *Aracus, fabaceus*, & *Faba kairina*, cui semina minora. J. B. 2. 286.

2. *Vicia*; fativa vulgaris; semine nigro. C. B. P. 344. *Tourn. Inst.* 396. *Boerh. Ind. A.* 2. 43. *Vicia*. *Offic. Ger.* 1052. *Emac.* 1227. *Raii Hist.* 1. 900. *Synop.* 3. 320. *Vicia vulgaris sativa*, Park. *Theat.* 1072. J. B. 2. 310. *Aphaca, Vicia*, Chab. 146. COMMON TARE.

The Stalks of Tares are angular, weak, and leaning, beset alternately at the Joints with long Leaves, having a Tendril at their End, made of ten or a dozen small roundish Pinnæ, a little hollowed in with a Spinula at the End: They are sometimes a little hairy. The Flowers grow usually two together, upright, and less than Pea-blossoms, of a purplish Colour; after which follow small flattish Pods, containing three or four small round black Seeds, less than Pease. Tares are sown in the Fields, flowering in *May*, the Seed being ripe in *August* and *September*.

Tares are rarely used in Medicines, though the Vulgar boil them in Milk, and give the Decoction to drive out the Small Pox, and Measles. *Miller's Bot. Off.*

Common

Common Tares are heating, drying, cleansing, absterfive, and astringent: They agree in Virtues with the APHACA, which see.

3. Vicia; fativa; alba. C. B. P. 344. Tourn. Inst. 397. Boerh. Ind. A. 2. 43. Vicia alba. Offic. Vicia alba semine. J. B. 2. 311. Raii Hist. 1. 900. Park. Theat. 1072. WHITE TARE.

This Species is distinguished by a remarkable Variety in its Leaves, some of which are almost round, others long and narrow; the Flower is single or double, with many purple Spots, and growing on a short Pedicle; the Pods, also, are different from the common Tare, being full of Seeds; sometimes nine in a Pod, which are altogether white, or purplish, or various, or of a pale green, resembling, in Shape and Colour, green Pease, to which they are equal, also, in Bigness, but distinguished from them in that they are not blackish in the Part where they are connected to the Pod, as Pease are.

The Vicia Indica fructu albo of Gerard differs not from the common Vicia, except that it is taller, and bears a larger and rounder Grain, which, in Colour, Shape, and Size, is equal and like to the common white Pea. Raii Hist. Plant.

It agrees in Virtue with the common Tare, but is not used in the Shops.

4. Vicia; vulgaris; acutiori folio; semine parvo, nigro. See ARACUS.

5. Vicia; flore albo; filiqua longa, glabra. Ind. 160.

6. Vicia; folio, & filiqua latis, filiqua hirsuta. Ind. 160.

7. Vicia; flore purpureo; filiquis brevibus, crassis, pendentibus. M. H. Descr. 2. 62.

8. Vicia; folio magno, atroviridi, apice aculeato; filiqua singulari, quasi articulata, semine nigrescente cinereo.

9. Vicia; arvensis; folio supremo emarginato, aculeato; flore & semine, albo.

10. Vicia; Orientalis; flore suave rubente; filiquis brevissimis. Nissole.

The twelve following Species of Vicia have Flowers growing thicker together, and in Spikes.

1. Vicia; Orientalis; flore maximo, pallescente, macula lutea notato. T. C. 270.

2. Vicia; perennis; maxima dumetorum; flore obscure rubente. M. H. 2. 61.

3. Vicia; luteo flore; sylvestris. J. B. 2. 313.

4. Vicia; multiflora. C. B. P. 345.

5. Vicia; Bengalenis hirsuta, incana; filiqua Pisi. H. L.

6. Vicia; angustifolia; purpureo-violacea; filiqua lata, glabra. Magnol. Botan.

7. Vicia; multiflora; Cassubica; frutescens; filiqua lentis. Breyn. Prodr.

8. Vicia; major; folio cordato; flore rubro; fructu albo, Pisi minoris instar. M. H. 2. 63.

9. Vicia; segetum; singularibus filiquis glabris. C. B. P. 345.

10. Vicia; minima; cum filiquis glabris. T. 397.

11. Vicia; maxima; tetraphylla, vel pentaphylla. H. G. 229.

12. Vicia; maritima; flore albo oblongo. Bobart. Boerh. Ind. alt. Plant.

Vicia, according to Varro de R. R. is derived à Vinciendo, from binding; because, by its Tendrils, like the Vitis, or Vine, it climbs, and binds itself about other Plants. But we are rather of Opinion, with Vossius, in Etymolog. that Vicia comes from the Greek; for those of Asia call this Plant *Bisor*, (*Bicion*) as we are told by Galen, Lib. 1. de Alim. Fac. Cap. penult. Raii Hist. Plant.

This Plant affords good Fodder for Cattle; for its Seed supplies the Place of Oats; and the Herb serves instead of Grass. Men have, also, eaten the Grain, in Times of Scarcity, and found themselves never the worse for it. The Meal of Tares is like the Meal of the Seed of Fenugreek. Hist. Plant. ascript. Boerhaav.

VICIA LUTEA. See APHACA.

VICIE SIMILIS. A Name for the Lathyrus; ἀμύλατος; supra & infra terram filiquas gerens.

VICINITRAHA, or VICINITRACTUS. Castellus informs us, that Felicianus makes Use of the first; and Ingrassias of the second, to express an Erysipelas. But this must have happened through a gross Blunder, with respect to the Derivation of the Word Erysipelas.

VICTICELLÆ, or VITICELLÆ LIQUOR, in Paracelsus, is a Sort of Wine.

VICTORIALIS. See ALLIUM.

VICTORIATUS DENARIUS, in Marcellus Empiricus, is half a Dram. As a Coin, it is half a Denarius.

VICTORIOLA. A Name for the Laurus Alexandrina. Blancard. See RUSCUS; latifolius; fructu folio insidente.

VICTUS. Imports the same as DIÆTA.

VIGILÆ. See Pervigilium, under the Article PYRELOS.

VIGO (Johannes de). A celebrated Surgeon of Genoa, about the Year 1517. There are some Compositions called by his Name. Thus the Emplastrum de Ranis cum Mercurio is called the Emplastrum de Vigo cum Mercurio; and without the Mercury, Emplastrum de Vigo simplex. Some Troches are, also, called Trochisci de Minio Vigonis. See CORRODENTIA. The Emplastrum de Minio Vigonis is thus prepared:

Take of Turpentine, ten Ounces; of Hogs Lard, seven Ounces; of the Suets of Mutton, and Beef, and of Oil of Roses, each half a Pint; of the Oil of Myrtle, of the Ointment of Poplar, and of Cerufs, each four Ounces; of the Litharges of Gold, and Silver, each three Ounces and a half; of red Lead, three Ounces; of the Fat of Fowls, two Ounces; and of white Wax, eight Ounces: Make into a Plaister, according to Art.

After the Litharges, the red Lead, and the Cerufs, are reduced to a fine Powder, they are to be mixed, in a Bason, with the Oils, the Fats, and the Ointment of Poplar: To these add two Pints of common Water, and boil the Mixture, constantly stirring it with a wooden Spatula, till it has acquired the Consistence of a Plaister, and the Water is quite consumed, which is known when it ceases to boil: Then melt in it the eight Ounces of white Wax, broken in small Pieces, and the Turpentine, to make a Plaister, to be kept for Use. This Plaister is of a drying, cicatrizing, and resolvent Nature. Lemery, Pharmacopée universelle.

VIGOR, with respect to Diseases, is the same as ACME.

VILLI. Small Hairs, or Fibres, or the Nap of Cloth. Hence, from the Similitude, the shaggy Fibres on the Inside of the Intestines, and many other Parts of the Body, are called Villi.

VILTRUM. The same as FILTRUM. Viltrum Philosophorum is an Alembic.

VINCA PERVINCA. See PERVINCA.

VINCETOXICUM. See ASCLEPIAS.

VINCULUM. A Bandage. Vinculum Softrati is a Species of Bandage described by Galen, in his Treatise of Bandages, Number 81.

VINDICIANUS. Marcellus Empiricus, in Cap. 16. gives a Remedy for a Cough, which he ascribes to Vindicianus. Rub, says he, live Sulphur, mix it with very old Hogs Lard, and make them up into Pills, of such a Size, that they may be easily swallowed: Give three the first Day, two the second, and one the third. This Medicine, he informs us, is excellent for Horses, as well as for Men.

VINUM. Wine.

The Principles, or Elements, of which Wine is composed, are, first, An inflammable Spirit: Secondly, A Phlegm: Thirdly, An acid tartareous Salt: And, fourthly, A certain sulphureous and oleous Substance.

Wines, therefore, differ from each other, with respect to Taste, Smell, and Virtues, according to the Mixture and Proportion of these Elements. Such Wines as contain a large Quantity of inflammable Spirit, soon intoxicate, and heat the Body; but Wines in which the phlegmatic or tartareous acidulated Parts predominate, are of a laxative and diuretic Quality; nor do they easily affect the Head. Wines which contain a great deal of an oleous and sulphureous Substance, such as old Wines, are of a deep yellow Colour, of a strong Taste, and Smell; and as they are not easily transpired, so they remain long in the Blood, and dry the Body.

There is, also, another essential Element, or Principle, in Wines, which is a certain sweet, oleous, temperate, and viscid Substance, discoverable in Wines which are not sufficiently fermented, or gently boiled; and such a Principle is, particularly, observed in strong Sack, Frontignac, and Hungarian Wine. This Principle not only renders Wines grateful to the Taste, but, also, of a nutritive and demulcent Quality.

Tho' all Wines may be resolved into their constituent Principles, that is, a Spirit, an Oil, a Phlegm, a sweet Substance, and an acid tartareous Part; yet they differ in this, that some contain a sweet and subtil Sulphur, whereas others have a coarser Sulphur, which is not so grateful to the Taste.

Thus Rhenish and Hungarian Wines contain a far more grateful Spirit, and a more sweet and subtil Sulphur than the Wines of France, Turin, and Meissen, in which the Spirit and Sulphur is somewhat harsh, and disagreeable to Nature. Hence it is, that the Smell, only, of old and generous Rhenish Wine, surprisngly refreshes the Strength; which Effect is not to be expected from other Wines. The tartareous Principle of Wines is, also, different; since some contain a large Quantity of coarse Tartar, such as the Provencal Wines; and others a more subtil Tartar, such as the Rhenish Wines. Some Wines, such as those

those of the *Mefelle*, contain a tartareous nitrous Salt, of a somewhat bitterish Taste, on which Circumstance depends their laxative and diuretic Quality.

In order to such an Analysis of Wines as may discover their Principles, a due and careful Distillation is of great Importance.

Three Pints of the best Rhenish Wine, distilled in a glass Cucurbit, yielded thirteen Ounces of Spirit, with which, however, was mixed almost half that Quantity of Phlegm.

Three Pints of Franconian Wine yielded eight Ounces of Spirit, of the like Nature with the former. A Pint and three quarters of strong Hungarian Wine, subjected to Distillation in a Cucurbit, yielded eight Ounces and a half of a Spirit far stronger than the former; so that there was hardly a third Part of Phlegm mixed with it.

From a Pint and six Ounces of Burgundian Wine, subjected to Distillation in the same manner with the others, I obtained eight Ounces of Spirit, mixed with half that Quantity of Phlegm. Hence it is obvious, that Hungarian Wine is far more spirituous than Burgundian Wine, which is more spirituous than Rhenish Wine, which is more generous than Franconian Wine.

After abstracting the Spirit from the Wine, by Distillation, what remains in the Cucurbit acquires a deeper Colour, and is of an highly acid Taste; only with this Difference, that the Remainder of the Hungarian Wine is of a somewhat sweetish acid Taste, that of the Burgundian of an astringent acid Taste, that of the old Rhenish Wine of a more acid Taste, and that of the Franconian Wine most acid of all.

When the Spirit, abstracted from the Rhenish Wine, is again poured to the Part remaining after Distillation, or the acid tartareous Phlegm, its penetrating acid Taste is, by this means, greatly corrected, and lessened; but its former Taste and Smell of Rhenish Wine does not return, because the specific Taste of any thing depends upon a particular Mixture and Texture of the Parts, which are dissolved and destroyed by the Distillation. And because, by the new and mutual Confusion of the Liquors, the Particles are not so united as they were before, hence, also, the Taste is changed.

Since a vinous Spirit corrects and infringes Acidity; and since Hungarian and Burgundian Wines contain more Spirit than any other Kinds of Wines, we may justly conclude, that these Wines are proper for those whose Stomachs generate large Quantities of Acids; such as old Persons, those subject to hypochondriac Disorders, and Quartan Fevers: And that they are principally beneficial, when Chylification is over, and many acid Crudities of the digested Aliments remain in the Stomach.

As the Remainder of the Burgundian Wine is an acid and austere astringent Phlegm, we may justly conclude, that this Wine is proper for corroborating the Tone of the Stomach and Intestines; and that the Use of it is more expedient when the Body is preternaturally soluble, than when the Patient is costive.

The Colours of Wines depend on the sulphureous oleous Principle, which, by the intestine fermentative Motion, is intimately resolved and mixed with the Parts of the Wine: The deeper the Colour, therefore, of Wine is, the larger Quantity of Oil they contain. When, therefore, the Spirit is abstracted from the Wine, the spirituous, aqueous, and acid Parts, are carried off, and there is left in the Vessel a thick Mass, of a darkish and very deep Colour; to which, if a considerable Quantity of Water is poured, it is immediately tinged with the same Colour the Wine had in its natural State; which is a sure Proof that the Wine derived its Colour from the thick, sulphureous, and oleous Mass, which remains in the Vessel after Distillation.

Red Wines receive their Colour from the red Pellicles of the Grapes, upon which they stand long infused; the Acid, therefore, which is in Musts, also, extracts and exalts the Colour which is contained in these Pellicles; for which Reason, that Colour is purely adventitious. All red Wines are possessed of an astringent Taste and Virtue, because they stand long infused not only with the red Pellicles of the Grapes, but, also, with their small Stones, which are of a manifestly astringent Taste. Hence they extract the astringent Principle from these two Substances, and receive it into themselves.

Red Wines, especially of the Burgundian Kind, when distilled, and afterwards reduced to a thick Consistence, by Evaporation, in a proper Glass, are of a deep-red Colour, and a strongly-astringent Taste; and a Portion of the Wine, thus inspissated, when poured into a considerable Quantity of Water, not only tinges it with a red Colour, but, also, gives it an astringent Taste.

When to red Wine, or the Extract of it which remains after Evaporation, there is poured a sufficient Quantity of the Oil of Tartar per Deliquium, the grateful red Colour of the Wine is destroyed, and changed into one of a brownish Kind; the Mixture becomes turbid, and deposits a certain Sediment at the Bottom; a certain Proof that the beautiful redish Colour does,

in a great measure, proceed from the Acid exalting the red Colour.

The yellow Colour of Rhenish Wines, also, proceeds from a sulphureous and oleous Principle; and as the Sulphurs, which are, as it were, the Matrixes of Colours, are exalted, by the Admixture of alkaline Salts; so the like happens in Rhenish and French Wines, the yellow Colour of which is changed into brown, by the Affusion of a sufficient Quantity of Oil of Tartar per Deliquium, or urinous Spirit of *Sal Ammoniac*.

When an alkaline Liquor is mixed with Wines of a considerably acid Taste, the Colour is not only changed, but, also, a gentle Effervescence excited; and the Acid of the Wine, meeting with the alkaline Salt, passes into a neutral tartareous Salt, such as tartarised Tartar, or the *Terra foliata Tartari*, which is generally prepared of Wine Vinegar, and the Salt of Tartar.

Since neutral Salts, consisting of a subtil Acid, and an alkaline Salt, such as the dry *Terra foliata Tartari*, or the *Arcanum Tartari*, which is only the *Terra foliata Tartari* dissolved, are of a remarkably abstergent, aperient, and resolvent Quality, and promote the Excretions by Stool and Urine, they are, therefore, highly beneficial in removing chronic Disorders. And since from the best Rhenish Wine, mixed with Oil of Tartar per Deliquium, the same Salt may be extemporaneously prepared, it is obvious, that Rhenish Wine may, by this simple means, be rendered highly medicinal.

The Acid remaining after the Abstraction and Evaporation of Rhenish Wine, if mixed with Oil of Tartar per Deliquium, produces so violent an Ebullition, that the Froth comes over the Lips of a pretty high Vessel; the Mixture becomes of a deep-brown Colour; and, a few Hours after, the Froth subsides and vanishes; and a Liquor highly similar to the *Arcanum Tartari*, both in its saline Taste, Colour, and Virtues, subsides to the Bottom. The Reason why, during the Effervescence, so great a Quantity of Froth is raised, seems to be this, that the Extract of Wine, besides an Acid, contains a large Quantity of Sulphur, and a viscid Principle: Hence the Affusion of the Alkali excites a great Effervescence, from which arise numerous vaporous and aereo-ethereal Particles, which, being sheathed up in the viscid Principle, cannot fly freely off into the Air, but raise the viscid Particles into Bubbles.

The Countries lying between the fortieth and fiftieth Degrees of Elevation of the Pole, such as Hungary, Spain, Portugal, Italy, France, a great Part of Germany, Austria, Transylvania, and a great Part of Greece, produce the best Wines; because, in these Parts, the Influence of the Sun is greater than in others.

It is, also, certain, from Experience, that mountainous steep Places, with Rivers at their Roots, produce the best Wines; for, besides the Influence of the Sun, the Goodness of Wines, in a great measure, depends on the fine and subtil Nourishment of the Grapes. Now because the Mountains are exposed to the Night Dews, which abound about the Rivers, and contain a subtil Water intermix'd with an ethereal Principle, it is not to be wondered at, if Dew should be the best Nourishment for the finest Vines. But Dew alone is not sufficient for the Nourishment of Vines, which, also, requires Rains.

The Nature of the Soil, also, contributes much to the Production of good Wine; for we observe, that the best Wines grow not in fat, clayey, gross, and black Soils; but rather in such as are stony, sandy, or chalky; which Kinds of Earths, though apparently barren, are yet very proper for Vines; because they long retain the solar Rays, which, by cherishing the Roots, make the Nourishment pass through all the Pores of the Plant. Besides, the Waters, passing through such Earths, are attenuated, and strained, and their grosser Parts separated, and retained; so that the nutritive Juice of the Plant must be the more pure and subtil. The Causes of the different Tastes, Salubrity, and Insalubrity of Wines, are, without doubt, placed in the different Nature of the Soil; since Tracts of Ground, lying on the same Mountain, with equal Aspects to the Sun, and bearing Vines of the same Species, yet yield Wines greatly different, with respect to Salubrity, Taste, and a penetrating Quality. The superior Virtues of the *Tokay* Wine, are, by the Inhabitants of that Part of the Country, ascribed to the Gold there produced, but more justly to the large Quantity of corroborating Sulphur contained in the Earth; since neither Gold, nor any other Metal, can contribute to the Fruitfulness of the Earth, much less to exalt the Juices of Vegetables, or render them more salutary. But the Reason why all the Hungarian Wines are more salutary than others, depends on the Subtlety and Fineness of the Nourishment with which the Vines are nourished, and the large Quantity of the aereal and ethereal Principle, which is intimately mixed with their Juices, and which renders both Aliments and Medicines far more salubrious than they would otherwise be.

The more subtil and light Waters are, and the more they abound with an aereo-ethereal Matter, the more wholesome they are. Medicinal Waters are only efficacious in curing Diseases, on account of the Salts, together with the spirituous ethereal Element, which they contain; and if, by Heat, and the free Access of the Air, they are deprived of these, their salutary Virtue immediately is forthwith rendered languid, and destroyed. In like manner, an aereo-elastic Spirit, in the Wines, impels and promotes the Motion not only of the Solids, but, also, of the Fluids, and stimulates the moving Fibres to gentle Contractions; so that the Circulation of the Blood and Humours, together with the Work of Secretion and Excretion, so necessary to Life, are facilitated, and promoted: And, for this Reason, because the Hungarian Wines consist of highly subtil and spirituous Parts, they excellently restore the Strength, and, by promoting a gentle *Diaphoresis*, eliminate the crude and superfluous Juices from the Body. But we shall, for the Reader's Satisfaction, enumerate the most considerable Wines in *Europe*, and specify their medicinal Virtues and Qualities.

Italy, then, affords generous and delicious Wines; among which, we shall first mention that Wine produced at the Foot of Mount *Vesuvius*, call'd, by some, *Lachryma Christi*, and, by others, the *Virgin Wine*, because it flows spontaneously, like Tears, from the best Grapes, before they are trod. This is a strong Wine, of a splendid red Colour, a grateful Smell, a sweetish Taste, and a salutary Quality; for it soon proves a safe and effectual Diuretic, on account of its Thinness.

Alban Wine, so call'd from its growing at the City *Alba*, is beneficial, as well for those who are, as those who are not found, since it gently promotes Perspiration and Urine. This Wine is of two Kinds, Red, and White.

Among the best Wines we may, also, reckon the *Tuscan Muscadel*, or the Wine of *Monte Fiascone*. This Wine is highly palatable, and grateful to the Taste.

The Red Wine of *Monte Bolzano*, and the Moscadel Wine of *Perusa*, are both highly celebrated, and yearly exported in great Quantities, from these two Cities.

The *Punic Wine* was sufficiently known to the Antients: It is produced on the rocky Mountain called *Pforce*, situated in *Capo d'Ischia*, in the *Adriatic Gulph*. This is a sweet Wine, of a fragrant Smell, and does not soon affect the Head, and Operations of the Mind. *Pliny* affirms, that, by the Use of this Wine alone, *Livia Augusta* lived to be eighty-two Years of Age.

Near *Vincentia* there is an excellent Wine produced, called *Marciminian Wine*, which is said to be less hurtful to gouty Patients than any other Wine whatever.

In the District of *Aquila* is produced a noble Wine, called *Rofazer*, from a City of that Name in the *Julian Forum*.

The *Vernacean Wine*, so called from a red Mountain, known, at present, by the Name of *Vernacia*, is a rich and generous Wine, and sufficiently known, not only in *Italy*, but through *France* and *Britain*.

The *Rhetian Wines*, produced in the *Telinian Valley*, are, also, very rich, and delicious; so that *Augustus* is said to have delighted in them. They are red, like Blood, sweet, and leave a somewhat austere Taste on the Tongue.

Though the Wines in *Italy* are generally sweet, yet there are austere Wines prepared in the northerly Parts; and these are used with great Success, in hot Weather, as, also, in hot Diseases, in order to extinguish the excessive Heat.

In *Greece*, the Wines of *Crete* and *Cyprus*, formerly known by the Name *Punic*, are every-where greatly esteemed.

Among the *French Wines*, *Champaign* is generally held in most Esteem: It is grateful to the Stomach, friendly to the Nerves and Head, and soon passes off by Urine. It is of a delicious Taste, on account of the Admixture of a subtil and spirituous Acid.

Next to this are the *Burgundian Wines*. These are generous, in Colour resembling the Eye of a Partridge, of a grateful Taste, less volatile, and better able to bear an Admixture of Water, than *Champaign*.

Paris Wine, especially if made of ripe Grapes, is thin, but grateful to the Taste, and not proper for being mixed with Water.

In *Bordeaux* is produced *Claret*, which is a Wine of a somewhat austere Taste, does not affect the Head, and Operations of the Mind, and excellently corroborates the Tone of the Stomach and Intestines. The best *Bordeaux Wine* is that call'd *Pontac*.

The *Orleans Wines*, both of the red and white Kinds, are very generous, and beneficial to the Stomach; but they generally affect the Head.

The white Wines of *Poitou* are, also, well known, and greatly resemble *Rhenish Wines*, only they are more crude.

Among the best of the *French Wines* we may, also, reckon *Frontignac*, and *Muscadine*, which is red, highly generous, of a sweetish subaustere Taste, and, on account of its Richness, requires an Admixture of Water.

Among the good *French Wines*, we may, also, reckon *Hermitage*, produced between *Valence* and *St. Valiere*. This is a redish subaustere Wine, resembling the Taste of *Myrtle-berries*.

Spain, also, furnishes excellent Vines, which, on account of the due Maturity of their Grapes, yield excellent Wines.

Canary, at present brought from the *Canary Islands*, especially the *Great Canaries*, is produced of the most rich and generous Kind about *Palma*.

Malmsey Wine is expressed from large round Grapes, of the best Kind; and lasts so long, that it may be transported to any Part of the World.

Malaga Wine, or *Sack*, is fatter than *Canary*. The *Perisfont Wine* grows, principally, near the Town *Gualdaclazar*, on the Vines long ago transplanted by *Petrus Simon* from *Germany to Spain*; for a Transplantation from one Climate to another will produce Fruit different in Taste, Sweetness, and other Qualities, according to the different Influence of the Sun, Nature of the Soil, and other Circumstances.

The Country near *Henes*, of *Andalusia*, is very fertile in Wine, which, however, is somewhat austere, and soon becomes acid in warm Places. Of the same Kind are the Wines produced about *Madrid*.

Alicant Wine, produced in *Valencia*, is red, but thick, grateful to the Palate, but hurtful to the Stomach. What we commonly call *Tent*, is not unlike this Wine.

Wine, in general, is possessed of many Virtues, both for the Purposes of Prevention, and Cure: By means of this Liquor, moderately and duly used, Longevity is procured, and the Body preserved robust, and in good Plight: Besides, Wine has a happy Influence, not only on the Body, but, also, on the Mind, whose Powers and Faculties it invigorates beyond all other Liquors, or Medicines, hitherto known. For, as *Gryllus, de Sap. dult. Lib. i.* informs us, the *Greeks*, on account of the Excellence of their Wines, were the glorious Sources from which Learning diffused itself through all the other Parts of the World; but that they lost, at once, their Genius, and Reputation for Literature and Science, when the *Turks* extirpated their Vines: And it is certain, from Experience, that the *Italians*, *French*, and *Germans*, in whose Countries good Wines are produced, are more ingenious and acute, than the Inhabitants of other northern Nations, who use Malt Liquors. The Heathens were so sensible of the happy Influences of Wine, that they placed *Pallas* and *Bacchus* in one Temple, in order to intimate that Prudence was increased by Wine. And the antient Poets have represented their Gods as wiser than Mortals, for no other Reason than that they used Nectar for their Drink, and Ambrosia for their Food. The Fire of the Poets, and all the happy Flights of *Homer*, *Ennius*, *Horace*, and *Ovid*, are the glorious Effects of Wine. Nor is this all; for this Liquor banishes Cowardice, eradicates a dastardly Turn of Mind, and inspires the Soul with Courage, Intrepidity, and Alacrity. Besides, Wine is an universal Preservative of Health, and long Life; for such as is the Circulation of the Blood, such the State of the Health will be. Now it is certain, from Experience, that when the Humours are gross, and their Circulation slow, from a want of due Force in the Heart, or any other Cause, the animal Functions, and, consequently, Health, are greatly impaired. But these Misfortunes are prevented by Wine, the due Use of which augments the Heat of the Body, renders the Pulse stronger, and quicker, forces the Blood from the Centre to the Circumference, increases the Transpiration, promotes a Discharge of Urine, renders the Face red, and the Veins turgid, and, in a Word, refreshes the whole Body and Mind.

The Antients were so sensible of all this, that they recommended Drunkenness, not of the intense and habitual, but of the rare and moderate Kind; for excessive drinking of Wine, like the Abuse of other Remedies, instead of good, produces bad Effects: And this Liquor is at proper Intervals only to be drank in greater Quantities than ordinary, with a View to rouse the Spirits, and animate the Soul, depurate the Blood, and remove Obstructions. Nor, for these Reasons, is it to be doubted, but Wine is an excellent Preservative against hypochondriac Disorders, Weakness of the Stomach, Cachexies, Suppressions of the Hemorrhoids, Tumors and Obstructions of the Liver and Spleen, the Stone in the Kidneys and Bladder, the Gout proceeding from a cold Cause, catarrhus and other Defluxions, Rheumatisms, Lassitude and Heaviness of Body, Loss of Memory, Dulness of Hearing, Dimness of Sight, Weakness of Sensation and Motion from a Fault of the Spirits and Nerves, Impotence in Men, and Sterility in Women: So that we

may justly affirm, that if Mankind knew what salutary Virtues were implanted in Wine, they would not be subject to so many Disorders, nor stand in need of so many Drugs and Physicians.

Having already considered the preservative Effects of Wine, we now come to inquire in what particular Disorders the Use of it is proper.

In malignant Fevers, then, nothing is more excellent than Wine. The Malignity of these Disorders is known from a Defect of Motion and Strength, and from a want of a due spirituous Quality in the Blood, arising from a slow Circulation of the same; all which indicate a certain Disposition of the Fluids to Putrefaction. It is, therefore, expedient, in all these Disorders, to restore the Strength, rouse the Spirits, increase the Circulation of the Blood, and promote Perspiration. These are the Designs of all Alexipharmics. But all these Intentions are answered by Wine, as is obvious, not only from the Authorities of practical Writers, but, also, from Experience: For I myself have known many cured of malignant Disorders, only by the moderate Use of Wine.

In those Disorders where the peccant Matter is to be expelled to the Surface of the Body, such as the Measles, Small Pox, and *Petechia*, when Nature is weak, and the Motion of the Heart insufficient for the Expulsion, or when, through Weakness, there is a Retrocession of the Eruptions, Wine is highly proper; but we are to abstain from its Use, when these Disorders are accompanied with an excessive Heat, an Ebullition of the Humours, and a quick Pulse.

In continual Fevers, *Hippocrates*, in *Lib. 2. de Morb. acut. Sect. 61.* recommends White-wine, both alone, and mix'd with Water. Numberless Practitioners are of the same Opinion. Thus *Forestus*, *Lib. Observat. 1. Obs. 1.* recommends fine small Rhenish White-wine; and *Helmont*, *de Feb. Cap. 12.* tells us, "that they who moderately use Wine in continual Fevers, easily recover, preserve their Strength, and sooner recover their former State and Condition."

Wine is still more proper in Intermittents, which generally arise from Crudities, an Obstruction of the Evacuations, and especially a Suppression of Transpiration. This Liqueur is to be exhibited pretty liberally, on the Days of Intermission; but sparingly, or not at all, during the Paroxysm, unless in the Decline of the Disease, and when the Body is disposed to sweat.

The Reason why Wine ought not to be prohibited in almost all Fevers, is this: A Fever is an intense Commotion of Blood, excited in order to remove and expel what threatens the Destruction of the Body. Now it is sufficiently obvious, that where this Motion is intense, and too strong, Wine is to be sparingly used; but if this Motion is so weak and languid, that Nature seems ready to sink, it is to be quickened by a proper Dose of White-wine, in order to restore languid Nature.

In Syncope, and Loss of Strength, nothing is more excellent than Wine. *Galen*, in *Lib. 3. de Medic. Facult.* orders those afflicted with a Syncope to drink Wine which is thin, of a yellow Colour, and old, rather than such as is new, or of a middle Age: Because the first not only restores the Strength, and recruits the Spirits; but, also, by its Smell, or when applied to the Heart and Wrists, far surpasses all other Cordials, and Analeptics.

In Nauseas, Weakness, Indigestion, and Inflation of the Stomach, nothing is more beneficial than Wine. Hence *St. Paul*, as we see in *1 Timothy v. 23.* advises *Timothy* to use Wine for a certain Disorder of his Stomach. *Galen*, in *Lib. 4. de Sanitate tuenda, Cap. 6.* tells us, that the Wines which are yellow or white, fragrant and thin, are excellent Stomachics, especially if they are gently astringent; and such are the Rhenish Wines, which, on account of their subtil, acid, spirituous, and astringent Principle, are highly beneficial, in exciting the Appetite, strengthening the Stomach, and promoting the Digestion of the Aliments.

In a *Fames Canina*, or preternatural Voracity, *Hippocrates*, in *Sect. 6. Aphor. 21.* recommends the drinking of Wine; and his Advice is founded on Reason: But that Author did not, in this Passage, mean every Wine, but only such as is generous, pure, and old. For the Cause of this Disorder is an acid corrosive Humour in the Stomach, which, by such Wine, is excellently corrected, just as the corrosive Nature of Spirit of Nitre, or Vitriol, is corrected by the Admixture of Spirit of Wine; or as the Acidity of Tartar, so long as it is in Conjunction with the Wine, is so corrected, as to prove grateful to the Palate.

In order to allay Thirst, nothing is more effectual than Wine mixed with Water; for, by this means, it far sooner extinguishes Thirst, than if Water had been exhibited alone; since Thirst arises from an Obstruction and Constriction of those Glands which discharge the Saliva into the Fauces, for moistening them, and the Oesophagus; but these Glands are better opened by Wine and Water, than by pure Water; for which

Reason, *Hippocrates*, in acute Fevers, was not afraid to prescribe a Mixture of Water and Wine.

In Vomitings, of the idiopathic Kind, or such as accompany Fevers as a Symptom, thin Wine is preferable to all other Liqueurs.

In Colics, especially those arising from Flatulencies, or viscid Crudities, nothing is more beneficial than old Rhenish Wine. For this Purpose, *Hippocrates*, *Lib. 2. Epidem. 6.* recommends rich Wine, because it renders crude Matter fit for Concoction, attenuates what is thick, and dissolves Flatulencies. *Crato*, also, in *Conf. 169.* recommends Rhenish Wine in Colics, but forbids the Use of *Moravian* and *Austrian* Wines; as, also, the *Malmsey* Wines, which are sweet, thick, and turbid.

In Diarrhoeas, and Dysenteries, which appear as the Symptoms of acute Distempers, small Rhenish-wine, either alone, or mixed with a Pisan, produces excellent Effects, since it is possessed of a subastringent Quality, by which the Tone of the Intestines, and their relaxed glandular Coats, are greatly strengthened: And as, in these Disorders, it is highly expedient to move the Humours from the Centre to the Circumference, to augment Perspiration, and provoke Urine, hence Wine is excellent, because it produces such Effects. Red Wines, on account of their greater Astringency, are generally recommended; and, if they are good, they may be used for that Purpose.

In Obstructions of the Liver and Spleen, in the Jaundice, and Cachexy, Wine produces excellent Effects. *Solenander*, a celebrated Practitioner, recommends a Mixture of chalybeate Water with a Wine which is white, pure, ripe, not strong, but pellucid, such as the Rhenish and Moselle Wines, as highly grateful to the Liver; and asserts, that, by their astringent Quality, they corroborate the Viscera. But sweet Wines, because they increase the Quantity of the Blood, are greatly condemned, not only by *Hippocrates*, *Lib. 2. de Morb.* but, also, by *Guarionius*, in *Conf. 117.*

In Dropsies, *Hippocrates*, in *Lib. de intern. Affect.* extols austere Wines; and aqueous Wines, in *Lib. 3. Epidem. Sect. 37.* And *Epiphan. Ferdinand. Hist. Med.* informs us, that Persons labouring under an Ascites have been cured by the Use of *Malmsey* Wine alone.

It is justly to be doubted, whether Wine is proper in hypochondriac Disorders; for I have frequently observed in Practice, that the Symptoms were exasperated by acid Wines, especially of the rough Kind. The Reason why hypochondriac Patients cannot bear Wines inclining to Acidity, seems to be this: On account of the slow peristaltic Motion of the Intestines, their Contents are not promoted, hypochondriac Patients being generally costive, but become stagnant; and, by their Continuance, contract an Acrimony. Hence Wine, in such Patients, is by the Stagnation of the Fæces, converted into a strong Vinegar, which stimulates the nervous Parts to Spasms. But, since hypochondriac Patients require a Reinforcement of Strength, and call for additional Force and Heat in their Stomach, Wine is not to be absolutely denied them. Hence *Brunnerus*, in *Conf. 9.* in hypochondriac Disorders, prefers old Rhenish, or good Hungarian Wines, moderately used at Meals. But those afflicted with Disorders of this Kind, ought to abstain from red, austere, and sweet Wines, and from the excessive Use of all.

In a Scurvy, which generates a large Quantity of fixed tartareous Salts, Rhenish Wine is excellent, because it is diuretic. Hence *Sachsus*, in *Tract. de Vite Vinifera*, informs us, that Rhenish Wines are highly beneficial in a Scurvy, because they, by Urine, evacuate the tartareous Sordes; and that, in scorbutic Patients, he has observed an Evacuation of thick Urine, abounding with Tartar, procured by Rhenish Wine. *Reisner*, in *Lib. de Scorb.* recommends strong, generous, and unmixed Wines, for scorbutic Patients; but orders them to be drank in a small Quantity; and, if the Patient's Heat is increased, to be diluted with Water mixed with Raisins.

In the Stone of the Kidneys, sweet, generous, and oleous Wines are by *Crato*, in *Conf. 53.* justly condemned, because the Stone is generally formed by a Redundance of Blood obstructing the abdominal Viscera and Kidneys, and producing, first, an Inflammation, and then an Ulceration of the Kidneys, and then the Stone. But that a Plethora is augmented by sweet Wines, we have already observed. The Stone is, also, generated in the Kidneys, by turbid and austere Wines, such as those of *Numburgen* in Germany. But Rhenish Wines are good against the Stone, because they are highly diuretic. *Schulzius*, in *Conf. 111.* recommends the *Neccarine* Wines. *Unzerus de Nephrit. Cap. 23.* extols rich Wines, moderately drank, after due Evacuation of the Body. *Montanus*, in *Conf. 229.* greatly recommends pure, ripe, and rich Wines of a white Colour, in nephritic Disorders. A Strangury, according to *Hippocrates*, in *Sect. 7. Aph. 28.* is removed by drinking Wine; but this Aphorism is to be understood principally of generous Wine, because the Disorder treated of generally

rally arises from a Suppression of Transpiration, which is restored by Wine of this Kind.

It is a Question of great Moment, Whether Wine is proper in arthritic and gouty Disorders? It is a common Persuasion, that these Diseases are produced by Wine, and that they are only to be cured by drinking Water, and abstaining from Wine. It is certain, that these Disorders arise from a subtle Tartar, which lacerates the Membranes. Hence Wines, which contain a large Quantity of Tartar, seem to be prejudicial in them. But these tartareous Diseases proceed from an Obstruction of the Emunctories, and a Viscidity and Density of the Humours. But Wine excellently conveys the morbid Matter through the Kidneys, which are the proper Emunctories of the Tartar. Hence, there is no Reason why Wines should not be admitted, especially since the Gout generally derives its Origin from a Weakness of the Stomach, a Defect of a spirituous Quality in the Blood, and a slow Circulation of the Humours. Hence, Wine exhibited with a proper Regimen, and by the Direction of a Physician, may prove a Preservative against the Gout, if it is used out of the Paroxysm. But as there are great Differences, not only between Wines, but, also, between Constitutions, so the Physician ought to be very circumspect. Generous Wines that are not acid, such as the *Hungarian Wines*, agree with some Patients. *Crato*, in *Consil.* 253. orders gouty Patients to drink a little *Hungarian*, or *Malmsey Wines*, at Meals. And *Solenander*, in *Consil.* recommends the moderate Use of Wine for gouty Patients, on account of the Weakness of their Stomachs. The same Author in *Sect.* 4. *Consil.* 24. speaks in the following manner: "We are to observe what the State of the Stomach, and of the rest of the Body, can bear. Nor is absolute Abstinence to be enjoined Patients of every Temperament, Constitution, Age, and Method of Life, because there are great Varieties of Patients. If Wine, especially of the gently astringent Kind, is drank moderately, and at a proper Time, its Use will be beneficial, instead of hurtful. Thus we see, that by the Exhibition of a little Wine in the Decline of the Paroxysm, gouty Pains are alleviated, because by the Heat and Spirits excited, the peccant Humour is dissolved; only the Patient must abstain from Wine in the Beginning of the Paroxysm."

Nor must we forget a singular Method of Cure, used by *Hippocrates* in the very Beginning of sciatic Pains, and a fixed and wandering Gout. His Words on this Occasion, are found in *Tract. de intern. Affect.* and are so memorable, that we shall here translate them: "From any Disorder of the Kidneys arises a proportionable Disorder of the larger Veins: But the Veins, when full of Blood, are indisposed by the Approach of any thing foreign to them. If the Disorder is in the Right Kidney, a Pain begins to reach to the Acetabulum of the Coxendix: The longer this Disorder has lasted, and the farther it has proceeded, the more intense Pain descends to the inferior Parts. And when this Pain has reached the external Malleolus of the Foot, and the Joint of the great Toe, it is again convey'd to the Head; and, when it has there formed an Ulcer, the Head seems as if it would burst, and the Eyes, and all the Body, are filled with Phlegm." A little after he speaks in the following Manner: "If you are called in the Beginning of such a Disorder, you must order a great Quantity of diluted *Mendeian White-wine* every Day; and let the Patient be intoxicated till the Blood bursts from his Nose; and, when the Blood once begins to flow, there is some Discharge of it made, for at least thirteen Days. But, when these thirteen Days are past, the Patient is no longer to be intoxicated; nor is such an Attempt to be made after the Blood begins to flow; but let him at Meals drink a little more Wine than usual, that the Blood may continue to flow." *Hippocrates* deduces these Disorders from a Plethora, which is confirmed by Experience; and this Plethora he endeavours to remove by an Hæmorrhage from the Nose, which he excites by copious drinking of Wine. But, whether it would not be more expedient to lessen the Plethora by Venesection, or procuring an Evacuation of Blood from the hæmorrhoidal Veins, I leave it to others to judge.

Having thus considered the Efficacy of Wine for the Cure of internal Disorders, we shall now treat of the Injuries arising from its preposterous Use in some Disorders. It is, therefore, certain from Reason and Experience, that in all Disorders, where a great Quantity of Blood is congested, as in Inflammations, and most Disorders of the Head, especially an Head-ach arising from an hot Cause, a Phrenitis, Madness, Vertigos, Epilepsies, Lethargies, and all drowsy Disorders, Wines of every Kind are prejudicial; for since in these Disorders the Blood is impetuously convey'd to the Part affected, and congested there, it must circulate slowly. Hence Wine, which by its Spirit ascends to the Head, and produces a greater Rarefaction of the Blood, which it forces more copiously and im-

petuously from the Heart, to the Part obstructed, must produce an Exasperation of these Disorders. *Hippocrates*, also, in *Lib. 2. de Morbis*, in a painful Repletion of the Brain, orders Abstinence from Wine; and, in the same Part asserts, that apoplectic Patients, ought totally to abstain from Wine; and in *Lib. 4. de Morb.* he tells us, that in a Sphacelus of the Brain, and a Lethargy, the Patient is totally to abstain from Wine. A phrenitic Patient, says he, should be warmed with warming Liquors, and Potions; but Wine must not be used for this Purpose. And, in his Book *de Insomniis*, he tells us, that mad Persons ought not to drink Wine.

Wine is, also, hurtful in a Cough and Phthisis, because the Aspera Arteria cannot bear its acrid stimulating Quality. But since sweet Wine assists Expectoration, the moderate Use of it is not injurious; nor when the Cough is on the Decline, is old *Rhenish Wine* to be prohibited, but rather prescribed.

Tirellus, in *Hist. Vini*, tells us, that Wines support the Sound, recover the Sick, revive the languid, and perform Miracles. Extracts, Quintessences, Stones, Boluses, and Pills, are to be despised in Comparison of Wines, which are the true Support of the innate Heat; and ought, therefore, to be celebrated with Praises, proportioned to the Advantages Mankind reap from them. *F. Hoffman*.

In *Spanish Wine*, of that Kind which in our Country (*Holland*) we call *Sireese Sek*, and very excellent of the Sort, I discovered the like saline Figures, as I had before observed in the *French Wine*, represented *Tab. I. Fig. S*, [See under *Acetum*] and others besides, which were of a kind of oblong Form, *Fig. T*. The Number of these, however, was very small, in Comparison of what appeared in the *French Wine*, or *Vinegar*. But I did not doubt of discovering more saline Figures, had this Wine been as thin as the *French*; for I perceived Multitudes of minute Particles subsiding in the Wine, of whose Figures I could have no exact View, because of the thick Matter which surrounded them. However, after I had kept the Wine three Days in my Repository, without a Cover, I perceived great Numbers of very minute Particles, some of which uniting together by their mutual Connexion, resembled the dry small Branches of some Tree; others floated about promiscuously, as soon as the Wine was stirred. These last did not appear to me at first of any Figure; but afterwards I found, upon a more accurate Inspection, that they were endowed with certain Forms and Shapes; and, indeed, the same as those of the saline Particles, which I had observed before in the *Vinegar*. Among them were many representing little Planes, partly inflected roundwise, but of such Minuteness, that, as far as I could judge by my Eyes, ten Millions of them together were not so big as a Grain of Sand. Of these saline Atoms, which presented themselves to my View, many were large and flat, others thick and sharp-pointed, and these had not yet attained their due Perfection. The Contemplation of these Figures confirmed me in the Opinion which I had entertained of the Formation of the acute, or sharp-pointed Atoms of Salts; and convinced me, that all the acute saline Parts of Wine, as well as *Vinegar*, were at first but as so many little thin Planes, and that, by an Inflection of the few Angles, they assumed the Form of those saline Figures, which I had before observed in the *Wine* and *Vinegar*. For Example, the *French Wine*, and what we call *Sek*, exhibited to my View the little thin plane Figures, represented *Tab. I. Fig. a b c d, e f g h*: The Sides of one of these Figures have a Roundness with an Irregularity, while the Sides of the other are those of a Plane; and these are all represented bigger than the Life, that their Position may the better appear, and that you may conceive how the Angles *d* and *z* are incurvated in the manner as is represented in the Figure *i k l*; and how the Angles *a* and *b* unite, and form an acute Angle at *i*, in the same Figure, and how, from a like Incurvation of the other two Angles *c* and *d*, there results a perfect saline Figure. But where these little Planes are but short, they have but two Angles incurvated, and assume the Forms represented by the Figures *q* or *r*, or those of *V* and *W*, *Tab. I.* relating to the *Wine of Orleans*, under the Article *Acetum*. I had as clear a View of the Figures represented *i k l, m n o p*, as I should have of half a Sheet of Paper rolled up at the two adjacent, or all the four Corners, and reduced to an acute Angle *i*, or two acute Angles *m, o*, with an interjacent Plane, tho' a Figure so exquisitely perfect, as that of these saline Particles, cannot be ascribed to Paper, or any thing of that Kind, however modelled: I could, also, plainly and fully discern, not only the Angles, but the interjacent Cavity, which seemed to resemble the Cavity in a Paper rolled up, in the manner before-mentioned.

These Experiments gave me Occasion of considering whether or no these saline Atoms, existing in Planes, changed their Figure when pressed in the Mouth, and passed from a Plane to a Body furnished with two acute Angles; and because they are hollow, by the Curvity of their Angles, picked the sensible

Parts of the Mouth, and lacerated them with their Edges, and so produced those uneasy Sensations on the Tongue and Palate, which we call an *Acid*, or the *Sense of an Acid*.

I placed some *Moselle* Wine in an open Vessel, and letting it stand in my Summer-room for some Days, I afterwards discerned swimming in it Multitudes of saline Figures, of the same Kind as those I had before observed in the Wine, Vinegar, and *Sek*, with only this Difference, that in many of them I not only observed a Cavity and Thickness, but could clearly perceive, that they consisted of from seven to ten Scales, lying one upon another, which I took care to delineate at first myself in a coarse manner, and afterwards had them delineated by a skilful Painter, as they were exposed to his View through a Microscope, and are represented *Tab. I. Fig. s.* I saw, also, swimming saline Figures of different Sorts, from which again arose those half-form'd Figures, represented by the Figures in the Table under *t.* In the Wine of *Orleans*, I perceived some of these little Figures, but not in so great Numbers as in the *Moselle* Wine. I observed, also, some saline Particles, which were perforated by others, as in the Figures *u*; and, besides these, a few saline Planes, some of which had their Sides incurvated, or circumvolved, as you see in Figure *w.* There were, also, among them a few, which had their shorter Sides, as it were, gradually indented, as in the Figures under *x.* I took Notice, also, of a few, which made no more than half of the Figure *s*, as you see them under the Letter *y* in the Table, and a few others, which were flat at their Extremitities, as you see under *z.* But what I highly wondered at was, that in the open Vessel reposit in my Summer-room, I could discover none of the smallest of these little Figures after four-and-twenty Hours; but after another four-and-twenty Hours, I discerned saline Figures, which were less than any before observed, and whose Position, on account of their extreme Minuteness, I could not come to the Knowledge of, as they were besides, hidden under the Covert of some gross Matter in the Wine.

I took *Rhenish* Wine, commonly called *Hochmar*, one Year old, well tasted and generous, before its Fermentation was quite ceased, and placing it aside in an open Vessel, after three Hours, I discovered in it the like saline Figures, which terminated at both Ends in an acute Angle, and had many of them an Eminence, in manner of a Back, or the Keel of a Boat turned upwards, being in other Parts very pellucid. These you see represented *Tab. I. Fig. 1.* The same Figures I had before observed in the *French* Wine. But after I had reposit the same Wine for two Days, I perceived some much larger Figures, with different Circumferences, some having two, others three or four, and others innumerable Circumferences, so closely united, that it was very difficult to determine how far these Circumferences extended, which were many of them so beautiful to the Eye, that nothing in the Sea, whether Coral, or Shells, though the fairest that can be seen, deserves to be compared with them; these you see under Number 2. Among these Figures were very many pellucid ones, which were destitute of any visible Circumference, except a few, which consisted of various minute Figures, of the same Position with those others. I discovered, also, Numbers of Figures, whose both Extremities were obtuse: The one Figure had more of a Plane, or was more obtuse than another; others there were which had only one blunt, or obtuse End, as under Number 3. In another Place I saw swimming in the Wine saline Figures, which had not only Circumferences, but were furnished with Steps or Furrows, as you see them represented under Number 4. Besides the Figures aforesaid, there was a great Number of lesser saline Figures, of different Sizes, and not only furnished with Peripheries, or Circumferences, after the manner of the Figures just mentioned; but constituted of various Forms, some of them exactly resembling a well-made Wine-hoghead, others a *Rhenish* Wine-vessel, which the *Dutch* call *Rhijns-wijnvoeder*, others a long Vessel, which they call *Lange-toest*, as in Figures 5. Some of them were of such Minuteness, that I was obliged to use the utmost Diligence to discover them; and when I had marked the Places, whence the more subtle Part of the Wine was almost exhaled, I, besides, observed lying various Kinds of ramous or branched Figures, some of which seemed to proceed from some saline Figure; and, when I had attentively contemplated those ramous Figures, I found they consisted only of the most minute saline Figures connected to one another, and some of them very irregularly disposed, being often united by the Ends of their Branches to the largest saline Figures, in the manner represented under Numbers 6, 7, 8, 9.

In the Beginning of December 1684. I tried Experiments upon that Kind of *Rhenish* Wine, which we call *Hochmar*, of the Growth of the Year 1678. if we may believe our Wine-merchants, who import this Sort of Wine from *Germany*, after I had made the Inspections into the like Wine, of which I have given an Account. In this Wine I discovered at first but

very few saline Particles; but after I had kept the same Wine three or four Days in my Repository uncovered, I perceived a far greater Number of saline Particles, but in much less Abundance than I had before discovered in the same Wine, when but one Year old. I was very well pleased, however, that I could observe very distinctly, as I thought, most of the largest Particles to consist of a Multitude of minute ones, an hundred of which I imagined, if I could have numbered them, might enter the Composition of one large Particle. These I have represented as well as I could, *Fig. 10.* But, after further Consideration, and close Observations, I concluded, that the larger saline Particles were first concentered, and that afterwards, the lesser ones, which were big enough to come within my Cognizance, became united with the larger by Appulsion; since no small Particles appeared in the Wine about these saline Parts, nor any thing like unto Salt, whereas in the rest of my Observations (for I made a Dozen Experiments upon these Wines, neglecting the rest) I had found saline Particles almost of the same Magnitude, very shining, Multitudes of small saline Particles lying near them. I discovered, also, sometimes a small saline Figure, which seemed to be no more than half the Figure mentioned, and is here delineated under Number 11. Near these were many remarkable small Figures, shining and pellucid, whose Apices, or Points, were not so acute as those of the large Figures; they are represented under 12. I, also, saw some few saline Figures larger than the last-mentioned, which in their Middle contained another Figure, No. 13. Beyond these, in the same Place, appeared some small pellucid saline Figures, whose Extremities were plane, (not pointed) No. 14. There were, moreover, some very few small Figures, representing the dry Sprags, or small Branches of Trees, as was before observed in the same Wine but one Year old; which ramous Figures consisted of many minute saline Figures united, as in the other. These Experiments shewed me the Reason, not only why *Rhenish* Wine included in a large Vessel, filled full, and well stopped, will keep many Years without losing its Strength, but why, also, in Process of Time, it loses its *Rhenish* or acidish Taste, and acquires a milder and sweeter one; which is, because the saline Particles in this Wine come together, and are coagulated; and partly subside to the Bottom, partly adhere to the Sides of the Vessel; and these coagulated Parts we call the Tartar of Wine. Hence it follows, that the older the *Rhenish* Wine is, the fewer saline Particles it contains. In *French* Wines the contrary happens, because the saline Particles, as far as I have observed, in a full and well-closed Vessel, are less concentrated, especially in the Wines imported from *Bordeaux*, for which Reason they never become milder or sweeter; but in those Wines, which are imported from *Nantes*, the Salts are more congregated, tho' their Sweetness, however, goes off at the same time.

In *Rhenish* Wine sold for *Rhingen*, (tho' I understood afterwards, that it was only *Palatine*) of the Growth of the Year 1683. and of a very grateful Taste, I observed at first very few saline Figures; but after I had set it aside in an open Vessel for four-and-twenty Hours, I discovered Multitudes of saline Figures acuminate about both Ends, as in No. 15. many of which had an oblique and transverse Eminence, others were very pellucid. There was, also, so vast and inconceivable a Number of saline Figures of the same Position, that they could by no means be observed by Help of that Microscope, through which all these Figures appeared of the same Size as you see them delineated. I, also, met with great Quantities of saline Figures, which appeared at first Sight, like handsome and well fabricated Wine-hogheads; but, upon a more accurate Inspection, I discovered that two of their Sides were incurvated, as under No. 16. From these Observations I learned, that the saline Figures, which I had discovered in the preceding Wines, and which I said were like Wine-hogheads, were of one and the same Position with these Figures, and that I had not view'd them on the convolved Side, nor made so exquisite an Observation of them, as I did of these. Besides these saline Figures, which I observed to be flat at one or both Ends, all the rest resembled the Figures, No. 16, 17. With these I saw small saline Figures, represented No. 15. with both their sharp or acute Ends rolled up, as in No. 17. I observed other saline Figures, which had only one Side incurvated, as No. 18. Sometimes I took Notice of a small saline Figure, resembling a Pyramid on a quadrilateral Base, or a Diamond cut in that Form, No. 19. but there were so few of these Figures, that sometimes I could perceive no more than one or two in a Drop of Wine. With these I could sometimes perceive an oblong saline Figure, furnished in the Middle with another Figure, of the Form just mentioned, as you see represented, also, No. 19. I met with the same Figures in other Wines, but did not judge them worth recording. Besides these, I often met with saline Figures, whose Angles, or Apices, about the Contortion, or Incurvation, were not closed, and which had a conspicuous Aperture

Aperture reaching lengthwise, N^o 20. tho' many others, which were clofer, seem'd only to have a Mark, distinguish'd by its Eminence, or Elevation. Sometimes I could, also, discern some little, long, and narrow Figures, as represented N^o 21. About these last I began to exercise my Speculations, whether they were only the Rudiments, or Materials, of some larger Figure to be formed, the Cause of whose Imperfection consisted only in the want of sufficient Matter to complete those saline Particles; for I saw but a few of them swimming in the Wine, but the greatest Part lay at the Bottom, when the Wine was in part evaporated: Besides all the saline Particles before-mentioned, I discovered, in all the Kinds of Wine, an infinite Number of minute and delicate Particles, to which I could ascribe no other Figure than that of Globules; and their Numbers were so great, as to make one believe, that the whole Substance of the Wine, except the saline Atoms, consisted of Globules; and I am persuaded, that they contribute, chiefly, to the Sweetness of the Wine.

I drew a small Quantity of that *Rhenish-wine* which our People call *Rijn-hawwer Cavelwijn*, from a full Hoghead, which had fermented almost during the whole Summer, and had been drawn off the Lees for some Weeks, retaining a good laudable Taste: I placed this Wine in an open Vessel, in four different Places of my Summer-room, and in little less than an Hour discovered in it Multitudes of saline Figures; but, after almost sixteen Hours, I discerned many Figures of a great Thickness, having a Cavity like a Cockboat, such as I had before related that I had seen in Vinegar, [see ACETUM] and are here represented N^o 22. I could observe, also, different Sorts of saline Figures, which, about their Centre, represented other small, darkish, and oblong Figures, some of which had two, others three, and others four Circumferences, N^o 23. Others, again, were marked with a Line, or Seam, thro' the Centre, N^o 24. I saw, besides, several saline Figures, with only one Apex, the other End being obtuse; the Cause of which seemed to be, that their constituent Particles were not yet complete, as we said before, and, consequently, neither the Figures themselves of this Sort, which were only pellucid, and are here represented N^o 25. I perceived, also, a few saline Figures, resembling those under N^o 26. And when I inspected the thinner Parts of the Wine, which had almost evaporated, I discovered innumerable Multitudes of saline Particles, most of which had two acute Angles, but were so extremely minute, that I cannot but think ten Millions of them, in Conjunction, to be less than a Grain of Sand. I, also, perceived other Figures swimming about, in the Shape of a well-fabricated Wine-hoghead, as I mentioned before; but tho' I examined these last saline Particles with all the Accuracy I was capable of, I could never distinguish them by Parts, or Lines; they were, also, thinner than all the rest, and pellucid: I saw, afterwards, many oblong, quadrilateral, saline Particles, which were, also, thin, in the highest Degree, and pellucid, as well as extremely minute; and are here represented N^o 29. but a little too big; the Reason of which was, that, with the same Microscope, which distinctly exhibited to View the Figures under N^o 22, 23, 24, 25, 26, and 28. I could not discover those which you see under N^o 27, 29. and this is the Cause that the Proportion could not be observed. I perceived, also, about the thinner Parts of the Wine, various ramous saline Figures, which were again composed of other saline Figures, so extremely minute, that I distinguish'd the Shapes of but very few of them; others, of the like ramous Kind, consisted of such irregular Figures, that I could distinguish them by no Position.

I made the same Experiments, as before, upon another Sort of Wine, which our People call *Cerence-wijn*; and I observed most of its saline Figures to agree with those represented under N^o 30. some of them appearing, as it were, convolved, others very thin and pellucid; others, again, when the Wine had been suffered to rest for some time, were become so thick, as to shew a darkish or brownish Periphery round about, as in Fig. N^o 31. others there were which made but half N^o 30, 31. and are represented N^o 32. I began, also, to examine that Kind of French-wine which we call *Coteau*, and discovered in it Multitudes of saline Figures, like those N^o 30, 31, 32. besides others whose Sides were convolved, as N^o 33. and others like Planes, whose longest Sides were right Lines, and both their Extremities round, N^o 34. some, also, had one acute Angle, as N^o 35. I discerned, also, many saline Figures, resembling, in a very lively manner, a flat-bottom'd Boat turn'd over, N^o 36. in others, of the same Structure, there appear'd, as it were, a Cavern; near the forement'ed I could discern various minute longish Figures, as N^o 37. which I supposed, had there been more Matter, would have assumed the Figure N^o 34. Besides these, I saw some saline Figures in the Form of N^o 38.

I made a full Examination and Inspection, also, into that Sort of French-wine which our People call *Tousscan-wijn*, which was rich, and, at the same time, very sweet, tho' many

among us believe the Sweetness of this Wine, which it acquires after four Years, not to be natural, but artificial, and procured by means of Sulphur, or the Wine called *Hogeland*, or Honey, or Syrup of Sugarcandy. I observed in this Wine all the saline Figures which I had discovered in the Wine called *Coteau*, but in this of *Tousscan* there were not so many saline Particles as in the other; and there was, besides, some Difference, in that I could discern in this Wine of *Tousscan*, at several Times, saline Figures cut, as it were, into Steps, or Degrees, as you see represented N^o 39.

I took, for further Examination, some *Tousscan* Wine, accounted the purest, and observed in it all the saline Figures which I said I had discovered in the *Coteau* and the *Tousscan*; but I judged the Number of the Figures contained in this last, called the *acidish Tousscan*, to be twenty-five times as great as those in the sweet *Tousscan*, but lesser: Besides, I could see in this last, or *acidish Tousscan*, the saline Figures floating, after a few Hours; but in the sweet *Tousscan* the saline Particles were slow in Appearance.

In the Wine called *Citerne* I saw all the saline Figures which I had observed in the *Tousscan* and the *Coteau*, and those very numerous.

I made Inspections, also, into *Hogeland* Wine, of the richest Sort, and found but very few Figures floating in it, tho' I had set it aside for three Days and Nights; but these Figures were much larger than those in the *Coteau* and the sweet *Tousscan*; and resembled those under N^o 30, 31, 33, 36.

I made an Infusion of Tartar of Rhenish-wine, pulverized in pure Water; and, when the Water was become limpid, I observed in it many of the saline Figures, which I said I had discovered in Wine-vinegar; among them some very clear Figures armed with two acute Angles, as in N^o 40. but most of them were irregular; the Reason of which, in my Opinion, was, the want of a Mixture of sweet or oily Matter, and because the saline Parts, especially where was little or no Water, separated and fell off on all Sides.

After this, I took under Examination some Tartar, as it was said to be, of French-wine, in the same manner as was described before; and discovered in it, also, some saline Figures, which agreed with those of the Wine; but the other Figures were even more irregular than those observed in the Rhenish-wine.

I took some of the purest Wine of *Orleans*, and with every Drop, as near as I could conjecture, mixed a Bit of Crabs-eye, of the Thickness of the Back of a Knife, because the Powder of the same hinders a clear View, when put in the Wine: After three Hours I examined it, and could see nothing at all, as I may say, in the Wine, which had any Resemblance to such saline Figures as I had seen in the Wine which had no Crabs-eyes mixed with it: I perceived, also, innumerable saline Particles with an oblong quadrangular Base, and the Sides ascending pyramidically, and ending in a kind of Ridge, or Back; in others I could only see a plain Figure. See both represented N^o 41. Some were Hexahedra, or Figures with six Sides, N^o 42. There were, also, various saline Figures, which had two oblique Sides, N^o 43. and a few quadrilateral Figures, containing within them a smaller quadrilateral one, as represented N^o 44. but others of these Figures had very short, and, in some measure, irregular Sides: I, also, happened on some saline Particles of the Figure N^o 45. in these last Particles I could perceive no Gibbosity, or Eminence; which was owing, I suppose, to their extreme Shortness; and when I took a View of a Bit of the Crabs-eyes, I observed in, perhaps, fifty Places, a Multitude of slender Tubes, proceeding, or torned, as it were, out of an Angle, or Apex, shining like Crystal, and one longer than another, tho' all nearly of the same Thickness, N^o 46.

In the same Quantity of Wine I infused white Chalk, and disposed it at four Places together in my Summer-room: When I had stayed about a Quarter of an Hour, I inspected the Wine, and observed in it a vast Multitude of the above-mentioned saline Figures, but much inferior in Bigness to those in the Wine with the Crabs-eyes: But when I had left the Wine with the Chalk for twelve or fourteen Hours, I found all the aforesaid saline Figures not only larger, but I perceived in various Places a great Multitude of little Tubes, emerging, as it were, from a Point of the Chalk, and like those represented N^o 46. but larger, and one thicker than another: And as the Wine which had contained the Crabs-eyes was covered with a Sort of Cuticle, the Cause of which I supposed to be a Kind of Coagulation of the Sweetness of the Wine, the contrary happened in the Wine with the Chalk, which was fine, and so continued.

Some time after I infused in the Wine before-mentioned, commonly called *Rijn-kawer*, *Kavel-wijn*, some Bits of Crabs-eyes, and after twelve or fifteen Minutes I found in it some few saline Figures: But when I had let this Wine stand for some Hours, I observed in it not only a vast Number of all the saline Figures

Figures represented under N^o 41, 42, 43, 44, 45, 46. but perceived, also, that the Figures which offered themselves to my first Inspection were increased in Magnitude, tho' I could discern none of those Figures which are found in the Wine in which no Crabs-eyes are infused.

Now since it so plainly appears, from every one of these Experiments, that none of the before-mentioned Rhenish or French Wines produces any saline Figures which have any Affinity or Similitude to the Salt of the Gout commonly called *Calc*; we may, with more Safety, and greater Certainty, affirm, that the Salt of Wine is not instrumental in generating the Gout: And the same is affirmed by daily Experience. For we may everywhere observe Persons, who are great Drinkers of French and Rhenish Wines, and yet are never infested with the Gout. On the other Hand, we see many who never tasted either French or Rhenish Wine, all their Lives, miserably afflicted with arthritic Pains and Disorders. From this Coagulation, or Transmutation of saline Figures in Wine, we, also, confirm those Arguments by which we would prove, that, in a well-constituted Body, none of the saline Particles of Wine penetrate into the Mass of Blood, especially since we hold, and are well assured, that our Stomach and Intestines were made for no other Ends than, in the first Place, for Contrition of the Aliments: Secondly, For Coagulation of the grosser Parts: And, thirdly, For the Distribution of the most subtil Part of the Aliments, after they have undergone the Operations of Contrition and Coagulation, into all Parts, for the common Nourishment of the Body.

And tho' I am sensible that Men of Judgment and Learning are more inclined to embrace and approve a single, good, and useful Experiment, than fond of applauding a whole Volume of well-written Speculations, or Ratiocinations, because these last are the work of the Brain alone; yet I have presumed frequently to interpose my own Thoughts and Reasonings on the Subject, from a Persuasion, if I might have Liberty to judge, that I could draw more Light from my own Observations, than it was possible for those, who had never seen or heard of such Experiments or Matters. *Leeuwenhoeck. Oper.*

VINUM AMARUM PRO OENOPOLIS.

Bitter Wine for Vintners.

Take Tops of Centory, twelve Handfuls; Gentian-root sliced, one Pound; Juniper-berries, one Pound and an half; Sevil Orange outer Peels, and their Juice, Number twelve; Lemon-peels, and Juice, Number six: Steep in a Bag, for fourteen or twenty Days, in white Port Wine, twenty Gallons; Canary, four Gallons.

Our common Taverns do not make a Bitter by much so good as this; and nothing can be more grateful, wholesome, or easier made. But this is to be said, in general, against that Whetting, as it is usually called, in a Morning, which some accustom themselves to; for tho' one Glass, when the Stomach has, by Debauch, or any other Accident from Distemper, been pall'd, or weaken'd, is of Service, by warming its Fibres, and giving them a due Tensity, in which, principally, consists a good Appetite, and Digestion; yet, when the Stomach is, perhaps, already too warm, from a high Diet, and frequent Tippling, this Practice helps to destroy the true Sense and Springiness of the Stomach, and, in Process of Time, will disable it from doing its proper Offices. After a great Debauch, indeed, there is somewhat to be said in Favour of the *English Proverb*, *A Hair of the same Dog*; because the undigested Remains at the Stomach, and the Quantity of slimy Juice which drains into it, during Sleep in the Night, cannot better be got off, than by raising it with a small Glass or two next Morning; but that ought not to be carried any farther.

VINUM ARTHRITICUM.

Wine against the Gout.

Take Sarsaparilla, and Guaiacum, of each an Ounce; Mistletoe of the Oak, six Drams; Germander, Ground Pine, and dried Sage, of each three Ounces; Cowslip-flowers, Flowers of Rosemary, and of Lilies of the Valley, of each half an Ounce; St. John's-wort, six Drams; White-wine, five Quarts.

These are ordered to stand in Maceration three or four Days, and then the Wine to be strained for Use, and two Ounces drank twice a Day, for forty Days together. Its Title denotes its principal Intention to be against the Gout; besides which, it is, also, recommended for all nervous Weaknesses, and Decays from cold pituitous Humours, and the Rheums of Age, and said to warm and invigorate the whole nervous System.

VINUM ARTHRITICUM ALTERUM.

Another Wine against the Gout.

Take Guaiacum, two Ounces; yellow Sanders, one Ounce; Cinnamon, *Spanish Angelica-root*, *Calamus Aromaticus*, of each two Drams; the outer Peels of Oranges dried, one Ounce; Flowers of Rosemary, Lavender, and Tops of Marjoram, of each half an Ounce; Germander, Sage, and Ground-pine, picked from all the Stalks, and dried, of each two Ounces; the lesser Cardamoms, two Drams: Bruise all into a gross Powder, and infuse in three Gallons of Mountain-wine, for two or three Weeks; and then strain, and bottle close, for Use.

This is an admirable warm Restorative in all nervous Decays, and cannot miss of Success, if continued for some time: For about two Ounces, or a common Wine-glass, taken two or three times a Day, will raise the most languishing Constitution, and preserve it against all Disorders of the Head and Joints, arising from nervous Decays. In most hydropic Habits, also, Medicines of this Kind are of great Service, as they not only help to absorb and evacuate all superfluous Humidities, but, also, to fortify the Solids, so as to prevent, by a brisk Circulation and Digestion, their future Increase.

VINUM ARTHRITICUM PURGANS.

A purging Wine, against the Gout.

Take China, and Sarsaparilla, of each two Ounces; Poly-pody, three Ounces; Rhubarb, and Sena, of each one Ounce; Hog-lice, six Drams: Cloves, one Dram; White-wine, three Quarts: Infuse, and strain, *f. a.*

This is not a very judicious Prescription: For the China and Sarsaparilla are of no Use in it, whatsoever their Virtues may be elsewhere, which are much suspected; because the cathartic Ingredients carry them downwards without having any Effect, the Bowels not being a proper Scene of Action for Alteratives, and Things of that Tribe.

VINUM ARTHRITICUM PURGANS ALTERUM.

Another purging Wine against the Gout.

Take Turpeth, Hermodactyls, of each two Ounces; Jalap, and black Hellebore, of each one Ounce; Cinnamon, two Drams; Ginger, half an Ounce; Lavender-flowers, one Ounce: Infuse in two Quarts of strong White-wine, in a Vessel well stopp'd for fourteen Days; then strain for Use.

This is a most pleasant and excellent Purge for all Distempers that have their Seat in the remote Parts, and nervous Cells. It is best to be taken over Night, in such small Doses as will not work off before Morning; because all of this Intention ought to pass into the Blood, and exert themselves much beyond the first Passages, else they can do little good: By sleeping, therefore, upon them, they better soak thro' the Lacteals, and, as it were, transpire into the most minute Recesses, where they are most fitted for Operation. The Patient may begin with three or four Spoonfuls, and increase the Quantity at Discretion; but it ought to be often repeated: For the Matter to be worked upon hereby is too remote, and closely lodged, to give way to a little Force: And a frequent Repetition hereof cannot but greatly cut off, as well as take away the Supply of those Humours which lodge upon the Joints, and do so much Mischief. So that, with Care, that dreadful Affliction, the Gout, may herewith be, in a great measure, kept off. And, in these Cases, Medicines of this Intention operate with much more Efficacy and Certainty upon the destined Humours, than when they are given in dry Forms; because the Subtlety of the Menstruum, by which their Virtues are extracted, conduces prodigiously to convey them to the proper Scene of Action, which they could never so well arrive at by any other Management.

VINUM BENEDICTUM.

The Blessed Wine.

Take of *Crocus Metallorum*, one Ounce; Mace, one Dram; Canary, one Pint and an half: Let them stand several Days in Infusion, and pour off the Wine, as it is used.

This has been a celebrated Emetic, but is now almost out of Use, for its Roughness. Its Dose is from two Drams to one Ounce. If its Use is at all justifiable, it is in apoplectic Cases, where some Violence is wanting, and the Shock upon the Nerves cannot

cannot be too great; and for such Purposes it is yet somewhat retained in the present Practice.

VINUM CHALYBEATUM.

Steel Wine.

Take Filings of Steel, one Ounce; Saffron, in Powder, two Drams; Mountain-wine, one Pint: Let them stand in Infusion three Days; frequently shaking them, and then filtre and keep for Use.

This is an admirably good Medicine in the Green Sickness, where Chalybeates are proper; it, also, wonderfully conduces, with Bitters, to remove all ill Habits that proceed from obstructed Viscera; and nothing is preferable to it in the Jaundice. It may be taken from two to four Ounces, once or twice a Day, when the Stomach is most empty: And the more Exercise is used with it, the more Good will it do.

Another STEEL WINE.

Take of the Filings of Iron, eight Ounces; Roots of Eryngo, Elecampane, of each one Ounce and an half; yellow Sanders, one Ounce; Rasplings of Ivory, red Coral, in Powder, of each six Drams; Cloves, Mace, Cinnamon, Ginger, of each three Drams; Ceterach, Flowers of Rosemary, of Broom, Epithymum, of each two Pugils; White-wine, three Quarts: Digest all together six or eight Days, and then filtre for Use.

It is good in all Uterine Obstructions; as, also, in Cachexies, and Foulnesses of the Liver and Spleen; but as, at the best, it is no elegant Composition; we shall therefore, in its room, substitute the following *Steel Wine*, which is, also, easier made.

Take Filings of Steel, four Ounces; Rue, Pennyroyal, of each two Handfuls; Peony, and Cassiumunair Roots, of each one Ounce; Saffron, two Drams: Infuse in two Quarts of Sherry, for fourteen Days, and then filter for Use.

This makes not an irksome Remedy, farther than what the rusty Taste of the Steel will give it; and it wonderfully promotes the menstrual Discharges; and of all that obstructs and raises Disorders in the Womb: For which Reason many Kinds of Fits and Convulsions are removed by it; and after a continued Use of it some time, it so cleanses the Organs of Generation, and fortifies the Tone of the Blood, that it wonderfully disposes to Conception; but then it is by all means to be left off, lest it destroys what it has been so instrumental in procuring. The Quantity of two or three Ounces, twice every Day, is sufficient, if continued some Weeks.

VINUM CHALYBEATUM RESTAURATIVUM.

Restorative Steel Wine.

Take clean Filings of Needles, two Ounces; the Juice of eight four Oranges: Let them stand twenty-four Hours, then add White-wine, two Quarts; Cinnamon, half an Ounce; Cloves, two Drams; Mace, four Scruples: After some Days Digestion cold, strain, and filtre for Use.

This is a very serviceable Composition for many Purposes, and will infallibly cure a Green Sickness, or any Tendency of the Constitution that Way; which is manifest from a pale Complexion, Debility, or Listlessness to Action, and short Breath. In hypochondriacal Melancholy, and all Affections of the Spleen, it will do much good; and, after Fevers, or any Distemper that spoils the Juices, this will greatly again restore them to their due Warmth and Vigour; and is much better than any of the mineral Steel Waters, how much soever they stand recommended in all such Cases: For the Spices, in this, warm and strengthen the Fibres of the Stomach, which otherwise would not so well receive and bear the Twitches and Corrugations of the Iron, without Ejection by Vomiting. It may be given from two to three Ounces, every Morning and Afternoon, when the Stomach is most empty.

VINUM CHALYBEATUM RESTAURATIVUM ALTERUM.

Another Restorative Steel Wine.

Take Filings of Iron, two Ounces; squeeze upon them the Juice of three or four Seville Oranges, and one Lemon: After twenty-four Hours standing together, and being sometimes stirred, pour upon the Mixture, in a Glass Bottle, two Quarts of White Port Wine, and one Pint of Canary; in which infuse the Ingredients of the Viper-wine, in proper Proportion, or so much of the Viper-

wine itself, without the Sweets. After fourteen Days strain for Use.

This is a noble Medicine to recruit with, after the Constitution has been almost torn to-pieces with the Fury of a Fever, or any acute Diseases; and particularly for Women who have much suffered in Child-bed, and are reduced almost to a Consumption: For this will not only promote the necessary Cleanings, but, also, raise the Blood with new Warmth and Nourishment. This indeed is an expensive Medicine; but, then, it may be considered, that its wonderful Efficacy makes some Amends; for two Ounces, twice in a Day, will certainly, in a little time, be attended with Amendment, in the most languishing Circumstances.

VINUM ENULATUM.

Elecampane Wine.

Take green Elecampane-root, white Sugar, and Currants cut small, of each four Ounces: Infuse them fourteen Days cold, in two Quarts of White Port.

This is an easy Liquor both to make and take, and will do Service in such who have weak Lungs, which are often subject to be stuffed with Phlegm, which it deterges, and prevents Ulcerations, and such Injuries as would bring on a Consumption. All asthmatic Persons, therefore, would do well to use this in Plenty, especially in the Winter-time, when the external Cold lessening the Quantity of perspirable Matter, by the Pores of the Skin, causes a much greater Pressure of the Fluids upon the Viscera, of which the Lungs have their Share, and, therefore, stand in need of such gentle Fortifiers and Cleaners as this makes. The Elecampane has, also, that deterfive Power by which it keeps open other Viscera; whence they better perform their Offices, and leave less Force to protrude upon the Lungs. It is therefore of Use in all Cachexies, and Tendencies towards a Dropsy. Some, also, will have there to be a Property in this of destroying Worms. Drink a Glass of it twice a Day.

VINUM HIPPOCRATICUM. See CLARETUM.

VINUM HYDROPICUM.

Wine against the Dropsy.

Take blue Flower-de-Luce Root, one Ounce; Elecampane, and Squills prepared, of each half an Ounce; Horehound, one Handful; Bark of Elder-roots, and Dwarf-elder, of each one Ounce; Sena, one Ounce and an half; Agaric, two Drams; Ginger, one Dram; White-wine, two Quarts: Infuse all for fourteen Days, and then strain for Use.

Or thus:

Take Ashes of Broom, and Juniper, of each one Ounce; Rhenish Wine, three Pints: Mix, and make a Lixivium; to which add, blue Flower-de-Luce Roots, one Ounce and an half; the inner Bark of Elder-root, and Dwarf-elder, of each one Ounce; Bark of Bitter-sweet, half an Ounce; Rhubarb, two Drams; Mechoacan, half an Ounce; Sena, one Ounce; Caraway-seeds, six Drams; Bark of Sassafras, and Winter Cinnamon, of each four Scruples: Infuse warm for twelve Hours; then strain, and add white Sugar, four Ounces; Damask Rose-leaves, two Handfuls: After due Infusion, strain again for Use.

If the Sena be left out, it is a better Diuretic; for the less it goes off by Stool, the more will it get into the Blood, and discharge its ferous Parts by Urine. It is therefore designed for hydropic Constitutions, and will do Service where there is a Tendency that Way, if begun with in time, and closely followed. The Dose is three Ounces every Morning fasting.

VINUM ICTERICUM.

Wine against the Jaundice.

Take Turmeric, in gross Powder, two Ounces; Saffron, two Scruples; Cochineal, four Scruples; Millepedes, No 320; Canary, one Quart: Infuse all for six or seven Days; then strain for Use.

It is very good for what its Title expresses, and may be drank two Ounces, three or four times in a Day; but the following we recommend as the most efficacious.

VINUM MILLEPEDUM.

Hog-lice Wine.

Take Hog-lice, half a Pound: Put them alive into one Quart of White Port Wine; and after some Days Infusion,

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tion, strain and press out very hard: Then put Saffron, two Drams; Salt of Steel, one Dram; and Salt of Amber, two Scruples; and after three or four Days strain, and filtre for Use.

This is an admirable Medicine against the Jaundice, Dropsy, or any cachectic Habit: It greatly deterges all the Viscera, and throws off a great deal of superfluous Humours by Urine. It may be given twice a Day, two Ounces at a time.

Another VINUM MILLEPEDUM.

Take four Ounces, or a Quarter of a Pint of Millepedes alive: Infuse them in one Quart of White-wine, with one Dram of *English* Saffron; shake them often, and let them stand two or three Weeks, then filtre the Wine for Use.

It is an admirable Cleanser of all the Viscera; and gives Place to nothing in a Jaundice; or any Obstructions of the Kidneys, or Urinary Passages: Which makes it a great Pity, that it is not more in Use; for there is hardly any chronic Distemper wherein it will not do Service; and even in scrophulous and strumous Swellings, a Course of it will greatly waste them, if not quite carry them away: And in Defluxions of Rheum upon the Eyes, it will do Wonders, by turning downwards those hot Salts, by their natural Outlets, the Kidneys, which had forced their Way through the Glands about the Eyes. It may be given from half an Ounce to two Ounces in a Dose.

VINUM MIRABILE.

The Wonderful Wine.

Take Cloves, Mace, Nutmegs, Cubebs, Cardamoms, Galangals, Cochineal, Saffron, of each one Dram: Infuse in one Quart of *Canary*, and Spirit of Cinnamon, four Ounces, for fourteen Days; then strain for Use.

This makes a better Cordial than the *Aqua Mirabilis* of the College, without Distillation; which will yet be much higher, if Ambergrise, or Musk be added. A Dram of it now-and-then, in moist cold Constitutions, is of good Service; for it warms, and prevents the Blood from running into those Rheums, and pituitous Juices, which stuff up the principal Parts of the Machine, and obstruct them in their Offices; occasioning Lethargies, Apoplexies, Palsies, Rheumatisms, and all that Train which are the frequent Attendants upon a declining Age, when the Vigour of Youth begins to wear off. But in cholerick and sanguine Constitutions, such Cardiacs as these are highly to be condemned, because they inflame the Blood, and do much Mischief that way; the contrary Regimen, such as Acids and Diluters, being there more necessary.

VINUM PECTORALE.

Pectoral Wine.

Take Juice of Liquorice, one Ounce; Saffron, one Scruple; Seeds of Coriander, Caraway, Anise, of each two Drams; Salt of Tartar, half an Ounce; Pennyroyal, and Hyssop-waters, of each four Ounces; *Canary*, one Quart: Let them all digest cold for some Days: Then strain for Use.

This assists in Expectoration, and helps to deterge and cleanse the Glands of the Bronchia, and neighbouring Parts: This may be drank two or three times a Day, or almost at Pleasure: Warm is the best.

VINUM SCELOTYREICUM.

Wine against the Scurvy.

Take Sorrel, Brook-lime, and Water-creffes, Garden Scurvy-grass, of each three Handfuls; Roots of Elecampane, blue Flower-de-Luce, Horse-radish, of each one Ounce and an half; Seeds of Scurvy-grass, one Ounce; White-wine, two Quarts: Let all digest two Days together, and then press out hard for Settling and Use.

A Wine Glass of it may be drank twice a Day, for some Weeks together, and will do good in any scorbutic Disposition: These kind of Medicines, used in the Spring, may be a Means to prevent many from falling into Fevers in the Summer-time, because they rince the principal Emunctories, and wash off such beginning Obstructions, as lay a Foundation for Fevers.

VINUM SCILLITICUM. See SCILLA.

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VINUM SCORBUTICUM.

Wine against the Scurvy.

Take Garden Scurvy-grass (gathered dry and unbruised) one Handful; Horse-radish Root scraped, half an Ounce; Winters-bark, grossly powder'd, two Drams; Arum-water, and White-wine, of each one Pint: Infuse them cold for three Days.

The Whole makes a warm biting Medicine, and a good Antiscorbutic: It helps to dissolve sily and viscid Humours, which entangle the Salts, and stick with them in the secretory Orifices, whereby they are eroded; especially the small ones upon the Skin. It quickens the Motions of the Fluids, and promotes the thinner Secretion; whence, in Dropsies, and all Cachexies from sluggish watry Humours, it will be of good Service. It may be drank at Discretion.

VINUM STOMACHICUM.

Stomach Wine.

Take Roots of *Virginia* Snake-weed, and Gentian, of each three Drams; Galangal, Cloves, Cubebs, Mace, Nutmegs, Saffron, of each one Dram; Cochineal, half a Dram; *Canary*, three Pints: Infuse for some Days, and then strain for Use.

This is a warm Composition, and may be of Service to cold Stomachs, and such as are troubled with Wind and Flatulencies: But it is too hot for many, and will be subject to breed Choler, and adust Humours; wherefore we prefer the following Stomach Wine.

Take of Gentian-root, half an Ounce, Galangal, Calamus Aromaticus, *Spanish* Angelica-root, of each two Drams; Centory-tops, one Ounce; the outer Peel of three *Seville* Oranges, with their Juice; Saffron, one Dram: Infuse in two Quarts of Sherry for fourteen Days, shaking the Vessel often; then strain and filtre for Use.

This is a most grateful Stomachic, and greatly mends a bad Appetite: It is a wonderful Help to cold Constitutions, and such as are inclining to Dropsies and Cachexies from Corpulency. The acid Juice of the Oranges mightily takes off both the Heat and Taste of the Bitters; and the Whole is worth every one's keeping in Readiness by them, to use upon Occasion, in any sudden Disorders of the Stomach, from Intemperance, or any other Cause. It may be drank twice or three times a Day: When the Stomach is most empty it is the best.

VINUM VIPERINUM.

Viper Wine.

Take of dried Vipers, cut into Pieces, N^o six: Digest them three Days, with a gentle Heat, in one Quart of *Canary*, and then strain out the Wine for Use.

Another VINUM VIPERINUM.

Take live Female Vipers in the Spring-time, N^o six: Put them alive into three Quarts of *Canary*; and let them stand close stopp'd, without any Heat, for six Months.

It is a wonderful Restorative, and greatly invigorates the whole Constitution, so as to provoke much to Venery, as well as other Actions of Vigour; but it much more contributes to this latter Purpose, if it be warmed with some Aromatics, especially the Sweetens, as Musk and Ambergrise. It is almost an infallible Remedy in cutaneous Eruptions, and even in a confirmed Leprosy.

Another VIPER WINE.

Take Vipers, N^o twelve; fine picked Flowers of Lavender, and Rosemary, green, of each four Ounces; six Nutmegs; Satyrion-root, half a Pound, sliced small; Gum-Benjamin, and Storax, of each two Ounces; Musk, and Ambergrise, of each half a Dram: Put all together, the Vipers alive, and the rest as fresh as can be got, into six Quarts of *Canary*; and after three or four Months Maceration, and sometimes in the Warmth of the Sun, but close covered: Strain the Wine, and let it settle fine, which decant for Use.

This is, perhaps, as stimulating a Restorative as Medicine can produce; and, in the last Decays of Life, will still supply the vital Lamp with some Recruits. It is an admirable Remedy for those who have been almost wore out with Venereal Engagements;

Engagements, especially if their Pleasures have been purchased at the Expence of a few Salivations, or a frequent Use of Mercurial Medicines; and it will revive any Constitution that is not quite mouldered into Rotteness. But they much best deserve such a Restorative, who by acute Diseases, as malignant Fevers, Small Pox, or the like, have been so broke, or shattered, in their Constitutions, as hardly to be within a Possibility of Recovery: For in such, it will to Admiration, repair the decay'd Juices, and fill again the Veins with a warm, generous, nutritive Blood. In scrophulous Habits, also, which are frequently leaning towards Consumptions, it will do great Service. And where young Persons are not so early happy in their conjugal Embraces as some wish to be, and it be suspected from a Coldness, or Insufficiency upon that Account on either Side, the Use of this cannot fail to render their Intercourse prolific: But the Use of it is warily to be indulged, lest with it be kindled an Heat, which reasonable Coition cannot assuage. And let such, also, who indulge themselves too lavishly in those Enjoyments, be careful how they prompt with such Helps, lest they run off their Strength and Life too precipitately; for the best Constitutions in the World wear out, and sink under the frequent Repetition of such Profusion; as the frequent straining any elastic Body whatsoever will weaken more and more its Spring, till it is quite lost, notwithstanding all the Helps of Art to preserve it.

VIOLA.

The Characters are;

The Leaves are alternate; the Calyx is quinquefid, expanded, firm, and has its Segments reflexed backwards. The Flower is pentapetalous, and anomalous, as consisting of a dipetalous Standard, two Wings, and a Tail representing a Keel; it is furnished with five Stamina. The Ovary in the Bottom of the Calyx, becomes a conic, triangular Fruit, which bursts asunder into three Keels, unfolding themselves into a Circle, and full of Multitudes of round Seeds.

Boerhaave mentions eighteen Sorts of *Viola*; which are,

1. *Viola Martia*; purpurea; flore simplici,odoro. C. B. P. 199. Tourn. Inst. 419. Boerb. Ind. A. 243. *Viola*. Offic. *Viola Martia purpurea*. J. B. 2. 542. Raii Hist. 2. 1049. Synop. 3. 364. *Viola nigra sive purpurea*. Ger. 699. Emac. 850. *Viola simplex Martia*. Park. Parad. 282. PURPLE VIOLETS.

The ordinary purple Violet has a thick fibrous Root, sending forth long, creeping Strings, which again take Root, and increase. The Leaves grow on pretty long Foot-stalks, somewhat hairy, and in Shape of an Heart inverted, being hollowed next the Stalk, and indented about the Edges. The Flowers stand on slender Foot-stalks, of an irregular Form, consisting of five sweet-smelling purple Leaves, with an Hood, or Heel, of the same Colour. The Seed-vessels are long, of an hexagonal Figure, when ripe, bursting into three Parts, containing Rows of round brown Seed.

Violets are found frequently wild in the Hedges, flowering in March, though what are made use of in the Shops, are cultivated in Gardens. The Flowers, which are principally used, are one of the Four cordial Flowers.

They are cooling, moistening, and laxative, good in Affections of the Breast and Lungs, helping Coughs, and pleuritic Pains. The Syrup is given to Children to open and cool their Bodies. The Leaves are cooling and opening, and frequently put into Clysters, as well as into Ointments, against Inflammations. The Seed is reckoned good for the Stone and Gravel.

Official Preparations are only the *Syrupus Violarum*. Miller's Bot. Off.

The Root of this Plant is a little saltish, glutinous, and detestive; neither it, nor the Leaves, which are insipid, and pretty glutinous, give any Tincture of Red to the blue Paper; the fresh Seeds give it a little, and are saltier than the Roots. There is a glutinous Sap in the Violets, which clogs the other Principles, and hinders their Motion: For,

By the chymical Analysis, we obtain from this Plant several acid Liquors, a great deal of Oil, a pretty deal of volatile, concrete, and fixed lixivial Salt.

Thus it is no Wonder, that it should lenify by its Phlegm and Oil, and be diuretic and laxative, by the Mixture of the other Principles. The Salt of the Violet partakes of the Nature of the Sal Ammoniac, in that it is composed of an urinous Part. The Infusion of two Ounces of the Root of this Plant purges upwards and downwards. Some prescribe it to three Ounces, and add twenty Grains of Salt of Wormwood, to draw a strong Tincture from it. The Leaves are emollient and laxative; they are continually used in Clysters, Fomentations, and Cataplasms. The Flowers loosen the Belly: Poterius affirms, that a Dram of their Powder purges well enough: There are three Sorts of Syrup prepared with these Flowers;

the simple, which has a very fine Colour, provided it does not boil; the Compound, which is the Invention of Mesue; and, the Purgative, of which M. Lemery has given the Description: The Simple and the Compound are very good for the Diseases of the Breast, occasioned by acrid and saltish Humours.

The Purgative Syrup of Violets is good, also, for the same Diseases, when it is necessary to purge; for the Seeds and Em-palements of the Flowers, which are used to make this Syrup, are very purgative; the Roots, also, might be added. Ettmuller relates, that Timæus prepared an excellent laxative Conserve with Violets, by giving the Consistence of a Conserve to Manna, with the Juice of these Flowers: This Conserve keeps the Belly open, if taken from two Drams to half an Ounce.

There is an excellent Sort of Cordial made after the following Manner, which is very good for those that are usually bound:

In six Pounds of the Juice of Flowers of Violets not picked, dilute over a clear gentle Fire, one Pound and an half of Manna; strain it all thro' a Cloth; and add a Pint of very good Spirit of Wine: Take a Spoonful or two of it Morning and Evening, if it is necessary.

The following Emulsion is prepared for the Nephritic Colic, and Retention of Urine:

Grind an Ounce, or an Ounce and half of Violet-seeds in a Marble Mortar, adding, by Degrees, six Ounces of the Water of Dogs-grass: Strain the Emulsion through a Cloth, and dilute in it one Ounce of Syrup of Violets. Martijn's Tournefort.

In the sweet-scented Violet, as well as in many other Plants, there are several Parts, which have their distinct Virtues: For the Root, Umbilicus, and Seed, are of a cathartic Quality; and three Ounces of the Root cut in Slices, and put into boiling Water just removed from the Fire, or infused a Night in Wine, communicate to them a purgative Virtue. The Seed pulverized, and a Dram and half thereof mixed in any Liquor, has the same Effect. The Umbilicus is much weaker, and communicates the same Quality to the Water in which it is infused; from whence they prepare what they call *Syrup of Violets by Infusion*. They purge bilious and serous Humours, which are not very stubborn.

The Leaves abound in a coldish and watry Substance; whence they mitigate a Phlegmon, and cool the immoderate Heat affecting the Stomach or Eyes; and, eaten among Greens, loosen the Belly.

The fresh Flowers refrigerate, moisten, mollify, and render the Belly soluble; they are in the Number of the Four celebrated cordial Flowers, and a Pectoral. Their principal Uses are in mitigating the violent Heat in Fevers, and the Pain of the Head thence proceeding, in Coughs, Asperities of the Throat, and the Pleurisy. The Syrup of the Flowers is very frequently prescribed to allay Thirst in Fevers, and gently to loosen the Belly.

The Seed of Violets is an excellent Lithontriptic, and was one of the Secrets of Dr. Butler, formerly a very celebrated Physician of Cambridge.

Dioscorides and Pliny assert, that the purple Part of the Flower, taken in Water, cures the Quinsey, and the Epilepsy, especially in Children. As to the Epilepsy, says P. Renalmsus, we are taught by Experience, that it is an Imposition; but he had better, and with more Decency, have said, that the Writings of the Antients have not been transmitted to us without Corruptions. Raii Hist. Plant.

2. *Viola Martia*; multiplici flore. C. B. P. 199.
3. *Viola Martia*; alba. C. B. P. 199.
4. *Viola Martia*; flore multiplici, candido. C. B. P. 199.
5. *Viola Martia*; major; hirsuta; inodora. M. H. 2. 475.
6. *Viola Martia*; folio eleganter variegato; flore purpureo.
7. *Viola Martia*; inodora; sylvestris. C. B. P. 199. M. H. 2. 474.
8. *Viola Alpina*; folio in plures Lacinijs dissecto. C. B. P. 199.
9. *Viola Martia*; arborescens; purpurea. C. B. P. 199. *Facea tricolor, surrectis caulibus, quibusdam arborea dicta*. J. B. 3. 547.
10. *Viola*; montana; lutea; glandiflora. C. B. P. 200. M. H. 2. 476. *Facea tricoloris genus, flore luteo, magno, repens; non annuum*. J. B. 3. 548.
11. *Viola*; tricolor; hortensis; repens. C. B. P. 199. Tourn. Inst. 420. Boerb. Ind. A. 244. *Viola tricolor*. Offic. Ger. 703. Emac. 854. Raii Hist. 2. 1052. Synop. 365. *Viola*

Viola tricolor major & vulgaris. Park. Theat. 756. *Jacea.* Schrod. Pharm. 4. 84. *Jacea tricolor sive Trinitatis Flos.* J. B. 3. 546. HEARTS-EASE.

This does not creep so much as the common Violets, but grows more erect, having roundish crenated Leaves set alternately on the Stalks, with two smaller and more jagged one, set on by them, without Foot-stalks. Among these arise the Flowers on long Stalks, in Shape of the common Violet; but, having the Leaves more erect and open, but differ from them in their Colour, some having the two upper Leaves of a full Yellow, with a purple Spot on each; the two Middle of a paler Yellow, with a deep Yellow in each; and the lower Leaf of a Velvet-purple, in some Plants, having more of the Yellow, in others more of the Purple, the many Varieties rendering it very beautiful. The Seed-vessel is longer than the Purple Violet, but full of the like Seed: It is found wild sometimes in the Borders of Fields, and is frequently planted in Gardens, flowering a good Part of the Summer.

The Leaves only are used, though but seldom: Yet they are accounted mucilaginous and vulnerary, good to take off the Gripes in Children, and to prevent Fits arising from thence. *Miller's Bot. Off.*

It grows in the Northern Parts of England among the Corn, and by Walls, and Banks of Hedges, spontaneously; but the Beauty and Variety of its Flowers have occasioned its being transplanted and cultivated in Gardens. It is supposed to have the same Virtues with the common purple Violet. *Ray. Dale.*

Dr. Baynard says, that many have been cured of Madness by the Use of the *Viola Tricolor*.

12. Eadem (II.); flore albo, & luteo.
13. Eadem (II.); flore pallide cœruleo, purpureo, & luteo. *Flos Trinitatis, major, violaceus.* H. Eyft. Æst. o. 12. F. 6. F. 2.

14. Eadem (II.); flore violaceo, holoserico, purpureo, & aureo.

15. Eadem (II.); flore magno, duplo majore, coloris unius, purpureo, holoserico.

16. Eadem (II.); flore pallido. *Flos Trinitatis, pallidus, major.* H. Eyft. Æst. o. 12. F. 6. F. 3.

17. Eadem (II.); flore ex aureo & pallido.

18. Viola; bicolor; arvensis. C. B. P. 200. M. H. 2. 476. *Jacea, bicolor, frugum & hortorum vitium.* J. B. 3. 548. *Boerh. Ind. alt. Plant.*

Viola is by Diminution from the Greek, *ἰων*, (*Ion*) the *Spiritus lenis*, being converted into the Letter *V*, as in abundance of Instances. *Ray.*

The first six Species are officinal, pectoral, and cordial, and proper in Coughs, Dryness of the Tongue, and Asperities of the Fauces, as, also, in Catarrhs, Phthisis, and the Pleurisy. The Flowers have an anodyne, demulcent, and antiphlogistic Virtue; they are infused in the purest Rain-water, from whence, by often repeating the same, is prepare the incomparable what they call *Syrupus Violarum sine Coctione*, "Syrup of Violets without boiling," by adding four times the Weight of Sugar. This Syrup is very palatable, gently opening, corrects every thing acrimonious, and loosens the Belly. The Leaves have much the same Virtues as those of *Acanthus*. The Flowers, which are ranked with the Four Cardiac Sorts, as well on account of their grateful Smell, or pleasing volatile Spice, as the fine Viscosity of their Particles, which dissolve and lenify whatever is earthy and rigid, are to be gathered in the Morning while the Dew is upon them. The Leaves are emollient and laxative, and used in Fomentations, Cataplasms, and Clysters. The Seeds are seldom used, except in Obstructions of the Kidneys, and the nephritic Colic. The Root purges upwards and downwards; the Calyces, which have a nauseating Quality, are to be rejected, unless you would have a pretty laxative Medicine; for then the Calyces are to be taken with the Flowers; the Seeds are potent Hydragogues. *Hist. Plant. adscript. Boerhaav.*

VIOLA AQUATICA, aquatilis, or palustris. Names given to the HOTTONIA; which see.

VIOLA HYEMALIS, A Name for the *Hesperis; hortensis; flore; purpureo;* and for the *Hesperis; hortensis; flore candido.*

VIOLA INDICA, scandens. A Name for the *Acriviola,* and for the *Acriviola; maxima; odorata.*

VIOLA LUNARIA, or LUNARIS. Names given to several Sorts of LUNARIA; which see.

VIOLA MARIANA. Offic. Ger. 362. Emac. 447. *Viola Mariana flore purpureo.* Park. Parad. 354. *Viola Mariana Dodonæi, quibusdam Medium.* J. B. 2. 804. *Campanula hortensis folio & flore oblongo.* C. B. P. 94. Raii Hist. 1. 732. *Boerh. Ind. A. 249. Tourn. Inst. 109. COVENTRY BELLS.*

In foreign Countries this grows in Hedges, and on mountainous Places; but, with us, is only cultivated in Gardens. The Root, which is seldom used in Medicine, is, as a Food, esteemed refrigerating, drying, and astringent. *Dale.*

VIOLA MATRONALIS. A Name for several Sorts of *Hesperis;* which see.

VIPERA. The Viper, or, as it is commonly called by the Vulgar, the Adder.

With respect to the Virtues of this Animal, one of the first, whom we find in Antiquity to have made use of the Flesh of this Creature to medicinal Purposes was, I think, *Antonius Musa*, the famous Physician to *Octavius Cæsar*; of whom *Pliny* tells us, that when he met with incurable Ulcers, he ordered the eating of Vipers; and, by this means, they were quickly healed.

It is not improbable, that he might have learned this from the great Greek Physician *Craterus*, mentioned often by *Cicero*, in his Epistles to *Atticus*; who, as *Porphyrius* relates, very happily cured a very miserable Slave, whose Skin in a strange manner fell off from his Bones, by advising him to feed upon Vipers, dressed after the manner of Fish.

Be this as it will, in *Galen's* time, the profitable Qualities of the Viper were very commonly known, himself relating very remarkable Stories of the Cures of the *Elephantiasis*, or *Lepa*, done by the Viper-wine.

Aræteus, who most probably lived about the same Time with *Galen*, and, of all the Antients, has most accurately described the *Elephantiasis*, commends, as *Craterus* did, the eating of Vipers, instead of Fish, in the same Diseases. And to this Purpose I remember, that as *Lopez*, in his Relations of the Kingdom of Congo, in Africa, takes notice how greedily the Negroes eat Adders, roasting them, and esteeming them as the most delicious Food; so *Dampier*, also, informs us, that the Natives of *Tonquin*, in the *East-Indies*, treat their Friends with Arrack, in which Snakes and Scorpions have been infused, accounting this, not only a great Cordial, but, also, an Antidote against the Leprosy, and all other Sorts of Poison.

The Physicians in Italy and France, very commonly prescribe the Broth and Jelly of Vipers Flesh, for much the same Uses, that is, to invigorate and purify the Mass of Blood exhausted with Diseases, or tainted with some vicious and obstinate Ferment.

From all this it appears, that the main Efficacy of the viperine Flesh is, to quicken the Circulation of the Blood, promote its due Mixture, and by this means cleanse and scour the Glands of those stagnating Juices, which, turning to Acidity, are the Origin of many, at least, of those troublesome Distempers in the Surface of the Body, which go under the Names of *scrophulous*, and *leprous*.

These good Effects are owing to that penetrating, strong Salt, with which the Substance of these Creatures does, in a very great Proportion, abound; and the Reason of this is from the Food they live on, which we have observed before to be Lizards, and Moles, whose Nature every one knows to be such as must necessarily, when they are dissolved in the Stomach, supply the Blood with a great Quantity of active and volatile Parts. And herein lies the Difference between the Flesh of Vipers, and that of other innocent Serpents, which, feeding upon Grass and Herbs, do not recommend themselves to us by any of those Properties, which are in so eminent a Degree found in the former.

Whoever reflects on what has been said on this Head, will very readily acknowledge, that our Physicians deal too cautiously or sparingly with a Remedy, which may be applied to very good Purposes, when they prescribe a few Grains of the Powder of dried Vipers, or make up a small Quantity of their Flesh into Troches; whereas, if Service be really to be done this way, the Patient ought to eat frequently of Viper-jelly, or Broth; or rather, as the ancient Manner was, to boil Vipers, and eat them like Fish; if this Food will not go down, (tho' really very good and delicious Fare) to make use at least of Wine, in which Vipers have for a long time been infused, by which I know a very obstinate *Lepa* has been removed; or, lastly, in some Cases, especially where Wine is not convenient, to take good Quantities of their volatile Salt, in which alone the Virtue of the before-named Medicines principally reside.

As for the Teeth, they are of two Sorts, the great, or poisonous Fangs, and the small.

The great, being fixed in the first Bone of the upper Jaw, are crooked and bent, like the *Dentes canini*, in most carnivorous Animals. They are manifestly hollow from their Root a considerable Way, not to the very Apex, or Point, (which is solid and sharp, the better to pierce the Skin) but to a small Distance from it, as is plainly seen by splitting the Tooth thro' the Middle. This Cavity ends at the convex Part in a visible Slit, very well resembling the Nip or Cut of a Pen, which is the Emisary or Outlet to the Poison.

Galen has given us a considerable Hint of this Make of the Tooth: For, the Mountebanks, (he says) used to suffer themselves to be bit with Vipers, having, first, with some Pastes, stoppt the Holes of their Teeth, that the Venem being thus kept

kept in, the Spectators might think they did by their Antidote, secure themselves from its dangerous Effects.

The Reason why these Teeth are crooked is, that the Point of the Tooth, when the Viper bites, may be perpendicular to the Part to be wounded; for the Head being raised back, in the Time of Biting, and the Tooth erected, if this were strait, it would not, by reason of its oblique Situation to the Part, enter with so much Force, nor so deep into the Flesh.

As for the Number of the poisonous Fangs, I have observed, that there are, for the most part, besides one, two, or three on each Side, fixed perpendicularly to the first Bone of the upper Jaw, some others which are young, and of a smaller Size, adhering to the same Bone: Their Points are harden'd, and they have their Fissures formed as in the other; but their Roots are soft and mucilaginous, like the Roots of the Teeth in Infants; and so they lie always depressed at the Bottoms of the former.

They drop off from the Bone at the least Touch; and therefore, some Anatomists have imagined them to be fastened to Muscles or Tendons; which would have rendered them altogether useless: For they are made to supply the Place of the greater, when they fall away, or are pulled out by Accident, and in order to do this, they do by degrees harden, and rise more and more, till at last they stand upright, and come to a perpendicular Situation in the Bone.

They are not all of the same Growth; for in some we can only discern the Shape of a Tooth, without any Hardness, in others the Point, and in the next somewhat more is harden'd, and so on, to the greatest Fang.

Their Number is very uncertain; there being sometimes six or seven in each Side of the Jaw, sometimes fewer.

These seem to have occasioned the Disputes among the Antients, concerning the Number of the viperine Teeth.

The poisonous Fangs have small Holes at the internal Part of their Root, through which the Vessels pass, which carry their Nourishment.

It is remarkable, that Nature has provided young Vipers with poisonous Teeth, grown to their Perfection, that so they may kill their Prey as soon as they come into the World.

The second Kind of Teeth, or the small, are hooked, and bent, as well as the former, but without any Slit or Opening: Of these there are four Rows, two on each Side of the Mouth: They are fixed in the third Bone of the upper Jaw, and in the second in the lower.

Their Use is to hold the Prey fast, while Execution is done by the Bite; left, in struggling to get away, it should pull out the Fangs.

The Instruments that emit the Venom being thus described; we come next to those which serve to prepare and contain it.

This Liquor is separated from the Blood by a Gland on each Side of the Head, placed in the anterior and lateral Part of the *Os Sincipitis*, just behind the Orbit of the Eye: It lies immediately under that Muscle which helps to depress the Fangs, so that by the Action of this it is pressed; which is an admirable Contrivance, to forward the Secretion of the Juice out of it.

It is a conglomerated Gland, composed of many smaller ones, contained in a common Membrane: Each of these sends off an excretory Vessel, all which do afterwards unite and form one Duct, which running towards the Roots of the Fangs, discharges the yellow Liquor into a Bag.

This Bag is fixed to the Basis of the first Bone of the upper Jaw, and, also, to the Extremity of the second, covering the Fangs near the Root. To the upper Part of this Vesicula there is joined another, in the anterior Part of which there is a Passage for the poisonous Teeth.

This consists of muscular Fibres, both longitudinal and circular; by means of which it can contract itself when the Fangs are erected; and by this Contraction the Venom is pressed into the Hole at the Root of the Tooth, and forced out at the Fissure near the Point.

That this is so done, I have frequently observed with the naked Eye, having cut off the Head of a Viper, and immediately pinching the Neck, to make it open the Mouth wide; for by this means the Venom was squirted out as from a Syringe.

When the Viper lies quiet, with its Mouth shut, the Fangs are depressed and covered with the external Bag; when it intends to bite, it opens the Mouth very wide, at the same time the lower Extremity of the second of the common Bones is moved forwards by proper Muscles, and turns, as it were, upon a fixed Centre, thus pushing forward the upper and lower Jaws, whose Extremes are united. By this means the lower Part of the first Bone of the upper Jaw is thrust forwards, the other Extremity turning in the Cavity of its Articulation, where it is fastened by Ligaments. The Fangs being, by this Mechanism, erected, the Bags which covered them, by the

Contraction of their longitudinal Fibres, are pulled back; and the Action of the circular ones does, at the same time, straiten the internal Bag, and force the Juice into the Teeth.

Besides this, when the Viper bites, it strikes in the Fangs to the very Root; and thus the *Vesicula* are still more squeezed, for the Discharge of the Liquor.

It is worthy our Observation, that the Viper can move the Jaw-bones on one Side, without moving those on the other; for they are not joined together at the Extremes, as in other Animals; which Contrivance is very beneficial to it in the swallowing its Prey; in that, while the Teeth on one Side stand unmoved, and fixed in the Flesh to hold it, those on the other Side are brought forward, to draw it in farther; then they keep it fast till the former Jaws advance again in their Turn: Thus they act successively, and force the Animal entire (there being no *Dentes Incisivi*, or *Molares*, to divide it) into the *Oesophagus*, whose muscular Fibres are very weak, and can help but little in the Business.

The Symptoms which follow upon the Bite of a Viper, when it fastens either one or both its greater Teeth, in any Part of the Body, are an acute Pain in the Place wounded, with a Swelling, at first red, but afterwards livid, which, by degrees, spreads farther to the neighbouring Parts with great Faintness, and a quick, though low, and sometimes interrupted Pulse, great Sickness at the Stomach, with bilious convulsive Vomiting, cold Sweats, and sometimes Pains about the Navel; and if the Cure be not speedy, Death itself, unless the Strength of Nature prove sufficient to overcome these Disorders; and though it does, the Swelling still continues inflamed for some time; nay, in some Cases more considerably upon the abating of the other Symptoms, than at the Beginning; and often, from the small Wound, runs a sanious Liquor, and little Pustules are raised about it; the Colour of the whole Skin is changed yellow, as if the Patient had the Jaundice.

These Mischiefs, although different Climates, Season of the Year more or less hot, the greater or lesser Rage of the Viper, the Beast itself, of a larger or smaller Size, and, consequently, able to communicate more or less Venom, and the like Circumstances, may variously heighten or abate them; yet usually discover themselves much after the same manner in all; unless the Bite happen not to be accompanied with the Effusion of that Liquor, which is the main Instrument and Cause of this violent and shocking Disturbance.

But before I proceed to inquire into the Nature and Manner of acting of this Juice, it may be worth the while to take notice, that this is not made on Purpose to be deadly and destructive to Mankind; but that the true Design of it is (tho' Authors have not regarded it) to perform an Office and Service of so great Moment to the Preservation of the Individual, that without it this Creature could not subsist.

For Vipers live principally upon Lizards, Frogs, Toads, Mice, Moles, and the like Animals, which they do not chew, but swallow down whole, and they lie in the Stomach; or if that be not big enough to receive them, partly in that, and partly in the *Oesophagus*, which is membranous, and capable of great Distention, till by the salival Juices of those Parts, together with the Help of the Fibres of the Stomach, and the Contraction of the Muscles of the Abdomen, they are gradually dissolved into a fluid Substance, fit for the Nourishment of their Bodies, which is the Work of many Days: This is one Reason why these Creatures can live so long without taking any fresh Food, which I have known them to do three or four Months; as another is, that their Blood is a grosser and more viscid Fluid than that of most other Animals; so that there is but a very little Expence of it, by Transpiration, and, consequently, less need of Recruit; this not only Microscopes discover, but Reason teaches; because there is but very little muscular Force in the Stomach to comminute the Food; and make a Chyle of fine Parts; and therefore the Blood must accordingly be of a tough and clammy Consistence. Besides, the Heart of a Viper has properly but one Ventricle, and the Circulation of the Blood is performed after the same manner as it is in a Frog and Tortoise, in which not above one Third of it passes through the Lungs; upon which Account its Communion in them by the Air is proportionably lesser than in other Animals. Now such a manner of Feeding as this, does necessarily require, that the Prey should, upon the first Catching, be immediately killed, otherwise it were by no means fit to be let into the Stomach; for we are not to think, that the Force of this Part would be alone sufficient to destroy it, the Subtlety of a living Creature (besides the Consideration of the Weakness of the Fibres) being in a great measure able to elude that, as indeed we do every Day find live Animals in the Stomachs of others: And therefore to do this, is the proper Use both of the Teeth, and their Poison; for which being designed and adapted, it is no Wonder if the Viper, this same way by which it destroys its Prey, proves sometimes mischievous to any other Creature besides,

besides, when it happens to be enraged, or by any Provocation stirred up to bite.

This venomous Juice itself is of so inconsiderable a Quantity, that it is no more than one good Drop that does the Execution; and for this Reason Authors have contented themselves with Trials of the Bite upon several Animals, never assaying to examine the Texture and Make of the Liquor itself; for which Purpose I have oftentimes, by holding a Viper advantageously, and enraging it till it struck out its Teeth, made it to bite upon somewhat solid, so as to void its Poison, which carefully putting upon a Glass Plate, I have with a Microscope, as nicely as I could, viewed its Parts and Composition.

Upon the first Sight I could discover nothing, but a Parcel of small Salts nimbly floating in the Liquor; but in a very short time the Appearance was changed, and these saline Particles were now shot out, as it were, into Crystals of an incredible Tenuity and Sharpness, with something like Knots here-and-there, from which they seemed to proceed, so that the whole Texture did in a manner represent a Spider's Web, tho' infinitely finer, and more minute; and yet withal so rigid were these pellucid Spicula, or Darts, that they remained unaltered upon my Glass for several Months.

I have made several Trials with this Juice, in order to find out under what Tribe of Salts these Crystals are to be ranged; and not without some Difficulty, by reason of the minute Quantity of the Liquor, and the Hazard of Experiments of this Nature, have plainly seen that it does, as an Acid, turn the blue Tincture of Heliotropium to a red Colour.

I did not succeed so well in mixing it with Syrup of Violets, and yet it did really seem to induce in this a reddish Hue; but I am very certain it did not at all change it to a greenish Colour, as it would have done, if any ways alcalious.

This may suffice, in their own Way of arguing, to convince those Gentlemen, who, without the Assistance of any Experiments, merely to serve an Hypothesis, which they have too fondly taken up, have with great Assurance told the World, that the Viperine Venom is an Alkali, and consequently to be cured by acid Remedies. But it is by far more easy to spin out a false Notion into precarious Reasonings, than to make faithful Experiments, and fairly improve them by just and necessary Consequences.

To proceed, this Discovery agrees very well with a Relation communicated by an ingenious Person to Dr. *Tyson*; which does so much illustrate this Matter, that I shall transcribe it in his own Words, out of the *Philosophical Transactions*: He says then, that being in the *Indies*, there came to him an *Indian*, with several Sorts of Serpents, offering to shew him some Experiments about the Force of their Poison: Having therefore, first pulled out a large one, the *Indian* told him this would do no Harm; and making a Ligature on his Arm, as in letting Blood, he exposed it naked to the Serpent, being first irritated to make him bite it; the Blood that came out of the Wound, made by his Teeth, he gathered with his Finger, and laid it on his Thigh, till he had got near a Spoonful: After this he takes out another, called *Cobra de Capelo*, which was lesser, and enlarges much upon the Greatness of his Poison. To shew an Instance of it, grasping it about the Neck, he expresses some of the Liquor in the Bags of the Gums, about the Quantity of half a Grain, and this he puts to the coagulated Blood on his Thigh, which immediately put it into a great Fermentation, and working like Barm, changed it into a yellowish Liquor.

This, I say, does well enough accord with what we have been advancing, concerning the Nature of this Juice: For *Boyle* hath long since proved by Experiments, that there is nothing of Acid in human Blood; and *Pitcairn* has demonstrated, that the acid Substances of Vegetables, taken into the Stomach, are, by the Action of this Part, the Lungs and Heart, when they come into the Blood-vessels, turned to alcalious; so that the arterial Fluid must necessarily be considered as an Alkali; and therefore, according to the known Principles of Chymistry, its Mixture with such a Liquor as we have discovered the viperine Sanies to be, will always exhibit some such Appearance as this now related.

But not to engage any farther in this Sort of Controversies, we may, perhaps, from the foregoing Observations, receive some Light, in order to understand the Nature and Reason of all those Symptoms which attend the Bite of this Creature: For the pungent Salts of this Venom, when with Force thrown into the Wound, will not only, as so many Stimuli, irritate and fret the sensible Membranes, whereupon there necessarily follows a greater Afflux than ordinary of the animal Juices that Way, (as is manifest from the *Bellinian Doctrine de Stimulis*) so that the wounded Part must be swelled, inflamed, and livid; but, also, these Spicula, being mixed with the Blood, will so disjoin and disunite the Parts of it, that its Mixture must be quite altered; and from the various Cohesion of its Globules

will arise such different Degrees of Fluidity and Impulse towards the Parts, from what this Liquor had before, that its very Nature will be changed.

It is worth the while, in the next Place, to consider the Cure of this Mischief, which, without all Doubt, ought to be by such external Management of the Wound as may immediately destroy the infused Venom.

Boyle experienced an hot Iron, held as near the Place as the Patient could possibly endure it very effectual to this Purpose: But the same Method did not answer Expectation, in the famous Case related by *Charas*.

An extraordinary Virtue against this and other venomous Bites, is ascribed to the Snake-stones brought from the *East-Indies*, one of which is to be presently applied to the Part, and let stick till it drop off: These are said to be taken out of the Head of the Serpent, called by the *Portuguese*, *Cobra de Capelo*, and to suck the Poison out of the Wound. *Redi* made Trials with several of them, but found no Service from any: Yet *Baglivi* tells us, of a terrible Bite of a Scorpion cured this Way. Monsieur *Charas's* Pigeons all died, though these were immediately clapped on, and stuck close to the Wound: But *Havers* saw a good Effect of one upon a Dog, who, though feverishly bitten, suffered no Harm; nor any farther Mark of the Poison, than a livid Circle round the Place.

In plain Truth, as these celebrated Stones do not seem to be what it is pretended they are, but rather factitious Bodies, compounded, it may be, of calcined Bones, and some testaceous Matters mixt together; so, by reason of their spongy and porous Texture, they do very readily adhere to any moistened Part of the Flesh, and imbibe whatsoever Humidity they meet with: This their Quality any one may experience, by holding one of them to the Roof of his Mouth: And it is upon this score that, when put into Water, Bubbles are raised by the Air in their Interstices, which some have too fondly thought to be the Effects of their throwing out the Venom they had sucked in.

Their Make being thus, some Part at least of the poisonous Juice may easily be drawn out of the Wound, by such an Application; and yet so much of it may sometimes happen to remain in the Flesh, as may make the Bite however to prove mortal. And thus it fared with a Pigeon, to the Thigh of which, first bitten by a Viper, I applied one of the Stones; for though it stuck fast to the Wound, and thus saved the Life for about four Hours (whereas others usually died in about half an Hour), yet, after this, the Mortification of the Part prevailed to that Degree as to become fatal to the tender Creature.

But our Viper-catchers have a Remedy far beyond all these, in which they place so great Confidence, as to be no more afraid of a Bite than of a common Puncture, immediately curing themselves by the Application of their Specific.

This, though they keep as a great Secret, I have, however, upon strict Inquiry, found out to be no other than the *Axungia Viperina* presently rubbed into the Wound. And to convince myself of its good Effects, I enraged a Viper to bite a young Dog in the Nose; both the Teeth were struck deep in; he howled bitterly, and the Part began to swell. I diligently applied some of the *Axungia* I had ready at hand, and he was very well the next Day.

But because some Gentlemen who saw this Experiment were apt to impute the Cure rather to the Dog's Spit (he licking the Wound) than to the Virtue of the Fat, we made him to be bit again in the Tongue, forbearing the Use of our Remedy, and he died within four or five Hours.

At another Time I made the like Trial with the same Success.

As this *Axungia* consists of clammy and viscid Parts, which are withal more penetrating and active than most other oily Substances, so these, without all Doubt, involve, and, as it were, sheath the volatile Salts of the venomous Liquor, and thus prevent their shooting out into those crystalline Spicula, which we have observed to be the main Instruments of that deadly Mischief which attends the Bite.

By this means it comes to pass, that this Cure, if rightly managed, is so easy and certain, as not to need the Help of any internal Medicines to forward it; but these however must take Place where, through want of the other, the Poison is spread farther, and has tainted the whole Mass of Blood.

Nor yet is it necessary, even in this Case, to fatigue the Patient with a Farrago of Theriacs and Antidotes; for the volatile Salt of Vipers is alone sufficient to do the Work, if given in just Quantities, and duly repeated; provided moderate Sweats be encouraged in Bed: Thus it succeeded with Monsieur *Charas*, and in some others I could relate; in one of which the Mischief had gone so far as to induce an universal *Icterus*.

I must remark, that since Dr. *Mead* wrote the Treatise of Poisons, from which these Particulars relative to the Viper are extracted,

extracted, a Man and his Wife, who made it their Business to catch Vipers, came from *Bath* to *Oxford*, and from thence to *London*; and, after having shewn a great Number of Experiments, with respect to the Bite of this Animal, at last discovered an effectual Remedy, which consists in nothing more, than chafing the Part wounded with Olive-oil, before the Fire; and, if the Case should be extremely bad, wrapping the entire affected Limb in a Cerate, made of White-lead, and the same Oil.

I must further observe, that as the viperine Poison acts by inducing a Coagulation of the Blood, which spreads gradually from the wounded Part to the Heart, of which I have seen an hundred incontestable Instances; and as rubbing in the Oil, prevents the Coagulation, and resolves the Blood already coagulated; hence, perhaps, we may account for the Efficacy of Unctions, so much practised by the antient Physicians, especially those of the Methodic Sect.

And, farther, may we not presume, that the Oil of Animals, so exquisitely treasured up in the Reservoirs of the Cellular Membrane; may, upon some Occasions, by mixing with the Blood, prevent Coagulations, and consequently Distempers, from such a Cause?

VIPERARIA. The same as SCORZONERA.

VIPERINA. The same as SCORZONERA.

VIRGA AUREA.

The Characters are;

The Root is fibrous; the Leaves are alternate and entire, and the Calyx is squamous. The Flowers are produced on the Tops of the Stalks and Branches, in a long Series like a Rod, are less than those of the Aster, have shorter Pedicels, and are generally of a golden Colour.

Boerhaave mentions fourteen Sorts of *Virga aurea*; which are,

1. *Virga aurea*; folio amplissimo; dentato. *An.* *Virga aurea*, *Canadensis*, latissimo folio, glabro. *T.* 485.

2. *Virga aurea*; montana; latiore folio, glabro. *H. R.* *Par.* 186.

3. *Virga aurea*; annua. *Zanon.* 205. *T.* 484. *Conyza Canadensis*, annua, acris, alba, folio *Linariae*. *Bocc.* 86. *Aster Canadensis*, annuus, flore papposo. *H. R.* *Par.*

4. *Virga aurea*; *Canadensis*; hirsuta; panicula minus speciosa. *H. R.* *Par.*

5. *Virga aurea*; *Novæ Angliæ*; altissima; paniculis nunquam reflexis. *Flor.* 2. 34.

6. *Virga aurea*; angustifolia; panicula speciosa; *Canadensis*. *H. R.* *Par. M. H.* 3. 125.

7. *Virga aurea*; *Novæ Angliæ*; foliis longissimis, glabris. *Flor.* 2. 35.

8. *Virga aurea*; foliis angustis; lævibus; non ferratis; panicula speciosa; floribus magnis.

9. *Virga aurea*; *Noveboracensis*; glabra; caulibus rubentibus; foliis angustis, glabris. *Flor.* 1. 26.

10. *Virga aurea*; angustifolia; minus ferrata. *C. B. P.* 268. *Boerb. Ind. A.* 97. *Virga aurea*. *Offic. Ger.* 348. *Emac.* 430. *Raii Hist.* 1. 278. *Synop.* 81. *Virga aurea vulgaris*. *Park.* 542. *Virga aurea vulgaris latifolia*. *J. B.* 2. 1062. *Tourn. Inst.* 484. GOLDEN-ROD.

The common Golden-rod grows to be two or three Feet high, having round hairy Stalks, full of a fungous Pith; the lower Leaves grow on pretty long Foot-stalks; they are three or four Inches long, broadest in the Middle, and narrow at both Ends, indented about the Edges, and hairy on both Sides; those, which grow on the Stalks, are less, and stand on shorter Foot-stalks, and sometimes without any. The Flowers grow thick together, in small Spikes, on the upper Parts of the Branches; they are composed of small yellow Petals, set about a little fistular Thrum, which afterwards turn into Down. The Root is long, running aslant with many Fibres; it grows in Woods and Hedges, and flowers in July.

The Leaves and Tops are used, this being accounted one of the best vulnerary Plants, and much used inwardly in Traumatic Apozems, and Wound-drinks; and, outwardly, in Cataplasms, and Fomentations.

It is somewhat restraining, and useful against Spitting of Blood, and other Hæmorrhages; and is of great Service against the Stone. *Miller's Bot. Off.*

Golden-rod is styptic, bitter, and gives no Tincture of Red to the blue Paper. It is likely, that its Salt resembles that which is natural in the Earth; but it is mixed with a great deal of Oil, and terrestrial Parts. Thus this Plant is vulnerary, and diuretic. It is prescribed in Pusans, and Broths, for the Dysentery, and for all Sorts of Hæmorrhages. These Medicines are lenitive, also, and provoke Urine; The distilled Water of the Tops, and the Extract of the whole Plant, have the same Virtues. The Leaves and Flowers of the Golden-rod, are taken after the manner of Tea. It is used in the *Eau d'Arquebuse*, and vulnerary Potions. *Martyn's Tournesfort.*

It is a most celebrated Vulnerary, both for internal and external Use, and even to be preferred before the *Solidago Saracenica*. For internal Wounds, says *C. Hoffman*, it is effectual, by carrying off the Ichor with the Urine; which agrees with the Observation of the most celebrated Physicians, that almost all vulnerary Potions are diuretic; and it was customary for the Combatants at Wrestling and Boxing, in their ordinary Drink, to take *Valerian*, which is a prime Diuretic. In external Wounds, this Plant is of Efficacy by Exiccation and Absterision; for which Purposes it is highly qualified.

That it is none of the least Lithontriptics and Diuretics, is agreed by all: It was first experienced by *Arnold. Villanovanus*, in the Stone, who used it in Powder; and it is celebrated for this Disease by *Barclay*, in his *Argenis*, and in his *Euphormio*. The Dose is two Drams of the Powder every Morning in warm White-wine.

C. Hoffman says, it is endued with a remarkable absterfive Virtue; whence it is so much celebrated in Obstructions of the Viscera, where there is a Tendency to a Dropsy; for which Intention, the Decoction of it was a long time kept as a Secret, tho' it be, also, commended against all Fluxes of the Belly and Uterus, and internal Hæmorrhages, which proves it to be rather astringent than absterfory, unless, perhaps, it performs those Effects by its desiccative, or drying Quality, which all ascribe to it. *Raii Hist. Plant.*

11. *Virga aurea*; Mexicana. *C. B. P. App.* 517.

12. *Virga aurea*; folio hirsuto salicis raro & levissime ferrato; caulibus atropurpureis.

13. *Virga aurea*; major; foliis glutinosis & graveolentibus. *T.* 484.

This *Boerhaave*, by Mistake, has taken notice of already, under *Conyza*; *mas*; *Theophrasti*; *major Dioscoridis*; for which I refer the Reader to *CONYZA*.

14. *Virga aurea*; omnium minima. *H. R. Par. Boerb. Ind. alt. Plant.*

The *Virga Aurea* is so acrimonious, that no Pepper can be compared with it, tho' it leaves not the least Relish of Acridness in the Mouth, but proceeds through the whole Body. It is like the *Ranunculus urens* of the Shops; and is of a moderately, or somewhat astringent Taste, which at first is not unpleasant, but leaves an ungrateful Relish in the Mouth. The Leaves are gathered in May, and dry'd for Use. *Barclay*, in his *Satyricon*, says, that he cured a Person of Quality, to whom he was sent on an Embassy, of the Stone, and a Suppuration of the Kidneys, with the Powder of the dry'd Leaves. Three or four Ounces of the Plant macerated in Water, are a good vulnerary Dose, and proper for internal Hæmorrhages, the Dysentery, and Diarrhoea. Externally it depurates Wounds, absterges Putridness of the Gums, fastens loose Teeth, and cleanses malignant Ulcers, and Fistulas. I have often exhibited it with great Success in all Sorts of putrid, viscid, and cold Indispositions. The Leaves duly dry'd, and infused after the manner of Tea, and drank with an Addition of Honey, are highly corroborative and deterfive, and of extraordinary Efficacy in Ulcers of the Lungs, and Wounds of the Breasts, and other Parts.

The *Virga aurea*, as we are told by *Tournesfort*, is a Plant of *Canada*, but is now common throughout *Europe*, because the Seeds brought from that Country have diffused themselves through all the *European* Regions, and grow without Difficulty; for the Seeds are agitated and dispersed into all Parts by the Winds, and where-ever they fall, easily take Root, and spring up. *Hist. Plant. adscript. Boerhaav.*

VIRGA AUREA is, also, a Name for several Sorts of *DO-RIA*; which see.

VIRGA AUREA, *Linariae foliis*. A Name for the *Comaurea*, *Germanica*.

VIRGA PASTORIS. A Name for the *Dipsacus sylvestris*; *capitula minore*; vel *Virga Pastoris, minor*.

VIRGA SANGUINEA. A Name in *Boerhaave* for the *Cornus*; *fœmina*.

VIRGATA SUTURA is the *Satura Sagittalis*, Sagittal Suture of the *Cranium*.

VIRGINALE CLAUSTRUM. The HYMEN.

VIRGO. Besides the various Kinds of acute and chronical Diseases, there are, also, some Disorders incident to Virgins, pregnant, and Child-bed Women, as, also, to Children.

When the Body of a Woman has arrived at its full Growth, if her Constitution is good, more Blood is generally prepared than can be contained in the Vessels; for which Reason it is eliminated from the Uterine Arteries, under the Name of the *Menses*.

If, in such a State and Condition of Body, this Blood is retained, a Plethora, Slowness, a Sense of Weight, Paleness, a Pain of the Loins, and Groin, and a Depravation of almost all the Functions, whether natural, vital, or animal, are produced, and may be easily accounted for from the too great Pressure

Pressure upon the Vessels, by the redundant, stagnant, and suffocated Blood.

The Blood, when thus accumulated, often finds surprising Ways, not known in the natural Discharge of the Menstrues, since Physicians have sometimes seen it eliminated by the Eyes, the Ears, the Gums, the Salival Ducts, and the Oesophagus, by Stool and Urine, by the Breasts and Skin, as, also, by Wounds and Ulcers.

By this means all the Viscera are often weakened, and a surprising Number of Disorders produced, partly by the conceived Putrefaction, and partly by the Injury done to the Vessels.

This Disorder is known, first, by the Age of the Patient; secondly, from her full Growth; thirdly, from a Plethora; and, fourthly, from the Signs of the Disease, subsequent to this Plethora.

It is cured by various Remedies adapted to the different Causes from which it proceeds.

Thus it may proceed either from a natural or accidental Concretion of the Pudenda, in which Case the Surgeon is, with a proper Instrument, to make a due Incision.

But, when it proceeds from a Stagnation of the Humours, these are to be rendered fluid; first, by Fomentations, and Frictions of the Feet; secondly, by Venesection in the Feet; thirdly, by the Exhibition of uterine Purgatives, such as Aloes, Myrrh, Betony, Coloquintida, Gum Ammoniac, Bdellium, Sagapenum, Opopanax, Galbanum, Asa-fetida, and the Elixir Proprietatis; fourthly, by Emmenagogues, which besides these already enumerated, are Birthwort, Mug-wort, Motherwort, Chamomile, Juniper, Marjoram, Marum, Feverfew, Pennyroyal, Rue, Savin, Sage, Elder, Mother of Thyme, Tansey, the Tree of Life, and Thyme; fifthly, by Plaisters, Fomentations, Liniments, Vapours, and Heat. The Plaisters proper for this Purpose are, those of Cumin, Melilot, Galbanum, Bay-berries, Labdanum, and Oxyroceum, applied to the Soles of the Feet, the Navel and Groin. The Fomentations may consist of Venice Soap, and a Decoction of the above-mentioned Herbs. The Liniments are to be prepared of Soldiers Ointment, nervine Ointment, that of Elecampane without Mercury, that of Agrippa, and that of Sowbread; distilled, aromatic Oils, and especially the distilled Oils of Juniper-berries, Hyssop, Mace, Marjoram, Origanum of Crete, Rosemary, Savin, Spike, Tansey, and Amber; the Oils by Infusion of Wormwood, Dill, Chamomile, Catmint, Rue, Castor, Saffron, Orris, and Earth-worms. Thus,

Take of Soldiers Ointment, and nervine Ointment, each one Ounce; of the distilled Oil of Juniper-berries, one Dram; of the distilled Oil of Savin, and of the Oils of Rue and Castor by Infusion, each half an Ounce: Make into a Liniment, to be applied to the Navel, Pubes, and Groin.

As for the Vapours, those arising from a Decoction of the Herbs already mentioned, and received into the Uterus, are most proper. And, sixthly, by corroborating the Vessels weakened by the Plethora, by means of Chalybeates and Astringents: Thus,

Take of the Filings of new and unrusty Iron, two Ounces; of Peruvian Bark, and Winter's Cinnamon, each two Ounces; of dried Rhubarb, half an Ounce; and of generous Rhenish Wine, two Pints: Make into a medicated Wine, of which two Ounces may be taken thrice a Day upon an empty Stomach.

When the Cause of the Disorder is by these means removed, the Symptoms already mentioned either spontaneously cease, or are to be cured in the same manner with the Disorder they most nearly resemble, which may be easily done from what has been said. *Boerh. Aph. & Mat. Med.*

VIRIÆ, or VIRIOLÆ. Rings worn upon the Arms as Amulets.

VIRIDE ÆRIS. Verdégrise.

VIRIDELLUS. Vitriol; or the Epilepsy.

VISCAGO. A Name for the *Lychnis*; *facie Auriculæ Ursi*.

VISCAGO. Mucilage.

VISCALEUS. The same as Viscum. *Johnson.*

VISCARIA. A Name for the *Muscipula*, Catch-fly.

VISCERA. The Bowels.

VISCERALIA.

Visceral Remedies in general are, those which impart Strength and Firmness to the sanguineous Viscera, such as the Liver, Spleen, Uterus, Kidneys, and Lungs; by which means they are qualified for a more happy and expeditious Performance of their respective Functions. To this Class we may, therefore, commodiously refer hepatic, splenic, pneumonic, uterine, anti-cachectic, anti-hydrotic, anti-isteric, anti-hysteric, and anti-phthical Me-

dicines: But the most considerable Viscerals are, the Roots of red Gentian, long and round Birthwort, Succory, Zedoary, Fern, true Rhubarb, and Rhapontic, Turmeric, and Rest-harrow, Peruvian Bark, Winter's Bark, the Barks of Tamarisks, the Ash, and Capers, together with Cloves; the Herbs Wormwood, the Lesser Centory, Fumitory, Carduus Benedictus, Marsh-trefoil, Golden-trefoil, Baum, spotted Lungwort, Spleenwort, Agrimony, Horehound, Dodder, *Paul's* Berony, Scabious, Spurge, Maiden-hair, and Mouse-ear. The Viscera are, also, excellently strengthened by some of the resinous Gums, such as Myrrh, Aloes, Bdellium, the Gum of the Ivy-tree, Gum Ammoniac, Olibanum, Sagapenum, Opopanax, and Asa-fetida. Some Minerals are, also, excellent Viscerals, such as the Flowers of pure common Sulphur, Filings of Steel, and all Preparations of that Metal. Some chymical Preparations are, also, powerful Viscerals, such as the Salts of Herbs obtained by Incineration, the Arcanum Tartari, the Terra foliata Tartari, Cream of Tartar, Sal Polychrestum, antimoniated Nitre, Spirit of Sal Ammoniac, Tincture of *Mars* extracted with Spirit of Wine from the Flowers of Sal Ammoniac prepared with Blood-stone, the Tincture of Tartar, the Tinctura Antimonii Alcalifata, the Elixir Proprietatis prepared with a Lixivium, the Essence of Soot, the Visceral Elixir prepared with an aqueous saline Menstruum, the Antimonium Martiale Cachecticum, *Becher's* Mass of Pills, and others of a like Nature. To the Class of Visceral Medicines, also, belong Mineral Waters, especially such as contain a certain subtile chalybeate Principle, such as those of *Pyrmont*, *Spaw*, and *Swalbacen*; and much more those which contain a larger Quantity of a chalybeate Principle, such as those of *Lauchstad*, *Radeberg*, *Bebra*, and *Frayenwald*.

These balsamic Viscerals, partly by a sulphureous, balsamic, and somewhat fixed earthy Principle, and partly by their alkaline, sulphureous, saponaceous, and bitter Quality, perform their Operation upon the Viscera, whose Vessels are obstructed and infarcted by gross and viscid Humours, by inciding and dissolving the tenacious Juices, and, at the same time, procuring a due contractile and elastic Force to the Vessels and Fibres of the Viscera, which had lost their Strength and Tone. Hence they are of great Efficacy, both for the Prevention and Cure of those chronic Diseases, which arise from any Disorder of the Viscera.

Though all Viscerals agree in this, that they strengthen the Tone of the Viscera, and remove Infarctions and Obstructions, yet it is necessary to vary them, according to the Diversity of Viscera affected, and the Diseases thereby produced. Thus, for Instance, if the Liver is obstructed, and a Jaundice, Cachexy, or Scurvy, produced by that means, the most efficacious Viscerals are those possessed of a certain saponaceous and deterfitive Bitterness, such as the Five aperient Roots, Rhubarb, Turmeric, Opopanax, Bdellium, Venice Soap, Elixir Proprietatis without an Acid, Essence of Rhubarb prepared with Salt of Tartar, Essence of Trefoil, and all good Preparations of Steel. When there are too great a Relaxation and Infarction of the Lungs, and the Diseases by that means produced are present, Myrrh, Gum Ammoniac, Flowers of Sulphur, *Paul's* Betony, Scabious, Chervil, Lungwort, Mouse-ear, Horehound, and Maiden-hair, are generally thought most efficacious. When the Spleen being preternaturally large, and infarcted with Blood, favours the Generation of an unpure Blood, and especially of a Cachexy, the Barks of Tamarisks and Capers, Fumitory, Spleen-wort, Dodder, Spurge, the Roots of Rest-harrow, and Chalybeates, are preferable to other Remedies. When from a weak, and too much relaxed Tone of the Kidneys, nephritic Pains and Stones are formed, the Bark of the *Egyptian* Thorn-root, and an Infusion of it; as, also, the Robs of Hounds-tongue and Juniper, are, in a peculiar manner, efficacious. From a weak State of the Uterus, and its Vessels, and a slow Circulation of the Blood and Humours, arise numberless chronic Diseases, which are efficaciously cured by long and round Birthwort, Mugwort, Myrrh, Feverfew, Galbanum, Bdellium, Opopanax, Amber, *Becher's* Mass of Pills, and others, prepared in the same manner. If the Intestines, and their Glands, the secretory, excretory, biliary, pancreatic, and lacteal Ducts, are so deprived of Strength, that by a copious Defluxion of Humours, excessive Fluxes are produced; or, if the Humours stagnating in the Vessels lay a Foundation for febrile Motions and Paroxysms, Rhubarb, Peruvian Bark, Winter's Bark, Cascarilla Bark, and the most subtile Crocus, and Essences of *Mars*, are found more efficacious than any other Remedies.

But, with respect to Corroboratives in general, it is to be observed, that they produce far better Effects, if not only before their Exhibition the redundant Blood is lessened, and the Sordes of the *Prima Via* evacuated by proper Laxatives; but, also, if, in order to render the Humours more fluid, they are exhibited in Decoctions or Infusions, or which is still better, with Medicinal

dicinal Waters, or Whey; by which means, the Operation of these Corroboratives, which are of an astringent Nature, is greatly assisted in removing violent chronic and inveterate Disorders; especially when their Use is for a considerable time persisted in, and proper Exercise, whether by Riding or Walking, used. *Fred. Hoffman.*

VISCIDITAS. See LENTOR.

VISCUM, VISCUS, *is*.

The Characters are;

The Leaves are conjugated, narrow, and oblong; the Flower is monopetalous, shaped like a Bason, quadrifid, sprinkled with Warts, and male; the Ovary grows in a different Place from the Flower, and is of a tender Substance, surrounded with four small Leaves; and becomes a roundish Berry, full of a Glue, and containing a flat Heart-shaped Seed.

Boerhaave mentions but one Sort of *Viscum*; which is,

1. *Viscum*; baccis albis. *C. B. P.* 423. *Boerb. Ind. A.* 228.

Viscum. Offic. Ger. 1168. Emac. 135. Raii Hist. 2. 1583.

Synop. 3. 464. *Viscum vulgare*, Park. Theat. 1392. *Viscum* vel *Viscum arborum*. Merc. Bot. 1. 77. *Viscus Quercus*, & *aliarum arborum*. J. B. 1. 89. MISSEL AND MISSELTO.

This Plant is never found upon the Earth; it grows upon the Oak, Apple, Plum, Pear, Acacia of America, and several other Trees. That which is found in the Wood of *Vincennes*, occupies the best Branches of the White-thorn, on whose Branches neither Earth, nor any other Matter, is to be found, which may seem proper to make the Seeds of this Plant chit. There is first discovered only a Tumor in those Parts to which the Mistletoe has fastened itself; its Flowers grow by threes, at the Division and Extremities of the Branches; each Flower is a yellowish Bason, of about three Lines Diameter, of the Thickness of Spanish Leather, cut into four Segments, rounded in three Points, and opposite to each other, in Form of a Cross, in such manner, that those which are opposite, are equal between themselves, but unequal with respect to the others; each Segment is raised with a little Bump, paler than the rest, and divided into Apartments full of little oval Holes, filled with Dust resembling Flour of Sulphur, or that which flows from the Summit, of other Plants.

The Flowers of Mistletoe produce nothing; the Fruits grow upon different Branches from those which bear the Flowers; these Branches are found, sometimes, upon the small Plant that bears the Flowers; and sometimes, also, upon Plants which bear only Fruit.

These Fruits are disposed, also, by Threes, at the Extremities of the Branches; each Fruit begins by a little oval Embryon, encompassed with four thick yellowish Leaves, half a Line long, pointed, and easily falling off; this Embryon thickens insensibly, and forms an oval Berry, three Lines long, like a little Pearl, filled with a flat Seed shaped like a Heart, covered with a silver-coloured Membrane, very fine, and full of Glue, that is to say, a very viscid, whitish, and sweetish Substance, in which the Seed naturally germinates, and pushes forth two Radicles out of the Side of its Notch.

This Seed, in all Appearance, produces the young Plants of Mistletoe to be seen upon the Branches of the Trees now mentioned; for some do but just peep, (if I may so say) and have only the Radicles which began to appear in the Berries. Nevertheless, we cannot say, that this Seed passes thro' the Root of the Oak, and the other Trees, and ascends into the Branches by the Sap-vessels; for each Seed is two Lines diameter, and the Texture of these Vessels cannot be perceived by our naked Eyes. It follows, then, that this Seed must be applied, by some external Cause, to the Branches of the Trees: These Causes may be reduced to two principal ones.

The Birds, perhaps, by crushing these Berries with their Feet or Bills, may give them an Opportunity of fastening themselves to the Branches, by their Glue: As we see the Magpies and Jackdaws contribute to the multiplying of several Plants, by carrying about their Kernels, and burying them. It may happen, also, that the Birds which have swallowed the Mistletoe-berries may void them upon the Branches of the Trees on which they perch; which made *Plautus* say, *Ipsa sibi avis mortem cacat*; tho' it is not very easy to comprehend how the Seeds which pass thro' the Gizzards of the Birds should escape being bruised, and ground to Pieces.

It may happen, also, that these Berries, falling, either of their own Accord, or by the Violence of the Winds, may stick, sometimes, against the Branches of the neighbouring Trees, especially if they happen to be applied by that Part by which they hung upon the Mistletoe; for this torn Part easily fastens itself to any Body on which it falls: But in what manner soever these Berries stick, we have Reason to believe, that the Glue, which they are filled with, insensibly softens the Bark to which it is fixed; and then the Seed, which had germinated before in its Berry, as we observed above, pierces it easily, by its Radicle. Perhaps this Glue, tho' it appears so mild and insipid

to us, ferments with the Sap of the Trees, and tears the Fibres of their Bark, which favours the Passage of the Fibres of the Radicle considerably. Thus the *Ova fœminea*, falling into the Body of the Uterus, fasten themselves to it, by means of the Placenta; the Juice of which, fermenting with that of the Glands of the Bottom of the Uterus, makes a little Inflammation, by means of which these two Parts stick together.

The Radicle, then, of the Seed of the Mistletoe, finding it easy to pierce the Bark of the Branches, lengthens into greenish Fibres, which run, at first, thro' the parenchymous, and piercing, afterwards, the ligneous Part, interlace themselves with the Fibres of the Branches, and insinuate themselves into their Vessels, out of which they draw a Juice proper for their Nourishment. One may easily distinguish these Fibres, if one take the Pains to trace them, after having discovered the first Bark. It is no wonder, that the Place where they insinuate themselves should swell, since they increase the Bulk of it; and, besides, these Roots, by taking hold, press the Vessels of the Branches in some Places, strangle them, and make them burst into others, which causes the Interception and Extravasation.

Mistletoe can live only upon Trees, because, perhaps, its Radicle, not having a Structure proper to separate from the Earth, and prepare the Nourishment necessary to the Vegetation of this Plant, it is necessary that this Preparation should be made in the Root of another Plant, which is to it as a Nurse; in the same manner as, the Stomachs of Children being too weak to prepare their Nourishment, they must either have a Nurse, or it must be accommodated to the Weakness of their Stomachs. To satisfy myself concerning the Production of Mistletoe, I have sown the Seeds of it for three Years together; but I have never seen any of them come up: I have fastened, also, several Berries, in March and April, upon young Branches of the Apple-tree and White-thorn; but the Violence of the Winds, and the frequent Rains which usually fall in that Season, have not permitted me to satisfy myself entirely concerning this Matter: So that I only propose Conjectures, which have Probability enough to be received in Natural Philosophy.

The Wild Pear-trees are covered over with Mistletoe, and I observed upon their Trunks, tho' the Bark was hard, the first Shootings of the Seed, which I had long sought, but could never find, in France, where this Plant is so common. These Seeds, which are of the Shape of a Heart, were out of their Cases, and stuck, by their Clamminess, to the Trunks and Branches of these Trees, when the Wind, or any other Cause, shook them out: Each Seed was laid in such manner, that the Point of the Root began to pierce into the Bark, whilst the Eye of the Seed shot out, and unfolded itself. All this confirmed me in my Opinion which I had mentioned concerning the Multiplication of Mistletoe, in my History of Plants which grow about Paris. *Tourn. Voyage into the Levant.*

The Fruits of the Mistletoe begin by Embryons crowned with four little Leaves, or charged with a radiated Crown, composed of four little yellowish Leaves, articulated about the Head of each Embryon; these Embryons proceed out of a yellowish round Mass, articulated with the Extremity of the Branch, and two opposite Leaves, which terminate it on the Sides. This Observation shews, that M. *Tournefort* was mistaken in the Description which he has given us of these Embryons. The Berries of Mistletoe, each of them, often inclose two Seeds; the Flowers of the male Plants are monopetalous, cut into four equal Parts, each charged, on its inner Surface, with a Summit, which is strongly fastened to it: It flowers at the same time with the female. *Vaill.*

Mistletoe is accounted a cephalic and nervine Medicine, particularly useful for all Kinds of Convulsion-fits, for the Apoplexy, Palsy, and Vertigo; for which Purposes, some prefer the Mistletoe of the Hazel to that of the Oak. They who have a mind to know all the Virtues of this Plant, may consult Sir *John Colbatch's* Discourse of the Mistletoe.

Of the Berry of this Plant was formerly made the *Viscus Aucupum*, or Birdlime, by boiling the Berries in Water till they burst, when they are well beaten in a Mortar, and afterwards washed in Water, till all the branny Husk was cleared away; but with us, in England, Birdlime is made of the Holly-tree, which they strip off about *Midsummer*, boiling a good Quantity of it in Water for about twelve Hours, till the whitish outward Bark is separated from the green; this they lay in a cool Vault, or Cellar, covering it with Fern, or such-like Matter, letting it lie for a Fortnight, by which time the Bark will be turned into a Jelly, which they afterwards beat in a Stone Mortar, till it becomes a tough Paste; this they wash well in running Water, till all the Sordes are cleared away, and then put it into earthen Vessels.

Birdlime is a powerful Attractive, and good to ripen hard Tumors and Swellings: It is an Ingredient in the *Emplastrum Diachylon magnum*. *Miller's Bot. Off.*

The Birdlime, or Glue, used for Fowling, was much used, by the Antients, in Medicine. It has the Virtue of mollifying and dissolving Tumors, the Parotides, and Abscesses, being mixed with Rosin, and an equal Quantity of Wax; it, also, cures the *Epinyctides*, and, as *Pliny* says, dries up strumous Ulcers, and cures the Epilepsy. It is good for many other Things, which may be found in *Dioscorides*, *Pliny*, and *Galen*.

The Wood is of principal and specific Use in the Epilepsy; it is, also, prescribed for the Apoplexy and Vertigo, taken inwardly, or hung about the Neck: For these Disorders it is acknowledged to be effectual, by the unanimous Consent of antient and modern Physicians. We know some, says *J. Bauhine*, who have made use of the Wood of *Viscum*, macerated in Wine, with Success, against the Vertigo. The Powder of *Viscum*, especially what grows upon Oaks, not only cures the Epilepsy, but provokes the Menstrues: It is, also, an Arcanum against a Pleurisy, being taken once and again, and a third time, in Water of Carduus and Poppy. *D. Bowles*.

J. Bauhine writes, that he has several times advised the Use of *Viscum*, bruised and macerated in proper Waters, against Worms of the Intestines in Children.

The Powder of the *Viscum* which grows on the *Oxyacanthus*, being infused in White or Spanish Wine, and given two Hours before the Paroxysm, or Fit, and the Dose repeated, if necessary, has often removed, and perfectly cured a Quartan.

The Leaves, after they have been chewed, and ground by the Teeth of labouring Beasts, and Cows, are, by our rustic People, esteemed effectual for expelling the Secundines.

Viscum is a parasitic Plant, or Shrub, which grows on other Plants or Shrubs.

It is much controverted whether the Seed of this Plant, which is perfect and mature, ever produces a Plant of the same Kind. *Aristotle*, *Pliny*, and all the Antients, with one Consent, hold the Affirmative, and that *Viscum* is propagated from the Seed of the Berries passing thro' the Bodies of Thrushes, Wood-pigeons, and other Birds of that Kind, after the pulpy Substance, involving the Grains, is concocted. Such is the Nature of the Seed, says *Pliny*, that, unless it be matured in the Bellies of Birds, it will not shoot. But *Julius Scaliger*, and, after him, *J. Bauhine*, and most of the Moderns, assert the contrary, and endeavour to prove the same, by a Multitude of Arguments; some of which, however, are easily answered. It is more difficult to answer the Argument drawn from the Situation of the *Viscum* on the Branches: For how is it possible for the Seed of the *Viscum* to settle on slender, erect Sprays, on which the Birds themselves can hardly rest, and those, too, agitated by the Winds, and washed with frequent Showers? Or, what is more, how can the Seed lodge itself on the prone Part of the Branches, or that Side of them which faces the Ground? To this Objection, however, it may, with some Shew of Probability, be answer'd, that the Excrements of the Birds, fed with *Viscum*, participate of its Nature; and therefore the Seed, beset with that viscid Matter, may be so firmly agglutinated to the Branches, as not easily to be separated from them by the Force of Wind or Weather. We, indeed, for our Part, are not free to admit of spontaneous or equivocal Generation; and since all Seed, as *Theophrastus* truly says, is for the Sake of Generation, it seems to us absurd, and by no means probable, that Nature should have created any perfect Seed, and that too in great abundance, which yet, in all its Species, is wholly useless, and unfit for the Propagation of its Kind. *Raii Hist. Plant.*

Pliny tells us, *Lib. 16. Cap. 30.* that, among other Products of the *Luxus*, it bears *Viscum* on that Part of it which looks towards the North, and *Hyphear* on its South Side. And *Lib. 17. Cap. 44.* he further says, that there are three Kinds of *Viscum*; for what grows on Firs, and Larch-trees, in *Eubœa*, is called *Stelis*; in *Arcadia*, *Hyphear*; and that the *Viscum* [properly so called] grows on the *Quercus*, *Robur*, *Ilex*, especially the *Ilex Sylvestris*, and the *Terebinthus*, and on several other Trees, but most plentifully on the *Quercus*, whence it is called *Dryos Hyphear*, "the *Hyphear* of the Oak:" And a little after he says, that the *Hyphear* is fittest to feed Cattle.

Theophrastus, whom *Pliny* transcribes with some Variations, and, perhaps, Mistakes, in the Beginning of *Cap. 23. Lib. 2. de Caus. Plant.* tells us, that it is very surprising, and looks quite odd, and unaccountable, that some Seeds and Plants will not shoot or grow in the Earth: Of this Nature are the *Viscum* [*Stelis*], *Stelis*, and *Hyphear*. *Stelis* is a Word they use in *Eubœa*, but *Hyphear* is an Arcadian Term, and *Ixia* [*Viscum*] is a Name they use in common. Some will have these three to be of the same Nature; but there seems to be some Difference between them, in that they grow on different Plants; for the *Hyphear* and *Stelis* grow on Firs and Pines, but the *Ixia* on the *Quercus* and *Terebinthus*, and many other Sorts of Trees. Others allege, as a good Argument for their being distinct, if

the Observation be right, that not only each of these is produced on homogeneous Trees, as, for Instance, the Pine and Fir, but more than one are to be found growing on different Parts of the same Tree, where on one Side you may observe the *Stelis* or *Ixia*, and on the other the *Hyphear*.

Here *Theophrastus*, and his Transcriber *Pliny*, seem to make the *Hyphear* and *Stelis* distinct Species from the *Viscum*, but, says *Rai*, erroneously; for if they were really different, how comes it to pass that, in so many Ages, and among such a Multitude of Authors since the Time of *Theophrastus*, this Distinction could never be discovered, but has hitherto escaped the diligent Search, and curious Eyes, of the most sagacious Botanists? Nor do we approve those Distinctions of *Viscum* which, are taken from the different Kinds of Trees on which it grows; as if what grew on Trees of different Species were itself, also, specifically different. And what *Theophrastus* has written, that it always preserves its Leaves on Evergreens, but loses them on Plants which shed their Leaves, is contrary to Matter of Fact; for what grows on Pear-trees, Apple-trees, Almond-trees, and many others, whose Leaves are caducous, is perpetually green, and never loses its Leaves. As to what *Matthioli* says of the *Viscum* growing on the *Quercus*, *Robur*, and *Castanea*, that all its Leaves fall off at the Approach of Winter, let him answer for himself: For my Part, I could never make the like Observation on any Tree, at any time of the Year. *Raii Hist. Plant.*

VISIO. Vision.

Light, which is an Aggregate of all Colours collected together, sends forth Rays on all Sides: These Rays, tho' very subtle, are, in like manner, compounded of all Kinds of Colours; whence they are again divisible into simple Rays, which, collected separately, or of one Sort, or of different Sorts together, represent Variety of Colours; but, all united, form a very splendid lucid Beam, or very white Brightness. These Rays proceed from a lucid Point; as from a Centre, towards all Points without it, in strait Lines, thro' an homogeneous Medium, in no estimable Space of Time, passing thro' pellucid, and falling upon opaque Objects. Hence, all Points of the Cornea are struck by Rays contained within a Cone whose Vertex is the lucid Point, and its Base the Plane of the Cornea, if there be no Impediment interposed between the radiating Point and the Cornea.

The same Rays, approaching denser Bodies, are there incurvated, some more, some less: Hence they are separated, and being separated, and reflected, exhibit Variety of Colours, falsely ascribed to the reflecting or refracting Body, unless so far as they are separated by its means: The Reflexion, then, is here various, according to the Variety of the Colour latent in the Ray; the Angle, however, which the reflected Ray makes with a Perpendicular erected at the Place of Incidence, seems to be the same as that made by the falling Ray with the same Perpendicular; and in other Respects there seems to be no Alteration at all.

If these Rays pass out of one Medium into another, in their Approach to the latter they are incurvated, and, in that Condition, pass on thro' that Medium; and the more dense this is, the nearer incurvated are they towards a Perpendicular, and so on the contrary: And the same is, also, owing to a singular Cause latent in some Fluids, not to be determined but by Experiments. This Inclination is called *Refraction*.

This Refraction, with regard to Sense, is regulated by one certain Law, which is as follows: If the same Ray falls into the same pellucid Medium in Variety of Angles, the Sines of the Angles of Incidence will bear the same Proportion to one another, as the Sines of the refracted Angles.

Hence it follows, that Rays proceeding from a radiating or reflecting Point to the pellucid Cornea, are there refracted towards a Perpendicular, with almost the same Alteration of Course as in Water; so they pass on thro' the aqueous Humour, and have their Course determined through the Perforation of the Pupil to the Superficies of the crystalline Lens; but those Rays which enter with so great Obliquity as to fall on the Iris, are thence reflected, and fall out of the Eye again, that they might not, by their Reflexion and Ingress into the Eye, disturb the Distinctness of Vision; and those other Rays, which, on account of their Obliquity, fall between the lower Part of the Uvea and the vitreous Body, or on the Superficies of the vitreous Body, are immediately suffocated in the black Pigment of the same, and lost, as if they had never been, that so no Rays might be transmitted thro' the Vitreous Humour, but such as, after penetrating the Pupil, fall upon the crystalline Lens; the Iris, in the mean time, being contracted, or dilated, admits more or fewer Rays, in proportion as the Object is nearer, and more vivid, or more remote and languid; under this Law, or Regulation, that the nearer, or more luminous, the Object, the narrower, or more contracted, the Pupil. This happens from a Mechanism peculiar to that Part, and defends that

that very tender Membrane, the Retina, from being offended, dried, or scorched.

The flatter, therefore, the Cornea, the less it collects the Rays which fall upon it from one lucid Point, and the more it disperses them, so that the fewer in Number arrive at the crystalline Lens, and even those very divergent, unless they come from a very remote Object: On the contrary, the rounder the Figure of the Cornea, the more it will unite the Rays which strike upon it from one radiating Point, and the greater Number will it collect in the crystalline Lens, and those very divergent. And hence you may assign one Reason for the Vision of short-sighted and aged Persons.

The crystalline Lens, after receiving the determined Rays from [the Pupil], unites them still more by a new Refraction, and renders them convergent, under the following Law, or Regulation, that those Rays which proceed from one Point without the Eye, being here collected into one Point not far remote, are thence conveyed thro' the vitreous Humour to the Retina, on which they paint only that one Point precisely from which those Rays proceeded. If the crystalline Lens be very dense, or round, the Point of Collection [the Focus] is too near the Lens, which creates Confusion; if, on the other Hand, the Lens be too rare, or flat, the Point of Collection is too remote, whence a Confusion is again occasioned; and this affords us another Reason for the Vision of old Persons, and *Myopes*, or such as are short-sighted.

From the two last Paragraphs we may account, or assign the Reasons why short-sighted Persons have their Sight helped by a concave dioptric Glass, or moving the Object nearer; and why aged Persons see more distinctly thro' a convex dioptric Glass, or when the Object is more remote.

Both these Defects in the Persons just mentioned, are, also, remedied by bringing the crystalline Lens to the Cornea, or removing it at a Distance; which Purposes seem to be answered two different Ways; as by compressing the Bulb of the Eye by a strong Contraction of all the four Muscles [See OCULUS] at once, whence the Bulb is lengthened; or by a Contraction of the Fibres which compress the vitreous Body, and elevate the Lens. There appears no other Method of answering these Intentions.

The Refraction which a Ray suffers in passing out of the Air into the Cornea, is nearly equal to what it suffers in passing out of Air into Water; and the Refraction of a Ray, passing from the aqueous Humour into the Lens, is equal to what happens to a Ray passing out of Water into Glass; whence the Alteration is inconsiderable: And, in the last Place, a Ray, passing from the crystalline Lens to the vitreous Body, suffers but little Alteration by Refraction, and, perhaps, none at all, when the vitreous Humor is pretty closely compressed; by which means, that Part becomes more dense. Hence the principal, and most necessary Use of the vitreous Humor seems to be, that the Lens, by having free Space to move, might adjust and accommodate the Eye to different Distances, being itself a Substance of a less mutable Figure than the vitreous Body.

The End, or Design, of all this Apparatus, [of Humors and Refractions] is, that there may be a distinct and vivid Collection of those Rays, which, proceeding from one Point of the Object, enter the Eye, and penetrate the crystalline Lens, in the Bottom of the Eye, directly under the Pupil, and that so there may be painted in this Bottom as many Points as were conspicuous in the Image: Hence, the Picture, or Image, in Miniature, formed on the Retina, resembles the Object.

And since the mucous Medulla of the optic Nerve has its Seat precisely in this Place, directly under the Pupil and the Lens, it appears, that this is the Part which receives the Pictures, and, by a Continuation of the Impression, presents them to the common Sensory; and excites in the Mind the Idea of the Thing seen.

It appears, also, from what has been said, that the Experiment of *Picard* and *Mariotte* is so far from disproving what has been advanced in the preceding Paragraph, as some Authors have thought, that it is a clear Confirmation of it; and we have even Occasion hence given us, to break forth into Praises of infinite Wisdom in placing the Entrance of the Optic Nerve not in the Axis of Vision, nor towards the exterior Angle of the Eye, but towards the Nose, in a middle Altitude.

The Perfection, therefore, of Vision, depends on such a Figure, Transparency, Fabric, and Energy of the Solids, and such a Density and Transparency of the colourless Humors, as are qualified for collecting Multitudes of Rays from every visible Point of an Object, unmixed with others, upon one distinct Point of the Retina, this Focus being formed neither too near, nor remote; and, in the next Place, on such a Mobility of these Solids and Humors, in Conjunction, as is necessary for a clear and distinct painting of Objects placed at different Distances; for, with these Requisites, their Size, Figure, Distance, Situation, Motion, Rest, Light, and Colour, are very

well represented. In the Retina there is, besides, required such a Situation, Expansion, Quickness of Sense, Tenderness, and Justness of Proportion, between the medullary, arterial, venous, and lymphatic Substance, as dispose it for transmitting, by a free and sound Optic Nerve, pure and perfect Images to the common Sensory.

There is, then, no Emanation of Rays from us, nor are they reflected from Objects back again upon us, as the *Stoics* asserted; nor is Sight performed by Emission of a visible Species from the Object towards us, as the *Pythagoreans* thought; nor by Emission of Effluvia from the Object and the Eye meeting together, and, after mutual Embraces, reflected, as the *Platonists*, by an extraordinary Way of Ratiocination, endeavoured to prove; nor, lastly, is it owing to a material Emanation of corporeal Images, as was the Opinion of *Epicurus*; but is performed in that simple and mechanic Way which we have above explained.

Queries on this Subject are such as the following:

Why Objects placed at the least Distance, in which the Eye can bear to see distinctly, appear most plainly?

Why, when removed thence to a great Distance, they appear distinctly, but affect us in a more languid manner? Why, also, when placed too near, they seem confused? What is necessary to a distinct, what to a strong Vision? And the like. Which are all easily answered, from the Premises. *Boerhaav. Institut. Medic.*

VISNAGA.

The Characters are;

The Root is fibrous, and annual; the Leaves are broader, shorter, and blunter, than those of Fennel. The Umbella is generally contracted, and closed; and the Seeds are much smaller than those of Fennel.

Boerhaave mentions but one Sort of *Visnaga*; which is,

Visnaga. Offic. J. B. 3. 31. Raii Hist. 1. 456. Boerb. Ind. A. 49. Gingidium umbella longa. C. B. P. 151. Gingidium Hispanicum. Ger. 885. Emac. 1042. Visnaga Gingidium appellatum. Park. Theat. 890. Fœniculum annuum, umbella contracta oblonga. Tourn. Inst. 311. SPANISH PICKTOOTH.

This is a Plant of about a Cubit and an half in Growth, with the striated, glabrous, and geniculated Stalk of the *Anethum*, and the smooth Leaf of the *Pastinaca erratica*, but divided into larger Segments: The Umbellas of the Flowers are white, and their Pedicles, especially the external ones, are above a Palm in Length, and are hard, and stiff; and each Pedicle, both internal and external, bears on its Top a new Umbella of numerous small Pedicles; every Umbella, also, as well as every Top of a Branch, has small Leaves subcent at its Base; the Seed is small, like that of the *Apium* of the Shops, and acrimonious.

It grows in *Italy*, *Sicily*, and the southern Parts of *France*, spontaneously, but is cultivated, with us, in Gardens; and flowers in the Summer.

J. Bauhine mentions a *Gingidium Ægyptium* with larger and firmer Umbellas and Pedicles than those which grow in our Gardens; and we, also, remember to have observed such.

The Description of the *Daucus Campestris*, in *Cæsalpinus*, agrees, in all Respects, with that which he had before given of the *Visnaga* in the same Book; so that it seems quite the same Plant.

The Pedicles, or Footstalks, of the Umbellas, on account of their Stiffness, and sweet Scent, serve for Toothpicks with many Persons, especially among the *Spaniards*; whence we call it *Spanish Picktooth. Raii Hist. Plant.*

The Virtues, according to *Bauhine*, are the same with those of *Fœniculum*, or Fennel. *Hist. Plant. adscript. Boerhaav.*

VISQUEIRO. The Name of a *Brasiliân* Tree, which affords a soft viscous Resin, used for Birdlime. *Raii Hist. Plant.*

VISUMARUS. A Name for the *Trifolium*, in *Marcellus Empiricus, C. 3.*

VITÆ BALSAMUM. See **ELIXIR BALSAMICUM HOFFMANNI.**

I have, by Mistake, made a Reference to this Article, from **EUSSII SPIRITUS BEZOARDICUS**, and from many other Articles, which ought to have been to **LIQUOR MINERALIS ANODYNUS**. This the Reader is desired to take Notice of.

VITALBA. A Name for the *Clematis*; *sylvestris*; *latifolia*.

VITALIA. *Cardiacs. Blancard.*

VITALIS ACTIO. See **ACTIO.**

VITALIS FUNCTIO. See **ACTIO.**

VITEALIS CONVULVULUS. A Name for the *Convolvulus*; *minor*; *arvensis*; *flore roseo.*

VITELLUS. The Yolk of an Egg. See **OVUM.**

VITEX.

The Characters are;

The Leaves run, as it were, into five Divisions; and, in
* * U
European

European Plants, are caducous. The Flower is monopetalous, tubulous in the lower Part; in the upper, as it were, bilabiated, and disposed in Spikes: The Ovary, which is seated in the Centre of an indented Calyx, becomes a globous Fruit, divided into four Capsules, containing oblong Seeds.

Boerhaave mentions six Sorts of *Vitex*; which are,

1. *Vitex*; foliis angustioribus, Cannabis modo dispositis. See AGNUS CASTUS.

2. *Vitex*; foliis angustioribus; Cannabis modo dispositis; floribus cœruleis. H. L.

3. *Vitex*; five Agnus; flore albedo. H. R. Par.

4. *Vitex*; five Agnus minor; foliis angustissimis. H. R. Par.

5. *Vitex*; trifolia; minor; Indica; rotundifolia. Breyh. Prædr. 2. Cara Nosi. H. Mal. 2. *Negundo* fœmina, *Acosta*. H. A. i. 181.

This is a Shrub about a Man's Height, of the Bigness of a Peach-tree, according to *Garcias*; or of an Almond-tree, according to *Acosta*; and growing in sandy Places: The Root is fibrous, of a brownish Colour without, and whitish within, with a thin Bark, of a bitterish, but when chewed awhile, of a somewhat acrimonious Taste; the Leaves are generally three on one Pedicle, two opposite, and the third at the End of the Rib larger than the others; they are of an oblong-round Figure, cuspidated in the fore Part, with an even Margin, moderately thick, soft, smooth, with their upper Face of a dark Green, but paler beneath, of a bitter and acrimonious Taste, and a grateful Smell, much like Lavender: According to *Acosta*, the Leaves have the Taste and Smell of Sage: The Flowers grow many together on common Pedicles, out of Nodules, which are produced by Pairs in a decussated Order above the Origin of the Leaves; these Flowers adhere to short Pedicles, are of a purple-ceruleous Colour, and have the same Smell as the Leaves, only brisker: They consist of five shapeless Petals, with a Bell-shaped Neck; one of the Petals is erect and broad, but concave and hairy in the interior Part; the Neck of the Flower towards that Part of the Leaf has, also, its interior Part hairy; the other four Petals are expanded to almost their Breadth, and more like one another, only those next the erect Petal are somewhat broader and rounder, the others towards the anterior Parts. The Flower is furnished with four erect, purple-ceruleous Stamina, which have blackish and arched Apices, and in the Middle a slender, purple-ceruleous Style [Pointal]; with a bifid Cuspis, inflected towards a ceruleous Leaf, and taking its Original from the Rudiment of the Fruit [the Ovary] within the Calyx; the Calyx, which straitly embraces the lower Neck of the Flower, consists of five short, faint-green, cuspidated Leaves, and is striated with slender Ribs, or Fibres, lengthwise: The Fruits are round, and somewhat oblong Berries, of the same Smell with the Flower, the greatest Part of the Berry comprehended within the Calyx, and of a faint-green Colour; but the upper Part, which appears above the Calyx, is at first redish and shining, but afterwards, when dry, of a black Colour, like Ink: In the Middle is an oblong-round Stone, under a green and hard Pulp, which is not thoroughly softened with Maturity; the Stone contains a whitish, tasteless Kernel.

The Oil of the Root, by Distillation, is clear, somewhat greenish, of a sweet, acrid, penetrating Taste, and void of Smell.

This Tree, says *Acosta*, is of such frequent Use in Medicine in these Countries [*Malabar*, and the adjacent Parts], that unless it had pleased God that a manifold Increase of young Shoots should succeed in the Room of those Branches which are cut off, the Trees had long ago been consumed, or, at least, been extremely dear and scarce; but the more the Branches are lopped, the thicker they grow, and are always green.

The tender Branches, Leaves, Flowers, and Fruits, bruised, and boiled in Water, or fried or boiled in Oil, are successfully applied to all Pains, proceeding from what Cause soever, but especially to Pains of the Joints from a cold Cause; and in Tumors and Contusions they have surprising Effects. Some apply the same to Wounds, and affirm, that in one Night it has removed the Pain, and digested the Matter.

The bruised Leaves are applied to old Ulcers with good Success; for they digest the contained Matter, cleanse the Ulcer, and cicatrize it; and they are really found to be of such Use in Wounds, Abscesses, and Contusions, as to render the Assistance of a Surgeon unnecessary. The Women wash their whole Bodies at all Seasons with the Decoction of the Leaves, and are so firmly persuaded that the Flowers, Leaves, and Fruit of the *Negundo*, have a Virtue of promoting Conception, that they would stone any Person who should endeavour to convince them of the contrary. The Leaves used in Mastication amend a fetid Breath. Thus far *Garcias* and *Acosta*. Raii Hist. Plant.

6. *Vitex*; trifolia; minor; Indica; serrata. Breyh. Prædr.

2. *Bennesi*. H. Mal. 2. Raii Hist. 2. 1575. *Negundo mas* *Acosta*. H. A. i. 179. *Boerb. Ind. alt. Plant.*

The Leaves of this Species grow by Threes and Fives on Pedicles, and are of an oblong and pretty narrow Figure, and contracted into an acute Point, but rounder and broadest at the Pedicle: In their fore Part they are more or less finely crenated, of a darkish-green Colour, but clearer in the upper Part; the largest Leaf is at the Extremity of a Rib; the two next, which are larger than the others, adhere to the Middle of the Rib by Pedicles not an Inch in Length; the other two Leaves are very small, and seated on the common Pedicle: In its other Characters it agrees with the preceding; its serrated Leaves, resembling those of the *Sambucus*, shew it to be the *Negundo mas* of *Garcias* and *Acosta*. Raii Hist. Plant.

The Seeds of the *Vitex* are effectual in the Hysterical Passion; and provoke Urine, and the Menfes. Hist. Plant. adscript. *Boerhaav*:

VITICELLA. A Name for the *Bryonia alba*.

VITILIGO. A Species of white Leprosy. See LEPROA.

VITIS.

The Characters are;

At the Joints of the Branches shoot forth Tendrils which clasp and twine themselves about whatever lies in their Way; the Flower is rosaceous, pentapetalous, and furnished with five Stamina; the Ovary grows in the Bottom of the Flower, is furnished with a short, hairy Tube, and becomes a soft, succulent Berry, containing several Seeds, generally four; the Flowers and Fruit are disposed in Clusters.

Boerhaave mentions twelve Sorts of *Vitis*; which are,

1. *Vitis*; sylvestris; Labrusca. C. B. P. 299. *Labrusca*. *Lemery's Hist. des Drogues*.

This is a Species of Vine which grows, without cultivating, by the Sides of Highways, and near Hedges; it bears a very small Grape, which, when ripe, becomes black, and sometimes ripens not at all.

The Plant is deterfive and aperitive, and its Fruit is astringent. *Lemery des Drogues*.

2. *Vitis*; vinifera; ex cujus Uvis acerbis, immaturis, Omphacium exprimitur. *Boerb. Ind. A. 2. 232. Vitis*. Offic. Ind. Med. 124. *Vitis Vinifera*. Mont. Ind. 55. THE VINE.

The Vine is so well known to every Body, that it would be needless to spend time in describing it: With us it generally runs up the Sides of Houses, or Walls; in the Wine Countries it is planted in Vineyards, as a Standard Tree. The Differences of the Grapes, which grow on them, are almost as many as the Countries they grow in, as to their Colour, Taste, and Largeness; and there is as great a Diversity in the Wines produced from them. Amongst these, the Canary, the Malaga Sack, and the Alicante, for sweet Wines, are reckoned best; the Sherry and Mountain, for dry Stomach Wines; the Red and White Port, and the French, to drink with Food, are most in Esteem; and to these, for their Excellency, and grateful Taste, may be added the Muscadine, the Smyrna, and Cyprus Wines.

As to the Nature and Use of Wine, there have been so many Volumes written about them, that it would be superfluous to say much here: Moderately used, it is very cordial, and of great Service to Mankind. It strengthens the Stomach, helps Digestion, comforts the Bowels, and is the best Preservative against the Plague. *Miller's Bot. Off.*

The Vine is reckoned, by *Theophrastus* and *Varro*, among Trees; but because it stands in need of Assistance, and must be forced to trail on the Ground unless it meets with something to lay hold of, in order to support itself, it can hardly deserve the Name of a Tree, tho' its Trunk sometimes grows to the Size of a Man's Leg, or, perhaps, Thigh. The Antients numbered it among Trees, with respect to its Bigness, in which it really exceeds some Trees, according to *Pliny's* Account of it, *Lib. 14. Cap. 1*. There is to be seen, he says, in the City *Populonia*, an Image of *Jupiter*, made out of one Vine, which has stood uncorrupted for many Ages. At *Massilia* [*Marseilles*] is a public Drinking-bowl, of the same Wood; and at *Metapontum* the Temple of *Juno* is supported by Pillars made of the Wood of the Vine. The Staircase by which you ascend to the Temple of *Diana*, at *Ephesus*, is made, as they say, of the Wood of a single Vine, in the Isle of *Cyprus*, where Vines grow to an extraordinary Bigness: Nor is there any Wood of a more durable Nature. There is no End of the Growth of this Plant; a whole House, or Villa, has been encompassed and overspread with the Branches and sequacious Tendrils of a single Vine. At *Rome*, in the Portico of *Livia*, one Vine, extending itself upon Poles, overshades the whole open Walk; and the same Vine has yielded twelve Amphoræ of Must: They over-top the Elms in every Place; and it is reported, that *Cynæas*, the Ambassador of King *Pyræus*, admiring the Height of the Vines at *Aricia*, but disliking the

austere Taste of the Wine, merrily said of it, that its Mother deserved to hang on so high a Gibbet. Thus *Pliny*.

C. Bauhine divides the *Vitis* into the *Sativa* and *Sylvestris*; or cultivated and wild: Of the *Sativa*, or cultivated, there is the greater Sort, of which there are very many Species, and the less. The Grapes of the larger differ in Colour and Size; for in some they are green, in others whitish, or of a deep yellow, or a deep black-red, or ceruleous, or a light-red. As to Form and Size in some Species, the Grapes are oblong, and of the Size and Shape of Prunes, and this Sort may be called *Pergulana* (perched, or staked up); of others the Grapes are round, and bigger or smaller; some again have no Grain, or Stones, others a single one, or perhaps two; a bearded Grape is more rarely to be met with. The lesser Sort of *Vitis* bears a black Grape, very seldom white or yellow, with a very small soft Kernel; they differ, also, in Taste; some are sweet, others sharp, others of a musky Taste, such as the *Vitis Apiana* of *Pliny*.

There is a Difference, also, in the Leaves; for some are larger, and more deeply cut, as the *Italica*, the Leaves being cut home to the Pedicle, and divided into acute Lobes; others are of a less Size. Some again are thinner, others thicker; some green, others red; others spotted; some hard to the Touch, others soft; some smooth, others a little hairy. Thus *C. Bauhine*.

Of the Kinds of Grapes *Pliny* thus briefly speaks: The Kinds of Grapes, in respect of Size, Colour, Taste, and Kernels, are innumerable, and they are still multiplying upon us; here they glitter in Purple, there they sparkle in Rose-colour, or shine in Green; the whitish and the black Sort are common; the *Bumasti* swell like turgid Breasts, and others run into Length with long Kernels like those of Dates, and so on.

That the Kinds of the *Vitis*, as well as of the Pear-tree and Apple-tree, are innumerable, was acknowledged by the Antients; since, as *Pliny* truly says, they are almost as many as the Differences of Soil, and new Sorts are produced every Day, and ever will be produced; but it would be extremely difficult, not to say impossible, to accommodate the ancient Names of Vines to the most noted and cultivated modern Species, and, therefore, we shall not attempt it, as having neither Means nor Leisure for such an Undertaking.

3. *Vitis*; *Corinthiacæ*; five *Apyrina*. *J. B.* 2. 72. *Boerb. Ind. A.* 2. 232. *Uvæ passæ minores, Passulæ*. *Offic. Uvæ passæ minores, vel Passulæ Corinthiacæ*. *C. B. P.* 299. *Corinthiacæ*. *Park. Theat.* THE CURRANT VINE.

These are a smaller Sort of Grapes, which took their Name from their growing in Plenty about *Corinth*, though we have them principally from *Zant* and *Cephalonia*; these they only gather off the Bunches, and lay them to dry in the Sun, and so put them up in large Buts.

Both these, and the *Uvæ passæ majores*, are opening and pectoral, helpful against Coughs and Consumptions.

The Currants are more used in the Kitchen, than in Medicine. *Miller's Bot. Off.*

Currants are of a temperate Quality, mitigate the Heat in Fevers, allay Thirst, and loosen the Belly. *Dale.*

4. *Vitis*; *Apiana*; *Plinio*. *C. B. P.* 298. *Uva Muscatella*. *Car. Step. Præd. Rust.* 342.

5. *Vitis*; *Pergulana*; *acinis Prunorum magnitudine & forma*. *C. B. P.* 298.

6. *Vitis*; *folio Apii*. *J. B.* 2. 73.

7. *Vitis*; *alba*; *dulcis*. *J. B.* 2. 73.

8. *Vitis*; *Frontiniacæ*. *C. B. P.* 299.

9. *Vitis*; *nigra*; *dulcis*; *Vintint dicta*.

10. *Vitis*; *multiplex*; *alia*; *pro diversitate, quæ obtinet in acinis ratione coloris, saporis, magnitudinis, admodum vari cultuque industrii Vindemiatoris semper novâ.*

11. *Vitis*; *quinquefolia*; *Canadensis*; *scandens*. *T.* 613. *Edera, quinquefolia Canadensis*. *Corn.* 100.

12. *Vitis*; *vulpina dicta*; *Virginiana*; *alba*. *Plukn. Alm.* 392. *Boerb. Ind. alt. Plant.*

The Leaves, with the Tendrils of the Vine, being bruised, and applied, mitigate Pains of the Head, and with Polenta, cool the burning Heat and Inflammation of the Stomach. The Leaves applied alone have the same Effect, as being of a refrigerating and astringent Quality. The Juice of the same drank, is effectual in the Dysentery, Spitting of Blood, the Stomachic Passion, and the Green-sickness. The Tear of the Vine, which is a sort of Gum, and concretes about the Stock, taken in Wine, expels the Stone, and used by way of Unction, cures the Lichen, Pfora, and Leprosy, first prepared by an Affriction of the Parts with Nitre. The same with Oil, frequently used to anoint the Hair, has the Effect of a Psilothrum; but the most efficacious for that Purpose is, the Liquor discharged from the green Sprays by Exudation when burning, which, also, removes *Myrmecia* [a kind of little black Warts]. The Ashes of the Sprays, with the expressed Husks of the Grapes in Vine-

gar, cure a Condyloma and Thymus, affecting the Parts about the Anus, being anointed with it. The same is effectual in Luxations, and the Bites of Vipers, and applied with Oil of Roses, Rue, and Vinegar, is good for an Inflammation of the Spleen. Botanists ascribe still more Virtues to the Ashes and Lixivium prepared of them; but there seems to be but little Difference between the Ashes of Woods and their Lixivia, except in their containing more or fewer Salts to emit them.

Grapes, in the Opinion of *Galen*, are the chief of all autumnal Fruit; more nutritive than any of the fugacious Sort; or such as will not keep, and have least of a bad Juice, especially when perfectly ripe.

All fresh Grapes disturb the Belly, and inflate the Stomach; for which Reason they are forbidden to be eaten in Fevers; but after they have been gathered and hung awhile, they are more innocent, and not only good for the Stomach, but restore a lost Appetite, and consequently are of Service in Languishings; they, also, render the Body soluble. But there is a very considerable Difference in Grapes: The sweet are most nutritive, and fatten the Body, cause Inflations in the Stomach, and provoke to Stool; austere Grapes, on the contrary, nourish but little, and bind the Belly. *J. B.*

I remember to have read somewhere of a *German* Matron, who, during the whole Time of Vintage, which lasted a Month or two, in which she lived upon Grapes, never used to drink, which shews that Grapes are good to quench Thirst.

Every body knows; says *Palladius*, that the larger Grapes, which make the finest Shew, and are of an hard and dry Grain; are brought to the Table; but the most fruitful, which have the tenderest Skin, and the richest Taste; and especially such as soonest fade, are set aside for the Press.

Vitis, according to *Donatus*, in *Eunuch*. comes from *Vico*, which *Festus* expounds by *alligare*, to tie; and *Nonius*, by *vincire*, to bind about; and *inflectere*, to inflect or bend. *Raii Hist. Plant.*

The distilled Water of the Tops of Vines cut in the Spring, is aperient, deterfive, and of Service in the Stone, and Nephritis; and, used externally, is good to deterge the Eyes. The Leaves and Tendrils are astringent and refrigerating, and proper in a Diarrhoea and Hæmorrhages, and are used in Fomentations of the Feet; the young Branches or Sprays, are aperitive. The immature Fruits of the *Vitis* are called *Agrestia*, and the mature *Uvæ*, which increase an Appetite, and provoke to Stool. The Fruits dried in the Sun, are called *Uvæ passæ*, or *Passulæ*, the largest of which are the *Uvæ Damascenæ*, the smaller *Uvæ Corinthiacæ*, which latter are serviceable in Coughs, and to expectorate Phlegm, and to render the Body soluble. The Leaves boiled, are astringent; the Water, which distils spontaneously from the Plant, deterges cutaneous Defections of the Face. The Tartar extracted from *French* Wines, is red; from *German* Wines, white. *Hist. Plant. adscript. Boerhaav.*

There are several Sorts of Raisins used, though *Dale* mentions only the two following:

1. *Passula Damascenæ*. *Offic. Passula maxima*; five *Damascenæ*, *Zibebæ dictæ*. *Schrod. IV. p. 172. Vitis Damascena*. *Hort. Reg. Par.* 186. *Tourn. Inst.* 613.

The *Zibebæ* stoned, and infused in a convenient Quantity of Spring-water, or a proper distilled Water, make a grateful Sort of Drink for sick Persons, and good to quench Thirst. The Stones have an astringent Virtue, and are proper in Vomitings and Fluxes of the Belly, whether used internally or externally; they are roasted and triturated for these Purposes. *Schrod.*

2. *UVA PASSA MAJOR*. *Offic. Uva passa major* *beuæ* *Græcis forte*. *C. B. P.* 299. RAISINS OF THE SUN.

Raisins of the Sun are made of the Grapes after the following manner; Cut the Stalks off the Bunches they design for that Use almost in two in the Middle, and by that means hinder the Sap from coming to them in any Quantity, and let them hang thus on the Branches, till by Defect of Nourishment, and the Heat of the Sun, they are sufficiently cured; when they are put up into Casks for Use. The *Malaga* Raisins are managed another Way: They dip the Bunches of ripe Grapes in a boiling-hot Lye, made of the Ashes of Vine-stalks, taking them out presently, and then lay them on Boards in the Sun to dry, and afterwards they are packed up in Frails. *Miller's Bot. Off.*

Raisins of the Sun, as well as the *Zibebæ*, and Currants, are all hot or temperate, lenient, loosen the Belly, correct Acrimony, are grateful to the Stomach, Lungs, and Liver, and mitigate a Cough. *Schroder.*

Raisins, by their acrimonious and penetrating Heat, vellicate the Teeth and Gums, and do them no small Injury, by disposing them, when frequently eaten, to Putrefaction. *Raii Hist. Plant.*

VITIS ALBA. See BRYONIA ALBA.

VITIS IDÆA.

The Characters are ;

The Flower is monopetalous, Bell-shaped, and has growing in it a globous Ovary, which becomes a soft umbilicated Berry, full of Juice, and containing small Seeds.

Boerhaave mentions five Sorts of *Vitis Idæa* ; which are,

1. *Vitis Idæa* ; foliis oblongis ; crenatis ; fructu nigricante. *C. B. P.* 470. *Tourn. Inst.* 608. *Boerb. Ind. A.* 2. 71. *Myrtillus. Offic. Vitis Idæa angulosa.* *J. B.* 1. 520. *Raii Hist.* 2. 1488. *Synop.* 3. 457. *Vaccinia nigra.* *Ger.* 1229. *Emac.* 1415. **BLACK WORTLES, or BILL-BERRIES.**

The Bill-berry Bush is a small low Shrub about a Foot high or more, with many tough, flexible, angular green Twigs, bearing small, oblong, round-pointed Leaves, crenated about the Edges, among which the Flowers grow singly on short Foot-stalks, of a red dull Colour, in Shape of a Bottle, which are succeeded by round umbilicated Fruit, as big as Juniper-berries, and much of their Colour, full of a pleasant sweet purple Juice. It grows in Heaths among Fern, in a boggy Soil, and in thin woody Places ; and flowers in *May*, and the Fruit is ripe in *July*. The Fruit only is used, and that but seldom in the Shops.

Bill-berries are cooling, binding, and grateful to the Stomach, and of use in Fluxes or Hæmorrhages. *Simon Paulli* says, they are much used against the Scurvy in *Norway*, and other Northern Countries. An agreeable Syrup may be made of the Juice, and used in all the fore-named Intentions. *Miller's Bot. Off.*

These Berries, according to *Dodonæus*, are cold and drying, with a manifest Astringent. They are good for an hot Stomach, quench Thirst, mitigate the Heat of burning Fevers, bind the Belly, stop Vomiting, cure a Dysentery proceeding from yellow Bile, and are effectual in the Cholera Morbus. But for these Purposes the Rob or Juice, inspissated with Sugar or Honey, is far preferable to the Berries, because these being of a cold Nature, being eaten crude, are offensive to a cold and weak Stomach, and disturb rather than bind the Belly. But *Casp. Hoffman* thinks, that the Berries which grow in the Sunshine, and are thoroughly ripe, are by no means of so cold a Nature as to injure a cold Stomach by their Crudeness.

The same Author is of Opinion, that the black Wortle-berries may rightly and regularly be substituted in the room of Myrtle-berries with these Conditions : First, that you take such as grow in Northern Countries, and not in *Italy* or *Spain* ; Secondly, that they be not perfectly ripe : Thirdly, that they be not green or fresh gathered, but dry'd : Lastly, that you take not the crude Juice, which is considerably refrigerating from its immoderate Aqueousness, and somewhat astringent, but inspissated into a Rob.

That this Juice is of fine Parts, and vehemently astringent, is evident from the Marks or Stains which it leaves on the Hands and Mouths of those who eat the Berries, and which can hardly be washed out ; hence it is used to dye Linen and Paper of a cerulean or sky-blue Colour.

The Shepherds and Peasants, who are Inhabitants of mountainous Countries, delight to eat the Berries ; for their Sweetness is accompanied with an Acidity, which is very grateful to the Palate. *Raii Hist. Plant.*

2. *Vitis Idæa* ; Zeylanica ; odoratissima. *T.* 608. *Myrtus Zeylanica, odoratissima, Baccis niveis, monococcis.* *H. L.* 435.

3. *Vitis Idæa* ; Æthiopica ; Buxi minoris folio ; floribus albicantibus. *H. A.* 1. 125. *Buxus, Africana, folio oblongiori, non serrato.* *Indic.* 238. *H. R. D.*

4. An *Vitis Idæa* ; foliis Myrti angustissimis ; longis ; alternis ?

5. An *Vitis Idæa* ? *Quæ Buxus, Africana, rotundifolia, serrata.* *P. B. Prodr. ? Plukn. Phyt. T.* 18. *H. R. D. Boerb. Ind. alt. Plant.*

It is called *Vitis* from its tough flexible Branches, with the Epithet of *Idæa*, because in former Times it grew plentifully on Mount *Ida*.

The Berries are astringent, and useful in the Diarrhœa and Dysentery : Of the expressed Juice is prepared a Rob, which is excellent for these Distempers. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Species of *Vitis Idæa*, *Dale* mentions the following ;

- VACCINIA.** *Offic. Vaccinia nigra fructu majore.* *Park. Theat.* 1455. *Vitis Idæa magna quibusdam, sive Myrtillus grandis.* *J. B.* 1. 518. *Raii Hist.* 2. 1487. *Synop.* 3. 457. *Tourn. Inst.* 608. *Vitis Idæa foliis subrotundis exalbidis.* *C. B. P.* 470. *Vitis Idæa foliis subrotundis.* *Ger.* 129. *Emac.* 1416. **THE GREAT BILL-BERRY.**

This Plant is pretty shrubby, with a Multitude of round, ramous Branches, a Cubit and half in Length, covered with a light-red Bark, and of a pretty solid and close Substance. *Cla-*

sius says the Branches sometimes spread on the Ground, are tough, and covered sometimes with an ash-coloured, sometimes a reddish Bark. The Leaves are of the Size of those of the common *Vitis Idæa angulosa*, oblong, but round ; glabrous, and not at all serrated like those of the other, somewhat glaucous in the lower Part, or, according to *Clusius*, whitish and venous, of an astringent and somewhat acid Taste, and caducous. The Flower is like that of the common Sort, White inclining to Purple, concave, the Lips being cut into five Lobes, reflexed outwards, and furnished with its proper Stamina. The Berries, which are equal to those of the Juniper, or *Myrtus Tarentina*, have a broader Umbilicus, whence proceeds an Apex ; whence it happens, that the Berries are not so round as those of the common *Vitis Idæa*. They adhere to pretty long Pedicles, are of a grateful, subacid, and vinous Taste, and contain some minute yellowish Grains. The Root is hard, ligneous, and abounds with capillary Fibres.

It delights in cold and mountainous Places : *Clusius* found it among the *Austrian* and *Stirian Alps* ; and *John Bauhine* in the Mountains of *Burgundy*, and other like Places. We have observ'd it in the mountainous Parts of *Cumberland*, and in great Plenty near *Gambleby* six Miles from *Perith*, in the marshy Pastures on both Sides of the Road.

The Hunters and Ploughmen ascribe an inebriating Quality to the Berries, as we are assured by *Du Choul*, *Camerarius*, and others, especially when eaten pretty freely. The Leaves and Branches are of the same Use to the *Silesian Dyers*, as the *Sedum Alpinum* to those who live in the Countries amongst the Alps. *Raii Hist. Plant.*

VITIS MARINA. See *FUCUS MARINA*.

VITIS NIGRA. See *BRYONIA NIGRA*.

VITIS SYLVESTRIS, trifolia. A Name for the *Toxicodendron* ; *triphyllum* ; *glabrum*.

VITIS VINIFERA. See *VITIS*.

VITISALTUS. The same as *CHOREA SANCTI VITI*.

VITREA TABULA. The internal Table of the *Cranium*. See *CAPUT*.

VITREUS HUMOR. The vitreous Humour of the Eye. See *OCULUS*.

VITRIFICATIO. Vitrification ; that is, the Conversion of any Body into Glass.

VITRIOLUM. Vitriol.

Dale mentions three Sorts of Vitriol ; which are,

1. *Vitriolum cæruleum seu Romanum.* *Offic. Vitriolum cæruleum.* *Charlt. Foss.* 11. *Vitriolum Cyprinum cæruleum.* *Worm.* 25. *Chalcalthum Cyprinum.* *Aldrov. Mus. Metall.* 339. *Matth.* 1363. *Atramentum cæruleum Romanum cæstum.* *Kentm.* 14. **BLUE, or ROMAN VITRIOL, and CELESTIAL STONE.**

It is a crystalline Substance, ceruleous, or resembling the Sapphire, compact like Sugar-candy, and of an acid, austere, acrid, and astringent Taste. It is either made of a Solution and Crystallization of Copper, or imported from *Cyprus* and the *East-Indies*.

Roman Vitriol is heating, drying, highly astringent, and constringing, provokes Vomiting, and expels Worms. *Schroder.* This Sort is esteemed the best for Medicinal Use, and is very much commended for the Scabies and Ulcers contracted from the *Lues Venerea.* *Worm.* It is the Basis of *Digby's* sympathetic Powder, and cures the Scabies and Lepra.

2. *Vitriolum viride.* *Offic. Charlt. Foss.* 11. *Vitriolum viride seu Romanum.* *Tourn. Matth. Med.* 185. *Chalcalthum viride falsitium ; Atramentum Sutorium Officinarum.* *Schw.* 373. *Atramentum viride durum solide cæstum.* 13. **GREEN VITRIOL, or COPPERAS.**

This, also, is a crystalline Substance, but of an herbaceous Colour, and more granulated and grumous-like common Salt : It has the Taste of the preceding.

There are two Sorts of *Green Vitriol*.

3. **VITRIOLUM ALBUM.** *Offic. Worm.* 25. *Geof. Prælect.* 106. *Charlt. Foss.* 11. *Chalcalthum candidum.* *Aldrov. Mus. Metall.* 339. *Atramentum album durum falsile.* *Kentm.* 13. **WHITE COPPERAS.**

White Copperas is a white granulous Substance, concreted like white Sugar, of the Taste of *Green Vitriol* ; it is imported to us from *Germany*, being found in the Mines of *Gosselaer*, of the Figure of Icicles, and transparent.

It agrees in Virtues with *Green Vitriol* ; but is more used in Collyria than the other Vitriols. There is, also, prepared an excellent Emetic of *White Copperas* dissolved in Water, and coagulated by boiling to the Consistence of White Sugar, as we are informed by *Geoffroy Prælect.* 106. who thinks *Tournesfort* mistaken in affirming, that it is made of *English Vitriol* dissolved in Water, and boiled till the Water is evaporated ; what remains consisting of pretty large grumous Masses resembling White Sugar, which being exposed to the Air, assumes a yel-

a yellowish Colour on the Outside. This *Vitriol* is of great Use in Styptic Waters, in Dying, and in making Ink. *Dale*.

Some derive the Name *Vitriol* from *Vitrum*, because it has the Colour and Transparency of Glass; in *Greek* it is named *χάλας*, as if it were an Efflorescence of Brass; and in *Latin* *Atramentum Sutorium*, because it is used in blacking Leather. *Vitriol* is either natural or factitious. The former is found in Crystals, or Striae, sticking to the Roofs of Mines; and the latter is made by boiling the vitriolic Veins of some mineral Ores in Water, and afterwards letting them stand in the Cold to crystallize; or by corrupting and fermenting the *Pyrites*, or *Marcasite*, and then mixing it with Water, from which *Vitriol* is afterwards obtained by Coction and Crystallization. This Way of making *Vitriol* seems to have been unknown to the *Greeks*.

White *Vitriol* is brought from *Germany*, made up in Loaves, like Sugar, and is of a sweetish astringent Taste: They are mistaken who think that white *Vitriol* of *Goslar* is only the Green, calcined by the greatest Degree of Fire; for it is found in proper Mines, like a downy Efflorescence, which being dissolved in Water, to a due Consistence, is afterwards boiled till it concretes into a white Mass, like Sugar. Sometimes little Pieces of it are found in the same Mines, transparent like Crystal. This *Vitriol* contains an imperfect Iron Ore, or, perhaps, an Iron Ore mixed with Calamine or Lead. Blue *Vitriol* is dry to the Touch, and concremented into blue Crystals, like Sapphires, of a rhomboidal Figure, flattened, and consisting of ten Sides. It is brought from several Places, especially from *Hungary* and *Cyprus*; and its beautiful blue Colour is owing to the Copper which it contains. The Taste of it is very acrid and austere. Green *Vitriol* has different Names, from the different Places where it is found; as *Roman*, *Swedish*, *English*, and *French*. It contains a large Portion of Iron, from whence its green Colour is derived: It is kept in the Shops, either in large rhomboidal Crystals, or in Heaps of small crystal Grains, sometimes a little unctuous, and sticking to the Hands. It is of an acid styptic Taste; and indeed it cannot well be supposed to have any other; *Vitriol* being an acrid Salt, which having corroded Iron or Brass coagulates with them, and concretes into a pellucid Mass, either of a green or blue Colour, according to the Metal which it has dissolved. Some Authors mention likewise red *Vitriol*; but I have not been able to learn what it is.

Vitriol is obtained by various Arts from Waters, Earths, vitriolic Stones, and especially from the *Pyrites*. In *Galen's* Time, blue *Vitriol* was made in *Cyprus*, by the Heat of the Sun exhaling the Humidity of a vitriolic Water. In some Places of *Hungary*, the same *Vitriol* is now made by boiling and evaporating a Water of the same Kind, and the green *Vitriol* is made by a Method not much different, in other Places of *Germany*. In some Places it is made by frequent Ablutions of an Ash-coloured Earth, marked with Spots of different Colours; some of which look like the Rust of Iron, others like Verdegriese, with a strong sulphureous Smell, and an unpleasant bitter Taste: This *Vitriol* is therefore composed of a Mixture of Iron and Copper; and accordingly its Colour is a Mixture of Blue and Green. In *England*, at the Distance of about a League from *London*, green *Vitriol* is made from the *Pyrites*, which are heavy dense Stones of a dark Colour on the Outside, but their inner Surface is radiated from the Centre to the Circumference, the Rays shining like Bath Metal: They are perfectly insipid to the Taste, and by being exposed to the open Air, for a sufficient Length of Time, they acquire an inward Kind of Fermentation, and spontaneously fall to Pieces. In the Cracks or Openings, we observe a certain Sort of white, saline, downy Efflorescence, of an acid styptic Taste. Afterwards the whole Substance of the Stone is dissolved, and falls into a fine Powder of a saline and vitriolic Taste, and sulphureous Smell. If fresh *Pyrites* be burned, and calcined in the Fire, the Fumes which they emit smell like Brimstone, and a red Calx remains, which contains some Iron and Copper. The Way of extracting *Vitriol* from the *Pyrites* is this:

The entire Stones are spread about in a large Area, the Height of about three Feet; and there they lie exposed to the Air for three Years, being turned one in six Months, that the Rays of the Sun may calcine them the better, and the Rain's penetrate them more easily. By this means they are reduced to a vitriolic Earth, which being well washed with Rain-water, the Liquor is afterwards conveyed by Pipes into Cisterns: Then they boil it to a due Consistence, in large leaden Vessels, throwing in a Quantity of old Iron, which is presently consumed by the Lixivium. Afterwards the Liquor is set to cool in other Leaden Vessels, with Sticks fixed a-cross, about which the *Vitriol* crystallizes.

The *Pyrites* of *Sweden* and *Liege* are very full of Sulphur, and the Way of preparing *Vitriol* from them, shall be related in speaking of that Mineral. Sulphur is obtained from these

Pyrites, per Descensum, and then the remaining Mass is calcined, and afterwards made into a Lixivium; which being strained, is boiled in leaden Vessels, and then set to crystallize, as before, in a cold Place.

A Solution of *Vitriol* turns the Tincture of *Heliotropium* into a faint purple Colour, coagulates Milk, turns Syrup of Violets to a greenish Colour, but does not change a Solution of corrosive Sublimate. When it is mixed with a Solution of Salt of Tartar, or Lime-water, the Colour becomes a little yellowish, and it communicates a black or dark-purple Tincture to the Infusion of Galls, which indeed is peculiar to *Vitriol*.

By Distillation an acid Spirit is obtained from *Vitriol*, by a very great degree of Fire, called by the Name of the Spirit or Oil of *Vitriol*, which turns the Tincture of *Heliotropium*, and Syrup of Violets, to the Colour of Fire, coagulates Milk and Blood, and raises a strong Fermentation and Heat with any alkaline Salt. The Oil of *Vitriol*, or that strong acid Liquor obtained from it by Distillation, when mixed with common Water, raises an intense Heat; with Sal Ammoniac it raises an Effervescence, but generates Cold, though the Fumes that arise feel hot.

After this Distillation is over, a blackish or red Earth remains in the Retort, called *Colcothar*, and it is the Calx or Crocus of either Iron or Copper, according to the Nature of the *Vitriol* that hath been distilled. From this Process it is evident, that *Vitriol* is composed of an acid Salt, subdued by metallic Parts; which is, also, easily demonstrated from the artificial Ways of producing *Vitriol*. If Spirit of *Vitriol* be poured on the Filings of Iron, a very good *Vitriol* is obtained; and if Copper Plates, stratified with Sulphur, be calcined in a Crucible, the Water in which this Calx is made to boil for some time, if evaporated, will leave behind a true blue *Vitriol*.

The Virtues ascribed by Chymists to *Vitriol* are past Belief; neither do we find the Event to answer their Promises. *Dioscorides* mentions an emetic Quality of it; and says, that, dissolved in Water, it is good against Worms in the Intestines, and after eating poisonous Fungi. He tells us farther, that this Solution, snuffed up the Nose, purges the Head, and reckons it among the astringent, heating, and caustic Medicines. *Pliny* commends it in Diseases of the Eyes, Fluxes of the Blood, and for the Cure of Ulcers, and *Galen* made Use of it in Collyriums. At present it is used as an Emetic, Vermifuge, Styptic, Detergent, and Antiphlogistic; but is seldom given inwardly without Preparation. Externally, white *Vitriol* is principally used in Collyriums, to allay an Inflammation of the Eyes, and stop their Running; and it is thus prescribed:

Take of white *Vitriol*, one Scruple; of Rose or Plantain-water, one Ounce: Let the *Vitriol* be dissolved in the Water, and strain the Solution, which, if it be too acrid, may be made milder, by the Addition of more Water. Or,

Take of the common or *Florentine* Orris, a Scruple; Rose and Plantain-water, of each three Ounces: Boil them over a gentle Fire till a third Part be consumed; and in the strained Liquor dissolve eight Grains of *Vitriol* for a Collyrium.

Powder of blue *Vitriol* is applied to the Extremities of the bleeding Vessels in Wounds, and stops the Bleeding, by cauterizing the Vessels, and coagulating the Blood.

Among the Preparations of *Vitriol*, the first is Purification, called *Gilla* of *Vitriol*, in which white *Vitriol* is mostly made use of; it is purified by Solutions, straining and drying, twice or thrice repeated; and then being taken, from a Scruple to a Dram at a Dose, in a proper Vehicle, will excite Vomiting: This is recommended by *Paracelsus*, and other Chymists, as an excellent Emetic, as not only cleansing the Stomach, by gentle Vomiting, but, also, strengthening both Stomach and Intestines afterward, by its Astringency: Whence it is given with Success in Diarrhoeas and Dysenteries. This *Gilla* was very much in Use before antimonial Emetics were known, and the Use of *Ipecacuanha* was discovered, but is now almost left off. *Geoffroy*.

THE ANALYSIS OF VITRIOL INTO SPIRIT, OIL, AND COLCOTHAR.

1. Take eight Pounds of the common green *Vitriol* of *Goslar*, put it into two earthen Long-necks, each containing four Pounds; cover them with a Tile; set them upon an Hearth, and surround them with Fire, that the Whole may grow gradually hot: The *Vitriol* will then begin to fume, and, upon increasing the Fire, and bringing it nearer, to melt; and, upon making the Fire still stronger, to thicken and turn grey: Then surround the Long-necks on all Sides so with Fire, that the Matter may grow yellow, and begin to appear red

at the Sides of the Vessels. Now let all cool: The Long-necks will be cracked: Take out the Matter, and beat it to Powder; it will be of a yellow Colour. This is the Calcination of Vitriol, in order for distilling the Spirit, and Oil thereof. This Operation ought to precede, otherwise the Distillation would be tedious, on account of the Time required to draw over the aqueous Phlegm, or else the Receivers would crack, on account of that Phlegm arising hot into them; and the Distilling-vessels, also, burst, as being forced by the melted Matter. Hence the Matter is to be calcined only so long as till it ceases to melt in the Fire. In this first Part of the Operation the eight Pounds of Vitriol are reduced to five.

2. Put these five Pounds of calcined Vitriol, first bruised, into a strong Long-neck. Let the Long-neck be large enough to hold double the Quantity; set it in a Furnace; when properly placed in the Furnace, and the Wall is built up, apply an Adapter to the Mouth of the Long-neck, luting it on carefully, with a Mixture of Clay and Lime; wrap a wet Linen Rag about the other End of the Adapter, and apply thereto a very capacious Glass Receiver, so as exactly to fit, and so as the Adapter may not reach above two Inches into it. Let this Receiver rest horizontally upon a Bench, so that the Axis both of the Receiver, the Adapter, and the Long-neck, may lie in the same horizontal Plane, lest otherwise the Neck of the Adapter, or the Receiver, should be pressed upon. Lute the second Juncture in the same manner as the first, and put Linen Rags about it, spread with the same Luting; and thus leave the Vessels for twenty-four Hours, that the Luting may grow dry.
3. Make the Fire with proper Cautions; a white Fume will first rise, and the Receiver grow warm; keep the Fire up in this State for six Hours; oily Veins will afterwards run down the Sides of the Receiver; and in this State again continue the Fire for six Hours; then for six Hours longer keep it up to its utmost Height, that the Long-neck may be thoroughly red-hot; a thick Oil will thus come over. If the Vapour should pass through the Luting, put a Linen Rag, spread with the same, and well heated upon the Crack; and thus it will be stopped: Though the Fire should be ever so long continued, the Vapour would not cease to rise, but the Produce would not defray the Cost; so that I judge eighteen Hours sufficient. Now, therefore, let all cool, till the Adapter is but just warm, and the Receiver grown quite cold.
4. Have then ready at hand a Bottle with a narrow Neck, and fitted with a wide Glass-funnel; then carefully moisten the Rags, and the Luting applied to the Mouth of the Receiver, and take them away gently, with Care to prevent the Dirt from falling in, the Fume from coming out so as to prove offensive, and the Glass from cracking, by being moved obliquely. Take it therefore away in a strait Line, and avoid the noxious Fumes. Cleanse the Mouth of the Receiver, that no Luting may drop in; then pour the Liquor out of the Funnel into the Bottle, stop it up, and set by the Receiver for the like Purposes. I have usually thus obtained one-and-twenty Ounces of thick, black, strong, and smoking Oil of Vitriol. A red, blackish, light, powdery, austere Calx, remains in the Long-neck, to the Quantity of fifty-two Ounces; so that five Ounces are lost in the Operation.

R E M A R K S.

And thus the Oil or Spirit of Vitriol is prepared, which has numerous Uses in Chymistry and Medicine; for it is a most powerful ponderous Acid, and a great Preservative, though itself a Caustic; and hence Vitriol consists of this, and Colcothar, and Phlegm. This Oil of Vitriol will scarce boil without a Fire of six hundred Degrees. If put into a Glass Body, and urged with a Sand-heat of five hundred Degrees, it yields its wild suffocating Spirit and Water, then changes from black to limpid, and becomes exceeding ponderous and fiery; and if poured into a Glass wet with Water, it produces such a Heat as instantly to crack the Glass: It attracts Water out of the Air. If four Ounces of this Oil be, by a Sand-heat, distilled in a little Retort, with a long and very curved Neck, so as that one Drop may follow another at the Distance of six Seconds, and fall into fair Water, contained at the Bottom of the Retort, as pure and perfect an acid Spirit will be thus obtained, as Oil of Sulphur by the Bell: But this requires a skilful Operator. Each Drop, when it falls into the Water, makes an Hissing, as if Fire had fallen therein: But if a falling Drop touches the Glass, it immediately cracks it, as if it were cut with a Diamond.

If a stronger Fire be used, the Neck of the Retort cracks, the Labour is lost, and a pernicious suffocating Fume exhales, which ought to be cautiously avoided. This Process is otherwise noble, and of excellent Use, at may be learnt from a prudent Exercise of Chymistry and Medicine. *Paracelsus* describes the best Method of preparing this Spirit to be by distilling recent Vitriol to Dryness, in a Vessel of *Hessian* Earth, and cohobating the Liquor upon the Remainder, the oftener the better, at last using the utmost Violence of Fire; and by this means he promises a Liquor serviceable in many Cases. The Direction is ingenious, and Artific-like, provided the Vessel be kept from bursting by too large a Quantity of the dry Vitriol. The Caution is to use a little Quantity at once, in a Proportion to the Vessel. *Boerhaave's Chymistry*.

The Mass that remains after the Distillation of Vitriol, called *Colcothar*, is a red martial Earth, still impregnated with some Quantity of acid Salt, and by often washing and drying, it becomes an Astringent, which is used externally to stop Bleeding in Wounds; and from the Water in which it is washed, a Salt is obtained, called the *fixed Salt of Vitriol*, or *Salt of Colcothar*. When the Colcothar has not been much calcined, it remains white and pellucid, not emetic, but diuretic, and aperient. Though this Salt is so much fixed as not to rise by a very great Degree of Heat, continued for several Days, yet it is easily made volatile by means of Borax, and is sublimated in the Form of silver-coloured saline Flowers. This is the sedative Salt of the great *Homburg*, and is thus prepared:

Take the fixed Salt of Vitriol well calcined, and Borax, of each two Ounces: Dissolve them separately in four Pints of warm Water; and then, having mixed the Solutions, pass the turbid Liquor through Cap-paper, and then distil it in a Glass Alembic, to Dryness; which being done, white saline silver-coloured Flowers will be sublimed. These are to be gathered, and kept for Use. The fixed Salt that remains in the Bottom of the Alembic, by a new Affusion of Water, may be fitted for a new Distillation, which being continued to Dryness, fresh Flowers will arise; and this Operation may be repeated till all the Salt is sublimed. The same Preparation may be obtained by taking Oil of Vitriol instead of the fixed Salt, and mixing it with twice its Weight of Borax. In this Case there is no Precipitation; but nevertheless Flowers are raised of the very same Kind with the former.

These Flowers are almost insipid to the Taste, and not easily dissolved in Water. They calm the feverish Heat of the Blood, and especially in burning Fevers, they prevent or remove delirious Symptoms, and allay spasmodic Affections, whether hypochondriacal or hysterical, at least for a time. In a Word, this Salt is an excellent Anodyne, and has a just Title to all the Virtues ascribed by Chymists to Vitriol, Sulphur, or what they call the *Archæus Sedor*. The Dose is from one to ten Grains, in any proper Liquor. It is however unsafe to order this Salt in Inflammations of the Lungs, Spitting of Blood, and other Inflammations of the Thorax; for though it be insipid to the Taste, yet it contains latent *Spicula*, which being gradually disengaged in the Body, may irritate and vellicate the Membranes of the Lungs, and so bring on a Cough.

Vitriol is, also, the Basis of the famous sympathetic Powder, to make which they calcine *Roman Vitriol* by the Rays of the Sun in the Dog-days, to a white and yellowish Powder, and keep that Powder for Use in Vessels close stopped. *Digby*, and others, have said wonderful things of this Preparation, which are not confirmed by Experience. However, it certainly stops Bleeding, when applied immediately to the open Extremities of the Vessels; and hence some have endeavoured to cure Wounds by the Use of it, mixing only a small Quantity of Gum Tragacanth in case of a purulent Discharge. *Geoffroy*.

THE DULCIFY'D OIL OF VITRIOL.

Ever since Chymistry began to be cultivated and improved, the Distillation of a sweet Oil from Vitriol has been known. *Basil Valentine*, and *Paracelsus*, make Mention of it; for as the ancient Chymists endeavoured, besides their own Secrets, to find a Substance for converting the more ignoble Metals into Gold, so they were persuaded, that the Matter of this Substance was to be sought for in Vitriol; for which Reason they have subjected this Salt to various Analyses by Fire, and obtained several Preparations from it, as may be seen in the Writings of the most celebrated Chymists, who accounted Vitriol the Matter of the true Philosophers Stone, as is evident from that remarkable Canon of the Chymists: *Vista Interiora Terræ, Reperies Ibi Occultum Lapidem Verum Metallorum*. Visit the interior Parts of the Earth, and you will there find the true secret

secret Stone of Metals. The initial Letters of the *Latin Canon* express the Name of *Vitriol*, from which various Preparations have been obtained; but none more remarkable than that Process by which Oil of Vitriol is rendered sweet. This is mentioned by *Valerius Cordus*, from whom *Conradus Gesner* has taken the Process, which in *Euonymus's Thesaurus de Remediis Secretis*, is ordered to be carried on in the following Manner:

Take of the most acrid burning Wine thrice sublimated, five Ounces; and as much of the austere Oil of Vitriol: Mix in a *Venetian Glass*; put it in a small Cucurbit with a narrow Mouth, and lute up the Orifice close, and let it stand thus for a Month or two: Then pour it into a Cucurbit with an annexed Alembic; then put it in a small Furnace, and cover the Half of it with Ashes; then apply a Receiver, lute the Joinings well, and extract the five Ounces of burning Wine which you have poured in: But that this may be more safely done, place the Cucurbit in *Balneo Mariae*; for thus the Wine will ascend without the Oil. When you have extracted the Wine, place what remains in a Furnace, so that the Sand may reach the Middle of the Cucurbit; then applying another small Receiver, lute the Joining carefully; then apply a moderate Fire, and gradually extract the Moisture till none appears left at the Bottom, always taking care so to regulate the Fire, that the Liquor may not boil up to the Pipe of the Alembic; for if such a Boiling should happen, you cannot check it, nor hinder it from going over into the Receiver, so that all the Oil is lost; for it boils very easily. Then you will see, that an aqueous and pinguious Humour are contained in it. You must separate the one from the other, so that nothing aqueous may be left in the Oil; for the Water corrupts the Oil, which, when separated, is to be preserved for Use. It is to be carefully kept, because only a small Quantity of it is obtained from one Pound of the austere Oil, and it easily evaporates on account of its aerial Quality. It is good against all Putrefactions in the Body, and against the Plague; it is, also, proper for carrying Pus, and thick and viscid Humours, out of the Lungs, in a Pleurisy, a Peripneumony, and an uneasy Cough; for it may be safely taken internally, and neither suffers the Formation of the Stone in the Kidneys, nor in the Bladder. It, also, cures the Bladder when exulcerated. The Dose is one, two, or three small Drops, in moderately temperate Wine.

Crollius, in *Basilica Chymica*, orders the sweet Oil of Vitriol to be prepared thus:

Take of the rectified Oil of Vitriol, one Part; and of Alcohol, four Parts: Digest in a Vapour Bath for some Months, and afterwards distil; and thus you will have floating on the Water an Oil of Vitriol of a grateful Taste and Smell, and of great Efficacy in Medicine.

These are the two Processes I have found in the Writings of the most ancient Chymists. Now it may justly be questioned, whether this Process answers, since I never remember to have met with it in any other Author, especially with this Detail of Circumstances and Cautions. Hence, it is probable, that the Chymists of the succeeding Age either did not prepare it, or did not look upon the Process as genuine, tho' in reality it is most true.

That described by *Crollius*, is the true *Spiritus Vitrioli Dulcis*; and, as in this Preparation, he has omitted the principal Circumstances added by *Gesner*, it is justly to be doubted, whether he ever prepared such a sweet Oil of Vitriol, especially because he informs us, that the Oil floated on the Water; whereas on account of its Weight, it rather subsides to the Bottom. *Hartman*, also, in his Notes on *Crollius*, doubts with respect to this Process, and substitutes another sweet Oil of Vitriol in its stead; which is prepared thus:

Boil Oil of Vitriol in a new iron Pan with common Water, till the corrosive Salt is collected at the Bottom of the Pan; and then the rest of the Oil of Vitriol becomes sweet. The same Effect is produced by extinguishing red-hot Iron, for several times, in Oil of Vitriol; but by this means the Virtues of the Oil are greatly changed, and its medicinal Effects lost.

Every one must be sensible, that Oil of Vitriol, when mixed with Iron, loses its corrosive Quality, but degenerates into a vitriolic Liquor, which, in some measure, subsides to the Bottom. But this is not the sweet Oil of Vitriol which ought to resemble that of Olive-oil, to be inflammable, of a fragrant Smell, and aromatic Taste, leaving no Acidity on the Tongue. It ought, also, to be dissolvable in highly rectified Spirit of

Wine, and to be possessed of anodyne and sedative Virtues. The celebrated Author of the Dissertation *de Vitrioli Elegiis*, speaks in the following Manner of the *Oleum Vitrioli Dulce*: "*Paracelsus* boasts, that he is able from Vitriol to obtain a Spirit, or rather a sweetish Oil of a green Colour, by means of which, he affirms, he can cure the Epilepsy. The Art of obtaining this puzzles the most expert Chymists, since, so far as I know or remember, no one has ventured to affirm, that he was Master of such a Secret." But I have observed, that two Centuries ago, the Preparation of this Oil was known to *Gesner*, and *Valerius Cordus*, the Truth of which will be more evinced by what follows. When, without any Knowledge of *Gesner's* Process, I above twenty Years ago had prepared some sweet Spirit of Vitriol, I found this highly fragrant Oil. The Process, as carried on by me, is as follows:

Take one Pound of Oil of Vitriol by Rectification freed from all its Phlegm, and of highly rectified Spirit of Wine entirely free from Water, six Pounds; to which pour the Oil of Vitriol. This produces a great Heat and Noise, resembling that produced by red-hot Iron immersed in cold Water. The Mixture becomes warm, and acquires a red Colour, and a grateful Smell; a few Days after, distil from a Cucurbit, with the Sand laid pretty high about it. Thus there is first obtained a pretty fragrant Spirit of Wine, and afterwards a more fragrant one. If the Mixture begins to be changed into a black Substance at the Bottom of the Cucurbit, the Spirit is to be removed, and another small Receiver applied; the Fire in the mean time being very mild and gentle; for unless this Caution is observed, the Whole of the black Mass suddenly comes over, and all the Labour is lost. But if we carry on the Process with a gentle Fire, we obtain a Phlegm of a sulphureous Taste, together with at least five Drams of an Oil, which subsides to the Bottom. This sulphureous Water is decanted, and we obtain a sweet ethereal Oil, of a grateful and penetrating Taste and Smell; and this is to be carefully preserved in a Phial.

1. That there is an Acid in this sweet Oil of Vitriol is obvious from this, that if any of it is put in a Silver Spoon, and held over a Candle, it contracts a reddish Colour, becomes acid, and tinges the Spoon with a black Colour.

2. If this aromatic Oil is for some Months kept in a Glass covered with a Swine's Bladder, it successively corrodes it, and that which remains in the Phial contracts a red Colour, and an acid Taste.

3. If it is boiled in a Phial with Quicksilver, it attacks the Quicksilver.

4. This aromatic Oil, when recent, is thoroughly dissolved by highly rectified Spirit of Wine, to which it communicates its Taste and Smell, together with an anodyne and sedative Quality, highly beneficial in all Pains and Spasms.

5. This Spirit of Wine impregnated with sweet Oil of Vitriol, if mixed with a small Quantity of the Solution of Gold, makes a yellow Tincture, which, when dropped on Iron, tinges it with the Colour of Gold.

6. When this Solution of Gold stands for twelve Hours, a black Powder subsides to the Bottom, a Sign that the Sulphur of the Vitriol unites with the Powder of the Gold, and that both of them are precipitated to the Bottom.

This curious and remarkable Process clearly discovers the Production of ethereal and distilled aromatic Oils. *Glauber* informs us, that highly-rectified Spirit of Wine may be converted into Oil, if it is mixed with Oil of Salt concentrated with *Lapis Calaminaris*. I tried this Experiment, but could obtain no Oil, besides the sweet Spirit of Salt; but by the Help of this Experiment I obtained an Oil, from the Production of which we learn, that highly-rectified Spirit of Wine is nothing but an æthereal Oil by the fermentative Motion resolved into the minutest Parts, and intimately mixed with the Phlegm: But when the Oil of Vitriol intimately unites itself with the oleous Particles disjoined in the Spirit of Wine, it is again coagulated into an Oil.

Hence it is obvious, that an Acid may enter the Mixture of distilled Oils, and that without a manifestly acid Taste it may be concealed and covered by the Oil and Sulphur: By the Admixture of the acid Sulphur of the Vitriol, since the whole Oil is sulphureous, the pinguious and oleous Parts of the Spirit of Wine acquire a new and penetrating Taste; for which Reason the Sulphur of Vitriol, in a liquid Form, may justly be accounted an excellent Anodyne, of great Efficacy in the Cure of Diseases, as I have often found from Experience. *Hoffman. Obs. Phys. Chym.*

THE FIXED ANODYNE SULPHUR OF VITRIOL.

We shall now consider that black Mass, of the preceding Process, which, in Distillation, remains at the Bottom: If to this

this a sufficient Quantity of common Water is poured, the Acid is diluted, and the Liquor, assuming a brownish Colour, is, by a due Evaporation, so concentrated, as again to yield true Oil of Vitriol; with which, and the Addition of the highly-rectified Spirit, we may again attempt the Preparation of the Spirit and sweet Oil of Vitriol. All the Acidity being washed away by the common Water, there remains, in the Filtræ, a subtil Powder, of a blackish Colour, and which, when dried, and thrown upon live Coals, flies all off with a sulphureous but not a fetid Smell. If this Powder is put into a Crucible, and urged by a strong Fire, it becomes red-hot, and a considerable Part of it is dissipated in the Air.

Upon laying this Powder, *stratum super stratum*, with Plates of Silver, these were not dissolved, as they generally are by mineral Sulphur; then I put two Drams of Salt of Tartar into the Crucible, in order to melt the Silver; after the Addition of a Dram and an half, I obtained an alkaline Mass, of a redish Colour, like that Liver of Sulphur which is obtained from a like Treatment of Salt of Tartar, the *Arcanum Duplicitatum*, and Powder of Charcoal.

Hence we may conclude, that it is a fixed Earth; and we are carefully to examine whether its Origin is to be derived from the Oil of Vitriol, or from the oleous and sulphureous Part of the Spirit of Wine; whether there is a peculiar medicinal, sedative, and anodyne Quality in it; and whether there is not, perhaps, an anodyne Sulphur of Vitriol in it.

It is a common Opinion, that, in the Distillation of Vitriol with an Acid, by means of the rapid Motion of the Fire, some subtil, chalybeate, or coppery Parts, are elevated, and ascend: For this Reason, the Antients, and especially *Basil Valentine*, preferred red Oil of Vitriol to that which is white, because they thought the former contained Sulphur of *Mars* and Copper, on which its Colour depended. But that this is false, is demonstrated, partly by the Rectification of the Oil of Vitriol, in which it becomes limpid like Water, without any Remainder of coloured Particles; and partly by the momentaneous Conversion of white Oil of Vitriol into red, by the Addition of a small Quantity of Oil, any inflammable Substance, or of a Piece of Paper.

Many esteem the Earth, left after the Distillation of the highly-rectified Spirit of Wine, and the Oil of Vitriol, a metallic chalybeate Earth: But I tried an Experiment upon it with a large Burning-glass, upon which, it was immediately evaporated into the Air; nor was there any fiery Ebullition like that which always happens in the Fusion of Iron by means of solar Fire; nor did Spirit of *Sal Ammoniac*, when poured to it, extract any Copper, as was evident from the want of a bluish Colour, which, by an Admixture of an urinous Spirit, always discovers itself in Copper.

I am, therefore, of Opinion, that this highly-black and light Earth remaining in the Cucurbit after the Distillation of sweet Oil of Vitriol, andedulcorated by Water, is the phlogistic Part of the highly-rectified Spirit of Wine, and of the Vitriol: And that it is so, may, I think, be demonstrated, in the following manner: All Oils even of the most subtil and æthereal kind, when kindled exhale a black Smoak, which, when collected, constitutes a black combustible Powder; now it is equally certain, that all inflammable Spirits are only subtil Oils by a fermentative Motion united with Phlegm: But as distilled Oils, when mixed with Oil of Vitriol, first become red, and then, after Distillation, and Evaporation, leave a large Quantity of phlogistic Earth; so it is not to be wondered at, if an inflammable Spirit, in the same manner mixed with Oil of Vitriol, should, by its intimate Union with it, not only contract a red Colour, but, also, leave a large Quantity of combustible Earth, and diffuse a Smell like that of Sulphur; for that fetid Smell, diffused by its Smoak, when kindled, arises from acid Particles mixed with a sulphureous Earth.

In this Experiment it is observable, that the thick and black Matter, swelling like kindled Sulphur, and the Phlegm of an acid Taste, do not appear till the Distillation is almost over, the superfluous inflammable Spirit consumed, and the earthy Particles of the Spirit of Wine, and Oil of Vitriol left: These volatile and oleous Particles, being mixed with acid fixed Particles, ought, also, to be separated by a gentle Fire; for by a strong Fire, they will quickly elevate, and raise all that ponderous Mass, so that it shall come over a long Cucurbit, and the Alembic. Hence we learn, that a small Quantity of volatile Matter is, on the Approach of Heat, capable of raising a great deal of the fixed Substance with which it is mixed. *Fr. Hoffman. Obs. Phys. Chym.*

VITRUM. Glass. *Vitrum Antimonii* is Glass of Antimony. *Vitrum Saturni*, is Glass of Lead.

VITTA. That Part of the Secundines with which the Head of a Child, when born, is sometimes covered as with a Coat, is called *Vitta* in a Female; but *Galea* in a Male.

VITULUS. The Calf. For an Account of the alimentary Substance contained in Veal, see the Article *ALIMENTA*.

Veal, I mean the Flesh of all the Parts of a Calf, is much used in Food, and ought to be white, juicy, tender, plump, and well-tasted.

The Head and Lungs of a Calf are pectoral, good to qualify the sharp Humours of the Breast and Throat, and for the Phthisic. Calves Feet are, also, pectoral, their Substance is glutinous, qualifying, and moistening. They are boiled in Broths to moderate the Loss of Blood, in the Menfes, Piles, and Spitting of Blood.

Veal, and the other Parts of a Calf being endued with a Juice that is temperate, produces no ill Effects; but they are not good for those who have a Looseness, caused by the Relaxation of the Fibres; for they will increase this Disorder.

Veal contains much Oil, Phlegm, and volatile Salt. It agrees at all times, with any Age or Constitution; but it is better for weak and tender People, and such as live a sedentary Life, than for those that are strong, robust, and accustomed to constant Exercise, who require more solid Food, and that does not so soon consume as Veal.

REMARKS.

A Calf ought to be chose when very young, and while it sucks, because then its Flesh and other Parts, are tender, dainty, and easy of Digestion; whereas these same Parts will afterwards become dryer, harder, and consequently, not so easy of Digestion. *Brucerius* says, the Romans and Italians let their Calves suck six Months, and sometimes even a whole Year; and that during that Time, they took care they should eat no Grass, as being persuaded their Flesh would thereby be more dainty, healthy, and better tasted: In short, as these Animals are naturally of a dry Constitution, the younger they are, the more good Effects their Flesh should produce, because it is in a better Temper.

Avicenna pretends Veal is very wholesome, and that it produce good Juices. Lastly, *Galen* says, that roasted Veal is easy of Digestion, and very nourishing.

Veal is nourishing, cooling, and moistening, because it contains an oily, viscous, and balsamic Juice, that is fit to unite with the solid Parts, to embarrass the sharp Humours, and to moderate their Fury and Impetuosity. It loosens the Body, by making the Humours contained in the Vessels more fluid, and the Passages more free and open. As for a Calf's Liver, as it consists of a compact and earthy Substance, as well as those of other Animals, it is not strange it should make the Humours gross, and bind the Body. They make use of the Fat or Suet of Veal, and especially that about the Kidneys, in Pomatums: This, as well as the Marrow of the Animal, is of a dissolving Nature.

The Runnet, which is made use of to curdle Milk, is in Latin called *COAGULUM*; which see. *Lemery on Foods.*

It is very remarkable that Veal, however easy of Digestion it is generally esteemed, will not agree with some Stomachs, but excites a kind of Sickness and Uneasiness, for many Hours after; a certain Evidence that it does not duly digest; and these are generally the Stomachs, which digest other Animal Food without any Uneasiness.

VIVERRA. Offic. Charlt. Exer. 20. *Viverra, Læis, Furo.* Mer. Pin. 167. *Mustela sylvestris.* Gesn. de Quad. Digit. 762. Aldrov. de Quad. Digit. 327. Johnf. de Quad. 107. *Mustela sylvestris Viverra dicta.* Raii Synop. A. 198. **THE FERRET.**

The Flesh, and Gall of this Animal, are recommended in an Epilepsy, the Gout, and are said to be good against Poisons. *Dale. Lemery.*

VIVIPARUS. An Epithet for those Animals which bring forth a young Animal, by way of Distinction from those which produce Eggs, and are called *Oviparus*.

ULCUS. An Ulcer.

What is meant by an Ulcer, seems so well known to every Person as to require no prolix Description; for the Definitions which are usually given us, both of this and many other things, are generally more obscure and difficult to be understood than the Names themselves. The most clear, however, and distinct Notion given of an Ulcer is, by those who define it a *Solution of the soft Parts of our Bodies together with the Skin, produced by some internal Cause, as an Inflammation, Abscess, or acrimonious Humours.* But Wounds which become inveterate and even Contusions when difficult of Cure, come within this Definition, and pass at length into Ulcers, and are commonly so called.

The proper and usual Seat of an Ulcer, then, is in any of the softer Parts of our Body, as the Skin, Fat, Glands, Flesh, and

and internal Viscera: For if there be any Exulceration or Corrosion in the harder Parts, as the Bones; it comes rather under the Notion of a Caries; or what is commonly called *Spina Ventosa*, than that of an Ulcer; though on account of some kind of Resemblance which it has with an Ulcer or Erosion of the softer Parts, they are sometimes treated of in Conjunction.

How Abscesses, Contusions, and Wounds differ from Ulcers, will be sufficiently illustrated by an attentive Consideration of the Nature of each Disease: For though Wounds and Contusions, as well as Ulcers, consist in a Dissolution of the soft Parts, yet they differ from them in a very material Point, as they proceed from an external Cause, and are produced, as it were, in a Moment; whereas Ulcers, on the contrary, owe their Original chiefly to some internal Cause, and form themselves by Degrees. As for Abscesses they are, as it were, the first Principles of Ulcers, or Ulcers not yet arrived at Maturity, as when an Inflammation passes into a Suppuration, the Skin remaining as yet entire. But as soon as the Skin breaks, and there is an Effusion of mature Pus, the Abscess is supposed to pass into an Ulcer, whether the Rupture happens spontaneously from an Erosion by the Pus, or the Skin be opened by the Surgeon's Knife.

Ulcers can by no means be reckoned all of one Kind, but are distinguished into various Species on many Accounts; as (1.) with respect to the different Parts of the Body in which they are seated; for sometimes they infest the Skin, at other times the Fat, and sometimes the Glands and Flesh; (2.) as to their Magnitude; for some Ulcers are large and extended; others small and contracted within narrow Limits; some deep, others shallow and more superficial; in particular, Ulcers of a considerable Depth, but narrow, and more especially distinguished by the Narrowness of their Orifice, or Beginning, usually pass under the peculiar Denomination of Sinus, or Fistula. Ulcers differ, (3.) with regard to Duration; for some are recent, others inveterate; (4.) on account of their attendant Symptoms; in which respect some Ulcers are mild and favourable, others malignant, that is, attended with very acute Pains, or fetid, putrid, pinguious, rheumy, or discharging much Ichor, creeping, or spreading, cancerous, or inclining to a Cancer, callous, fistulous, or verminous; there is a Difference between them, (5.) with respect to their Causes, in which Light they assume the Epithets of scorbutic, venereal, carious, cancerous, pestilential, and such as are supposed to proceed from Fascination. In the last place Ulcers are distinguished (6.) by the Parts in which they are seated. Thus some infest the Nostriis; others the Fauces; Palate, Breast, and Anus; and one Sort has the Name of *Fistula Lacrymalis*.

The Opinion of some late Physicians, who ascribe the principal Cause of Ulcers to some foreign Acid, corroding the Parts of the Body like Aqua-fortis, seems too precarious and ill-founded to demand our Assent, since there is hardly any Kind of acrid Humour, whether it be saline, lixivial, alkaline, or acid, that is not capable of corroding the Body, and exciting an Ulcer. And indeed, as the Blood in Stagnation is generally converted into an alkaline Acrimony, which has nothing at all of the Acid in it, as some would persuade us, since the very fetid Smell of Ulcers shews the Alkali to have by much the Predominance, I think it appears very plainly that the Cause of Ulcers is oftener to be ascribed to alkaline than acid Humours, as we know and take it for granted, that by Alkali our Physicians mean any Kind of acrimonious or saluginous Substance, which resists and enters into Conflict with all Kinds of Acids; as, for Instance, Salt of Tartar with Vinegar, and Oil of Tartar per Deliquium with Spirit of Vitriol. But to proceed. As there is a great Variety of Poisons, so is there, also, of acrimonious Substances, and consequently of Ulcers. The more pestilential the corroding Acrimony, the more noisome and fetid, the more phagedenic and dangerous are the Ulcers, and sometimes to such a Degree of Malignity as to become quite incurable, as in a Carcinoma, or Cancer. It is to be observed, also, that Ulcers may owe their Original not only to Acrimony, but to any Cause whatever, which is capable of effecting a Stagnation and Corruption of the Blood. Thus Tumors, Inflammations, Wounds, Contusions, Fractures, Luxations, Scirrhuses, Cancers, and Caries, very frequently degenerate into Ulcers, which, also, tho' they may happen at first to be mild and safe, often become at length malignant and dangerous, either from a bad Habit of Body, an improper Regimen of Diet, or unskilful Treatment and Bandage, and other like Causes.

Tho' most Kinds of Ulcers may be discovered and known by the bare Sight, yet that we may examine more exactly the Depth of a Sinus, and which Way it proceeds and has its Course, and whether it be attended with a Caries, we use the Help of Probes. Whether it be a new or an old Ulcer is best known by interrogating the Patient, who will, also, probably make the best Discovery of the Causes why the Disease is be-

come inveterate, and whether it be owing to some subjacent Caries, or to an improper Regimen of Diet, or Method of Cure. An Ulcer is to be judged mild and favourable principally on the following Account; if, in the first place, it be not inveterate, nor accompanied with any bad Symptoms; if again the Pus be moderately thick, whitish, smooth, and not very fetid; and, lastly, if the Patient be young and vigorous. On the contrary, Ulcers are justly esteemed malignant and difficult of Cure, if the Patient be of an infirm, scorbutic, or hydropic Habit of Body; if the Pus be immoderately thin, acrid, fetid; yellow, whitish and reddish, greenish or blackish, or too thick, and much resembling Lard. No less Danger is to be apprehended, when the Patient labours under intense Pains, or the Ulcer is of such a Nature as to reject the Method of Cure used in Wounds, and recent Abscesses, by Digestives, and vulnerary Balsams.

Impure and putrid Ulcers are so called, when the affected Flesh appears corrupted, soft, whitish, or livid; or when the Matter discharged is thicker, and more glutinous than ordinary, or appears green, or variegated. Ulcers of the fluent or rheumatic Kind are such as discharge Plenty of thin Sanies. Phagedenic, or spreading Ulcers, discover themselves by corroding the circumjacent Parts, in a quicker or slower manner, according to the Degree of Acrimony in the Matter. We call an Ulcer fistulous, when it penetrates to a considerable Depth under the Skin, or between the Muscles, and especially when the Sinus is large, and the Outlet, or Orifice, narrow. And, lastly, Ulcers are said to be callous, when their interior Parts are covered with a Kind of hard, and, as it were, cartilaginous Substance.

Ulcers are judged to be venereal, when consequent upon lying with an infected Woman, or after some venereal Disorder, as a Gonorrhoea, venereal Bubo, or the Lues Venerea. Various is the Situation of these Kinds of Ulcers, tho', for the Generality, they are seated in the same Places in which venereal Bubos are produced; or in the Nose, Fauces, and Penis; which last are called Ulcers, or Carcinomas of the Penis, in French Chancres, "Shankers." In the other Sex these venereal Ulcers are most incident to the Labia Pudendi, and the Neck of the Uterus. Cancerous Ulcers are either the very same with those exulcerated Carcinomas treated of under CARCINOMA, [see that Article] or such as, in their Progress, and attendant Pains, most nearly resemble a Carcinoma. Ulcers are said to be carious, when some adjacent Bone is found deprived of the Periosteum, and corroded, or affected with a Caries. That Ulcers may be produced by Fascination, or Witchcraft, the common Proof is, that Pins, Hair, Threads, Rags, Nails, Egg-shells, Coals, and other extraordinary and preternatural Things, are sometimes found, in Wounds, or Abscesses. But, if I may be allowed to speak my own Sentiments, in this Affair, I am of Opinion, that not only most of those Signs which are regarded by the Ignorant as undoubted Marks of Fascination, but the very Thing, or Fascination itself, is, at least, very much to be questioned, or else is absolutely counterfeit, and wholly directed and promoted with a superstitious View: For many Ulcers were, in former Times, esteemed the Effects of Fascination, when, in Reality, they were manifestly otherwise.

Recent Ulcers, of a favourable Kind, like recent Abscesses, are not difficult of Cure, especially if the Patient be young and vigorous; but the more inveterate an Ulcer becomes, and the worse the concomitant Symptoms are, the greater is the Difficulty which attends a due Conglutination; whence it is, that very putrid, rheumatic, or much-running, fistulous, callous, carious, and cancerous Ulcers, are not cured but with vast Difficulty, and by the utmost Skill and Management of the most able Surgeons. For as for those bold and confident Quacks and Mountebanks, who boast and value themselves at so high a Rate, on account of their secret Plaisters and Ointments, which they pretend to be of surprising Efficacy in all manner of Ulcers, I am persuaded, and can appeal to Experience, that they very grossly impose upon themselves, and others. The more depraved or infirm the Habit of Body, the older the Patient, the more acrimonious the Blood, the worse the Smell of the Ulcer, and the Colour and Acrimony of the Pus, the more difficult must, of Necessity, be the Cure. When the Ulcers are very large, or numerous, and every Day discharge a vast Plenty of Matter, or Sanies, they very much weaken, and, by Degrees, exhaust and destroy the Patient. Old Ulcers in the Feet, especially in Persons far advanced in Years, and infirm, are by no means to be healed: For, as Experience almost universally shews, the Health of the Patient stands established on a good and hopeful Foundation, as long as the corrupted Matter, collected from all Parts of the Body, is discharged by the Ulcers; but when this Efflux is suppressed by a Conglutination, the Consequence, after some time, is generally observed to be some very bad Distemper, such as Pains of the Head, Vertigo, Apoplexy, Epilepsy, a Difficulty of Breathing, or a Suffocation, or, perhaps,

Diarrhoea, Dysentery, internal Inflammations, and other Disorders of that Kind, which terminate in Death, according to the concurrent Observations of very many practical Physicians. Thus, also, when any inveterate Ulcers, of this Kind, dry up in old Persons, and their Lips contract a Lividness, with a Heat, there is great Danger of a *Sphacelus*, succeeded by Death. But in younger, and robust Persons, the Cure of inveterate Ulcers is attended with more Safety; but the necessary Care to be taken in such Cases is, not only to remove the Cause of the Ulcer, by proper Medicines, but to restore the Blood to its former Purity; which, oftentimes, is not effected but with great Difficulty. If the Disease, therefore, be too inveterate, and the affected Persons impatient of Medicines and Abstinence, it is no wonder if Ulcers cannot be cured, even in robust Constitutions.

Venerae Ulcers are seldom or never to be cured without a previous Expulsion of the venereal Venom out of the Body by proper Medicines; without which, all external Remedies are of no Effect, in this Case. *Fistulous, callous, and carious Ulcers*, are seldom or, rather, never cured but by manual Operation; for oftentimes after inducing a Cicatrix, they form themselves anew, and are more troublesome than before: In particular, a *carious Ulcer*, if the Caries be great, and especially in the Joints, often discharges such vast Quantities of Pus, as extremely to weaken, and, without a seasonable Amputation of the Limb, to destroy the Patient. The Case is much the same with *cancerous Ulcers*; for here, also, unless the Part affected be separated from the Body, there can be no Hopes of a Cure, as we have before observed under CARCINOMA; and sometimes the Cancer or Carcinoma returns after the Operation, and is not to be removed till it terminates in the Destruction of the Patient. As for Ulcers affecting the Viscera, since they are removed from the Reach of manual Operation, or the convenient Application of Medicines, they are often very justly esteemed incurable.

The Method of Cure in Ulcers is extremely various, as adapted to the great Variety of the Disease: For when the Ulcer is but recent, it is to be healed in the same manner as a recent Wound, or Abscess. We must first, then, begin with *Mundification*, or cleansing the Ulcer; after that, proceed to incise, or fill the Cavity with new Flesh; and, lastly, cover and conglutinate the same, as much as possible, with a fair and even Cicatrix.

Mundification of an Ulcer is usually performed in the following manner: First, The corrupted Matter is evacuated; or, when it discharges itself not so freely as it ought, gently expressed with the Fingers; if there be a deep Sinus belonging to the Ulcer, it is to be extirped, by some proper Injections; or, if the Place be open enough, by repeated Intromissions of fresh Lint. If there be any Pieces of Membranes, or other corrupted, pinguious Parts left in the Ulcer, the best way to eject them is, at every Dressing to introduce into the Place Lint moistened with some digestive Ointment, and cover it with a Plaster of Diachylon, Diapalma, or something of the like Nature; and upon that apply Compresses, and over the Whole a Bandage: This Method is to be carefully followed till the Place be thoroughly cleansed, or till the Bottom of the Ulcer appears quite red, and covered with new Flesh.

After due *Mundification*, our next Business is, to fill the Ulcer with new Flesh, which is performed by Help of such Medicines as are commonly called *Sarcotics*, [from *σαρξ*, Flesh] that is, Flesh-generators; among which, the best, and most effectual by many Degrees, is the *Digestive Ointment*; for without some extraordinary Impediment, this *Digestive* is of itself sufficient to produce new Flesh. It is, indeed, the Manner of almost all Surgeons, very gravely to recommend every one his proper Balsamics for the procuring of new Flesh; but there was no Necessity, as I imagine, for them to be so careful and solicitous on this Point, since there is in this very *Digestive*, a balsamic Virtue; and we ought, besides, to consider that this new Flesh owes its Generation not so much to the Assistance of Medicines, as the Benefit of Nature: For all the Care and Diligence of the Surgeon have scarce any other Effect than to remove all such Things as are hurtful, and may prove Impediments to a Cure. If any one, however, should think our *Digestive Ointment* not strong enough for his Purpose, I would advise him to *Balsam of Arcæus*, *Balsam of Peru*, *Balsam of Mecca*, *Balsam of Sulphur*, *Essence of Myrrh and Aloes*, *Oil of Myrrh per Deliquium*, *Oil of Eggs*, and other vulnerary Balsams of the like Kind, to be used in its stead; and, by the best Means he can procure, to accomplish a perfect Conglutination.

Where an Ulcer has penetrated so deep as to have its Bottom remote not only from Sight, but from the Reach of Medicines, it may seem necessary, in every Dressing, after expressing the corrupted Matter collected within, to make an Injection of some cleansing and healing Liquor; such as a Decoction of Agri-

mony, or Birthwort mixed with Honey of Roses, or Essence of Myrrh and Aloes, or what *Belleste*, in his *Hospital Surgeon*, recommends, a Decoction of Walnut-leaves, mixed with Sugar, before the Place be bound up, till the Bottom is conglutinated; and to continue the same till the Ulcer is filled up.

The Ulcer being, by some means or other, as may seem most advisable, incased, and filled up, the Induction of a fit and decent Cicatrix is, in the last Place, to be considered; and there is no better Method to be taken, for this Purpose, than every Day to apply dry Lint to the Place, with a Plaster, till the Cicatrix be completed: But if, by such means, you cannot prevent a Luxuriancy of Flesh, with a Moistness of the Ulcer, it will be proper to sprinkle on the Part some drying Powders, such as those of Mastic, Frankincense, Sarcocolla, Colophony, Lapis Calaminaris, and Tutty; applying afterwards, to the Place, dry Lint, and a Plaster accommodated to retain and hold together the Things applied, continuing the same till the Place be perfectly whole and sound: But if the luxuriant and fungous Flesh has already elevated itself above the rest of the Skin, the best way to consume it is, to rub it with blue Vitriol; or, if this be not strong enough, to sprinkle on it some Powder of red Precipitate, and burnt Alum, till its Growth be entirely suppressed, and nothing appears prominent.

In the last Place, it is hardly to be expressed how much a prudent Regimen in Diet and manner of Living, contributes towards the Incasing and Conglutination of Ulcers: For it has been an old Observation of the Professors of the salutary Art, that very bad Ulcers have often been cured by means of a Regimen, without any considerable Assistance from Medicines; and, on the contrary, that the slightest, and most contemptible, Sores have, by a Neglect of the Rules of Diet, and a preposterous way of Living, degenerated into very bad, and even incurable Ulcers. Great Care, therefore, is to be taken, by every Person infested with an Ulcer, to avoid acrid, salt, and acid Food, and such as is too fat, or heating, with Swine's Flesh, and all such as is difficult of Concoction. If a bad Habit of Body be an Impediment to the Cure of an Ulcer, the Advice of a skilful Physician is required, who, by the Prescription of proper internal Medicines, may not only prevent an Ulcer of a mild and favourable Kind from becoming malignant, and, perhaps, incurable, but, as much as possible, promote and hasten its Cure.

For *fistulous Ulcers*, see the Article FISTULA.

OF MALIGNANT ULCERS.

There are Ulcers of so bad and malignant a Nature, as not to admit of a Cure by the common Method of Treatment of Ulcers of an ordinary Kind; and these are, for that Reason, called, in medicinal Terms, *dyssepulotic, chironian, cacotheta*, [see *Dyssepulotos, Chironium, Cacothetes*] *obstinate, and stubborn Ulcers*. It is not to be doubted but that there are some proper Causes of their Malignity; but what they are in particular, in every Case, which render a Cure so difficult, is alike known to the Generality of Surgeons, and those who are quite ignorant of the Matter. Ulcers, however, of a *stubborn and malignant* Nature, generally infect Persons of a bad, scorbutic, cachectic, and hydropic Habit: They may, also, proceed from the *Lues Venerea*, a Caries, or a Callus, an extraordinary Acrimony of the Blood, or a cancerous Disposition; and the Causes are diligently to be investigated, and extirpated, by those who attempt the Cure of those Kinds of Ulcers; if they would hope for any Success. But an Attempt of this Nature is a Matter of such Difficulty and Importance, as, in most Cases, to require the maturest Thoughts and Deliberations of the most experienced Physician or Surgeon; so much is it above the Capacity of a mere Empiric, how impudently soever he may boast of his incomparable Secrets, and sovereign Remedies of Plasters and Ointments, which he has always in Readiness by him against the worst of Ulcers.

If there be nothing of a Fistula, Callus, Caries, putrid Flesh, or Worms, belonging to the Ulcer, its Stubbornness and Malignancy must certainly proceed from a bad and infirm Habit of Body, on account of a too glutinous, acid, acrimonious, or bilious Blood; or from an imprudent Regimen of Diet, or some venereal Disorder; or in Women, particularly, from an Obstruction of the Menstrues; in Men, from a Suppression of the Hemorrhoids: In such Cases, it is not only the Business of a Physician to prescribe internal Remedies, but injoin, also, a strict Diet; which is of such extraordinary Efficacy, that even the worst of Ulcers have been frequently cured by it, with hardly any Assistance from internal Remedies, provided they are every Day duly cleansed, and dressed with some common vulnerary Ointment, Oil, or Balsam, with some ordinary Plaster, as the Lead Plaster, or Diapompholyges, or the like, carefully laid over it so as to cover the Whole. In Meats and

Drinks

Drinks it must be observed, as an inviolable Rule, to chuse none but the lightest Kinds, and to be very abstemious even in the Use of these: But any thing too salt, acrid, acid, hard, or crude, or whatever is prepared of Fat, Bacon, Swine's Flesh; and farinaceous Masses, or whatever is taken in Quantities beyond the Rules of strict Temperance, is always found to be extremely prejudicial. Patients of a hot Temperament are to avoid heating Meats; those of a cold Temperament are to abstain from Foods of a refrigerating Quality; but a good Diet, or Abstinence, is, however, observed to be more effectual, when assisted with due external Treatment. The *Ulcer* must, therefore, be very carefully extirped and cleansed from the corrupted Matter, lest the same, by its Stay, should become more acrimonious, and, by that means, the *Ulcer* should spread. After Mundification, you may apply the digestive Ointment, with which may be mixed Myrrh, Mastic, or Colophony, or a Decoction of Walnut-leaves, with a little Sugar, or a Decoction of Verdegrise in Wine. In some Patients, simple Spirit of Wine, or Lime-water, applied in Linen moistened with them, is of excellent Service in drying and healing those Kinds of *Ulcers*: If there be any Fistulas in the Case, they are to be cut, then cleansed, and afterwards consolidated with Balsam of Peru, Balsam of Capivi, Balsam of Sulphur, with Oil of Turpentine, or any other agglutinating Medicines; and if, at the same time, there be no Neglect of internal Medicines, there is no doubt but some of the worst of *Ulcers* may, by such Management, be brought at last to a perfect Cure.

If there be a copious Discharge of Humours from these stubborn Kinds of *Ulcers*, it is an Indication of a Mixture of too great a Quantity of thin and acrid Serum with the Blood, which is often owing to the Patient's drinking too much; and such *Ulcers* are called *Rheumatic*. In this Case, since there can be no Way more commodious for the Discharge of the Humours than by the principal Passages downwards, Cathartics and Diuretics, if the Strength will permit, are freely to be administered; and, at the same time, the Patient is to drink less. Excellent Medicines, for these Purposes, are, prepared Millepedes, Essence of Amber, of Myrrh, of Peruvian Balsam, Tincture of Tartar, tartarised Tincture of Antimony, or any other Kinds of balsamic Tinctures, or Essences, proper for provoking of Urine. Drinking too freely, or in great Quantities, which is often the Cause of such Disorders, is quite improper here; on the contrary, the moderate Use of strong Beer, and old Wine, as ordinary Drink, is very wholesome, and the more so if a little Hungarian or Spanish Wine be taken now-and-then at Dinner; except at Dinner, I would advise Abstinence from all manner of Drink. Of Meats, or Eatables, the most proper are such as are dried or roasted, or such as thicken the Blood; for which Purpose, Barley and Rice-puddings, Water-gruel, Calves Feet, and Jellies, are accommodated. External Medicines, also, of a drying Quality, are of principal and necessary Use; among which are, Lime-water, Lapis Calaminaris, prepared Tutty, Chalk, Mastic, Frankincense, Colophony, and native Cinnabar prepared; with one or other of which the *Ulcer* is to be sprinkled, and afterwards covered with the Plaister Diapompholygos, the lead Plaister, or a Plaister of Lapis Calaminaris.

That Sort of malignant *Ulcer*, which spreads and extends itself gradually, by corroding the adjacent Parts on every Side, has the Epithet of *corrosive*, or *phagedenic*, and indicates the State of the Blood to be highly acrimonious. The first Care of the Physician, therefore, in this Case is, by internal, lenient, and emollient Medicines, to correct the ill State of the Blood: To this End are especially adapted Decoctions of the Roots of China, Sarsaparilla, Comfrey, Polypody, Liquorice, Scorzonera, the Lapathum Acutum, the Herbs Mallows, Marshmallows, St. John's-wort, Sanicle, Agrimony, white Horehound, and the like. Of Foods, the most proper are, such as were prescribed before for *rheumatic Ulcers*; for every thing acrid, salt, or too much seasoned with Spices or Acids, and all Meats prepared with any Part belonging to a Swine, is highly prejudicial, and therefore to be avoided. On the other hand, purging Medicines now-and-then administered with a Mixture of *Mercurius Dulcis*, are not only serviceable in diminishing the Sanies of the Blood, but of great Efficacy as Lenients, in correcting the Acrimony of the Blood, and promoting the Cure. Topical Remedies may be such as were recommended before, and the Use of them, after a careful and thorough Exterision or Mundification of the *Ulcer*, is to be continued till its Progress be entirely checked, and the Place perfectly healed.

Somewhat of the Nature of phagedenic or corrosive *Ulcers* are *cutaneous Ulcers*, or such as arise in the Skin, and most commonly in the Face, as well of Children, as adult Persons; for they not only owe their Origin to an acrimonious Blood, but dilate and spread themselves. In cutaneous, therefore, as well as phagedenic *Ulcers*, the most proper and effectual Medicines are such as potently evacuate by Stool; and gradually

correct the Acrimony of the Blood, and are before specified. To Adults I would recommend, for these Purposes, before other Things, the aforesaid Decoctions of the Woods, or the Decoction of the Root of the Lapathum Acutum, or of the Herb Fumitory. Of either of these is to be taken the Quantity of eight or ten Ounces, three or four times a Day, warm; and, after the first Draught in the Morning, it will be proper for the Patient to compose himself in his Bed, and to sweat. To these may not improperly be added, the Essences of Fumitory, of the Woods, and of Amber, or the tartarised Tincture of Antimony, to the Quantity of thirty or forty Drops, to be taken several times a Day, with the forementioned Decoctions; also absorbent Powders mixed with Antimony and Flowers of Sulphur, and the Use of the same is to be continued for some time; but a careful and exact Regimen seems as necessary here as in any Case whatever. For Infants not weaned from the Breasts, it has been found of great Service to use Medicines which gently purge and correct the Blood; the Mother, or Nurse, who suckles the Child, being enjoined a strict Regimen, besides the Use of the Remedies before-mentioned. Topics proper in this Circumstance are, principally, Oil of Tartar *per Deliquium*, applied two or three Times a Day with a Pencil, or Feather, either alone, or mixed with Oil of Eggs and Wax; after which, the Place must be covered with a Plaister, either the Lead Plaister, or *Emplastrum de Minio*, or *Emplastrum de Sperma Ceti cum Camphora*, to secure it from Injuries by the external Air. Where the Disease has spread itself over the Face, as it often happens in Infants, a Plaister is not convenient; and it is better to adapt a Linen Mask, or Vizard, to the Face, as is advised in Ambustions: Also, *Oleum Philosphorum*, Oil of Eggs, Lime-water, and Water with which diaphoretic Antimony has been edulcorated, are good Remedies; if the Face be every Day washed and cleansed with them. Instead of these, it may be sometimes proper frequently to anoint the Place with Ointment of Litharge, or *Unguent. Diapompholygos*, or *De Enula*; mixing therewith, if the Disease be more stubborn than ordinary, a small Quantity of Quicksilver, or red Precipitate: If the cutaneous *Ulcers* flow with Sanies, like those of the rheumatic Sort, it may be necessary to treat them every Day, with an Insersion of an absorbent and drying Powder, prepared of Tutty, *Lapis Calaminaris*, Cerufs, Chalk, or the like, mixed with native Cinnabar, or red Precipitate; or to anoint them very frequently with beaten Cream.

But of all corrosive and malignant *Ulcers*, none are more virulent or formidable than those of the *cancerous* Kind, since they are to be treated with the same internal and external Remedies, as we have prescribed for an exulcerated Carcinoma [see CARCINOMA]; tho' *M. A. Severinus*, a very celebrated Physician and Surgeon, seriously assures us, that we are to expect more Relief from manual than medicinal Operations, in such Cases; for many have been cured by Steel and Fire, when Medicines have been of no Use. When, therefore, it is determined to treat an *Ulcer* of this Kind with Burning, or Excision, we are to take all possible Care that the same be entirely extirpated, and that no corrupted Part remain; for that would entirely defeat the End and Design of the Operation: Some, instead of these severe Operations, use a phagedenic Water, prepared in the following manner:

Take Water of Quicklime, one Pint; Sublimate Mercury; half an Ounce: Mix them together. Or; instead of Mercury Sublimate, use an Ounce, or an Ounce and half, of white Precipitate: This is to be applied warm frequently; with Lint dipped therein.

Instead of Sublimate Mercury, I have often used, with very good Success, *Mercurius Dulcis*, in Lime-water, for stubborn *Ulcers*, as a much safer Medicine than the other. As for digestive Ointments, they are quite improper in cancerous *Ulcers*; and even found to be fatal.

If there be a Putridness and Fetidness attending the *Ulcer*, it must proceed either from a very depraved Habit of Body, or want of Care or Skill in the Surgeon employed in the Dressing. It is the Physician's Part here, by proper Medicines, to correct and strengthen the Habit with all convenient Speed; while the Surgeon takes due Care frequently to extirpate and cleanse the *Ulcer*, and so much the more, if the same be affected with a burning and intense Heat: For when *Ulcers* are but seldom dressed and cleansed, as is usually the Case after great and bloody Battles when the Number of the Wounded is very considerable, it can scarce be avoided, but that the vitiated Flesh will be infested with Heats, Putridness, or Worms. For preventing such Inconveniencies, there is no readier Way, than to apply our digestive Ointment, mixed with *Unguentum Egyptiacum*; or the *Unguentum Fuscum* of *Wurtzius*, or the phagedenic Water, or red Precipitate, either by itself; or mixed with burnt Alum, or well worked into the digestive Ointment, and to continue the same

state till the corrupted Flesh be totally consumed, and the Bottom of the Ulcer comes to its natural red Colour. While this is doing, it will be convenient to wrap the affected Part in Linen moistened with Spirit of Wine, which is a Medicine that very potently resists Putrefaction. The Sore being thus cleansed from the putrid and corrupted Parts, the Conglutination is to be performed by the same Means as have been prescribed for other Kinds of Ulcers, the Surgeon taking all due Care that the Patient be frequently refreshed, and have his Spirits enlivened not only with comforting Meats and Drinks, but by such cardiac and antiseptic Medicines as are directed by the Physician, lest Nature should sink, and the Strength be exhausted under the Length of the Cure. *Vermineous Ulcers* are to be treated in the same manner; for whatever resists Putrefaction, is, also, an Enemy to Worms, and all due Care is supposed to be taken, at every Dressing, for extergering the Worms and putrid Flesh; after which the Cure is effected by the Methods above prescribed.

In the last Place, there are some Ulcers so malignant and obstinate, that though they cannot be discovered to have contracted any Venereal Contagion, they yet resist all the Medicines hitherto prescribed. In this Case I have learned by long Experience, that there is no Method of Cure so prevalent and effectual as what is performed by means of mercurial Medicines, or by a gentle Salivation. For I have found the Blood, in some Patients, corrupted to such a degree, as not to be lenified, much less corrected, without the Help of Mercury. But if there be any manifest Signs of Venereal Contagion contracted by the Patient, this Method of Cure by Mercury becomes absolutely necessary, as we shall demonstrate below.

Of the Cure of VENEREAL ULCERS.

Venereal Ulcers, as we have already observed, are generally seated in the Groin, or Inside of the Thighs, being the Effects of Exulcerations of Venereal Buboës: They are, also, generated in the Prepuce, Frenum, and Glans of the Penis; in which Cases they take the Name of *Cancro*, in French, *Chancres*, (whence the *English Shankers*); in Women they infect the Vagina, and *Labia Pudendi*; sometimes the Nose, Palate, Lips, Fauces, Tongue, and Uvula, the Forehead, Cranium, and other Bones, are affected with them; and one single Ulcer of this Kind, if neglected, or ill-treated, is capable of exciting an universal *Lues Venerea*. The whole Affair, therefore, of the Cure consists chiefly in evacuating and eliminating, by proper Medicines, as soon as may be, the Poison of the Venereal Infection.

No Medicines are better adapted to this Purpose, than Cathartics, incorporated with *Mercurius Dulcis*, either in Pills or Powders, and frequently administered. With these must be joined the Use of the Woods in Decoction, for correcting the Blood, together with Essences of the Woods, *Pimpinella alba*, and Amber, and Tincture of Antimony, and the like, which are of excellent Service, when taken in the Morning early, in Bed, by promoting a moderate Sweat. A strict Regimen of Diet is in no Case more necessary than the present: For Wine, and all other heating Liquors, as well as salt, acrid, and acid Meats and Drinks are highly pernicious. If these Remedies prove too weak and ineffectual on account of the Inveteracy of the Disease, or its Complication with the *Lues Venerea*, it will be necessary, either to use stronger Sudorifics, such especially as Decoctions of the Woods, with a proper Regimen; or to call in the Assistance of Mercury, in order to excite a gentle Salivation, which at once cures the Ulcer, and expels the Venereal Venom.

When these Kinds of Ulcers affect the Mouth, Uvula, Fauces, Tonsils, or Tongue, not only internal Remedies are to be employed, but the Mouth itself is to be very often washed with a Decoction of the Woods, either simple, or mixed with Honey of Roses. After this the affected Part is to be anointed and cleansed, either with *Hartman's* Green-water, or Honey of Roses, mixed with a few Drops of Spirit of Vitriol to give it a gentle Acidity; and, at last, it is to be healed by the Use of Essences of Amber and Myrrh, or Oil of Myrrh *per Deliquium*. If the Ulcer appears in the external Parts, the best Way is to apply the Digestive Ointment, or Basilicum, mixed with Quicksilver, or white or red Precipitate in Lint, or *Vigo's* Frog-spawn Plaister, or Diachylum mixed with Mercury, in order to exterge and cleanse the Parts. After Mundification, the Ulcers are to be sprinkled with the Essences just mentioned, or the absorbent Powders so often prescribed, which may have their Virtue augmented, by mixing with them a small Quantity of red Precipitate, in order to Exsiccation and Conglutination: No less effectual for the Purposes of Cleansing and Healing are the phagedenic Water, or Lime-water, impregnated with *Mercurius Dulcis*, applied in Lint, moistened therewith several times in a Day; especially if the Parts be now-and-

then gently touched with the Lapis Infernalis. You have, also, an excellent Conglutinant, after Mundification, in a simple Ointment prepared of Quicksilver, mixed with a sufficient Quantity of Turpentine, or in the following Mercurial Ointment.

Take of Unguentum Mundificativum, or Diapompholygos, crude Mercury extinguished in a little Turpentine, each an Ounce. Or,

Take of an Amalgama of Mercury, and Lead, one Ounce; Bole Armoniac, two Ounces; Ointment of Roses, a sufficient Quantity: Make them into an Ointment.

If the subjacent Bone be carious, it is to be treated with such Remedies as are prescribed for the Cure of a Caries [see the Article Os], and particularly with Euphorbium; Oil of Cloves, the phagedenic Water, or Spirit of Nitre in which Mercury has been dissolved, or, if it may safely be done, with a red-hot Iron. Sometimes these Kinds of Ulcers in the softer Parts of the Body, and particularly the Groins, make a constant and copious Discharge of a Lymph; and such Ulcers are found to be so stubborn, that no Medicines can be found of sufficient Force to exterge and dry them. Such a Circumstance is usually attended with a Rupture, or Erosion of some lymphatic Vessel; and here we are first to attempt a Suppression of the Flux by Compresses, and a strait Bandage, which has sometimes happily succeeded: But if a Bandage proves of no Service, there is no better Remedy for so foul and troublesome a Nuisance, than the Application of a red-hot Iron; and the same must be repeated as often as Necessity requires.

Venereal Ulcers of the Penis, or Glans, carelessly treated, usually terminate in the *Lues Venerea*, and Perforations and Corrosions of the Urethra, through which the Urine passes, as through a Sieve. Sometimes the whole Glans, or Penis, are affected with a Scirrhus, or Shankers, to such a Degree as to require the Use of the Knife. If the Disease infects the Nose, it commonly produces a very fetid Ulcer, called, in the technical Way of speaking, *Oxana*, which sometimes consumes the whole Part. Sometimes the Palate with its Bones is so miserably corroded and perforated, that whatever Drink or liquid Food is attempted to be swallowed, is rejected through the Nostrials: These Perforations are seldom closed, or brought to a Coalition, especially if larger than ordinary: They may, however, when their Orifices are consolidated; be closed up with a thin Piece of Gold or Silver. It is much more usual for the Tonsils, with the outer Membrane of the Uvula, or the entire Uvula, to be corroded and consumed. In all these Affections, Mercury, and the Decoctions of the Woods, are the principal Remedies. Sometimes it happens, as I myself have had several Opportunities of observing, that the very Cranium itself, especially about the Forehead, is corroded and perforated with a Caries, in so surprising a manner, as to discover the very Brain, with the Pulse of the Arteries belonging to it, which are plainly to be discerned; whence very formidable and dangerous Symptoms must arise, the Consequence of which is sometimes Death, unless it be prevented by the seasonable Administration of the before-mentioned Remedies.

Of CALLOUS ULCERS.

Ulcers of the callous Sort are seldom or never cured without a previous Extirpation of the *Callus*. Now there are three Ways by which the Callus may be extirpated. The first and gentlest, which takes Place in a recent and softer Callus, is by Corrosives, and those of the mildest Sort; some of the principal of these are burnt Alum, and red Precipitate, either used alone, or mixed in equal Portions, or with a Mixture of the Digestive Ointment, or Basilicum, or Unguentum *Egyptiacum*, or the Brown Ointment of *Wurtzium*. With some or other of these Medicines are the callous Parts to be anointed several times in a Day, and these are usually effectual, especially those mixed with red Precipitate. But if none of those milder Topics prove of sufficient Force to eat away and consume the Callus, it will be proper, in the second Place, to make a thorough Scarification of the callous Parts, and afterwards rub them with the Lapis Infernalis, or Butter of Antimony. A third Method, no less expeditious than the former, is by Spirit of Nitre, or Aqua-fortis, impregnated with as much Quicksilver as can be dissolved in it over the Coals, and every Day applied to the Part.

There is yet a gentler Way of extirpating a Callus, described by *Le Dran. Tom. 2. Observ. 115*. This Method is to apply, for four or five Days together, a Plaister compounded half of a Plaister of Diachylum with Gums, and half of *Vigo's* Plaister, mixed with four times the Quantity of Mercury, to be renewed every Morning and Evening, in order to soften, in some measure, the Lips of the Callus. After this the Callus is

is to be scarified, all manner of Ways, to the Bottom, the Ulcer being covered afterwards with a Bit of Lint, till the Blood, which commonly flows in small Quantities from the Incisions in the Callus, be stopped: This done, the same Plaster is applied over the whole Ulcer, so as to touch the bare and newly scarified Lips of the Callus. About four Days after, the Surgeon repeats the Incisions, or *Scarification*, as it is usually called, and renews the same the third or fourth time if there be Occasion, that is, if the Callus be not dissolved. By this Method, as the above-mentioned Surgeon affirms, is the Callus gradually subdued, softened, and at length totally disappears, leaving in its room a very laudable Cicatrix, without the Assistance of any other Remedy. I never had an Opportunity, I must confess, of trying this Method.

If the callous Ulcer be, also, fistulous, an Incision is first to be made into the Sinus, in the same manner as has been directed for a Fistula, before we attempt to consume the Callus; after which the Callus is to be consumed, by the Methods above related. If the Application of the Knife be too much dreaded by the Patient, or otherwise unsafe, it will be convenient to introduce into the Sinus a Tent of *Unguentum Egyptianum*, or the Brown Ointment of *Wurtzius*; by which means the Callus, if not very obstinate, is insensibly consumed, and may be the sooner, if the fore Part of the Tent, before its Introduction, be rubbed with red Precipitate, Lapis Infernalis, or Butter of Antimony, and this be continued till the Callus be consumed. If these corrosive Tents will not penetrate to the Callus, the most convenient Method will be to use the Syringe, and make frequent Injections of the Phagedenic Water, or of *Unguentum Egyptianum*, or *Wurtzius's* Brown Ointment, dissolved in Spirit of Wine, into the difficult and winding Sinus, compressing afterwards the Mouth of the Ulcer, that the Liquor may be retained for some Space of Time, within. The Callus being thus removed, the Cure of the Ulcer is to be managed like that of a Fistula.

It may sometimes happen, that in callous and fistulous Ulcers which are of long Standing, or full of Turnings and Windings, these corrosive Medicines are of little or no Service; or, what is worse, may be more disposed to corrode and vellitate the Nerves, and excite most terrible Convulsions, sooner than consume the Callus. In such a Circumstance it cannot but be most proper to make an Incision in the Ulcer, in the same manner as directed for cutting the Fistula [see FISTULA], but with all due Care and Circumspection, for Fear of wounding some Artery, Nerve, or Tendon.

If neither the Method of Incision just recommended be thought of Force sufficient, or expeditious enough, in extirpating the Callus: In this Case, if the Patient be endowed with a good Measure of Strength and Intrepidity, and the Place be safe and convenient, with respect to the Nerves and Arteries, the most expeditious Method that can be used, is to separate or cut off all the Callosities with the Knife, or cauterize them with a red-hot Iron. By this bold and resolute Operation, the inveterate and stubborn Ulcer is, as it were, converted into a very recent Wound; and, consequently, may be healed by common Remedies, unless the Cure be prevented by a Caries, a bad Habit of Body, the *Lues Venerea*, Scurvy, Dropsy, or some other Indisposition.

Of the Cure of MAGIC ULCERS, or such as are supposed to be induced by Fascination.

For Ulcers on which they bestow the Epithet of *Magic*, on account of their strange Phenomena, as containing Threads, Needles, Nails, and the like, *Paracelsus*, *Helmont*, *Agricola*, and many others, have been very careful to prescribe Remedies, which are, for the most part, of no Significance, and either superstitious or idle. The best of them, however, seem to be Oaken and Willow-leaves, Maidenhair, St. John's Wort, by some called *Fuga Daemonum* on this Account, Quicksilver, Asa-fetida, Antirrhinum, and some others: Any one of these, either hung about the Neck, or used in some other insignificant manner, according to Prescription, will, as it is pretended, secure the Body from all malevolent Influence and Effects of Fascination. Some prescribe the Ashes of a Woman burnt for Witchcraft; others the Ashes of burnt human Dung, to be sprinkled on the Ulcer. *Heerius* and *Horstius* recommend especially the *Unguentum de Visco corylina*, or Ointment of Mistletoe of the Hazel, against magic Ulcers: *Mynsicht* prescribes his Foetid Plaisters: Others advise other Things.

Whatever our Sentiments ought to be on this Head, it is certain a Physician best consults his own Reputation, as well as the Health of his Patient, when he treats Diseases and Maladies of this Kind, which, by the ignorant Vulgar are, for Reasons vain and ridiculous, reputed the Effects of Magic, upon careful and due Thought and Examination, accommodated to the Nature of the Ulcer, and especially to the Habit

of the affected Party; such are the Remedies recommended under the preceding Heads: For though we should be never so willing to grant, that a Person may suffer in his Body, and be disquieted, by the crafty and cunning Tricks and Delusions of the Devil and Magicians, yet we have no sufficient Reason to convince us, that the Disorder thus caused, is supernatural, and, on that Account, incurable by natural Means; so as to oblige us to have Recourse to superstitious, sordid, and absurd Remedies. To this it may be added, that ignorant and superstitious Surgeons, and Attendants on Bagnios, report everywhere as magical, all such Ulcers as they are not able to cure; whereas the same falling afterwards into more skilful Hands, when the true Nature and Cause of their uncommon Malignity comes to be discovered, are often healed without much Difficulty. There have been, also, perhaps, in former times, some ill-meaning Surgeons who have pronounced an Ulcer *magical*, without Foundation, in order to extort the more Money for the Cure.

Of the Cure of OLD ULCERS, especially in the Legs.

Though no Part of the Body be secure from the Danger of old or inveterate Ulcers, yet are the Legs and Feet more subject to them than other Parts: And for this Reason, though we have formerly treated of malignant or inveterate Ulcers in general, we think it incumbent on us to enlarge more particularly, on those which infest the Legs or Feet. The Causes of Exulcerations of the Legs are generally the same with those of malignant Ulcers in general; for one as well as the other proceed from a bad Habit of Body, a thin and acrimonious Blood, some adjacent Fistula, Caries, or Callus: In Women, from an Obstruction of the Menstrues, and other like Causes. Whoever, therefore, pretends to cure an Ulcer in the Leg, must inquire into its true Cause, and to the same accommodate the Cure, in the Manner prescribed above.

But before we enter into the Method of Cure, it will not be improper to inquire whether a Conglutination of such inveterate Sores or Ulcers in the Feet and Legs can be effected with Safety; because there are Instances in the Writings of the most experienced Physicians, where the Consequences of such Cases have been very severe and dangerous Disorders, and oftentimes most certain and present Death. I have, as I apprehend, in a great measure, given a satisfactory Answer to this Question near the Beginning of this Discourse, when I said, that in Persons far advanced in Years, and of a very bad Habit of Body, it is best to abstain from Conglutination of such inveterate Ulcers, because they are a great means of Health, as being so many Issues or Outlets by which Nature is accustomed to expel the noxious or superfluous Humours. I would not, however, without some weighty Reason, have this Rule applied to young and robust Persons; for since the first Causes of such stubborn Ulcers, either by Abstinence and a prudent Regimen, or by Fontanels, or proper Medicines, may, without all Danger, in such Subjects, be removed, it cannot be doubted but that the Conglutination may afterwards be performed with little or no Detriment to the Patient.

Tho' we have determined the Conglutination of moderate Sores or Ulcers in the Legs or Feet of aged Persons to be dangerous, yet we are so far from thinking all Care and Medicines in their Case useless, that we rather pronounce them highly necessary: The Surgeon here has a double Duty incumbent on him; one Branch of which consists in alleviating as much as possible the Pains and Disorders which attend them; the other Part of his Business is to take care that the Evil may not increase, nor spread; and that no new bad Symptoms, such as Pains and Inflammations, may add to the Disease by exasperating the Ulcer.

In the first place, therefore, Abstinence, and a very exact Regimen of Diet is to be enjoined the Patient, that he may not eat to Excess, nor of such Meats as are noxious and prejudicial in his Case; of which Kind are all acrimonious, hard, and crude Aliments, and Swine's Flesh in particular. Proper and gentle Cathartics are, also, of Service in attracting the redundant and malignant Humours from the lower Parts, and expelling them gently by Stool. Besides these, other internal Medicines, which are contrary to the Cause of the Disease, are occasionally to be prescribed; such, for Instance, as Elixir Proprietatis, and Essences of Myrrh, Amber, and *Peruvian* Balsam; which, as well as all Balsamics, and Bitters, are highly serviceable for correcting the immoderate Thinness and Acrimony of the Blood in Persons advanced in Years.

With respect to external Treatment, it is above all things necessary, that the Ulcer be kept clean, and once or twice every Day exterged from Sanies. After this it is to be filled with Lint, either dry, or dipt in a Decoction of the Leaves of Walnut or Birthwort, for the Reception of the acrid Humours. Upon this it will be proper to apply *Baubine's* Plaster for old

Ulcers, or the *Emplastrum Diasulphuris* of *Rulandus*; the Lead Plaister, the Plaister of Diapompholyx, or of *Lapis Calaminaris*, or any other of the like Nature. These Directions being carefully and regularly observed, and the affected Part guarded, as much as is possible, from the Injuries of the Air, or external Cold and Humidities, it is not to be doubted but the *Ulcer* will prove of the mildest Sort, and serve as a Drain to the whole Body for the Evacuation of corrupted Humours, and consequently be found beneficial and salutary, and highly conducive to the Prolongation of Life and Health. And really it seems probable, that the Observation of those admirable and wholesome Effects of inveterate *Ulcers* in aged Persons induced the antient Physicians; who followed Nature as the best Guide, to raise Fontanels in sick and valentudinary Bodies, which might do the Office of *Ulcers* in draining and evacuating the Body of acrid and superfluous Humours.

If it should happen, as is sometimes the Case, that by means of some Blow, or taking Cold, or by immersing the Leg in cold Water, or from a Fit of Anger, a Fright, Sorrow, or an improper Regimen of Diet, that the diseased Part be seized with a Pain or Inflammation, it will be convenient to wrap the Place in a Linen Cloth folded and moistened with *Hungary Water*, or with theriacal, or camphorated Spirit of Wine, or with Lime-water and the said camphorated Spirit, and frequently to repeat the same; and the Patient is to be strictly enjoined to keep his Leg in Bed, and to guard it from external Cold, taking every Morning some Cups of Tea, or some other Sudorific, and to sweat well afterwards in his Bed; by these means the Pain and Inflammation are usually in a short time removed. But the Case becomes dangerous, when the Inflammation is violent, especially in a corrupted and weak Body, and begins to pass into a Gangrene. In such a Circumstance the same Remedies are to be employed, both internal and external, as have been prescribed for a Gangrene [See the Article *GANGRENA*]. But Care is to be taken, above all things, that such infirm and aged Patients be every now-and-then refreshed with Cardiacs, and comforting Medicines, and frequently cast into a gentle Sweat. If these Kinds of Remedies be postponed and neglected, the Danger usually increases, and there is very great Reason to fear, that the Disease will gradually degenerate into a Sphacelus, followed by Death.

When inveterate *Ulcers* of this Kind, in old and infirm Subjects, dry up spontaneously, and turn livid, the Patients, for the most part, are immediately seized with an Horror, Nausea, and Feebleness, which are Indications of a great Decay of Nature, a Corruption of the affected Part, and an extremely dangerous Condition, which often terminates in a speedy Death. Under such formidable Symptoms there is the greatest Necessity to have immediate recourse to a proper Diet, and corroborative Medicines for preserving the Strength. Topics convenient to be applied to the *Ulcer* are the Roots of Gentian, or Florentine Orris bruised; or, if these prove not strong enough, the Root of Black Hellebore reduced to Powder, or in Globules; or, in the last place, if this be ineffectual, Powder of Cantharides, or a Globule of a Blister-plaister of the Shops. By this Method such *Ulcers*, when in a State of Exsiccation, or in a manner dry'd up, are stimulated and irritated to such a Degree as sometimes to flow afresh, and so begin to relieve the Patient from the malignant Humours by which he was oppressed, after which the *Ulcer* is to be treated in the manner prescribed. But if these Medicines prove of no Effect, and the *Ulcers* continue in a State of Dryness, there remains no Hope of the Patient, whose Case is desperate, and Death unavoidable. *Hist. Chir.*

ULEX. A Name for the *Genista spartium*; majus; brevioribus aculeis.

ULMARIA.

The Characters are;

The Leaves are pinnated, resemble those of Agrimony, are triangulated, and divided after the Manner of those of umbellated Plants. The Apex of the small Pedicle is expanded into a monophyllous, quinquefid Calyx, which is expanded like a Star. The Flowers are rosaceous, pentapetalous, collected into Panicles, scarce visible, and furnished with numerous Stamina. The Ovary, which grows in the Centre of the Calyx, consists of three, four, or five little Pods, furnished with a Tube, and becomes a Fruit composed of a Multitude of small membranaceous intorted Sheaths, collected into an Head, and containing one small Seed.

Boerhaave mentions two Sorts of *Ulmaria*; which are,

1. *Ulmaria*. *J. B.* 3. 488. *Raii Hist.* 1. 623. *Synop.* 3. 259. *Boerb. Ind. A.* 295. *Tourn. Inst.* 265. *Ulmaria Regina Prati*. Offic. *Ulmaria vulgaris*. *Park. Theat.* 592. *Ulm. Regina Prati*. *Ger.* 886. *Emac.* 1043. *Ulmaria Barba Capri floribus compactis*. *C. B. P.* 164. **MEADOW-SWEET.**

Meadow-sweet has a long, reddish, fibrous Root, from which spring several pinnated Leaves, having two or three Pair of opposite large serrated Pinnæ, with an odd one at the End, cut

into three Parts; they are hoary underneath, and green above, wrinkled, and full of Veins, and having several very small Pieces between the Pinnæ; the Stalk is red and angular, growing two or three Feet high, beset in an alternate Order with the like Leaves. The Flowers grow upon the Top of the Stalks, Umbel-fashion, being small, five-leaved, and full of Apices of a white Colour, and are followed by little round Heads, made Screw-fashion, of several Seeds set together. It grows in moist Meadows, and by River Sides, and flowers in June. The Leaves and Tops are used.

They are alexipharmic and sudorific, and good in Fevers, and all malignant Distempers; they are, likewise, restraining, binding, and useful in Fluxes of all Sorts: They are put into the *Aqua Lactis*.

The only Official Preparation is the *Aqua Ulmaria*. *Miller's Bot. Off.*

Its Leaves have an herby, saltish, and glutinous Taste; they give a faint-red Colour to the blue Paper; the Root gives it a deep one; it is styptic, and a little bitter; its Salt seems to resemble the Sal Ammoniac; but is united with a great deal of Sulphur, and a pretty deal of Earth.

By the chymical Analysis it yields some acid Liquors, some volatile concrete Salt, a good Quantity of Sulphur, and a pretty deal of Earth: Thus it is sudorific, cordial, and vulnerary. The Decoction of its Root in Water is very good in malignant Fevers, and is preferable to that of *Scorzonera*.

The Extract of its Root is said to be sudorific, but it is very moderate; for though you should give a Dram of it in the Morning, another in the Afternoon, and a third at Night, with a Grain of Laudanum, you must continue this Practice for two or three Days, before you can perceive any considerable Effect. The same is, also, observable in other Sudorifics. A Decoction of its Root is deterfiv and vulnerary. Its Juice enters the *Emplastrum Felicis Wurtzii*. *Martyn's Tournefort.*

The Flowers, infused in Wine or Beer, communicate to them a grateful Smell and Taste in manner of the *Pimpinella*. The Flowers are of a pleasant Smell, exhilarating the Heart without oppressing the Head, whence they are very proper in Summer-time to adorn or be strew'd in Parlours and Dining-rooms. One *Renatus* of *Rochelle*, as we are told by *J. Baubine*, affirms, that the Flowers communicate a grateful Smell to Methueglin, and improve it to such a Degree as to compare with the Wine of *Crete*, or *Candy*, which they call *Malmsey*.

I myself have seen, and can solemnly affirm, says *S. Pauli*, that *Queen of the Meadows* has had surprising Effects on a Girl who had a mortal Wound in the Bladder, and in an almost incurable Fracture of the Arm; whence it justly deserves to be an Ingredient in the most celebrated and useful Plaister of *Felix Wurtzius*, who highly extols the Roots of this Plant, and seems to prefer it before all other Vulneraries, or any such as are recommended in Fractures. *Raii Hist. Plant.*

2. *Ulmaria*; floribus in longas spicas congestis. *Barba Capra*, floribus oblongis. *C. B. P.* 163. T. 265. *Barba Capri*. *J. B.* 3. 488. *Boerb. Ind. alt. Plant.*

Ulmaria is antispasmodic, antiepileptic, corroborative, and astringent: Hence our Peasants use it in a Dysentery, and Diarrhoea, and to repress Vomiting. I have found it, also, of Service in regulating the disorderly Motions of the Heart, Blood, and Spirits; and where-ever Condensation, Strengthening, or Astringent are required, this Herb is of excellent Use. The Leaves are good for an Hæmoptoe; and the bruised Root is applied to Wounds, in order to stop the Blood, and consolidate the Part. A Decoction of the Roots is proper in malignant Fevers. *Hist. Plant. adscript. Boerhaav.*

ULMUS.

The Characters are;

The Flower is monopetalous, Bell-shaped, and adorned with many Stamina. The Ovary in the Centre of the Flower becomes a foliaceous, Heart-shaped Fruit, soon mature, concealing in the Middle a membranaceous, Pear-shaped Capsule, full of a Seed of the same Figure.

Boerhaave mentions four Sorts of *Ulmus*; which are,

1. *Ulmus*; campestris, & Theophrasti. *C. B. P.* 426. *Tourn. Inst.* 601. *Boerb. Ind. A.* 220. *Ulmus*. Offic. *J. B.* 1. 139. *Ulmus vulgaris*. *Park. Theat.* 1404. *Ulmus vulgarissimus folio lato scabro*. *Ger. Emac.* 1480. *Raii Hist.* 2. 1425. *Synop.* 3. 468. **COMMON ELM.**

The Elm is one of the commonest Trees we have: It has a rough thick Bark, and the Branches are clothed with somewhat rough, crenated, green Leaves. The Flowers are small and staminate, coming out early in the Spring before the Leaves. The Seed is round and foliaceous.

The Bark is principally used, being absterfiv and cleansing, and is frequently used in Gargarisms for sore Mouths and Throats, to clear them of tough viscid Phlegm. It is, likewise, accounted good for Ruptures, and to consolidate Wounds. *Miller's Bot. Off.*

The Seed of the *Ulmus* is called *Samera*, and is ripe about the latter End of April.

As to its Virtues, according to *Dioscorides*, the Leaves, Tops, and Bark, are of an astringent Quality. The Leaves bruised in Vinegar are effectual against the Lepra, being rubbed on the Parts, [*Galen* ascribes this Virtue to the Bark, *Pliny* to both the inner Bark and Leaves] and conglutinate Wounds, and much more effectually if the Bark be bound about the Place instead of a Fillet. The Roots have the same Virtue of conglutinating Wounds, and the Decoction of the Roots, or, according to *Dioscorides*, of the Bark of the Roots, is used by some to wash Fractures, in order to accelerate Consolidation by inducing a Callus. The same Decoction is said to mollify Hardnesses of the Joints, and to resolve Convulsions of the Nerves. The fat Substance swimming on the Decoction, restores Hair fallen off, being rubbed on the Place. The Bark of the Root bruised, and worked up with *Muria*, into a Malagma, mitigates the Pain of the Gout.

A Dram of the Bark [an Ounce] taken in an Hemina of cold Water [*Dioscorides* says in Wine or Water] works by Stool, and particularly upon phlegmatic and watry Humours. *Plin. Dioscorides*. It is strange, says *Ray*, that an Astringent should purge. *Pliny* commends the Tear for Collections [Abscesses] Wounds, and Ambustions; but the Elm in our Country, says *Ray*, discharges no Tears, either spontaneously; or from Wounds.

The Bark of the Tree boiled in common Water to near the Consistence of a Syrup, and then mixed with a third Part of Aqua Vitæ, is a singular Remedy against the Pain of the Sciatica, the Part affected being fomented with it for some time by the Fire.

The Humour found in the Follicles, which grow on the Leaves, rubbed on the Face, brightens the Skin, and makes the Countenance more amiable. *Matthiæolus* writes, that it cures the Enterocoele in Children, if Bolsters dipped therein are applied to the Groin, and tied under their Thighs. *Fallopian* says, that he never found any thing more effectual in Agglutination than this Liqueur. Of the same is prepared an Oil, which, as we are assured by *Sylvius*, is of extraordinary Efficacy in Wounds; but we could never observe, says *J. Bauhine*, that Oils had any good Effect on simple Wounds, but rather fill them with Sordes, and prevent their Conglutination. *Raii Hist. Plant.*

2. *Ulmus*; folio latissimo scabro. *Ger. Emac.* 1481. *Raii Hist.* 2. 1426. *Synop.* 3. 469. *Tourn. Inst.* 601. *Boerb. Ind.* A. 220. *Ulmus montana*. *Offic. C. B. P.* 426. *Ulmus latiore folio*. *Park. Theat.* 1404. THE WYCH HAZEL.

This is found frequently in Hedges. The Bark is used in Medicine; and agrees in Virtues with that of the preceding Elm.

3. *Ulmus*; minor, folio angusto, scabro. *Ger. Emac.* 1480.

4. *Ulmus*; folio glabro. *Ger. Emac.* 1481. *Park. Theat.* 1404. *Boerb. Ind. alt. Plant.*

ULNA. The Name of a Bone in the fore Arm. See BRACHIUM.

ULNARIS MUSCULUS. *Winslow* describes three Muscles under this Name; the *Ulnaris Internus*, the *Ulnaris Externus*, and the *Ulnaris Gracilis*; for which last see PALMARIS LONGUS.

The ULNARIS INTERNUS is a long Muscle, fleshy at its upper Extremity, and tendinous at the other, situated on the outer Part of the Ulna.

It is fixed by its upper Part in the back Side of the long or internal Condyle of the Os Humeri, in that Part of the Olecranon which is next the Condyle, along the upper Half of the Ulna very nearly; and to the Middle common Tendon of the neighbouring Muscle, termed commonly *Profundus*.

It runs in the Direction of the external Angle of the Ulna, and ends by a long Tendon in the Os Pisiforme, or Orbiculare of the Carpus, reaching, also, to the Os Unciforme, being united to the Ligament common to these two Bones.

When the *Ulnaris Internus* acts alone, or as the principal Mover, it brings the Hand obliquely toward the internal Condyle, and toward the Olecranon, though with Difficulty.

When it acts together with the *Radialis Internus*, it turns the Hand equally towards the two Extremities of the Bones of the fore Arm; and thereby moves not only the Carpus in general on the fore Arm, but, also, the second Row of the Carpus on the first, and the metacarpal Bones on the second.

When it acts with the *Ulnaris Externus*, it turns the outer Edge of the Hand toward the Olecranon.

The ULNARIS EXTERNUS is a long Muscle lying on the Outside of the fore Arm, fleshy toward the Os Humeri, and tendinous toward the Carpus.

It is fixed above to the external Condyle of the Os Humeri, being there united to the *Anconæus minor*; to the annular Ligament of the Head of the Radius, and to the upper Half of

the external Angle of the Ulna. From thence it advances, and forms a Tendon, which passes through the external Notch at the lower Extremity of this Bone, on one Side of the Styloide Apophysis.

The Tendon having afterward passed under a particular Ligament situated near the Os Cuneiforme of the Carpus, is inserted in the Outside of the Basis of the fourth metacarpal Bone, sending some tendinous Filaments to the Basis of the little Finger. It is, also, often fixed in the Basis of the third metacarpal Bone.

When the *Ulnaris Externus* acts with the *Ulnaris Internus*, it turns the outer Edge of the Hand toward the Olecranon.

With the *Radiales Externi*, it turns the Back of the Hand toward the outer Condyle. This Motion is termed *Extension*, but very improperly, when applied to the Hand; for the *Metacarpus*, which is naturally bent this Way, will be still more bent by the Action of these Muscles. I should chuse, therefore, to term this Motion the Inversion, rather than the Extension, of the Hand. The *Carpus*, indeed, may, in some Sense, be said to be extended, because the Bones of the second Row are brought to a straighter Line with those of the first.

When this Muscle acts alone, it brings the outer Edge of the Hand obliquely toward the Olecranon, and the external Condyle, at the same time; but this is performed with Difficulty. *Winslow's Anatomy.*

ULOMELIA, ὑλομελία, *Ionice*, ὑλουεμία, from ὑλῶ, for δλῶ, entire, and μέλῶ, a Limb, in *Hippocrates*, signifies the entire, absolute, essential, and universal Nature of any Thing. This appears to be the Sense of the Word in the following Passages, *Lib. de Artic.* περὶ ἀσθενῶν ὑλομελίας γεγενῆσθαι, "there will be a Treatise of the full and complete Nature of the Glands;" where *Galen*, in his Comment, expounds the Place by τὴν ἀλόκληρον φύσιν τῆς τῶν ἀσθενῶν φύσεως, "the perfect and entire Nature of what essentially belongs to the Glands." The Word is used in the same Sense in two Places of the *Treatise de Glandulis*, from which *Erotian* expounds ὑλομελίας by ὅλης φύσεως, "the entire Nature." Again, *Lib. de Aliment.* where we read, κατὰ μὲν ὑλομελίαν πάντα, the Passage imports, that all the Parts conspire, or are accommodated to the universal Good or Benefit of the Whole; and κατ' ὑλομελίαν is there opposed to κατὰ μέρος, which is used to express a particular Relation and Consent of the Parts among themselves. We read, also, in his Epistles, ὑλομελίαν τὴ σκῆψιν; by which he plainly means, "the universal Nature of the Body," which he recommends to the Study of a Physician. *Hesychius* takes ὑλομελίαν for an Adverb, and expounds; by καθόλου, συλλυβδῆν, "universally, comprehensively;" and adds, that some understand it, ἐπὶ τῆς ἀβρίας τῶν ὅλων φύσεως, τὸ γὰρ ὅλον ἔλον λέγει, "of the complex Nature of things; for ὅλον he calls ἔλον."

Ὀλομελίαν signifies, also, a Perfection and Soundness in all the Members; and ὑλομελῆς is absolutely perfect in all the Parts; and is expounded by ὑγιῆς, ἀλόκληρῶς, "sound, entire." And thus it imports, in *Lib. de Corde*; where we read, τὴν μὲν γὰρ καρδίαν ἰδοὺς ἂν ῥιπταζόμενον ὑλομελῆ, "you may observe the Heart agitated in every Part which belongs to it."

ULON, ἔλον, in the Plural *Ula*, ἔλα, are the Gums or Caruncles which are placed about the Teeth. Ὀῦλα, says *Ruffus Ephesius*, αἱ περὶ τὰς τῶν ὀδόντων ῥίζας σάρκες; "The Ula are the fleshy Parts about the Roots of the Teeth." But *Pollux* tells us, that the ἔλα are the Flesh which incompasses the Teeth on the Outside; and that the Flesh which surrounds them on the Inside is called ἐνυλα (*Enula*); see ENULON. The Gums are said to have this Name bestowed on them on account of their Softness and Tenderness; for ἔλῶ, in *Hesychius*, is expounded τρυφερὸς καὶ ἀπαλὸς, "delicate and soft;" and *Erotian* explains ἔλῶ ἐρίῳ, τὸ μαλακῶ, "soft Wool." The same Author says, that ἔλον ἐρύβιον signifies τὸ πυρρὸν, "red, or rufset," coloured;" and by some is taken to mean τὴν ἰσομεγέθη δούβῃ ἀποροχρόδονν, "a Wart, of the Bigness of a Vetch." Ὀῦλα, in *Hippocrates*, *Lib. 2. de Morb.* is put for a Tumor and Disorder of the Gums.

Ula, ἔλαι, also, signifies the Gums, 7 *Epid.* where we read, ἔλαδον ὑπερσάρκωσις, "a fleshy Excrecence in the Gums," &c. But *Lib. 5. Epid.* we read it ἔλῶν, and the same is repeated. Ὀῦλαι, also, in *Erotian*, is expounded by κριθαί (*Crithe*), "Grains of Barley."

ULOPHONOS, ὑλοφόνῶ. The Name of a poisonous Plant; the same as Ixia.

ULPHA. *Rulandus* explains this by *Lapsatura*; *Castellus* by *Recrementum Cotis*.

ULRACH. Dragons Blood. *Rulandus*.

ULTRAMARINUM. Ultramarine. A fine Magistery of *Lapis Lazuli*, of a fine blue Colour, much used in Painting, but not in Medicine. *Junken* describes the Method of preparing it.

ULVA. A Species of Moss. See the Explication of botanic Terms, under the Article BOTANY.

ULULA. Offic. Aldrov. Ornith. 1. 538. Bellon. des Oyse. 142. Gefn. de Avib. 700. Mer. Pin. 171. Jonf. de Avib. 32. Charlt. Exer. 78. *Strix cinerea*. Will. Ornith. 68. Raii Ornith. 105. Ejusd. Synop. A. 26. THE GREY OWL.

The Parts in Use are, the Gall, Fat, and Flesh. The Gall is commended for the Albugo, Cataracts, and Films; the Fat for clearing the Sight; the Flesh boiled in Oil, and that Oil mixed with Sheep's Butter and Honey, is good to heal Ulcers. Pliny. It is esteemed by some for the Gout. Dale.

UMARI. See CAMARINHAS.

UMBELLA. See FLOS UMBELLATUS, in the Explication of botanical Terms, under the Article BOTANY.

UMBELLIFERA ALSATICA. A Name for the *Oreose-linum, pratense*; *Cicuta folio*.

UMBELLIFERA CANARIENSIS. A Name for the *Butleuroides*; *quæ Simpla nobla Canariensium*.

UMBELLIFERA, FOLIO PANACIS. A Name for the *Passinaca, folio quasi Libanotidis latifolia*; and, also, for the *Passinaca*; *semine longissimo*.

UMBILICATA LINFOLIA. A Name for the *Omphalodes*; *Lusitanica*; *Lini folio*.

UMBILICUS MARINUS. Officin. *Operculum Cochleæ cælatæ*. Bellon. de Aquat. 430. Mont. Exot. 6. *Operculum Cochlearum marinarum subrotundum in se contortum*. Long. Math. Test. 56. This is the Cover of the *Cochleæ Cælatæ*, and is a stony kind of Substance, of a flat Superficies, remarkable for a spiral Line of a deep-yellow Colour, hollow in one Part, after the Figure of a Navel, of a carnation, or igneous Colour, and an earthy Taste. As to the Virtues, Johnson says it stimulates to Venery.

Augustinus Scilla is persuaded, that these Substances are either the Eggs of the *Cochleæ*, or some other short, imperfect Productions of the same: But the ingenious Mr. Ray, when he was on his Travels in Italy, and at Rome, procured the Fish itself just taken out of the Sea, alive, in its Shell, with this kind of Operculum or Cover over it.

UMBILICUS VENERIS. A Name for the *Saxifraga*; *Sedi folio, angustiore, serrato*.

UMBILICUS VENERIS is, also, a Name for the *Cotyledon*; *major*.

UMBILICUS, is, properly, the Navel.

UMBLA. The Name of a River Fish, somewhat like the Trout. It is esteemed very good Food, and to be aperient, and resolutive.

UMBRA. Offic. Salv. de Aquat. 115. Raii Ichth. 299. Ejusd. Synop. Pisc. 95. Rondel. de Pisc. 1. 132. Gefn. de Aquat. 1029. *Umbra marina*. Aldrov. de Pisc. 81. Bellon. de Aquat. 129. THE GRUNTER, or SHADOW-FISH.

It is taken in the Mediterranean Sea. The Parts in Use are, the Bones found in the Head, and called in the Shops *Lapides Umbrarum*: These are commended for the Colic, and, in France, are commonly set in Silver, and sold by the Goldsmiths under the Name of Colic-stones: For, they say, if it be only carried about one, or worn about the Neck, it not only removes the Pain of the Colic, but prevents its Return. Bellon. Dale.

UMBRAGINES. Pigmies. Rulandus.

UMBRATILIS PUGNA, *Græc. σκιμαχία*, is a Species of Gymnastics, in which the Patient fights with Head and Heels, or boxes and wrestles with a Shadow. He is not only to use his Hands, says Oribasius, but his Legs, in this Encounter with a Shadow; and sometimes to put himself in a Posture of Leaping, and throwing himself on his Adversary, and to use his Heels like a Wrestler; sometimes he is to press, or spring forward; and sometimes to retreat, as from a superior Force. The Patient, in this kind of Exercise, did not always fight with a Shadow, but sometimes encountered a Pillar, or a Post. Of this *Umbratilis Pugna* we find not only Notice taken in Plato, who, in his *Apology*, and elsewhere, says, of those who fought without an Adversary, that they did *σκιμαχῆν*, "combat a Shadow;" but, also, by St. Paul, who, 1 Cor. ix. alludes to it, in these Words, *ἐπὶ πύκτιναι, ὡς ἀπὸ ἀέρος δέξασθαι*, "so fight (box) I, not as one who beatech the Air." Mercurialis de Art. Gymnast. p. 191.

The *Umbratilis Pugna*, or *Sciamachia*, is good to remove the Sense of a Lassitude, to strengthen the Shoulders, and for Weakness of the Nerves, and a Tremor; it, also, draws the Humours downwards, especially in those who act the Wrestler in standing on Tiptoe; and it is of good Service to the Kidneys, and Intestinum Colon, and in Diseases of the Thorax. Oribas. Med. Col. Lib. 6. Cap. 29.

UMBU. See IVA-UMBU.

UMBU. Pison. *Prunifera Brasiliensis Fructu magno, radicibus tuberosis*.

In Bigness, Structure, and Fruit, it appears, at a Distance,

like a small Citron or Lemon-tree; the Trunk is short, and not thick, but divided into a Multitude of twisted Branches, of a weak Contexture; the Leaves are not large, but smooth, and of a lively Green, but of an acid and astringent Taste; it bears a whitish Flower; and the Fruit is of a yellowish White, and resembles a pretty large Plum, but has a harder Pulp, tho' but little in Quantity, because it covers a large Stone, as does the Fruit *Acacia*; and when it is ripe, in the rainy Months, becomes of a very grateful Taste, being of an acid mixed with a Relish of sweet; but is, otherwise, so harsh, as to set the Teeth on Edge; and is, therefore, reserved for the same Uses as the Leaves, which are adapted to the Intentions of refrigerating, and astringing: The Root, which has something peculiar, and remarkable, beyond the Roots of other Trees, spreads far and wide under-ground, and swells to various thick and ponderous Tubera, which, if you consider their Shape and Colour on the Outside, which is an Ash-colour, you would take for large Potatoes, or Roots of the *Linhyama*; but, when their outer Pellicle is taken off, they will appear different; for, on the Inside, they are of a Snow-white Colour, and full of a soft and succulent Pulp, exactly like that of the Gourd, and dissolving, in the Mouth, into a cold watery Juice, very sweet, and grateful to the Palate.

It is highly comfortable and refreshing to feverish Persons, to such as labour under violent Heats, and to Travellers, as I have often experienced, says Piso; and, in the Sweetness and Wholsomeness of its Water, is not at all inferior to the Citrus. Raii Hist. Plant.

UNCAM. Quicksilver. Rulandus.

UNCIA. An Ounce.

UNCINUS. A small Hook. Castellus.

UNCTIO. Unction.

UNCTUARIUM. A Room, in the ancient Baths, where People were anointed.

UNCTUOSITAS. Unctuousity, or Unctuousness.

UNCUS. An Hook: Of which many Sorts are used in Medicine.

UNDATIO. A kind of preternatural Motion of the Heart. It should seem to be that Sort of Motion which makes an undulating Noise, perceivable externally.

UNDIMIA. A kind of cedematous Tumor, the Matter of which is coagulated, and glutinous, like the White of an Egg.

UNEDO. See ARBUTUS.

UNGUEN. An Ointment.

UNGUENTARIUS. A Vender of Ointments, and Perfumes.

UNGUENTUM. An Ointment.

Ointments are divided into simple and compound; though it so happens, that some of the former are considerably compounded: And, amongst the latter, there are some simple Ointments, and others very little compounded.

It frequently occurs, that Turpentine, Ceruse, Lard, and some other Things, are ordered to be washed in Rose-water, or the Juice of some Herbs; but this is a Circumstance that avails so little to any Purpose of Moment, that I never knew it complied with: So that a Continuation of such Directions seems principally to be in Compliment to the old Prescriptions, which abound in such minute Exactnesses. It may here, also, be observed in general, that where Oil is directed in an Ointment or Plaister, the wholesale Traders, who seek only Profit, generally substitute Lard; and where Ceruse, Minium, or Litharge are concerned, they are generally used in Over-proportions, because they make such a Weight come out much cheaper.

The *Unguentum album Camphoratum*, and *Rubrum desiccativum*, are much of the same Intention, though the former is the more cleanly Medicine, and most in Use; and there is no Circumstance in their Making, of Consequence, but the mixing of the Camphire, when the other Materials are so cool, that their Heat will not evaporate it; but even long Keeping will, in a great measure, if not wholly, lose it: So that the Goodness of these is solely known by their smelling strong of this Ingredient. The *Unguentum de Minio Camphoratum*, & *Plumbo*, and *Nutritum*, are within the same Intention: But the two former are not used; and the latter is so inconvenient, upon account of its soon growing dry, and even milky, that it is, also, but in little Esteem: The common Diachylon, also, lowered into an Ointment, with a little Oil, is the same thing, and of a much smoother and better Consistence. The *Unguentum Tutie* comes in too, as a Dryer, and a Cooler; but hath nothing remarkable in its Making, and is principally used against Inflammations in the Eyes.

The *Unguentum Egyptiacum* is the only one, amongst many others, brought to a Consistence with Honey, that is in Use; and

and this principally in Sores of the Mouth, where those Things which are more properly Ointments, are nauseous. The green Colour of Verdegrise changes black in the Boiling.

The *Unguentum ex Apio*, amongst the lesser, and *Mundificativum ex Apio*, amongst the greater Compounds, are exactly the same: But I never knew any thing made or prescribed under either of these Titles.

The *Unguentum à Gummi Elemi*, most commonly called *Limentum Arcaei*, from the Name of its Inventor, and the *Basilicon Minus*, are the principal in Use amongst our Surgeons, for deterring Dressings; though there are others of like Intention, and some of them newly added, from the Experience of Persons now living, which are not yet so much established in the Shops; as the *Unguentum Basilicon flavum*, *Unguentum aureum*, à *Resina*, and *Detergens*.

There are some considerable Compositions of this Form, in the Intention of Emollients, at the Head of which is the *Unguentum Dialthææ*; but the great Demand for this, as it is much used, hath taught the wholesale Men very greatly to spoil it, in order to render it cheaper; for they accustom themselves to make it without the Mucilages, and counterfeit their Scent with a little Fenugreek Powder; the Neats-foot Oil, also, is hardly to be expected from them: When it is good, it is of a yellow Colour, and no ill Scent. The *Unguentum Liliorum*, de *Mucilaginis*, and *Emolliens*, are of the same Intention, but not in Use.

Amongst the compound Ointments, there are some which take in a Number of very warm aromatic Ingredients, and seem designed for Paralytic Infirmities, and Cases that require brisk attenuating Applications: Of these are in most Esteem, the *Unguentum Martiatum*, and *Nervinum*; both which are much the best when fresh made; though that can be done but once in a Year, when the Ingredients are in their proper Season.

There are Ointments, also, within the Intention of Strengtheners; but this at first View seems to be a very improper Form for such Things; because an Astringent, in an unctuous Vehicle, is the most unsuitable manner possible for its Application; the Slipperiness of the one entirely frustrating the Efficacy of the other: For which Reason, those few, that yet keep a Place in the Dispensatory, are entirely neglected; neither the *Unguentum Mastichinum*, nor the *Astringens*, being ever made; altho' it hath so happened, that the latter is twice prescribed in the last Dispensatory, but the second time under the Title of *Unguentum Sumach*.

The next Intention, of any Consequence, for which we are provided by this Form, and which seems as suitable to it as any, is against cutaneous Foulnesses, as the Itch, and such-like Distempers; and this seems to be the Reason that there is such Choice of them now given: But tho' most of these have the Reputation of great Antiquity, and hold their Places in abundance of officinal Dispensatories down to the present, especially the *Unguentum Emulatum Nicotianæ*, and *Ex Oxylapathæ*; yet they are so uncleanly in Use, that they are almost altogether fallen to Neglect, unless in some of our Hospitals, those which contain Mercury being much more neat, and efficacious, for the same Purposes, as the *Unguentum cæruleum*; but even this must greatly give Place to many Prescriptions, for Elegance, which are to be met with only in extemporaneous Practice for the same Intentions.

Some other Things, of this Division, are, little less than Oils brought into Ointments by the Exchange of Oil for Lard; as the *Unguentum Rosaceum*, and *Sambucinum*; with some others, newly added, not yet brought into Use; as the *Unguentum Digitalis*, *Linariæ*, and some few others; but these require no particular Remark. Some others, also, pretty difficult to tell what they were intended for, as the *Valentia Scabiosæ*, *Tapfi Valentia*, *Tapfsmel*, and *Unguentum Splanchnicum*, cannot be of any great Service to inquire into, especially as they are neither regarded in the Shops, or Prescription. The *Unguentum Populaceum*, and *Diapompholygos*, are designed as Coolers, but now daily give Place to much neater Ointments in extemporaneous Practice. The Pomatum only remains, of this Division, to be taken notice of; but both the Making and Use of that is almost entirely got amongst the Women; that which is directed in the Dispensatory being of no manner of Regard. *Quincy's Prælect. Pharm.*

UNGUENTUM ÆGYPTIACUM. See ÆGYPTIACUM UNGUENTUM.

UNGUENTUM ÆGYPTIACUM MAGIS COMPOSITUM.

A more compound Egyptian Ointment.

Take of Verdegrise, four Ounces; of the sharpest Vinegar, six Ounces; of Honey, one Pound: Let them all boil over a gentle Fire, to a dusky Colour; adding, towards the

latter End, of Roch Alum, and Sal Ammoniac, of each half an Ounce; and make them into an Ointment.

UNGUENTUM ALBUM. See ALBUM UNGUENTUM.

UNGUENTUM AMARUM.

The bitter Ointment.

Take of the Oils of Rue, Savin, and Mint, of each two Ounces and an half; Juice of Wormwood, one Ounce; Powder of Rue, Gentian, the lesser Centory, and Myrrh, of each one Dram; of the Pulp of Colocynth, two Drams; of Succotrine Aloes, three Drams; of Lupin-flowers, half an Ounce; of Ox's Gall, and of Wax, of each one Ounce and an half: And boil up to an Ointment, with a sufficient Quantity of the Juice of Wormwood.

The *Augustan Dispensatory* hath a Composition of this Intention, under the Title of *Unguentum ad Vermes*, which agrees with this, in many Ingredients; but that takes in many others, which *Zwelfer* justly finds fault with, as of no Advantage to the Medicine: This, therefore, seems to have had no Regard to that as a Pattern, but very plainly follows the Prescription taken into the first Dispensatory of the College from *Foesius*, under the Title of *Unguentum ad Lumbricos majus*, this differing from that in nothing but the Expulsion of some needless Ingredients, as the Juice of Peach-blossoms, &c. and changing Hepatic for Succotrine Aloes; but this last Alteration is against the Opinion of those who prefer the Hepatic Sort in external Applications, as this is designed principally to anoint the Bellies of Children troubled with Worms, because its more vigorous and fetid Scent is most likely to pass thro' the Pores, and give the intended Disturbance to these troublesome Creatures.

UNGUENTUM AD AMBUSTAM.

Ointment for Burns.

Take of the inner Rind of fresh Elder, and of the fresh Leaves of the same Tree, each two Ounces: Bruise them well, and boil them in two Pounds of Linseed Oil, till the aqueous Moisture is consumed; then press out the Oil, and dissolve in it six Ounces of white Wax; and whilst they remain fluid, sprinkle the following Powders therein, keeping the Whole perpetually stirring; Powder of Cerase, three Ounces; and of Calamine, one Ounce: Then taking the Mixture from the Fire, and permitting it to cool a little, add thereto two Drams of Camphire, reduced to a Powder, by being rub'd with a few Drops of Oil of Almonds: Lastly, mix all together, so as to make an Ointment.

This seems to be an excellent Ointment for the Purposes expressed by its Title, and deserves always to be kept in Readiness, to provide, in the best manner, against such Contingencies as we meet with every Day.

UNGUENTUM ANTIPSORICUM.

Ointment for the Itch.

Take of Elecampane-root, and the Root of sharp-pointed Dock, each three Ounces: Slice and bruise them; then pour thereon three Pints of Spring-water, and a Pint of Vinegar: Boil them to an half, and strongly press out the remaining Liquor; to which add six Ounces of the Leaves of fresh Water-crelles; and two Ounces of those of Sage: Let the Herbs be well bruised, and mixed up with four Pounds of Hogs Lard: Then boil all together, till the aqueous Moisture is exhaled, and press out the Ointment; whereto put four Ounces of the Oil of Bays; and mix the whole together.

Sulphur may be hereto added, occasionally.

If that stubborn cutaneous Distemper, the Itch, be curable by vegetable Preparations, this Ointment bids fair to effect it; but, in case of Failure, you see the Compilers order the Assistance of Sulphur, to be used at Discretion; and in the following Ointment, what rarely fails, the Assistance of Mercury.

UNGUENTUM ANTIPSORICUM CUM MERCURIO.

Ointment for the Itch, with Mercury.

This is made of the preceding Ointment, by adding thereto four Ounces of Quicksilver, killed by being ground with a proper Quantity of Venice Turpentine; and mixing them together, according to the Rules of Art, so as to make an Ointment.

U N G

The three last Ointments are from the *Edinburgh Dispensatory*.

UNGUENTUM ASTRINGENS SIVE SUMACH.

An astringent Ointment.

Take of Oil of Roses, often washed in Alum-water, one Pint and an half; of white Wax, four Ounces; of unripe Galls, Cypress-nuts, Myrtle-berries, Balaustines, Pomegranate-peel, Acorn-cups, Acacia, Sumach, and Mastich, of each one Ounce: After all are well beat, macerate them for four Days in the Juice of Medlars and Services; then let them all be dried by a moderate Fire, and make them into an Ointment, with the Oil of Wax.

UNGUENTUM AUREUM.

The golden Ointment.

Take of yellow Wax, half a Pound; of common Oil, two Pounds; of Turpentine, two Ounces; of the Pine-tree Resin, and Colophony, of each one Ounce and an half; of Frankincense, and Mastich, of each one Ounce; of Saffron, one Dram: First of all melt the Wax in the Oil; then put in the Turpentine, and give them a Boil together: After they have stood to cool a little, sift in all the rest, finely powdered; but add the Saffron last of all, and stir them about with a wooden Spatula, till they become an Ointment.

This is a Composition originally of *Mesue*, and had a Name first given it, both on account of its Colour, and the wonderful Virtues ascribed to it; on which last Score, too, by some Authors, it is called *Unguentum Regis*. The *Augustan Dispensatory*, and all the Editions of the College, have received it, exactly the same, down to the present; yet I cannot learn, that it is in any great Esteem in the present Practice of our Surgeons: Tho' *Zwelfer* says, it is a wonderful good Incarnier, especially in the most tender Constitutions: But he says, that it is much better for several Purposes, especially in Wounds of the Head and Tendons, to use in it Oil of Turpentine, instead of the common Oil.

UNGUENTUM BASILICON FLAVUM. See BASILICON.

UNGUENTUM BASILICON MINUS, seu TETRAPHARMACUM. See BASILICON.

UNGUENTUM COERULEUM.

The blue Ointment.

Take of live Quicksilver, one Pound; of *Venice* Turpentine, six Ounces: Mix them together, in a Mortar, till the Globules of Mercury disappear; and then add to it four Pounds of Hogs Lard made warm, so as to make them together into an Ointment.

UNGUENTUM DE CALCE. See CALX.

UNGUENTUM CITRINUM.

The yellow Ointment.

Take one Ounce of Quicksilver, and dissolve it in as much Spirit of Nitre as will serve for that Purpose: Then add, by Degrees, a Pound of melted Hogs Lard; and mix them into an Ointment.

For the Purposes of a Detergent, this seems to be a fine Contrivance. *Edinburgh Dispensatory*.

UNGUENTUM DETERGENS.

A detergent Ointment.

Take of yellow Resin, of Sheeps and Hogs Fat, of each one Pound; of yellow Wax, and Powder of Olibanum, of each one Pound and an half; Gum Euphorbium, and Powder of Verdegrise, of each two Ounces; of *Straßburg* Turpentine, three Ounces: Let the Fats, Resin, and Wax, be melted together, and strained; then to them sift in the Olibanum, Euphorbium, and Verdegrise, in Powder: And, lastly, put in the Turpentine; and, when the Vessel is taken off the Fire, keep stirring, till the Whole is cold.

UNGUENTUM DIALTHÆÆ. See ALTHÆA.

UNGUENTUM DIALTHÆÆ COMPOSITUM. See ALTHÆA.

UNGUENTUM DIAPOMPHOLYGOS. See CADMIA.

UNGUENTUM DIGITALIS. See DIGITALIS.

UNGUENTUM E GUMMI ELEMI. See ELEMI GUMMI.

U N G

UNGUENTUM EMOLLIENS.

The emollient Ointment.

Take of fresh Butter washed in Rose-water, six Ounces; of Oil of sweet Almonds, four Ounces; Oils of Chamomile and Violets, of each three Ounces; of Ducks and Hens Fat, of each two Ounces; of Orrice-root, two Drams; of Saffron, half a Dram: When the Orrice and Saffron are powdered, and the rest melted together, make them into an Ointment.

UNGUENTUM ENULATUM. See HELENIUM.

UNGUENTUM ENULATUM CUM MERCURIO. See HELENIUM.

UNGUENTUM FUSCUM.

The brown Ointment.

Take of Colcothar, and the Phlegm of Vitriol, of each one Ounce; of Vinegar, one Ounce and an half; of the Flowers of Verdegrise, five Drams; of despumated Honey, three Ounces: And make into an Ointment.

UNGUENTUM LILIORUM.

Ointment of Lilies.

Take of the Oil of white Lilies, six Ounces; of the Oils of Dill and Chamomile, of each two Ounces; of the Oil of sweet Almonds, one Ounce; of Ducks and Hens Fat, of each two Ounces; and of yellow Wax, three Ounces: And melt them all together into an Ointment.

It seems calculated for the same Intention as the *Unguentum de Alibea*, to soften and discuss Tumours.

UNGUENTUM LINARIÆ. See LINARIA.

UNGUENTUM MARTIATUM. See MARTIATUM UNGUENTUM.

UNGUENTUM MASTICHINUM.

The Mastich Ointment.

Take of the Oils of Mastich, Wormwood, and Spikenard, of each two Ounces; of the Powders of Mastich, Mint, red Roses, red Coral, Cloves, Cinnamon, Aloes-wood, and Camels Hay, of each one Dram; and of Wax, a sufficient Quantity to make it into an Ointment.

UNGUENTUM MERCURIALE SEU NEAPOLITANUM.

The Mercurial or Neapolitan Ointment.

Take of Quicksilver, one Pound; of *Venice* Turpentine, and liquid Storax, each two Ounces: Grind them together in a Mortar, till the Globules of Mercury are no longer visible; then add thereto three Pounds of melted Hogs Lard, and four Ounces of Oil of Bays: Mix all together into an Ointment, according to the Rules of Art.

The liquid Storax is here added with Judgment, both as it promotes the entire Dissolution of the mercurial Globules, by its Viscosity, and gives the Whole a grateful Scent. *Edinburgh Dispensatory*.

UNGUENTUM DE MINIO CAMPHORATUM.

Camphorated Ointment of red Lead.

Take of Oil of Roses, one Pound and an half; of red Lead, three Ounces; of Litharge, two Ounces; of Cerufs, one Ounce and an half; of Tutty, three Drams; of Camphire, two Drams; of Wax, one Ounce and an half: Make them into an Ointment with a leaden Mortar and Pestle, the Wax being first melted with a gentle Fire; and the rest being added in fine Powder.

UNGUENTUM DE MUCILAGINEBUS.

The mucilage Ointment.

Take of the Oils of white Lilies, Orrice, Violets, and Chamomile, of each six Ounces; of the Mucilage of Linseed, Quince-seeds, Fenugreek-feed, and Marshmallow-roots, of each four Ounces; of Ducks and Hens Fat, of each five Ounces; of white Wax, one Pint: Mix, and make into an Ointment.

UNGUENTUM NERVINUM.

Nerve Ointment.

Take of Cowslip-leaves, with their Flowers, of Sage, Ground Pine, Rosemary, Lavender, Bays with the Berries, Chamomile, Rue, Smallage, Melilot with its Flowers, and

and of Wormwood, of each one Handful; of Mint, Betony, Pennyroyal, Parsley, the lesser Centory, and St. John's-wort, of each half an Handful; of Sheep's or Neat's-foot Oil, five Pounds; of Mutton or Beef-suet, or the Marrow of both, two Pounds; Oil of Spike, half an Ounce: Bruise them, and boil together with the Oils and Suets, till they become an Ointment.

This is much like the *Martiatum*, but the warmer of the two; and it is in Esteem enough to keep its Place in the Shops, and be sometimes prescribed.

UNGUENTUM E NICOTIANA SEU PETO.

Ointment of Tobacco.

Take of the depurated Juice of Tobacco, of fresh Hogs Lard, diligently washed, of each one Pound: And boil them together, to the Consumption of the Juice; then add, of Turpentine, four Ounces; and of round Birthwort, in Powder, two Ounces: And make them into an Ointment.

This is originally taken from a Dispensatory of *Laurentius Jobertus*. Its first Prescriber gives it an extraordinary Character for dissipating scrophulous Tumours, and healing green Wounds; but the modern Practice directs it principally in cutaneous Foulnesses; tho' it is so uncleanly a Medicine, at best, as to be offensive to nice Persons.

UNGUENTUM NUTRITUM.

An Ointment by Mixture.

Take of Litharge of Gold, in fine Powder, half a Pound; of White-wine Vinegar, five Ounces; of Oil of Roses, one Pound: Let the Litharge be stirred about in a Mortar, by Turns pouring in Oil and Vinegar, in little Parcels, until the Vinegar ceases to be visible, and the whole becomes a white Ointment.

It is very drying, and even, in keeping, will grow so brittle, as to want fresh Oil to make it fit for Use; but it is not greatly in Use.

UNGUENTUM OPHTHALMICUM.

Ointment for the Eyes.

Take of Tutty and Calamine, of each six Drams; of calcined Lead, and Camphire, of each two Drams; of Myrrh, Sarcocolla, Aloes, and white Vitriol, of each one Dram: Make them all into a fine Powder. Then take of fresh Butter, twelve Ounces; of white Wax, two Ounces; and when these are melted together, by Degrees shake in the forementioned Powders, and stir all together, till the Whole is cold, and become an Ointment.

UNGUENTUM EX OXYLAPATHO.

Ointment of sharp-pointed Dock.

Take of sharp-pointed Dock-root, boiled in Water, and strained thro' a Sieve, and live Sulphur, of each one Ounce and an half; of Hogs Lard, boiled in the Juice of Scabious, to the Consumption of all the Juice, half a Pound; of the *Unguentum Populneum*, boiled in the Juice of Elecampane, half an Ounce; some Drops of Oil of *Rhodium* Wood: And let them all be reduced, in a Mortar, into an Ointment.

It is designed for the Itch, and cutaneous Distempers, but is so troublesome to make, and so uncleanly, at best, that it is seldom used, or made.

UNGUENTUM PECTORALE.

Pectoral Ointment.

Take of the Ointment of Marshmallows, two Ounces; of *Sperma Ceti*, half an Ounce; of Oil of Mace, obtained by Expression, two Drams; of the distilled Oils of Aniseed and Rosemary, each half a Dram; of the Oil of sweet Almonds, one Ounce: Melt the Ointment of Marshmallows, the *Sperma Ceti*, and the Oil of Almonds, together; then, having removed them from the Fire, put in the distilled Oils, and the Oil of Mace, so as to make an Ointment.

There is nothing in the Composition of this Ointment that forbids its internal Use as a good balsamic or pectoral Medicine, provided the Oil of Mucilages be carefully made for the Oint-

ment of Marshmallows contained therein; however, its Title denotes it designed for external Application; and, indeed, by being rubbed warm upon the Chest, it cannot but be of considerable Efficacy, in some Diseases of that Part. *Edinburgh Dispensatory.*

UNGUENTUM E PLUMBO.

Ointment with Lead.

Take of the Oil of Roses, six Ounces; of calcined Lead, and Litharge, of each ten Drams; of Turpentine, one Ounce; of Ceruse, and Antimony, of each half an Ounce; of white Wax, two Ounces: Make them into an Ointment, by mixing them together in a leaden Mortar.

UNGUENTUM POMATUM. See POMATUM UNGUENTUM.

UNGUENTUM POPULNEUM. See POPULUS.

UNGUENTUM E RESINA.

Ointment of Resin.

Take of the finest Pine-tree Resin, of Turpentine, yellow Wax washed, and fine Oil, each equal Parts: Let the Wax and Resin be melted in the Oil, and then the Turpentine added to them, so that they may all have a Boil over the Fire together, and be strained, S. A.

UNGUENTUM ROSATUM.

Ointment of Roses.

Take of Hogs Lard, cleared from all its Membranes, and well washed, one Pound; and add to it one Pound of fresh red Roses; which suffer to stand together for seven Days; then boil them over a gentle Fire, and press out the Lard; afterwards macerate again with fresh Roses, for the same Space of Time, and boil and strain as before: Lastly, put to it six Ounces of the Juice of red Roses; of Oil of Sweet Almonds, two Ounces; and boil over a slow Fire, to a Consumption of all the Juice: Then strain it again, that it may become an Ointment, S. A.

UNGUENTUM RUBRUM DESICCATIVUM.

Red drying Ointment.

Take of common Oil, two Pounds; of yellow Wax, twelve Ounces; of *Armenian* Bole, and the Caput Mortuum of Vitriol, of each six Ounces; of Calamine levigated, four Ounces; of Litharge, and Ceruse, of each six Ounces and an half; of Camphire, half an Ounce; and boil over a gentle Fire to the Consistence of an Ointment.

UNGUENTUM SAMBUCINUM. See SAMBUCUS.

UNGUENTUM SATURNINUM, *vulgo* BALSAMUM UNIVERSALE.

Ointment of Lead, commonly called the Universal Balsam.

Take of Litharge of Gold, and red Lead, of each one Pound; of Vinegar, four Pints; and boil them together till one half of the Liquor is wasted; then strain off the other; to the Remainder add the same Quantity of Vinegar, and proceed to boil and strain as before, till the Operation shall have been performed six several times. Then mix all the Parcels of strained Liquor together, in a glazed Earthen Vessel, and exhale them to the Consistence of an Extract. Take of this Extract, and of white Wax, each three Ounces; of Oil-olive, a Pound; and mix them together, according to the Rules of Art, so as to make an Ointment.

As Vinegar is so good a Solvent for Lead and Litharge, it may be worth the Pains to prepare the Extract, for this Ointment, in the manner here described: It is, without Dispute, a much better way, than using calcined Lead and crude Litharge; and this, if it had no other Advantage, would give it the Preference, as an Healer and a Dryer, to the UNGUENTUM E PLUMBO, usually ascribed to *Foesius*, and above described. *Edinburgh Dispensatory.*

UNGUENTUM SPLANCHNICUM.

An Ointment for the Bowels.

Take of the Bark of Caper-root, six Drams; of Bryony-root, *Florentine* Orrice, Powder of sweet Fennel-seed, and

and Ammoniacum dissolved in Vinegar, of each half an Ounce; of the Tops of Wormwood, and Chamomile-flowers, of each one Dram; of the Ointment of Bays, one Ounce and an half; Let those things be powdered which require it, and sifted, and the rest mixed therewith in a warm Mortar, so as to make an Ointment, *S. A.*

UNGUENTUM TUTIÆ. See CADMIA.

UNGUENTUM VERMIFUGUM.

Ointment against the Worms.

Take of the Leaves of Female Southernwood, common Wormwood, Rue, Savine, and Tansey, each two Ounces: Bruise and boil them with a Pound and an half of Oil-olive, and a Pound of Hogs Lard, till the aqueous Moisture is consumed; then strain and press out all that will run; to which add of the Gall of an Ox, and of Succotrine Aloes, each one Ounce and an half; of Colocynth, and Wormseed, of each one Ounce: Boil them all together, keeping them continually stirring, so as to make an Ointment. But observe, that the Aloes, the Colocynth, and the Wormseed, are reduced to very fine Powder.

Here we have an Instance of a Composition, where the Ingredients, though numerous, conspire to the same Intention, and seem to uphold each others Virtues; there is nothing improper, or indiscreetly admitted in the Whole; so that it cannot well fail of answering its End, as an external Application in the Case of Worms. *Edinburgh Dispensatory.*

UNGUES. The Nails.

The Nails are looked upon by some as Productions of the cutaneous Papillæ; and by others, as a Continuation of the Epidermis. This last Opinion agrees with Experiments made by Maceration, by means of which the Epidermis may be separated entire from the Hands and Feet, like a Glove or Sock.

In this Experiment we see the Nails part from the Papillæ, and go along with the Epidermis, to which they remain united like a kind of Appendix; and yet their Substance and Structure appears to be very different from that of the Epidermis.

Their Substance is like that of Horn, and they are composed of several Planes of longitudinal Fibres folded together. These Strata end at the Extremity of each Finger, and are all nearly of an equal Thickness, but of different Lengths.

The external Plane or Stratum is the longest, and the rest decrease gradually, the innermost being the shortest; so that the Nail increases in Thickness from its Union with the Epidermis where it is thinnest, to the End of the Finger where it is thickest.

The graduated Extremities or Roots of all the Fibres of which these Planes consist, are hollowed for the Reception of the same Number of very small oblique Papillæ, which are Continuations of the true Skin, which, having reached to the Root of the Nail, forms a semilunar Fold, in which that Root is lodged.

After this semilunar Fold, the Skin is continued on the whole inner Surface of the Nail. The Fold of the Skin is accompanied by the Epidermis, to the Root of the Nail exteriorly, to which it adheres very closely.

Three Parts are generally distinguished in the Nail, the Root, Body, and Extremity. The Root is white, and in Form of a Crescent; and the greatest Part of it is hid under the semilunar Fold.

The Crescent and the Fold lie in contrary Directions to each other. The Body of the Nail is naturally arched, transparent, and appears of the Colour of the cutaneous Papillæ which lie under it. The Extremity of the Nail does not adhere to any thing, and still continues to grow as often as it is cut.

The principal Use of the Nails is to strengthen the Ends of the Fingers and Toes, and to hinder them from being inverted towards the convex Side of the Hand or Foot, when we handle or press upon any thing hard. For in the Hand, the strongest and most frequent Impressions are made on the Side of the Palm, and in the Foot, on the Sole; and therefore the Nails serve rather for Buttresses than for Shields. *Winslow's Anatomy.* See POLLEX.

UNGUIS, is, also, the Name of a Disorder of the Eye, called Pterygion. See OCULUS.

UNGUIS ODORATUS. Offic. Onyx. Dioscorid. THE SWEET HOOF.

It is unknown in our Shops, which substitute in its stead, the *Blatta Byzantina*; as we have demonstrated from the Observations of the learned *Martin Lister*, under that Article. *Dale.* See BLATTA BYZANTINA.

It is, also, a Name for the BLATTA BYZANTINA.

UNGUIS, in Botany, is the white and inferior Part of the Leaves of Roses, and some other Flowers.

UNGUICULI. The same as ALABASTRA.

UNGULA CABALLINA, is the TUSSILAGO. Colts-foot.

UNGULA OCULI is a Pterygion, a Disorder of the Eye. See OCULUS.

UNICORNU, MONOCEROS. Offic. Park. Theat. 1611. *Monoceros*. Raii Ichth. 42. Ejusd. Synop. Pisc. 11. *Monoceros*, *Unicornu marinum*. Charlt. Pisc. 47. *Cetus marinus Narwal dictus*. Mont. Exot. 6. *Balæna decimum sextum genus dicitur Nahwal*. Schonef. Ichth. 28. THE UNICORN.

It is taken in the *Davis's Straits*; and the Part in Use is the very large, white, round, striated, turned Tooth, growing out on the Left Side of the upper Jaw, almost in the same manner as that of an Elephant; but that on the Right Side soon falls off. It is distinguished from Ivory by the Fineness of its Fibres: It is, also, generally more solid and ponderous; in other respects it resembles Ivory.

As to the Virtues, it is sudorific, alexipharmic, and cordial, whence it is commended against Poisons, contagious Diseases, and the like; it is, also, thought effectual in the Epilepsy of Infants. *Schroder*. *Andreas Baccius* has written a whole Book of the Unicorn, in which he directs Fragments of it to be set in Rings, and worn upon the Fingers, or hung about the Neck instead of an Amulet, so as to touch the Skin. It has the same Virtues as Hartshorn, Ivory, and the like Substances.

The Fragments of Horns, which are sold under the Name of *Unicorn's Horn*, are no other, as we are assured by *Paulus Ammannus*, than Bones of the Whale, Sea-horse, or Teeth of the Elephant, which, as *Cardan* says, may be made, by artificial Means, to resemble this Horn. *Dale.*

UNICORNU FOSSILE. Offic. Geoff. Prælect. 73. *Schrod.* 359. *Cornu fossile*. Worm. 54. Charlt. 23. *Cornu fossile*, *vulgo Monocerotis Cornu*. Boet. 425. *Ceratiis*. Aldrov. Mus. Metall. 630. Gefn. Lap. Fig. 154. *Ebur fossile*. Clus. Exot. 68. *Lapis Arabicus*. Cæsalp. 611. *Turquesia*. Ind. Med. 47. *Dens Elephanti petrefactus, aliis, Lithoræzarga, alba.* THE UNICORN-STONE.

The fossil Unicorn, or *Lapis Ceratites* of *Gesner*, is a stony Substance, resembling in Colour, Smoothness, and Shape, the Horns, Teeth, and Bones of Animals. It is made up of an outer, hard Part, of an yellowish, blackish, or Ash-colour, and a soft, friable, compact medullary Part, without Pores, of an astringent and drying Quality, sticking very close to the Tongue, and sometimes of an agreeable Smell.

It is often dug up in the Form of Bones turned to Stone, among which we often find the *Dentes Molares*, and *Incisorii*; and we can perfectly distinguish between the Root of these Teeth, and that Part which appears without the Gums. Sometimes we meet with Fragments of the Radius and Tibia, representing the natural Conformation of these Bones in a very perfect manner. There are, likewise, dug up large Branches, and Trunks of Trees, in which the Species of Wood is still distinguishable. There is, therefore, no room left to doubt, but that these stony Substances are really Petrifications of the Horns, Teeth, and Bones of Animals, or of Wood; which being putrefied, by remaining long under Ground, and, in a manner, calcined, their Substance becomes more rare and porous, as we see daily in rotten and worm-eaten Wood. By the Afflux of a fine Marl dissolved in Water, these porous Substances are filled, and the Water insensibly evaporating, the Remainder incorporates with the Bones, or Pieces of Wood, into a stony Substance, of the same Form and Figure with what they were before. But if these earthy Parts, which concrete with them, be of the crystalline or flinty Kinds, then they turn to a Substance like Crystal or Flint, as we see in several Sorts of fossil Shells.

The fossil Unicorn is found in many Places of *Germany*; and at *Mont Martyr*, near *Paris*, there were lately found many Bones hid in a stony Substance. The *Germans* esteem it for its astringent, alexipharmic Qualities, and as a Provoker of Sweat, and accordingly, often use it in Diarrhoeas, Dysenteries, Hæmorrhages, the *Fluor Albus*, malignant and pestilential Fevers, and in the Epilepsy. The Dose is from ten Grains to a Dram. But they do not use all Kinds of it indifferently, but choose that which has a pleasant Smell, and which has been previously tried upon Dogs, or other Animals, because it sometimes contains a poisonous Quality, especially when dug out of the Earth, mixed with Arsenic; and therefore great Care is required about it. *Geoffroy.*

It agrees in Virtues with the *Terra Lemnia*, and is recommended against malignant Distempers; it resembles, also, Unicorn's Horn, particularly in resisting Poison, and curing the convulsive Motions of Infants; and is often used in the Small Pox and Measles. Of this Substance calcined, is prepared the factitious Turquoise. *Dale.*

UNIFOLIUM. A Name for the *Smilax*; *unifolia*; *humillima*.

UNIO. A Pearl. See MARGARITÆ.

UNNI CHILENSIUM de Læet. *Hispanis Murtilla*. The Name of an *Indian Tree*, which bears a Fruit in Clusters, about the Size of Peas, of a sweetish, and at the same time, somewhat acrid Taste. The Natives express a clear Liquor from it, which resembles Wine; and of this Juice they make a sort of Vinegar.

UNQUASI. Quicksilver. *Rulandus*.

VOARCHADUMIA. A kind of *Cabbala*, or Ænigmatic Art, relative to Metals, which proposes the Exaltation of Gold by Cementations, and other Methods, in which the *Hebrew Letters*, of some occult and mysterious Virtues, are employ'd. The Curious may see an Account of this in the *Theatrum Chymicum*, Vol. 2. p. 500.

VOCIFERATIO. Vociferation. See **ANAPHONESIS**.

VOLA. The Hollow of the Hand, or Palm.

VOLANS. Mercury. *Dornæus*.

VOLATICA. The same as *Lichen*. See **LEPRA**. A sort of wandering Pain, attended with a Tumor, and affecting sometimes one Part, sometimes another, is called *y. Hannemannus* in the *Act. Hassniens. Volatica Scorbatica*.

VOLATILIS. Volatile. In Chymistry, those Substances are called *Volatile*, which rise, and fly off, upon the Application of Heat, or Fire; as those which endure the Fire without Diffipation, are called *fixed*.

VOLEMA. The Name of a certain Species of very large Pear. *Virg. Georg.*

VOLSELLA, λαβίς, is the same as **FORCEPS**, [see the Articles **FORCEPS** and **ACANTHABOLUS**] is a surgical Instrument, contrived for taking hold of any thing, according to the Etymology of the Greek λαβίς [*Labis*], used by *Hippocrates*, *Lib. de Sterilib.* and *Galen*, *de C. M. S. L. Lib. 3. Cap. 3.* and derived from λαμβάνω [*lambano*] to apprehend, or lay hold of. Its principal Uses are in removing Plaisters and Lint from Wounds and Ulcers, and in extracting Splinters, and other things of that Kind; as, also, in taking hold of various things, in which respect it is very useful in Anatomical Dissections: It is commonly made of Steel, but sometimes, for Brightness and Curiosity, of Silver. *Tab. XXII. Fig. E*, represents the *Volsella*, or *Forceps*, which is denticulated, or furnished with Teeth, by which means it is enabled to hold a thing the faster.

VOLVA, in *Scribonius Largus*, No. 104. is the middle Part, or Core of the Apple containing the Kernels, prescribed by him, among other things, for a Weakness of the Stomach rendering it incapable of retaining the Food.

VOLUBILIS, a volubendo, from twisting, or twining, according to *Blancard*, is a Name for the **SMILAX**.

VOLUNTARIUS, κατὰ προαίρεσιν, ἐκούσιος, voluntary, spontaneous, is applied to any thing which is in our own Power to have it done or not done. In this Sense *Motion*, *Tears*, and other Actions, are said to be voluntary. *Castellus*.

VOLUNTAS, θέλημα, according to *Dr. Willis*, *de Anima Brutorum*, is an Attendant of the rational Soul, proceeding from the Understanding, and a kind of rational Appetite, in the same manner as the sensitive Appetite is connected with the Imagination, and is the procuring Hand of the corporeal Soul. *Castellus*.

VOLEPTAS, ἡδονή, Pleasure, is the ultimate Perception of the sensitive Soul, in which all other Affections acquiesce; and, consists, according to *Dr. Willis*, who has attempted to describe it, in the Treatise just before quoted, in a grateful and elegant Alteration, Expansion, Agitation, and Motion of the Spirits, occasioned by sensible Objects. *Castellus*.

VOLVULUS, in *Pathology*, is the same with **ILÆOS**, which see. In *Botany* it is a Name for the *Convulvulus*; *Linariæ Folio; affurgens*.

VOMER, ὤν, ὤν, in Anatomy, according to the Description given it by *Chefelden*, is seated between the Bones of the Palate, and the sphenoidal Bone, being, also, joined to the Process of the Ethmoides, and Part of the lower Jaw, and having its fore Part, which is spongy, continued to the middle Cartilage of the Nose, and making in Conjunction with it, the *Septum Nasi*. See a fuller Description of this Bone under the Article **CAPUT**.

VOMICA is commonly taken for a suppurated Impostume, or an Abscess with a Suppuration. *Castellus*.

Vomica Pulmonum is a latent Disease of the Lungs, which often deceives under a Shew of Health. What goes by this Name is a small Abscess seated in some Part of the Lungs, and straitly inclosed within a Bag, or Membrane. This Disorder is most incident to those who are affected with a *Tabes*, or labour under an *Anastomosis*, or Rupture of a Vein in the Lungs. In this Disease, the Breath smells ill long before the *Vomica* breaks, sometimes Blood comes up with Coughing, the Body is perpetually dull and heavy, and the Cough very long and troublesome, and sometimes followed with an Expectoration of the *Vomica*;

in which Case the Patient is seized with no small Fever, succeeded by bloody Spit, and vast Perturbation of Body; the Consequence of which Circumstance may possibly be a Recovery to a good State of Health. It has often happened, that the *Vomica*, by a sudden Rupture, has discharged itself into the Heart, and occasioned sudden and unexpected Death. *Lommii Obs. Med.*

Vomici, in some Authors, are such as are affected with a *Vomica Pulmonum*; and *Johnson Lexic. Chym.* calls Quicksilver *Vomica Liguoris æterni*, "the *Vomica* of the eternal Liquor."

VOMILIUM, supposed to be from *Vomo*, to vomit, is a Name bestowed by *Libavius*, *S. A. Chym. Lib. 6. Cap. 19. 20.* on *Mercurius Vitæ*, and *Aurum Vitæ*, on account of their Effects. It is extended, also, to other Emetics; so that *Vomilia*, in the Jargon of the Chymists, may be supposed to be the same with *Vomitioria*.

VOMITIO, Vomition, or the Act of Vomiting.

VOMITORIA, **VOMITIVA**, ἐμετικά. *Vomitioria*, Emetics.

Vomitary Medicines, or Emetics, are indicated,

1. From the Foulness of the Mouth in the Morning, from its Bitterness, from Eructations, Nausea, a gnawing Pain of the Stomach, with a gradual Decay of the Appetite, neither excited nor attended by a Fever.
2. From spontaneous Vomiting, together with great Facility in the Action.
3. From the Nature of the Matter, as it is known to be moveable or immovable.
4. From the Situation of the Place affected with a Repletion or Obstruction below the Diaphragm, and especially if that Affection be primary, and nothing contraindicates.
5. From the general or epidemic Nature of the Disease.
6. From the Constitution of the Year.

Emetics are forbidden by the Contraries to the fore-mentioned Indications.

The Body is prepared for taking a *Vomit* with the more Ease and Safety;

1. By rendering the Matter moveable by Dilution, Attenuation, and Dissolution.
2. By relaxing and lubricating the Passages with mollifying, oleous, and gentle Medicines.
3. By premising Phlebotomy, if the Body be plethoric, or excessively robust, and, at the same time, very strongly agitated.

Vomiting is excited,

1. By irritating the Spirits by presenting some very nauseous Idea, or by some unaccustomed Agitation, as on the Sea, or otherwise.
2. By irritating the Fibres of the Fauces and Pharynx with a Feather dipt in Oil, or something like it.
3. By swallowing large Draughts of fresh warm Water, with Oil, Honey, Sugar, and the like.
4. By every thing highly acrimonious, and at the same time viscid; by the Flower and Seed of Dill; by the Leaves of *Asarabacca*; and by the Root and Seed of *Atriplex*; or by more violent Simples, as the Cataputia, *Esula*, the Root of *Cyclamen*, the Flower, Juice and Bark of the *Ebulus*, or Dwarf-elder; the Flowers, Seeds, and Root of *Broom*; both the *Hellebores*, the Seeds of *Nasturtium*, *Ricinus*, *Thymelæa*, and *Cnicus*; the Roots of *Bryony*, *Iris*, and *Tithymalus*; the Herbs *Gratiola*, and *Tobacco*.

5. By Antimonials, as the *Crocus*, *Glaſs*, *Flowers*, or *Regulus* of Antimony, in Substance, Infusion, Rob, Syrup, emetic Wine, the *Mercurius Vitæ*, Emetic Tartar, and the like, which produce various Effects according to the different Degrees of Violence.

6. By Mercury rendered acrimonious by Acids, in which, also, great Variety may be observed, in proportion as the Acid more copiously and openly, or more sparingly and covertly, adheres to the Mercury.

The Choice, Dose, Form, with the proper Time for administering Emetics, are indicated by the Age, Sex, Temperament, Season of the Year, the Nature of the Disease, and of the Matter to be evacuated.

Vomiting is promoted by copious Draughts of mild, aqueous, honeyed, and warm Liquor, taken after every Paroxysm of Vomiting, and the same, after being discharged, again repeated.

Vomiting is repressed by swallowing some smooth Oil, by Opates, Aromatics, grateful Acids, and Corroboratives, either taken inwardly, or outwardly apply'd. *Bocrhaav. Institut. Medic.*

VOMITUS. A Vomiting. See **PYRETOS**.

Vomiting and a *Nausea*, seem to be retrograde spasmodic Motions of the muscular Fibres of the Oesophagus, Stomach, and Intestines, attended with strong Convulsions of the Muscles of the Abdomen and Diaphragm, which, when gentle, create a Nausea;

Nausea; when violent, a *Vomiting*. These convulsive Disorders proceed from the immoderate Quantity, or Acrimony of the Food; from Poisons; from some Injury of the Brain, as a Wound, Contusion, Compression, or Inflammation of that Part; from an Inflammation of the Diaphragm, Stomach, Intestines, Spleen, Liver, Kidneys, Pancreas, or Mesentery; from an Irritation of the Gula; from a disorderly Motion of the Spirits by unaccustomed Agitations in a Coach, Ship, or otherwise; or from the Idea of something nauseous. *Boerhaav. Institut. Medic.*

There is scarce any Accident, in human Life, which occurs more frequently than *Vomiting*; for there is no Person but vomits at one time or other; and there are very few Diseases which are not attended with this troublesome Symptom. Now *Vomiting* is no other than a preternatural Inversion of the peristaltic Motion of the *Oesophagus*, Stomach, and especially the *Duodenum*, to the Degree of a convulsive Contraction, by which the Contents of the Stomach, accompanied sometimes with those of the *Duodenum*, are discharged by the Mouth.

The Affection itself is too manifest, to require a Description by diagnostic Signs; but the Symptoms which attend it are to be regarded with Care and Attention, and the rather, as the Causes of *Vomiting* are various, to a great Degree. In general, we may observe, that some Persons are very easy to vomit, and disposed to that Action on the least Occasion; others, on the contrary, are with great Difficulty provoked to it, and find it no less troublesome, with much Striving, and after many vain Efforts, to discharge their Stomachs this way. The first of these Persons are called, by a technical Term, *Eumeti* [ἐμεῖς, from ἐμ, importing Facility, and ἐμω, to vomit]; and such are Children in comparison of Adults; Women, if compared with Men; and, among Men, they who are of a lax Habit of Body: They, on the contrary, who are of a close, well-set Habit of Body, short-necked, and of a robust System of Nerves, are termed *Dysmeti* [δυσμέτοι, from δὺς, importing Difficulty, and ἐμω, to vomit].

The antecedent and concomitant Symptoms of *Vomiting* are usually a very troublesome Nausea, with a Tension and Weight in the epigastric Region, a Bitterness in the Mouth, Heat, a gnawing Pain, and Loss of Appetite, with a great Anxiety of the *Præcordia*, and Restlessness. Much Spittle distils into the Mouth, and is evacuated by Spitting, and the Patient is, besides, affected with a Vertigo, Dimness of Sight, Heaviness of Head, Redness of Face, Trembling of the under Lip, and most of all with a Cardialgia, till, at length, after much laborious and fruitless Eructation, he discharges the Contents of his Stomach. All these Symptoms plainly enough indicate a spastic and convulsive Subversion of the Stomach and adjacent nervous Parts.

The Matter discharged by *Vomiting* is what gives the several Denominations to that Affection: A mucous, chylous Discharge of Reliques of Foods not perfectly dissolved, is called a *pituitous Vomiting*; a Congestion of bilious Matters evacuated this Way constitutes what we call a *bilious Vomiting*; other Denominations, as those of *blackish*, *corrupt*, *green*, *æruiginous*, and *porraceous*, are taken from Accidents owing to a Mixture of other Humours, and particularly such as are acid, or corroding. Sometimes Worms and Insects are thrown up by *Vomiting*; and sometimes a stercoraceous Matter from the very Bottom of the Intestines, is, by an Inversion of the peristaltic Motion, discharged the same Way. At other Times Pus and a sanious Matter are evacuated; and I myself once observed a fleshy and membranous Mass, like a Polypus, which was generated in the Stomach, expelled by *Vomiting*. Frequently there is a Discharge of pure Blood, and in such a Case the *Vomiting* is denominated *sanguineous*; sometimes the Blood is black and corrupted, which constitutes what we call the *Morbus niger*, or *black Disease* of Hippocrates.

The proximate Seat of the Matter discharged by *Vomiting* is the Stomach, by whose preternatural Motion with that of the adjacent Parts the same is expelled; but the more remote Parts, as the Liver, Pancreas, by means of their Ducts, the Spleen, the Mass of Blood and Humours, and the Habit of the Body, as it happens in Tumours, by means of the Vessels and Glands, have their Contents attracted the same Way. The Causes which irritate the sensible and nervous Substance of the Stomach to a systolic and compressory Motion are to be sought not only in itself, but in the adjacent and remote nervous Parts, since we may, on some Occasions, observe, that *Vomiting* is excited by Consent of Parts in a Multitude of spasmodic Affections: And this Observation is of so great Moment, that for its better Illustration, we cannot but think it very proper to premise an exact Description of the Fabric of the Stomach and *Duodenum*, according to the Discoveries of the newest and most approved Anatomists.

The first Parts, then, which here offer themselves to our Sight, are, the *Coats* of the Stomach, which has four ascribed

to it. The outermost is *membranaceous*, and takes its Rise from the *Peritonæum*, and is continued to the Coat which surrounds the Concavity of the Diaphragm; the second Coat is *muscular*, and consists of a double Series of Fibres, of which the external is constituted of longitudinal Fibres, which serve in contracting the Length of the Stomach; the internal Series of Fibres consist partly of such as extend themselves from the *Cardia*, or the Mouth of the Stomach, to the *Pylorus*, and cause an Approach of both Orifices to one another; and partly of circular ones, which are disposed over the Breadth of the Stomach, and are instrumental in its Contraction: The third Coat, which is subjacent to the former, has the Denomination of *nervous*, and is furnished with tendinous Fibres, which are extended obliquely over the Stomach; this Coat is larger than the former, on which Account it is rugous, and provided with a Multitude of Glands: The fourth is called the *villous Coat*, and is composed of nervous *Papillæ*, and Ends of Vessels erected like *Villi*, or coarse Hairs, and lined with a Mucus, derived from the forementioned Glands; but between the outer Coat, and the muscular as well as between this and the nervous Coat, and between this last and the villous Coat, there is a triple cellulous Substance, containing very numerous Blood-vessels.

The next Parts which deserve our Consideration, are the *Vessels* of the Stomach: These are two *gastric Arteries*, the *right*, and the *left*, and *coronary Artery*: For the *Aorta Inferior*, after entering the Abdomen thro' a Perforation near the Spine, immediately sends forth the *Arteria Cœliaca*, which is divided into three Branches, the first of which is the *hepatic*, whence arise the *Arteria Pylorica*, *Gastrica dextra*, and *Duodena*. Another Branch is, the *Coronary*, whose Ramifications extended over the Stomach are innumerable; and the third Branch is the *splenic*, which taking its Course to the Spleen, sends forth first the *pancreatic Artery*; secondly, the *left Gastric*; thirdly, the *epiploic Artery*; and, fourthly, the *Vasa Brevia*, one of which is *venous*: By this Connection of Arteries it appears, that the Consent of the Humours, in their Circulation thro' the Parts before-mentioned is very considerable. The *Veins* are, the *coronary*, the *right* and *left Gastric*, and one of the *Vasa Brevia*; these all arise from the *Vena Porta*, whose Trunk, taking its Course under the *Duodenum* to the *Pancreas*, sends forth, in the first Place, the *Vena Cystica*; *Pylorica*, and *Duodenales*; after this, sends off three, and sometimes but two Branches: One of them, which is the *splenic*, is subdivided into the *coronary*, *left Gastric*, *pancreatic*, *epiploic*, and the venous Portion of the *Vasa Brevia*; another Branch, the *greater Meseraic*, supplies the *intestinal* and *gastro-epiploic Veins*; and the third Branch, the *internal hæmorrhoidal*, produces the *right gastric* and the *duodenal Veins*. Hence it appears, that an Interruption of the Circulation of the Blood in one of the *Viscera* is succeeded by a Regurgitation to some other; the Veins are accompanied by lymphatic Vessels, as the Arteries are by Nerves; these Nerves proceed partly from the *Par Vagum*, and partly from the intercostal Branch; the *Par Vagum*, descending in two Branches on both Sides of the *Oesophagus*, distributes innumerable Ramifications over the whole Stomach, and afterwards concurs in forming the Plexuses of the intercostal Nerve: This latter, after perforating the Diaphragm, forms, near the *Cœliac Artery*, *semilunar Ganglia*; whence arise, on the right, the *Plexus Hepaticus*, and *Renalis major*; and, on the left, the *Plexus Lienaris*, *Stomachicus*, and *Renalis sinister*. From the *Plexus Hepaticus* and *Renalis dexter*, with the semilunar Ganglion, arises the *Plexus Mesentericus Superior*, by whose Intervention the five Plexuses, before-mentioned, on both Sides are so united, that the Parts which are supplied from them with Nerves, are mutually related to one another by the strictest Consent.

In the next Place, the Structure of the *Duodenum* highly deserves our Contemplation: This Part, with respect to its Coats, Nerves, and Vessels, agrees with the Stomach, and, beginning at the *Pylorus*, forms three Flexures; the first Flexure, tending from the Stomach obliquely downwards is at the same time reflected backwards, and has inserted into it, near its End, the common biliary Duct, which conveys the Bile and pancreatic Juice; after this, when it approaches the right Kidney, it forms another Flexure, where it rests upon the Pancreas; and, lastly, near the Spine, in its Approach to the left Kidney, it makes a third Flexure, over which the Artery and the *Plexus Mesentericus Superior* have both their Course; the Constriction of which immediately affects the *Duodenum*; the Capacity of this Intestine far exceeds that of the others, contrary to the common Opinion, which makes it less.

These two Parts, the *Stomach*, and the *Duodenum*, which may justly be called a *lesser Stomach*, are not only connected with one another in a very remarkable manner, but with other nerveo-membranous Parts; as, first, with the *Oesophagus*, by a Communion of the same common Coats; and hence they communicate, also, with the Coat which surrounds the Fauces and the Mouth. Secondly, they have a Connection with the whole

intestinal Duct, or Tube, not only by the Communication of the same Coats, but, more especially, by means of the *Plexus Mesentericus Major*, from which all the Intestines are supplied with Nerves. And, thirdly, they have a strict Relation to the *Omentum*, which is very firmly connected to the anterior Part of the Stomach. Fourthly, they have a Connection with the Diaphragm by Branches from the *Par Vagus*, and intercostal Nerve; and, also, by a Coat which is common to the exterior Surfaces of both the Stomach and the Diaphragm; and, by means hereof, fifthly, with the nervous and membranous Parts of the Breast, and with the Muscles of the Abdomen. Sixthly, they have a Correspondence with the biliferous Ducts, not only by the *Ductus Cholidochus*, which is inserted into the *Duodenum*, but principally by the *Plexus Hepaticus*, which supplies the *Duodenum* and Stomach with Nerves, and communicates with the *Plexus Stomachicus*, by the Intervention of the *Mesentericus Superior*. Seventhly, they communicate with the Pancreas, which firmly adheres to the *Duodenum*. Eighthly, with the Kidneys, by the right and left *Plexus Renalis*, which is connected with the *Plexus Stomachicus*. And, lastly, with the Head and Brain; as, also, with the Heart, by the Branch of the *Par Vagus*, which is common to them both.

By virtue of the muscular Coat, and its Fibres above-mentioned, which are common to the *Oesophagus*, Stomach, and all the Intestines, there is excited a vermicular kind of Motion, which is peculiar to those Parts, and has the Name of peristaltic: This Motion consists in an alternate Constriction and Relaxation of the said Parts, and tends from the upper Parts downwards. In the Stomach, by contracting and straitening it, after different manners, and dilating it again, with the constant Assistance of the Motion of the Diaphragm and Muscles in Respiration, it promotes the Digestion of the Aliments, and their Expulsion thro' the *Pylorus*. In the Intestines it is the means of an Absorption of the laudable Humours by the lacteal or chyloferous Vessels, and of the Protrusion of the excrementitious Parts to the lower Region, and their Elimination by the *Anus*.

Whenever this peristaltic Motion, which directs its Force downwards, is perverted into a Motion of the preternatural, spasmodic, and convulsive Kind, there arise Gripes of the Intestines, cardialgic Pains about the *Pylorus*, Spasms, as they are called, of the Stomach, Colics, and Fluxes of the Belly: But if this same Motion, besides its spasmodic Contraction, be, also, inverted, and tends upwards, it first of all forces up the Contents of the Intestines into the Stomach, or if they are there already, impels and protrudes them upwards, whence *Vomiting* is excited, in which Action the *Pylorus*, together with the *Duodenum*, connected to it, and the lower and anterior Part of the Stomach, thro' a violent Contraction of the longitudinal and circular Fibres, are contracted to the upper Orifice, to which the Contents are by this means applied, and the continued Force of the Spasm still pressing behind, are from thence forced into the *Oesophagus*, and, the same inverted Motion being propagated thro' the whole *Oesophagus*, conveyed to the Mouth, and so discharged. This Motion is assisted by a violent Constriction of the Diaphragm and abdominal Muscles, caused by Consent, and by a Compression of the Sides of the Stomach, thence occasioned. Hence it is observed, that, after each Act of *Vomiting*, the Difficulty of Respiration still continues, and the Region of the Abdomen is more or less affected with Pain; and, that in Animals dissected immediately after the Exhibition of an Emetic, a Compression of the Stomach by the Diaphragm and *Musculi Recti* of the Abdomen, is evidently visible; whence some *English* Physicians are of Opinion, that the Fibres of the Stomach contribute nothing at all to the Action of *Vomiting*.

The weaker the Fibres of the Stomach, and the more copious and moveable the Matter to be discharged, the easier is the *Vomiting*; but if the Fibres be considerably robust, as in those who vomit with Difficulty, or the Cause of the *Vomiting* consists in a tenacious, viscid Humour firmly adhering to the Folds of the Stomach, or an acrimonious caustic Matter infesting the Nerves, the Action of *Vomiting* is rendered difficult, and attended with formidable Symptoms: The Action in such a Circumstance is preceded by a very severe Cardialgia, vast Nausea, Anxieties, and Perturbation of the *Præcordia*, laborious and fruitless Eructations, troublesome Concussions of the Abdomen, its Contents, and especially of the Diaphragm; whence proceed singultuous Agitations; a plain Evidence that the Stomach labours under a great Convulsion, which is insufficient to expel the noxious Matter. It very frequently happens at such a time, that the Convulsion is propagated to the bilious Ducts, which occasions an Effusion of Bile into the *Duodenum* and Stomach, and, being discharged by Eructation, the *Vomiting* is not in the least abated: The same Motion is communicated to the *Oesophagus*, and expresses the Lymph from its Glands, and those of the Fauces, much of which is discharged by Spitting. Moreover, from a Compression of the Blood-vessels of the Stomach, and the adjacent Parts, by the violent Concussions, the Blood is im-

pelled in great Quantities to the superior Parts, and the Head, and causes an Infarction of the Vessels, a Distention of the nervous Membranes, and a Disposition to the like Spasms: Hence proceed Redness of the Eyes, Pains in the Head, Dimness of Sight, Vertigo, Trembling of the under Lip, and sometimes convulsive and epileptic Commotions of the whole nervous System.

The proximate Cause which disposes to *Vomiting*, is a Vellication or Stimulation of the nervous Fibres of the Stomach and *Duodenum*: Now the vellicating Matter resides either in the Parts themselves, or in others remote, but connected with them by means of the Nerves: Hence arises a Distinction of *Vomiting* into *symptomatic* and *idiopathic*; the material Cause of the latter is in the Stomach itself, or at least in the *Duodenum*; the other has its Cause more remote, residing in the lower Intestines, the bilious Ducts, Kidneys, Head, or some other distant Part, and depends chiefly on Consent of Parts, by which the irregular Motions are communicated. It is evident, therefore, that there is no such thing as a monarchical Power, which *Helmont* ascribes to his Regent of the *Pylorus*, from which, he thinks, the Origin of the Constriction and inverted Motion is always to be derived. For tho' it sometimes begins at the *Pylorus*, yet the Principle of the Constriction is frequently residing in the lowest Intestines, as appears by the stercoreous *Vomitings*.

Among the material Causes of *Vomiting*, which have their Seat in the Stomach itself, the first which deserves Notice is, the excessive Quantity of Things ingested; which, by oppressing the Fibres of the Stomach, and distending them beyond the Sphere of their Elasticity, and by that means occasioning a more than ordinary Afflux of the nervous Fluid and the Blood, excites them to convulsive Motions, in order to expel the noxious Matter: Hence the Subjects most obnoxious to *Vomiting* are, 1. Excessive Drinkers, on account of the immoderate Quantity of Liquors ingested. 2. Tender Infants, from sucking too much Milk, or a premature Reception of more solid Food; in which latter Case, *Kerkringius*, not without Reason, imputes the Cause to the Straitness of the *Pylorus*, not as yet capable of transmitting solid Aliments. 3. Persons weakened by Diseases, and fasting under them; in which Circumstance, a moderate Allowance of Food, especially of the solid Kinds, may provoke *Vomiting*. 4. Voracious Children, who are much subject to Hiccups and *Vomiting*.

Another Cause of *Vomiting* is the vitiated Matter collected in the Stomach, which is frequently the Reliques of crude Meats, and such as are difficult of Digestion, salt Meats, such as are hardened in the Smoak, and the like improper Foods, which are hard to be concocted. Hence are excited *Vomitings* of a pituitous Kind, which are incident, 1. To Persons of a weak Stomach, but voracious Appetite. 2. To those who, being accustomed to softer Kinds of Food, enter upon a more solid and gross Diet. Hence, also, 3. They who indulge themselves in plentiful Feeding, much Sleep, and a lazy Kind of Life, are, also, much subject to *Vomiting*. The same vitiated Matter, or foul Sordes, by long Residence, becomes acid, and by an Accession of Bile from the *Duodenum*, procured by a Fit of Anger, or, perhaps, some other Cause, is rendered more acrimonious; whence arise, from the Stomach, bilious *Vomitings*.

All bilious *Vomitings*, especially if they are chronic, or periodical, have their *Fomes* in the *Duodenum*. This Intestine is very well accommodated for the Entertainment of the vitiated Sordes, on account of its Flexures, and because of an Affusion of Bile to the chylous Juice which happens in the same. If this Bile becomes inert and unactive, or stagnates on account of the languishing Tone of the Intestines, and is not duly mixed with the Aliments, or has its Substance more and more corrupted by an Accession of acid Humours, it is rendered acrimonious, and in a manner caustic; whence, by vellicating, it excites bilious, green, æruginous, and even black *Vomitings*: For Bile, by a strong Acid, is rendered green; and after it has stood for a considerable time, it becomes of a black Colour; hence the Matter discharged by *Vomiting* is often acid to a high Degree, so as to set the Teeth on Edge, and corrode the very Stones of a Pavement, and silver Vessels. Such was the Matter of the *Vomiting* observed by *Henricus ab Heer*, Obs. 29. which had the Taste of Vitriol: And I myself, in my Notes on *Potterius*, Cent. 2. Caf. 93. have related a Case where the Matter thus discharged was corrosive like *Aqua fortis*; and mixed with Filings of Steel, became true Vitriol.

Persons subject to *Vomitings* which have their Origin in the *Duodenum*, are, 1. *Hypochondriac* and *melancholic* Patients, who, on account of the languid Tone of the Intestines, are much molested with acid and viscid Crudities, from the Remains of the Food in the Stomach and *Duodenum*. To this it must be added, that the Bile is unactive to such a Degree, that instead of a generous Chyle, there is produced nothing but a copious Collection of acrid and acid Humours mixed with a corrupted Bile, by

by long Residence become black, and communicating the same Colour to the Humours, which, for that Reason, the Antients imagined to proceed from the Spleen. These Humours are constantly vellicating the *Duodenum* and *Pylorus*, Parts quick of Sensation, whence the Stomach is easily subverted, especially since these Parts are of themselves subject to an Inversion of the peristaltic Motion. 2. The *scorbatic* are no less liable to this Affection, from the Thickness and Impurity of the whole Mass of Humours; as are, also, 3. The *cachectic*, whose Bile is vapid, and insufficient for the perfect Dissolution of the Aliments; whence their Vomit is more of the bilio-viscid Kind. 4. Infants are much subject to these *Vomitings*, from their sucking impure Milk, rendered acid by the angry and fretful Temper of the Nurse, which frequently is the Occasion of porraceous, æruginous, and green Discharges of this Kind. And, lastly, Persons labouring under a Quartan are molested with these *Vomitings*, proceeding from the *Duodenum*.

Vomiting is, also, excited by the noxious and offensive Qualities of the Things received into the Stomach. Thus Aliments too fat; Fruits, and fermentible Substances, undergoing a more acrid Fermentation, excite *Vomiting*, especially if the Stomach be already oppressed with bilious Humours. The same is effected by Food which is ungrateful, and taken with a Loathing; and the more, if it be of an oily and pinguious Substance. Under this Head must be reduced acrimonious Things, and such as are endued with a subtil caustic Principle, as are all Emetics, and poisonous Substances; particularly the Eggs of the Barbel-fish, for which see *Timaus à Guldenkle, Lib. 3. Cap. 7.* and poisonous Mushrooms, mentioned by *Hildanus, Cent. 4. Obs. 34.* As for Poisons themselves such as Arsenic and Sublimate, it is very well known, that by their highly-caustic Principle, they excite not only *Vomiting*, but very terrible convulsive Symptoms in the whole System of the Body, which are the Effects, also, of the more acrimonious Emetics and Cathartics.

A subtil, acrimonious Humour, infesting the nervous Parts of the Stomach, is, also, a Cause of very troublesome *Vomitings*. Sometimes this Humour is by a *Metastasis* transferred to the Stomach from the Matter of the Gout, *Erysipelas*, *Scabies*, Ulcers, and Purples, to the Stomach. An Instance of *Vomiting* excited from the premature Consolidation of an Ulcer, we find in *J. Rhodius, Cent. 2. Obs. 65.* For the same Reason it happens, that the Small Pox, Measles, and malignant and exanthematous Fevers, are attended with most violent *Vomitings*: For the acrid and caustic *Miasma* of those Diseases, by infesting and irritating the nervous Fibres of the Stomach, produces this Disorder. From the same Cause must we account for those dreadful *Vomitings* in the Pestilence, where, upon dissecting a Carcase, *Helmont*, as he assures us, in his *Tumul. Pestis*, found the Stomach covered over with an *Eschar*. And *Diemerbroeck, de Peste, Lib. 4. Hist. 13.* tells us, that he saw the same Part affected with a Carbuncle.

A Congestion of the vital Blood in too great a Quantity in the Vessels of the Stomach, and by that means distending them to an immoderate Degree, is another usual Cause of *Vomiting*. Hence, 1. Women with Child, in the first Months after Conception, are affected with it, from a Regurgitation of the Blood, caused by a Retention of the Menstrues, to the superior Parts, which ceases when the Foetus arrives at a considerable Bulk, in some Subjects after the fourth Month. We have a remarkable Instance to this Purpose in *P. Lotichius, Lib. 5. Obs. 7.* 2. Women who have no menstrual Flux are, for the same Reason, molested with *Vomiting*. Thus *Panarolus, Sect. 1. Obs. 22.* relates the Case of a Girl from whom the Menstrues never flowed, who for seven whole Years as soon as she took any Food, vomited it up again; but, after her Menstrues began to flow, was freed from that Disorder. 3. Men are subject to the same Distemper from a Suppression of the Hæmorrhoids, which occasions a Reflux of the Blood, in too great Quantities, to the *Vena Porta*, and by that means a Congestion of the Blood as aforesaid, whence *Vomiting* is frequently excited.

A preternatural Constitution or Disposition of the Stomach itself is a sufficient Cause of *Vomiting*. For, first, if the upper Orifice be closed up by a Spasm, or any other preternatural Cause, it excites this Affection, which, however, cannot properly be called *Vomiting*, but is rather to be esteemed a Spasm of the lower Part of the *Oesophagus*; since the Food, before it arrives at the Stomach, is thrown up again, together with a Mucus contained in the *Oesophagus*. Examples to this Purpose may be found in *Willis's Pharmacop. rat. Part. 1. Sect. 2. Cap. 1. Fernelius, Lib. 6. Pathol. Cap. 1.* and *Coiterus, Observ. Chirurg. p. 121.* where you have an Instance of the *Cardia*, or upper Mouth of the Stomach, closed up with a *Scirrhus*, and hard Tubercle.

The Case is otherwise with the *Pylorus*, from whose preternatural Constitution and Obstruction Occasion is given for chronical and perpetual *Vomitings*; so that it may be taken for a

Rule, that whoever is for a long time together molested with *Vomiting*, especially after Meat, and at the same time pines and wastes away in his Body, he has his *Pylorus* ill constituted. We have an Instance of that Part hardened and incrustated to such a Degree, as to be incapable of transmitting Food, in *Sanchez, Obs. 1. p. 376.* of a scirrhus *Pylorus* in *Salmuth, Obs. 20. Cent. 1. Willis's Pharmac. rat. p. 1. Sect. 2. Cap. 1.* and in *A. Med. Berol. Dec. 2. Vol. 3.* of a blackish and corroded *Pylorus* in *Meibom. Diff. de Vom. Sect. 31.* and of a *Pylorus* obstructed by a Piece of Money swallowed, in *Kerkringius, Spic. Anat. Obs. 1.* in which Cases the Patients were molested with *Vomiting* as long as they lived.

A symptomatic *Vomiting* proceeds from the Irritation of the *Oesophagus* or Intestines: Hence it happens, that from the Intrusion of a Feather, or the Finger, into the Fauces, and a Titillation of the Beginning of the *Oesophagus* by the same, the Stomach is immediately subverted, or irritated to Vomition, especially if it be oppressed with a Load of Humours. And that the Beginning of an Inversion of the peristaltic Motion frequently commences from the lower Intestines, and is propagated, by Consent of Parts to the Stomach, we are assured by those *Vomitings* which owe their Rise to the Colic, Gripes, and the like Disorders, in which Cases vast Quantities of Humours, of various Colours and Consistencies, are often discharged. See *Hildanus, Cent. 4. Obs. 32, 35.* And *Marcellus Donatus, Lib. 4. Cap. 3.* affirms, that twenty Pounds of Sordes have been, for several Days together, discharged by *Vomiting*. I have myself observed in old Persons afflicted with an Hernia, where the Falling down of the Intestines has been very considerable, an extraordinary and surprising Discharge of a feculent Matter by vomiting every third or fourth Day, for several Years together.

Vomitings are occasioned by some Disorder in the Intestines, in the following Cases: 1. From their Distention by Wind and Fæces, an Example of which we have in *Dodonæus, Obs. Med. 37.* 2. From an obstinate spasmodic Colic, as we are assured by Experience. 3. From a stubborn Obstipation of the Belly; as it happens in that wandering spasmodic Disorder in which Clysters, after Injection, are discharged together with the Fæces, by the Mouth. 4. From the Iliac Passion, and Hernias. 5. From a Dysentery, according to *Platerus, Obs. p. 875.* 6. From Worms corroding the Stomach and Intestines. See *Amatus Lusitanus, Cent. 1. Cur. 5. Cent. 3. Cur. 20.* I knew a Girl, seven Years of Age, who, having laboured under a violent Cardialgia, Convulsions, and continual *Vomitings*, at length discharged a large Worm by the Mouth, and soon after died. In these Cases there is very often a total Inversion of the peristaltic Motion, which beginning from the *Intestinum Rectum*, ascends even to the Fauces, and conveying all the Contents of the Intestines to the superior Parts, expels them by the Mouth.

There may be, also, a severe *Vomiting* excited by Consent of Parts from a Disorder of the biliferous Ducts in the Liver: For as these Ducts are endued with the same constrictive and dilatatory Motion as the Intestines, so their preternatural Constriction or immoderate Laxness provokes to *Vomiting*. In the former Case there is not only a violent Expression of the Bile into the *Duodenum*, and from thence into the Stomach, in a retrograde way, vellicating its Coats, and exciting to vomit; but the very Spasm of the above-mentioned Ducts is, by Consent of the *Plexus Hepaticus* and *Stomachicus*, propagated to the Stomach. In the latter Circumstance there is too great an Effusion of the Bile thro' the relaxed Tubes into the *Duodenum*.

Causes of bilious *Vomitings* are, 1. Emetics, and strong Cathartics, which excite Spasms in the Stomach and biliferous Ducts, whence there is an Effusion of Bile into the *Duodenum*. 2. A great Fit of Anger, especially when the Subject is eating; and, in such a Circumstance, the Passion of the angry Mother may have a pernicious Effect upon the Child who sucks her Milk. 3. A tertian Fever, on account of the Spasms of the *Primæ Viæ*; in which Case bilious *Vomitings* are of Service. 4. The *Cholera Morbus*, and bilious Fevers. 5. Hypochondriacal Disorders, in which the *Primæ Viæ* are affected with Spasms. 6. The last Cause I shall mention is, Stones in the Gall-bladder, or bilious Concretions, by which Spasms are excited which produce bilious *Vomitings*. Remarkable Instances of this are to be found in the *M. N. C. An. 6. Dec. 1. Obs. 20.* and *Scultet. Armament. Obs. 61.*

Nothing is more common than for Persons under nephritic and calculous Disorders to be affected with a Nausea, *Vomiting*, and Gripes, especially if a Stone happens to stick in those sensible Parts the Ureters, or even in the Kidneys. Observations to this Purpose occur in *Bonetus, Sepulchr. Obs. 60.* and I remember a celebrated Physician, and Botanist, of this Place [Hall], sixty Years old, who from a Stone which stuck very fast in the middle of his left Ureter, laboured under continual *Vomitings*, and Loathings of all Food, for three Months

together, which, at length, induced a Decay of Strength, and Wasting of the Body, terminating in Death. Some Weeks before his Decease, he complained of the corrupt and fetid Taste and Smell of the Matter discharged, imagining it to be mixed with the urinous Secretions, which passed off but in small Quantities. It very frequently also happens, that nephritic Paroxysms after long ceasing, are renewed and re-excited by Spasms of the Stomach and Intestines. The Reason is obvious, for as the left Kidney, by its nervous Plexus, thro' the Intervention of the *Mesentericus Superior*, coheres with the Plexus *Stomachicus*; and the right Kidney, by means of the like Plexus, is immediately connected with the Plexus *Hepaticus* and *Stomachicus*; and besides as the *Duodenum* is connected with the *Involucra* of this Kidney, hence it easily appears why Spasms of either Kidney, but the Right more than the Left, should excite Vomiting, often of the bilious Kind, and so violent, as hardly to be exceeded by Emetics. We have a remarkable Instance, to this Purpose, in *Meibomius, Dissert. de Vomitu, Sect. 27.* where Stones impacted in the Kidneys first excited terrible Vomiting, and, when these ceased, so violent a Spasm of the *Oesophagus* was excited, that something, as it were, seemed to leap out of the Mouth.

Vomiting, also, may, by Consent of Parts, attend Affections of the Head, as *Hippocrates* long ago observed, 6 *Aph.* 50. "A Wound of the Brain," he says, is necessarily succeeded by "a Fever, and bilious Vomiting." And we read the same in the *Coacæ Prænotiones*; and every Surgeon knows, that Inflammations, or considerable Wounds and Contusions of the Head and Brain, and its Membranes, are succeeded by Vomiting. And the same Consequence happens from violent Spasms of the nervous Parts of the Head, as in that severe Pain of the Head called *Clavus Hystericus*, an obstinate Cephalalgia, Hemisrania, Vertigo, spasmodic Apoplexy, and the like Disorders; in all which Cases a Vomiting is occasioned thro' that Consent which the Stomach, by means of the *Par Vagus* of Nerves, holds with the Brain; not to mention, that the Connection of the *Par Vagus* with the fifth Pair of Nerves, is the Cause of Vomiting under difficult Dentition.

A Depression of the Eniform Cartilage, by compressing and irritating the Stomach, may be reckoned among the external Causes of Vomiting. Examples to this Purpose we have in *Barbette, Anat. Lib. 1. Cap. 4.* and *Decker Prax. Barbett, p. 126.* For this Reason Maids who much straiten and compress their *Præcordia* with stiff Boddice, are subject to Vomiting. To external Causes, also, is to be referred, an imaginary Vomiting excited from the Perception of ungrateful Objects, by Sight, or even by Hearing; and, also, that Vomiting which is provoked by a whirling Motion of the Body, or Jactation in a Ship, to Subjects unaccustomed to it.

There is, also, a critical Kind of Vomiting, when the material Cause which produces it is eliminated by the very Vomition, which is therefore very salutary, and is sometimes to be observed in angry Persons, and Cachectics of a choleric Disposition; and, also, in Fevers, both acute and intermittent, and principally about the critical Days: For, by means of this Action, the Stomach, *Duodenum*, the biliary Vessels of the Liver, the Pancreas, with the intestinal Tube and Glands, are purged, and deterged from those Collections of vitious Juices and Humours which otherwise might enter the Mass of Blood, and create various Disorders, which, upon their Expulsion by Vomiting, are not to be apprehended. Of such salutary Vomiting, *Celsus* excellently remarks, *Lib. 1. Cap. 3.* "that it is beneficial to all bilious and full Persons, who have either injured themselves by Repletion, or have bad Digestions. For if more be received than can be concocted, we ought not to run the Hazard of its being corrupted; or if it be already corrupted, there is nothing more commodious than to expel it, by the quickest and most ready Passage. Whenever, therefore, we are molested with bitter Eructations, attended with Pains, and Oppression of the *Præcordia*, let us have immediate Recourse to Vomiting."

The Diagnosis of the different Causes of Vomiting is formed upon the Evidence of concurring Signs. Pituitous Vomiting, attended with a pressive Pain about the Region of the Stomach, are an Indication of Crudities adhering to the *Primæ Viæ*. Bilious, chronical, and periodical Vomiting, signify too great a Lateness of the biliferous Ducts; chronical Vomiting, particularly, of many Years Duration, in which the Food is thrown up half-concocted, indicate some Injury or *Scirrhus* of one of the Viscera. That Vomiting has its Rise from the Stone, we infer, from a Pain in the Region of the Loins, attended with a Diminution of the urinary Evacuations, and with sandy Excretions. Paleness of Countenance, and Pains and gnawing Sensations in the Intestines, attended with frequent Spitting and Itching of the Nostrils give a Suspicion of Worms: But Judgment is necessary in these Cases, to explore, from the various concurrent Symptoms which attend Vomiting, the true Cause of that Af-

fection, without the Discovery of which we can expect but a palliative Cure.

By way of Prognosis, all critical Vomiting are salutary, symptomatical ones bad, and worst of all when excited by a subtle caustic Acrimony vellicating the Nerves. All Vomiting more violent than ordinary, is not free from Danger; for it may cause Abortion, excite an Hernia, and dispose to a Retropulsion of the arthritic, podagric, and erysipelatous Matter upon the nobler Parts, to the no small Detriment of the Patient. It has occasioned a Rupture of the Omentum, as we read *Act. Med. Berol. Dec. 2. Vol. 3.* and a Laceration of the very Stomach, as we are told by *Sanchez, Ob. præst. p. 376.* Bilious Vomiting, especially the green, porraceous, and æruginous, terrify us with Appearance of Danger, and threaten an Inflammation. Vomiting from Worms corroding the Stomach is generally pernicious; and if a dead Worm be discharged, and at the same time there be a Cessation of very severe Symptoms, and terrible Convulsions of the Limbs, all at once, it is a mortal Indication of a supervening *Sphacelus*, which destroys the Worms, together with the Patient. All fetid Vomiting are of bad Prognostication, as they indicate an internal Corruption. Sebaceous or Tallow-like Vomiting indicate a Redundance of corrosive acid Humours in the Stomach, by which the pinguious Substances are coagulated, and an intolerable burning Heat and Cephalalgia are usually excited.

Where there is a plentiful Discharge of a gross Humour tinged with a brown Colour like Gall, to the Quantity of Half a Pint, or a Pint, whether spontaneous, or procured by Art, as it frequently happens in slow Fevers, it is a certain Indication, that the Tone of the Intestine next the Stomach is very much decayed.

Constant Vomiting, for the Space of Half a Year together, or more, and attended with a slow Heat, and an Extenuation of the Body, give strong Suspicion of an ulcerated Stomach. I met with an Instance of this Nature when I practised Physic at *Minden in Westphalia*, fifty Years ago, and had a View of it in the Dissection of a dead Body.

THE METHOD OF CURE.

Critical Vomiting, by which Humours of various Kinds are plentifully discharged, being salutary, scarce require any Cure, but are rather, on some Occasions, to be promoted. But symptomatical Vomiting, which are less sufficient or accommodated for removing the Cause, are the more carefully to be treated, in order to their Cure: And the two principal curative Indications, or Intentions, to be answered, are, in the first Place, to quiet and compose the convulsive and unruly Motion of the Stomach; and, afterwards, to oppose and subdue the material Causes of the Disorder.

The first Intention is answered by Antispasmodics, Corroboratives, and Anodynes, beginning with gentle, and proceeding to stronger Remedies of those Kinds. Of this Nature are, Saffron, and Castor in the Form of Powders, Essences, or Extracts; *Theriaca Cælestis*, incorporated with Powder of Amber, and Absorbents, as Hartshorn, Crabs-eyes, and red Coral: Powders composed of these Ingredients, with spirituous and vinous Waters, such as the Waters of Lime-tree-flowers, Lilies of the Valley, Chamomile, Baum, Mint, Black Cherries, Cinnamon, and the like, are of signal Service in these Cases. Among Corroboratives are distinguished, Nutmegs, Mace, Cardamoms, Cinnamon, *Costus Verus*, Cloves, Orange and Citron-peels, the Roots of red Gentian, Calamus Aromaticus, Galangals, the Herbs Marjoram, Rosemary, and the like; with the Oils and Essences prepared of these Simples. But of all the Remedies specifically appropriated to this Disease, the *Mentha Crispa*, or curled Mint, is the most eminent and effectual; for which Reason, the Oil prepared from it may be mixed with almost all the Remedies administered in these Cases, as being an eminent Paregoric as well as Strengtheners. Among Anodynes, I can affirm, that my own anodyne Liqueur is as effectual as safe, especially if it be mixed with my Balsam of Life; or, if more powerful Anodynes are required, recourse may be had to the *Pilula de Styrace, Wildeganfii*, or *Sydenham's Laudanum*.

With the Administration of these internal Medicines, it may be of good Service to join the Application of Topics to the epigastric Region, in order to repress, in some measure, the Violence of the disorderly Motions. Externals proper for this Purpose are, the strengthening distilled Oils of Mint, Cloves, Nutmegs, Wormwood, Mace, Cedar, and the like, reduced with Balsam of Peru into an Ointment. Epithems, also, for the same Purpose, may be composed of the *Spiritus Matricalis*, *Spiritus Theriacalis*, Hungary-water, and Essence of Saffron; and Cataplasms of camphorated Spirit of Wine, Ferment of Bread, the strongest Wine-vinegar, with Balsam of Peru, and an Addition of some Drops of the Oils of Mace and Mint. Of no less Efficacy is a Plaster of Crums of Bread, and Balsam of Peru, softened with a Drop or two of some distilled Oil;

over which it will be proper to apply resolvent and strengthening Bags warm. Our Balsam of Life does excellent Service in this Case, the Præcordia, and epigastric Region being anointed therewith.

But we shall lose our Pains, if we only use these Things alone, without attempting to remove the material Cause of the Disorder. A Vomiting, then, of the pituitous Kind which depends on Crudities of the *Prima Via*, and a viscid Mucus sticking in them, is best cured by an Emetic, especially if the Vomiting is not of itself sufficient to eliminate the Sordes; and if the Patient is greatly afflicted with an Effort to vomit, a Nausea, and Cardialgia; for, in this Case, after the Use of inciding and digestive Medicines, such as neutral Salts, the Roots of Arum, and especially of Squills, we are to exhibit a gentle Emetic, such as tepid Water mixed with fresh Butter, and copiously drank; or the Root of Ipecacuanha reduced to Powder. To Infants seized with a Vomiting on account of coagulated Milk, or the Meconium contained in the Stomach, it is expedient to give Oxy-mel of Squills mixed with Syrup of Rhubarb.

A bilious Vomiting which arises from a weakened Digestion, and has its Fomes in the *Duodenum*, after the Use of Absorbents, and gently-laxative Preparations of Manna and Rhubarb, admits of a perfect Cure, by restoring the Strength of the Stomach and Intestines; which, after the Sordes are gradually removed, is excellently performed by my visceral Elixir, used for a considerable time together with a proper Regimen, and due Exercise: And as this Kind of bilious Vomiting is of a chronic Nature, so that Species is of a more acute and hurtful Kind, which draws its Origin from violent Spasms of the Stomach and biliary Ducts, excited by Anger. In this Case, it is expedient to correct the Acrimony of the Bile by diluent and acidulated Medicines; by the *Spiritus Nitri Dulcis*; by the Spirit of Vitriol; by Absorbents, fossil Ivory, and Crabs-eyes: The spasmodic Motions are, in the mean time, to be allayed by gentle, antispasmodic, and anodyne Medicines; using for the Sake of Evacuation Potions impregnated with Rhubarb; but where there is a Coagulation of the Bile, or a Gall-stone, nothing is more effectual for resolving them, than the *Caroline Springs*, or any cold medicinal Waters, exhibited tepid. When too great a Relaxation of the biliary Vessels proves the Cause of chronic Vomitings, the most proper and efficacious Remedies are Corroboratives; the best of which are, the *Peruvian Bark*; the Bark of *Cascarilla*; Essence of *Gentian*; and chalybeate Tinctures, exhibited in vinous Waters.

A Vomiting which arises from an acrid Matter adhering to the Nerves of the Stomach, or from a Retropulsion of a Gout, arthritic Disorders, or an Erysipelas, besides mild Sedatives, and Medicines which excite the Motions necessary to the Expulsion of the Matter, requires a recalling of the exanthematous Matter to the Surface of the Body: This End is obtained by exhibiting a diaphoretic Powder, which determines the Motion of the Blood and peccant Matter to the external Parts of the Body; and this Effect is more successfully produced, if a small Quantity of Camphire is added to the diaphoretic Powder, and Clysters, Frictions, and Baths for the Feet, are used. When Poisons or poisonous Aliments excite a Vomiting, nothing affords more certain Relief than the immediate Exhibition of large Draughts of Milk and pinguis Liquors, by means of which the Spicula of the Poison are not only obtunded, but vomited up along with the Liquor drank. Hence some Physicians, in Vomitings arising in Plagues and malignant Fevers from a Miasma stimulating the Coats of the Stomach, order the Root of Ipecacuanha to be taken in some warm Liquor; after which, they exhibit Acids in Conjunction with Diaphoretics. But this Practice is not to be used in Cases where there is an Inflammation of the Stomach.

Acrid, acid, and bilious Sordes, falling into the Intestines, frequently excite a Vomiting accompanied with colical Pains; in which Case, we are first to exhibit internally diluting and demulcent Medicines, such as Decoctions of Oats and Hartshorn, Whey, or a few Spoonfuls of the Oil of sweet Almonds. 2. Antispasmodics; the best of which is, the anodyne mineral Liquor, mixed with a few Drops of genuine Oil of Mace, and exhibited in cold Water. The Laudanum of *Sydenham* may be, also, used for this Purpose; and in Patients of choleric Temperaments, rectified Spirit of Vitriol, either alone, or mixed with the anodyne Mineral Liquor, and exhibited in cold Water, is an excellent Remedy. And, 3. Mild Laxatives; the best of which are Clysters joined with the internal Use of Preparations of Manna and Rhubarb, or the Salts obtained from medicinal Waters dissolved. Where there are Worms in the Intestines, Clysters of Milk alone are most expedient, exhibiting at the same time internally, bitter Resolvents, or mercurial Laxatives; during the Use of which a sufficient Quantity of Milk, or Oil of Sweet Almonds, is to be exhibited.

The preservative Method is principally to be used, when

from too great a Relaxation of the *Prima Via*, Crudities are perpetually generated, and periodical Vomitings by that means produced. In this Case the Region of the Stomach, and of the Back about the first Vertebra of the Loins, with which the Stomach is connected by a certain Ligament, is to be defended from all Cold. Saline, acid, crude, and smoked Aliments, together with such as are of hard Digestion, are to be carefully abstained from. Nor must the Patient for ordinary Drink use Malt Liquors, but some proper Decoction in Conjunction with old generous Wine, especially *Burgundy*. Excessive Sleep is hurtful, but moderate Exercise beneficial. It is, also, expedient for some time to use visceral Elixirs after Meals; Chalybeate Baths, and Liquid Medicines prepared of Steel, are very beneficial. It is, also, of great Advantage at proper Intervals to purge with gentle Laxatives.

To attempt to stop a Vomiting by Astringents and Anodynes, before the peccant Matter is removed, is an highly prejudicial Practice; for when the spasmodic Motions are allay'd, worse Symptoms succeed, such as excessive Anxieties of the Præcordia, Cardialgias, and Inquietudes. For this Reason, the Vomiting generally does not cease by the Exhibition of Corroboratives, before the Excretion of the peccant Matter; for these Remedies are only to be used when the Motions, but not the Matter, are peccant, or when there is no Proportion between the Motion and the Matter, or when the latter is subtle, and in a small Quantity, but the Efforts to vomit strong and violent.

Hence if in Infants especially and Children a Vomiting is excited by the Chin-cough, on account of the Consent between the Stomach and Diaphragm, the Disorder is to be allayed by sedative and anodyne Medicines, such as the Syrops of white and red Poppies, Extract of Saffron, Oil of Sweet Almonds mixed with *Sperma Ceti*, the *Pulvis Marchionis*, Amber, Cinnabar, and a Grain or two of the *Theriaca Castellis*, Clysters may, also, be injected, and the Breast and epigastric Region may be anointed with a Liniment prepared of green and red *May Butter*, the Fats of the Badger, Fox, and Beaver, and a little of the Oil of Henbane.

The Vomiting of pregnant Women arising from a Regurgitation of the Blood to the Stomach, which is, also, observed in Women afflicted with a Retention of the Menfes, and Men labouring under a Suppression of the Hæmorrhoids, is most effectually removed by temperating Medicines, mild Laxatives, Clysters, Corroboratives, and best of all by Venesection, or a Recalling of the usual Excretions of Blood. In Cases of this Kind Emetics are highly prejudicial, since they either excite a Vomiting of Blood, or, which I have frequently seen, bring on an Inflammation of the Stomach.

A bilious Vomiting, accompanied with Spasms of the Præcordia, and excited by Anger, especially when the Patient is at a Meal, is to be treated with great Caution; and the principal Intention of Cure ought to be directed to the Relaxation of the Spasms. In such Cases it is customary with many to exhibit Emetics and Purgatives; but I would advise these to be carefully abstained from, since I have often seen violent Symptoms, and sometimes mortal Inflammations of the Stomach brought on by this means.

When Efforts to vomit or actual Vomitings seize in the Morning, which frequently happens to those who use too much spirituous Liquors, especially over Night, then the precipitating Powders, and such as involve the acid Crudities, together with Medicines which promote Digestion, such as the Stomachic Powder of *Brickmannus*, and candy'd Citron, and Orange-peel, are the most efficacious Remedies.

If, as I have frequently observed, a chronic Vomiting at certain Intervals arises from long-continued Grief, I have found the most efficacious Relief in Analeptics, and especially in the Balsam of Life mixed with an equal Portion of the anodyne Mineral Liquor, and used both internally and externally. Excellent Effects are, also, produced by the *Balsamum Embryonum*, Cinnamon-water impregnated with Quinces, and generous Wines.

When Vomiting is joined as a Symptom to febrile Paroxysms, which frequently happens in Quotidians both of the simple and double Kind, it is proper, if no Circumstance contraindicates it, to exhibit a gentle Emetic. In the Small Pox and Measles the Vomiting ceases spontaneously after the Eruption; and a Mixture prepared of distilled Waters, the Juice of Lemons or Citrons, and the Salt of Wormwood, is of excellent Service. Nor does this Preparation want its proper Use in Tertians.

A Vomiting, arising from the Pain of the Stone, is most effectually allay'd by the Anodyne Mineral Liquor, or the *Spiritus Nitri Dulcis* well prepared. Oleous Clysters, Baths of sweet Waters, Oil of Sweet Almonds taken internally, and Antispasmodics are, also, proper. The Vomiting of Persons labouring under Hernias, or the Iliac Passion, rarely remits till the Tumor is mollify'd and reduced.

Hippocrates in *Epid. Lib. 6.* informs us, that Vomiting is cured by Vomiting; but because Contraries are cured by Contraries, some Physicians have concluded from this Passage of *Hippocrates*, that Similars may be cured by Similars. But this is an Error; for, if Vomiting is cured by Vomiting, the Cure is performed by Contraries; for Vomiting often proceeds from peccant Sordes, and ill concocted Juices lodged in the Stomach, which Nature endeavours spontaneously to evacuate; and when she is not able to do so, her Force is to be assisted by Art. For this Reason young Practitioners are to be advised not to abuse this Maxim, lest by a wrong Application of it they should be led into a preposterous and injurious Practice; for if an acrid caustic Matter adhering to the Coats of the Stomach, or Blood stagnating in the Vessels of the Stomach, is the Cause of the Vomiting, it would be a terrible Error to attempt to increase this Vomiting by Art.

In order to stop excessive Vomiting, Rest, and lying in Bed, contribute considerably; for any Commotion of Body forthwith excites and augments the Vomiting; and this Observation is of singular Use in Practice.

In the Beginning of exanthematous Fevers, such as the Plague, Erysipelas, and Small Pox, Nature often attempts a Vomiting, which ought by no means to be stopped, or treated with Astringents. In Cases of this Kind, such Medicines as gently promote cuticular Excretion are proper; for when the Effluences begin to appear on the Surface of the Body, the Vomiting ceases spontaneously.

The obstinate Vomiting of hysterical Patients ought not to be suddenly stopped by Opiates, or Astringents; for by this Practice I have seen violent Convulsions of the Limbs, and Anxieties of the Præcordia produced; and when these Symptoms ceased, the Vomiting returned.

When frequent Vomiting afflicts and weakens the Stomach, an exact Regard is to be had to the Regimen and Method of Life. It is expedient to eat frequently, though little at a time, and of such Aliments as are proper, and easy of Digestion. Sweet Milk and white Bread agree with some, though not with all; and I can from Experience assert, that the drinking pure cold Spring-water contributes more to strengthen the Stomach, and remove the Custom of Vomiting, than any other Liquor whatsoever: Rich and astringent *Pontac*, and *Burgundian* Wines, are preferable to others, especially *Rhenish* Wine, which is prejudicial to hypochondriac Patients. The Juices of roasted Fleshes are more proper than those of such as are boiled.

In Diseases where Nature is by a certain salutary Motion employ'd in propelling a peccant Humour to the Surface of the Body, which happens in arthritic and erysipelatous Disorders, Topics, and especially Preparations of Camphire, are to be very cautiously applied; for I have frequently observed, that by camphorated Spirit of Wine, which in some Cases is very useful, used by infirm Patients labouring under arthritic Pains, an Hepatitis, and spurious Pleurisy, which are, also, Species of a Rheumatism, the peccant Matter has been forced back to the nervous Coats of the Stomach and Intestines, and excited Vomiting, Cardialgias, and Hiccups. In Cases of this Kind, if an Attempt is imprudently made to stop the Vomiting by Astringents and Opiates, a mortal Inflammation of the Stomach is easily brought on in infirm Patients.

Immoderate and long-continued Vomiting of pregnant Women, which principally happen in the first Months of Gestation, especially in those who indulge themselves too much in Venery, and are plethoric, are by no means to be cured by spirituous Medicines, such things as corroborate the Stomach, Astringents and Opiates; but are to be removed by repeated Venesections in the Arm, Rest of Body, and Tranquillity of Mind; and when a Vomiting of this Kind is so violent as to threaten Abortion, I have seen it more effectually stopped by drinking pure cold Water, than by the Use of any other Medicine whatever. But when an Analeptic is requisite, one Spoonful of Cinnamon-water taken after Meals, is sufficient.

Fred. Hoffman.

VOMITUS CRUENTUS. See **MORBUS NIGER.**

VOPISCUS. The Twin which comes to perfect Birth, while the other perishes in the Uterus. *Castellus.*

VORACITAS. Voracity. See **ADDEPHAGIA.**

VOSACAN. A Name in *Boerhaave* for the *Corona Solis*; *Rapunculi Radice.*

UPUPA. *Offic. Schrod. 5. 324. Aldrov. Ornith. 2. 704. Gefn. de Avib. 70. Schw. A. 368. Jonf. de Avib. 85. Charlt. Exer. 98. Raii Ornith. 145. Ejusd. Synop. A. 48. Will. Ornith. 100. Bellon. des Oyse. 293. THE HOOPO.*

It is a melancholy and very unclean Bird, living on Worms found in Dung, Caterpillars, Beetles, and the like. The Parts in Use are the *Flesh* and *Feathers*. The *Flesh*, and its Decoction, according to *Avicenna*, have a specific Virtue against the Colic. And the *Feathers* applied, are said to mitigate Pains of the Head. *Dale.*

URACHUS, *ὑράχης*, from *ὑέρ*, Urine, and *ῥαχ*, to have, or contain, a Ligament belonging to the Bladder, and of particular Use in the Fœtus. See **ALLANTOIS** and **RENES.**

URÆON, *ὑράιον*, in *Galen. Com. in R. V. f. A.* is the the Extremity of a Bone, particularly the *Os Sacrum. Castell.*

URAGION, *ὑράγιον*, in *Hippocrates, Lib. de Corde,* is the the Apex, or Point of the Heart.

URAGOS, *ὑράγος*, from *ὑέρ*, Urine, and *ῥαγ*, to convey, in *Aetius, Tetr. 4. Serm. 4. Cap. 3.* is the same as *Urachus.*

URANÆ, *ὑράνας*, from *ὑέρ*, Urine, the Ureters, by some so called. *Goræus.*

URANION, *ὑράνιον*, is the Name of a Collyrium; of the Sort called *Adelia*, [see **ADECTOS**] described by *Paulus, Aetius,* and *Trallian, Lib. 2. Cap. 5.*

URANIOS, *ὑράνιος*, from *ὑράν*, *Cælum*, the Heavens, in *Hippocrates*, is commonly spoken of the Air, particularly in *Epid. Sect. 3.* near the Beginning.

URANISCUS, *ὑράνισκος*, a Diminutive of *ὑράν*, Heaven, is a Name for the Palate, or *Hyperoa*, on account of its being the superior Part of the Mouth, and, also, arched in manner of the Heavens. *Castellus.*

URANOS, *ὑράν*, Heaven, by *Hippocrates*, in Compliance with the vulgar Way of Speaking, is commonly used for the Air, which is above us as far as the Region of the Clouds. *Galen, Com. 2. in 1 Epid. T. 4.* It is, also, a Name for the Palate, as in *Aristotle, de Part. Anim. Lib. 2. Cap. 17.*

URANOSCOPUS. *Offic. Aldrov. de Pisc. 264. Rondel. de Pisc. 1. 305. Jonf. de Pisc. 61. Salv. de Aquat. 197. Raii Synop. Pisc. 97. Uranoscopus seu Cœli Spectator. Charlt. de Pisc. Callionymus vel Uranoscopus, ὑρανόσκοπος. Oppian. THE STAR-GAZER.* For a further Account of this Fish see **CALLIONYMUS.**

URCEOLARIS, URCEOLA. Names for the *Parietaria*, from its Use in scouring Glass-vessels [*Urceoli vitrei*].

URCEUS. A Measure of Liquids, of various Dimensions in different Places; in the Territory of *Pergamus*, it contained twelve or fifteen Ounces of Wine. *Castellus.*

UREDINES, in the alchymistical Cant, are the Virtues of Metals communicated to them from the Sun. *Uredo* in *Pliny, Lib. 20. Cap. 18.* is the Smut affecting Fruits; and is a Name given, also, to a burning and very severe Cephalalgia in a remarkable Case related in the *Philosophical Transactions* for June 1668.

UREMA, *ὑρέμα*, in *Hippocrates, Lib. de Nat. Hominis*, is the same as *ὑέρ*, Urine.

URENTIA (Medicamenta), the same as *Caustica*, or rather, according to *Blancard*, **PYROTICA.**

URESIS, *ὑρέσις*, in *Coac. 263.* is the same as *ὑέρ*, Urine, but *ibid. 348.* signifies Miction, or the Action of urinary Excretion.

URETERES, *ὑρετήρες*, from *ὑέρ*, Urine. The Ureters. See **RENES.**

URETHRA. See **GENERATIO.**

The proper Method of opening the imperforated Urethra, or Glans.

Two Cases usually occur, in which the impervious Glans, or Urethra, should be opened. 1. When the Glans is impervious in a new-born Infant. 2. When, in Adults, the Extremity of the Glans being imperforated, the Urine is discharged under it. That the Urethra is impervious in Infants, may be gathered from hence: If, for some Days after their Birth, we do not find the least Marks of Urine in the Cloths and Swaths about them, and if they cry violently. Upon this, the Operation must be speedily performed, lest the Infant should lose its Life, through the Detention of too great a Quantity of Urine. But this Operation is commonly varied, according to the various Dispositions of the Disorder: For sometimes we find some Mark, at least, of an Urethra in the Glans, as the Passage of the Urine is only stopped by a very thin kind of Membrane. In this Case, therefore, the Cure may very easily be performed, by carefully piercing that Membrane with a pretty fine Lancet, or even with the Needle before described in couching a Cataract (*Tab. XXXVIII. Fig. 5. or 6.*); and, after a Discharge of Urine made by the Patient, by introducing into the Urethra, either a Tent fastened to a Thread, and dipt in the Oil of sweet Almonds, or in some other vulnerary Oil, or a small flexible Candle, or a waxed coarse Thread, in order to hinder it from closing again. If the Membrane be somewhat thick and fleshy, it is better to use, instead of the Lancet, either the aforesaid Couching-needle, or even a finer triangular-pointed Needle, commonly called a *Trocar*, like that in *Tab. XLVII. Fig. 6.* and to perform the rest of the Operation in the Manner already directed. But if not the least Mark of an Urethra can be perceived, then commonly the Infants are left by many Surgeons without any kind of Assistance, as incurable. Though it is better, in my

my Opinion, to make the Experiment, and to attempt, tho' in vain, some difficult Operation, than, by neglecting all Methods, to exchange the doubtful Hopes of Recovery for the immediate Danger of Death. Wherefore those Surgeons are to be commended, who, in such a Case, especially if the adjacent Parts of the Abdomen be distended with Urine, duly perforate the Penis with some of the above-mentioned Instruments; and, after a Discharge of the Patient's Urine, set about the rest of the Cure in the Manner already prescribed.

But if this Method should not prove successful, then nothing seems to remain, but the Death of the Child, or piercing the Bladder above the Os Pubis, or perforating the Perinæum, in the Manner directed under that Article. But, whether this latter Method of Cure for this Disorder in Infants has ever been tried by any Surgeon, I cannot be positive.

In Adults several Cases may happen which require the Assistance of a Surgeon to open the impervious Glans: For, sometimes, it is true, the Urethra is pervious, but yet in such a manner that the Urine flows not so much from the Glans, as from some other Part of the Penis below it, and that sometimes nearer, and sometimes farther from it, and even in some Cases from the Perinæum. Sometimes we find a Perforation in some other Part of the Penis and Urethra, besides the Glans, so that the Urine passes two Ways: But almost always such Disorders have been contracted in the Uterus; and consequently they are natural, as it were, to most of those affected with them. In the mean time it cannot be denied, but that they likewise arise from an Ulcer or Wound in the Penis, or sometimes, possibly, on occasion of extracting a Stone out of the Urethra, or from the Acrimony of the Urine, which being stoppt by a Stone lodged in the Urethra, corrodes, and makes a new Passage for itself. Such Apertures are all commonly hard to cure, yet those which are largest and nearest to the Bladder are worst; and if the Aperture is very large, it can never be totally conglutinated. Those Persons whose Penis is perforated near the Abdomen, are to be esteemed quite unfit for Marriage and Procreation; but the Case is otherwise with those whose Urine flows either about the Middle of the Penis, or near the Glans; for nothing at all hinders the subtle Particles, or Aura of the Semen of such Persons in Coition, from passing into the Uterus: So that here the greatest Care and Prudence is requisite in those Surgeons, who, in Cases of this Nature, are called upon to give their Opinion, before any Court of Judicature, as to Matters of Ability or Impotence. If the Urine flow through the Glans, though at a preternatural Aperture; yet since a Man is not unfit for Copulation, nor has any Impediment in discharging his Urine, it seems safer to forbear attempting a Cure, than by an Incision to occasion a dangerous Profusion of Blood, and an Inflammation in the Glans, a Part very full of Blood-vessels. But if the Urethra be perforated below the Glans, or even below the Frenulum, then two things are chiefly incumbent on the Surgeon. 1. To make a proper Perforation through the Glans with some Instrument. 2. To agglutinate and close up, as nicely as possible, the preternatural, and consequently incommodious, Passage of the Urine.

The Glans may be perforated most commodiously in two Manners: The first is, after a Discharge of the Urine, to cut longitudinally in a strait Line the impervious Glans with a Knife, beginning at the preternatural Aperture, in such manner as to lay the Corpora Cavemosa bare, yet without wounding them in the least. Let the wounded Parts bleed plentifully, according to the Patient's Strength and Habit, the more readily to prevent any Danger of an Inflammation. Then if the Bleeding does not stop spontaneously, fill the Wound with dry Lint, which cover with a Plaister and Compress, and make a proper Bandage round it. About twenty-four Hours after, remove the Dressings and Lint, and introduce a smooth leaden Cannula into the Wound, in such a manner as to pass from the Extremity of the Glans, beyond the preternatural Foramen, into the Urethra; and consequently receive and transmit the Urine, till the Cure is completed. Make repeated Scarifications in the callous Lips of the preternatural Orifice; or which is safer, cut them away very nicely with a Pair of fine Scissars; for the finer the Portions cut off are, the better do the Parts agglutinate; to promote which, glutinous Plaisters are exceedingly serviceable, provided they be narrow, but yet adapted to keep the Lips of the Orifice in Contact.

But they must not be brought quite round the Penis, lest by hindering the Circulation they should cause too great a Swelling, and make the Lips of the Orifice part from each other. Put a Compress over the Plaister, and a slack Bandage round it, and last of all secure the Cannula from falling out. After this is done, put the Patient to Bed, and let him keep himself very quiet there, and forbear drinking for some Days, lest he should have too frequent Calls to make Water, or at least a Discharge of his Urine before the Wound is conglutinated should excite

Pain, and, by loosening the Plaister, hinder the Cohesion of the Parts: For indeed the first Dressing should not be removed unless there be some urgent Necessity, before the third or fourth Day; and then it must be done with the greatest Care, lest the Lips of the Wound, having still but a slight Cohesion, should be again separated; and when the Parts are found to cohere, the first Dressing must be kept on for some Days: But if on the contrary, they be not joined, it will be proper to lay on a new adhesive Plaister, till the Lips of the Orifice are firmly united; as to the rest, the same things are to be done, as directed in every Conglutination of Wounds.

The second Method of Cure is performed in the following Manner: Let the Needle, or fine sharp-pointed triangular Trocar, (*Tab. XLV. Fig. 2. or Tab. XLVII. Fig. 6.*) be passed directly, and very carefully, through the impervious Glans into the Urethra; then, after a sufficient Quantity of Blood is discharged, let a pretty long and slender Tent of clean Lint, in order to stop the Bleeding, be introduced into the new made Orifice, and a proper Dressing applied. But if the Bleeding stops spontaneously, let a waxed coarse Thread, or a flexible Wax-candle big enough to enter it, be introduced, in order to hinder the Adhesion of the Lips of the Orifice. Next Day, let a new Tent, dipt in a digestive Ointment, be put into it, but with this Caution, that it reach not beyond the preternatural Foramen from which the Urine has already flowed, so that as often as there is Occasion, the Urine may be discharged thro' it, till the Inside of the new Passage be lined with a Membrane; for otherwise, should it flow through it too soon, it would occasion Pain in the fresh Wound, and hinder the Production of the Skin. For some Days, therefore, let the Tent, and afterwards the Wax-candle of a proper Thickness, be dipt twice a Day in some desiccative Ointment, and let the Urine be discharged through the preternatural Orifice, till by means of the Wax-candle and desiccative Ointment, the Membrane be found to be grown over the Inside of the new Perforation. For then, instead of a Tent, Thread, or flexible Wax-candle, a very smooth and pretty long leaden Cannula is to be introduced into that new Aperture of the Penis, so as to pass beyond the old Orifice, and receive and discharge the Urine; by which means the Agglutination of the preternatural Foramen will be more conveniently accomplished. The following Method of Cure is most commonly made use of: Either the Lips of this Orifice are scarified with the Knife, or cut as nicely as possible, with a fine Pair of Scissars, and then joined by laying an adhesive and narrow Plaister over them, after which the Wound is to be treated in the same manner, as has been shewn above in the first Method of Cure. The preternatural Foramen being closed up, the leaden Cannula is likewise taken out; and thus the whole Cure is completed. Sometimes, such is the State of that preternatural Foramen of the Urethra, that it cannot be closed up or agglutinated; and yet duly perforating the Glans is not entirely an useless Operation; for when it is properly executed, and a new Passage formed, the Patients become afterwards more fit for Procreation. For tho' by this means, perhaps, not all, nor the greatest Part, yet a considerable Portion of the Semen can, in Coition, be thrown into the Uterus. By this very Method of Cure, therefore, those have the Faculty of Generation restored, or at least promoted and increased, who otherwise, through a natural Defect in the Penis, seemed almost or entirely unfit for Procreation. Besides, it is very necessary, after the Cure has been completed, to open a Vein as soon as possible, and repeat Bleeding occasionally, especially in such Persons as are of a laudable and plethoric Habit. For otherwise it may happen, especially in vigorous young Men, that an Erection and Expansion of the Penis should readily ensue, which may divide the Lips of the Orifice, and consequently retard the Conglutination, or render it entirely impossible.

I know very well, that there are some Surgeons, who, in order to close this kind of preternatural Foramen, stitch up the Lips of the Wound. Others choose rather by Corrosives to consume the hard and callous Parts of the Foramen, than to cut them away. But neither of these Methods of Cure, in Cases of this Nature, is much to be commended. For the tender Lips breaking, as commonly happens when stitched, the old Foramen, instead of being closed up, is rather enlarged. And by applying Corrosives the Skin may be corroded too much, and consequently the Orifice made so wide, that the Lips can never afterwards be joined together; and both Pain and a troublesome Inflammation may be thereby caused.

URETICOS, *ἐνὺρικός*, from *ἐνὺρ*, Urine, is sometimes spoken of the Urinary Passages, in which Sense *ἐνὺρικοί πέποι*, are the Ureters; sometimes it is apply'd to Medicines, and so is the same as *Diureticos*, sometimes to the Patient, and imports a Facility of Urine, and in that Sense is used by *Hippocrates*, de *R. V. J. A.* in the superlative Degree, where *ἐνὺρικός τις*, with him, signifies a Person who has a very free and plentiful Flow of Urine;

Urine; and, in the last place, it is spoken of a Disease, and apply'd to a Species of symptomatic Fever; and thus *Uretica Febris* is a Fever attended with a Diabetes.

URIAS, *seles*. The Urinary Tube; that is, the *Urebra*.

URINA. Urine. See RENES.

The principal Symptoms of Urinary Secretion injured are,

1. *Ixveia*, an *Ischury*, or entire Retention of Urine, the primary Causes of which are a Plethora; an Inflammation of the Kidneys, Ureters, Bladder, the Neck of the Bladder, Urethra; a Spasm, and Compression of the same Parts; also, an Obstruction of the same from the Stone, Phlegm, Pus, a Thrombus, Caruncle, Impostume, or Tumor.

2. *Avveia*, a *Dysury*, or Excretion of Urine with Trouble, Labour, or Pain. One Species of this is what we call *segyseia*, a *Strangury*, in which there is an Emission of Urine by Drops, with a burning Sensation. The Cause of both these Disorders is manifold; as principally the Acrimony of new fermenting Beer or Wine, or of their Lees; the acid, salt, alkaline, oleous, aromatic, bilious Acrimony of the Humours; an Excoriation of the Parts of the Bladder, or Urethra, by an Inflammation, some Ulcer, an Attrition by a Stone, and especially from an internal Exhibition of caustic Insects; and, lastly, from a Stoppage of the Passages by a Stone, or a Tumor in the Neck of the Bladder, or the Urethra.

3. An *Incontinence of Urine*, when the same flows without Effort or Consent of the Will, or Respiration. This Disorder generally proceeds from a Resolution, Dilatation, or Dissolution of the Fibres of the Sphincter of the Bladder, or a Consumption of the same by a Suppuration, or a Putrefaction of them by a Gangrene. See INCONTINENTIA.

4. *Διαβήτης*, a Diabetes which is a frequent and copious Discharge of chylous or lacteous Urine. The Cause of it is supposed to be too great a Laxness of the urinary Arteries, in Conjunction with an extraordinary Dilutedness of the Humours, both which proceed from Aquosities. *Boerhaav. Inst. Med.*

An ISCHURY.

A total Suppression of Urine is called *Ischuria*, *ixveia*, "an *Ischury*;" but a Diminution of the Action of making Water, is termed *Stranguria*, *segyseia*, "a *Strangury*;" tho' this latter Word is of much more extensive Signification, as comprehending every *Stillicidium* of Urine, which if not attended with Pain, and the Urine flows by Drops, is a lesser Degree of *Ischury*; but if it be painful, is to be referred rather to a *Dysury*, or Heat of Urine.

An *Ischury*, then, or a total Suppression of Urine, is of two Kinds, as it is commonly distinguished into the *true*, or *genuine*, which attends a full Bladder, and the *spurious* or *bastard* Kind; in which Affection the Bladder is empty, nothing descending into it from the Kidneys.

A *true* and *genuine Ischury* depends on three Causes; the first of these is an *Abolition of Sense in the Bladder*, on account of a Resolution or Obstruction of the Nerve which supplies it, or a Diversion of the Spirits, for want of which the Bladder feels no Stimulation, nor is it at all irritated to Expulsion, as is the Case in Deliriums, and soporose Affections.

A second Cause is a *cold Distemperature of the Bladder*, contracted from refrigerating Causes, either internal or external, which obtund the Sense of the Bladder, and weaken its expulsive Faculty.

A third Cause is a *Straitness of the Neck of the Bladder*, intercepting the Efflux of the Urine. Of this *Straitness* there are three Causes assigned by *Galen, de Loc. Affect. Lib. 1. Cap. 2.* For either, first, he says, the Muscle surrounding the Neck of the Bladder is swelled to such a Degree as to obstruct the Passage, which is the Case when it happens to be affected with an Inflammation, Scirrhus, Abscess, or any other Tumor; or,

in the second place, there is an Excrescence of some Caruncle, the Passage from some preceding Ulcer; or, lastly, the Obstruction proceeds from a Callus, or some other Substance, insensibly generated in Length of Time from a gross and viscid Humour. The Passage may be stopped up, also, by a Stone, a crude and gross Humour, grumous Blood, or Pus.

Moreover the Urine may be intercepted by a Compression of the Neck of the Bladder, from a Tumor of the incumbent neighbouring Parts; for Instance, the Uterus, when turgid with a large Foetus; the Intestinum Rectum, when stuffed with hard Faeces, or the Anus tumefied with the Haemorrhoids increased to a remarkable Bigness.

Again, a Suppression of Urine is sometimes occasioned by an excessive Quantity of Urine too long retained, by which the whole Body of the Bladder is distended in such a manner as to be incapable of contracting itself in order to Expulsion, from which Distension the Passage must of Necessity be contracted and closed up. Now a Repletion of the Bladder from too long a Retention of the Urine, happens in two Cases: The first is when a Person in Health, on occasion of ur-

gent Business, or when he is at Church, or at the Assemblies, at Feasts, riding in a Coach, or in other like Circumstances, for want of a convenient Opportunity of Time and Place, voluntarily suppresses his Urine: And, secondly, the Bladder is excessively filled and distended, so as to be incapable of contracting itself, from an Insensibility of the Stimulus of the Urine, on account of the dulled Sense of the Bladder, occasioned by an Affection of the Nerves which supply that Part, when the Nerves appropriated to the Constriction of the Sphincter Muscle may all the while remain unaffected. This was the Case of a certain Person, as we are assured by *Galen, de Loc. Affect. Lib. 6. Cap. 4.* from a Luxation of the Vertebrae of the Spine.

A *spurious Ischury* so called is, when the Urine is suppressed, the Bladder being empty, because there is no Afflux of Urine to that Part. The Cause why no Urine descends to the Bladder is of two Kinds; being either, first, because the Kidneys form no Urine, nor send it downwards; or, secondly, because the Ureters receive it not. The Kidneys may be injured in their attractive or expulsive Function; the first happens when either the Faculty itself receives Detriment, or the Object is unsuitable and wrong. The Faculty is injured by a violent Distemperature, and principally by a cold one, or is under an Impediment from an Obstruction either in the Kidneys, or the emulgent Vessels, proceeding from the Stone, or a Conflict of gross Phlegm, or Pus, descending thither from some superior Part; sometimes, also, the emulgent Vessels are obstructed by a Repletion from an immoderate Collection of Blood and Serum, an Instance of which *Riverius* gives in *Obs. 1. Cent. 1.*

The Attraction of the Kidneys is injured through the Fault of the Object, when the Serum is either consumed, as in burning Fevers, or diverted to other Parts, which is the Case in a Dropsy.

The expulsive Faculty of the Kidneys is in like manner injured by the same Causes, that is, by a Distemperature, Obstruction by a Stone, grumous Blood, gross Phlegm or Pus, or by an Inflammation.

The Ureters receive not the Serum, nor transmit it to the Bladder, on account of an Inflammation or Obstruction from the Stone, grumous Blood, Pus, or gross Phlegm, or from a Compression of the neighbouring Parts by Tumors.

It is to be observed, that both Kidneys, or Ureters, must be affected, in order to procure a total Suppression of Urine; for while there is an open and a free Passage through one of them, the Urine may continue to flow.

All the forementioned Causes may each of them be considerable enough to procure an entire Retention of the Urine, called an *Ischury*; but if they are too weak for that Effect, they produce only a partial and diminished Excretion, which we call a *Strangury*. Both Disorders proceed from the same Causes differing only in Degree.

The *true* and *proper Ischury* is known by the Weight and Tension of the Hypogastrium, and the circumscribed Tumor, which has the Figure of the Bladder. Its Causes are discovered from preceding and attendant Circumstances; for if the Disorder proceeds from a copious Collection of Urine, which impedes the Contraction of the Bladder, it may be learnt by Relation from the Patient, who will inform you, that he has omitted the necessary Business of making Water for a considerable Time, either on account of long Riding, or out of Respect to the Place, or the Presence of some honourable Person, and that he was never affected in those Parts before. If he happens to labour under a Delirium, Palsy, or any other Disorder, above enumerated among the Causes, the Suppression of Urine is justly to be ascribed to it.

Constrictions from Tumors of the same or neighbouring Parts, or from other Causes above-mentioned, may be known from the proper Symptoms of those Affections. Obstructions of the Urinary Passage may be discovered by introducing a wax Candle or Catheter, which, if they cannot penetrate, but stop by the Way, are a plain Evidence, that their Passage is obstructed by some Stone, Caruncle, or some other Matter that blocks up the Way. And these offensive Substances may be distinguished by the following Characteristics: If a Stone be impacted in the Canal, and the same be descended from the Kidneys, nephritic Pains have preceded; if the Stone be generated, or has long resided in the Bladder, the Symptoms proper to a Stone in the Bladder have, at least, in some slight measure, preceded the Affection. If a Caruncle hinders the Passage of the Urine, it is the Consequence of a virulent Gonorrhoea, or some Ulcer in the Canal of the Penis, which has for a long time been discharging purulent Matter. If the Obstacle be a Grume of Blood, a Concretion of Pus, or gross Phlegm, they will manifest themselves by an Excretion of some small Portions from the Penis in adhering to the Catheter when extracted.

A *spurious Ischury* is distinguished by its having no Tension, nor

nor any Tumor or Weight in the Region of the Pubes, but rather a Perception of a kind of Vacuity, or Emptiness in these Parts. There is no Desire to make Water, no Irritation in the Bladder; and when the Catheter is introduced, tho' the Passage be found free and open, no Urine comes away. Preceding Signs are Stones in the Kidneys and Ureters, an Inflammation, or great Plenitude, or excessive Drinking, not followed by a copious Discharge of Urine, and by that means occasioning too great a Repletion of the Veins; or, lastly, a burning Fever, or a Dropsy, by turning the Course of the Serum another Way, may be the Cause of a spurious *Ischury*.

As to the *Prognostics*: A Suppression of Urine is very dangerous, and if it exceeds the seventh Day, generally mortal. For the Serum retained in the Vessels infects and contaminates the Blood, regurgitates upon the whole Body, endangers Suffocation, and, being convey'd to the Head, there induces a comatous Affection.

A Suppression of Urine, which proceeds from a Wound of the Spine, a Fall, or a Luxation of the Vertebrae, is incurable.

If the Smell of Urine proceeds from the Mouth and Nostrils of the Patient; there is no Hope left of Recovery.

A Tenesmus, supervening a Suppression of Urine, portends Death on the seventh Day; a supervening Hiccough shews Death near at hand.

In the Cure of an *Ischury*, whether total or partial, our Intention is to be directed to the Removal of the Cause. And, first, with respect to the *spurious Ischury*, which depends on Affections of the Kidneys and Ureters, we are to address ourselves to the Cure of the Inflammation, nephritic Pains, and Stone of the Kidneys. But such an *Ischury*, proceeding from a Repletion of the emulgent Vessels, is to be treated by taking away a large Quantity of Blood, and by Hydragogues. A *true Ischury* is cured by Remedies which remove the Cause that produces it. And here, first, if it proceeds from an Inflammation of the Bladder, or adjacent Parts, such Medicines as are adapted to the Cure of such Inflammations are to be employ'd.

If the Suppression of Urine be caused by a Stone impacted in the Neck of the Bladder, it is to be removed by the following Method:

First, let the Patient be placed on his Back, with his Legs elevated, and be strongly shaken for a good while together, that the Stone may slip back into the Bladder; and if it cannot be moved by this means, it is to be impelled by introducing the Catheter. If the Stone has penetrated deeply into the Urethra, its Excretion is to be promoted by all manner of Ways, by gently impelling it with the Fingers, and so bringing it to the Extremity of the Penis; after that by Immersion of the Penis in warm Water, or warm Milk, or by immersing the Patient in a Semicupium, in order to relax and dilate the Passages. If the Stone can neither be extracted outwardly, nor impelled inwardly, we are directed by practical Authors to make a Ligature above and below the Place, and then to make an Incision in the Penis, and so take out the Stone.

An Obstruction of the Neck of the Bladder from an Inflammation, is cured by Remedies proper for an Inflammation. However, if the Urine be retained for a considerable time, a Wax-candle rubbed over with Oil of sweet Almonds, may be gently introduced, avoiding by all means the Catheter, lest, by exciting a Pain, the Inflammation should be increased.

A Suppression of Urine from a Caruncle is cured by an Extirpation of that Caruncle, which must be accomplished by proper Remedies introduced by Help of a Wax-candle, which must be managed by a Surgeon well skilled in such Operations. But when the Symptoms are pressing, for the Caruncle sometimes swells to such a Degree as to obstruct the whole Passage, we are under a Necessity of making a Way for the Efflux of the Urine by the Introduction of the Catheter, though it is to be feared, lest the Part being irritated should swell the more. Before we take this Method, however, we are to attempt a Revulsion by Phlebotomy and Vomiting, and, also, to try to diminish the Inflation of the Caruncle by an Application of Repellents to the Pubes and Perinæum, that a Way may be made for the Discharge of the retained Urine.

An *Ischury* owing to gross Phlegm requires Purgation; first, with *Diaphœnicon* reduced with Rhubarb into the Form of a Bolus, and afterwards with Turpentine frequently exhibited with Powder of Liquorice. After these, a Decoction of the Opening Roots with Oxymel, or Syrupus Byzantinus, may be given; not omitting, during the whole Course, the Use of emollient and opening Clysters, Fomentations, and Semicupiums. All such Remedies as are proper for dissolving and expelling the Stone are, also, convenient in this Case; and among other peculiar Remedies the following are approved by Experience:

Take Benedicta Laxativa, half an Ounce; Troches of Myrrh, two Scruples; Decoction of Savin, three Ounces;

mix them for a Potion. With this Remedy a Suppression of Urine, in a certain Woman, was cured in a short time.

If there be a Redundance of Phlegm in the whole Body, or particularly in the Head, an universal Purgation by Apozems for three or four Days together in the Beginning of the Disorder, will be of very good Service, Phlebotomy being premised.

A very good Medicine, also, in this Affection, is a Julap prepared of the Juices of Pellitory of the Wall, Sea-fennel, and Lemons, with Oil of sweet Almonds, prescribed for the Cure of the Stone in the Kidneys.

Syrupus Fernelii de Raphano, two Ounces the Dose, is, also, very effectual in this Case.

Dodonæus relates, *Lib. Conserv. Cap. 47.* that a Man of eighty Years was perfectly cured of a Strangury by once taking a Lixivium of Egg-shells incinerated and mixed with Spirit of Wine.

Arnaldus Villanovanus recommends Wine of Winter-cherries in the following Case, related in his Book *de Venis*: "There was in my Time, he says, a certain Cardinal, who for Days together had laboured under a Suppression of Urine, and was swelled very big, and his Case was said to be desperate. When all Remedies were of no Effect, at last by the Advice of a Quack, he took a Draught of Wine of Winter-cherries, and made a vast Quantity of Water, and was freed from his Disorder. By the good Success of this Experiment this poor and illiterate Quack grew celebrated and rich." This Wine is prepared as *Arnaldus* there describes it, by taking five, seven, or more Winter-cherries, and bruising them in White-wine, which must afterwards be strained, and so exhibited.

Millepedes, also, bruised in White-wine, and given, are very effectual in provoking Urine. The Oil of Scorpions of *Matthioli*, to the Quantity of five or six Drops, in Broth, or other Liquor, is a potent Diuretic.

The frequent Use of Crystal Mineral provokes Urine, especially where an Inflammation is feared, which is very often excited by too long a Retention of the Urine in the inner Coat of the Bladder.

Spirit of Salt has the same Effect, and in a much greater Degree.

Of common Remedies the Juice of Pellitory of the Wall depurated, and exhibited to the Quantity of four Ounces, with half an Ounce of Sugar, is of great Efficacy; it may be mixed with Sal Prunellæ, or Spirit of Salt.

If a Suppression of Urine, which is owing to a pituitous Matter, makes frequent Returns, there is no better Remedy than the Use of the nitrous and sulphureous Waters of hot Springs, which by frequent drinking and bathing are of mighty Efficacy in dissolving, absterging, and consuming the mucilaginous Matter.

A Person of Quality of this City, labouring under a Suppression of Urine for several Days, after trying many Remedies in vain, was cured by the Injection of the following Clyster, and retaining it two Hours.

Take of the Roots of Smallage, Parsley, Butchers-broom, Asparagus, Mallows, Marsh-mallows, each two Ounces; Pellitory of the Wall, two Handfuls; Seeds of Anise, Fennel, Dill, Caraway, Daucus, Bishops-weed, Bastard-saffron, Rue, and Cumin, with Bayberries, each half an Ounce; Flowers of Chamomile, Melilot, Dill, and Stoechas, each two Pugils: Boil them in red Wine to the Consumption of half; strain the Liquor, and in one Pint of it dissolve four Ounces of fresh Butter, two Ounces of Honey of Roses, one Ounce of brown Sugar, half an Ounce of Benedict. Laxativ. one Yolk of an Egg, Oils of Nuts, Dill, and Linseed, each one Ounce: Make them into a Clyster.

The Chymists, also, have Remedies which they highly extol for these Disorders, such as Spirits of Salt, Vitriol, Sulphur, and Turpentine, which they exhibit to the Quantity of half a Scruple in proper Waters, or in Chicken-broth. They recommend, also, for the same Purposes, Salt of Tartar, and Salt of Bean-stalks, exhibited from half an Ounce to an Ounce.

To make a Revulsion of the Humours from the Parts affected they prescribe an Emetic, by which means they boast to have cured not a few.

Through the whole Course of the Cure, Fomentations, Liniments, Cataplasms, Semicupia, and other external Remedies, the same as are prescribed in nephritic Pains, are not to be neglected. A good Remedy, among others of that Kind, is a Cataplasm of Pellitory of the Wall fry'd with Butter, or what is better, with Oil of Scorpions; also, a Bladder half full of Oil, which will be improved by boiling Scorpions in the Oil.

A common Topic in this Disorder is a Cataplasm of fry'd Onions with Swine's-fat, and an Addition of some Oils, applied to the Region of the Pubes and Loins.

But far more potent in Operation are raw white Onions bruised in a Mortar, and with Oil reduced into the Form of a Cataplasm, and applied to the Kidneys, Ureter, and Region of the Pubes.

A Cataplasm of bruised Radishes has the same Virtues.

When an Ichury is produced by Grumes of Blood, we must attempt their Dissolution by Remedies adapted to that Purpose. Of the Number of these are, Troches of Amber, the Rennet of a Kid, the *Coagulum* of an Hare, Oxymel simple, and of Squills, Syrup of Vinegar, and the like. Among external Remedies, Cow-dung is of admirable Efficacy, according to *Aetius*, *Tetrab. 3. Serm. 2. Cap. 27.*

In the last Place, when a Suppression of Urine, or a Strangury, proceeds from Pus, absterging and incising Remedies are required, and such as are usually prescribed in Ulcers of the Kidneys and Bladder. See ISCHURIA.

Of a DYSURY, or HEAT OF URINE.

By the Word *Dysury*, that is, *Difficulty of Urine*, we understand any dolorific or painful Excretion of Urine, which the Moderns generally express by *Ardor Urinae*, "an Heat of Urine." Numbers of Authors confound this Affection with a Strangury, which they will have to be attended, also, with a painful Sensation, and to be distinguished from a *Dysury* only in that a lesser Quantity of Urine is discharged under it; for which Reason it is, also, called *Stillicidium Urinae*, "an Excretion of Urine by Drops." But we chose, for the sake of Perspicuity, to call a Diminution of the Quantity of the Urine, not attended with Pain, by the Name of *Stranguria*; and comprehended it under the same Chapter with *Ichuria*, because the same Method of Cure serves for both; and proceed, in this Chapter, to treat of dolorific Excretions of Urine, comprising them all under the Name *Dysuria*, "Dysury;" because they all proceed from the same Causes, and require the same Remedies.

The proximate and immediate Cause of dolorific or painful Miction, or making of Water, is, a Solution of Continuity in the sphincter Muscle, or *Urethra*; and therefore whatever is capable of making a Solution of Continuity in those Parts, may excite a *Dysury*, or *Heat of Urine*.

Amongst those Causes, the principal and most frequent is, the Acrimony of the Urine, which is sometimes simple, and without the Mixture of other Humours, as proceeding only from an hot Distemperature of the Viscera, or the Use of hot and acrimonious Food; but it is more frequently procured by a Mixture of acrid Humours, such as Bile, or salt Phlegm. Sometimes a Distillation of Pus from an ulcerated Bladder or Kidneys, is the Cause of this Acrimony in the Urine; sometimes a kind of white and milky Substance, discharged in great Quantity with the Urine, excites this Heat of Urine: This Substance, the Generality of Physicians take to be purulent, and to proceed from the Kidneys: But their Opinion is rejected by *Sennertus*, for this Reason, because if the whole Kidneys were resolved into Pus, they could not supply such vast Quantities as are sometimes excreted every Day, for some Weeks together. He supposes it, therefore, to proceed from a depraved Concoction, first, in the Stomach, and afterwards in the Liver; since an Error of the first Concoction can never be rectified in the second. Hence the Chyle, and after that the Blood, is left in a crude State, without due Depuration from the saline and tartareous Parts, which ought to be separated in the first Concoction; and these Particles, being attracted by the Kidneys, and afterwards transmitted to the Bladder, excite that dolorific Sensation in the Act of making Water. He confesses that he was induced to be of this Opinion, from observing the following Case: A learned Gentleman, who had laboured for some Weeks under an Heat of Urine, and voided the same in considerable Quantities, but so full of a white Matter, that it took up half the Urinal; and with a great deal of Pain, was at last, after trying various Sorts of Remedies to no Purpose; perfectly cured only by drinking Malmsey Wine.

A latent Stone in the Bladder, by Allision to its Neck, creates a Pain in making Water; the same may be excited by gross Sand vellicating the Entrance into the *Urethra*.

An Inflammation or Ulcer of those Parts excite, also, an Heat of Urine, since the Parts, being rendered more exquisitely sensible by those Affections, suffer considerably even from Urine of a good Temperament, just as we see in external Inflammations or Ulcers, the Parts affected not being able to suffer the least Touch from Objects otherwise suited to them. Thus, in a Gonorrhoea, while the Inflammation of the *Urethra* continues, an Heat of Urine is constantly felt.

The Diagnosis of this Distemper is manifest of itself; for the Pain, under Excretion of Urine, is so sensible and acute, as frequently to make the Patient cry out: But the diagnostic Signs of the Causes are to be distinguished in the following manner:

If the Heat of Urine proceeds from its Acrimony, it will appear thin, and high-coloured, and sometimes of a flameous Colour; or it will be remarkable for a Mixture of bilious, pituitous, or purulent Matter; or there will be a Distemperature of the Viscera, or an hot and acrimonious Diet, a sultry Season, or the like preceding procatactic Causes.

As for Stone, and Inflammations of those Parts, and the like Causes, they will manifest themselves sufficiently by their proper Signs.

With respect to the Prognosis, this Affection is not dangerous in itself, but is very afflictive to the Patient; and, with regard to the various Disposition of the Causes, is often difficult to be cured, especially in aged Persons, whom, if decrepit, it accompanies to the Grave; and at whatsoever Age it happens; if it continues long, it causes an Ulceration of the Bladder, and its Neck.

The Cure consists, in the first Place, in the Removal of the Cause: And thus, if the *Dysury* proceeds from the Stone, an Inflammation, or an Ulcer of the Bladder, or its Neck, the Cure is to be managed with an Eye to Indications taken from these respective Diseases; but such Remedies as are, also, proper for mitigating the Symptoms, will be proposed below.

A *Dysury* proceeding from the Acrimony of the Urine; and the Heat of the Humours mixed with it, is to be treated with the following Remedies.

In the first Place, Phlebotomy is necessary to be administered; in order to correct the intemperate Heat of the Liver, and other Parts; and the same is to be repeated several times, with regard to the Greatness of the Plethora, or the Danger of an Inflammation: 1. In the Right Arm, for Evacuation and Revulsion; after that, in the inferior Veins, for Derivation from the Part affected; on which Account *Hippocrates*, and his Follower *Galen*, in all Affections of the Parts below the Kidneys, prescribe opening the inferior Vein.

Purging is, also, proper in this Disease, but only with such Cathartics as are of a lenient and cooling Quality; for otherwise the Heat of Urine would be highly exasperated; and therefore some, in this Case, will not venture to prescribe more than a Bolus of simple Cassia, which is indeed preferable to other Purgatives. But it will be still more refrigerating, if mixed with the Pulp of Tamarinds, or a Solution of Cassia in a Decoction of Lettuce, Purslane, and the Tops of Mallows, may be exhibited for several Days together, that the Conflux of the acrimonious Humours to the urinary Parts may be gradually derived to the Intestines. But if the Redundance of the depraved Humours seems to require stronger Medicines, we may have recourse to the following Potion:

Take Leaves of Lettuce, Purslane, Plantain, and Tops of Mallows, each half an handful; Tamarinds, Half an Ounce; citrine Myrobalans, one Dram: Boil them to six Ounces; strain the Liqueur, and infuse therein, of recent Extract of Cassia, one Ounce: Strain the same again, and dissolve therein, of Rhubarb infused in Water of Lettuce, with yellow Sanders, one Dram and an half; Manna, and Syrup of Roses, one Ounce: Make a Potion.

In a long *Dysury*, a purging Opiate would be of Service.

Vomiting excited by Emetics of the gentlest Sort, must be highly beneficial; for it makes a Revulsion from the Part affected, and avoids those Inconveniencies which usually attend Evacuations by Stool. It will therefore be proper to be used in such Subjects as can bear it with Ease, and to be repeated once or twice in a Week.

By Clysters, frequently injected, not only the acrimonious Humours are derived to the Intestines, and, by degrees, purged off, but the hot Distemperature and Inflammations of the Bladder, and adjacent Parts, are mitigated and corrected. A Formula, for this Purpose, you have as follows:

Take of Roots of Marshmallows, one Ounce; Leaves of Mallows, Violets, and Lettuce, each one Handful; Flow-ers of Water-Lily, and Barley cleansed, each one Pugil: Boil them to a Pint; strain the Liqueur, and in the same dissolve of Cassia newly extracted, one Ounce; one entire Egg; Oil of Violets, two Ounces; for a Clyster.

Mucilages of the Seeds of Marshmallows, Quinces, and Fenugreek, may very properly be mixed with Clysters, in order to mitigate Pain.

But as Lenients for mitigating Pain, and Coolers for correcting the Heat, Clysters consisting purely of Milk, or of the same mixed with the above Mucilages, are usually most efficacious; and we have known some Patients who, after long Pains and Afflictions under this Disorder, have received Relief only from this Remedy, and a Semicupium.

Remedies to be taken at the Mouth are very numerous, and found by Experience to be of Service, as Demulcents, in correcting the Heat of Urine, and the Distemperature of the Parts. Some of the principal are as follow:

Take of the Waters of Purslane, Lettuce, Roses, and Water-Lilies, each one Ounce; Syrup of Violets, and Nymphaea, each six Drams; Sal Prunellæ, one Dram: Mix them, for a Julap, to be often repeated. Or,

Take Roots of Marshmallows, one Ounce; Leaves of Lettuce, Endive, Purslane, and Tops of Mallow, each one Handful; Seeds of Melon, Gourd, Mallow, Lettuce, and white Poppy, each three Drams; Jujubes, and Sebestens, each six Parts; Violets, Roses, and Water-Lilies, each one Part: Boil them to a Pint and an half; strain them; and in the Liquor dissolve of the Syrups of Violets, Jujubes, and white Poppy, each one Ounce and an half; Sal Prunellæ, half an Ounce: Make a Julap, for four Doses, to be taken twice a Day.

Emulsions, also, are of Use, tho' they are diuretic; because they are cooling, and gently cleanse the urinary Passages. Of this Nature is the following:

Take of the Four greater cold Seeds, and those of white Poppy, each three Drams; sweet Almonds blanched, and infused in cold Water, half an Ounce: Pound them in a marble Mortar, pouring thereon, by degrees, of the Decoction of Barley decorticated, Liquorice, Purslane, and the Tops of Mallow, one Pint and an half: Make an Emulsion for three Doses; adding, to every Dose, of Syrup of Violets, one Ounce; Sal Prunellæ, one Dram. If the Pain be greater than ordinary, some Syrup of Poppies may be mixed with it. A Dram of the Powder of Gum Arabic is, also, proper to be added, or the *Syrupus de Althæa Fernellii*.

Broths may, also, be prepared in the following manner:

Take of the Roots of Marshmallows, half an Ounce; Mal-lows, one Handful; Liquorice, half an Ounce; Seeds of Quinces, one Dram: Boil them in Broth of a Chicken or Hen; to be repeated for several Days together.

Whey of Goats Milk, taken in large Draughts, is, also, of signal Service.

Of no less, or rather more Efficacy, in the Absence of a Fever, is Milk taken by itself, especially Asses Milk, which not only deterges, but is a Demulcent, mitigating Pain, and correcting the Acrimony of the Humours.

If the Disorder be of long Continuance, mineral refrigerating Waters, especially such as are impregnated with Alum and Iron, or have a little Tincture of Vitriol, are highly serviceable: For it has been found, by Experience, that the Waters of *Mayenne*, which are endued with the like Virtue, have sometimes cured these Disorders, tho' become inveterate.

Instead of the Julaps above described, a simple Decoction of Mallows, with Syrup of Violets, may be used; by which Remedy, *Forestus, Obs. 4. Lib. 25.* tells us, he was cured of a very severe Dysury. He found no Relief, he says, from any thing, so much as from the aforesaid Decoction; and he informs us, that, with the same Remedy, he cured others who were in the like Circumstances.

The same Author, *Obs. 3. of the same Book*, tells us, that one *Jacobus Joannis*, an Apothecary, cured himself, and others, with Rose-water, beaten with the White of an Egg, and drank at two Doses.

And he further informs us, that an old Man of *Delft* was cured of this Disorder by a Decoction of Chamomile-flowers in Milk, to which he was advised by an old Woman.

Amatus Lusitanus, Curat. 56. Cent. 6. relates, that a Woman who laboured under a Dysury, and could not be cured by a Number of Medicines, which he there describes, was perfectly recovered by a Conserve of the Flowers of Mallows. Of this Conserve she took, every Morning and Evening, the Quantity of one Dram, drinking afterwards a Quarter of a Pint of Water of Mallows. And the same Author, *Curat. 59. ibid.* tells us, that an old Man, who laboured under a Dysury, after excreting a Stone, was cured by the same Conserve, taken in the same manner, in less than three Days. The Conserve of the Flowers of Marshmallows is of the same, or greater Efficacy.

Some experienced Physicians commend Troches of Alkekengi, or Winter Cherries, exhibited a Dram at a time, in some con-

venient Liquor; because they are diuretic, and at the same time obtund and correct the Acrimony of the Urine.

If the Pain be very sharp and pressing, it may be of Service, while the Patient makes Water, to immerge the Penis in warm Milk, or a Decoction of Mallows, and the Seeds of white Poppies; and even warm Water, by itself, is of no small Efficacy in diminishing the Heat and Pain.

By way of Potion, a mild Decoction of Mallows, mixed with Syrup of Violets, or impregnated with Conserve of Roses, will be of signal Benefit.

For Mitigation of the Heat of Urine, it has been found beneficial, to make Injections into the *Urethra*, composed of Milk, Emulsions of the Cold Seeds, Plantain-water, and Whey; with which may be mixed, the Liquor of the White of an Egg well beaten; or a Scruple of the Troches of Winter-cherries.

External Remedies, also, are not a little conducive to the repressing of those Heats: Such are Baths, and Semicupiums; Fomentations of the *Pubes* and *Perinaeum*, by Decoctions of cooling Herbs; Liniments prepared of Oil of Roses, Oil of Water-Lilies, Ointment of Roses, *Unguentum refrigerans Galeni*, *Populeum*, with Camphire, and Mucilage of *Psyllium* (Fleawort) extracted in Plantain-water. Refrigerating Epithems, and the aforesaid Liniments, are, also, to be applied to the Kidneys and Liver, for mitigating their hot Distemperature.

When there is a Flux of acrid and bilious Humours, it will be convenient, in order to their Derivation, to apply a Caustic to the Right Leg, or to open the hæmorrhoidal Veins, which is of excellent Service in all Affections of the Kidneys and Bladder, according to *6 Aph. 11.* since, from the same Branch, called the *Ramus Splenicus*, are propagated those Veins which are distributed over the Kidneys, Bladder, and Hæmorrhoids. *Riverii Prax. Med. Lib. 14. Cap. 3.*

BLOODY URINE.

An Hæmorrhage from the urinary Passages, generally called a Discharge of bloody Urine, proceeds from a Rupture or Corrosion of the Vessels either of the Kidneys or Bladder, in such a manner, as that they evacuate their Contents sometimes with, and sometimes without any Urine. This Disorder is more or less dangerous, according to the Circumstances with which it is accompanied.

It frequently happens that Physicians are egregiously deceived in determining whether the Blood is discharged with the Urine, or not. If pure Blood, in considerable Quantities, suppose a Pint, or more, as it sometimes happens, be discharged with the Urine, or Blood, without any Mixture of Urine, be evacuated by the urinary Passages, the Matter is past all Doubt: But if the Blood is mixed in a small Quantity with the Urine, a more careful Scrutiny is requisite; for often Urine of a bloody Colour is discharged, and deposits a Sediment which exactly resembles Blood: On the contrary, Urine of a brown or blackish Colour is discharged, which is mixed with Blood, tho' no such thing is suspected. For this Reason, we shall enumerate the certain Signs from which this Variation and Difference is to be judged of. If, then, the Redness of the Urine, by which it resembles Blood, proceeds from sulphureous Particles exalted by an Admixture, especially, of alkaline Salts, then, as soon as it is discharged, it appears clear and transparent, whilst the Sediment is of an incarnate and cinnabarine Colour. But this Sediment, by the Application of a sufficient Heat, again dissolves in the Urine, which becomes clear and transparent as before; whereas, when the Urine is red, by means of Blood, it is opaque, and somewhat thick, whilst the Sediment is grumous, of a black-redish Colour, and is either not dissolved at all, or again absorbed by the Urine: Besides, if the Redness of the Urine proceeds from Blood, it tinges the Cloth thro' which it is strained, with a redish Colour, which does not happen when the high Colour of the Urine proceeds only from Salts.

As there are various Passages for the Secretion and Excretion of the Urine, it is of Importance to know whence the Blood discharged flows: If pure Blood is copiously and suddenly discharged, without Pain, *Hippocrates, in Sect. 4. Aph. 78.* justly concludes, that the Blood comes from the sanguineous and vascular Substance of the Kidneys: But when the Quantity of Blood is small, of an obscure blackish Colour, with or without a purulent Matter, and especially if there is a Pain during or after the Discharge, then it is certain that it proceeds from a Wound or Ulceration of the Bladder. That the Discharge of Blood from the Kidneys is without Pain, and that from the Bladder accompanied with one of an highly intense Kind, is to be ascribed to the Diversity of the Structure of these Parts; for the Kidneys are not possessed of an exquisite Degree of Sensation; but when the Blood attempts its Passage thro' the highly-sensitive nervous Coats of the Bladder, an intense Pain must necessarily be produced: Nor is it surprising, that, on such an Occasion, the Patient should be seized with a Train of violent

violent Symptoms; such as Deliquiums, Difficulty of Breathing, an obscure, small, and sometimes frequent Pulse; a Nausea, Anxiety of Mind, and cold Sweats. Thus *Hippocrates*, in *Lib. 4. Aph. 80.* informs us, "That if any Person frequently discharges by Urine Blood, and grumous Matter, and at the same time labours under a Strangury, accompanied with Pain in the lower Part of the Abdomen and Perinæum, such a Person labours under a Disorder of the Parts adjacent to the Bladder." When the Blood is mixed with the Urine in consequence of a Wound of the Ureters by a large or sharp Stone, there is an acute Pain about the Loins, and iliac Region, and a difficult Discharge of sandy Urine, whilst the Disorder is discovered by the other Signs of a Stone lodged in the Ureters. If, in consequence of a Wound of the Blood-vessels of the Bladder, and its Coats, any Blood is discharged, the Urine is not only evacuated with great Pain, and sometimes after a previous Obstruction; but, also, grumous Concretions, full of gross fabulous Molecules, are sometimes discharged with it: And this, also, on certain Occasions, happens, when a Stone, firmly impacted in the Kidneys, wounds them.

There is still another Species of bloody Urine, which is rarely mentioned by Authors, and which proceeds from a too great Distention and Aperture of the Vessels of the Bladder, or rather of the Sphincter. *Cælius Aurelianus*, in *Traët. de Morb. Chron.* speaks of this Disorder in the following Manner: "As in the Anus and Vagina or Neck of the Uterus of Women, so, also, in the Bladder, Hæmorrhoids are sometimes generated, which discharge Blood, at various Intervals. This ought at first carefully to be adverted to, by the prudent Physician, since the Effusion is not at its greatest Height at first, but is gradually augmented, whilst the Patient is now-and-then seized with Deliquiums, and the Blood retained about the Pubes with considerable Pain; for sometimes inflated and tumid Hæmorrhoids produce a Difficulty or Suppression of Urine, by the Greeks called *Dysury*, or *Ischury*." *Archigenes* affirmed, "That as the Menfes and Hæmorrhoids had stated Periods; so, also, a Plethora sometimes vented itself, at certain Seasons, by the Kidneys and Bladder." *Hæurnius*, in *Comment. in Aph. 78. Sect. 4.* when treating of the different Parts from which the Blood is discharged, speaks in the following manner: "The Blood discharged from the Bladder is not intimately mixed with the Urine, but becomes grumous when it subsides; and this grumous Matter, which is sometimes evacuated without Urine, produces a Pain about the Bladder; but Blood discharged from the Kidneys is in a large Quantity, and so exactly mixed with the Urine, that the whole Urine seems to be nothing but a thin diluted Blood: But the Blood immediately subsides, tho' it remains liquid, and is by no means concreted."

But we are not to confound a Discharge of bloody Urine with an Evacuation of bloody Semen; for it frequently happens, that, in Persons labouring under a virulent Gonorrhœa, when the *Prostata* are relaxed, by the too great Afflux of Lymph and Serum, not only the seminal Liquor, but, also, a mucid Serum, full of small Particles of Sand, and sometimes Blood evacuated from the Mouths of the Vessels corroded by the Acrimony of the Matter, is discharged from the Urethra, without any Urine.

We are, also, carefully to distinguish between a Discharge of bloody Urine, and that Evacuation of Blood which is made from the Integuments of the Penis. I have known several Instances of Men, in whom, at certain Periods, a large Quantity of pure Blood has, for several Weeks, been discharged from the Penis, after a preceding tensive Pain of the Groin and Thighs. *Stalport Vander Wiel*, in *Cent. 1. Obs. 80.* has collected Instances of the same Kind. But, in this Case, the Blood discharged is not mixed with the Urine, but is discharged by itself, Drop by Drop, from the Ramification of the external hæmorrhoidal Veins, which is distributed to the Pudenda.

We are, also, carefully to distinguish between a critical and salutary Discharge of Blood, and that which is morbid and prejudicial: The former most frequently happens in large Quantities from the Kidneys, and sometimes but rarely in a small Quantity from the Sphincter of the Bladder, without Pain, or great Uneasiness, and returns at certain Periods. This principally happens by a Translocation of the Blood which ought to be eliminated by the Menfes or Hæmorrhoids, when these Evacuations are either obstructed, or suppressed. I have seen such critical Discharges of Blood from the Penis, in young and old Men of plethoric Habits, succeed a Cessation of the hæmorrhoidal Flux, or an Omission of usual Venesection, without any manner of Danger: I have, also, seen Discharges of bloody Urine, in Women of eighty Years of Age, who lived high, and enjoyed good Health, especially if, after the Cessation of their Menfes, they neglected Venesection.

Besides, I have frequently observed, that old Persons, when the hæmorrhoidal Discharge ceased, and middle-aged Men,

afflicted with the blind Hæmorrhoids, after violent Commotions either of Body or Mind, have discharged a large Quantity of Blood of a brownish Colour, like Coffee, without any Difficulty of Urine; and this Blood, undoubtedly, proceeds from the Blood-vessels about the Sphincter of the Bladder: For the external hæmorrhoidal Veins communicate with the Bladder, and distribute Ramifications to it. But it is not so with the internal Hæmorrhoids, whose Ramifications distributed to the Bladder, have not, as yet, been seen by any Anatomist.

This Excretion of Blood with the Urine, arising from the Suppression of other sanguineous Excretions, especially the Hæmorrhoids, principally happens from the Kidneys, whilst the Blood, accumulated and conveyed thro' the inferior mesaraic Artery to the Coats of the *Intestinum Rectum*, not finding a Passage there, as it were, regurgitates to the Trunk of the great Artery, or is rather there collected in great Quantity; and, being conveyed to the arterial Vessels of the Kidneys, which, both in Number and Bulk, exceed the emulgent Veins, by distending and opening their Orifices, passes to the urinary Ducts which are connected with the Extremities of the small Arteries, from which it is conveyed to the Mouths of the Papillæ, thence to the Pelvis, and thence into the Ureters and Bladder. In such a Case, therefore, neither *Anastomosis*, nor *Diæresis*, nor *Diapedesis*, so much talked of by Authors, obtain.

The Bladder is, also, greatly subject to Excretions of Blood; because, on account of its perpendicular and low Situation, the Return of the Blood from it thro' the Veins, is very difficult. Hence it is, that, in the tumid external Hæmorrhoids, or the internal Hæmorrhoids, when obstructed, especially in plethoric Patients, the Blood accumulated and stagnant there, preternaturally enters the Orifices of the capillary Vessels of the Bladder, or rather of the Sphincter.

The Suppression or Cessation of the hæmorrhoidal Discharge by any Cause whatever, is the principal Cause of that Species of bloody Urine in which the Blood is conveyed from the Kidneys. *Hercules Saxonia*, in *Lib. 3. Cap. 4.* gives us an Instance of a Person of Distinction who, during five Years, labouring under a Suppression of the Hæmorrhoids, now-and-then evacuated from the Urethra large Quantities of Blood, before he discharged his Urine. *Rolfinkius*, in *Dissert. Anatom. Lib. 5. Cap. 26.* tells us, "that a Person of Distinction, subject to the hæmorrhoidal Flux, upon having it suppressed, fell into a Discharge of bloody Urine, which lasted for several Weeks, but disappeared when the Hæmorrhoids were recalled in a very moderate manner." *Reiseli*, in *Epistol. 64.* tells us a memorable Story of a Shepherd, who, having a Suppression of the Hæmorrhoids for three Years, evacuated sometimes such a Quantity of pure Blood, without any Urine, as to fill a Chamber-pot; nor had the Patient, ever in his Life, used Venesection: But after he had three Paroxysms of this Kind returning at stated Periods, limpid and natural Urine was discharged. But when, by the Advice of his Physician, he used Wine pretty liberally, took Pills prepared of Aloes impregnated with Juice of Succory, and Extract of the Troches of Alhandal, the Hæmorrhoids returned, and his Disorder ceased.

Tho' all violent Exercise, in plethoric Persons, lays a Foundation for Hæmorrhages; yet no Species of Exercise has a more direct Tendency to excite a Discharge of bloody Urine, than Riding. Various Instances of this occur in practical Authors: Thus *Riverius*, *Cent. 2. Obs. 13.* gives us an Account of a Man, of fifty Years of Age, who discharged bloody Urine every time he rode. *Hollerius*, also, in *Aphor. 78. Sect. 4.* *Hippocrat.* speaks in the following manner: "If some Persons ride hard, or use immoderate Exercise, they discharge Blood from their over-heated Kidneys." And, a little after, says he, "I am of Opinion, that bloody and turbid Urine was discharged by a reverend Bishop, both on account of the Dilatation made in the Cavities of the Kidneys, and in the urinary Passages, on account of the excessive Heat, first generated by the violent Motion of the Chariot driven quickly in a rough Road, which agitated his whole Body, and especially the Region of his Back; and then, by the succeeding excessive Heat; whilst, with a Coat of Skins, he ascended the Mountain under a scorching Heat of the Sun. By all these Things, so great an Heat was excited in the Parts about the Kidneys, that, on account of their too great Dilatation, bloody Urine was discharged. Hence it is, that even now, when he is fatigued, or uses violent Exercise, his Urine is turbid, and bloody." The Reason why Riding, which is of great Efficacy in curing other chronical Diseases, disposes to Hæmorrhages of the Kidneys and Bladder, is, that by the Compression of the Veins in the Thighs, the *Perinæum*, and the *Anus*, the Return of the Blood is greatly retarded. Hence the Quantity of the Blood is enlarged in the Arteries, and its Motion in the superior Parts increased, especially about the

Loins, by means of the succussory Agitation. Thus the Afflux of the Blood being rendered brisker, the emulgent Arteries, at last, easily open. For *Malpighi*, in *Tr. de Remibus*, justly observes, "That, if we except the Lungs, there is no Part of the human Body more subjected to the Injuries of a redundant Blood than the Kidneys."

A Stone in the Kidneys is, also, frequently the Cause of a Discharge of bloody Urine, which is more troublesome and dangerous than the former: Of this there are many Instances; such as that related in *Horstius*, *Lib. 4. Obs. 37.* where, without any Pain of the Loins, nephritic Patients, especially when plethoric, upon using violent Exercise, are observed to discharge bloody Urine. This probably happens, because a pretty large Stone, of a sharp Figure, may for a long time remain without Pain in the Kidneys, and yet, by its Compression and Attrition, excited by Exercise, considerably injure the vascular Substance of the Kidneys, greatly hurt their natural Functions, and, by that means, lay a Foundation for an Eruption of the Blood: For when the Stone, by its Bulk and Weight, compresses the Ramifications of the emulgent Vein, by hindering the Passage of the Blood thro' them, it proves the Cause why the Blood copiously and impetuously conveyed thro' the small emulgent Arteries, and their capillary Ramifications, which terminate in the urinary Ducts, greatly distends the former, and at last makes its Way into the latter, which, in a natural State, were only destined for the Conveyance of Urine: And this happens more violently and infallibly when in Persons disposed to the Stone, various Medicines which force Urine, and the Stone, are exhibited; which is a common tho' a wretched Custom, especially if these Medicines are of the hot Kind; such as Preparations of Turpentine, Amber, and Juniper: For, in such a Case, the Stone, pent up in the Kidneys, by corroding, excoriating, and dilacerating the small Vessels of the Kidneys, produces an Exulceration; in which Case, Pus and Blood drop thro' the Ureters into the Bladder, and, consequently, a painful Discharge of some Portion of the Urine, with which corrupted Pus and Blood are evacuated, is produced. This, also, happens the more rarely, when the Ureters are exulcerated by a Stone.

There is, also, a copious and dangerous Discharge of bloody Urine, when, from an Exulceration of the Bladder, arising from a copious, acrid, and stagnant Blood, a mucous, purulent, and bloody Matter descends into its Cavity; for, in this Case, the Urine is discharged with intense Heat, intolerable Pain, and Difficulty, whilst the Disorder is accompanied with Tremors and convulsive Motions of the Limbs, attended with Colds and Tremblings. I have, also, frequently seen this happen in Persons labouring under virulent and inveterate Gonorrhoeas, whilst an acrid and corrosive Matter flowed from the Genitals, and corroded the adjacent Parts. When this Case happens, and when the Substance of the Kidneys or Bladder is corrupted, and a purulent and putrid Matter is secreted, fursuraceous Urine is discharged, with small Caruncles or Substances resembling Hairs or Worms in it, which can never come from the Bladder, since it is not possible they should be its Filaments. They must, therefore, proceed from the mucous Matter contained either in the Kidneys, or Bladder, concreted into such a Form and Consistence.

Another Species of bloody Urine may be produced by external Causes, such as Contusions, Falls, Blows, and the lifting of Burdens: This frequently occurs in Practice, tho' it is not very easy to account for it: For if it proceeded from a Rupture of the Vessels in the Kidneys, or a Solution of Continuity in them, it could not be so speedily cured by Venesection, and such Things as dissolve the Blood. I am rather of Opinion, that, by the Contusion or Contorsion, especially of the Blood-vessels, and the Stagnation of the Blood there, its Circulation through those wounded Parts is hindered, by which means the Impetus and Quantity of the Blood is increased in the internal Vessels; and when these, especially in plethoric Persons, are distended, the Blood is easily discharged from them. This very easily happens in the Kidneys, if a Blow has been inflicted on that Region. Hence there are Instances in which Discharges of bloody Urine have succeeded Luxations of the Vertebrae. As *Hildanus*, in *Cent. 2. Obs. 10.* observed a Dysentery produced by the Amputation of a Leg, so I knew a Discharge of bloody Urine succeed a Fracture of the Bone of the Leg: So that it is easy to conceive how, by a Contusion of the Veins, and a Stagnation of the Blood elsewhere, some Part of it may be discharged through the Urethra.

It is certain from Experience, that Discharges of bloody Urine may be produced by violent Gripings of the Abdomen, by acrid Purgatives, and by strong Diuretics, such as Cantharides; but this Symptom is owing to the spasmodic Stricture of the Veins, by which the free Circulation of the Blood is intercepted: Hence we may easily give a Reason why the Measles and Small Pox, especially of the malignant Kind, are sometimes

accompanied with this terrible Symptom. There are Observations in some Authors, in which it is affirmed, that, by Venticulators, in which there are Cantharides, a Discharge of bloody Urine is sometimes produced: But as I never observed any such thing, we may justly suspect that the bloody Urine proceeded from some other Cause.

No Discharge of bloody Urine is free from Danger: For though, at the Beginning, it may appear critical and salutary, on account of the Redundance of Blood produced by a Suppression of the Menfes, or Haemorrhoids, yet it is dangerous, because it not only easily recurs and exhausts the Strength, but, also, if an Error in Regimen is committed, or if it is imprudently treated with Styptics, an Inflammation and Corruption are readily induced on the Kidneys, or Bladder: It, also, frequently happens, that a certain Portion of grumous Blood descending from the Kidneys, is so firmly impacted in that Part of the Ureter, where it is obliquely inserted into the Bladder, as to produce a violent Ischury, not to be cured without the greatest Difficulty. Sometimes, also, Blood becomes grumous in the Cavity of the Bladder; and, adhering firmly to the Sphincter, produces an intense Pain, and a total Suppression of Urine. The same, also, happens, when the Blood-vessels of the Sphincter, like the blind Haemorrhoids, become turgid with thick Blood.

The most dangerous Species of bloody Urine is that which proceeds from a profound Wound or Ulceration of the Kidneys or Bladder, and is accompanied with an intense Pain, and an Evacuation of Pus: We are not, however, to take the mucous and glutinous Sediment, sometimes observed in bloody Urine, for Pus, which generally floats on the Surface; for the Quantity of this Sediment is often so great, that if it proceeded from an Exulceration of the Kidneys, they would soon be consumed by it: It is rather a Mucosity which drops from the too much relaxed glandular Coat of the Bladder and Urethra, or from the wounded Prostate; after which, it is mixed with the Urine.

Having thus considered the various Causes and Seats of bloody Urine, it is incumbent on the skilful Physician to have a due Regard to all these, both in his Measures for the Prevention and Cure of this Disorder: When, therefore, a Discharge of bloody Urine arises from a Redundance of Blood, or is to be dreaded from that Cause, nothing is more safe and efficacious than Venesection; only observing this Caution, that, during the Paroxysm, it is to be performed in the superior Parts, that is, the Arm; and the Quantity to be taken away is to be estimated by the Patient's Strength, and Habit of Body. But if a Discharge of bloody Urine arises from a Suppression of the Haemorrhoids, it is safer, in order to prevent a Relapse, to open a Vein in the Foot: The same Practice is, also, to be observed, when, in a spasmodic Colic, and violent Gripings of the Abdomen, a Discharge of bloody Urine happens, on account of the Stagnation and Congestion of Blood about the Coats of the Intestines, and its Incapacity of being discharged from the haemorrhoidal Veins. Besides, as this Disorder generally returns at stated Periods, it is so much the more necessary we should prevent its Approach by seasonable Venesections.

When this Disorder derives its Origin from a violent Ebullition or Expansion of the Blood, with or without a Plethora, which generally happens by violent Commotions either of Body or Mind, or by the Abuse of hot Medicines, which too strongly agitate the Blood, besides Venesection, nothing is more efficacious than the Use of nitrous Medicines, and such as check the elastic intestine Motion of the Blood; or Refrigerants, the best of which is depurated or artificial Nitre prepared with Spirit of Nitre and Salt of Tartar, mixed with earthy and absorbent Substances, and exhibited either in the Form of a Powder, or a Potion. The best Vehicles for this Medicine are, sweet and acidulated Whey, a Decoction of Barley, pure Spring-water, or Spring-water mixed with an equal Quantity of *Selteran* or *Tonstein* Waters, a Decoction of Hartshorn and Vipers-grass, or small Ale into which a sufficient Quantity of the Tincture of Roses, or Daisy-flowers, with Spirit of Vitriol, but not of Salt, whose volatile Acrimony is prejudicial to the Lungs and Kidneys, has been dropped.

As Costiveness is of great Force, not only in generating, but, also, in sustaining this Disorder, partly because by the Flatulencies and Spasms arising thence the equal Circulation and Distribution of the Blood is hindered, and more copiously conveyed to one, especially the weakest Part, than others, and partly because many impure, acrid, and bilious Sordes, are conveyed from the *Prima Via* to the Mass of Blood and Humours, hence nothing is a better Preservative against this Disorder, or more efficacious for preventing a Relapse, than keeping the Body duly soluble: But this End is not to be procured by Purgatives, acrid Stimulants, or large Doses of Salts; much less by Preparations of Aloes, or Pills which contain even the least Quantity of that Ingredient: The Intention is rather to be answered

swered by mild Laxatives of a corroborative Quality, which, as they are best in all preternatural Excretions of Blood, so, also, they are most efficacious and safe in this. The best of this Kind are, Preparations of Rhubarb mixed with Raisins; such as Currans rendered laxative by a gentle Infusation with a Solution of Rhubarb, or Powder of Rhubarb, mixed with Cream of Tartar.

In order to corroborate and gently constrict the dilated and opened Vessels of the Kidneys, or in order to consolidate their Substance if wounded, the most efficacious Medicines are; Decoctions or Infusions of gently vulnerary and astringent Ingredients, such as Agrimony, Ground-ivy, Horsetail, Yarrow and its Tops, Golden Rod, and the Root of the greater Con-sound edulcorated with *Prussian Honey*, which is highly friendly to the Kidneys. These Decoctions may be, also, mixed with Milk, according to the Situation of the Patient. Almond Milk, especially when used as a Vehicle for *Armenian Bole*, is, also, of singular Efficacy in healing and consolidating these Parts.

If a Corrosion or Ulceration of the Kidneys, Ureters, or Bladder, are present, which often happens when the Disorder is of long Standing, and accompanied with Pains, the principal Intention of the Physician ought to be, to correct the Acrimony of the Humours; and so long as this is neglected, neither an Alleviation of the Pain, nor a Consolidation and Cure of the wounded Part, are to be expected. This Intention is therefore excellently answered by *Fernelius's Syrup of Marshmallows*, *Forestus's Decoction*; and that recommended by *Mynsicht* against a Discharge of bloody Urine. The same End is, also, answered by an Infusion, which, besides the above-mentioned vulnerary Herbs, has, for Ingredients, the Bark of *Egyptian Thorn-root*, and *Cherry-tree Gum*: A Powder, also, prepared of the Roots of Marshmallows and Liquorice, *Sperma Ceti*, the Four cold Seeds, white Poppy-seeds, the Seeds of Club-moss, and Saffron sweetened with a sufficient Quantity of Sugar-candy, are, also, of Service.

For a Dysury or Ischury, which are frequently dangerous Symptoms of an Hemorrhage from the Kidneys or Bladder; whilst grumous Concretions of Blood obstruct the Ureters in that Part where they are inserted in the Bladder, or the Sphincter of the Bladder itself, no Medicine affords a more efficacious or instantaneous Relief, than large Draughts of tepid Water, and the external Use of Baths. In this Case it is, also, expedient, to inject into the *Urethra* and Bladder tepid Water, in order to dilute the acrid Humour, and dissolve the grumous Concretions. *Hippocrates*, as we have already observed, recommends these very Remedies: But if, on account of grumous Concretions in the Bladder, or its Sphincter, such Spasms are excited, as to induce a total and hurtful Ischury, excellent Effects are produced by an Emulsion of the Four cold Seeds prepared with Crabs-eyes and diaphoretic Antimony; as, also, by a Powder prepared of *Sperma Ceti*, Crabs-eyes, and Nitre; externally a Bladder, full of a Decoction of emollient Flowers, is to be applied to the Abdomen; the Body is, also, to be rendered soluble, by a Laxative of Manna, or by an emollient oleous Clyster.

Besides all these Remedies for curing recent, and removing inveterate Disorders of the Kidneys and Bladder; nothing is more efficacious than temperate medicinal Waters; such as the *Selteran*, *Antonian*, and *Wildungenian Springs*, especially if mixed with Milk, but rather Asles Milk. This is sufficiently obvious from the salutary Elements of which they are composed, and the unanimous Consent of those who have wrote concerning their Virtues.

Milk and Whey are, also, excellent Remedies against this Disorder: For *Hippocrates*, in *Lib. de Intern. Affect. Sect. 17*, speaks in the following manner: "If the Urine is discharged like the Juice of roasted Beef, the Patient is to drink Whey and Milk; Whey till he is sufficiently purged, and Milk for forty or fifty Days; by which means, the Disorder is alleviated." The Milk of Sheep and Goats is, also, recommended by *Riverius*, in *Obs. 13. Cent. 17. as*, also, by *Gatinarias* and *Forestius*, who affirm, that, by this single Remedy, they have effectually cured a Discharge of bloody Urine, mixing with each Dose one Dram of *Armenian Bole*. *Riverius* is, also, of Opinion, that this Practice is proper in violent Discharges of bloody Urine; though he thinks it less expedient in those of a moderate Kind.

With respect to Venesection, which is of the greatest Importance both for curing and preventing a Return of the Disorder, if it proceeds from a Suppression of critical Hemorrhages, we are to observe, that, in the Beginning, a large Quantity of Blood is to be taken away; for by this means the Design not only of Evacuation, but, also, of Derivation, is answered: But when a Discharge of bloody Urine is periodical, a Vein is to be opened two or three Hours before the Paroxysm,

and such a Quantity of Blood taken away as the Patient can bear.

Hippocrates, in the Part last quoted, in a Discharge of bloody Urine arising from an Exulceration of the Kidneys or Bladder, orders the Patient to drink temperate White-wine of a yellowish Colour; for too spirituous Wines, or such as abound with an Acid; such as *Rhenish-wine*, are by no means proper where there is a painful Discharge of bloody Urine; but rather sweet Wines, such as those of *Spain*, the *Canary Islands*, and *Hungary*; for they not only promote Digestion, but are, also, friendly to the affected Bladder.

Since it is of great Importance what Kind of Liquor a Person labouring under any Disorder of the Kidneys and Bladder drinks, we are to observe, that he is carefully to abstain from thick and acid Ales, but to use large Quantities of small pure Beer, which, like an aqueous Medicine, resolves and carries off the acrid and sandy Matter. This is confirm'd by the celebrated *Sydenham*, in his *Treatise de Mictu cruento a Calculo Renibus impaeto*. And that Physician, as soon as he entered his Coach, took a large Draught of Small Beer, which he repeated before he return'd Home, if he chanced to stay a considerable time; by which means he affirms, that he prevented a Discharge of bloody Urine: But the Ale used on this Occasion ought to be well boil'd, and fermented.

Though proper Exercise is of great Importance for the Prevention and Cure of chronical Disorders; yet it is quite otherwise in Excretions of Blood, especially from the urinary Passages; for nothing is more effectual in bringing on this Disorder than violent Exercise, especially Riding: And I have, also, seen loud and long-contin'd Speaking prove highly prejudicial in a painful Discharge of bloody Urine, arising from a Disorder of the Bladder. Thus *Hippocrates*, in the Passage already quoted, tells us, "that when Blood is discharged with the Urine, the Patient is soon cured, if he enjoys a State of Rest; whereas by Exercise his Pains are rendered far more intense." *Sydenham*, also, in the before-mentioned Treatise, determines the Matter by his own Example; for when he walked much, or rode in a Coach, though very slowly, in the Streets, he was seized with a Discharge of bloody Urine; whereas, when he performed long Journeys in a Coach on the high Road which is not paved with Stones, he was never afflicted with that Symptom. He, also, tells us, that he went soon to Bed, that the Concoctions, which are diminished by nocturnal Lucubrations, might be the more duly performed.

In a Discharge of bloody Urine, whether from the Kidneys, or the Bladder; whether critical, or symptomatical; nothing is either more common, or more prejudicial, than the Use of Astringents, which too suddenly stop the Evacuation of the Blood; for by this means Inflammations, Exulcerations, and Putrefactions are produced, by the grumous Concretions retained in the Vessels: For as a Spitting of Blood, treated by these Remedies, easily degenerates into an Inflammation, Phthisis, or Exulceration of the Lungs, so, also, a Discharge of bloody Urine terminates in an Inflammation, Exulceration, and Putrefaction. When, however, the Effusion of Blood is very violent, and accompanied with excessive Loss of Strength, I have found excellent Effects produced by the following Mixture, successfully used by *Sylvius*, in Discharges of bloody Urine:

Take of Plantain-water, two Ounces; of the Waters of Purslane and Cinnamon, and of distilled Vinegar, each one Ounce and an half; of prepared red Coral, Crabs-eyes, and Seal'd Earth, each one Scruple; of liquid Laudanum, three Grains; and of *Quercetan's Syrup of Coral*, or *Fernelius's Syrup of Comfrey*, a sufficient Quantity to render the Preparation grateful.

Topics are, also, advantageously applied to the lumbar Region: For this Purpose we may use the Frog-spawn Plaster mixed with Alum, or Sugar of Lead, and a little Camphire: The White of an Egg, beat with Alum, and applied pretty cold to the Pubes, by way of Epithem, is, also, of considerable Service: For these, by their mild, refrigerating, and astringent Quality, in some measure check the Impetus of the Blood.

Those who are now-and-then afflicted with this Disorder, or disposed to it, ought to be very careful with respect to their Regimen and Diet, carefully abstaining from Wine, all Aromatics, especially Garlic and Onions, together with aperient Roots, such as those of Parsley, Parsneps, Celery, and Asparagus. Nor ought they to sleep upon their Backs, or lay them upon too warm Cloths, or Skins: Excessive drinking of warm Infusions of Tea, or other Herbs, is to be avoided, and rather cold, or somewhat cold Liquors, are to be used. I often, with great Success, order a Decoction of dried cherries in Prusan, to be used as common Drink. *Frederic Hoffman.*

Of Predictions from URINE; of the Nature and Causes of URINE; and of what Importance it is with respect to Prognostication.

Since it has been demonstrated that the Life or Death of the Patient in acute Diseases may be predicted from the Stools, [see DEJECTION] we are now in course to examine into the Signs and Prognostics which may be afforded from Urine relating to the same Subject; for the Observation of the Urine is of no less Importance than that of the other Excretions towards the prefiguring a good or bad Event to Diseases. *Galen, de Loc. Affect. Lib. 6. Cap. 4.* tells us, that the gibbous Parts of the Liver, and all others which are superior to these, are subjected to an Expurgation by Urine; and *Com. 2. in Lib. Prognost. 7. 26.* he says, that the Urine is an Indication of the Affections of the Bladder and Kidneys; and more than this he tells us, *Com. 2. in 1 Prorrh. T. 2.* that it indicates, also, the Strength or Weakness of the Blood-vessels, and of the Faculty which generates the Juices. Many Disorders, therefore, though not all, as is vulgarly imagined, in a great many Parts of the Body, may be judged of by the Urine, as may, also, all Fevers, Hectics excepted, and Inflammations, though these latter, when affecting the Thorax, are first signify'd by the Spit, as those which affect the Belly are indicated by the Stools; but even in these Cases, the Judgment which may be made of them from the Urine, is not to be despised.

Since therefore the Observation of Urines is of vast Moment towards the Prognostics of many Diseases, it justly deserves our Inquiry how far we may venture to prognosticate from them with respect to the Life and Death of the Patient. For this End it will be proper to premise a few things concerning the Differences and Causes of Urines, which are necessary to be known, in order to predict Events from them in Diseases.

Every Physician knows, that the Urine is a serous Excrement, secreted by the Kidneys, and from them by the Ureters transmitted to the Bladder, from which it is excreted and discharged from the Body. But by Urine we understand not only the serous Humidities, but all other Substances which are evacuated by Urine, since they are of great Moment towards a Prognosis. For the Matter of Urine seems to be of three Sorts: Sometimes the Excretion consists of the Humidities of the Meat and Drink, which, from those who drink much, are commonly discharged in a crude and aqueous State. Secondly, the Urine is sometimes nothing but the serous Humidity of the Blood impregnated with the Quality of the predominant Humour; and, in the last place, it may be composed of Humidities proceeding from a Colliquation, as when it is of a fattish Substance. This triple Matter of the Urine is very elegantly expressed by *Hippocrates, 6 Epid. Sect. 5. Aph. 14.* in the following Words; *ἔσθ' οὐρόχρονον βρώματι καὶ πρῶματι, καὶ ὡς ἐσθ' ἐόν, ὡς δὲ ὕγρ' ἐστίν*, "Urine is of the same Colour with the Meat and Drink, and is, as it were, a Colliquation of the internal Humid."

But let us now take a distinct View of the Differences of Urines, and they may be distinguished with respect to their Substance, Qualities, Quantity, and Contents.

As to their Substance, some are thin, others thick, and others are of a middle Kind; of the thin Sort some continue so a long Time, others soon become thick; after the same manner, of Urines voided thick, some continue in that State, others become thin.

With respect to their Qualities, there is a triple Difference observable, one in regard to their Colour, another as to their Clearness or Obscurity, and a third with respect to Smell.

Urines, with regard to Colour, are distinguished into white, pale, yellow, gold-coloured, red, green, livid, and black. There are several other Colours of Urine enumerated by some; but these, which are the principal, will be sufficient to furnish us with Prognostics: And some of these Colours are united with, or proper to Urine of a thin Substance, others to thick Urine. To thin Urine belong the light-red, yellow, green, livid, and, also, the black Colours. Some think, that only the pale, light-red, and yellow, are proper to thin Urine; but it is certain, that the green, livid, and black, are sometimes observed in Urine of a thin Consistence, as, for Instance, in the Cases of *Herophon*, the Wife of *Epicrates*, and *Meton*, observed by *Hippocrates, 1 Epid. Aeg. 3. 5. 7.* Of *Meton*, he says, "that his Urine was thin and blackish." It cannot, however, be denied, that black Urine is commonly thick; but the pale, light-red, and yellow, are never voided thick, but are constantly thin; for these Colours are imputed to a Want of Matter.

With respect to Perspicuity, or Obscurity, in the second place, some Urines are clear and lucid, others turbid and obscure, and of those which are voided clear some remain so, others, in a little time, become foul or turbid; in the same manner, of Urines excreted turbid some continue so, others, by a Subsiding of the gross Matter, become clear.

With respect to Smell, also, in the last place, some Urines are fetid, others not.

Urines, as was said, are distinguished, thirdly, with respect to their Quantity, for sometimes the Excretions are copious, sometimes small, sometimes moderate, and, on some Occasions, wholly intercepted.

The last Distinction mentioned of Urines regards the Contents; and under this Head may be observed a Multitude of Differences in Urine. We call the Contents of Urine that Substance which appears in any manner separated from the Body of the Urine, and is observed sometimes on its Superficies, sometimes in the Middle of the Vessel, and sometimes at the Bottom. This last the Greeks call *Hypostasis*, and we (the Latins) *Subsidentia*, *Residentia*, *Sedimenta*, and *Subjecta* (the *Hypostasis*, Settlement or Sediment, which subsides to the Bottom of the Urinal). When the Contents, or separated Corpuscles, occupy the Middle of the Vessel, they are called by the Greeks *Enæremata*, and by the Latins *Sublimationes*, *Suspensa*, *Sublimia*, and *Sublimamenta* (the *Enærema*, or pendulous Substance in the Middle of the Urine, see *ENÆREMA*). If the Contents appear on the Superficies of the Urine, they take the Name of *Nubes* and *Nubeculae*, "Clouds and Mists, or Films." Under the Head of *Hypostasis*, or *Sediment*, may be reduced a Variety of subordinate Distinctions; for some *Hypostases* are thick, others thin, some continuous, others discrete, or incoherent, and not at all united, but unequally dispersed through the Substance of the Urine. They are, also, distinguished into white-pale, yellow-pale, or deep-red, green, livid and black, and into fetid and not fetid. Again, of thick Sediments, some consist of crude and gross pituitous Humours, others are of a melancholic, or black adust, and others, to name no more, of a red and sanguineous Consistence. These thick Sediments, or *Hypostases*, appear, also, of various Forms; some appear in the Shape of Grains, and are for that Reason called by the Greeks *Oroboides*; sometimes they shew like Scales, and have the Name of *Petaloides*; sometimes like Bran, narrower but thicker than the scaly Sort, and take the Appellation of *Pityroides*; and, in the last place, these *Hypostases* sometimes resemble a kind of Meal, and are hence called by the Greeks *Crimnoides*; and like these last, in Appearance, are the purulent Urines, which consist of Pus. Sometimes, also, there appears in the Urine, a thick, pituitous Substance, and a mucous Humour.

In the *Enæremata*, or suspended Corpuscles, as, also, in the superficial Clouds, or Films, appear the same Varieties, with respect to Continuity and Division, Equality and Inequality, Thickness and Thinness, Difference of Quantities, and Diversities of Colours, with those before ascribed to the *Hypostases*. But it is proper to the superficial Contents to consist sometimes of oily and pinguous Particles.

Of the different Causes of the URINE.

In treating on this Head, we shall begin with the thick and the thin Urine: The last Sort in Fevers always indicates a Weakness of Concoction, and is occasioned either from an Obstruction of the Blood-vessels, Ureters, Kidneys or Bladder, by which means only an ichorous, or thin serous Humidity is excreted, or when the Humours take their Course to the Head, as the Case is in Phrenies, where a Thinness of Urine is a common Symptom. Hence we conclude, that a thin Urine is excreted when nothing of the Humours happens to be mixed with it, and that a thick Urine is occasioned from a Mixture of something which is the Result of a Concoction attempted by Nature, or the Removal of some Obstruction. That a thin Urine in Fevers always signifies Crudeness we are taught by *Galen in many Places*; and *Hippocrates 3 Epid. Sect. 3. Stat. Pest.* speaking of epidemical burning Fevers, tells us, they were attended with "plentiful Excretions of thin Urine, which had nothing critical, nor were of any Service to the Patient." This Thinness of the Urine sometimes continues, sometimes alters to Thickness: The latter shews, that Nature has begun its Work or Concoction; but the other indicates, that the Business is as yet unattempted, and is a Sign of an extraordinary Crudeness, as we are taught by *Galen, Lib. de Urinis, Cap. 3.*

Thick Urine is occasioned by a Mixture of Humours, and if it appears in the Beginning, indicates a Redundance of gross Humours, as we are told by *Galen, Lib. Quaest. in Hippocratem dista*; but in the State or Height of the Disorder it shews, that Nature attempts an Excretion of the Humours.

Much Urine proceeds from plentiful Drinking, or a Redundance of Humidities, as in a Dropsy, and a Suppression of Evacuations by Stool in an humid State of the Belly, on which Occasion we are told by *Hippocrates, 4 Aph. 82.* "that copious Excretions of Urine by Night, are an Indication of small Discharges by Stool." An immoderate Quantity of Urine may be occasioned, also, by an Inflammation of the Kidneys attracting to themselves a vast Plenty of Humidities,

ties, as in the Diabetes, or from a Multitude of Humours when the Patient undergoes a critical Expurgation by the Kidneys; as was the Case with many observed by *Hippocrates*, 3 *Epid. Sect. 3*.

Urine in too small Quantities proceeds from contrary Causes, as from drinking but sparingly, from a too plentiful Discharge of the Humidities by Stool or Sweat, or a Consumption of them by an immoderate igneous Heat, as it usually happens in burning Fevers, in which Cases it is often totally suppressed. Sometimes, also, as it is well known, the *Urine* is excreted in small Quantities from an Obstruction of the Passages, by which it makes its Way through the Kidneys or Bladder.

As to the Causes of the Colours of *Urine*, we shall begin with the white *Urine*, which is either *thin* or *thick*. *White thick Urine*, as we are taught by *Galen*, indicates a Redundance of crude and gross Humours, especially what is excreted thick, and continues so. *Urine* of this Kind, in which nothing subsides, indicates an extraordinary Crudeness, and an extreme Weakness of the Faculty of Concoction. Hence such *Urine* in acute Diseases is pernicious, as it proved in the Cases of the Wife of *Philinus*, and the Wife of *Dromeades*, 1 *Epid. Aeg. 4. 11*. But *Urine* of this Kind, which begins to grow thinner, shews that Nature has begun Concoction.

White thin Urine, which *Galen*, *Com. in 4 Lib. Aph.* calls *aqueous Urine*, has for its Causes either a Weakness of the concoctive Faculty, as in old Persons; or an Obstruction of the Kidneys, as in nephritic Disorders before the Stone is discharged; or an Obstruction of the Liver; or, which often happens, a total Diversion of the bilious Humour to the Brain; for which Reason such *Urine* portends a Phrensy, as *Galen* assures us, *Lib. de Urin. Cap. 6*. As this Kind of *Urine* indicates an highly crude State of the Disease, with an extreme Weakness of the concoctive Faculty, it is of all *Urine*s the most pernicious, especially in bilious Diseases, as we are assured by *Galen*, 1 *Lib. de Crisibus*, *Cap. 12*. and *Com. 2. in Prognost. T. 32*.

The Cause of *pale Urine* is the Mixture of too small a Quantity of the yellow Bile with the serous Humidities; but this Sort of *Urine* seems not far removed from a State of Concoction, provided it be not very thin.

Yellow, light-red, or saffron-coloured Urine, if *thin* at the same time, indicate the Disease to be in an absolutely crude State, and the Viscera affected with a violent burning Heat; but when *thick*, it is a Sign of Concoction, and sometimes of a critical Excretion.

Red, and reddish Urine take their Colour from Blood, as we learn from *Galen*, *Lib. de Cris. and Com. 2. in Prognost.* and more fully, *Com. in 3. Epid.* They are occasioned by an Excretion of half-concocted Blood by the urinary Passages, and indicate, as he says in the Treatises just mentioned, a Redundance of an unconcocted and serous kind of Blood in the Vessels, and the inner Parts of the Body; such *Urine* is, also, an Indication to us of the Imbecillity of the secretive Faculty; whence *Hippocrates*, *Lib. Prognost.* tells us, that *reddish Urine* signifies a long Duration of the Disorder, or that a long Space of Time is required for the due Concoction of the Blood. *Reddish, thin Urine*, though the Author of the Book *de Urinis* denies there is any such *Urine*, is occasioned by a slight Tincture of ichorous Blood; but the *thick and reddish* is from a Redundance of unconcocted Blood, as may be often observed in that burning Fever called a *Synochus*.

Resembling the former is that *Urine* which is coloured with Blood, and called *bloody*, or *sanguineous Urine*. Such Excretions are occasioned from the infirm State of the Kidneys, and a Relaxation of the Vessels which terminate in those Parts, called an *Anastomosis*, or a Relaxation of the Ducts which lie between the first and second Sinus; from such Causes proceeded the *bloody Urine* discharged by *Apemantus* and the Carpenter, mentioned by *Hippocrates*, 4 *Epid. T. 19*. Sometimes a Discharge of Blood is occasioned by a Rupture or Aperture of the Veins, or an Ulceration of the Kidneys or Bladder, as we may learn from *Hippocrates*, 4 *Aph. 86*. where he says, "If Blood, or Pus, or Scales, are excreted by *Urine*, and this *Urine* has, also, a fetid Smell, the same indicates an Ulceration of the Bladder;" and *ibid. 77*. "A sudden [ἀνὰ ταυτοῦ] spontaneous, see *AUTOMATOS*] Discharge of Blood by *Urine*, indicates a Rupture of some small Vein in the Kidneys."

Green Urine is either from porraceous Bile, generated in the Stomach, as *Galen* says, from the Crudeness of the Humours, or else from an æruginous Humour in the Vessels, which owes its Original, according to the same Author, *Com. 2. in Prognost.* to a burning Heat, and vehement Adustion of yellow Bile. In Persons who are in Health, or free from a Fever, such *Urine* is generally a Sign of porraceous Bile; but in acute Fevers and Inflammations of the Viscera, it indicates an æruginous and bilious Humour, according to *Galen*, *Lib. 2. de Crit.* where he determines this Colour in particular to proceed from an Al-

teration of yellow Bile, by the Force of a burning Heat, into Bile of a black Colour.

Next in Colour to *green* is *oily Urine*, which however is not fat, or pinguious; but as *Galen*, *Com. in 3 Epid. T. 72*. and *de Crisibus*, describes it, resembles Oil in Colour and Consistence; and this Sort of *Urine*, as he tells us, he had sometimes observed, proceeding from a Concoction of the Disease, without any bad Consequence to the Patient.

But *pinguious*, or *fat Urines*, which by their Fatness resemble Oil, or are called *oily*, because, like Oil, they swim on the Superficies, have quite another Cause, as proceeding always from a Colliquation of the Fat, either of the whole Body, or only of the Kidneys. To this Purpose we read in 7 *Aph. 35*. that "a pinguious and compact Hypostasis indicates an acute Disorder of the Kidneys." And we may know, says *Galen*, in his Comment on that Aphorism, when there is a Colliquation in the whole Body from the feverish Heat, if it were only by an Excretion of Fat with the *Urine* successively, and not all at once, as in a Colliquation only of the Kidneys. Hence we conclude, that there are two Sorts of *oily Urine*; one, which in Colour and Consistence only appears very like Oil, and another, which is of a pinguious Substance, and which *Hippocrates*, in the Aphorisms before-mentioned, says, contains Fat. Of this latter Sort of *oily Urine*, he says, in his *Prognostics*, "If there be a Fatness on the Superficies resembling a Spider's Web, it is to be condemned, for it is a Sign of a Colliquation." *Galen, de Sanit. tuend.* tells us, that this Fat swimming on *Urine*, is like that which concretes on the Superficies of Broths when cooled. And, *Lib. de Urinis*, a Treatise ascribed to him, he makes three Distinctions of this kind of fat or *oily Urine*; the first is what the *Greeks* call *Elæochroos*, which is of the Colour of Oil, and indicates a beginning Colliquation; the second is called *Elæophanes*; this has a more exquisite Mixture of oily Particles, and shews that the Colliquation increases; the last is the *Elæodes*, which in its whole Substance, and in all respects resembles Oil, and shews the last Degree, or Height, of a Colliquation. But the same Author, *Com. in 3 Epid. 72*. makes two Kinds of *oily Urine*, one like Oil in Colour and Thickness, but void of Fatness; another Fat, of which there are two Sorts, one with a Fatness swimming atop, like the Eyes of Oxen, called by the *Greeks* *Elæophanes*; and another, which has its Superficies covered with a fat Substance resembling a Spider's Web, and is called *Elæodes*. All these Kinds of *oily*, or more properly, *pinguious Urine*, proceed from a Colliquation of the Fat by an igneous Heat, as was before observed.

Urine of a livid Colour proceeds from an immoderate Coldness, according to *Galen, de Cris. Lib. 1. Cap. 12*. and is therefore pernicious in acute Distempers, as indicating an Extinction of the natural Heat. It is however sometimes occasioned by a gross, livid Matter, and on that account not deny'd by *Hippocrates* to be good, and sometimes critical.

Black Urine is either the Effect of an immoderate Coldness (though in that Case it may more properly be styled *obscure* than *black*), or of a burning Heat. *Galen, Com. in 1 Prorrh.* tells us, that *black Urine* is occasioned by a Mixture of black Bile with the Serum, which tinges the *Urine* with a black Colour; and *Com. in 3. Epid.* he says, that it proceeds from a melancholic Blood, which like Soot, communicates its Colour to the Serum. Hence, *Lib. 1. de Cris. Cap. 12*. he says, that *black Urine* is a Sign of a Redundance of black Bile, or adust Blood in the Body. But here we are to make a Distinction of this Kind of *Urine* into those of a thick and a thin Consistence.

Thick black Urine always derives its Colour from a more than ordinary copious Excretion of a gross atrabilious Humour, or black Bile, or adust Blood, whence in Quartans, and Disorders proceeding from the Spleen and Melancholy, a thick and black Kind of *Urine* is evacuated.

A *thin and black Urine*, *Galen, Com. 2. in Prognost. and Lib. 1. de Cris.* supposes to proceed either from excessive Coldness, which occasions, also, a Blackness of the Blood, or from an immoderate Heat scorching the Blood. We know and can predict these Kinds of *Urine*, because they are preceded by *Urine* of a yellow, light-red, or saffron-colour; *livid Urine*, also, changes to *black*.

We should next in Order, after *black Urine*, treat of the Causes of *clear and foul, or turbid Urine*. As for *clear Urine*, which is permanent, or continues in a State of Clearness, it is included in what has been said of the Colours of *Urine* in its thin Consistence, and therefore we are to treat only of such *Urine* as is excreted *clear*, but after some time becomes *turbid*. This Kind of *Urine* every one knows to be crude, and to become foul and disturbed from a Redundance of gross Flatulences, and consequently it is regarded by every Physician of the least Experience, as an Indication of Nature's Efforts toward a Concoction.

coction. *Galen, de Sanit. tuend. Lib. 4. Cap. 4.* says, "If the Urine be excreted pure and clear, but is immediately turbid, it shews that Nature sets about the Concoction of the crude Juices; if the Urine becomes not foul immediately, but after some time, it is a Sign that Nature has not yet begun its Work, but will attempt it hereafter." The same Author, *Com. in 3 Epid. in 4 Aph. & Lib. 4. de Sanit. tuend. & Lib. 1. de Cris.* makes three Sorts of turbid Urine; one excreted clear, and becoming turbid afterwards, of which we now speak; another excreted turbid, and becoming clear; and a third which is excreted turbid, and always remains in that State. This last is by Physicians generally call'd *Subjugalis*, with reference to *Horses sub jugo*, "under the Yoke," or us'd to draw; because in Colour, Thickness, and Foulness, it resembles the Urine of a working Horse. Such Sort of Urine proceeds from crude and gross Humours agitated by Heat, and an Elevation of numerous Flatulencies thence occasion'd, which mix with the Serum, and render it confus'd and turbid. For this Reason *Hippocrates, 4 Aph. Cap. 9.* says, "That turbid Urine, like that of Horses, in Fevers, indicates a present or future *Cephalalgia*;" as it is a Sign to us, he means, that Multitudes of Vapours are elevated and convey'd to the Head. *Galen, Com. 5. in 6 Epid. T. 15.* says, "that turbid Urine, like that of Horses, is proper to those who abound with crude Humours, which are put in a State of Fusion by the Heat." By this means, being converted into a spirituous Kind of Substance, they furnish Plenty of Matter for flatuous Exhalations to the Head. Turbid Urine, then, we find, proceeds from crude and gross Humours agitated by Heat.

Turbid Urine, which becomes clear, is, from the natural Heat, employed in Concoction; but Urine always remaining in a turbid State is generally the Effect of a febrile Heat agitating and confounding the Mass of Blood, and is such as we see in the Beginning of malignant Fevers; when Nature has done nothing towards a Concoction. *Avicenna*, and the other Arabian Physicians, tell us, that turbid Urine, which never settles, foreshews an Ebullition of the Humours, on account of the Violence of an extraneous Heat, and the Weakness and Indisposition of the natural Heat towards a Concoction. But *Galen, de Cris. Lib. 1. Cap. 12.* says, that Urine remaining turbid, without becoming in the least clear, indicates that Nature has begun an Agitation in the Blood, and is in full Vigour and Strength, sufficient for Concoction; but that Urine excreted clear, and soon after becoming turbid, signifies that the Agitation of the Humours towards a Concoction is not yet begun, but may be expected. For these Reasons, he prefers that Kind of turbid Urine, which always remains in that State, because they indicate a beginning Concoction, as he more clearly expresses it, *de Sanit. tuend. Lib. 4. Cap. 4.* where he says, that "Urine foul, or turbid, like that of Horses, indicates a Repletion of the Veins with such Humours as are called crude; but that Nature, however, ceases not from her Work, but powerfully concocts them."

And of Urine which becomes turbid after Excretion, he there adds, "If it be voided pure, and immediately turns foul, it shews that Nature attempts a Concoction; but if it grows turbid at some Distance of Time, it is a Sign that Nature is not at present, but will shortly be, employed in that Work." A little after he seems to assert the contrary, when he says, "If there be no Separation, or what subsides is bad, it shews that Nature is weak, and wants Assistance in concocting the Juices." Upon the Whole, it must be said, that turbid Urine continuing in that State, is sometimes the Effect of an extraneous Heat agitating the whole Mass of Blood, and sometimes proceeds from the natural Heat, or Nature itself employ'd in Concoction; and that in the latter Case it is distinguished from the other by its not appearing in the Beginning, but in the Increase of a Disorder, when Nature manifestly attempts a Concoction; after which the Urine has a Sediment, or becomes less turbid, the Strength not much impair'd, and the Disease is free from mortal Signs: And this perhaps is no more than what *Galen* means in the Chapter above quoted, by the following Words: "Of all turbid Urines, let the general Character be a Separation of the thick from the more liquid Part, which is either quick or slow, or none at all. If it be quick and immediate, and what subsides be white, smooth, and equal, it shews Nature far superior to the Juices which it concocts; but if what subsides be bad, Imbecillity of Nature is signified." If then such turbid Urine appears, as we said, in the Beginning of a Disorder, at which Season Nature attempts no Concoction, on account of the Ebullition and Agitation of the extraneous and febrile Heat, it indicates a Turbation from a Redundance of crude and gross Humours put in a State of Fusion by the vehement Heat, which, in Conjunction with the Violence of the Distemper, and the extreme Weakness of the Patient, may be justly esteem'd a fatal Prognostic. *Galen*, therefore, might well say, *Com. in 4 Aph. T. 70.* "Turbid Urine, which

comes to no Settlement, if the Patient be strong, shews the Disease will be of long Duration; if weak, that it will be mortal." Urine, then, which appears turbid, and continues so in the Beginning of a Disease, proceeds not from the natural, but an extraneous Heat, which is confirmed by the Weakness of the Patient, and some pernicious concomitant Sign, and from its having nothing of a laudable Sediment.

We have spoken largely of the Causes of turbid Urine, and would treat, in a few Words, of the Origin and Cause of pungent Urine, or such as is excreted with Pain, and a pungent Sensation: This, in short, proceeds from highly-acrimonious and hot Humours, which are voided together with the Urine, and, according to *Hippocrates, 1 Epid. Sect. 2.* are the Occasion of a Strangury. And *Galen, Com. in 1 Epid.* to the same Purpose, tells us, "that when the excrementitious Parts of the whole Body are purged off by the Passages of the Kidneys, the Patient is seized with a Strangury, as well upon other Accounts, as principally from the Acrimony of the confluent Urine;" this Acrimony is the Effect of an immoderate Degree of Heat.

Fetid Urine is known by every Body to be the Effect of an extraordinary Putridness either in the Vessels, or the Kidneys, or the Bladder.

As to Urines of an equal and unequal Consistence, *Galen, Com. in 7 Aph. T. 33.* makes the following Remarks: "If we take the Word *disjunctus* (distant or separate) in its proper Sense, the Thing is impossible; because Urine is always continuous, without Interstices; but if we understand by this Term an Inequality of Substance or Consistence, he (*Hippocrates*) rightly says, that such an Inequality indicates a vehement Perturbation in the Body: For when Nature prevails, and is predominant, all Things are equally united; but when it is repelled and controlled by Variety of stubborn and rebellious Matters, that Portion of them which is subdued and concocted, takes one Form; and what is renitent and refractory, another; and when there is a great Variety of these contumacious Particles, it shews the Inequality in the Urine to be very considerable, as well as the Perturbation, which is the Cause of it."

We have given you the Causes of the various Kinds of Urine, and proceed to treat of the Causes of its Contents; under which Head we are to inquire the Reasons of those Contents at the Bottom, which we call *Hypostases*, *Subsidences*, and *Sediments*; and what are the Causes of those pendulous Contents in the Middle, which pass by the Names of *Enaeremata* and *Sublimamenta*; as, also, the Reasons of the *Nubes* and *Nubeculae*, or the Clouds and Films which swim on the Superficies of Urine.

In general, the Variety of Contents in Urines depends on the various Generation and Mixture of Flatuities; for when there is a Redundance of these in the Urine, the excrementitious Particles are conveyed to the Superficies; when there is but a moderate or small Quantity of them, they make this Settlement in the Middle; and if there be none at all, they reside at Bottom. Hence it is that an Hypostasis indicates a good Concoction, in which the Flatuities, being dissolved, cause no Perturbation. This, however, is no necessary Consequence from the Contents being lodged at the Bottom, since not every Hypostasis, or Sediment, infers, of Necessity, a Concoction, but that which is white, smooth, and equal at all Times, as we are taught by *Hippocrates*, in his *Prognostics*. Nor do Clouds and Films always signify Crudeness: For, as we are told by the same Author, in the Book just quoted, "Clouds on the Surface of Urine, if white, are good." And *Galen, Lib. 1. de Cris. Cap. 12.* tells us, that in Patients injured to Fasting and immoderate Labour, the Disease often has its Solution before any thing subsides in the Urine; and it is generally sufficient if there be a white Cloud, and a white, smooth, and equal *Enaerema*.

But white, smooth, and permanently equal Contents, in the Bottom of the Vessel, or Urinal, constantly signify Concoction, an *Enaerema* of that Kind a less Degree of Concoction; and a Cloud of the same Sort, as being situated highest of all, a still lesser Measure of Concoction of the Disease.

The Contents, or excrementitious Particles, elevated in the Form of a Circle, to the Superficies of the Urine, is a certain Indication of a *Delirium*, as was observed by the Author of *1 Prorrh.* and I have frequently found the Truth of it by Experience.

A copious Sediment, though it occupies the lowest Place in the Urinal, indicates a Redundance of crude Humours, as *Galen, Lib. 1. de Cris. Cap. 12.* has demonstrated, from Examples of Children bred in Idleness, and pamper'd with full Diet, whose Urine abounds with Crudities, and a Repletion of the Body with crude Humours. And, *Com. 2. in Prognost.* he says, that there appears a copious Sediment in Urine, when the Disease is fomented by crude Humours; and that there is

very little or no *Sediment* in the *Urine* of those who labour under bilious Diseases, or are used to Fasting, and hard Labour.

A *thin Urine*, *Sediment*, or *Hypostasis*, is a Sign of thin Humours; but a *pure Hypostasis*, which scarce rises upon shaking the Vessel, shews a great Weakness of Nature in the second Concoction.

Thick and gross Sediments are, in like manner, Indications of gross Humours, agreeably to what we are told by *Galen*, *Com. in 4 & 7 Lib. Aph.* and *Lib. de Plenitud.* where he says, that "the *Urine* of voracious Persons has a thick *Sediment*." We affirm, therefore, that a gross or thick *Hypostasis* is an Indication of gross Humours, and consequently of difficult and troublesome Disorders.

An *united*, or *continuous*, and *equal Hypostasis*, of a pyramidal Figure, is highly commended, as being a Sign of a very good Concoction; as, on the contrary, a *discrete* and *unequal Sediment*, or *Hypostasis*, has a quite different Signification. *Galen*, *Lib. 1. de Crisf. Cap. 12.* For an *Hypostasis* which is *unequal*, and *discrete*, or consisting of loose and separate Parts, shews a Redundance of gross Flatuosities in the Veins, which are incapable of being dissolv'd and discuss'd by Nature, as we are told by the Author of *Lib. de Urinis*.

As to the Colours of the Contents of *Urine*, *white*, as we said, is judg'd the best, if the Matter be, also, continuous, smooth, and equal; and such is the Result of a perfect Concoction.

Unequal discrete Contents are distinguish'd from an *Hypostasis*, as making a Substance disjunct, or disunited, and dispers'd, like small and minute Particles of Sand, through the Body of the *Urine*. These are the Effects of a copious Phlegm, or proceed from Pus, or a Colliquation of the solid Parts; and of this Nature are the Contents resembling coarse Flour, and the *Hypostasis* which the *Greeks* call *Crimnodes*.

Red and redish Contents signify Crudeness, and Want of Concoction; whence it is justly said by *Hippocrates*, *Lib. Prognost.* "that redish *Urine*, with a redish and smooth *Sediment*, shews the Disease to be of longer Duration than in the first Case [where the *Sediment* is white, smooth, and equal]; but is, however, very salutary." The Author of the Book of *Urinis* says, that red Contents proceed from an ichorous Blood, and signify Want of Concoction.

Yellow and green Contents are bad, because they shew, that the Disease is fomented by a yellow, æruginous, or porraceous Bile.

The worst Colours in the Contents of *Urine* are the livid and the black. A livid Colour soon changing to black, proceeds from a Refrigeration of Heat; and a yellow, light-red, or green Colour, quickly altering into black, is the Effect of an igneous Heat burning the Humours. Justly, therefore, does *Hippocrates*, *Prognost.* pronounce black Clouds in *Urine* bad.

Of Contents in *Urine* which proceed from a Colliquation, and therefore appear in various Shapes, those *Hypostases* which are call'd by the *Greeks* *Oroboides*, because they resemble the Pulse *Orobis*, and, also, *Sandarachoides*, are the Effects of a beginning Consumption of the Flesh after the Fat is consum'd; and are Indications of a Colliquation either of the whole Body, or of the Kidneys.

The Contents, or *Hypostases*, call'd, in *Greek*, *Petaloides*, that is, squamous, or scaly, appear, according to *Galen*, when, after a Colliquation of the Fat and Flesh, the superficial Parts are abraded by the igneous Heat.

The *Pityroides*, or *furfuraceous Hypostases*, which are narrower and straiter, but yet thicker, than the scaly Sort, are the Effects of a Dilaceration and Consumption of the Vessels of the solid Parts by the igneous Heat.

In the last Place, the Contents or *Hypostases* call'd *Crimnodes*, which are like coarse Meal, or Flour, proceed from a Consumption of the solid Parts more violent than the former: Of these Kinds of *Hypostases*, we find *Hippocrates* passing his Judgment, *Lib. Prognost.* in the following Words: "If the *Hypostasis* of the *Urine* be *Crimnodes* [like coarse Flour], it is bad; but the *Petaloides* [resembling Scales] are worse; the white and thin is very bad; but the *Pityroides* [furfuraceous] is still worse." Here *Galen*, in his Comment on the Place, tells us, that these Kinds of *Urine* are the Effects of an igneous Heat scorching the Blood, or consuming the Flesh in an unequal manner.

Of good URINES, portending Recovery.

Urine, as well as other Excretions, affords Indications in Diseases for a *Prognosis* of Death or Recovery, two Ways: First, as it is a Sign of Concoction and Malignity; and, secondly, as it is a Cause, in discovering itself to be a good or bad Excretion. Of *Urine* portending a good Event, in both these Respects, we find *Galen*, *de Crisf. Cap. 12.* and *Com. in 3 Epid.* giving the following Description: "The best Kind of *Urine* is what is of a moderate Consistence, answering in Proportion to the

Quantity of Drink, of a lightish Red, or yellowish Colour, with a white, smooth, and equal *Sediment*, or *Hypostasis*." The best *Urine*, says *Hippocrates*, *Lib. Prognost.* is what has a white, smooth, and equal *Sediment*, during all the time before the Crisis; for this signifies that the Patient is in a safe State, and that the Disease will not be of long Duration: But if there be an Intermission, and the *Urine* be sometimes pure, and sometimes with a white and smooth *Hypostasis*, the Disease will be the longer, and the Patient the less secure." *Galen* adds, "The *Urine* ought to be of a moderately saffron Colour, and of a mean Consistence between thin and aqueous, and thick like that of Horses." The same Author, *Lib. 1. de Crisibus*, *Cap. 12.* says, "that the best *Urine* is rather of a lightish-red, than yellowish Colour." And *Com. in 1 Epid.* and *Lib. 10. Simpl.* he makes it moderately yellow; and *Lib. 2. de Sanit. tuend. Cap. 2.* he says, "that a lightish-red and bilious *Urine*, is an Indication of a perfect Concoction in Diseases."

In many Cases concocted *Urine* has but little Colour; in others it is more deeply tinged; whence it appears, that the best *Urine* is not always observ'd to be of the same Colour. The divine *Hippocrates* was of Opinion, that we were not so much to regard the Colour or Consistence of *Urine*, as its Contents, in order to a *Prognosis*; since, in the Place just quoted, where he describes the best *Urine*, he says not a Word of the Colour and Substance, but only of the Contents: For he tells us, that "the best *Urine* is what has a white, smooth, and equal *Sediment*," omitting the Colour and Substance, which are not observ'd to be always the same in such an *Hypostasis*. And though, indeed, it be necessary for the *Urine*, when furnish'd with the best *Hypostasis*, to be of the best Colour, and of a moderate Consistence, and in temperate Bodies such Colours are usually observ'd, as before describ'd, and reputed laudable, yet as there is a vast Variety in *Urine* with respect to the various Constitutions and Dispositions of Bodies, we are to have recourse to a general Method for discovering the best Kind of *Urine* in all particular Cases. Here we are well directed by *Aristotle*, *Lib. 1. Probl. T. 52.* "The best *Urine*, he says, is moderate in all Respects, and most like that of the Person in Health; which is a Precept to be regarded by the young and unexperienced Physician, in his Inspection of *Urine*; in which, when he sees any Alteration from what it was in a State of Health, he may safely pronounce the Person to whom it belongs fallen from a perfect State of Health and Soundness." This of *Aristotle* is certainly a good Rule for judging of good and bad *Urine*, since the Theory of *Similars* and *Dissimilars* is one of the chief Principles of the Art of *Prognosticating*. Upon these Considerations we, also, conclude, that in Diseases such *Urine* is to be esteem'd the best, as approaches nearest to the *Urine* of the Patient in Health; and this is the Character which *Galen*, also, has given of it, *Lib. 1. de Crisf. Cap. 12.*

But, for our clearer and more exact *Diagnosis* of the best *Urine*, we are attentively to consider the Temperament of the Body and *Viscera*, with the Age, Sex, Diet, and Way of Living, of the Patient: For the *Urine* of Bodies of an hot Temperament is of an higher than ordinary Colour; and the *Urine* of Persons of a cold Temperament, of a lower Colour than is consistent with Mediocrity. In respect of Age, young adult Persons make thinner *Urine*, and more colour'd than Children; and the *Urine* of Children is thicker than ordinary, as that of old Persons is thinner, and more colourless. With regard to Sex, the *Urine* of Women is thicker, and more colourless, than that of Men, and more abounds with Contents: In other Respects, the *Urine* of voracious Persons abounds with crude Sediments; on the contrary, the *Urine* of those who are us'd to Fasting has but little *Sediment*, and is more coloured than the former; and the same Appearance in the *Urine* is effected by Watchings and Fatigue; whereas the *Urine* of those who live in Idleness abounds with *Sediment*, and is less colour'd.

Hence we conclude, that in Children the best *Urine* is what appears of a thickish Consistence, is but slightly tinged, and abounds with a copious, white, smooth, and constantly equal *Hypostasis*. In Youth and Manhood the *Urine* ought to be more deeply tinged, and of a yellowish or lightish-red Colour, and of a thinner Consistence, with fewer Contents, and so much the thinner, and more colour'd, as the Body is of an hotter Temperament; and so much the less colour'd, as the Temperament of the Person is colder. In Women the *Urine*, on some Occasions, must be thicker, and more colourless, than ordinary; in Persons under Circumstances of Fasting, Fatigue, and Watching, higher colour'd, and thinner, with fewer Contents; and in those who indulge themselves in plentiful Living, and Idleness, the *Urine* must be expected less colour'd, of a thicker Consistence, and with a more copious *Sediment*.

But in Bodies of a moderate Temperament the best *Urine* is, as *Galen* says, of a moderately croceous Colour, of a mean Consistence, answering in Quantity to the Drink; with a white,

white, smooth, and constantly-equal Sediment, and, in short, most resembling the *Urine* of Persons in Health. In all Cases the best *Urine* has a white and equal *Hypostasis*, or Sediment; *Urine* with a pendulous Substance, or *Enæorema*, is not so good, and that with a Cloud, or Film, worse than the former. We are, however, taught by *Galen*, *Com. in 3 Epid.* that an *Enæorema* is sometimes good; and that even a Cloud may be good enough to prove a salutary *Prognostic*, according to *Hippocrates*, 4 *Aph.* 70. where we read, that "Persons in whom the Fever comes to a Crisis on the seventh Day, have a red Cloud in their *Urine* on the fourth Day, and other Things in Proportion." And not only a red Cloud, says *Galen*, which was not seen before, prognosticates a Crisis; but a white Cloud much more; and a white, equal, and settled *Enæorema*, more than either; But if the Disease be very quick in Motion, and there be a Change in the Colour and Consistence of the *Urine*, there are sufficient Grounds for prognosticating an approaching Crisis. *Hippocrates*, *Lib. Prognost.* says, that "a Cloud floating in the *Urine*, if white, is good." And a little after, "we are to consider in these Clouds, whether they move upwards or downwards, and also, what Colour they are of; for if they tend downwards, and are of the Colour above-mention'd [white], they are good, and laudable."

With respect to the Substance, *Urine* of a thin Consistence, with a good Colour, is laudable. Hence *Galen*, *Com. in 1 Epid.* says, "It is plain that thin *Urinæ*, but of a good Colour, promise a Recovery on account of the Goodness of their Colour; but, in respect only of their Thinness, they require a longer time for Concoction." So that this Kind of *Urine* prognosticates, indeed, a Recovery, but it is after a considerable time; as it happen'd in the Cases of *Cleonastides* and the *Clazomenian*, 1 *Epid.* *Ægr.* 6. 10. and *Chæron*, 3 *Epid.* *Secl.* 1. *Ægr.* 5.

Thin and colourless *Urine*, where there are Signs of Recovery, indicate an Abscess, as we are taught by *Hippocrates*, *Lib. Prognost.* quoted by *Galen*, *Com. 1. in 3 Epid.* T. 4. to this Purpose: "Thin and equal *Urinæ*, he says, excreted for a long time together, if there be other salutary Signs, indicate an Abscess in the Parts below the Diaphragm." Thus it happen'd to *Pythion*, 3 *Epid.* *Ægr.* 1. who liv'd near the Temple of *Tellus*, of whom it is said, "From the first to the eighth Day his *Urine* was thin, and colourless, and had a cloudy *Enæorema*; on the tenth he fell into a Sweat, his Spit was somewhat concocted, and he had a Crisis, about which time he voided a thinnish [for *ὑπόλευκα*, as all the printed Editions have it, I read *ὑπόλευκα*] *Urine*." On the fortieth Day after the Crisis, a Suppuration appear'd in the Parts about the Anus, and the Abscess produc'd a Strangury.

Of Colours in *Urine*, the laudable, as we said, are the yellowish, lightish-red, suberaceous, or somewhat saffron-like Colour, the moderately pale and subluteous Colour. The reddish *Urine*, with a reddish Sediment, is said, by *Hippocrates*, to be salutary, though it indicates a long Disease; the black Colour in *Urine* is not always bad; it is not so, for Instance, in Disorders of the Spleen, as appears in the Case of *Herophon*, 1 *Epid.* *Ægr.* 3. and in those who abound with melancholic Blood; and the same is agreeable to what *Galen*, *Com. in Epid.* remarks of a female Patient, where he says, "that the Colour of her *Urine*, though black, indicated no Danger, because proceeding from a Retention of the Menfes, which were of a more melancholic Cast." Plenty, also, of black *Urine*, which changes not to aqueous critically excreted, is of Service. Hence *Galen*, *Com. 3. in 3 Epid.* T. 73. says, he knew a Woman who was very much reliev'd by a plentiful Excretion of such Kind of *Urine*; besides, black *Urine* with a plentiful Hæmorrhage from the Nostrils, as in the Case of *Meton*, 1 *Epid.* *Ægr.* 7. or a copious Flux of the Menfes, as was observ'd of the morose Woman, 3 *Epid.* *Secl.* 3. *Ægr.* 11. are not in the least to be dreaded.

Of turbid, or foul Kinds of *Urine*, what soon settles or subsides is good, especially if the Sediment be white, smooth, and equal, according to *Galen*, *de Sanit. tuend. Lib. 4. Cap. 4.* where he writes, "that if there appears a Separation of the thicker from the more liquid Substance in the *Urine*, and what subsides is white, smooth, and equal, it indicates a Superiority of Nature in subduing and concocting the Juice."

Clear *Urine*, which soon becomes turbid, may, also, be esteem'd beneficial, as it signifies, that Nature is at work in concocting the Humours.

With regard to Alterations in *Urine*, those are esteem'd laudable which are made for the better, either in Colour, Consistence, or *Hypostasis*. Hence thick *Urine*, excreted after the Beginning of a Disease, is accounted beneficial, since Excretions, after the Commencement of a Concoction, become thick, if they were thin before; as, on the other hand, when from thick they change to thin, it is a very good Sign; agreeably to the Doctrine of *Hippocrates*, 4 *Aph.* 68. where we read, "that

"they who void a thick, grumous *Urine*, and in small Quantities, and are not free from a Fever, are reliev'd by a supervening plentiful Excretion of thin *Urine*, which is most likely to happen when there has been an *Hypostasis* in the *Urine* from the Beginning, or not long after." Here *Galen*, in his Comment, says, "that Plenty of thin *Urine* is beneficial, as it indicates the morbid Matter to be more attenuated."

It is best for *Urine*, from turbid to become clear, from colourless to grow colour'd, from too high a Colour to become less colour'd, and from wanting Contents to assume either a Cloud, *Enæorema*, or *Hypostasis*, which are white and equal.

Such, then, are the Properties and Qualifications of *Urine*, by which it indicates a Recovery in acute Diseases, as it is a Sign of Concoction; in the same manner it portends a good Event as a Cause in shewing itself to be a salutary Evacuation.

For this Reason, Plenty of *Urine* excreted on a critical Day, indicates a salutary Crisis, and with the greater Certainty, if it be in its own Nature of a laudable Kind, as it was in the Case of *Nicodemus*, 3 *Epid.* *Secl.* 3. *Ægr.* 10. of whom *Hippocrates* observes, 3 *Epid.* *Secl.* 3. "that on the twenty-fourth Day he voided much white *Urine*, which had a copious *Hypostasis*; and he fell into a plentiful hot Sweat, underwent a Crisis, and was freed from his Fever." And of *Pericles*, *ibid.* *Ægr.* 6. he says, "On the third Day his Fever was abated, and he voided Plenty of concocted *Urine*, with a copious Sediment." *Chæron*, also, *ibid.* *Secl.* 2. *Ægr.* 5. is said to escape, by the Benefit of a copious Effusion or bilious *Urine*. To the same Purpose we read, 4 *Aph.* 73. "that where an Abscess is expected in the Joints, the same is prevented by an Evacuation of much thick and white *Urine*." And, 6 *Epid.* *Secl.* 4. *Aph.* 2. "that an Evacuation of thick white *Urine*, such as happen'd to the Servant of *Archigenes*, sometimes happens in Quartans attended with a Lassitude, and prevents an Abscess." But that Kind of thick *Urine* which resembles coarse Meal, portends Death, or a long Duration of the Disease; as we are taught by *Galen*, *Com. in 7 Aph.* 31.

Acrid *Urine*, evacuated with Pain, and in great Quantity, frequently happens to be critical in acute Diseases, agreeably to the Observation of *Hippocrates*, 1 *Epid.* *Secl.* 1. where, after describing an epidemic Disorder very fatal to Children, he says, "that the only serviceable, and most important of all the Judications, and by which many escap'd the greatest Danger, was, an Alteration of the Disease to a kind of Strangury, and Abscesses in the Parts affected." And a little after, "with regard to the Strangury, it was tedious, and very troublesome to the Patient; the *Urine*, in this Case, was copious, thick, various, red, mix'd with Pus, and excreted with Pain." To which he adds, "All who were in this Circumstance recover'd, and not one of them, as far as I know, dy'd." The Case of *Pythion*, 3 *Epid.* *Ægr.* 1. which was much of the same Nature, had probably the same happy Event; of whom we read, that "on the fortieth Day after a Crisis, a Suppuration was form'd about the Anus, and converted itself into a Strangury;" after which, it is probable that he recover'd by the Benefit of copious Evacuations by *Urine*.

There are some Kinds of oily *Urine*, not fat, but resembling Oil only in Colour and Consistence, which are, also, salutary; these never happen but from a perfect Concoction of the Disease, and have been several times observ'd by *Galen*, as he says, *Com. in 3 Epid.* T. 72. from a Concoction of the Disease, without any Detriment to the Patient. And so much for good *Urinæ*, which are of salutary Prognostication.

Of bad URINE, which portends Death.

Thin, white, aqueous *Urine*, of long Continuance; in a Disease not of a favourable Kind, is destructive, as we are assur'd by *Galen*, because it indicates a very high Degree of Crudeness; and it is no less pernicious in acute Fevers, because, according to the same Author, it shews that the yellow Bile has its Course upwards, and is carry'd towards the Head, from whence we may predict a Delirium and Phrensy. And such *Urine* we find condemn'd by *Hippocrates*, 4 *Aph.* 72. where he says, "that white pellucid *Urine* is bad, especially in a Phrensy." And *Galen*, in his Comment on the Place, says, that he never knew one in a Phrensy, from whom such Excretions of *Urine* proceeded, recover. For it is much better, as the Disease is wholly of a bilious Nature, that the *Urine* should appear bilious, and worst of all that it should be thin and transparent, as it was observ'd in *Philistes*, labouring under a mortal Phrensy, 3 *Epid.* *Secl.* 2. *Ægr.* 4. We conclude hence, that thin and aqueous *Urine*, in all acute Fevers, is bad, as portending, at least, a long Duration of the Disorder, with Relapses; for Nature requires a long time for the Concoction of Humours in so highly crude a State, when, if the Fever be not extremely violent, and the Strength not much exhausted, the Patient has been sometimes known, though after a long time, to recover;

but if the Disease be violent, and the Strength much impair'd, such Urine is absolutely fatal: And this is what *Galen* means, *Com. in 4 Aph. 71.* when he says, "If the Strength was before exhausted, such white perspicuous Urine is pernicious, as in Phrenesies; in which Case we have no Instance of Recovery." We may add, as a stronger Confirmation of their Fatality, their long Continuance, and Appearance after the Beginning of the Disorder, as it happen'd in the Case of the Woman who lay ill in *Thasos*, 3 *Epid. Sect. 3. Aeg. 2.* who, on the eleventh Day, evacuated such thin aqueous Urine, and continu'd so to do till the fortieth Day. We have already observ'd from *Hippocrates, Lib. Prognostic.* that a Continuance of such Urine, with salutary Signs, prognosticate, a Solution of the Disease by an Abscess, as it actually happen'd in the Case of *Pythion*, who liv'd near the Temple of *Tellus*, 3 *Epid. Aeg. 1.* and is demonstrated by *Galen*, in his Comment on the Case. But, on the other hand, where are no salutary Signs to accompany it, a Continuance of such Urine is always mortal. Hence *Hippocrates, Prognost.* pronounces aqueous Urine one of the most destructive Kinds, and worst of all in Children.

Thick Urines, according to *Hippocrates*, in the same Book, are bad, especially if they appear in the Beginning; at which time, as *Galen* will have it, *Comment. in 4 Aph. 6.* the Urine is generally thin: But those Kinds of thick Urine which have either none, or a bad *Hypostasis*, are very bad; and of these, *Galen, Com. in 4 Lib. Aph. 1.* says, "thick Urine, without a Sediment, if the Strength be pretty entire, portends a long Continuance of the Disease; but if the Strength be much exhausted, the Death of the Patient." And *Hippocrates, 1 Epid. Sect. 1.* describing an epidemic Fever of the semitertian Kind, says, that "in some Subjects the Urine was thick, and had but a small *Hypostasis*, and the same not of a due Consistence, but crude and unseasonable." *Galen*, also, 1 *Com. in 3 Epid. T. 5.* speaking of these Kinds of Urine, says, that *Hippocrates*, in that Case of *Hermocrates*, by "hinting that his Urine was thick, and without *Hypostasis*, plainly intends, that it was foul and turbid, as he here usually calls that Urine which always appear'd in a crude, disturb'd State, and impregnated with a flatulent Spirit, like Must." Since Urine, then, in which nothing subsides, is of the Number of turbid Urines, thick Urine, also, destitute of a Sediment, is to be esteem'd a turbid Urine, which, says *Galen*, besides indicating a flatulent and crude Perturbation of the whole Mass of Blood, shews the Disease to be fomented by gross Humours.

Having first observ'd, that turbid Urine may be either thin or thick, we proceed to inquire into the *Prognostics* which may be drawn from turbid Urine in acute Diseases. *Galen*, as we before observ'd, makes three Sorts of turbid Urine; one voided thin and clear, and afterwards becoming foul and turbid; a second voided turbid, and continuing in that State; and the last voided foul and turbid, and afterwards growing pure, and clear. These last mention'd, *Galen, de Cris. Lib. 1. Cap. 12.* makes to have a less Degree of Pravity; because it shews, that something of an unequal Turbulency remains, and that the Disease will be concocted in a short time. Worse than the former is that kind of turbid Urine which is discharged clear, and becomes turbid afterwards; because such a posterior Turbation signifies that Nature wants to begin its Work of Concoction of the Disease, but has not actually begun it; and therefore requires a longer time, and a good measure of Strength in the Patient, to perfect the Concoction. Of a mean Kind between the two former, according to *Galen*, is that Urine which is excreted turbid, and continues in a State of Turbation, without growing in the least clear, or subsiding. And this Sort of turbid Urine, he says, indicates, that the Agitation in the Blood is still promoted, in order to a Concoction. The same Author, *de Sanit. tuend. Lib. 4. Cap. 4.* tells us, that "if the Urine appears turbid, like that of Horses, it shews the Veins to be replete with what they call crude Humours; but that Nature, however, is not idle, but hard at work in concocting them." Hence it appears, that turbid Urine, which becomes not clear, nor subsides, is better than such Urine as is excreted clear, and afterwards becomes turbid. This Distinction, however, *Hippocrates* seems not to be sensible of, since he no-where says that this last mention'd is of worse Signification than the other; but condemns, in general, those Kinds of turbid Urine which never subside, nor grow clear, more than the others; and pronounces them pernicious. Thus it prov'd, for Instance, in the Case of the Wife of *Philinus*, 1 *Epid. Aeg. 4.* who dy'd; of whom it is said, "Under her Convulsions great Quantities of Urine came from her, for the most part, involuntarily; white, thick, like what is disturb'd by shaking, after long Settlement in the Urinal; it did not subside, but in Colour and Thickness was like the Urine of a Horse; such was the Nature of her Urine, says *Hippocrates*, as far as it appear'd to me." And of the Wife of *Dromeades*, another fatal Instance, we read, *ibid. Aeg. 11.* "that the Day after she was

seiz'd with a Rigor she had a commodious Evacuation by Stool; that her Urine was thick, white, turbid, like Urine agitated after long Settlement, and did not subside." The same turbid, and not subsiding Urine, was observ'd in the Man who, "being in a feverish State, made a Supper, and drank freely;" 1 *Epid. Aeg. 12.* and in *Hermocrates*, 3 *Epid. Sect. 1. Aeg. 2.* who both died of acute Fevers. *Galen*, also, seems to assert the same *Prognosis* from turbid Urine, in his Comment on 4 *Aph. 70.* where he says, "Some Sorts of Urine remain turbid for a long time, others soon acquire a thick Sediment, and signify a quick Solution of the Disorder; but turbid Urine in which nothing subsides, if the Patient be strong, shews the long Duration of the Disease; if weak, Death." And *de Sanit. tuend. Lib. 4. Cap. 2.* he gives us his Description and Judgment of these turbid Kinds of Urine, in so clear a manner, that we may from thence conclude this kind of turbid Urine to be more pernicious than the rest. "Of all turbid Urine, he says, the general Mark or Character by which it is judg'd, is a Separation of the thicker and grosser from the thinner and more liquid Substance; and this Separation is effected in a quick or slow manner, or not at all; if the Separation be quick, and what subsides be white, smooth, and equal, it shews that Nature has the Dominion over the Juices, and concocts them. If the *Hypostasis* be good, but acquir'd at some considerable Distance of time, it prognosticates that Nature will prevail over the Juices in Length of time. But if there be either no Separation at all, or what subsides is bad, it indicates that Nature is weak, and wants Assistance in concocting the Juices."

We conclude, then, from the Premises, that turbid Urine, in which nothing subsides, is more pernicious than other Urine of that kind. The same may be demonstrated from the Rule of Contraries: For since *Galen* himself confesses, that turbid Urine, which collects an *Hypostasis*, is good, and signifies that Nature will overcome the Disease; the contrary Urine, therefore, which is destitute of all Sediment, and always remains turbid, must have a contrary Signification, and portend that the Disease will prevail over Nature: For turbid Urines, also, not to grow clear, indicates their Turbation to proceed not from the natural Heat employ'd in Concoction, but from some extraneous and preternatural Heat working the Ruin of the Patient. For turbid Urine, which acquires that Property from the natural Heat, terminates in Clearness; but turbid Urine which is the Effect of a Turbation by the febrile Heat, always remains turbid, and collects either none, or a bad *Hypostasis*.

Moreover, among the Kinds of turbid Urine, what remains turbid in the Beginning of a Disease, is worse than the like happening in the Increase; at which time the natural Heat is employ'd in Concoction, and often causes a Turbation in the Urine by filling it with Flatulencies; but in that Case the Urine in a little time deposits a good Sediment, and becomes clear.

As to that kind of foul or turbid Urine which is evacuated clear, and becomes turbid afterwards, whether it has a greater Degree of Pravity than the other Kinds of turbid Urine, as *Galen, de Cris. Lib. 1. Cap. 12.* will have it, I am not perfectly satisfy'd: For if by Urine becoming turbid after Evacuation, it be signify'd, as he there, and *Lib. 4. de Sanit. tuend. Cap. 4.* tells us, that Nature has not indeed yet begun, but is preparing to set about its Work of Concoction; and that by turbid Urine growing clear, it be indicated, that Nature has actually begun a Concoction; it seems to follow, that turbid Urine, depositing no Sediment, is the most pernicious, at least in acute Disorders, and is justly indeed so esteem'd, since it indicates the Presence of a Multitude of crude and gross Humours, which requires a long time for Nature to concoct and subdue; and a great measure of Strength is, also, necessary, for such a Work. Hence, in weak Bodies, and violent Disorders, such Urine portends Death.

With respect to the Colours of Urine, the white, thin, and aqueous, in acute Diseases, are the worst, because, as we learn from *Galen*, it is best, in bilious Diseases, for the Urine and Excrements to appear pretty much colour'd. *Hippocrates, Lib. Prognost.* condemns the thin and fiery red Urine, as "indicating the Disease to be in an absolutely crude State; and that if it continues long, it is to be fear'd the Patient will not be able to support himself till the Urine be concocted." And such is its *Prognosis*, because a thin and fiery-red Urine is a Sign of a violent Disease, and an internal burning Heat, or vehement Inflammation, either in the Liver, Stomach, or Diaphragm.

In Inflammations of the internal Parts, and in acute Fevers, gold-colour'd Urine, of long Continuance, is very much to be suspected, because it indicates a high Phlegmon, or Inflammation, in some one or other of the Viscera.

Black Urine, in acute Disorders, is always attended with Danger, unless it be critically excreted, or flows in a copious manner, under a Suppression of atrabillious Menfes, or a plentiful Hemorrhage from the Nose. In what Cases black Urine is not

to be dreaded we have shewed before ; but in acute Diseases, if not excreted under the Circumstances before-mentioned, it imports Danger, as indicating Plenty of adult Blood, which it will be difficult for Nature to concoct. For this Reason Hippocrates, *Prognost.* pronounces black Urine more destructive than the thin and fiery-red, and worst in adult Persons ; on the same Account he condemns black Clouds floating in Urine as a pernicious Sign.

Thin black Urine, excreted in small Quantities, 1 *Epid. Sect. 2. Stat. 3.* was one of the Symptoms which attended the Beginning of a very mortal epidemic *Causus*, or burning Fever, and portended a fatal Event.

Black Urine changing to aqueous, as in the Woman who lay ill near the cold Water, 3 *Epid. Sect. 3. Aegr. 2.* is destructive. Of her it is observed by Hippocrates, that on the eleventh Day she voided Plenty of thin black Urine, and on the twentieth great Quantities of aqueous Urine flow'd from her ; on which Galen, in his Commentary, observes, that black Urine changed to aqueous is a mortal Sign. The Author of 1 *Prorrh. T. 4.* writes, that " in Persons under Perturbations and Watchings, colourless Urine, with a black Enæorema, is phrenetic," that is, prognosticates a Phrensy ; and we may say, a Phrensy of a malignant and mortal Nature, because proceeding from a black and adult Bile.

Black and fetid Urine is observed by Galen, *Comment. in Aph. and Com. 2. in Prognost. T. 32.* to be destructive. And continually black, thin, and aqueous Urine, with bad Signs, portend Death, as it happened in the Case of the Woman, 3 *Epid.* before-mentioned, of whom it is said by Hippocrates, at the End of his Account, that " her Urine was perpetually black, thin, and aqueous, attended with a Coma, Loathing, Despondency, Watching, Proneness to Anger, Anxiety, and melancholy Disorders of Mind."

But the worst of all is black Urine with a black Sediment. On this Kind of Urine, Galen passes his Judgment, *Lib. 1. de Crisibus, Cap. 12.* in the following Words : " Worst of all, he says, is Urine black in its whole Substance, and I never knew one Person recover after voiding such Urine ; but it is less pernicious if what subsides of it only be black, and less so still, if no more than what floats in the Middle (the Enæorema) be black, and much less pernicious than this last, is a Cloud only of that Colour."

Oily Kinds of Urine, particularly such as have a Fatness on the Surface, resembling a Spider's Web, are condemned by Hippocrates in his *Prognostics* ; and Galen, *Lib. 4. de Sanit. tuend.* says, they are pernicious, as indicating a Colliquation. Of *Pythion*, 3 *Epid. Sect. 3. Aegr. 3.* who lay ill near the Temple of *Hercules*, it is said, that " he voided an oily Kind of Urine." Next to black, oily Urine is the worst, because it is a Sign of an extraordinary Colliquation, and that the igneous and febrile Estuation prevails over the natural Heat, as it did, for Instance, in the aforesaid *Pythion*, and the Woman of *Cyzicus*, *ibid. Aegr. 14.* who both voided first black, and soon after oily, or fat Urine.

No less pernicious is a fat Kind of Urine succeeding a thick, turbid Urine, which deposits no Sediment, because it signifies, that the igneous or febrile Heat, which first excited the Turbation, is not only undiminished, but very much increased. Such was the Circumstance of the Urine observed by Hippocrates in the Case of the Wife of *Dromeades*, and of him, who being feverish, supped and drank freely, 1 *Epid. Aegr. 11. 12.* In the latter Case the Patient on the first Day voided red, thick, turbid Urine, which deposited no Sediment ; on the fifth and seventh he excreted great Quantities of a fat, oleous Urine, and died on the eleventh Day of his Illness. In the other Instance, " the Urine on the second and third Day was thick, turbid, and had no Hypostasis ; on the fourth and fifth oily, and on the sixth the Patient died."

In like manner Plenty of thin aqueous Urine without Contents, no way relieving the Patient, or vitious in any manner, in acute Disorders is very much to be dreaded. Thus Hippocrates, 3 *Epid. Sect. 3. Stat. pest.* describing the Symptoms of an epidemic *Causus* generally attended with a Phrensy, and very mortal, tells us, that the Patients excreted " great Quantities of thin Urine, which were of no Service, nor had any Relation to a Crisis." And afterwards, speaking of the same Subjects, he says, " The Urine was in vast Quantities, and not in proportion to the Drink, but far exceeding it ; and it had besides an extraordinary Degree of Pravity, being neither thick nor concocted, nor duly purged." The same Author, 3 *Epid. Sect. 2. Aegr. 12.* relating the mortal Case of the Woman who lay ill in *Foro Mendacium*, says, that on the tenth Day she voided great Quantities of Urine, which had no Hypostasis. And of the sick Woman by the cold Waters, he says, that her Urine was always much in Quantity, black, thin, and aqueous.

Much thick, or turbid Urine, not subsiding, and no way

beneficial is, also, very much condemned, as are generally all great Quantities of Urine in the Beginning of acute Distempers, being justly esteemed of no Service, because at that Time nothing concocted can be excreted, nor any good Purgation be made.

Thin Urines in small Quantities, under burning Fevers, and acute Inflammations, are very bad, as indicating the Serum of the Blood to be consumed by the fiery Heat, and if the Urine has besides any manner of Pravity, it is so much the worse, as it proved in the Cases of the Wife of *Dromeades* before mentioned, the young Man of *Melibæa*, 3 *Epid. Aegr. ult.* and the Virgin Daughter of *Euryanactes*, 3 *Epid. Sect. 2. Aegr. 6.* in the two last of which the Urine was little, thin, and not of a good Colour ; and in the first Case the Urine was little, thin, and oily. And in the Cases of the Woman who lived with *Tisamenus*, and another Woman who belonged to the Family of *Pantimides*, 3 *Epid. Sect. 2. Aegr. 9. 10.* the Urine was observed to be thin, and in small Quantities. All these Patients before mentioned died in a short time after the Appearance of this Symptom which we are speaking of.

An utter Suppression of Urine from a total Consumption of the serous Humidities of the Blood by the igneous and febrile Heat, or from an Extinction of all the Functions, as Galen expresses it, *Com. 2. in 3 Epid. T. 4.* is a fatal Prognostic in Fevers. Of *Silenus*, who lay sick of a mortal Fever, 1 *Epid. Aegr. 2.* Hippocrates observes, that " On the sixth Day his Urine stopped, and that on the seventh he made no Water ; but that on the eighth he made Water in small Quantities with Pain and a pungent Sensation." This is an Indication to us of a vehement Heat consuming the Serum of the Blood, and rendering it highly hot and acrimonious. In the Woman of *Cyzicus*, 3 *Epid. Sect. 3. Aegr. 14.* the Woman who was a Domestic of *Aristion*, and lay ill of a Quinsy, *ibid. Sect. 2. Aegr. 7.* and the young Man of *Melibæa* before-mentioned, there was a Suppression of Urine a little before their Decease from an Extinction of the Faculty.

Urine little in Quantity, acrid, and of no Benefit to the Patient is, also, mortal, as it is a Sign, that all the serous Humidity is consumed by the burning Heat which affects the internal Parts, and that the Humours are inflamed ; and it was observed by Hippocrates of *Silenus*, that before his Death he voided a small Quantity of pungent acrid Urine. And I have myself, says *Prosper Alpinus*, observed these small Excretions of highly acrid and vellicating Urine in my beloved Wife *Guadagnina*, and several others, labouring under a mortal burning Fever, a little before their Decease.

Urine void of Contents, and having neither Hypostasis, Enæorema, nor Cloud, is bad, unless it be occasioned through Fasting, Fatigue, Watching, or an highly bilious State of Body, in which Circumstances it is a bad Sign for the Urine to appear without Contents, as we are taught by Galen, *de Cris. Lib. 1. Cap. 4.*

Thick Urine, without a Sediment, in acute Distempers, is affirmed by Galen to be mortal.

Urine with a small or a crude Sediment is bad : Such was that observed by Hippocrates, 1 *Epid. Sect. 1.* in those who laboured under an epidemic Kind of semitertian Fever. " The Urine, he says, was thin, unconcocted, colourless, and little in Quantity, or else thick, with a small Hypostasis, and no laudable Constitution, and depositing a crude and unseasonable Sediment."

Galen, *Com. in 4 Aph. 69.* condemns thick Urine on account of the Heaviness of its Sediment ; and the Author of the Book *de Urinis, Cap. 42.* tells us, that sometimes a white and crude Humour is excreted with the Urine, and subsides to the Bottom like a good Hypostasis. And Galen, *Com. 2. in Prognost.* says, that a copious and crude Sediment is an Indication that the Disease is fomented by a Multitude of crude Humours, and by that means rendered difficult and dangerous ; for the same Reason he absolutely condemns a thick and gross Hypostasis, *Com. in 4 Aph. 69.* Of such an Hypostasis is Hippocrates to be understood, 7 *Aph. 31.* where he says, " That an Hypostasis with a branny Sediment (*Crimnodes*) in Fevers, indicates that the Disease will be of long Continuance." We have already observed from Galen, *Lib. 1. de Cris. Cap. 12.* that those thick Sediments, which the Greeks call *Crimnodes*, signify a great Colliquation, and therefore in acute Diseases are mortal. The same Author, *Com. in 7 Aph. 31.* speaking of those Sediments, he says, " It appears then by these Examples [*Silenus*, and the sick Man in the Garden of *Dealces*] that whenever Patients void an Urine with this branny Sediment, if ever they recover, it is but very slowly ; but if the Disease be mortal, they die in a very short time." Galen therefore pronounces such Urine destructive, by hinting to us, that great Numbers whom it concerns, are destroy'd before the Disease is protracted to any considerable Length ; and that whoever happen to escape, recover with much Difficulty, and not till after under-

undergoing a long and tedious Sickness; and for this very good Reason, because such a Disposition as is the Cause of these Excretions by Urine, requires a vast deal of Concoction. *Hippocrates, Lib. Prognost.* highly condemns the *Crimnodes Hypostasis*; such an Hypostasis had the Urine of *Silenus, 1 Epid. Aeg. 2.* who died on the eleventh Day; and that of the sick Person in the Garden of *Deacles, 3 Epid. Sect. 1. Aeg. 3.* in whom the Disease came not to a perfect Crisis till the fortieth Day.

We have before observed, that the *Sediments* resembling the Pulse called *Orobis*, the *squamous*, or *scaly*, and the *furfuraceous*, which the *Greeks* call by the respective Names of *Oroboides*, *Petaloides*, and *Pityroides*, are mortal in acute Fevers, as proceeding from the same Colliquation, unless they are the Effects of some Disease in the Kidneys or Bladder. *Hippocrates*, in his *Prognostics*, passes his Judgment on all these Kinds of Urine in the following Words: "A *Crimnodes* (branny) Hypostasis in Urine, he says, is bad; but the *Petaloides* (*squamous*) worse; the white and the thin Urine have a considerable Degree of Pravity; but the *Pityroides* (*furfuraceous*) is yet worse." We know these Sediments are not the Effects of a Disorder in the Kidneys from the Presence of an actually incumbent, acute, and colliquating Fever, and the Appearance of no Sign by which we can judge the Kidneys to be injured.

A loose, discrete Sediment is, also, disapproved, as it indicates Crudity; and when an Hypostasis of this Nature appears, we can never safely predict the Recovery of the Patient.

The same Judgment is to be passed on an unequal Sediment, according to *Hippocrates Prognost.* where we read, "If there be an Intermission, and the Urine be sometimes excreted pure, and at other times deposits a white and smooth Hypostasis, the Disease becomes the longer, and the Patient the less secure."

A reddish Sediment is disapproved by *Hippocrates, ibid.* because, though it be in a good measure salutary, it indicates the Disease to be of long Duration. And the Author of the Book *de Urinis*, says, that a reddish Sediment shews a Defect of Concoction, but is no mortal Sign. A long Disease is however to be suspected, and therefore such a Sediment seems not free from Pravity, especially in weak Bodies, and violent Diseases, which soon exhaust the natural Strength, and oftentimes before the Disease is concocted.

A black Sediment, or Hypostasis, is very bad in acute Diseases, and, if attended with black Urine, is affirmed by *Galen* to be the worst of all Sediments; a black Enæorema is less pernicious, and a black Cloud least of all the three.

Of *Enæoremas* the sublime [*μελαινόν*] is disapproved, as indicating a Delirium; an Instance of which we have in the Virgin of *Larissa, 3 Epid. Sect. 3. Aeg. 12.* where *Galen*, in his Commentary says, that this *Enæorema* signify'd a Delirium, not in itself, but by Accident, as it was an Indication of a stenuous Blood, since if there were no Flatuosities in the Blood, the *Enæorema* would subside to the Bottom of the Urinal. The Author of *1 Prorrheth. 4. 32. 37.* makes a sublime suspended Substance in the Urine to portend a Delirium, and so much the more, says *Galen, Com. 2. in 1 Prorrheth. T. 1.* if it be attended with a Ringing of the Ears, or a Cessation of a Pain in the Hip, or some other inferior Part remote from the Viscera.

A black, loose, or discrete and unequal *Enæorema*, is bad; but not so bad as a Sediment of that Character, according to the Author of *Lib. de Urinis*, supposed to be *Galen, Cap. 17.*

A black Cloud is condemned by *Hippocrates, Lib. Prognost.* as is, also, a fat Substance swimming on the Surface of the Urine, because it indicates a Consumption. I have several times observed a Cloud of a circular Form elevated near the Surface in the Urine of those who have died phrenitic; and thence concluded such an Appearance to be a pernicious Sign in acute and turbulent Fevers. If therefore the Contents of the Urine, though constituted according to Nature, are by an undue Quantity of Spirit elevated to the Surface, it portends some Disorder, and that no inconsiderable one, of the Head.

To the fore-mentioned Characters of bad Urine we may add, that Excretions of Urine not remembered, or not perceived by the Patients themselves are, also, of bad Signification. Thus, *1 Prorrheth. 29.* we read, that "a Flowing of Urine from a sick Person without his remembering it, is pernicious;" for it indicates, as *Galen* says in his Comment on the Place, a Deprivation of all Sense of the natural Functions.

There remains one thing which highly deserves our Remembrance on this Head, and is as follows: In many very destructive Fevers, the Urine in Colour, Substance, and Contents, appears like the Urine of Persons in Health, and on that Account is esteemed and pronounced laudable by the mistaken and unexperienced Physicians, though at the same time it portends inevitable Death, by indicating to us that the Bile, by which

the Urine is coloured, has its Course wholly diverted upon the Brain, or one of the Viscera, and that nothing of the noxious Humours is excreted with the Urine, which is observed by Physicians to be highly destructive in Phrenies, and, also, in a Pleurisy and Peripneumony. *Prosper Alpinus de Prasag. Vit. & Mort. Aegrit.*

URINACULUM. The URACHUS.

URINALIS HERBA. A Name for the LINARIA. *Blancard.*

URINARIUS. The same as URETICUS.

URNA. A Measure of Capacity among the Romans, derived, according to *Varro, ab urinando*, "from Diving," because, as he says, *in aqua haurienda urinat, hoc est, mergitur ut Urinator*, "in drawing of Water it dives, or is immerg'd like a Diver." It is the fortieth Part of the Culeus, and half of the Amphora, *Columella, Lib. 3. Cap. 3. Volusius Mar-tianus, Columella, ibid.* speaks of Vineyards, which yielded six hundred Urnae the Jugerum, which is at the Rate of above fifty-four Hogsheads and an half to our Acre. *Arbuthnot of Weights and Measures.*

UROCRISIA, or UROCRISIS, *νεκρωσία*. The Judgment formed of Distempers by the Urine; from *νεκρ*, Urine; and *κρσις*, to judge.

UROCRITERIUM. The same as UROCRISIA.

UROCRITICA. The Signs taken from Urine.

UROGALLUS, *J. Jonst. Tetrao. Aristotel.* A Species of Pheasant; there are two Kinds of this Bird, the great and the small; the first is as big as a Turkey-cock, with a black Head, and short Beak, a Neck almost a Foot long, and blackish and reddish Feathers; the second, or smaller Sort, is called the Mountain Pheasant. These Birds live in Northern Countries, and are said to keep themselves for two or three Winter Months under the Snow; they are very good to eat.

Their Fat is emollient, resolvent, strengthening, and nervine. *Lemery des Drogues.*

UROMANTES, from *νεκρ*, Urine, and *μαντις*, a Prophet. A Water-caster; or, in the vulgar Phrase, a Piss-Prophet.

UROMANTIA. The same as UROCRISIA.

URON, *νεκρ*, Urine. See RENES, and URINA.

UROPYGION. See ORRHOPYGION.

UROSCOPIUM. An Inspection of the Urine.

URSUS. *Offic. Schrod. 5. 312. Raii Synop. A. 171. Schw. Quad. 131. Aldrov. de Quad. Digit. 117. Jonst. de Quad. 86. Charlt. Exer. 14. Gefn. de Quad. Digit. 941.* THE BEAR.

The Parts of this Animal, which are used in Medicine, are the Fat and the Gall. The Fat is emollient and discutient, and is of principal Use in the Alopecia; it cures, also, Pains of the Gout, the Parotides, and other Tumors, and heals Ulcers in the Legs. The Gall is recommended to be taken inwardly for the Epilepsy, Asthma, and Jaundice. Outwardly it is of Service in cancerous and spreading Ulcers, the Toothach, Dimness of Sight, and other like Diseases. *Schroder.* The Skin is good for a Person bitten by a mad Dog to lie upon; and serves instead of a Rug to Travellers in the Winter-season. *Schwenhsfeld.*

URTICA.

The Characters are;

The Stalks are not branched. The Leaves on the Stalks grow opposite by Pairs, and are serrated, triangular, and in the European Kinds set with stinging Spines. The Flower is apetalous, staminateous, male, seated, for the most part, in a tetrapetaloidal cruciform Calyx, and having a Calycule in the Middle. The Stamina are sometimes four, sometimes more, and the Testicles are parted into foliaceous Planes. The Fruit generally grows on a Plant distinct from that which bears the Flower, and is either a bivalve Capsule, full of Seed, and consisting sometimes of a Collection of Globules, or a Pincer-shaped Substance holding the Seed in its Gripe, and furnished with a filamentous Tube and Calycule. There are found Ovaries, also, in the Male Plant; so that there are Male, Female, and Hermaphrodite *Urticae* or Nettles.

Boerhaave mentions eight Sorts of *Urtica*; which are,

1. *Urtica*; maxima; racemosa; *Canadensis*. *H. R. Par.*
2. *Urtica*; urens; maxima. *C. B. P. 232. Tourn. Inst. 534. Boerb. Ind. A. 2. 105. Urtica. Offic. Urtica racemifera major perennis.* *Raii Synop. 54. Urtica major vulgaris.* *J. B. 3. 445. Raii Hist. 1. 160. Urtica major vulgaris & media sylvestris.* *Park. 446. Urtica urens.* *Ger. 570. Emac. 706.* COMMON STINGING-NETTLE.

The common Stinging-nettle has a creeping spreading slender Root, full of Fibres, sending forth squarish Stalks, a Foot and an half, or two Feet high, having two oblong sharp-pointed Leaves growing on long Foot-stalks, deeply serrated about the Edges, and covered, as well as the Stalks, with short stinging Hairs, that cause a Burning and Itching in the Flesh. The Flowers are

are small and staminous, growing on long slender Bunches; some Plants bearing larger Flowers, and no Seed, and others small round Seed, and smaller Flowers. They grow everywhere in too great Plenty. The Roots, Leaves, and Seed are used.

They are cooling and restraining. The Juice is good for all Kinds of inward Bleedings, Hæmorrhages, and Fluxes. A Tent dipt into it, stops the Bleeding of the Nose, or of Wounds. The Root is diuretic, and are accounted a Specific for the Jaundice. The Seed is commended for Coughs, Shortness of Breath, and Obstructions of the Lungs. *Miller's Bot. Off.*

The Leaves of this Species of Nettle have an insipid, glutinous Taste, and give no Tincture of Red to the blue Paper; the Roots stain it very little; they are insipid also, but a little styptic; from which we may conjecture, that the Nettles contain a Salt resembling that which is naturally in the Earth, that is to say, composed of Sal Ammoniac, Nitre, and Marine Salt; but in these Plants it is clogged with a great deal of glutinous Phlegm, and united with abundance of Sulphur and terrestrial Parts: For,

By the chymical Analysis we obtain from the Nettles some volatile concrete Salt, a great deal of Sulphur and Earth, and several Liquors, which give a greater Indication of an acrid than an acid Salt; so that it is very likely, that the Phlegm of these Herbs is thickened rather by the terrestrial Parts, than by the Acid: But this thick Phlegm, which is very considerable, is entirely destroyed by the Fire. Nevertheless, it is no Wonder, that the Nettles should be detensive, diuretic, and good to restore the Motion of the Fluids; for this glutinous Phlegm only moderates the great Activity of the acrid Salt, and of the Sulphur.

The Juice of Nettles depurated either of itself, or by gentle boiling it up, stops the Spitting of Blood, and the Flux of the Piles: It is very good for the Dysentery and Fluor Albus. The Cataplasm of Nettles is emollient and resolvent, and consequently good to dissolve Tumors accompanied with an Inflammation; it relieves the Gout, and dissipates sometimes malignant Ulcers, and cold Tumors. The Leaves of Nettles may be taken after the manner of Tea, for the Stone and Gravel; some drink the Wine in which they have been infused. The Roots of Nettles preserved with Sugar, procure Expectoration in an old Cough, Asthma, and Pleurisy, especially if the Leaves be applied as a Cataplasm upon that Side where the Patients feel their Pain: Some drink their Juice for the same Diseases. The young Shoots of Nettles, taken in Broths, purify the Blood. The Conserve of their Clusters, and the Extract of the whole Plant, have the same Virtues. The Pilsan of Nettles is very good in a malignant Fever, Small Pox, or Measles; Emulsions may be made with the Water and Seed of this Plant. *Martyn's Tournefort.*

All Nettles are diuretic and lithontriptic, and are said to have a particular Antipathy to the *Cicuta*, and *Hyoscyamus*. Eaten as a Green, they loosen the Belly, cleanse the Kidneys, expel the Stone, and promote Expectoration, and the Eruption of the Measles. The good Wives in our Country use to gather the fresh Buds of Nettles, and the Leaves at their first coming forth in the Spring, and boil them in Broth, to purify the Blood. The Juice of the Herb, or a Syrup prepared of it, are very effectual in Spitting of Blood.

Take of the Juice of Nettles, four Ounces, for five or six Days together in the Morning fasting, and boil the Nettles in Broth. This Remedy has recovered those who have been left by the Physicians.

A Woman who had a Bleeding from a Vein opened in her Stomach, which returned upon her at every new Cold or Indisposition, found the same Medicine of most immediate Efficacy, when all others failed. The distilled Water, mixed with Spirit of Wine to a great Degree of Acidity, is admirably effectual in restraining an Hæmoptysis. *Hier. Reblingerus*, and *Udalricus Jungius*, two Persons of Quality, who were both very subject to Hæmorrhages at the Nose, used, as a never-failing Remedy, to take a Piece of the white, ligneous, and round Root of the Red Nettle, and put it up their Nostrils, snuffing up some Water.

Externally it is of Service in putrid, gangrenous, and malignant Ulcers, and discusses Hardnesses and Tumors, and represses an Inflammation of the Uvula. The lesser *Urtica* bruised, or the Juice of the same put up the Nostrils, stop their Bleeding.

The Seed of the *Urtica*, especially the Roman Kind, is of frequent Use in Affections of the Lungs, as the Asthma, stubborn Coughs, the Pleurisy, and Peripneumony. A Conserve prepared of the Bunches of the Flowers and of the Seeds, is a most effectual Remedy in the Stone of the Kidneys, Affections of the Thorax, and Spitting of Blood. That the Seed of

Nettles provokes Urine and the Menstrues, and stimulates to Venerary, is agreed by Physicians; whence it is commonly given by lewd Women to those who address them. The Root of the great Nettle is highly commended for the Jaundice; the same boiled in Wine and Honey, is an excellent Medicine in old Coughs, and an Orthopnea.

For the burning Heat, Pustules, and Itching, excited by Nettles, the Remedies are Oil of Olives, Oil of Roses, the Juice of Tobacco, or a green Leaf of the same applied; and, to name no more, the expressed Juice of the Nettle itself, as *Parkinson* tells us.

An immoderate Flux of the Hæmorrhoids, after all manner of Remedies try'd in vain, and the Patient was very much weakened, has been cured only by the Juice of Nettles depurated by a slight Ebullition, given to the Weight of two Ounces with a little Sugar. Examples of this have been collected from *Riverius*, and other practical Writers of Medicine, by *Dr. Tancred Robinson*.

The People in my Country, says *S. Pauli*, know by certain Experience how to prevent the unseasonable Fermentation of their new Beer, and to defend it from the Thunder, by placing in their Vessels a very large Stinging-nettle, with some Bits of Steel. *Raii Hist. Plant.*

3. *Urtica*; urens; minor. *C. B. P.* 232. *M. H.* 3. 435.
4. *Urtica*; urens; pilulas ferens; prima Dioscoridis; semine Lini. *C. B. P.* 232. *Tourn. Inst.* 434. *Boerb. Ind. A.* 2. 105. *Urtica Romana*. Offic. *Urtica pilulifera folio profundius Urticæ majoris in modum serrato, semine magno Lini*. *Raii Synop.* 54. *Urtica Romana*. *Ger.* 570. *Emac.* 706. *Park.* 440. *Raii Hist.* 1. 161. *Urtica Romana sive mas cum globulis*. *J. B.* 3. 445. ROMAN NETTLE.

This Nettle has rounder Stalks, and darker-green Leaves, more deeply serrated, than the common Nettle; they are neither so large, rough, nor hairy, but full of small shining Prickles, that are rather more stinging and burning than the common. Towards the Top of the Branches, from the Bosom of each Leaf, arises a round Ball on a long Foot-stalk, about as big as a Pea, and thick set with sharp stinging Hairs, including several shining Seeds, in Shape like Linseed. It grows in several Places of England, as about *Yarmouth*, and in *Romney-Marsh*; but it is not very common.

This is much of the same Nature with the common Nettle; but the Seed is reckoned more pectoral, and of greater Service against Coughs, and Affections of the Lungs; but is very seldom used. *Miller's Bot. Off.*

It grows in sandy Places, and the Parts in Use are the orbicular, compressed, smooth, shining Seeds, which are of a blackish-red Colour, of a somewhat acrimonious Taste, with a kind of Fineness. They are frequently used in pulmonary Affections, the Asthma, stubborn Coughs, Pleurisy, and Peripneumony. *Dale.*

5. *Urtica*; altera; pilulifera; Parietaræ foliis. *H. R. Par.* 131.
6. *Urtica*; Romana; facie Urticæ vulgaris.
7. *Urtica*; pilulifera; folio angustiori; caule viridi; Balcarica. *Salvadore.*
8. *Urtica*; Americana; caule rubro; folio læte viridi; splendente. *Boerb. Ind. alt. Plant.*

The Nettle is called *Urtica*, *ab urendo*, "from burning," because it is very burning when handled. The four first Species are furnished with small, slender Spines, of so flexible a Nature at the Extremities, that when they enter the Skin they easily bend; but when they penetrate the Flesh they cannot be drawn forth; but are there broken off as it were into Fragments, and excite an Inflammation and Vesicles, which continue till the Pieces are expelled.

The Decoction of the Leaves is aperitive, and commended against the Gout. The greenest and freshest Stalks are used to whip the Limbs affected with the Gout or Palsy, in order to excite an Inflammation in the external Parts. This Plant is of Service in Diseases of the Kidneys and Bladder, Coughs, Phthisis, internal Hæmorrhages, Hæmoptysis, Vomiting of Blood, an immoderate Flux of the Hæmorrhoids, and bloody Urine. The Leaves bruised and applied, resist a Gangrene, and a Decoction of them drank in the manner of Tea, is an excellent Laxative. *Hist. Plant. adscript. Boerhaav.*

URTICA ACULEATA. A Name for the *Cannabina*; flore purpurascens, and for the *Cannabina*; flore albo.

URTICA HERCULEA. A Name for the *Galeopsis*; procerior; foetida; spicata.

URTICA INERS. A Name for several Sorts of *Lamium*; it is, also, a Name for the *Galeopsis*; sive *Urtica iners*; flore luteo.

URTICA MORTUA. A Name for the *Galeopsis*; lutea; amplioribus foliis; maculatis.

URTICA MARINA. Offic. *Charit. Exer.* 68. *Schonef. Licht.* 77. *Urtica*. *Jonst. Exang.* 54. *Urtica marina* 5 & 6. *Rondeletii*

Rondeletii. C. B. P. 369. *Urtica rubra*. Rondel. i. 530. Bellon. Aquat. 342. Gesn. 1039. Aldrov. Exang. 568. *Urtica vel Pulmonis marini* Species. Mer. Pin. 194. SEA BLUBBER.

It swims on the Water; and is often cast by the Tide on the Shore, being a round, compressed, pellucid Substance; resembling a Jelly, with red Veins interspersed. The Virtues are the same with those of the *Lepus marinus*.

URTICATIO. A kind of surgical Operation, which consists in striking any Part of the Body with Nettles, in order to recall the natural Heat.

URUCU. See **ACHIOTL**.

URUCATU *Brasilienfis*. *Marogr.*

This is a Plant which grows upon the Tree *Urucari-iba* without a Root; but it has four or five Leaves, which are broad beneath, and make an oval Bulb, about four Digits in Length, and containing a fat, medullary Substance, of the Appearance and Consistence of a sacitious Ointment, cold to the Touch, of a white Colour, inclining to green, and interspersed with many fine whitish Filaments. Above the Bulb the Leaves part, and become narrow; but shoot up to a Foot or more in Height, wider above, Tongue-shaped, and green like those of the Squill; every Leaf has three Fibres extended according to its Length. It bears neither Flower nor Fruit, and has no Smell, as neither has its Ointment.

This Ointment is cold; and esteemed very proper and effectual for mitigating Pain; and is, also, found by Experience to induce a Sopor. *Raii Hist. Plant.*

URUCURI-IBA. See **PALMA**.

URUMENA, *ερεμνα*. The Urine; or Substances discharged together with the Urine.

URU-PARIBA. See **GUIRA-PARIBA**.

URUS. The wild Bull.

USFIDA. The Scorize of Gold. *Rulandus*.

USNEA CRANII HUMANI. Offic. *Musculus ex Cranio Humano*. Ger. 1374. Emac. 1563. Park. 1313. *Musculus Cranio Humano immatus*. *Usnea Officinarum nostratium*. *Raii Synop.* 36. MOSS OF A DEAD MAN'S SKULL.

They find it frequently in Ireland; whence it is imported to us. The whole Plant, which is in Use, is commended by very many Authors for Hemorrhages; and is an Ingredient in that celebrated Composition called *Unguentum armarium*.

There are two Sorts of *Usnea humana*; the first, which is used in our Shops, is imported from Ireland, and is nothing but a smaller Species of the *Musculus vulgaris terrestris Adiantum aurei Capitulis*, and differs not from the Moss which grows to Stones and Trees, which it exactly resembles, so as not to be distinguished from it neither by Form nor Smell. Mr. Dood, an Apothecary of London, and a very good Botanist, has observed it growing to the Bones of Horses and Oxen lying in the Fields.

The other Species is crustaceous, and grows to Skulls after the Manner of the *Lichen petraeus*; and spreads itself. And this Sort is preferred by Authors to the preceding, as it is supposed to be endued with a peculiar Virtue of subduing and removing several Kinds of Diseases. *Ephem. Germ. Raii Hist.*

This Species of Herb which adheres to the Skulls of Carcasses exposed to the Air, is by different Authors recommended as highly beneficial in various Diseases. Thus it is extol'd as a Specific in Epilepsies, and all Disorders of the Head, in Hemorrhages produced by whatever Cause, and in Dysenteries. It is used internally, externally, alone, mixed with other Substances, and as an Amulet. It is an Ingredient in the *Unguentum Armarium*, *Magneticum*, or *Sympatheticum*. In Hemorrhages it produces its Effects, if only held in the Hand. Thus Boyle, in his Specifics, informs us, that he himself had an Hemorrhage of the Nose stop'd by using it in this manner. Juncker, in Therap. informs us, that it renders the Body so impenetrable as not to be pierced with a Musket-bullet. Some affirm, that the Virtues of that Usnea are greater which has been gathered from the Skulls, during a certain Position of the Stars; when, for Instance, the Moon is in the Increase in the House of Venus, when she is in Pisces, Taurus, or Libra. Others affirm, that the Usnea gathered from the Heads of hang'd Persons is best: But Paracelsus asserts, that what is found on the Skulls of Persons broken on the Wheel, is no less valuable: See Schrod. Ph. Hoffman; Cl. Schrod. Boecler. Ettmuller, Helmont, Barbet, Med. Pauli Quadrip. Konig. Valent. Mus. Hildan. Grube in Arcan. Med. informs us, that those who greatly extol the Usnea in Medicine, suppose, that the vital and animal Spirits of the deceased Person are collected in it, and by a certain medicinal Force derived to any Part affected in a living Person: But as every one knows, that a Carcase has neither vital nor animal Spirits, those seem to be in the right who give no Credit to the peculiar Power of this Plant, or its Specific Virtues in removing obstinate Disorders. Junckerus, in the Work already quoted, affirms, that the Virtues of

this Plant are founded on Credulity, or some other Error. Besides, the Force of Imagination may be supposed to co-operate strongly with this Medicine, as Boyle, de Specificis, thinks; where he informs us, that if a certain Person, when Blood was taking from him, took Usnea in his Hand for the sake of Curiosity, the Blood ceased to flow till he laid it aside again. Marx, the celebrated Dealer in Aromatics, in Nuremberg, does not hesitate to affirm, that the Usnea of the human Cranium is of no other Use but to be preserved as a Rarity. And Boecler is of Opinion, that, as with the Bones of dead Bodies; so, also, with the Usnea, many superstitious and impious things are done. But I am of Opinion, that in Hemorrhages, where styptic Tents, or Pessaries, are expedient, the Usnea mixed with other proper Ingredients, may produce happy Effects. Besides, where esiccant and astringent Medicines are proper, its Powder, whether used externally or internally, must certainly produce some Effect; for it is of a drying and astringent Nature. Thus I agree with Pauli de Med. Corp. hum. Sect. 8: where he speaks in this Manner: "Though the Usnea may produce good Effects in Spittings of Blood, Hemorrhages; and other Fluxes; yet there is no Necessity why a Physician should disgrace his Profession by prescribing it, since there are other Substances equally astringent, and which no Patient will refuse on account of the Horror and Nausea they produce." Ettmuller informs us, that some supply the Place of the true Usnea with the Moss of a Tile, which in Hemorrhages of the Nose, they immerse in Vinegar, and apply to the Crown of the Head; whereas instead of the true Usnea, which is rare, others use one of the artificial Kind, which they obtain in the following manner: They take the Moss of large Meadow Stones, gathered in the Month of April; this, when gently dried, they reduce to a gross Powder in a Glass Mortar, sprinkling it with Malmsey Wine, or that of Petrus Simon, till it has acquired the Consistence of a thick Poulitice. Then with a Knife they spread this Preparation very thin on the Cranium of a Carcase broken on the Wheel. As it becomes gradually dry, they spread more of it on the Cranium, which in the open Air they expose to the Rays of the Sun, removing it when Rains come on. This they repeat till the Plant begins to flourish, and afterwards gather from it an Usnea not inferior to that which grows spontaneously from the Skull. Ludovici, in Pharm. when treating of Vulneraries and Astringents, speaks in the following manner: "Moss may be every-where found; and that obtained from the Oak, and the common Egyptian Thorn, for medicinal Purposes, in Pessaries for Instance, Tents and Ointments are not inferior to the Usnea; gathered in the most superstitious manner, or even that growing in human Skulls." Rieger.

USRUB, or URSUB. Lead. *Rulandus*.

USTILAGO. Blighted Corn.

USTIO. Burning, either relative to the Simples of the *Materia Medica*; or to the surgical Application of the actual Caustery.

USTULATIO. The toasting, or roasting any moist Substance, in order to render it dry. It is, also, used with respect to Wine which is heated; or, as it is usually expressed, burnt.

USUALIA MEDICAMENTA. Medicines which are in common Use.

USURAT. Tin. *Rulandus*.

UTERARIA. Uterine, or hysteric Medicines.

UTERINUS FUROR.

The *Furor uterinus* is a Species of Madness proceeding from an ardent and inordinate Desire of Coition; which deprives the Patient of the Use of Reason, so that she speaks all manner of obscene Words, and abandoning all Shame invites, by all Sorts of immodest Gestures and Expressions, the Men to venereal Embraces.

This immoderate Desire of Copulation is produced by the Plenty, Acrimony, and Heat of the uterine Juices, exceeding the natural Bounds, and creating an extraordinary Turgency in the seminal Vessels, which stimulating, and in a manner inflaming the genital Parts, excites a vehement and untuly Appetite to venereal Commerce. From the same Matter and Fomes ascend Vapours to the Brain, which disturb the Reason, and interrupt the Use of it, tho' indeed the furious Desire of Coition alone, without the Assistance of Vapours, might very well be supposed to produce the same Effect, since all violent Passions are known to create the like Disturbances in the Mind, and particularly an inordinate and extravagant Love, which has the Name of *Eroticus Affectus*. [See AMOR].

The Juices acquire these Qualities by long Retention in hot and salacious Bodies; for which Reason, this Affection is proper to Virgins, and young Widows, tho' it may possibly happen to young Wives, whose Husbands are either impotent, or hated, and not qualified for a sufficient Depletion of the Spermatic Vessels, or satiating the venereal Desires.

Some are of Opinion, also, that the Juices putrefy, and contract a malignant Quality, productive of those severe Symptoms. But they will find it difficult to shew the Difference between the *Furor uterinus* and the *Hysteria Passio*, which owes its Original to corrupted and malignant Juices. For the various Degrees of Putrefaction create different Degrees of Malignity, whence arises a great Variety of Symptoms; yet the manifest Qualities of the Juices, such as its Redundance, Heat, Acrimony, and immoderate Turgescence, together with the excessive Heat of the genital Parts, are sufficient to excite this Affection.

The Causes productive of this Disorder are hot, copious, and acrimonious uterine Juices, Youth, a sanguine and bilious Temperament, partaking of an adust Quality, and atrabilious Food, of bad Juice, rich and plentiful Living, and especially spiced and high-seasoned Dishes, with the frequent Smell of Spices, as Nutmegs, Cubebs, and the like, long Sleep, and on soft Featherbeds, the Courtship and Careless of Lovers, the Reading of obscene Books, Dancing, and other Pleasures and Sports enjoyed in Company with young Persons.

The Diagnosis of this Affection is easily formed from the Premises; but because it comes on gradually, and by slow Steps, its Progress is to be explained. In the Beginning, while Reason is yet entire, the Patient becomes more sad and silent than ordinary, has a wanton Cast of the Eye, and a red Colour in the Face, which is heightened at Intervals, and especially at the Relation of amorous Adventures; at which Time the Pulse and Respiration are altered, through Sympathy of the Heart. Hence *Galen* boasts, that he had discovered the mad and ungovernable Passion of Love in Women by the Pulse, which suddenly alters, and beats in various Manners at the Sight, or recalling to Mind the beloved Object. In Process of Time, as the Disorder increases, she begins to be quarrelsome, and to shed Tears, and now-and-then to burst into Fits of Laughter, and to speak many things inconsistent or indecent; from which, however, nothing certain can be inferred: After this she repents, and is sorry for what is past, till the Return of another Paroxysm, which happens, according to the irregular Motion of the Matter, without any certain Period. When the Disease is arrived at its Height, the Patient invites the Men to venereal Commerce openly and in a public Manner, and talks of venereal Affairs in coarse and common Terms, calling Things by their proper Names.

As to the Prognosis, the Disease is curable if treated in Season; but if suffered to continue for a considerable Time, till it has taken firm Root, it degenerates at last into a true Mania.

There is great Hope of Recovery when the Intervals begin to be long, when the emaciated Body begins to recover Flesh, and when the Patient is not much affected or disturbed at the Mention of Love Affairs.

The Cure of this Affection is to be directed with a View to the Correction of the hot Distemperature of the Viscera, particularly the Uterus, and of the Blood and uterine Juices, and to the Evacuation of the acrid Humours, and seminal Matter. These Intentions are answered by the following Method:

First, then, we are to begin with Phlebotomy, and repeat the same several times, and as often as the Strength will permit, that the whole Mass of Humours, and the Uterus itself may be refrigerated, and a Revulsion of the fervid Blood from the Veins of the Uterus procured.

If there be a Suppression of the Menfes in the Case, the Veins are to be opened in the inferior Parts, in order to provoke that Course of the Humours which Nature has appointed.

If the Blood seems to tend towards the hæmorrhoidal Veins, which is known by their Swelling and Redness, these Vessels are to be opened with Leeches.

After this, Cathartics are to be administered of the milder Kind, and such as evacuate Bile or Melancholy, as either of them most abounds.

After the Use of Purgatives are required Julaps preparatory of the peccant Humours, or such as are refrigerating and gently opening, to be used three Days.

Soon after this, a pretty strong Purge is to be given in order to evacuate the obstinate and deeply fixed Humours. For this Purpose the same Cathartics as are prescribed in a Mania, are here, also, proper to be used, and to be repeated at Intervals.

After repeated Purgation, in order to the Refrigeration of the Uterus and the whole Body, and to allay the Heat of the Humours, the following Bath will be of excellent Service, being frequently used during the Course of the Distemper;

Take of Leaves of Lettuce, Willow, Water-lily, the Vine, Purslane, Navelwort, each one Handful; the Flowers of

Violets, Water-lily, and Roses, each two Handfuls: Boil them all together for a Bath, which the Patient is to use warm, without sweating, twice a Day, long before and after the Times of Eating.

But since an entire Bath cannot easily be continued for many Days together, a Semicupium at least of the Decoction aforesaid, or even of simple Water, is frequently to be used quite tepid, or warm; for the principal Part of the Cure consists in potently refrigerating the Uterus. And this is confirmed by a remarkable Case related by *Harvey* in his Treatise *de Partu*, of a Woman of Quality, who was delirious for above ten Years from a *Furor* and *Melancholia Uterina*. After trying all manner of Remedies without Effect, she happened to be seized with a Falling down of the Uterus, which was not suffered to be replaced till its hot Distemperature was thoroughly qualified by the external Cold. The Success answered Expectation, and the Lady recovered the perfect Use of her Reason in a short time, after which the Uterus was reduced to its proper Situation.

For the farther Refrigeration of the Body, it will be convenient to drink Whey for many Days together.

In short, all those Remedies which are prescribed for the Cure of the Hypochondriac Affection and Mania, are of Service, also, in this Disorder; Respect being had to its Origin, whether from Bile or Melancholy.

To all the Remedies before-mentioned, may be added such as are endued with a specific Property of extinguishing and refrigerating the uterine Juices; among which are the following Preparations:

Take of Leaves of the Water-lily, Willow, and Agnus Castus, each four Handfuls; Lettuce, Purslane, Navelwort, each one Handful; the Four greater cold Seeds, those of Lettuce, White Poppy, each half an Ounce; Seeds of Dill, two Drams; Flowers of Water-lily, and Violets, each one Handful: Bruise them fresh together, sprinkling them with the Juice of Lemons, and distil them in *Balneo Maria*, and to each Pint of Water add a Dram of Camphire: The Dose is an Ounce, to be taken frequently:

Or,

Of the forementioned Simple, or some of them, may be prepared a Decoction, which may be taken at several Doses, sweetened with Sugar, with an Addition of a little Camphire.

Or,

An Emulsion may be prepared of the Four greater cold Seeds, those of Lettuce, and White Poppy, extracted with Waters of the Water-lily, Lettuce, and Willow, with Syrup of Violets.

Opiates may, also, be prescribed of the following Forms:

Take Conserves of the Flowers of Water-lily, Violets, and the Vitex, or Agnus Castus, each half an Ounce; Conserve of Roses, an Ounce and an half; Stalks of Lettuce preserved, one Ounce; Coral, and Emerald prepared, each one Dram: Make them into an Opiate with Syrup of Violets, and Water-lily.

When the Delirium is at its Height, Medicines which procure Sleep are of greatest Service, both internal and external, and such as are prescribed for the Cure of the Phrenitis and Mania.

During the whole Course of the Disease, cooling Clysters, and gentle Cathartics are to be used, avoiding the stronger and more acrid Purgatives, which by Exagitation of the Matter contained in the Uterus, or its Vessels, may cause an Exacerbation of the Symptoms, as is usually the Case.

Injections may, also, be made into the Uterus of the Decoction of those Herbs which have been prescribed for Baths, and other Remedies; and with those Injections Salt of Lead may properly be mixed.

Clysters of Oxycrate frequently administered are of good Effect.

External Remedies are cooling Liniments, applied to the Loins, Pubes, and Perinæum, prepared of Oil of Water-lily, Ointment of Roses, or the White cooling Ointment, with the Juice of Nighshade, Henbane, and Water-lily dissolved, with an Addition of a little Camphire.

A leaden Plate perforated is to be continually worn upon the Kidneys.

With

With regard to the proximate Cause of this Disorder, since the Evacuation of the acrid and corrupt Juices may remove the same, the most proper Means would be, in the Beginning of the Disease, before the Fit of Deliriousness becomes very manifest, or in some more lucid Interval, to dispose of the Patient in Marriage to a young and lusty Man, by whose Embraces the Uterus being satiated, and the Matter contained in its Vessels discharged, the Cure is effectually accomplished.

Pessaries may be prepared of Leaves of *French Mercury* bruised, with a little Myrrh, or Powder of Birthwort. These are to be introduced while the Patient is in the Bath, that the Uterus may not be over-heated, and after an Hour's Time be removed. And soon after Injections are to be made into the Uterus of Whey, or a Decoction of Barley, with a little Juice of Nightshade, Houfleeck, or of Hemlock, which last Herb is peculiarly recommended in this Affection.

For Expurgation of the Juices, the following Bolus is of great Service:

Take of *Venice Turpentine*, three Drams; Troches of *Agaric*, half a Dram; Seeds of Carrot, Hemp, Powder of Wood of Aloes, each eight Grains: Make them into a Bolus with Sugar.

If the Disorder continues, Cauterics are to be applied to the Legs; for there is no Method more effectual than to derive the Matter to the inferior Parts by means of those Drains.

If the Spleen be affected with a Tumor, or Obstructions, as is often the Case, it is to be treated with Remedies properly adapted to those Affections.

And, in the last place, because the Brain and Heart are great Sufferers in this Disease from Vapours ascending thither from the Uterus, proper Relief is to be provided for each Part; the Brain is to be eased as much as possible by Frictions, and Ligature on the inferior Parts, and Application of Cupping-glasses to the Hips and Groins; and the Heart must be relieved by Epi-thems, both liquid and solid, such as are prescribed in Decays of the vital Forces. *Riverii Prax. Med.*

UTERUS. The Womb.

In investigating the curious Structure of the Uterus, we shall first take notice of the surprising Force, or elastic Power, of its muscular Fibres and Vessels, which are capable of being incredibly distended, and of spontaneously returning to their former State. This is principally obvious in pregnant Women, whose Uterus is sometimes incredibly distended by a large Foetus, or Twins, and the Secundines and Waters; but when these are excluded, the Uterus is again lessen'd, and contracted; so as hardly to be an hundredth Part so big, as during Gestation: And though other Parts of the Body, such as the Skin and Scrotum, when distended by a dropical Tumor, or the Stomach and Intestines when turgid with Flatulences, are capable of yielding in a surprising manner, when acted upon by an interior Force, and of contracting themselves into their natural State and Space, when that Force ceases; yet this Power of Dilatation and Contraction is no-where so conspicuous as in the Uterus. Besides, what is still more surprising is, that though the Uterus, which, out of a State of Gestation, is hardly equal to a Pear in Figure and Bulk, grows to so vast a Largeness, yet its Thickness is not lessen'd by this Expansion, but rather remains the same.

Besides, no Part of the human Body is furnish'd with such numerous Vessels as the Uterus. The first of these Vessels are, the spermatic Veins and Arteries, which are contiguous to the Ovaria; and, being in numerous Ramifications convey'd to the Bottom of the Uterus, terminate there, which is sufficiently obvious, from this, that, by blowing into these spermatic Vessels, the Bottom of the Uterus is distended: After the spermatic Veins and Arteries, the next most conspicuous Vessels are, the Ramifications of the hypogastric Artery and Vein, which run to the middle and inferior Part of the Uterus, as, also, to the Vagina; to which, also, especially where it is connected with the Rectum, are distributed the Ramifications of the external hæmorrhoidal Veins, which are by an Anastomosis join'd with the Ramifications of the internal hæmorrhoidal Veins; and, which is particularly to be observ'd, these Blood-vessels, copiously distributed through the Body of the Uterus, not only run everywhere, in a winding incurvated Direction, but are, also, very small in Virgins, barren Women, and such as are not with Child; notwithstanding which, after Conception, in pregnant Women, these Vessels are so enlarg'd, both with respect to Length and Breadth, that their smallest Ramifications become capable of admitting a large Probe.

Besides the large Congeries and winding Direction of the Vessels in the Uterus, there is so remarkable and singular a Con-

currence of these Ducts, that there is no-where so frequent and great an Anastomosis or Conjunction both of arterial and venous Vessels distributed from different Parts of the Body: For when the spermatic Vessels are blown up, the hypogastric are, also, dilated; and when these are expanded, the former are so too. The external Hæmorrhoidals, when blown up, distend the internal, which, when expanded, dilate the former: Besides, there is a manifest Connection observ'd between the spermatic Vessels of the Right and Left Side. But there is this peculiar in the exquisite Connection of the Vessels of the Uterus, that their Extremities terminate in such a manner, as to form mutually communicating oval Cellule of different Bulks, which render the Substance of the Uterus spongy and fungous, and which, in pregnant Women, are surprisingly enlarg'd. Hence it is that the Uterus, especially of a pregnant Woman, when cut transversely, exhibits large and almost numberless Cavities: By means of this sinuous and cavernous Conjunction of the Vessels it is, that not only the Uterus in pregnant Women is greatly distended by the contain'd Blood, and its Compages, which was before tense and constricted, render'd more lax and soft, but, also, that the Orifices of the Extremities of the Vessels, which under the Membrane of the Uterus open obliquely into its Cavity, and through any of which, when Air is blown, it easily passes into the Cavity of the Uterus, are more dilated; by which means, the perforated Filaments of the vascular Membrane of the Chorion can receive Nourishment from them, and convey it to the Foetus.

Nor in this anatomical Consideration of the Structure of the Uterus, and especially of its Vessels, are we to forget, that not only the hypogastric Veins, which return the Blood, have Diameters as large again as the hypogastric Arteries, but, also, that the spermatic Veins do not run straight, but in a winding manner; so that if they were stretch'd out, their Length would amount to some Ells, and be three times greater than that of the spermatic Arteries. All these Circumstances sufficiently evince, that the Motion of the Blood through these Veins is slow, especially since they are destitute of Valves, by means of which, in other Parts of the Body, the otherwise slow Return of the Blood to the Heart is greatly promoted and assisted. With respect to the Structure of the Uterus, it is, also, remarkable, that it is destitute of Fat, with which other internal Parts are copiously cover'd, for this Reason, no doubt, lest its Membrane, being furnish'd with adipose Vessels, should hinder the free Expansion and Contraction of its Sides.

From what has been said, many difficult Phenomena, with respect to the natural and preternatural State of Women, may be more clearly explain'd; many Errors in the pathologic and therapeutic Parts of Medicine detected; and a surer and more compendious Method of treating Diseases, arising from Indispositions of the Uterus, establish'd.

To begin, then, with the most usual Disorder of this kind: It is sufficiently known, that, every Month, Women, from the time of Puberty till they are pretty far advanced in Years, have a salutary Excretion of pure Blood from the Mouths of the Vessels, whether dispersed through the Uterus, or the Vagina; but when this Excretion is either totally suppress'd, too scanty, or returns at irregular Periods, violent and terrible Disorders are produced; so that Physicians, in all Disorders incident to Women, ought to have a just and careful Regard to the State of the menstrual Discharge. But in specifying the Causes of this Evacuation, Physicians run into different Opinions, since some assert that it is owing to a certain specific Ferment; others, that it is produced by a certain determinate Effort of an intelligent Principle, endeavouring to expel what is disagreeable to Nature: Others assert, that this Evacuation is produced by the Influence of the Stars, and especially of the Moon; whilst some maintain, that it is the Effect of a Redundance of Blood, which is denied by others; because, say they, by Venesection, which hinders the Generation of a Plethora, this menstrual Discharge cannot be totally remov'd, or check'd.

But the Person who carefully considers the mechanical Structure of the Uterus, with respect to its Vessels and Fibres, will easily perceive, that the true Causes, and even the Effects, of this periodical Evacuation, are expressive of the greatest Wisdom and Contrivance in Providence: For as the Uterus, on account of the numerous Vessels with which it is furnish'd, and their winding Direction, as, also, on account of the easy and surprising Dilatation, of which it is capable, affords a fit Receptacle for the redundant Blood; hence, if this vital Liquor in Women, who are always greatly disposed to the Generation of a Plethora, is, in process of time, gradually accumulated in the uterine Vessels, and not return'd in a due Degree and Proportion thro' the Veins, the vascular Sinuses are fill'd and infarcted with it, till their Extremities, which terminate obliquely in the Uterus, being too much distended, at last open, and discharge a pure Blood into the Cavity of the Uterus, or the Vagina. But when a suffi-

a sufficient Quantity of the redundant Blood is evacuated, the Mouths of the Vessels again collapse, and are contracted; and the Plethora being diminish'd, the Circulation of the rest of the Blood is render'd freer, not only through the Uterus; but all the other Parts of the Body. Thus, on account of the exquisite Relation every thing in the animal Oeconomy bears to the Circulation of the Blood, this salutary Evacuation is produced.

Since, then, a Redundance of Blood is the principal Cause of the menstrual Discharge, it is sufficiently obvious, that those Physicians commit a terrible Error, who, in Cases where the Menfes are stop'd by previous Disorders, or excessive Hæmorrhages from other Parts, endeavour to recal that Discharge by strong, forcing, and emmenagogue Medicines; whereas their Intention ought rather to be, after the Disorder is surmounted, to restore the Appetite and Digestion, and, by salutary Aliments, which are easily digested, and generate a laudable Chyle, to rouse and augment the depressed Sanguification; and, when this End is obtain'd, the Menfes again flow spontaneously.

But since the Structure of the Uterus, with respect to its Texture, contractile and expansive Power, Largeness and Smallness, is not the same in all, but differs, with respect to Age, hereditary and native Construction of the solid Parts, and Method of Life, it is absolutely incumbent on a Physician, who endeavours either to judge of, or cure Disorders arising from the Uterus, carefully to investigate the Nature and Disposition of that Part, and afterwards to treat the Disorder by proper Remedies. Nothing is more frequent in Practice, than, when in Virgins, and tender Women, the Menfes do not return at their proper Periods, to advise Venesection; and, after that, to prescribe forcing Medicines; and even such as excite a violent Turgescence and Commotion in the Blood; by which means the miserable Patients are thrown into a worse State than before; since a Chlorosis is brought on, and accompanied sometimes with Convulsions, sometimes with Distentions of the Limbs, or with slow Fevers, violent Head-achs, and other Disorders, of a like Nature: This, in my Opinion, happens, for no other Reason, than that the Suppression or scanty Discharge of the Menfes derives its Origin from the tense Stricture of the Fibres of the Uterus, and the excessive Smallness of the Vessels, so that they are difficultly distended by the Blood: For it is certain, from Experience, that young and tender Girls, by the Abuse of Acids, or by the too free Admission of Cold to their inferior Parts, whilst they sit almost naked on the cold Ground, have contracted an anomalous State of the Menfes, accompanied with terrible Symptoms, and hardly capable of being cur'd.

If an irregular State of the Menfes proceeds from this Cause, forcing Medicines are not only useless, but, also, prejudicial; for when the Vessels are contracted, and closed up, and the Blood thrown into a quick Motion and Ebullition, a greater Infarction and Obstruction, and a Regurgitation of the Blood to the more noble nervous Parts, will happen, and, by that means, produce Spasms and Convulsions. Nor is Venesection in the Foot, in other Cases highly beneficial for the Alleviation of the Symptoms, of any great Service; but frequently, on account of the greater Derivation it occasions to the Uterus, confirms the Obstruction, and hinders the Blood from being discharg'd from the Orifices of the uterine Vessels. Almost the only Relief, in this Case, is found in tepid emollient Fomentations, and Baths, which relax the constricted Fibres. This Intention is excellently answer'd by Baths of pure light Rain-water alone, or by those of the sulphurated Toeplitz Waters, seasonably used; but, internally, rejecting all hot, acrid, and balsamic Substances, let the Patient drink mineral Waters; and, if she has not an Opportunity of doing so, the next most efficacious Medicines are, neutral Salts, of an inciding, aperient, gently diuretic, and laxative Quality, exhibited in a sufficient Quantity of some proper Liquor. The most considerable Salts of this Kind are, Borax, *Sedlitz Salts*, the *Terra foliata Tartari*, a Solution of Crabs-eyes, the *Arcaenum Duplicatum*; and, in Persons of bilious Habits, Nitre is of uncommon Efficacy. But, if the *Primæ Viæ* are full of acid Sordes, the Liquor of the Salt of Tartar, with a small Quantity of the Mass of balsamic Pills dissolv'd in it, affords the most surprising Relief.

But as the Suppression or scanty Evacuation of the Menfes arise principally from a Narrowness, Compression, and Stricture of the Arteries of the Uterus, so excessive Discharges of this Kind derive their Origin from the too great Largeness, Relaxation, and weaken'd Tone of the uterine Vessels, and the Sinuses form'd by them in the Substance of the Uterus, and from the slow Return of the Blood through the Veins to the Heart, occasion'd by that means: For, if we except the Liver, there is no Part of the Body in which the Motion and Return of the Blood to the Heart is observ'd to be so difficult, as in the Uterus;

which happens not only on account of the perpendicular Situation of this Part, with respect to the Heart; but, also, because the Vessels, and especially the Veins, as we have already observ'd, run in a very winding and incurvated manner, through the Texture of the Uterus. Besides, since, both on account of the Distension of the Uterus by the Fœtus, and the winding Direction of the hypogastric and spermatic Veins, the quick Motion of the returning Blood is greatly retarded, the Reason is obvious, why the Diameters of the uterine Veins should be as large again as those of their corresponding Arteries: So that we may reasonably conclude, that four times as much Blood is contain'd in the uterine Veins, as in their Arteries. If, therefore, the venous Sinuses, with which the Compages of the Uterus abounds, are preternaturally distended by a thick stagnant Blood, by this means the Blood, being strongly convey'd through the Arteries, and denied a Passage through the Veins, it by its Quantity and Force at last opens the distended Orifices of the Vessels, so that their Contents are copiously discharg'd.

From what has been said we may easily understand why Virgins have more rarely excessive menstrual Discharges, than Women who have brought forth Children, or sometimes pregnant Women, in whom an excessive Hæmorrhage from the Uterus frequently proves the true Cause of Abortion: For it is sufficiently known, that an abortive Exclusion of the Fœtus rarely happens without an excessive previous Hæmorrhage from the Uterus: For when, in pregnant Women, the venous Vessels of the Uterus are preternaturally distended, by the copious Afflux of Blood, and when the Blood becomes grumous, and coagulated in the small Cells of the Uterus, not only the Orifices of the Arteries, but, also, the infarcted Sinuses, being open'd, and a convulsive Motion of the Uterus and adjacent Parts, without which an Abortion is not easily produc'd, happening, the Arteries and Sinuses discharge a large Quantity of Blood with Impetuosity, the Uterus becomes flaccid, the Placenta is separated from the Filaments of the Uterus, and from the Apertures of the Vessels, and, lastly, the Fœtus, is excluded, two or three Days after the Hæmorrhage.

Hence pregnant Women, if in the last Months of Gestation Nature attempts an Abortion with an excessive Hæmorrhage from the Uterus, are often in great Danger; nor is the Danger less, when the Exclusion of a mature Fœtus is preceded by a large Discharge of Blood. It is certain from Experience, that by this Misfortune, both the Mother and Infant are exposed to the most imminent Danger, and unless the latter is brought into the World, both are destroy'd by the Hæmorrhage which cannot be stop't; for so long as the Infant, whether mature, or only an Embryo is retained in the Uterus, the Uterus, with its Vessels, is not only greatly distended, but the Orifices of the Vessels, on account of the more impetuous Afflux of Blood to them, being more opened, discharge a greater Quantity of Blood, which flows continually; whereas when the Fœtus is excluded, though the Mouths of the Vessels opened by the Removal of the Secundines, with which they were before covered, discharge a large Quantity of Blood, yet when the Distension of the Matrix ceases, the open Orifices of these Vessels collapse, and, upon their Contraction, the Hæmorrhage ceases. In such a Case, if we intend to preserve the Mother, and prevent a mortal Hæmorrhage, nothing remains but to extract the dead Fœtus with all Expedition, or in the safest manner possible, to procure a seasonable Abortion. This Doctrine is sufficiently confirmed by *Bhonijs*, in *Dissert. de Abortu salubri*.

Though violent Affections of the Mind, especially Frights, or intense Commotions, and Rarefactions of the Blood, arising from violent Exercise, too hot Baths, or the Use of drastic Purgatives, Emetics, Sudorifics, or Emmenagogues, are the frequent Causes of Abortion, yet unless the Vessels of the Uterus are preternaturally distended, relaxed, and infarcted by a Redundance of Blood, and the Matrix subject to spasmodic and convulsive Motions, an Abortion is not greatly to be dreaded. Hence we may justly reckon it an Error, not only in the Vulgar, but, also, in several Physicians, who are of Opinion, that some Remedies infallibly procure Abortion; whereas it is certain from Experience, that Women of Pleasure, when pregnant, cannot sometimes obtain their wicked Ends by copious Venesections, and the Use of drastic Purgatives, Emetics, and Emmenagogues, though when the Matrix is disposed to a too speedy Exclusion of the Fœtus, Abortion is procured by the slightest Cause. It is, therefore, a singular Proof of the Goodness and Wisdom of Providence, that there are not found in Nature Remedies universally and infallibly capable of procuring Abortion, since by their means numberless Murders might be committed.

Nothing happens more frequently than that Women who have once suffer'd Abortion, are again easily subject to the like Misfortune, at the same Period of their Gestation. It is, also, certain

certain from Experience, that generally sanguineous Masses, as large as an Hen's Egg, together with a large Quantity of grumous Blood, are excluded from the Uterus before Abortion happens, which is a manifest Proof, that the Strength and Elasticity of the Uterus and its Vessels, are so weakened by the preceding Abortion, that they could not soon return to their natural State; for the so frequent Disposition of the Uterus to Abortion is only to be accounted for from the excessive Relaxation and Dilatation of the Vessels. And this Dilatation must be removed, and the Tone of the Vessels restored by a prudent Physician, in the first Days or Weeks after Abortion, or natural Birth, by mild Laxatives, and temperate balsamic Corroboratives, duly repeated, or by a proper Diet; or if the Patient is plethoric, and has conceived, by proper Venesection in the first Months of Gestation; and unless these Measures are taken, this peccant State of the Uterus is not removed without great Difficulty; for, what is carefully to be adverted to, too great a Redundance of Blood with respect to the Vessels and Strength, to which Women of spongy Habits, those who are costive, and such as lead a sedentary Life, are principally subject, proves the material Cause of Abortion. Hence, if in the first Months of Impregnation the Blood is not by the provident Force of Nature discharg'd from the external Region of the Uterus, at the usual Period, which frequently happens; or if too small a Quantity of Aliments are taken into the Stomach, on account of Inappetence, Nausea, Subversion of the Stomach, and Uneasiness of the Præcordia, which in the first Months after Impregnation are very common Symptoms; or if in Proportion to the redundant Blood Venesection is not duly performed, and the Patient's Body kept soluble by proper Remedies, the Fœtus rarely arrives at Maturity, and seldom is retained in the Uterus till the full Time.

There is, also, another no less fatal Error in Practice, which is an Attempt by frequent Venesections in the Arm, the liberal Use of refrigerating, or actually astrigent Medicines, such as Opiates, and Narcotics, to put an imprudent Stop to menstrual or lochial Discharges, either in Childbed Women, or such as have suffered Abortion; for by this preposterous Method, and the Use of improper Remedies, the natural Strength, Tone, and Elasticity, not only of the Uterus, but, also, of all the Solids, are greatly diminished, and the Misfortune rendered either incurable, or far worse than it would have otherwise been; for what to some may perhaps appear a Paradox, we rather affirm, that the same Method, and almost the same Remedies, by which a Diminution and Suppression of the Menstrues are removed, are most beneficial for checking them when immoderate, and reducing them to a natural State: For it is certain from Experience, that both an excessive and too scanty menstrual Discharges, have been cured by a proper Use of hot and cold medicinal Waters, Baths of nervous and emollient Herbs, uterine Clysters, Preparations of Steel, the balsamic Pills, those of *Becher*, and others made in the same manner, Baths for the Feet, and the Use of deterfive nitrous Salts; for in both States the Tone of the Uterus is destroy'd, the Vessels distended with Blood, the Circulation of the Humours through the uterine Ducts not free and easy, but intercepted by Infarctions, Obstructions, and Stagnations; for removing or correcting which, the forementioned Remedies are very proper.

We now come to consider another Disorder of the Uterus, which is to be derived from the same Structure of the Matrix we have already mentioned; for in the Compages of the Uterus, the Direction of the numberless Vessels is winding and intricate, and the Circulation of the Blood through them, highly slow and difficult; so that it is not to be wondered at, if, in consequence of a depraved Nutrition, both the internal Surface, internal Cavity, Neck, or even Vagina of the Uterus, should be preternaturally subject to fleshy and fungous Excrescences of various Figures, Bulks, and Structures, which sometimes so augment it, as to resemble a State of Pregnancy. Fibrous bloody Masses, and polypose Concretions formed of Membranes, are, also, more frequently generated in the uterine Vessels than any where else, and lay a Foundation either for Sterility, or immoderate Hæmorrhages from the Uterus, which are succeeded by Abortion. Concretions of this Kind are commonly called *Moles*, of which there are various Species; by *Lamswerd* distributed into Moles of Nutrition, and those of Generation; but lest these should be confounded, as they easily are, we shall consider their Difference somewhat accurately.

First, then, the Secundines, with a tender Fœtus of one or two Months old, excluded by Abortion, is by ignorant Persons taken for a Mole, because it resembles a fleshy Concretion. Besides, though more rarely, globulous Masses formed in the Uterus itself, often create a Suspicion of Pregnancy, and are frequently found in such Persons when dead, or are excluded by a preternatural Increase of the Motion and Constriction of the Uterus; besides, it sometimes happens, that, a few Months after Abortion, or a legitimate Delivery, Women who have

been judg'd pregnant, have discharg'd from the Uterus solid fleshy Masses, of various Bulks and Figures, which, as they are deform'd, and resemble a Mole, large Mouse, or some other Animal, are not only, by the Vulgar, ascrib'd to Incantation, and said to be Moles, but, also, by some Physicians, given out for preternatural Conceptions, arising from the Imbecility of the seminal Fluid. These Concretions are often carried in the Uterus for a Year, and longer; and, by reason of the various Symptoms peculiar to the Mother, create a Suspicion of a true Embryo; but are generally excluded on the tenth or eleventh Month. But *Mr. Ruysch*, in *Observat. Anatomico-chirurg.* 28. & 58. seems to have advanc'd a more solid and rational Doctrine, when he asserts, that all these Concretions arise from Pieces of the Secundines left after the Exclusion of the Fœtus, and firmly connected with the Vessels of the Uterus; and that these Pieces, being nourish'd by the Afflux of the Blood, increase; and, in Process of time, becoming more compact, and hard, assume various Figures, according to the different Compression of the Uterus: For it often happens, that the Secundines are discharg'd dilacerated; for which Reason, it is expedient, after the Delivery, to inspect whether they are entire, or separated: For, if any Portion remains, the Patient is often subjected to violent Symptoms; for which Reason, the remaining Piece is to be expeditiously expel'd; which I have known successfully done by a proper Clyster, or by the *Pilula Balsamica*. But Masses of Blood, and membranous Fibres, by some call'd Polypuses, are more frequently observ'd, and these, being form'd in the dilated Vessels of the pregnant Uterus, and at last propel'd by the strong Effort of the Matrix and adjacent Parts, frequently cause Abortion, which they either precede, accompany, or follow.

Having thus traced the Difference, and inquir'd into the Origin of Moles, we may the more easily determine that important Question, Whether Virgins can be pregnant with Moles. For it is sufficiently obvious, that the Species of Moles, arising from enlarg'd Pieces of the Secundines, can by no means be found in Virgins. Nor are the Pieces of fibrous and coagulated Blood, which are thought Moles, or Polypuses, found in the Uterus of Virgins, the Vessels of which are very small, and narrow; but they are principally observ'd in pregnant and Child-bed Women. But it is neither unusual, nor impossible, that fungous Bodies should be produc'd, both on the external Surface, and in the internal Cavity, of the Uterus of a Virgin, who has been subjected to some external Violence, such as a Fall from an Height on the Abdomen, as we are inform'd by *Bartholinæ*, Cent. 1. Hist. 97. and by *Horslius*, in *Lib. 4. de Morb. Mulier. Obs.* 39. Nor is it to be deny'd, since it is certain, from Experience, that married Women, Widows, Women advanc'd in Years, those above Fifty, and those of sanguine and corpulent Habits, have, after a long Cessation of the Menstrues, evacuated fleshy and bloody Moles, sometimes as large as an ordinary Fist, and of different Degrees of Softness and Hardness, accompanied with immoderate Effusions of Blood. Of this we have Instances in *Marcellus Donatus*, Lib. 4. Cap. 25. *Joh. Rhodius*, Cent. 3. Cap. 53. and *Rodericus a Castro*, who gives us an Instance of this Kind in a Woman of seventy Years of Age.

On account of the difficult and slow Return of the Blood through the Vessels of the Uterus, especially the spermatic Vessels, which run into various Windings and Curls, like the Tendrils of Vines, and, consequently, make the Way to the Heart longer than it would otherwise be, it, also, happens, that, in the Uterus, and adhering Parts, especially the Tubes and Ovaries, there sometimes happen Inundations of Serum, and aqueous Tumours; for never does the fluid and aqueous Part of the Blood sooner recede from the rest, than when it passes through the Viscera in a slow and languid manner; as is sufficiently obvious in the Liver; for which Reason, in no Part are there more numerous lymphatic Vessels observable, than in the Substance of the Uterus and Liver, and adjacent Parts; and these lymphatic Vessels, being, by the Afflux of the Lymph, distended, are rais'd into large Blisters, or Hydatides, which being broken, a Dropsy is sometimes quickly generated, and a surprising Quantity of extravasated Serum lodg'd in the Cavity of the Abdomen. Thus *Salmuthus*, in Cent. 1. Obs. 38. informs us, that, after a difficult Labour, he found many Hydatides in the Confines of the Uterus. *Pecclinus*, in Obs. 19. tells us, that he found the same in an hysterical Patient, who dy'd pregnant. And *Tulpius*, in Lib. 4. Obs. 45. gives us an Instance of a Woman, in whom the Horns of the Uterus contain'd about nine Pints, or more, of Water and Pus, included in numberless Vessels. More Instances of this Kind occur in *Schenckius*, Lib. 3. Obs. 6, 7. *Rosfrickius de Organ. Genital.* Cap. 20. and *Sydenham*, de *Hydrope*. *Hardeus*, also, informs us, that, in a Countrywoman, the Left Ovary contain'd three Pints of a saltish and fetid Water, and that the Fallopian Tube annex'd to it had a remarkable Hydatid on it. About twenty Years ago, I remember to have seen produc'd, in a Woman of forty Years

Years of Age, by a violent Fall on the hypogastric Region; a Swelling in that Part, accompanied with a tense Pain; and this Swelling was succeeded by a large Discharge of limpid Water, which was first evacuated with the Menfes; and when the Discharge of the Blood ceas'd, that of the Lymph continu'd for half a Year, so that the Patient daily discharg'd almost a Pint; till, having try'd all Remedies in vain, she at last dy'd of a Consumption, and slow Fever.

I have, also, frequently observ'd, that a Dropsy is conceal'd under a State of Pregnancy, which frequently lays a Foundation for Physicians passing a fallacious Judgment; but I have seen pregnant Women, labouring under a Dropsy at the same time, preserv'd by a copious Discharge of the Serum; but when the Humour is discharg'd into the Cavity of the Abdomen, it proves mortal. *Platerus*, in *Lib. 3. Observat.* gives us a memorable Instance of a Woman who was afflicted with an *Ascites* every time she was pregnant. I myself have successfully restor'd Women, who, from a Cachexy, arising from irregular Living, and a Defect of the Menfes, have fallen into a Swelling of the whole Body, accompanied with a Difficulty of Breathing, Drowsiness, and Defect of Strength: From these Women, after the Use of the balsamic Pills prepar'd in my manner, and of the aperitive Salt, a large Quantity of Water was evacuated, not only by Stool, but, also, from the Uterus, both at the time of their Menfes, and out of it; and when this Water was evacuated, all the violent Symptoms were gradually abated: Hence I am of Opinion, that dropical Tumours in Women arise rather from a Fault of the Uterus, than of the Liver; and that when they arise from the former alone, they are more easily cur'd than when the latter is affected; because there is a freer Discharge to the stagnant Serum through the Uterus.

Hence it is easy to perceive the Reason why not only Virgins, but, also, married Women, are so frequently afflicted with a long-continu'd and uneasy Discharge of Serum of various Colours and Consistences, from the Uterus: For because the Tone and Motion of the Matrix, which consist in the equable Contraction and Relaxation of its Fibres, are easily injur'd, and weaken'd, and the Motion of the Humours through the winding uterine Vessels slow and languid, and the Return of the Blood through Veins destitute of Valves, also, very slow; not only Infarctions, and Stagnations of the Blood and Serum, easily arise in the Matrix, but, also, the serous and lymphatic Juice, becoming viscid by its slow Circulation, prepares a Way for itself, and is discharg'd through the Orifices which every-where occur in the Uterus and Vagina. It is the common Opinion of most Authors, that this Humour is secreted from the *Lacuna* of *De Graaf*, or the small Pits remarkable about the *Urethra*, and the small Glands lodg'd there: But in these *Lacuna* there is no Perforation found capable of admitting even a Bristle; but rather, on both Sides of the Orifice, and through the whole Substance of the Vagina, there appear more numerous *Lacuna*, which easily receive half a Finger's Length of a Bristle, and whose Ducts, when compressed, discharge a Liquor not unlike the seminal Fluid. See *Heister. Compend. Anatom.*

But though these Glands, when greatly relax'd, may discharge a copious Humour, yet they are not the only and genuine Seat of a *Fluor Albus*; but there are far more numerous Passages, from which the Matter of the *Fluor Albus*, and the impure serous Liquor discharg'd with and after the lochial Flux in Child-bed Women, derive their Origin. And though *Mr. Ruysch* denies, that Glands have ever been seen, or their Existence demonstrated, in the Uterus; yet it is not to be doubted but the Serum may attempt its Discharge from the small Mouths of the Vessels, which evacuate the Blood during the Menfes: For the celebrated *Fantoni*, in *Anat.* makes a memorable Observation, which is, that Air may be blown through the Veins of the Uterus into the Cavity of the Matrix and Vagina; and from the latter through the former. Besides, according to *de Graaf*, and *Hornius*, Pores and small Perforations are observ'd in the Neck of the Uterus. *Verbeijen*, in *Anatom. C. H. Cap. 33. c. f. Tab. 17. Fig. 2. 3.* informs us, that in a Uterus macerated in Water, and retain'd in a moderate Heat for some time, he saw many globular Corpuscles, not only in the interior Surface of the Vagina, in some Parts form'd into Clusters, and elsewhere disseminated through it, but, also, in the inferior Part of the Cavity of the Uterus; and these Corpuscles, he thinks, ought to be justly look'd upon as small Glands, subservient to the Secretion of a serous and pituitous Humour.

This Disorder, which at first Sight appears so slight, as to be only esteem'd a serous Defluxion, is, nevertheless, highly obstinate, and not to be cur'd without the greatest Difficulty; which, in my Opinion, is owing to this, that most Physicians only seek for the Cause of it in a deprav'd Sanguification, a want of a due spirituous Quality in the Blood, and a Redundance of Serum; whilst, little solicitous to restore the Tone of the Uterus, and promote the brisk Circulation of the Blood through it, they at-

tack the Disorder with Anticachectics, Purgatives, and such Medicines as eliminate the Serum, omitting Corroboratives, which are highly necessary. I, in order to remove this obstinate Disorder, recommend the Use of balsamic Pills, prepar'd after the manner of *Becher*, of bitter Extracts, balsamic temperate Gums, and a small Quantity of Extract of Aloes and black Hellebore, especially if used with some chalybeate Medicine: For ordinary Drink, the Patients ought to use a Decoction prepar'd of the Wood of the Mastich-tree, the Roots of Sarsaparilla, Shavings of red and yellow Sanders, Currants, Hartthorn, and Fennel-seeds; externally, Morning and Evening, balsamic Fumigations of Mastich, Amber, Olibanum, Tacamahaca, and artificial Cinnabar, are to be used; or, by means of a Syringe, the *Aqua Sclopetaria* is to be injected into the Womb, or a Liquor prepar'd of the Root of Birthwort, the Herbs Mugwort, Feverfew, Agrimony, Silverweed, Myrrh, Mastich, Myrtle-leaves, and the Flowers of red Roses boil'd in Red-wine; which proves highly beneficial, not only when injected into the Uterus, but, also, when frequently apply'd with linen Cloths to the Region of the Pubes. But to all these we prefer natural Baths, which, on account of their chalybeate Principle, are of a corroborating Quality; such as the Waters of *Lauchstad*, especially when boil'd with nervous Herbs, which corroborate the Uterus; such as Baum, Mint, Origanum, Mother of Thyme, Clary, *Roman Chamomile*, and Marjoram; for these, frequently exhibited, after the Use of Balsamics, and, when the Body is duly purg'd, are of singular Efficacy, not only in this, but in other Disorders arising from a Fault of the Uterus, especially if at the same time temperate mineral Waters are drank.

But as the Disorders of the Uterus, hitherto specify'd, arise principally from its Relaxation, and want of Tone; so there are others which derive their Origin from its excessive and spasmodic Stricture: For the Matrix has this in common with all other Parts compos'd of muscular and nervous Fibres, that it is, on certain Occasions, seiz'd with Spasms, and sometimes even agitated with convulsive Motions: But as in the internal Orifice of the Womb, which is of an exquisite Sensation, the Remission of the Motions, so, also, the intense and preternatural Rigour, is principally perceiv'd in the same Part, because it is in a great measure compos'd of nervous Fibres connected with each other, and running in a spiral Direction: For sometimes an excessive Constriction of the internal Orifice of the Uterus not only renders Birth difficult, but, also, unless relax'd by emollient Baths, Ointments, and Fomentations, absolutely prevents the Exclusion of the Foetus. It is, also, certain, from Experience, that a rash Admission of Cold to the inferior Parts, especially the Confines of the Uterus, during the lochial or menstrual Discharges, puts a Stop to these Evacuations: The same Effect is, also, produc'd by Frights; which, as they are of great Efficacy in constricting, especially the Fibres and Ducts of the external Parts, so this Influence is in a particular manner observ'd in the nervous and muscular Substance of the Uterus, and its Parts; and frequently proves the Cause of Abortion, or of an excessive or suppress'd lochial or hæmorrhoidal Discharge. Emetics, acrid Purgatives, and all Kinds of Poison, induce a great Change on the Uterus, and, by exciting Spasms in it, easily procure Abortion, in Women of delicate Habits.

It is, also, certain, that, in order to exclude not only the Foetus and Secundines; but, also, Moles, and Masses of coagulated Blood, it is necessary there should be an intense systolic or constrictory Motion of the Uterus, so that its Bottom being constricted and corrugated, its Orifice and Vagina may be dilated. When, therefore, in Women in Labour from a Defect of Strength, this intense Motion and constrictory Force of the Uterus fails, Analeptics are to be us'd; such as Cinnamon, and the Oil and spirituous Water of Cinnamon; as, also, other Corroboratives, such as the Essences of Amber and Myrrh, the Balsam of Life, the *Spiritus Oleosus* of *Sylvius*, and the Bezoardic Spirit of *Buffius*; Emmenagogues, also, are of great Use, as Borax; and Vomits are, by some Physicians, greatly recommended, in order to stimulate the Fibres of the Uterus to a brisker Motion.

On the contrary, when before or during the Labour, the Uterus is seiz'd with spasmodic or convulsive Motions, which often, either before or during the Birth, invert the natural Situation of the Foetus, and when the Mother is afflicted with an intense Heat, it is highly prejudicial to exhibit such spirituous Substances; because they hinder the Exclusion of the Infant, and excite a Fever, or Delirium, in the Mother: But, in such Cases, the most salutary Effects are produc'd by antispasmodic and sedative Medicines, which check and allay the Impetuosity of the Motions: The most considerable Remedies of this Kind are, Saffron, Castor, the Gall of an Eel, Powders of Vipers, of human Secundines, and of Worms; the *Pitula Wildegansii*, the Tops of white Lilies, and the Waters of the Flowers of the Lime-tree, of Elder, of the *Egyptian Thorn*, of white Lilies, and of Primroses. It is, also, expedient, in such Cases, when

when the Patient is plethoric, to open a Vein in the Arm, immediately before the Labour, lest the Nerves of the Abdomen being compress'd by the redundant Blood, the Motion, not only of the Uterus, but, also, of the Muscles subservient to the Expulsion of the Fœtus, should be suppress'd and hinder'd. Almost the same Method is to be us'd, when the *Lochia* are retain'd, in Pain arising from excessive Stricture, which, in Child-bed Women, is known from Pains of the Abdomen: When such a Case happens, the lochial Discharge is not to be procur'd by forcing Medicines, but by Sedatives; for which Reason, *Etmuller*, in *Dissert. de Vi Opii Diaphoretica*, greatly recommends Preparations of Opium for this Purpose: But if, on account of a Diminution of the constrictory Force of the uterine Fibres, the impure and stagnant Blood is not, after the Birth, duly evacuated from the Uterus, besides internal Medicines which excite the Discharge of superfluous Humours, nothing is more beneficial than a Clyster prepar'd of uterine Herbs, such as Southernwood, Pennyroyal, Rosemary, Mugwort, Baum, and Flowers of the Wall-flower, with the Addition of a small Quantity of the Mafs for the balsamic Pills.

There is, therefore, in the Uterus a constrictory and relaxatory, which, in my Opinion, may be justly call'd a peristaltic Motion; for whilst one Part is contracted, another is dilated; by which reciprocal Motion every thing preternatural is effectually excluded from the Uterus. That Child-bed Women often complain of Flatulences bursting from the Uterus, is a Sign that a tenacious Humour, which, by the Heat, is resolv'd into Vapours, remains in the Uterus; and that in the Substance of the Matrix this peristaltic Motion is still carry'd on: Besides, that this alternate Motion of the Uterus, just as it happens to the Stomach in Vomiting, is sometimes inverted, is certain, from this, that the menstrual or lochial Blood, usually discharg'd through the Vagina, is, on certain Occasions, forc'd through the *Fallopian* Tubes into the Cavity of the Abdomen, a Circumstance which always proves mortal. An Instance of this, *Mr. Ruysch* has given us, in *Observat. Anatomico-chirurg. Obs.* 84, & 85. It is, also, to be carefully observ'd, that, when the *Fundus* of the Uterus is closely contracted, and its inferior Part, together with the Vagina, too much relax'd, the Matrix itself may be so contorted and subverted, that Midwives are often deceiv'd, and imagine that a Fœtus still remains in the Uterus. See *Ruysch*, in the Work already quoted, *Obs.* 93. Besides, to the preternatural Motion of the Uterus, which is inverted from the external to the internal Parts, we ought, in my Opinion, to ascribe those violent and fatal Symptoms, which frequently afflict Child-bed Women, such as Fevers, acute Pains, Convulsions, Deliriums, mortal Apoplexies, and Purples of the red and white Kind; because all these Disorders derive their Origins from the corrupted Blood which ought to be evacuated from the Uterus, repress'd to the inferior Parts, and becoming stagnant.

Hippocrates expressly assigns, as the Cause of these Disorders, an intercepted Passage of the Blood through the Uterus, in the following manner: "The Blood, returning from the Uterus, and pressing upon the Diaphragm, produces a Strangulation, by a Retraction of the Uterus; when entering the Head, it gives Rise to Madness, Epilepsies, a Catochus, and Apoplexies; when possessing the Thorax, it excites Coughs; when rushing into the Heart, it produces Palpitations, Tremors, and sometimes Syncopes; and when it enters the Nerves, it gives Birth to Stupors, Immobilities, and Palsies." For all those Symptoms, commonly call'd hysterical, which frequently afflict Women, and have a great Agreement with the Symptoms of the spasmodic and flatulent hypochondriac Disorder, arise principally from a Fault of the Uterus; for there is a great Consent between the Uterus and the principal Parts of the Body; and this Consent is not so much to be accounted for from the Communication of Nerves, and the mutual Concurrence of the irregular Motions in the nervous Parts, as from the System of Blood-vessels, and the disturbed Motion of the Blood in them: For as in hypochondriac Patients, when the Blood, passing with Difficulty through the Liver, is accumulated in these Parts, especially of the nervous Kind, such as the Stomach and Intestines, to which the Ramifications of the *Vena Porta* are distributed, it, by its Pressure and Distention, excites Spasms, accompanied with violent Symptoms; so, also, in Women, when the Blood, becoming stagnant, is not freely conveyed through the Uterus, it regurgitates to the principal Parts of the Body, such as the Stomach, and especially the Intestines, Head, and Thorax; where, according to the Diversity of the Parts, it injures their Functions, and induces various and violent Symptoms. Hence the most skilful and sagacious Physicians, in all Disorders peculiar to Women, have a particular Regard to the Uterus, the State of the Menfes, and the Circulation of the Blood through the Vessels of the Matrix; whereas those Physicians proceed in a preposterous Method, who prescribe various Remedies, in order to remove the Sym-

ptoms; whilst, at the same time, they overlook the Cause and Origin whence they proceeded.

We now come to consider the Consent between the Uterus and the *Intestinum Rectum*, and hæmorrhoidal Veins. With respect, then, to the Sympathy between the Uterus and hæmorrhoidal Veins, we must take notice of an anatomical Error common to those who greatly extol Hæmorrhages and the hæmorrhoidal Discharges, whilst they imagine that the internal hæmorrhoidal Veins, which are Ramifications of the *Vena Porta*, distribute Branches to the Uterus, and especially to the Vagina; whereas *Saltzmanus*, in *Dissert. de Vena Porta*, has clearly demonstrated, that only the external hæmorrhoidal Veins send to the Matrix and Vagina an incredible Number of small Branches, connected with the internal Hæmorrhoids by a mutual Anastomosis: When this Connexion of the Vessels is known, it is easy to render a Reason why, in plethoric Women, the Blood seeks a Passage not only from the Uterus, but, also, sometimes, from the Veins of the Anus: And when the Passage this Way is precluded, the stagnant Blood not only produces Tumours, called the blind Hæmorrhoids, but, also, lays a Foundation for more Disorders, such as oppressive fixed Pains in the *Os Sacrum*, and other Symptoms familiar to those who labour under a Suppression of the Hæmorrhoids. It is, also, certain, that in old Women, who have no longer their menstrual Evacuations, there often arises, if not an hæmorrhoidal Discharge, yet, at least, an Effort of Nature that way, accompanied with the several Disorders usually accompanying a Suppression of the Hæmorrhoids. It is, also, owing to this Connexion of the Vessels, that, in the first Days after Delivery, knotty Protuberances of the hæmorrhoidal Veins frequently arise in the Anus, and excite an intense Heat; and these Protuberances certainly draw their Origin from the strong Efforts of the Patient, forcing a large Quantity of Blood to the Uterus and its Vessels.

The Consent between the Vagina and *Intestinum Rectum*, is sufficiently obvious from this, that their Membranes are so closely connected, and adhering to each other, that they can hardly, by the most cautious Hand, be separated, without Dilaceration. This is the Reason why a *Tenesmus*, a Symptom familiar to those labouring under a Dysentery, easily disposes the Vagina to fall down, and often proves the Cause of Abortion. Hence it is that acrid Suppositories, especially such as are prepared of drastic Purgatives, contribute much to Abortion; and that Clysters, prepared of uterine, nervous, and gently-stimulating Medicines, are very efficacious in expelling Moles, or grumous Blood, from the Uterus; as, also, in recalling the Menfes, or *Lochia*, when suppress'd. I shall now subjoin some Rules and Cautions, highly useful in Practice.

1. Pregnant Women, when plethoric, are by nothing better fortified against Diseases, and the Fœtus preserved sound, and vigorous, than by Venesection, about the third, seventh, and ninth Months.

2. It is an Error to imagine that Venesection in the Foot is prejudicial to pregnant Women, because it procures Abortion.

3. Venesection is often used with great Benefit, when the Patient is afflicted with Pains of the Back, hysterical Symptoms, or Sciatic Pains.

4. Venesection in a Suppression of the *Lochia*, or when the Purples remain in the internal Parts of the Body, often prevents the Danger of speedy Death.

4. The Suppression and Diminution of the Menfes often arise from a Plethora, which is removed by Venesection; so that, immediately after it, the Pulse becomes stronger, and the Blood is more freely conveyed through the Uterus.

6. When a continual or intermittent Fever seizes either a pregnant or Child-bed Woman, Venesection is never prejudicial, but often highly necessary.

7. It is expedient, in the first Days after Labour, to exhibit the *Pilula Balsamica*, by the Use of which the lochial Discharge is not only promoted, but, also, many Sordes, collected during the time of Gestation, are evacuated by Stool.

8. Preparations of Raisins, Manna, Rhubarb, and Tartar, are more proper for pregnant Women than other Laxatives.

9. In order to remove Sterility, the only Intention of Cure is, to restore the Tone of the Uterus, and reduce the Menfes, and Motion of the Blood through the Matrix, to a natural State.

10. Almost all Diseases, arising from a Disorder of the Uterus, if capable either of an Alleviation, or a Cure, require Venesection, gently-laxative balsamic Pills, Baths, both natural and artificial, duly-prepared Chalybeates, gentle Antiscorbutics, Carminatives, and the Use of temperate mineral Waters.

11. *Peruvian* Bark, in Conjunction with other proper Remedies, especially Powder of Chamomile-flowers, if exhibited prudently, and at a proper time, in Intermittents, is not prejudicial to pregnant Women; but proves a most salutary Remedy.

12. Obstinate Disorders arising from a Fault of the Uterus, often require external Applications, such as Fumigations, Injections, uterine Clysters, Fomentations, Epithems, and Baths, that the Virtues of Medicines may be the sooner conveyed to the Part affected.

13. Pregnant and Child-bed Women ought to be very careful with respect to their Diet, Regimen, and Method of Life.

14. Pregnant and Child-bed Women ought carefully to avoid external Cold, and internal Refrigeration, by means of purgative Medicines, and all astringent Acids; nor ought they to use too large Quantities of Aliments. But as Rest of Body is friendly to Child-bed Women, so it is prejudicial to such as are pregnant, who ought for that Reason to use proper Exercise.

OF AN INFLAMMATION OF THE UTERUS.

The peculiar Fabric of the Uterus, the surprising Elasticity of the Fibres of its whole Substance, the Number of its Blood-vessels, and their winding serpentine Direction, the glandulous and nervous Texture, together with the exquisite Sensation of the Neck, and internal Orifice of the Uterus, are Circumstances which render it subject to various Disorders, especially acute and dangerous Inflammations, together with Abscesses, and malignant Ulcers arising thence. Besides, because, not so much on account of the Communication and Sensibility of the Nerves, as the intercepted Motion of the Blood through the fibrous and vascular Compages of the Uterus, its Motion in the other Parts of the Body, is, also, greatly disturbed and perverted, hence there is a great Consent between the Uterus and the more noble Parts of the Body, such as the Head, the Breast, the Præcordia, the Stomach, and whole nervous System; so that when the Uterus is disordered, or inflamed, violent Symptoms happen in the adjacent and remote Parts of the Body.

Among the other Disorders incident to the Uterus, an Inflammation frequently happens, and may be known from the Heat and fixed Pain in the Groins, accompanied with an acute Fever, a Pain of the Loins, and lower Part of the Belly, an Inflation of the Abdomen, a Stimulus to discharge the Urine and Excrements, an Heat and Difficulty of Urine, together with other violent Symptoms in the Præcordia, Head, and Breast. Though the Moderns take little Notice of this Disorder, yet some of the Antients were very full and accurate in describing it: Thus, *Actius* speaks of it in the following Manner: "An Inflammation of the Uterus may be produced by various Causes, such as Blows, Suppressions of the Menfes, external Cold, Inflation, Abortions, and hard Labours. An Inflammation of the Uterus is succeeded by an acute Fever, a Pain of the Head, and its Tendons, a Pain in the Bottoms of the Eyes, and in the Joints of the Arms and Fingers, a Detraction and Declination of the Neck, a Disorder of the Stomach in consequence of its Consent with the Uterus, a Contraction of the Mouth of the Uterus, and a small and dense Pulse. If the whole Uterus is inflamed, there is a violent pulsatory Motion in all its Parts. If its posterior Parts are only inflamed, there is a Pain about the Loins, and the Fæces are retained on account of the Compression of the Intestinum Rectum. If on the contrary, its anterior Parts are inflamed, there is a Pain about the Groin, a Strangury, and difficult Discharge of the Urine, arising from a Compression of the Bladder. When the Sides of the Uterus are inflamed, the Groins are rendered tense, and the Thighs and Legs oppressed. When its Bottom is inflamed, there is a Pain and Tumor principally about the Navel. When its Neck, or inner Orifice is inflamed, there is a Pain in the superior Part of the Abdomen, and, upon introducing the Finger into the Vagina, the Mouth of the Uterus appears hard, and makes a considerable Resistance."

An Inflammation of the Uterus may be justly divided into slight or superficial, and violent or profound; the former frequently happens to Childbed Women, is easily produced, and most frequently succeeds the Milk Fever. This Species admits of a Cure, if prudently treated, and is easily resolved in a few Days. But the violent, or profound Inflammation of the Uterus, which is accompanied with an intense Fever, and a Train of terrible Symptoms, whose Vehemence does not remit, often proves mortal on the seventh, ninth, or eleventh Day, especially when the White Purples supervene, which are always a bad Sign, since they derive their Origin from a corrupted, putrid, and vapid Blood and Serum lodged in the Uterus, and are even a Proof, that the Uterus is already corrupted and sphacelated.

The material proximate Cause of an Inflammation of the Uterus is an unequal Circulation of the Blood through the uterine Vessels; for when the small Vessels are obstructed, con-

tracted, and spasmodically constricted, the Blood is with a greater Impetuosity and Swiftness convey'd through the adjacent Vessels, and their lateral Ramifications, otherwise not susceptible of Blood. Hence arise a Tumor, Redness, and Heat, together with a Pressure of the nervous Coat of the Uterus. The Uterus is disposed to Inflammations by Blows, Contusions, external Wounds, a Plethora, a Cacochymy, a Suppression of the Menfes, or Lochia, a copious Defluxion of Blood to the Uterus, a difficult Labour, the Passions of the Mind, especially Anger, and Frights, excessive Vomiting, or strong Efforts to it, Refrigeration of the lower Part of the Abdomen after violent Exercise in plethoric Habits, the drinking cold Liquors, especially during the menstrual, hæmorrhoidal, or Lochial Discharges. Convulsive Colics, also, and violent spasmodic, and hysterical Affections, produce Inflammations of the Uterus.

Inflammations of the Uterus are never more incident to Women, than when they are in Child-bed; for, after the Birth, the Uterus freed from its Load, by its elastic Force is again reduced to a smaller Space, and gradually contracts itself. Hence the dilated Vessels of the Uterus are contracted, the Blood contained in them is expressed from their open Mouths, before continuous with the Secundines, and evacuated under the Name of *Lochia*, to the great Benefit of the Patient. But at the same time, this Contraction of the Vessels directs the Motion and Course of the Blood elsewhere, that is, from the Uterus and inferior Parts, to the superior Parts and Breasts; and this generally happens about the third Day, with a considerable febrile Commotion, generally called the *Milk Fever*. If, therefore, the Lochial Discharge is prevented by spasmodic Strictures of the Uterus, it not only excites a dangerous and inflammatory Stagnation in the Uterus itself, but, also, increases this usual Conveyance of the Blood from the inferior to the superior Parts, both with respect to its Vehemence and Quantity. In this Case the spasmodic Strictures of the Abdomen are violent, the Discharge of the Blood, or mucid Humour from the Uterus is stopt, the Patient becomes costive, the Feet are rendered cold, there is a Stimulus to discharge the Urine, which is evacuated with Pain; the Countenance becomes red and tumid, the Eyes sparkle, certain Drops sometimes fall from the Nostrils, the Mind is restless, the Sleep either none at all, or disturbed with frightful Dreams; and at last these violent Symptoms, a difficult Respiration, Delirium, Convulsions, and a phrenetic Delirium, often suddenly put an End to the Patient's Life.

These Circumstances are accurately described by *Hippocrates*, in *Lib. 1. de Morb. Mulier.* in the following Manner: "If, says he, the Uterus of the Child-bed Woman is inflamed, the Abdomen becomes hot and large, there is a Suffocation about the Præcordia; and when the Lochia are retained in consequence of Cold, the Uterus is distended." And in *Lib. 2. de Morb. Mulier.* he tells us, "That if an Erysipelas happens in the Uterus, the Breast is affected by it, the Abdomen becomes tumid and cold, the Patient is seized with a violent Fever and Rigor, breathes thick, and is subjected to Delirium and Weakness, a Pain of the whole Body, Dejection and Inconstancy of Mind. The Disorder ascends from the inferior Part of the Abdomen to the Loins, Back, Præcordia, Breast, Neck, Head, and Stomach, so that the Patient seems dead." But 'tis certain from Experience, that pregnant Women of tender and delicate Habits, prone to violent Commotions of Mind, subject to spasmodic and flatulent Disorders, afflicted with an irregular State of the Menfes, or with Costiveness after Labour, easily fall into a Suppression of the Lochia, accompanied with a dangerous and acute uterine Fever. Sometimes, also, an Inflammation of the Uterus arises from a Retention of the Whole, or some Part, of the Secundines; for when the Secundines are retained, the Exclusion of the Blood from the Uterus is not only prevented, but, also, the succeeding Putrefaction excites a Fever, or renders it worse, if already formed.

Now, as in all Inflammations the stagnant Humour, if not dissolved, putrefies, and degenerates either into a sphacelous, or ulcerous Corruption; so the same, also, happens in Inflammations of the Uterus. An Inflammation of the Uterus, which degenerates into a Sphacelus, is soon mortal, and is most incident to Child-bed Women, in whom, when dissected, the Uterus and Vagina are generally found hard, and of a dark, brown Colour. But an Inflammation of the Uterus, which terminates in a Suppuration, or Ulceration, is of a more chronic Nature, and happens principally out of a State of Child-bed. This suppuratory Inflammation of the Uterus is principally incident to Women of sanguine, soft, and spongy Habits, especially if they have been afflicted with a bloody Fluor Albus, and have put an unreasonable Stop to it by Astringents. It is, also, frequently incident to those Women whose Blood is gross and

and impure, who use insalutary Aliments, sweet Summer Fruits, and Sweet-meats, who expose their inferior Parts to the Cold, especially when the Body is over-heated, who are afflicted with Sorrow, who are prevented from satisfying their Inclinations to venereal Commerce by Enjoyment, who neglect usual Venesections, or who being old, lead a quiet and melancholy Life. And in such Women the Inflammation happens more frequently in the Neck and internal Orifice, which consists of nervous Fibres spirally interwoven, than in the Bottom of the Uterus; for which Reason there is an intense and burning Pain in the Pubes, accompanied with a difficult Discharge of Urine. The Signs of an Abscess of the Uterus are by *Hippocrates*, in *Lib. 1. de Morb. Mulier.* enumerated in the following Manner: "If," says he, the Uterus is ulcerated, Blood and Pus are discharged, a fetid Smell of the Parts arises, an acute Pain seizes the Loins, Groin, and lower Part of the Abdomen. The Pain ascends upwards to the soft Parts of the Sides, the Ribs, the Scapulæ, and sometimes to the Clavicles. The Patient is seized with a violent Head-ach, and Delirium: But, in Process of Time, she becomes tumid, weak, subject to Deliquiums, slight Fevers, and Refrigerations; but her Legs are more considerably swelled than the other Parts of her Body. This Disorder succeeds Abortion, if the corrupted and putrefied Humours left behind are not duly evacuated, and the whole Body is excessively hot. It is, also, brought on by uterine Fluxes, the Matter of which is of an acrid or bilious Quality." But for the most part, an Ulcer of the Uterus degenerates into a Gangrene and Sphacelus, and by that means proves mortal. It sometimes, however, happens, that an Apostem formed in the Uterus, breaks internally, and a white fetid Sanies is copiously discharged, by which means the Patient is preserved. See *Forestus, Lib. 28. Obs. 44.*

If the exterior Part of the Uterus is inflamed by external Cold, the Inflammation easily degenerates into a Scirrhus, which becoming ulcerated, is justly called a *Cancer of the Uterus*, and is incurable. It, also, frequently happens, that the Glands about the Neck of the Uterus, and especially its internal Orifice, are changed into a Scirrhus, which at last, degenerates into an ulcerous Inflammation, which, like an ulcerated Cancer, is, also, incurable. Though the Moderns have taken little Notice of this Disorder, yet I have frequently seen Instances of it, and found it accompanied with the same Symptoms, exactly enumerated by *Aetius, Tetrabib. 4. Serm. 4. C. 94.* in the following manner: "Cancers in the Uterus are sometimes with, and sometimes without, an Ulceration; an hard, unequal, prominent Tumor, of a disagreeable, red, and sometimes sub-livid Colour, is found about the Mouth of the Uterus. There is a violent Pain in the Groins, superior Part of the Abdomen, and Loins, whilst the Parts, originally affected, can hardly bear to be touched, or treated in the different Manners necessary for a Cure. But if the Cancer is of the exulcerated Kind, besides Pains, Hardness and Tumor, corroded and unequal Ulcers appear, which have generally sordid, tumid, and whitish Lips, and are covered with un-seemly Crusts. But the Ulcers which seem most pure, appear feculent, livid, red, and bloody. From such Ulcers there is continually discharged a thin, aqueous, black, or yellow fetid Sanies, and sometimes Blood, accompanied with the other Signs of an inflamed Uterus." This Disorder, according to *Hippocrates*, is incurable; but it is to be mitigated by Infusions prepared with Fenugreek and Mallows, and by Cataplasms of a like Nature.

The C U R E.

As an Inflammation of the Uterus is never more frequent than in Child-bed Women, and after Abortion, and is brought on either by the unskilful Management of Midwives in difficult Labours, and their too rough handling the Mother, or by the violent Efforts during Labour, which force the Blood, especially of the impure Kind, to the Uterus, or by an Obstruction of the Lochia, by means of Pains, hysteric Spasms, a Fright, or Refrigeration, it is necessary, both for the Purposes of Prevention, and Cure, that the Physician should be well acquainted with all these Causes. But because it is far more easy to prevent this Disorder when approaching, than to cure it when present, the Physician ought, by all means, to use his utmost Endeavours to put a timely Stop to it, and prevent its Approach if possible.

Without considering those Disorders of the Uterus, which are brought on by external and violent Causes, we shall only observe, that nothing more frequently occurs in Practice, than an inflammatory Fever of the Uterus after Labour, on account of a too scanty, or totally suppressed Discharge of the Lochia. Hence the Physician is in the first Days after Delivery, to take care that the Lochia be duly evacuated; for which Purpose he is to direct his principal Intentions to the Removal of those

Causes which obstruct the Lochial Flux. Now it is sufficiently certain, that during a long and violent Labour, there is so violent a Commotion and Exagitation both of the solid and fluid Parts, that from the Quickness of the Pulse, the Heat of the whole Body, the Thirst, and Inquietude, we may justly conclude that a Fever is present, during which febrile Commotion, little or none of the putrid and bloody Recrements is evacuated from the Uterus. Hence, after the Labour, the Physician is to use his Endeavours to compose and mitigate this impetuous Commotion of the Parts. This Intention is best answered by keeping the Patient in a State of Rest, the Use of a temperate diaphoretic Regimen, and the Exhibition of diluent and gently cooling Medicines. But because during Labour, which is only performed by spasmodic and convulsive Strictures arising from the spinal Marrow, the Spasms, and painful Strictures, are by Consent, convey'd to the Intestines; and because these Strictures remain some time after the Labour, and in consequence of the same Consent, by constricting the muscular and nervous Fibres of the Uterus, obstruct the free Circulation of the Blood, the Physician is therefore carefully to allay and soothe them; For this Purpose,

Take of the Pulvis Marchionis, and Crabs-eyes, each one Dram; of diaphoretic Antimony, half a Dram; and of pure Nitre, sixteen Grains: Reduce to a Powder; of which the fourth Part is to be taken for a Dose, adding, if the hysteric Spasms are at the same time very violent, four or six Grains of the Powder of Castor, to be taken in the Water of common Chamomile-flowers distilled with Ale prepared of Wheat.

This Intention is, also, answered by the Oil expressed without Fire, from recent sweet Almonds, which either alone, or mixed with a fourth Part of Sperma Ceti, may be exhibited to the Quantity of an Ounce, or half an Ounce, in Broth prepared of Pullets, or in Water-gruel. Externally the whole Abdomen is to be anointed with a Liniment thus prepared:

Take of the Oils of Dill, Chamomile, and white Lilies, each one Ounce; of the Oil of Caraway, two Drams; or of the Oil of Camphire, one Dram: Make into a Liniment, for anointing the Abdomen; after the Use of which, apply a warm folded Cloth.

When the febrile Motion is thus composed, in order to promote the Lochial Discharge, there is hardly any more efficacious Medicine, than the Mass of Pills prepared in Imitation of *Becher's*, of bitter Extracts, resinous-temperate Gums, and Aloes duly corrected. On the second Day, therefore, after Delivery, let fifteen Grains of this Medicine, in the Form of Pills, other Circumstances being alike, be exhibited in the Morning or Evening, and continued for five or eight Days, according as the Circumstances of the Patient require. This is an highly mild and proper Evacuant; for by corroborating the Tone of the Intestines and Uterus, which is weakened by the excessive Distension, and at the same time, by gently stimulating, it frees the Abdomen and Intestines from Sordes, and the Uterus from stagnant and corrupted Blood, by which means it excellently prevents the Inflammation, the Fever, and other violent Symptoms arising from a Retention of the recrementitious Sordes. This Medicine is, also, of singular Use when the Secundines, or any Part of them, or any other foreign Substance, is to be expelled from the Uterus.

But if the Intentions of the Physician are not answered by these means; if a continual Fever preys upon the Patient; if her Abdomen is distended with Flatulences; if the Lochia are retain'd, and violent Spasms conveyed to the superior Parts, another Method is to be used; for the Redundance of Blood accumulated during Gestation, is to be diminished by Venesection, not in the Arm, but in the Foot; for Spasms often arise from an excessive Distension of the Vessels, and the Quantity of the superfluous Blood by distending the Compages of the Uterus, diminishes and prevents its systaltic and expulsive Power. Hence Venesection is of the greatest Importance to promote the Lochial Discharge, and prevent Inflammations. As in *France* Venesection is more often used for this Purpose than it ought, so in *Germany* it is totally rejected; so that many die of an inflammatory Fever of the Uterus, who might have been preserved by seasonable Venesection.

Besides Venesection, when an inflammatory Fever is already present, the stagnant Blood is to be put in Motion, the thick Humours rendered fluxile, and the Stagnation dissolved: In order to obtain this End,

Take of the Waters of Chervil, Carduus Benedictus, Scordium, Elder-flowers, Egyptian Thorn-flowers, and distilled Vinegar, each one Ounce and an half; of Crabs-eyes,

eyes, one Dram and an half; of diaphoretic Antimony, or Bezoardic Mineral, half a Dram; of the Spiritus Nitri Dulcis, or the Anodyne Mineral Liquor, twenty Drops; and of the Syrup of Carduus Benedictus, two Drams: Make into a Mixture; of which let the Patient take two or three Spoonfuls every two Hours.

For ordinary Drink let her use weak Broth prepared with Fowls, the Roots of Vipers-grafs, and Succory, together with the Shavings of Hartshorn, adding at Pleasure the Juice of Oranges. It is, also, expedient now-and-then to exhibit an Infusion prepared of the Herbs Pauls Betony, Scabious, Sow-thistle, the Flowers of Clary, and common Chamomile, together with the Seeds of Fennel; nor are we to omit the tempering and resolvent Powders prepared of Crabs-eyes, a Solution of Crabs-eyes, Nitre, and Sal Polychrestus. Powders of this Kind are commodious, interposed with *Becher's* Pills, or others like them, in order to promote the Lochial Discharge, and derive the Impetus of the Blood from the Head. Clysters are, also, to be used, and may consist either of sweet Whey, or Decoctions of the Flowers of common Chamomile, the Herbs Mugwort, Sage, Clary, and French Mercury, with an Addition of Honey, Nitre, and the Fat of Hens.

When out of a State of Child-bed, in Women of impure Habits, various Causes concur to produce an Inflammation, not so much in the Bottom as in the Neck of the Uterus and Vagina, besides the internal Remedies already mentioned, external Medicines are, also, to be used, such as Epithems applied to the Region of the Pubes, uterine Injections prepared of proper Ingredients, Pessaries, and, on account of the Vicinity of the Parts, Suppositories introduced into the Anus. An Epithem may be prepared thus:

Take of the Aqua Sclopetaria, four Ounces; of the Essence of Saffron, and camphorated Spirit of Wine, each two Ounces; and of Nitre dissolved in Elder-flower Water, one Dram; and, according as Circumstances require, let these be mixed with Vinegar of Rue, or of Scordium, and applied with several Folds of Linen Cloth.

For an Injection I commend either Womens, or Asses Milk boiled with Elder-flowers, Myrrh, and Saffron, adding a little Nitre. The most uneasy Symptom of this Disorder, which is a Tenesmus, is, besides by emollient Injections, excellently alleviated by Oil of sweet Almonds, or a Mucilage of the Seeds of Flea-bane, or Fenugreek; two Ounces of which, with an Addition of twelve Grains of the Extract of Saffron may be injected into the Anus; and all these Remedies are useful when the Inflammation has degenerated into a Suppuration.

It, also, frequently happens, that when a long-continued *Fluor Albus*, especially of the bloody Kind, is ill treated, or preposterously stopt, the Uterus is affected with a Tumor, Pain, and inflammatory Fever, which sometimes terminates in a Suppuration. In this Case the Cure is highly difficult and perplexed, especially when the Matter flows not from the external Glands, but the internal Substance of the Uterus. When this Disorder is chronical, I know nothing more efficacious than the mild *Empsen* and *Caroline* Waters, which not only effectually dissolve the stagnant Humours, but, also, corroborate the Part affected. But the Patient is to abstain from astrigent Baths, and from the stronger *Caroline* Waters, which on account of their calcarious and chalybeate Earth, are of an astrigent and repellent Nature. But Injections prepared of uterine and aromatic Herbs, boiled in sweet Water, are very beneficial. When the Vessels are thus relaxed, and the Humours diluted, we may with Advantage exhibit the *Pilule Becherianae*, which are the most considerable of all the uterine Specifics. Nor is *Hippocrates's* Method of curing an Ulcer in the Uterus to be rejected, which in *Lib. 1. de Morb. Mulier.* he gives us in the following manner: "When this Disorder happens, bathe the Patient in large Quantities of warm Water, and apply tepid Substances to the Part affected. But if Pains possess the superior Parts, the whole Body is to be fomented, and a purgative Potion exhibited; and, if boiled Whey can be had, let the Patient drink it for five Days: But if Whey cannot be had, let her drink boiled Asses Milk for three or four Days. After the Use of the Whey or Milk, let her drink Water, and use proper Aliments, such as tender and recent Mutton, the Flesh of Fowls, Beet, and Gourds; but she is carefully to abstain from all saline, acrid, and Sea Substances, as, also, from the Flesh of Goats." And certainly Whey, and Asses Milk, are highly beneficial, not only in obtunding the Acrimony of the Humours, but, also, in correcting the hectic Heats, with which Patients labouring under this Disorder, are greatly afflicted.

An Inflammation of the Uterus induced by an external Cause, and accompanied with a Fever, a Pain of the Groins, a difficult Discharge of Urine, and Spasms in remote Parts,

calls for Venesection, not only in due time, but, also, repeated first in the Arm, and then in the Foot. In this Species of Inflammation, it is, also, requisite the Body should be rendered soluble by Clysters, which in all Disorders of the Uterus, are of singular Use. Externally we are to apply a Plaister prepared of Melilot, two Ounces; Sperma Ceti, half an Ounce; Gum Ammoniac, two Drams; Saffron, one Dram; and Camphire half a Dram; not omitting the internal Exhibition of mild, diaphoretic, and discutient Medicines.

Since many Child-bed Women die of an uterine Fever, especially if they contain a large Quantity of gross impure Blood, hence it is certainly of great Importance, in order to prevent these capital Disorders, for pregnant Women, partly by a salutary Regimen, and partly by proper Remedies, to preserve both their Solids and Fluids in a due Temperature, Quantity, and Equilibrium of Motion; for such as is the Nature of the Patients, even of Child-bed Women, such is the Struggle of Nature against the Disease, and such is the Cure, in which Nature does more than Art. In order therefore to prevent this terrible Disorder, it is necessary that Women, during Gestation, should consult their Health both by seasonable Venesections, and proper Laxatives, especially Preparations of Rhubarb. They ought, also, to use a moderate Diet of a laudable Kind, preserve a due Tranquility of Mind, and drink diluting Potions, which have a Tendency to support and promote Perspiration. Besides, as Inflammations of the Uterus in Child-bed Women, especially those of sanguine Constitutions, and those who in the last Months have neglected Venesection, frequently proceed from hot and spirituous Liquors, aromatic Wines, and such as are impregnated with Saffron, both Nurses and Patients are to be seriously advised to abstain from these Liquors, which exagitate the Blood, and rather by Venesection, and the Use of Baths, for two or three Weeks before the Labour, to procure a free Circulation of the Blood through the Uterus, and its easy Discharge after Delivery.

In no Disorder are Commotions of Mind, especially by Frights and Anger, so prejudicial as in Inflammations of the Uterus. Nor is Refrigeration of the Abdomen and Groins in any Case so hurtful, as after Abortion and Delivery; for Child-bed Women, on account of the Solution of Continuity in their Fibres, the Dilaceration of the Vessels, and the Extravasion of the Humours, are to be considered as Persons severely wounded. But it is sufficiently known how easily these Causes may induce an Inflammation of the wounded Part, and consequently of the Uterus. Hence, not only Child-bed Women, but, also, those who labour under any Disorder of the Uterus, are to be carefully advised to abstain from such hot and spirituous Liquors.

In order to promote the suppressed Lochial Discharge, we are never to exhibit drastic Emmenagogues, such as Preparations of Saffron, Myrrh, Amber, Aloes, or hot Aromatics, or saline stimulating Medicines, much less, if immediately after their Labour, there is still an Impetus of the Motions; for these rather increase the Fever, heighten the Spasms, condense the Blood in the Uterus, by carrying off its moist Parts, which renders it unfit for Evacuation, and dry and obstruct the Emunctories more than they were before. But, when the Spasms begin to be relaxed, the Pains to remit, and the Pores to become open, then moderate Emmenagogues, and such Medicines as restore the Tone of the Parts, are to be exhibited. The best of this Kind are, Solutions of Amber, Myrrh, Rhubarb, and Saffron, not with Spirit of Wine, but with an aqueous and lixivious Menstruum; as, also, Baum-water, or gently spirituous Water of Mugwort, such as that which is distilled with Ale prepared of Wheat, exhibited frequently, though in small Doses.

Venesection is, also, one of the most considerable Remedies for recalling the Lochial Discharge; nor, if it is indicated, let the Physician be terrified from ordering it by the Violence of the Symptoms, or even when the Purples appear. See *PURPURA*. But when provident Nature by profuse Sweats, or Stools, in some measure, makes Amends for the Cessation of scanty Discharge of the Lochia, we are to abstain from such Medicines as excite the Lochial Evacuation.

When a viscid, yellow, and bloody Humour is evacuated, it is a pretty sure Sign, that the Substance of the Uterus is injured, and that an Inflammation and Ulceration are approaching. In order, therefore, to prevent an Inflammation, or remove it when already present, frequent Purgings with Rhubarb, Tamarinds, and Manna, are both safe and necessary, in order to divert the peccant Humours from the Uterus. This Practice is of such Importance to the Cure, that *Forestus*, in *Lib. 29. Obs. 48.* tells us, that he cured a Woman of Distinction of an Ulcer in the Uterus, by giving her every fourth Day, five Ounces of a Decoction of Sena, Epithymum, red Roses, and Indian Myrobalans, edulcorated with Sugar, ordering her at the same time, to have abstergent Decoctions injected into the Uterus.

Uterus. If an Ulcer of the Uterus is curable, after the Use of gentle Purgatives for some Days, a Decoction of Sanders, Marsh-mallows, Sarsaparilla, Mint, Epithymum, Liquorice-root, and Rose-wood, drank for twenty-five Days, with a sudorific Regimen, is of considerable Service. See *Sylvaticus*, Cent. 4. Obs. 48.

When an Ulcer of the Uterus resembles the Nature of an ulcerated Cancer, a putrid Sanies, together with corrupted Shreds of the Uterus, are evacuated with a fetid Smell, intense Pain, and a Train of violent Symptoms; and, in this Case, the Disorder is generally incurable; demulcent and lenitive Medicines are, however, only to be used. If any Hope of a Cure still remains, I recommend the drinking of Milk, especially that of Asles; as, also, the Use of temperate mineral Waters; such as the *Selteran Springs*, and those of *Wildungen*; interposing, Morning and Evening, a Bath of sweet Water with Bran, in which the Patient is to sit for an Hour, or longer. No acrid, hot, and stimulating Medicines, are to be exhibited internally. In Abscesses, and Ulcers of the Uterus, we are, also, cautiously to use Astringents and Repellents, since by these a Scirrhus is easily induced. Injections of Goats Milk, Saffron, and Elder-flower-water, produce excellent Effects. *Hippocrates* recommends the Use of Cabbage; but the Juice of red Beets, frequently injected warm, is better.

An exulcerated Cancer of the Uterus is frequently accompanied with an intense Pain, which destroys the Strength, and totally prevents Sleep. This Pain is best allayed by Anodynes; such as the Extracts of Saffron and Poppies, the *Pilula de Styrae*, the *Pilula de Cynoglossa*, the *Pilula Wildegansii*, the *Pilula Matthaei*, and the *Pilula Starkii*. *Riverius*, in *Prax. Cap. 10.* speaks in the following manner: "All these Things are sometimes insufficient to allay the intense Pain, which, on certain Occasions, absolutely deprives the Patient of Rest and Sleep. Hence we are frequently obliged to have Recourse to Narcotics, which, in this Disorder, are not hurtful, on account of the intense Heat of the Humours: And I myself knew a Woman labouring under a Cancer of the Breast, who, for four Months, daily took two or three Grains of *Laudanum*, from which she obtained great Relief." *Frederic Hoffman*.

UTRICARIA. The Name of a Plant which grows at the Cape of *Good Hope*, to which I find no medicinal Virtues ascribed. *Raii Hist. Plant.*

UTRICULUS. The Uterus is sometimes thus call'd.

UTRIFORMIS ABSCESSUS. The same as **OEDEMO-SARCOMA**.

UTRUS. A Name for the *Isatis*, Woad. *Marcellus Empiricus*, C. 23.

UTY Brasiliensis. The Name of a Tree which grows in *Brasil*, of no Use in Medicine. *Raii Hist. Plant.*

UVA CRISPA. See **GROSSULARIA**.

UVA GRUINA. Offic. *Vitis Idæa palustris Virginiana*, fructu majore, *Raii Hist.* 1. 685. *Vitis Idæa palustris Americana*, oblongis splendentibus foliis, fructu grandiore; rubro, pluribus intus acinis referto. *Pluk. Almag.* 392. *Phytog. Tab.* 320. f. 6. **CRANE-BERRIES.**

They are imported from *New England*, and are supposed to be excellent against the Scurvy: They are, also, of some culinary Service, among us.

UVA MARINA. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

UVA PASSA MAJOR. See **VITIS**.

UVA PASSA MINOR. See **VITIS**.

UVA URSI.

The Characters are;

The Calyx is very small, and, as it were, denticulated; the Flower is monopetalous, and Pitcher-shaped; and the Ovary in the Centre of the Calyx becomes a spherical Berry, containing a Multitude of oblong Seeds.

Boerhaave mentions but one Sort of *Uva Ursi*, which is;

Uva Ursi. Tourn. Inst. 599. *Boerb. Ind. A.* 2. 219. *Vitis Idæa*. Offic. *Vitis Idæa foliis carnosiss & velut punctatis, sive Idæa Radix Dioscoridis*. C. B. P. 470. *Raii Hist.* 2. 1489. *Radix Idæa putata, & Uva Ursi*. J. B. 1. 523. *Vaccinia Ursi, sive Uva Ursi apud Clusium*. Ger. 1230. *Emac.* 1416. **SPANISH WHORTLES.**

They grow in *Spain*, *Italy*, and other southern Countries; and are said, by *Dioscorides*, to be good for excessive Fluxes of the Belly, Menstrues, and all Kinds of Hemorrhages. *Dale*.

UVA FABRILES, in *Caelius Aurelianus*, imports Grapes dry'd in the Smoke of a Smith's Shop.

UVATIO. A Disorder of the Eye, the same as *Staphyloma*. See **OCULUS**.

UVEA TUNICA. The uveous Coat of the Eye. See **OCULUS**.

UVIFERA ARBOR TABACENSIS. *De Lact.* The Name of a Tree, the Wood of which is red, the Leaves round,

and the Fruit like Grapes; of a very grateful Taste. It grows principally on the Sea Coasts. *Raii Hist. Plant.*

VULCANUS. Fire.

VULNERARIA. See **ASTRINGENTIA**.

VULNERARIA.

The Characters are;

The Calyx is tubulated, and swelling; the Pod is short, full of a roundish Seed, and concealed in the membranaceous Calyx of the Flower.

Boerhaave mentions four Sorts of *Vulneraria*, which are;

1. *Vulneraria rustica*. See **ANTHYLLIS LEGUMINOSA**.

2. *Vulneraria rustica flore albo*. T. 391.

3. *Vulneraria; flore purpurascente*. T. 391. *Anthyllis, leguminosa hirsuta herba, flore suave rubente*. M. H. 2. 181.

4. *Vulneraria; pentaphyllos*. T. 391. *Anthyllis leguminosa, lato affinis, major, Hispanica vesicaria*. M. H. 2. 181. *Lotus pentaphyllos vesicaria*. C. B. 332. *Trifolium Halicacabum sive vesicarium*. J. B. 2. 17. 361. *Boerb. Ind. alt. Plant.*

It is called *Vulneraria*, from its Excellence in vulnerary Uses; for the Decoction of it, or the Herb itself, bruised and applied, deterses Wounds, prevents their Suppuration, and closes their Lips. *Hist. Plant. adscript. Boerhaav.*

VULNUS. A Wound.

A Wound is a recent and bloody Solution of the Union of a soft Part, by a hard and sharp Body in Motion, press'd against it, or resisting it.

In this Aphorism we have an accurate Definition of a Wound, which is, that it is a Solution of Cohesion in the Parts: But, in order to give it the Denomination of a Wound, it must be recent; by which Circumstance it is distinguished from an Ulcer, in which there is a Solution of Cohesion in Parts before cohering. By *Hippocrates*, however, as in *Lib. de Capit. Vulnerib. Cap. 12.* Ulcers and Wounds (*ἔλκη καὶ τραύμα*) are sometimes used promiscuously, and that in the same Chapter. It is, also, added, in the Definition, that it is a bloody Solution of Continuity: For if the Wound is so small that no red Blood is discharged, it hardly deserves Consideration, since the Skin can scarcely be pricked with the Point of a Pin, without producing an Effusion of some Blood. It is, also, added, that it is a Solution of Continuity in a soft Part, in order to distinguish it from a Separation or Division in the Bones, by Fracture or Fissure. And, lastly, in order to distinguish it from a Contusion, it is added, that the Solution of Continuity is made by a hard and sharp Body, which, in a small Surface, impresses its Motion on any Part of the Body: But an hard and sharp Body cannot separate the Cohesion of the Parts, unless, by Motion, or Pressure, it is apply'd to the cohering Parts, or unless the Parts of the Body are moved or pressed to the hard and sharp, and at the same time resisting Body: For it is sufficiently obvious, that the Effect must be the same, whether the Lancet is apply'd to the Arm, or the Arm to the Lancet.

Therefore the sensible Cause of a Wound is, the Hardness, Sharpness, and Motion, or Resistance of the wounding Instrument.

These Things are sufficiently obvious: For, unless the wounding Instrument was hard, it could not overcome the Force by which the Parts mutually cohere; and unless it was sharp, it would make a Contusion, instead of a Wound.

The Subject is any soft Part; and therefore, consequently, the Texture of the sanguiferous, serous, lymphatic, adipose, nervous, membranous, and tendinous Vessels, and the Canals formed of them.

It is obvious, from the Definition, that the Subject of a Wound is a soft Part; but modern Anatomy evinces, that the soft Parts of the human Body are a mere Congeries or Texture of Vessels: Hence there can be no Wound without a Division of many Vessels, and that of different Series: For no sanguiferous Artery can be divided, without the Vessels almost of all Kinds, being injur'd; for the Coats of this Artery consist of other smaller Vessels, whose Coats are, also, made up of other still smaller Vessels, and so on, till we arrive at the smallest. Hence, by a simple Wound of a sanguiferous Artery, the serous and lymphatic Vessels are wounded, as, also, the Follicles which yield that lubricating Substance, with which the internal Sides of the larger Arteries appear anointed: The Membranes, also, and muscular Fibres, constituting the muscular Coat of the Artery, are wounded.

Hence it is obvious, that, by a very slight Wound, all the Parts, enumerated in this Aphorism, may be wounded:

In this Subject the Cause already mentioned, produces a Separation of the coherent Parts, and an Effusion of the contained Liquid.

Since,

Since, therefore, there can be no Separation of Cohesion in a soft Part, without many Vessels being wounded, it is sufficiently obvious, that every Wound must produce a double Effect; for it separates the solid Parts before mutually cohering, and then it brings from the wounded Vessels that Fluid which was in them at the Moment they were wounded; as, also, that which by the Laws of Circulation, must soon be conveyed to the wounded Part through the divided Vessels. But since it is obvious, from the preceding Aphorism, that all Kinds of Vessels may be injured by a Wound; so it evidently appears, that all Kinds of Fluids may be discharged from the wounded Vessels.

Hence those Actions are injured, which depend upon the Cohesion of the Parts, and a determined Circulation of Liquids through the Vessels.

The entire human Body consists of Solids and Fluids. No Wound can be conceived, which does not destroy the Cohesion of the solid Parts, and interrupt the Circulation of the Humours through the divided Vessels: But all the Functions of the human Body depend on the Soundness of the solid Parts, and the due Motion of the Fluids through the Vessels. Hence there can be no Wound but what injures, at least, some Functions. Thus, that the Fingers of the Hand may be moved at Pleasure, the *Musculus Profundus*, and *Sublimis*, by which this Motion is performed, must be sound; now if by a Wound the Tendons of these Muscles are divided, the Motion depending on the Soundness of these Parts is of course destroyed.

In Physiology it is shewn, that, among other Things requisite to the Action of any Muscle, it is necessary there should be a free Influx of the Spirits through the Nerves: Now if the Nerve distributed to the Muscle should be divided, the usual Influx of the nervous Fluid into the Muscle is hindered, and its Action destroyed.

Those Wounds, therefore, are mortal, which are inflicted in those Parts whose Cohesion is inseparable from Life.

A mortal Wound is such as produces Death as its necessary Effect; but Death is present, when the Influx of the Blood into the Heart, and its Expulsion from it, are hindered: But that these two Effects may be produced, the Soundness of many other Parts is requisite. Every Wound, therefore, which destroys the Things requisite to the free Influx of the Blood into the Heart, and its Expulsion from it, must, of its own Nature, be mortal. The Characteristics of mortal Wounds, and in what Parts they are afflicted, shall be hereafter specified.

Some of these Wounds induce inevitable Death.

All those Wounds which by their Effects induce Death, agree in this, that they destroy the Reception of the Blood into the Heart, and its Expulsion thence: But there is, however, a considerable Difference between mortal Wounds; for some are inevitably mortal; so that though the Wounds are accurately understood, and the Parts wounded thoroughly known, no Attempts of Art hitherto known, can prevent Death from succeeding them, as the Effect does its Cause: Thus, for Instance, if by a two-edged Sword, thrust into a Man's Thorax, a large Wound is made in that Part of the Aorta where it emerges from the Pericardium, all the Blood discharged from the Left Ventricle of the Heart will flow through this Wound, and either be accumulated in the Cavity of the Thorax, or flow through the external Wound, but can never return through the Veins to the Right Ventricle of the Heart; whence inevitable Death ensues. Nor can this be by any Art prevented; for there is no Access to the Heart for applying Ligature, or Suture: And though this could be done, which, however, is impossible, the Aorta being ty'd, the Left Ventricle of the Heart could not empty itself. Hence the Circulation of the Blood, on which Life depends, would be suffocated.

But if after the Aorta is divided into two Branches distributed to each Thigh and Leg, it is wounded in any of these Branches, the Wound will, indeed, of itself, be mortal, because all the Blood will be discharged from this divided Artery; but yet it will not be inevitably mortal, because, by means of a Tourniquet, or Bandage, the Artery may be so compressed, as to emit no Blood, after which, it may be ty'd.

In the Reports given in by Physicians to Judges, these Circumstances ought carefully to be adverted to, and distinguish'd.

Others, if left to themselves, are mortal; but, by the Help of Art, may be so amended, as to remove the Danger of Death.

All the large Arteries distributed through the Limbs may, if wounded, discharge the Blood in such a manner, as to prove

mortal: Hence a Wound in such an Artery is, indeed, mortal; but, by Art, may be hindered from producing Death, as its Consequence. Hence it is obvious, that Physicians and Surgeons, who treat Wounds, and make Reports concerning them to Judges, ought to know the Directions and Distributions of the larger Vessels, and those Parts in which they may be most commodiously compressed, in order to prevent Death from the subsequent Hæmorrhage.

Yet, through Neglect, or Error, Wounds, in themselves not mortal, may be rendered so.

This most frequently happens to those who least deserve it; that is, to Soldiers in the Field of Battle. Many wounded Men have died of Hæmorrhages, which might have been stopp'd by a skilful Surgeon. Many have, also, dy'd by an Extravasation of Blood under the Cranium, who might have been preserved by a seasonable Use of the Trepan. A strong Contusion of the external Integuments of the Cranium, accompanied with a very small Wound, has, when neglected, often produc'd the most terrible Symptoms, and even Death; all which might have been prevented, if a proper Method of Cure had been pursued. Numberless Instances of this occur in practical Authors.

Not only Neglect, but, also, Errors in Practice, often render Wounds, of themselves not mortal, fatal to the Patient. Persons rarely die of Hæmorrhages, unless the large Arteries are divided; but those who suffer a great Loss of Blood, fall into a Deliquium, and then the Hæmorrhage stops: If they are thus left half dead, as it were, in a moderately hot Place, give them only small Quantities of Flesh-broths, at different times; and by this means drooping Life may be supported, till the divided Vessel contracts itself, and is even often consolidated. Thus many have been preserved, whose Death seem'd unavoidable.

But those who endeavour to recover those who have fallen into Deliquiums, in consequence of violent Hæmorrhages by spirituous Liquors, do not restore the lost Quantity of Fluids, but increase the Action of the Vessels upon the Liquids; by which means another Loss of Blood is produced, and the Cause of Death augmented. Many, after Engagements, being left for whole Days among the Carcasses of the Slain, with almost their whole Blood exhausted, have, however, afterwards revived.

Some Chymists inform us, that Arsenic, fixed with Nitre, is an excellent Remedy for stopping Hæmorrhages; but the Application of such a virulent and poisonous Remedy to a crude Wound, is highly dangerous; since the smallest Portion of it, received into the Veins, after violent Convulsions, might prove mortal.

Hence when, by public Authority, the Carcasses of wounded Persons are inspected, it ought first to be enquired whether the Wound is such as that Death must necessarily ensue; or whether by Surgery, as now known, Death might have been prevented; and then, whether the Death, succeeding the Wound, is to be ascribed to that Wound, or to other Causes.

The Effects of Wounds are various according to the Variety of Actions exercised, whilst the wounded Part was entire; and hence various Appellations of Wounds arise, which are readily distinguish'd by the Physician who is acquainted with those Actions during Health.

As many different Parts of the human Body as may be hurt by a Wound, so many distinct Functions may be injured, the Soundness of which depended on the Cohesion of the Parts divided by the Wound: But the Person who, from the high Improvements of Anatomy and Physiology, knows the various Uses of the several Parts of the Body, can, from a Knowledge of the Part wounded, determine the Injury which must succeed the Wound. Thus, when the Tendon of a Muscle is divided, it is obvious, that the Action of such a Muscle which depended on the Soundness of the Tendon, must be destroyed: Hence it is obvious, that there is a great Variety of Wounds, as to the Effects they produce in different Parts of the Body.

Nor is there a less Variety of Names, Forms, and Effects, in Wounds arising from the Diversity of the wounding Cause, with respect to its Figure, and Method of acting, whether by Puncture, Cutting, Striking, or Agitation; as, also, with respect to the Force with which it is applied, its Removal from the Wound, its remaining in it, and its poisonous Infection.

In this Aphorism are considered the Diversities of Wounds, so far as they depend on the wounding Instrument.

As for the Figure; if the Instrument be of a conical acute Figure, there will be a Puncture, which soon closes; in which Case,

Case, it is difficult to know the Deepness of the Wound: But if the Instrument is of the Figure of an acute Wedge, a Scissure will be produced.

As for its Method of acting, whether by Puncture, or Cutting; from these Circumstances arise a great Variety of Wounds; for, by Puncture, a narrow, though often a deeply-penetrating Wound, is produced: Whereas, when an Instrument, of the Form of an acute Wedge, is drawn through the soft Parts, then long tho' less deep Wounds are form'd.

As for Striking; in this Case the wounding Instrument penetrates with the greater Force, and is driven the deeper; and, unless it is very sharp, it may, at the same time, make a Contusion.

As for Agitation; it is to be observed, that, when a Wound is inflicted with a full-extended Arm, the Sword often passes without doing any great Harm between Parts a Wound in which would be very dangerous; but if the Sword, remaining in the Wound, is agitated and twisted about in it, far more Parts are injur'd; but this is to be learned from the Figure of the Wound: For if the Bulk of the Wound corresponds to that of the wounding Instrument, it has only been inflicted with a direct Thrust: But if, with a broad Sword, the Wound is made round, it is a Sign, that the Sword has been twisted about in it.

As for the Force of impinging, according to the different Degrees of Impetuosity with which the wounding Instrument is apply'd to the Body, the Wound will penetrate more or less deep.

As for removing the Instrument from the Wound, or leaving it in it; in the most violent Wounds it is sometimes expedient to leave the Instrument in the Wound, since the Parts wounded often so embrace the Instrument, as to prevent an Hæmorrhage, which, when the Instrument is withdrawn, often proves instantly mortal. By this means, Life is at least preserved for some time. Thus Virgil, in his *Æneid*, Lib. 10. when representing the Death of Pallas by Turnus, expresses himself in the following beautiful manner:

*Ille rapit calidum frustra de vulnere telum,
Una eademque via sanguisque animusque sequuntur.*

When the implacable Achilles is, in the 22d Book of Homer's *Iliad*, represented as having plunged a Spear in the Neck of Hector, he is said to leave the Instrument in the Wound, that he might have an Opportunity of insulting him in the Agonies of Death; but Hector expired as soon as the Spear was withdrawn.

This Diversity of Wounds principally happens from this Cause; when the Instrument is barb'd, or hook'd, so that it cannot be extracted without great Laceration.

As for the poisonous Infection; surprising Experiments evince, that there are some Substances, which, tho' they may be safely swallowed, yet prove infallibly and suddenly mortal; when apply'd to Wounds. In the Bites of Vipers, the venomous Juice, convey'd into the Wound by the Teeth of the Animal, infallibly kills Men, larger Animals, Hens, and Pigeons. When, at the Desire of the great Duke of Tuscany, Men of Learning were inquiring into the Nature of the Venom of the Viper, and with the Antients and some of the Moderns, asserted that it was lodged in the Bile of the Animal, a bold Viper-catcher convinced them of their Mistake; for he courageously drank the Bile, mix'd with half a Glass of cold Water, and sustain'd no Injury by doing so: Nor did the Viper's Gall, exhibited to various Species of Animals, do them any Harm; nor, when dropt into a recent Wound, did it produce any bad Effects. *Franc. Redi Observat. de Viperis.*

Others think it more probable, that the Poison of Vipers is lodg'd in the *Loculi*, or Bags, adjacent to their Teeth; in which there is a Liquor, in Colour and Taste resembling Oil of Almonds; and, when the Viper bites, the Jaws being compressed, this Liquor is necessarily infused into the Wound. But tho' the Poison, convey'd into the Wound by the Viper's Bite, produced such terrible Effects, the same Viper-catcher who drank the Bile, did not hesitate to drink the Liquor expressed from the *Loculi* of an angry Viper, and all the Foam and Saliva in its Mouth, after having diluted them in Wine, without sustaining any Injury. Neither did this Liquor and Foam produce any bad Effects, when exhibited to other Animals. *Redi.*

The Spears of the Inhabitants of Bantam, which, by a very slight Wound, prove mortal, when infused in Wine, or any other Liquor, for many Days, conveyed no malignant or poisonous Quality to the Liquor in which they had so long remained. *Redi.*

When the valiant Cato led his Army thro' the parched Libyan Deserts, his thirsty Soldiers would not venture to drink of a certain Fountain, on account of the great Number of Serpents it

contain'd; but their sagacious General persuaded them to drink boldly, and encouraged them, by his own Example, to do so. *Lucan. Pharsal. Lib. 9.*

If a Thread, wet with Oil of Tobacco, is, by means of a Needle, pass'd thro' any Part of a live Animal, such an Animal soon dies. In this manner was a Viper killed, in less than half a quarter of an Hour, by Redi; who, nevertheless, found, that the same Degrees of Malignity were not in the Oils obtained from all the Species of Tobacco.

When, therefore, there are anomalous Symptoms, which we cannot suspect to arise from the Wound, as their Cause, we are then to consider whether they arise from the venomous Infection of the wounding Instrument.

All these again vary; with respect to the Difference of the Part receiving the Wound, as to its Hardness, Softness, Connexion, Situation, Effect, contain'd Liquid, and Alteration.

In the two preceding Aphorisms are enumerated the Diversities of Wounds, as far as they depend on the Functions injur'd by the Wound; as, also, those Differences which depend on the Diversity of the wounding Cause: But in this are considered those Varieties of Wounds which arise from the different Natures of the wounded Parts.

As for the Hardness or Softness of the Part; a wounding Instrument will, with a small Force, penetrate the soft Integuments of the Abdomen; but it will require a far stronger Impetus, or Application, to divide the Cranium.

As for the Connexion of the wounded Part with others; when the Tendon of a Muscle is divided, the Motion of that Part to which it was naturally united, is lost; and this is accounted the Effect of the Wound. When a small Artery, remaining in the Socket after the Extirpation of a Tooth, discharges so much Blood as almost to prove mortal, this does not happen because so small an arterial Ramification is hurt, but because, being fix'd to the bony Surface of the Socket, it cannot contract itself; and by that means be closed. When, in the Flexure of the Cubit, by rash and unskilful Venesection, the *Aponeurosis* arising from the tendinous Part of the Biceps Muscle is hurt, the terrible Symptoms which ensue do not depend upon such a slight Wound, but upon the Connexion of that tendinous Expansion with other Parts.

As for the Situation of the Part; if only a small Ramification of the intercostal Arteries is so wounded; that the *Pleura* being, at the same time, perforated, the Blood flows into the Cavity of the Breast, the Lungs may, by the Corruption of the extravasated Blood, be inflamed and suppurated, and a mortal Consumption brought on, only because that Artery is so situated as that it can discharge Blood into the Cavity of the Breast. For, in other Parts of the Body, larger arterial Ramifications may be cut without Danger. A Wound in the internal Part of the Thigh is, on account of the large Vessels situated there, far more dangerous than an equal Wound in its external Part.

As for the Effect; many Parts of the human Body are of such a Nature, that, when they are injured by a Wound, or any other Cause, the Functions of other Parts are, also, disturbed; but Anatomists have not as yet found a Reason why, when the former are hurt, the Actions of the latter should be disorder'd. Thus, for Instance; after several Fits of the Colic, or Iliac Passion; there arises, in the *Colica Picro-mum*, a Palsy of the Arms, and frequently, if the Disorder proceeds, a true *Marasmus* of the superior Limbs. But no one, from the known Structure of the Parts, can account for such a Phenomenon. In the *Mémoires de l'Acad. des Sciences*, l'An. 1727. we are inform'd, that, after Wounds of the Abdomen, in which some Nerves of the Mesentery were cut, the Patient was subjected to intolerable Pains, and died; but, upon opening the Body, neither the large Vessels were found cut, nor any of the Viscera wounded: Upon cutting in a Dog the intercostal Nerve, and the eighth Pair, which, in that Animal, are included in one Vagina, or Covering, it appeared, that the Dog's Eye, on the same Side, was darkened; became less, and was inflamed; and, by repeated Experiments, it was evinced, that the Eyes are always sensibly changed, by that means. But this could not be accounted for from the Structure of the Parts, tho' it was confirmed by the Effects succeeding the Wound. Hence it is obvious, that there is a great Diversity of Wounds arising from the Effects which are observ'd to be produc'd by the wounded Part in other Parts of the Body. But an Observation of the Fact often informs us of such Events; when, from the known Structure of the Parts, we could not have demonstrated, that such Phenomena were to be apprehended.

As for the Liquids contained in the Part wounded; if the Gall-bladder, being wounded, discharges the Bile into the Cavity of the Abdomen, this Bile, becoming putrid, will soon produce

produce terrible Symptoms. If the Ureters should be cut, the Urine discharged from the Wound, will be accumulated in the Abdomen, and becoming corrupted may render all the abdominal Viscera putrid.

As for a Change or Alteration in the Appearance of the Parts; the Parts of the Body hurt by a Wound may, more or less, so degenerate from their natural Conformation, and by that means have their external Appearance surprisingly chang'd.

When the Muscles of one of the Sides of the Face become paralytic, there is a surprising Distortion on the opposite Side; because the Muscles, destitute of the *Æquilibrium* of their antagonist Muscles, retract the Parts of the Face. It is sufficiently obvious, that the like Effect may be produced by Wounds, when some Muscles of the Face, or other Parts, are hurt; or when the Nerves distributed to these Muscles are cut or divided.

As it is necessary to be acquainted with the Origin of this Multiplicity, so a subtle Distinction of Names is of no great Use.

It is not to be doubted, but Physicians and Surgeons, who undertake the Cure of Wounds, ought carefully to attend to what has been said in the three preceding Aphorisms; for upon these depend the Diagnostics and Prognostics of Wounds, which can be placed on no sure Foundation but that of a Knowledge of the Structure and Use of the Parts: For when we know the wounding Instrument, together with the Manner and Force with which it was applied, when we consider the Nature of the Part wounded, and know its natural Uses injured by the Wound, we foresee what is to be dreaded, and understand how far Art can remove the Misfortunes which have already happened, or prevent such as are to be expected. But it seems difficult by various Names so to specify the numerous Diversities of Wounds, that the Word affixed to each shall convey a distinct Idea of it to the Mind; and still more difficult so to impress these Ideas and Words in the Memory, as that they may be of Use. Thus *Paré*, that he might give the Differences of Wounds, has prefixed a whole Table to his Treatise on Wounds: But a Person who attentively considers, will easily see that these are not of great Use; and that the general Knowledge of those Things on which the so great Diversity of Wounds depends, is sufficient.

If, in an healthy and robust Body, a Wound is made in a visible Place, not irrigated by any large Artery, and not too tendinous, the following Phenomena arise, provided the Orifice of the Wound is defended from the Cold, from Air, and Exsiccation.

That something certain may be established, with respect to the Cure of Wounds, it is necessary to premise those Phenomena, which are observed to happen from the time in which the Wound was inflicted, till it is perfectly consolidated; and, when these are pointed out, in the Order in which they succeed each other, they afford an evident Knowledge of the Method used by Nature in restoring Parts separated by a Wound, to their former Cohesion.

In order, therefore, to avoid all Error and Confusion, we shall only here consider a Wound alone, and suppose the Body of the wounded Person in perfect Health in every other respect; otherwise the Phenomena observed would not be justly ascribed to the Wound alone, but might, in some measure, depend upon a Disease accompanying the Wound; for quite other Changes appear in a Wound when the Body of the Patient labours under a scorbutic, venereal, or rachitic Cacochymy: Besides, the Body is supposed robust; for in weak Habits the languid Circulation conveys the Humours to the Wound with a smaller Impetus: Hence, in such a Patient, the Pain, Heat, and Tension, are far less about the Lips of the Wound, than they are in an equal Wound inflicted on a strong, robust, and vigorous Person.

Besides, all these Things ought to be obvious to the Senses: Hence, in the external Parts of the Body, the Phenomena of Wounds are principally observable; and from a Sight of these we learn what happens in the internal Parts of the Body, when wounded. For this Reason it is, also, supposed, that no large arterial Vessel is wounded; for in this Case, the violent Effusion of Blood would hinder all the Phenomena from being accurately viewed.

It is, also, added, that a Wound ought not to be in a tendinous Place; for if the Tendon of any Muscle is wounded, and not entirely cut thro', the Muscle affixed to such a Tendon may, by drawing the wounded Tendon, produce terrible Symptoms, which do not so much depend on the Wound, as on the Muscle drawing the wounded Tendon. But we shall hereafter

describe those Symptoms which arise from a Division of large Arteries or Tendons by means of a Wound.

Besides, an Admission of the Air, especially when Cold, surprisingly changes the wounded Parts, and injures and dries the tender Vessels. Thus if, by a Wound, the *Cranium* is denuded, and the Bone exposed to the free Air for a considerable time, such a Wound will hardly be cured till there is a Separation of the bony *Lamina*, by Exfoliation. But this Circumstance does not depend upon the Wound: For if the denuded Bone had been immediately defended from the Air, such an Exfoliation would not have happened.

Under these Conditions, then, are enumerated, the Phenomena proper to Wounds alone, in the following Numbers:

1. The Parts between which the wounding Cause is forced, recede by degrees more and more from each other, tho' the Cause is removed, unless the Puncture is very small.

As soon as the wounding Instrument has divided the Cohesion of the Parts, the Distance of the Parts separated is equal to the Thickness of the Instrument: Hence, when the public Executioner, with a sharp Razor, flits the Face of Malefactors, there only appears, at first, a red Line; but, gradually, the Lips of the Wound recede from each other, so as frequently, in a few Hours, to be the Breadth of a geometrical Line distant from each other: For that Force by which the solid Parts cohere, proceeding to act, retracts the divided Lips; because in the Place where the Wound is, the Cohesion of the Parts is destroyed.

As for the Smallness of the Puncture; whilst a wounding Instrument by Puncture makes a small Wound, as soon as it has penetrated the Skin, and wounded the subjacent *Tunica Cellulosa*, unless the Patient's Body is much extenuated, the Wound appears very inconsiderable, or none at all; because the *Tunica Cellulosa*, by the Pressure of the Skin, in the adjacent Parts, immediately rises in the Wound, and closes it. Hence, when corpulent Persons are blooded, the Discharge of the Blood is often suddenly stopt by the Fat obstructing the Orifice of the Skin.

2. At first the Blood flows from a Wound with Impetuosity, but, by degrees, stops spontaneously.

If a great Artery is not wounded, nor such a one as, being affixed to a Bone, cannot retract, and close itself, the first Moment the Wound is received, the divided Vessels discharge the Blood with Impetuosity; but soon after, their Orifices being by their own Elasticity contracted, and concealed within the Lips of the Wound, the Hæmorrhage is quickly diminish'd, and at last ceases spontaneously. This evidently appears in Cutting for the Stone; in which Operation, when by a pretty large Wound the Skin and subjacent Parts are divided, an Ounce or two of Blood are discharged; but unless, by some unlucky Accident, a large Artery is wounded, the Hæmorrhage, which would otherwise greatly disturb the Operation, soon after ceases almost totally; for almost all the Blood evacuated from the Wound is discharged from the Arteries; for pretty large Veins, when divided, discharge but a small Quantity of Blood, unless there is some Obstacle placed between the Heart and the Wound, inflicted in the Vein: But the Arteries, by their Elasticity, easily contract themselves; by which means, the Blood is soon stopt.

3. Then a sanguineous Crust is formed in the Cavity of the Wound.

Since, then, as we have now observed, arterial Blood is almost only discharged from a Wound; and since such Blood, when extravasated, in the soundest and most robust Person, is naturally soon coagulated; hence, as soon as the Impetus of the discharged Blood begins to cease, such a *Coagulum* of the Blood is formed, generally called a *Thrombus*, or bloody Eschar, which adhering to the Lips of the Wound, perfectly covers its whole Surface. Thus Wounds are covered and defended by the exquisite and salutary Effort of Nature; and under this Covering, the Parts separated by the Wound are gradually consolidated: And because this *Thrombus* is, by the Heat of the Body, and the contiguous Air, more and more dried, there is a pretty hard Covering thus formed, which after the Cure of the Wound spontaneously falls off.

4. A diluted redish thin Liquor flows from it.

When this *Thrombus* begins to be formed, or when it is removed, after its Formation, Blood is not generally discharged, but only a thin Liquor tinged with a faint-red Colour, and resembling the Washings of new-killed Flesh. This seems to happen

happen because the Vessels destined for the Conveyance of the red Blood being divided, but gradually contracting, their Orifices discharge but little red Blood, whilst a greater Quantity of a thinner Fluid, which is not red, is evacuated from them.

5. Then the Lips of the Wound begin to be red, preternaturally hot, painful, tumid, and retorted, whilst the Bottom of the Wound becomes tumid and prominent. But especially the Fat rises into the Aperture of the Wound, and there soon degenerates.

When the divided Vessels by their proper Elasticity contract their Orifices, and are almost entirely closed, the Humours which used to flow through those Vessels, are stoppt: Hence there arises an Obstruction about the Lips of the Wound, and the Impetus of the succeeding vital Humours forcing the Fluids into the obstructed Vessels, dilates them near the obstructed Place; and hence arises a true Inflammation. For this Reason on the second and third Day the Lips of the Wound become red, whilst greater Heat and Tumor, the Concomitants of an Inflammation, appear. And if all these Symptoms are moderate, they prognosticate nothing bad, since they naturally happen in all Wounds. This is the Reason why a recent Wound is hardly accompanied with any Pain, but especially on the third Day, or sometimes sooner, an Inflammation arising, and the wounded Parts becoming tumid, a very considerable Pain is often perceived in the Wound.

Hence *Hippocrates*, in *Epidem. Lib. 2.* tells us, "That when severe Wounds are inflicted, if a Tumor does not succeed, it is a very bad Sign." The same is affirmed in *Aph. 66. and 67. Sect. 5.* where he observes, "That soft Tumors are good, but such as are crude, bad." For if no Tumor arises about the Lips of the Wound, it denotes that the vital Force is defective, and if the Tumor is excessive, the violent Inflammation lays a Foundation for dreading a bad Event.

The same Author, in his *Treatise de Fracturis*, not only observes, but lays it down as one of the most important Rules in Surgery, "That on the third and fourth Days, Wounds are by no means to be disturbed; and that we are at this time to abstain from all Searches by the Probe, and from every thing which is capable of irritating Wounds; for in general, most Wounds take a considerable Turn, and grow troublesome on the third or fourth Day."

For the like Reason, in the same *Treatise*, he advises, that when a fractured Bone sticks through the Skin, it is to be reduced on the same or following Day; but not on the third, and by no means on the fourth and fifth.

Thus *Simeon*, and *Levi*, the crafty Sons of *Jacob*, in order to revenge the Affront given them by *Sechem* the Son of *Hamor*, in despoiling their Sister *Dinah*, persuaded the the unwary *Hamorites* to submit to Circumcision; and on the third Day, their Wounds being so excessively painful, that they could make no Resistance, they slew them all both with Ease and Impunity.

As for the Retorsion of the Lips of the Wound, and the tumid prominent State of its Bottom: The *Membrana Adiposa* subjacent to the Skin is easily distended, and rendered tumid, as is obvious in fat and dropical Persons, and in an *Emphysema*, in which the Air entering the *Membrana Adiposa*, produces so surprising Expansions thereof. But the Skin covering the *Membrana Adiposa*, confines it very strongly; hence, when the Skin is divided by a Wound, the Lips of this Wound gradually recede from each other; and the *Membrana Adiposa*, which in the Place of the Wound is free from the equable Pressure of the Skin, soon rises and swells. Hence the Skin being on both Sides retracted from the protuberant *Membrana Adiposa*, the Lips of the Wound are retorted, and, in its Bottom, a tumid Prominence appears. But if the Impetus of the Fluids distending the Vessels remains the same, whilst the Causes resisting this Distension are lessened, the Largeness of the Vessels will be augmented. When, therefore, the Resistance of the Skin in a Wound is removed, the *Membrana Adiposa* rising in the Wound, will be more dilated, and grow out into what the Surgeons call *fungous Flesh*, and consequently degenerate very soon.

6. And, at the same time, a slight Fever, accompanied with Thirst and Heat, is excited.

This only happens when the Wound is considerably large; for in a small Wound these Symptoms are not generally observed; for as soon as the Symptoms enumerated in the preceding Number arise, a greater Heat is excited, not only in the Wound, but, also, in the whole Body, the Pulse becomes quicker, the Patient is afflicted with Inquietudes, and turbu-

lent Dreams; his Thirst is, also, increased, and his Urine more red than before. But all these Symptoms last as long as the Tumor, Pain, Heat, and Retorsion of the Lips of the Wound are present; and when these cease, the other terminate. Such a slight Fever happening to wounded Persons in this Stage of their Misfortune, is so far from being injurious, that it is beneficial, since by its means the Pus is formed, after which it generally ceases. In cutting for the Stone, the Extirpation of a Breast, or other Wounds of a like Nature, the Presence of such a Fever at the time specified, is always a good Sign.

Hence *Hippocrates*, in *Aph. 47. Sect. 2.* observes, "that during the Generation of Pus, Pains, and Fevers more readily happen, than when it is formed."

But here we only speak of such a Fever as at this time arises from the Wound as its Cause; for a Fever may happen to wounded Persons from various other Causes: Thus in large Wounds a copious Pus already formed, and in some measure reformed by the bibulous Veins, often induces an hectic Fever, which preys upon the Body.

7. Hence about the third or fourth Day, sooner or later, a tenacious, white, pinguious, equal Liquor, called *Pus*, is formed in the Wound.

When a Wound is inflicted, the Blood is immediately discharged; and afterwards, when the divided Vessels are more constricted, a redish Ichor. Then arises an Inflammation of the Wound with the Symptoms described. Then begins to appear in the Wound an unctuous Liquor, almost of the Consistence of fresh Cream, somewhat yellowish, entirely equable, without Smell, and of a mild Taste, almost like that of Chyle: This Liquor is called *Pus*, which if laudable, has all the now enumerated Qualifications. But such a Pus is never formed unless the Wound is covered; but a Pus of this Kind is generated under a Thrombus arising in the Wound, or a Plaster covering it. Hence Pus is not formed in the Vessels, but in the Wound, by the extravasated Humours cherished and changed by the Heat of the Body; for if all the Pus in a Wound is wiped away with soft Lint, about an Hour after the Surface of the Wound will every-where appear moist with a thin Liquor, which is not Pus. But if for twenty-four Hours the Wound is covered with a Plaster, the Pus will appear upon removing this Plaster. Hence Pus is formed out of the Vessels; but the Matter of which it is formed, is conveyed thro' the Vessels.

But Pus thus formed in a Wound produces happy Effects; for Nature uses this Method to disengage and separate from the live and sound Parts such as are mangled and half lacerated, and the inflamed Extremities of the Vessels, together with the infarcted Liquids lodged in the Lips and Bottom of the Wound. Besides under this Pus, when formed, all the lost Parts grow up afresh.

Hippocrates, who strictly followed Nature, in the Beginning of his *Treatise de Ulceribus*, tells us, that recent Wounds [*ἑλκεα νεότιστα*, which Words seem rather applicable to Wounds than Ulcers] and the Parts adjacent to them were not inflamed, if a Suppuration was speedily brought on. He afterwards adds, that a Wound inflicted with an acute Instrument, may be cured without a Suppuration; but that contused and mangled Flesh became putrid, and being converted into Pus, was consumed, after which new Flesh must necessarily be generated.

In the same Place he tells us, that Wounds are inflamed when they tend to a Suppuration; but they suppurate by such a Change and Heat of the Blood, as renders their Pus putrid. But by Putrefaction, he does not here seem to mean a malignant and truly putrid Degeneracy of the Humours, but only that Change of their State by which they are transformed into Pus, as is obvious to every one who reads the Passage attentively.

Hence laudable Pus is by Surgeons reckoned the best of Signs. And *Galen*, in *Com. Aph. 22. Sect. 5.* does not hesitate to affirm, "that no bad Accident can happen to an Ulcer which generates Pus;" for Pus is formed whilst laudable Humours are with a due Motion conveyed to the Wound; hence it has as its first Cause, the Actions of remaining Health; for in a cacochymic Body good Pus is rarely formed in a Wound, but an Ichor, which greatly degenerates from the Conditions of laudable Pus. Hence in such Patients, Wounds though slight, are not to be cured without the greatest Difficulty. For this Reason the ancient Greek Physicians called such Bodies *δυσανκτα*, that is, Bodies in which Wounds were not cured without great Difficulty. And *Hippocrates*, in *Aph. 8. Sect. 6.* tells us, "that Ulcers arising in the Bodies of dropical Patients are not easily cured." If, in consequence of a violent Fever, the Humours are moved with a great Impetus, the Wound appears dry without any Pus: If, on the contrary, the Strength

of Nature is languid, there is, also, a Defect of Pus. For this Reason Hippocrates, in *Pregnst.* reckons the Dryness of an Ulcer among the Signs of approaching Death.

8. At this time the Redness, Heat, Tumour, Pain, Retorsion of the Lips, and Fever, cease, or are diminished:

For all these Symptoms only arise, because the divided Vessels in the Lips of the Wound being contracted by their Elasticity, deny a free Passage to the Fluids convey'd to them. Hence arises a true Inflammation which brings on Redness, Pain, and Heat in the Part. The Membrana Adiposa in the mean time, free from the equable Pressure of the Skin, receives into its dilated Vessels foreign Humours, by which means it becomes tumid in the Bottom of the Wound, and retorts its Lips. But a Suppuration separates the obstructed Extremities of the Vessels, together with the stagnant Fluids lodged there. Hence, when Pus is formed, and the obstructed Vessels are again rendered pervious, a free Circulation of the Humours thro' them is restored. All these Symptoms, therefore, arising from an Inflammation of the Lips and Bottom of the Wound, are necessarily much diminished, or totally removed, by the Formation of Pus.

This Stage of a Wound is by Surgeons generally called the *Time of Digestion*; and when they see the tumid Parts subside, they generally say, that *the Pus fuses, and dissolves all the Parts.*

9. And the Cavity of the Wound, from the Bottom to the Top, from the Circumference to the Centre, is gradually filled with a new red live Matter called *Flesh*, whilst the Margins, becoming white, bluish, soft, and equal, are united.

When after a laudable Digestion, all the Parts which could not be reduced to their requisite Soundness, are separated from the live Vessels, then the Wound is said to be *pure*; and its whole Surface appears every-where equably moist and perspirable, whilst there is no Roughness nor Dryness either in the Lips or Bottom of the Wound. Then begins that Stage of the Wound in which it is consolidated; for under the Pus, which is a natural and mild Balsam, we daily observe the Bottom of the Wound to rise gradually, and a new Matter to proceed equably from the Circumference to the Centre. And when this Matter is viewed with Microscopes, it appears to be the tender and pulposus Extremities of Vessels. This is by Surgeons called *Incarnation*; not that muscular Flesh properly so called, is regenerated in this manner, but it has become customary to call this red and live Matter daily increased in a pure Wound, *Flesh*. This appears beautifully in Wounds with Loss of Substance, whilst, for Instance, by the Stroke of a Sword, the Skin, with a Part of the subjacent Membrana Adiposa, is carried off; for in this Case there naturally appears, first, in the Bottom of the Wound, a Congeries of sprouting Vessels; then the like Vessels are protruded from the Margins, and concurring and uniting with the others rising from the Bottom, by an admirable Artifice of Nature, restore the lost Substance; for in this Case, Art does nothing but remove Impediments, and prevent the Access of the Air, by covering the Wound; the natural Fabric of the Body performs all the rest. That these things happen in this manner is sufficiently certain; but by what Laws or Mechanism they are brought about, is hitherto unknown. Galen, in *Method. Medend. Lib. 3. Cap. 3.* beautifully expresses this in the following manner: "With respect to the Generation of Flesh, it is to be observed, that the Matter of it is laudable Blood; but the Artist, or Author, of its Formation, [*ἐμπνευστὸς τῆς καὶ τεχνητὸς*] Nature." In this Passage he treats of the Method in which a hollow Ulcer ought to be cured. The Antients were, however, ignorant of the admirable Structure of the minute Vessels of which our Bodies are composed. And the Moderns far more skilled in Anatomy, cannot help admiring how the elongated Mouths of the divided Vessels in the Wound, should concur, unite, and be concreted with the adjacent Vessels, and that in such a manner, that Arteries are united to Arteries, Veins to Veins, and Nerves to Nerves; so that a Substance exactly like that which was lost, is formed in the Wound. This peculiar Property of the human Body is loudly expressive of the infinite Wisdom of its all-powerful CREATOR.

Whilst these things happen in a hollow Wound, the Margins which were before red and tumid, begin to subside in an equable manner; they acquire a bluish Pearl-like Colour; and thus the first Rudiments of the Cicatrix are formed about the Margins, and are gradually increased toward the Centre, till the Wound is equably closed.

10. Lastly, the Wound becomes dry, and is covered with a Cicatrix.

When all the lost Parts are restored, and the Parts divided by the Wound, united, the Wound appears dry, though before a certain Moisture was observed all over its Surface.

If a large Quantity of Substance is not lost, nor by an excessive Suppuration much of the Membrana Adiposa and Skin consumed, all the Parts are so consolidated, that there hardly appears any Difference between the Place of the Wound, and the adjacent Skin, in which Case it hardly deserves the Name of a Cicatrix. But where a large Portion of the Skin is taken away, or much of the subjacent Membrana Adiposa consumed by the Suppuration, then the Place of the Wound will appear more white, solid, and often more depressed, than the adjacent Skin. In this Case it is called a *Cicatrix*, which is always less perspirable, tho' more smooth and shining, than the other Parts of the Surface of the Body. This is in a particular manner obvious after the Extirpation of a Breast or large Steatoma, where a considerable Portion of the Skin is removed; for in this Case the Cicatrix formed, or Surface of the Wound is smooth, shining, unmoveable, and adhering to the subjacent Parts.

Thus we have described the History of Wounds in a sound Body, and enumerated all the Phenomena, which from Experience we find to happen in a Wound from its first Infliction to its entire Consolidation. Hence we may deduce the best Method in which Wounds ought to be cured, which is, by imitating Nature's Method, which consists in removing such things as are hurtful, and supplying such as are defective. But it is to be observed, that we here speak of Wounds in which neither a large Artery, nor an highly tendinous Part, are wounded. We must, therefore, next consider, what Changes of Phenomena happen to a simple Wound, if such Parts should be wounded.

If an Artery, not too large, nor too near the Heart, is cut quite through transversely, the divided Parts retiring, and hiding themselves in the neighbouring solid Parts, by means of this Contraction, stop the Efflux of Blood; and the other Phenomena proceed as before described.

Whilst the Blood, by the Force of the Heart, is thrown into the Arteries which always become narrower, by acting on their Sides it removes them from the Axis of the Canal, and consequently increases the Capacity of the Arteries. But all other Circumstances being alike, it dilates the Arteries the more the greater Resistance there is about their Extremities. Hence an Artery when tied becomes very tumid between the Ligature and the Heart. But this Dilatation is resisted by the muscular and orbicular Fibres of the Arteries with a considerable Force, by which they are again contracted into their former Dimension, as soon as the impelling Force of the Heart ceases. When, therefore, an Artery divided by a Wound discharges Blood from its open Orifice, the Resistance of the Blood impelled from the Heart is diminished, and consequently the Cause of the Dilatation of the Artery is lessened. The Force, therefore, of the orbicular Fibres prevails, by which in every Moment the Artery is more contracted, and thus gradually the Orifice of the divided Artery is closed, if it is not excessively large. Besides, the longitudinal Fibres being by the same Causes more contracted, diminish the Length of the Artery: Hence an Artery, entirely divided, shrinks back, and lodging itself between the adjacent solid Parts, is by their Bulk and Weight more compressed and contracted. If a considerable Quantity of Blood is discharged from a Wound, the Strength being impaired, and the Impetus of the impelled Blood diminished, the Contraction of the divided Artery is augmented. When a great Toe was cut off by one Stroke of a Chissel, I saw two Arteries project, perhaps the Length of a geometrical Line beyond the Surface of the Wound; but when they had for a few Minutes discharged the Blood freely, they began to be retracted, the Hæmorrhage was lessened, and two Days after when the Dressing was removed, no Blood was discharged, the Mouths of the divided Arteries being closed up. But if an Artery, which is either very large, or very near the Heart, is divided, the Contraction of such an Artery is not able to resist the Blood impelled with so great a Force; hence the Hæmorrhage proves mortal; for the smaller the Artery is, and the farther distant from the Heart, the Impetus of the Blood impelled from the Heart is the more retarded, because the Resistance it meets with is greater.

If an Artery is wounded transversely, and not cut quite through, the Wound enlarges by a Retraction of the divided Fibres; hence a perpetual Hæmorrhage; and when that ceases, an Aneurism, from the Tenuity of the Cicatrix yielding to the Force of the circulating Fluid.

In this Case, for the Reasons already specified, a Wound inflicted on an Artery is, in consequence of the Recession of the divided Parts, more enlarged. But because some Parts

as yet cohere, the Extremities of the Artery cannot shrink back and lodge themselves in the adjacent Parts; nor can the orbicular Fibres be so contracted as to close the Wound of the Artery. Since, therefore, in this Part there is no Resistance, and a considerable one in the other entire Vessels, such a Wound will continue to discharge Blood till the Patient dies, or falls into a Deliquium. But it more frequently happens, that the Blood is discharged not in such a Degree as to prove mortal, but only to induce a great Weakness. Then there begin to grow gradually on the Part of the wounded Artery, as it were, the Rudiments of a Cicatrix, which are able to check the Effusion of the Blood moved by so weak a Force of the Heart: But afterwards the Strength of the Patient becoming greater, this Part remaining weaker than the other Parts of the Artery, is more dilated, and becomes protuberant. This is called an *Aneurysm*, or a *Dilatation of the Artery*, because the Artery in that Place no longer remains an equable conical Canal, but is distended into a Sack; for as the Largeness of Arteries depends on two Causes, that is, the Force with which the Blood propelled from the Heart endeavours to dilate the Arteries, and the Resistance of the Sides of the Arteries, and consequently as the Largeness of Arteries is in a Ratio compounded of the direct Ratio of the Impetus of the impelled Blood, and an inverse Ratio of the Resistance of their Sides, it is sufficiently obvious than when an Artery is rendered weaker in any Part, it must of course be more distended there. But because by such a Distention, such a Part will be still more weakened, the Reason is obvious why such large aneurysmical Tumors, of which we have many Instances in practical Authors, are often formed.

If a large Artery is wounded, and cut quite through, a perpetual Hæmorrhage will arise, till Fainting, or Death, is induced. The Parts below the Wound grow tabid, and are consumed by a putrid but slow Gangrene, or else drying, are entirely contracted.

In this Case the Blood is discharged with a full Stream, tho' not with an equable Celerity, but, as it were, by Starts, sometimes with a small, and immediately after with a greater Force; because at the time the Arteries are in their Diastole, the Force of the Heart alone urging the Blood, then expels it through the open Artery. But a great Part of the Impetus convey'd from the Blood to the Heart, is spent in dilating the Arteries: Hence only in the time of the Diastole of the Arteries, the Blood is propelled with that Excess, by which the Force of the Heart surpasses the Resistance of the Sides of the Arteries. But whilst, when the Action of the Heart ceases the Arteries are compressed, the Blood moves with a far greater Celerity through them, and when evacuated from the Body, is of a scarlet Colour. From these two Signs we know, that the Blood is discharged from an Artery; and not from a Vein. But a large Vein, except in highly plethoric Patients, when wounded, discharges but a small Quantity of Blood, which is always blackish, and less red than arterial Blood. If the Artery wounded is large, and very near the Heart, the Death of the Patient soon ensues, the whole Blood being in a short time expelled from the Wound. But the Effusion often only brings on a Deliquium; and if in this Case, the Patients are not invigorated by Wine, or Cordials, but left, as it were, half dead, there is some Hope, that during the Continuance of such a weak and languid Life, the divided Artery may be contracted and consolidated. *Boerhaave*, in his Prelections, used to give his Auditors a very memorable Instance of this Kind, which he himself saw.

A Countryman over his Bottle was wounded with a Knife under the Axilla; and the axillary Artery being divided, the Blood was discharged with a violent Force: Soon after the Patient falling down was thought to be dead, and was laid out as such. Next Day when the Persons appointed by public Authority to examine Wounds, and give in their Report to the proper Judges with respect to their mortal Nature, came to him, they found some Warmth about his Thorax, without any other Signs of Life. They deferred examining his Wound for some Hours, during which the Patient began gradually to recover, tho' every one imagined that he would soon die. But contrary to all Expectation he totally recovered, after continuing a long time in such a weak and languid Condition; only the Arm of that Side remained all his Life dry, and without Juice, almost like a Mummy. If, therefore, in an Artery so large and so near the Heart a Consolidation could be obtained, it is obvious, that we are not to despair in the most dangerous Wounds of Arteries, and, perhaps, in such Patients, if weak and languid Life was not augmented by stimulating, vinous and cordial Substances, more would be preserved than really are.

If a large Artery, running to the inferior Parts, is divided, and if the Ramifications of no other Artery are distributed to

these Parts, the total Influx of the vital Fluid into them must necessarily be destroyed: This is succeeded by a Mortification of those Parts, which in this Case may happen in a double manner; for either the Fluids contained in the inferior Parts, being no longer propelled by the Impetus of the arterial Blood, become stagnant and corrupted; in which Case a putrid, tho' slow Gangrene happens, because all the vital Impetus which moves the live Parts to these gangrenous Crufts, and consequently soon makes the Disorder spread, is here wanting: Or the Humours left in the inferior Parts, after the Division of a large Artery, by the proper Contraction of the Vessels, and Action of the adjacent Muscles, pass into the Veins, and return to the Heart; from which, however, nothing can be conveyed to these Parts. Hence the Vessels of these Parts being totally destitute of Fluids, collapse, and grow together. And as the most Part of the Bulk of the human Body depends upon Humours, so the Bulk of those Parts is surprisingly diminished, whilst they are dried and totally contracted, as appears in the Instances last-mentioned.

Those Nerves which are large and tense, when cut quite through, recede, and hide themselves, draw and extend their small Branches situated a little above the Wound, excite Pain and Obstruction in the neighbouring Nerves; but to the Parts below the Wound, cause a Stupor, Immobility, Emaciation, or a Gangrene.

We shall now consider those Phenomena which appear when large Nerves are wounded; for no Wound can injure the Skin without dividing numberless nervous Fibrils; but of these we do not treat, for we consider here only the large Nerves as they are demonstrated by Anatomists, and which are so many Congeries of other Nerves contained in a common Covering.

As for the *Recession or Shrinking of the Nerves*; that which in large Nerves may properly be called a *Nerve*, and which arises from the tender Pulp of the Brain does not seem possessed of such a Degree of Strength, as that when divided to be by its Elasticity capable of receding or shrinking back. But the Nerves which arise from the Medulla Oblongata, and Spinal Marrow, and, which at their Origins, are highly soft, are covered with tough Coats, that they may be safely convey'd to these Parts of the Body on which they are to perform their Offices. On these Coats depend the Strength and Elasticity of the Nerves. Hence small nervous Fibrils make a considerable Resistance to the Knife in dissecting Carcasses. And unless it was so, the Demonstration of the Nerves, especially where they are divided into small Ramifications, would be absolutely impossible. When, therefore, a large Nerve is divided, the separated Extremities, by the contractile Force of the Coats covering the Nerves, and of the Vessels distributed through these Coats, recede from each other, and conceal themselves under the adjacent Parts. But the larger a Nerve is, other Circumstances being alike, the thicker its Coats are; and as the small nervous Congeries, which united form the large Nerve, are, also, covered with their proper Coats, hence large Nerves when divided are retracted with great Force.

As for their *drawing and extending their small Branches a little above the Wound*; the Nerves, as well as the Arteries and Veins, are divided into Ramifications; but the Ramifications arising from the Arteries and Veins, every-where communicate with the Cavity of the Trunk whence they arise. Hence the Fluids are by a Continuity of Motion convey'd from the Trunk into the Ramifications. But it is otherwise in large Nerves, which send off smaller Nerves like Ramifications from them; for such a large Nerve contains numberless smaller Congeries of Nerves wrapt up in a common Covering, and these smaller Congeries consist of others still smaller. Nor have the Dexterity and Industry of the most curious Anatomists been hitherto able to find an End of this Division. But from a large Nerve in its Course, are every-where distributed such Congeries of Nerves, which are called *Ramifications of the large Nerve*, not because they are by a Continuation of Substance propagated from it, as in the Arteries and Veins, but because being before united with other similar Congeries, they constituted the Bulk of the large Nerve; but now going off from it, they run to their proper Places in order to perform their Offices. All the Nerves, therefore, which like Ramifications are derived from the large Nerve, are such as they are in that Place where the large Nerve arises from the Medulla Oblongata, or Spinal Marrow. But in the Arteries and Veins, the Ramifications take their Origins from that Part in which they run off from the Trunk of the greater Vessels.

When, therefore, a large nervous Trunk is divided, it by receding will, at the same time, draw with it the small Ramifications arising from it, a little above the Part where the Wound is inflicted. Hence by this violent Distraction of the nervous Fibres, intolerable Pains of the adjacent Parts to which

these Ramifications run, are produced; and hence there is often a more intense Pain in the adjacent, than in the wounded, Part. But that by such a simple Distraction of the nervous Fibres, intolerable Pain may be produced, is certain from numberless Observations. When a Phlegmon distending the Membrana Adiposa, is suppurating, it elevates the Skin, and distracts its Fibres with an intense Pain. But when the Pus is formed, and an Incision made in the Skin with a Lancet, the Pain forthwith ceases, whilst the distending Pus is discharged. An intense Pain is, also, produced by an inflammatory Tumor elevating the tense and nervous Membrane of the Auditory Passage. And in a Lues Venerea, a Tumor sometimes arising in the Substance of the Bone, distracts the Periosteum, and produces a Pain so intense, that the Patients are ready to lay violent Hands on themselves.

Besides, the Coats which cover the large Nerves, and the Ramifications running off from them, consist of numberless small Vessels, as is certain from anatomical Injections. The nervous Ramifications cannot, therefore, be distracted by the divided Trunk receding, but the Coats with which they are covered must, also, be distracted, and consequently the Vessels constituting these Coats, must be elongated. But it is certain that every Cause which distracts and lengthens Vessels, diminishes their Capacity. Hence may arise an Obstruction, and all its Effects.

As for the Stupor of the Part below the Wound; quite different Actions of the Nerves are observed in the human Body; for some give a Power of Sensation to the Parts to which they are distributed; others produce muscular Motion, whilst the Nutrition of the Parts and Life itself seem to depend on others. That these different Actions are performed by different Nerves, is sufficiently evinced by what happens in Diseases; for often Palsies of particular Parts are formed, and sometimes an Hemiplegia, in which one Side of the Body becomes incapable of Motion, and is entirely deprived of voluntary muscular Action, whilst the Sensation, Heat, and Nutrition of the Part affected remains. In this Case there is considerable Hope of a Cure. Sometimes together with a Power of Motion, Sensation is lost, and such a Stupor produced in the Part affected, that it appears no longer to belong to the Body, whilst the Patient perceives Obstacles acting on such a Part, as if he only touched them with a stretched-out Stick. This is a worse State of the Disorder. But when there is a Sense of Cold in a paralytic Part, and its muscular Substance begins to decrease, the Disorder is generally incurable, as is certain from many Examples of Palsies succeeding the Colica Pictonum. Tho' the Nerves subservient to so many different Functions, have distinct Origins in the Brain, yet being collected into large nervous Congeries, they are distributed to the several Parts. When such Nerves are, therefore, entirely divided, all the Functions depending on the Soundness of such Nerves are abolished. Hence arise the Stupor and want of Sensation in the Parts below the Wound, as, also, their Extenuation, and Privation of Motion, unless Ramifications rising from the Trunk above the Wound are distributed to the inferior Parts, or other nervous Trunks send off Ramifications to them.

The Reason will, perhaps, appear less evident, why a Gangrene of the Parts below the Wound often succeeds a total Division of a large Nerve. But a Gangrene is such a Disorder of a soft Part, as after the Cessation of the Influx of the vital Fluid into the Arteries, and its Efflux through the Veins, tends to a Mortification. If, therefore, a Gangrene succeeds the Division of a large Nerve, this vital Influx and Efflux of the Humours must have ceased; the Arteries, however, and Veins, are entire, and the Humours moving in them laudable, whilst the Nerves are only divided. But if it is considered, that the Motion of the Fluids through the Arteries depends on two Causes, that is, the Force of the Heart, and the Action of the Arteries, and if it is at the same time observed, that the Force of the Heart is, in a great measure spent in dilating the Arteries, and that consequently the principal Cause of the Motion of the Fluids through the Arteries is their own Contraction, which partly depends on their Elasticity, but more especially on the muscular Force of the orbicular Fibres, by which the dilated Arteries are contracted, and propel their contained Fluids, and as it is certain from Physiology, that the Action of a Muscle requires the Soundness of the Nerve convey'd to that Muscle, and that the nervous Trunks send off Branches to the adjacent Arteries, it will appear, that when the Nerve is destroy'd, the muscular Force of the Artery is, also, lost, by which it propel'd its contained Fluid: There will, therefore, only remain the Elasticity of the Artery, and the Impetus communicated by the Heart. But in the Veins the Blood moves with that Motion which it has whilst it passes from the Arteries into the Veins. It is, also, assisted by the Motion of the adjacent Muscles, which becoming turgid when they act, press the adjacent Veins, and by that means promote the Motion of the venous

Blood. But when the Nerves are divided, the inferior Muscles remain paralytic, and no Power of Action remains in them. When, therefore, the Impetus of the Blood convey'd from the Arteries into the Veins, is diminished, and the Action of the Muscles, adjacent to the Veins, defective, the Blood in the Veins begins to move slowly, to be accumulated, and become stagnant. And thus a greater Resistance arises to the Arteries, whose Action was before weakened. Hence at last the vital Motion of the Fluids through the Arteries and Veins is suffocated in the Parts below such a Wound, that is, a Gangrene is formed.

Thus appears the Reason of those Disorders which are observed to succeed the Division of large Nerves. But medicinal Observations evince, that after such Wounds, Gangrenes are formed in the inferior Parts.

Nerves which are tense, or tendinous, if pricked, or cut half through, excite Pains; sometimes at first obtuse, and sometimes acute; first in the wounded Place, afterwards in all the annexed and adjacent Nerves. Hence Heats, Tumors, a Redness extending pretty far round the Wound, Fevers, Deliria, Spasms, Inflammation, an Aperture of the inflamed Part, accompanied with an Evacuation of an acrid, thin, and often a very copious Serum: After these, Insensibility, Rigidity, Exsiccation, Immobility, or Gangrene, and Death: And indeed all these Symptoms are the more violent, the more strongly the Nerve is stretched above the firm Parts, or more strongly affixed to them, as, also, the more tough and tenacious the Coverings of the Nerve are.

These are the calamitous Cases in which from a slight Wound so terrible Symptoms often arise. It sometimes happens that in opening a Vein of the Arm, the Tendon of the Biceps Muscle is injur'd, or, which happens more frequently, the broad Aponeurosis, which arises from that Tendon, and covers the Muscles of the Cubit. At this very Moment an intolerable Pain is often perceived, which the Patient expresses with miserable Shrieking.

Sometimes, in the Beginning of such a Disorder, there is only felt an obtuse Pain, which a few Hours after is greatly increased, and affects the whole Arm as far as the Humerus. Sometimes, also, the subaxillary Glands become pretty soon tumid, and inflamed. The Patients often complain that they perceive in the Wound itself, as it were, a live Fire burning the Parts. On the Skin appear oblong red Spots, which are always a bad Sign. In a malignant *Paronychia*, where the Tendons of the Flexor Muscles of the Finger are affected, a red Zone running longitudinally according to the Direction of the Muscles which bend the Fingers, through the Skin of the Cubit, is by the skilful Surgeons looked upon as a very bad Sign: In the soundest Man, an acute Fever is often excited; and the Brain being disturbed partly by the Fever, and partly by the Vehemence of the Pain, Deliriums, Convulsions, and sometimes Death, ensue.

But tho' Death does not always succeed such Wounds of the Nerves, yet terrible Misfortunes are produced by them; for the whole Part becomes greatly tumid and inflamed, and an incredible Quantity of thin Liquor is continually discharged either from Blisters raised on the Epidermis, or from the Wound itself; but because the Patients perceive a burning Pain, they accuse the Acrimony of the Humour discharged, which, however, when tasted, is found to have no great Degree of Acrimony. Sometimes a Gangrene preys upon the whole Membrana Adiposa; and in this Case a mild Suppuration never happens, but sinuous Collections of ichorous Matter consume all the Fat lodged in the Interstices of the Muscles, and the pinguedinous Coats of the Tendons are destroy'd; hence afterwards the Skin adhering to the Muscles, and the Tendons and Muscles for want of the Membrana Cellulosa being concreted with the adjacent Parts, a Rigidity and Immobility of the Part are brought on, and the Use of the whole Member is lost. When by a violent Gangrene, or Suppuration, the Coats of the Nerves in which the Membrana Cellulosa is also found, are destroyed, the Use of these Nerves is lost, and an Insensibility, and Extenuation of the Parts brought on. In the soundest Constitutions, surprising Degeneracies of the Humours, excessive Pains, and a Loss of the Use of the Parts, are often induced by the slightest Puncture, or Wound, of a Nerve.

It is, also, to be observed, that all these Symptoms are the more violent, the more tense the wounded Nerve is. Hence arises the Danger of Punctures about the lost Phalanxes of the Fingers, where the strongest Tendons are inserted, and in the Palm of the Hand, where the tendinous Expansion of the Musculus Palmaris forms the tense and tendinous Part of the Palm. Besides, this Malignity is increased, if the nervous Parts wounded are covered with thick Coats, as is obvious in the most dangerous Species of *Paronychia*, where the Tendon

inserted

inserted in the last Phalanx of the Finger, being hurt by a Puncture, or inflamed by any other Cause, produces the most intense Pains, a Phrenitis, Convulsions, a Syncope, and often sudden Death; or, if the Patient survives this, after violent Agonies, the last Phalanx of the Finger becomes mortified, and falls off: And a Clinching of the Hand, which cannot by any Art be removed during the Patient's whole Life, shews the dire Remains of the Disorder. The Reason of so great a Malignity depends almost entirely on this, that the Tendons bending the Phalanxes of the Fingers are surrounded with a surprising Ligament almost of a cartilaginous Hardness; for if in the Beginning of such a Disorder, a skilful Surgeon, by a bold Incision, divides all the Parts to the Bone, and by that means cuts the Ligament surrounding the Membranes, the Pain is forthwith lessened, and all these terrible Symptoms are prevented.

The same Symptoms, with very little Alteration, happen, when Tendons are differently wounded, and these are extremely violent.

The Tendon of a Muscle, when examined, may be divided into as many Fibrils as the Muscle itself. Between these Fibrils are lodged numberless small Vessels, as is evident from anatomical Injections. But these Fibrils of the Tendons seem to be only Continuations of the muscular Fibres, which seem to derive their Origin from the Nerves which enter the Muscles. Hence it is not to be wondered at, that the Tendons, which are, as it were, the Offspring of the Nerves, should, when wounded, suffer the same Misfortunes with the Nerves. But as in a large Nerve there are found Vessels of all Kinds, and the cellular Membrane separating the nervous Fibres from each other, so the same is observed in Tendons. But because the Tendons are only subservient to the Motion of the Parts, and since, sides, the Nerves contribute to Sensation and Nutrition in many Parts of the Body, hence all the same Misfortunes do not happen to the Tendons when wounded, as happen to the Nerves. But in both Cases, there are many Phenomena in common; which, however, are observed to be generally more violent in the Tendons than in the Nerves.

Nerves, when entirely divided, unless their small Ramifications a little above the Wound are distracted by the Recession of the divided Trunk, do not create much Pain. But all the Uses which the inferior Parts received by these Nerves are destroyed. Thus, also, when a Tendon is entirely divided, the Motion of the Part which depended on the Integrity of that Tendon, is destroyed; but there is often no more Pain than that which accompanies a simple Wound, nor do any more violent Symptoms succeed. This I saw in a Man in whom the Tendons which erect the Fingers, were cut with a Knife. In the *Mem. de l'Acad. Royale des Sciences An. 1722*, there is a memorable Case which confirms this. A nimble Dancer endeavouring by a great Leap to raise his Body, broke the *Tendo Achillis* in both Legs, the Skin remaining entire. There were three Fingers-breadths between the Extremities of the Tendons. By a proper Ligature the Patient was restored to his natural State; nor at the time of the Rupture, nor during the whole Course of the Disease, did he feel any Pain.

In another Man, the Skin remaining entire, that Part of the same Tendon which arises from the *Gastrocnemii* Muscles, was broken, whilst that Part of the Tendon, which derives its Origin from the *Musculus Soleus*, lying under the *Gastrocnemius*, remained entire. In that Case, there was an intense Pain, with a strong Inflammation and Tumor of the Part. Hence it appears, that far worse Symptoms are produced when a Tendon is half divided, than when it is totally divided.

But violent Symptoms are produced by the slightest Wounds of the Tendons, and by only gently touching a Tendon divested of its Coat, the whole nervous System is in a Moment disturbed; which is surprising, since the Tendons when covered with their Coats, especially with that pinguedinous Membrane which by its soft Oil lubricates them, and renders their Action quick, may, without any great Pain, not only be strongly drawn, but, also, stitched together; for it is sufficiently known in Surgery, that the Extremities of divided Tendons are seized with Forceps, drawn together, retained in Contact by passing a Thread through them, and thus happily cured, whilst the Part affected is so disposed, as that the Muscles whose Tendons are cut remain flaccid. But when a Tendon divested of its Coats is but gently touched, terrible Symptoms are produced.

There is no Remedy more efficacious for preventing or mitigating the violent Symptoms arising from Punctures of the Nerves and Tendons, than black *Peruvian* Balsam gently warmed, and dropt into the Wound; then by the Application of a warm Spatula it is to be made to penetrate and diffuse itself through all the Parts of the Wound. Afterwards, the

whole Limb is to be wrapt up in soft Cataplasms, or Fomentations, or continually anointed with mild oleous Substances. If the Wound is so small as not to admit the *Peruvian* Balsam easily, it is to be a little dilated.

The Application of warm Oil is of great Use where the whole nervous System is irritated, and Convulsions dreaded, as we learn from *Galen's* own Case, as recorded by himself, in *Comment. 1. on Hippocrates de Articulis*.

And the Membranes of the Tendons and Nerves, which are frequently propagated to the adjacent Parts, are affected with the same Diseases.

All Membranes, when wounded, do not produce such violent Symptoms, but only such as are highly tense. The tendinous Membrane produced from the *Fascia Lata*, and the like Aponeurosis arising from the *Gluteus Musculus*, and surrounding the strongest Muscles of the Thigh, when hurt by a slight Puncture, are seized with intolerable Pain. The same happens in the Aponeurosis of the *Musculus Biceps*, which is sometimes hurt in taking Blood from the Arm. If the tense Membrane covering the Auditory Passage is distracted by an inflammatory Tumor, an intolerable Pain arises, and a Delirium and often Death succeed, as *Hippocrates* tells us in his *Prognost.* and *Coacæ Prænotiones*. But Wounds are to be most dreaded in those Membranes which are either Productions of the Tendons, or are possessed of an exquisite Sensation, and Capacity of Irritation on account of the great Number of Nerves dispersed through their Substance. Thus the *Periosteum*, when wounded, sometimes produces the most exquisite Pain.

A Knowledge of the Laws of Circulation, and a Consideration of the adjacent Parts, will teach us in what manner the lymphatic, adipose, venous Vessels, and the Vesiculæ, or small Cisterns, suffer in Wounds.

As for the lymphatic Vessels; the Vessels by Anatomists demonstrated under the Name of *Lymphatics*, are all of the venous Kind, as is obvious from the Motion of the Fluids through those Vessels from the Ramifications into the Trunks, as, also, from the Valves, which *Ruyssch* so evidently demonstrated in his *Dilucidatio Valvularum*, to *Blissius*, who denied that the Valves in these Vessels were ever demonstrated. These lymphatic venous Vessels, when wounded, produce no great Harm; for considerable sanguineous Veins, when wounded, discharge no great Quantity of Blood. But to these lymphatic Veins correspond similar lymphatic Arteries, which, when wounded and not entirely divided, may produce a perpetual and uneasy Effusion of Lymph in Wounds. But that there are numberless such Vessels in the Body may be concluded from anatomical Injections made into the Arteries; for in this Case those Vessels, in which there naturally appeared no red Blood, are filled with a coloured Matter. *Ruyssch* so filled the Tendons and Ligaments, that they became quite red; there were, therefore, in these Parts many such Vessels, which during Life were filled with a thin Liqueur, whose Colour was not perceptible: Perhaps, for this Reason, a Discharge of such Lymph is so frequently observed in Wounds inflicted about the Joints; and Surgeons often find large Quantities of this Lymph flowing both from Ulcers and Wounds about the Joints.

As for the adipose Vessels; that the Fat of the human Body may be mixed with the Blood, and with it move through the Vessels, is sufficiently certain; for in fat Persons labouring under an acute Fever we observe, that in a few Days the Fat is surprisingly diminished; and in such Diseases, oleous Drops have appeared in the Blood taken from the Veins. When *Malpighi*, as he tells us, in *Tr. de Omento, Pinguedine, & Adiposis Duobus*, observed oleous Streaks growing to the Trunk of the Vena Portæ in Frogs, upon compressing them, he saw plainly Drops of Oil in the Trunk of the Vena Portæ carried to the Liver along with the Blood. There seems, therefore, to be no Doubt concerning this. But it is a Doubt, whether such a pinguious Oil is by a continual Motion conveyed in proper Vessels like the other Humours, or whether it remains collected in small Cells, which by their recipient Orifices are united with the Arteries, whence this Oil is secreted, and which by their emittent Orifices communicate with adjacent similar Cells, as, also, with the Veins, which again receive and mix with the other Humours this Fat, secreted from the Arteries, and deposited in Cells. *Malpighi*, in the Work last quoted, seems to think that there are such pinguedinous Vessels, which by a continual Course convey this Oil, without the Interposition of any Cells: But in his posthumous Works he tells us, that the Fat is preserved, and accumulated in proper Cells, as in so many peculiar Laboratories; but that he durst not assert the Existence of adipose Vessels, tho' he had been very accurate in searching for them. But whether the Fat is lodged in such Cells mutually com-

Communicating with each other, or whether there are such Pinguinous Vessels, when either are wounded, their Contents will be discharged, become corrupted, and capable of producing many Misfortunes. *Ruyfch*, as he tells us, in *Epist. Anat. ad Boerh.* upon opening the Abdomen of an Horse which died after hard Running, found its whole Cavity full of a thin diluted Oil. It is certain, that the Fat is highly lax, easily protuberates into a Wound, and produces fungous Flesh, especially if fat Parts, when wounded, are treated with too emollient Applications.

As for the venous Vessels; provided these are not very large, they are not, when wounded, productive of very dangerous Symptoms; for a violent Hæmorrhage rarely happens from them, except in plethoric Patients, in whom it is not prejudicial, since it diminishes the Redundance of the Blood. But the adjacent Veins mutually joined by frequent Anastomoses, easily supply the Defect of the wounded Vein. But it is to be observed, that when a considerable Vein is known to be wounded, it is dangerous to apply those acrid Styptics which are sometimes used for stopping Hæmorrhages from Wounds, such as Vitriol, Alum, and Alcohol; for it is to be feared, lest these being received into the open Wound of the Vein, should enter the Blood, and produce Coagulations therein, which being conveyed through the Vein, which becomes continually broader, to the Right Ventricle of the Heart, and thence impelled into the Pulmonary Artery, may produce the most terrible Disorders.

As for the Vesicles; these are all glandular Follicles, in which the Humour secreted from the Blood by the Arteries, is collected into a membranaceous Cavity, and thence discharged through a proper Emiffary for particular Purposes. When these Vesicles are wounded, it is obvious their Use must be lost. But of how great Importance this Loss is, is only to be known from a Knowledge of the Use of those Parts. Thus, when the Vesiculæ Seminales are wounded, it is obvious the whole Business of Generation must be disturbed.

If a Wound lies exposed to View, its Presence and Nature is discoverable,

1. By the Sense, after wiping away the Impediments which hinder the Sight of it, and stopping the Flux of Blood.
2. By an anatomical Knowledge of the adjacent Parts.

Great Caution is requisite in a Physician or Surgeon called to a wounded Person, lest they should pass a Judgment of the Wound before they have carefully examined it; for whatever they rashly pronounce on such an Occasion may, perhaps, be afterward related to the Judges. If the unlucky Event should prove that the Wound was dangerous, though at first Sight they pronounced it but slight and inconsiderable, those who plead the Cause of the Guilty afterwards, brand the Character both of the Physician and Surgeon, as if the Misfortunes succeeding the Wound ought to be imputed to their Want of Skill. Prudent Surgeons generally ask the Physician present, what he thinks of the Wound, and of the Effects to be dreaded from it, by which means they save their Reputation. It is therefore proper, that all Physicians should embrace every Opportunity of seeing Wounds, and severe Operations, that thus they may gradually accustom themselves to look upon the Calamities of Mankind with Intrepidity. *Hippocrates*, in *Tr. de Flatibus*, tells us, "That the Physician should look upon dangerous Wounds, handle such as are disagreeable, and by the Calamities of others endeavour to prevent his own Miseries; for by Art the Sick are freed from the greatest Misfortunes, Diseases, Pains, Sorrow, and Death." These Misfortunes are alleviated by the salutary Art; but it often happens, that Physicians who are well acquainted with the Fabric of the Body, are by the Sight of the Wound, the Cries of the By-standers, and the Complaints of the Patient, so disturbed, as to pass a quite different Judgment from what they would have done, if they had considered all Circumstances with a calm and sedate Mind.

A Wound is not therefore to be examined precipitately, but with the greatest Attention of Mind; for at the first Dressing the Surgeon may safely do that which afterwards cannot be commodiously done; since on the succeeding Days the Wound often becomes so tumid, painful, and inflamed, that it cannot bear the Scrutiny of the Probe without great Pain and Irritation.

If a Wound is inflicted on a Part of the Body exposed to View, all Impediments which hinder the distinct Examination of the Wound are to be removed from it. Tepid Water with Honey, Wine, and a little Sea Salt, is to be used for washing the Wound, by which means the Thrombuses of concremented Blood are removed, and the whole Surface of the Wound is discovered. But so long as the Blood flows impetuously from the Wound, there is such an Inundation, that nothing can be distinctly observed. For this Reason the Hæmorrhage is to be stopped, which in the Limbs is easily done by compressing the

Trunks of the Vessels by a proper Ligature; and in other Parts of the Body, unless very large Vessels are wounded, the Hæmorrhage may be stopt with warm Alcohol of Wine.

As for an anatomical Knowledge of the adjacent Parts, nothing certain can be determined without it; for the Inspection of a Wound may discover its Largeness, Deepness, and Direction; but a Knowledge of the Parts adjacent to the Wound, is only to be obtained from Anatomy. *Eustachius's* Tables, in which the Situation of the large Arteries, Veins, and Nerves, as, also, the Origins and Courses of the Muscles, are so accurately marked, may be of great Use for this Purpose, that thus, knowing the Place of the Wound, we may be able to determine what Parts of the Body are wounded, and what Injury is to be dreaded from the Wound.

The Presence and Nature of a Wound, which is not exposed to View, is discovered,

1. By Anatomy; by the Situation of the Person when wounded; and the Manner and Force of the Stroke.
2. By an Impediment to the Action of a particular Part, subsequent to the Wound.
3. By the Humours discharged from the Wound, either within or out of the Body.
4. By the Affections which are consequent to the Wound, as Pain, Hiccup, Spasms, Tumor, &c.

The Knowledge of a Wound is far more difficult where the Whole of it cannot be viewed by the Eye. The Entry of the wounding Instrument into the external Integuments is seen, but how far it has penetrated, cannot often be discovered. It will, however, be of great Use to the Surgeon carefully to attend to the following Circumstances:

1. By Anatomy we know what Parts are situated in the Place wounded; but the Situation of the Patient at the time he received the Wound, and of the wounding Person when he inflicted it, will demonstrate the Way in which the wounding Instrument penetrated into the internal Parts of the Body. If the wounding Instrument can be had, it may sometimes be known from the Largeness of the Wound in the Integuments how deep it has been driven. All these things ought to be carefully inquired into, both from the Patient, and from those who were present when the Wound was inflicted. Thus, for Instance, if a Sword is passed in a perpendicular Direction between the sixth and seventh true Ribs, it will penetrate into the Cavity of the Abdomen: But if a Man receives a Wound with his Body reclined backwards, whilst the Sword is passed from the inferior Parts upwards, it may penetrate into the Cavity of the Thorax. But if when the Body is inclined forwards, a Sword enters the same Part, it may pass through the whole Abdomen, even to the Pelvis. Thus, also, a Wound inflicted on the Side may run a great Way under the Integuments, and above the Ribs, especially in fat Persons, without penetrating into the Cavity of the Thorax. When we examine into the Deepness of a Wound by means of the Probe, it is of great Importance to know the Situation of the Patient when the Wound was received, and to place him in that very same Situation; for unless this is done, it often happens, that the Membrana Adiposa stops up the Wound. Thus, in Venesection, especially in fat Persons, it often happens; that at first the Blood flows out with a full Stream, but immediately stops upon the smallest Change of Situation in the Arm, because the fat subjacent to the Skin interposes itself between the Orifice in the Skin, and that in the Vein.

2. As we know from Physiology the things requisite to the Soundness of the particular Functions of the Body, so we easily see from the Action either hindered, or totally abolished after the Wound, whether some or all of the Requisites necessary for that Action are destroy'd by the Wound. Thus if a Wound penetrating into the Cavity of the Abdomen is immediately succeeded by an excessive Languor of the vital Actions, if the Heart palpitates quickly, if the Pulse is quick and unequal, the Face and Lips pale, and the Extremities cold, we conclude, that in consequence of a Division of some large Vessels, a considerable Quantity of Blood is discharged into the Cavity of the Abdomen. If a Wound inflicted in the Neck is without a considerable Hæmorrhage succeeded by the like Symptoms, it is to be dreaded, lest the Nerves situated here, and running through the vital Viscera, are wounded. If after a Wound of the Head the same Symptoms happen, it is thought that the Cerebellum is wounded, or compressed by the extravasated Humours. When Wounds of the Head are succeeded by an Abolition of all the animal Functions, the same Misfortunes are thought to have befallen the Brain itself. If after a Wound of the Back the inferior Parts are deprived of Sensation and Motion, we conclude that the Spinal Marrow is wounded. The same holds true with respect to the other Actions of the Body.

3. If after a Wound of the Thorax a red frothy Blood is either discharged from the Wound, or vomited up, we know that the Vessels of the Lungs are divided. If from a Wound in the Abdomen Chyle is discharg'd; a Wound of the small Intestine is denoted; but if the Fæces, a Wound of the large Intestines is indicated. If Blood is discharg'd by the urinary Passages, we know that the Kidneys, Ureters, or Bladder, are wounded.

4. A Pain suddenly succeeding a Wound, denotes that the Nerves, Tendons, or tendinous or nervous Membranes, are wounded; but an Hiccough, and Spasms, may be produced by Wounds inflicted in different Parts. After excessive Hæmorrhages, an Hiccough, and Convulsions, often arise; and are, by Hippocrates, in *Coac. Prænot. & Aphor.* in such a Case, pronounced very bad Symptoms. Hippocrates condemns an Hiccough arising from the Iliac Passion. Hence it is very probable, that this Disorder may be consequent to Wounds of the Intestines. An Hiccough, also, succeeds Wounds of the Diaphragm, Oesophagus, Stomach, and Head: Hence this Symptom, when consider'd alone, always shews the malignant Effect of the Wound, tho' it does not always infallibly indicate the Part wounded.

Sudden Tumors, succeeding Wounds, either shew that the Humours are extravasated, and collected in preternatural Parts; or that the Air has enter'd into the Cavities of the Body, thro' the Wound, and is surprisngly dilated by the Heat. We have consider'd those surprisng Tumors succeeding Wounds of the Breast, whilst the Air entering the *Membrana Adiposa*, distends the whole external Surface of the Body in an incredible manner, under the Article THORAX.

From a Knowledge of what has been said, the Event of Wounds may be prognosticated. As,

1. The Death or the Life of the Person wounded.
2. The possible, impossible, entire, or partial Cure.
3. The easy, difficult, long, or short Cure.
4. The Effects of the Wound remaining after the Cure is perform'd, as Consumption, Insensibility, Immobility, Deformity, &c.

When, by the Assistance afforded by the modern Improvements in Surgery, and a due Examination of all the Circumstances mention'd in the two preceding Aphorisms, we find the Diagnostic of a Wound, which teaches us the Part wounded, and the Actions of the Body, either abolish'd, or hinder'd by it, we may then foretel the Event of the Wound; and those Symptoms which may proceed from the Wound, as their Cause, will become obvious. This is call'd the Prognostic of Wounds; in determining which, great Caution is necessary: For, as Celsus, in *Lib. 5. Cap. 26.* informs us, "It is the Part of a prudent Surgeon not to meddle with a Patient who cannot be preserv'd, lest he should be thought to have destroy'd him who fell the Victim of his own Disorder. But where there is great Dread, without absolute Despair, he is to acquaint the Friends of the Patient with the Difficulty of the Case, lest, failing of Success, he should be thought either deceitful, or ignorant. But as these are the Measures taken by prudent Surgeons, so Quacks give out, that slight Cases are of the last Importance, that their Cures may appear the more surprisng."

But it is to be observ'd, that there are some Cases, in which the most skilful Anatomists may be deceiv'd, in determining the Parts injur'd by a Wound: For the Situations of the internal Viscera have frequently been found very different from those which they commonly obtain. For Instances of this Kind, see *Journal des Sçavans, Janvier 1689. Act. Lipsiens. An. 1690. and Carol. Drelincourt. Opuscul.*

In these Instances such Phenomena happen'd in found Persons, and the Change of Situation in the Viscera obtain'd from the very Beginning of their Lives. But it is, also, certain, from Experience, that the Situation of the Viscera is frequently chang'd by Diseases. Thus, in *Mem. de l'Académie Royale des Sciences, l'an. 1716.* we are told, that, in a certain Woman, the Situation of the Stomach, as, also, of the other abdominal Viscera, was found surprisngly chang'd by frequent Vomitings. It is highly probable, that such Changes in the Situation of the Viscera are very frequent: For in those Carcasses, says *Vanswieten*, which I have either dissected myself, or seen dissected by others, many such Changes were observable. Thus I have seen the Spleen fallen down into the Pelvis, the Bottom of the Stomach reaching below the Navel; that Part of the *Intestinum Colon*, which lies below the Stomach, so far distant from it, as to be lodg'd below the Navel, and form an Arch, the convex Part of which lay towards the Pelvis; and the concave towards the Stomach.

Now the Errors which must necessarily happen hence in the Prognostic of Wounds, seem hardly to be avoidable, since these Things can neither be predicted, nor known, by any Signs.

Besides, the particular Idiosyncrasy of the Person wounded may greatly change the Effects of the Wound. Thus some are

so faint-hearted, as to fall into a *Delirium*, upon seeing the Blood flow from the Wound even of another Person. Hence Hippocrates, in *Prorrhetic. Lib. 2.* tells us, "That there are many Wounds inflicted in Places which are not dangerous, whilst, at the same time, the Wound itself is so painful, that the Patient is depriv'd of a free Respiration; whereas others, where there was no Danger, have, on account of the Excess of Pain, breath'd freely, but been seiz'd with a *Delirium*, and dy'd feverish: For whoever have Bodies prone to Fevers, or Minds easily subject to Commotions, suffer such Misfortunes. But the Surgeon is neither to be surpris'd, nor afraid, at these Things; considering that both the Souls and Bodies of People differ widely from each other, and are of great Efficacy in Wounds and Diseases."

By means of these Cautions we are to determine the Prognostic of Wounds; in which we are to examine,

1. Whether the Wound is such as to produce infallible Death as its physical Effect; or whether, after the Wound, Life may be preserved.

2. *With respect to the possible, impossible, entire, or partial Cure*; a Wound is said to be cured, when the Parts separated from their natural Cohesion by the wounding Cause, are again concreted, and united. Thus, if the Finger is transversely cut, in such a manner as only to cohere by a small Portion of the Skin, the Cure of such a Wound cannot be promised. The Patient may, indeed, be preserved, tho' without this Part of his Body: Besides, it often happens, that, after the Cure of the Wound, all the Uses are not restored to the wounded Part, which it had in its natural State; in which Case there is not a total, but a partial Cure. Thus if a considerable Nerve is totally divided by a wounding Cause, there will never be a total Cure of such a Wound; for all those Functions which depended on the Soundness of such a Nerve, will ever after be abolish'd.

3. *With respect to the easy, difficult, long, or short Cure*; unless these Things are mentioned at the Beginning, the Blame of a difficult, or long-protracted Cure, will be often thrown on the Physician, or Surgeon. A Cure is said to be easy, which is performed without great Pain to the Patient, or Trouble to the Surgeon. When the Tendon of the Muscle which erects the Thumb, being divided, shrinks back under the Integuments, such a Wound cannot be cured, and the natural Use of the Part restored, unless the Wound is dilated, the Extremities of the divided Tendon laid hold of with Forceps, brought into Contact, and retained in that State by proper Suture; but these Things cannot be done without Difficulty and Pain: Prudence requires, that these Things should not always be revealed to the Patient, but rather indicated to his Friends, lest the Misfortunes of a tedious Cure should be afterwards imputed to the Physician, or Surgeon.

Thus when a Wound with considerable Loss of Substance is inflicted, whilst a large Portion of the Skin and *Membrana Adiposa* is removed by the Edge of the Sword, a considerable Space of Time is required for the Restitution of what was lost: If a simple Division of the Skin and *Membrana Adiposa* is only made by the wounding Instrument, when the Lips of such a Wound are duly united, it will be pretty soon consolidated, provided the Body of the Patient is sound; but if he labours under a considerable Cacoehymy, the Cure will be far longer, and more difficult. These Things ought to be determined in making the Prognostics of Wounds, because many are of Opinion, that Surgeons, from a sordid View to Gain, protract the Cure of Wounds far longer than is necessary: But no honest Surgeon will ever be guilty of such a Piece of Wickedness.

4. *As to the Effects of the Wound remaining after the Cure is perform'd, as Consumption, Insensibility, Immobility, Deformity, &c.*; these Things are, also, to be carefully attended to: In Wounds which are not mortal, Judges generally proportion the Punishment of the Inflictor to the Injury which the Patient sustains from the Wound inflicted: Hence the Advocates for the Offender usually employ all their Cunning and Oratory in charging the Symptoms subsequent to the Wound, upon the Physician or Surgeon to whose Care it was committed. For this Reason, at the first Dressing, from an anatomical Knowledge of the Part in which the Wound is inflicted, and from the Functions injured after the Wound, those Misfortunes ought to be indicated; which will follow the Wound, tho' ever so well cured; or, if this cannot be certainly determined, a Caution is to be given with respect to the particular Misfortunes to be dreaded after the Cure of the Wound: For in no Cases are Surgeons more injuriously treated than in these; since after the Wound is cured, if the Motion of the Part is lost, they generally tell who cured the Wound, and not who inflicted it, ungenerously laying on the former that Blame, which is the just Portion of the latter. When the only Artery which is distributed to a Part is divided, we foretel that an Atrophy of the Part will succeed the Cure: If a large Nerve, distributed to a Part, is destroyed, we prognosticate the Insensibility, and often

the Immobility, of the Part. If a Wound cannot be cured till after a long and violent Suppuration, when, for Instance, the Parts of a wounded Bone ought to be gradually separated, the *Membrana Adiposa* being thus consumed, we prognosticate that there will be a deep and unseemly Cicatrix.

Unavoidable Death, arising from a Wound, may proceed from five Effects; so that the following Wounds will necessarily prove mortal.

In this Aphorism are enumerated those Wounds which necessarily, and, in Spite of the highest Art hitherto known, remove that Condition of the Body which is absolutely requisite, that the Commerce between the Body and Mind may continue, or be restored, and not necessarily be destroy'd. But from Physiology it is absolutely certain, that the muscular Action of the Heart, the Reception of the Blood into the Heart, and the Expulsion of the received Blood from it, are indispensably necessary. Hence, in N^o 1. are enumerated those Wounds, which hinder the Influx of the nervous Fluid requisite for the muscular Action of the Heart. In N^o 2. those Wounds are enumerated, which, in consequence of a Division of the Cavities of the Heart, hinder any Blood from being contained in it. In N^o 3. are enumerated those Wounds, which, in consequence of the Dilatation of the Orifices of the wounded Vessels, hinder the discharged Blood from returning to the Heart. But as in a human Creature, after it is brought into the World, the Right Ventricle of the Heart cannot evacuate the Blood contained in its Cavity, except thro' the Lungs, and as to this their Dilatation by Respiration is requisite, for this Reason, in N^o 4. are enumerated those Wounds which totally destroy Respiration. Then, lastly, since, by an inevitable Effect of Life and Health, many both of the solid and fluid Parts are daily lost, hence it is requisite, that, in order to preserve Life, as many Parts of the same Kind should be perpetually restored both to the Solids and Fluids, as were lost by the Energy and Activity of Life. But the Loss of all these is restored by the Aliments eaten, and by the natural Actions changed into a Substance similar both to the solid and fluid Parts of the human Body. For this Reason, in N^o 5. are enumerated those Wounds which destroy the Soundness of those Parts absolutely requisite to this Work.

To these five Heads we may therefore reduce all mortal Wounds.

First, Those which intercept the Influx of the nervous Fluid into the Heart, from the *Cerebellum*; such as Wounds of the *Cerebellum*, or Brain, so deep as greatly to injure the *Medulla Oblongata*; or when the Texture of the Vessels within the *Cranium* is so dissolv'd, as to admit of an Extravasation of their Contents, which destroy Life by Pressure or Putrefaction, and which cannot be come at by means of the Trepan, by reason of the Condition of the Place; as it happens in Wounds of the inferior Part of the Orbit of the Eye, the temporal Bones, the *Os Ethmoides*, and the Basis of the *Cranium*, those which deeply injure the spinal Marrow; or which divide the cardiac Nerves.

As the Heart is a true Muscle, so its Action requires all those Things, which from Experience we know to be necessary for the Action of the other Muscles of the Body. But it is certain from Experiments, that the Influx of the Spirits thro' the Nerves into a Muscle, is requisite to its Action; the same will, therefore, obtain in the Heart: It is, also, certain from medicinal Observations, that when by violent external Causes, the Blood is so extravasated within the *Cranium* as to compress the whole Brain, all the Sensations and Motions depending on the Will are totally abolished; whereas the Action of the Heart in the Beginning of such a Disorder, is rather increased, as is obvious from the Strength and Celerity of the Pulse in apoplectic Patients. But it is known from Anatomy, that the *Cerebellum* is very safely defended, since it lies under the Brain, and being covered with the *Dura Mater*, cannot be so easily compressed by the extravasated Humours, as the Brain itself. But when the same Causes continuing or increased begin to compress the *Cerebellum*, which being of a more solid Contexture, therefore more resists compressing Causes, then the Action of the Heart ceases, and Life is destroyed. Hence we know that the *Cerebellum* communicates, thro' the Nerves, the Spirits requisite for the muscular Motion of the Heart. Wounds, therefore, which greatly hurt, or totally destroy, the *Cerebellum*, are justly accounted mortal. This is confirmed by Experiments made on live Animals. Thus *Perrault*, in his *Mechanique des Animaux*, *Partie 2. Cap. 7.* informs us, that, when the Brain of a large Dog was cut like Chequer-work, almost for an entire Hour, he died the very Moment his *Cerebellum* was wounded. *Raymond Vieussens*, in his *Neurographia Universalis*, *Lib. 1. Cap. 20.* tells us, "That when, after opening the superior Part of a Dog's Head, the *Cerebellum* is cut into Pieces, and taken out of the *Cranium*, the Animal dies almost forthwith, tho'

"the Brain, and Trunk of the *Medulla Oblongata*, are by no means hurt." The same Experiment was made by *Bbonius*, in young Puppies, whose *Craniums* were as yet soft, and their Sutures gaping, by driving a Knife into the *Cerebellum*, upon which he saw them expire, after slight Concussions of the external Parts; but upon removing the *Cranium*, it appeared, that the Instrument, in one of the Animals, had perforated almost the whole Compages of the *Cerebellum*; whereas, in the other, it had only penetrated its medullary *Nucleus*.

Nor is it any Objection against the mortal Nature of Wounds of the *Cerebellum*, that *Wepfer*, in *Tr. de Cicutæ Aquaticæ Historia & Noxæ*, in Puppies whose Heads were cut off, saw the alternate Systole and Diastole of the Heart remain for several Hours: For here we treat of the durable Action of Life, and not concerning that surprising Property of the Heart, by which, when taken out of the Body, it continues its Motion after Death: For *Wepfer* by no means intended to deduce from his Experiments any thing contrary to this Doctrine, as he himself affirms.

But since it is certain, from Anatomy, that no Nerve is derived from the *Cerebellum*, but that the whole medullary Substance of the *Cerebellum* being collected, goes off into the *Medulla Oblongata*, from which the Nerves afterwards arise, it is sufficiently obvious, that considerable Wounds of this *Medulla Oblongata* must necessarily prove mortal. Now if we consider that the *Cerebellum* and *Medulla Oblongata* are so safely lodged that they cannot be wounded without a considerable Wound of the Brain itself, and of the large Vessels and Muscles, the mortal Nature of Wounds of these Parts will be still more obvious.

But Wounds of the Brain itself, tho' pretty large, are not always mortal; as is obvious, from many Observations specified under the Article *CAPUT*.

When sanguiferous arterial Vessels, or large venous Vessels, are by any Cause ruptured, they discharge their contained Blood, as, also, that which by the continual Force of the Heart, would have flowed thro' the Vessels, if sound. But the hard Bone of the *Cranium* cannot yield, and naturally the Brain exactly fills the Cavity of the *Cranium*; for which Reason, the extravasated Blood must necessarily compress all the Parts contained in the Cavity of the *Cranium*. Hence, immediately after an Extravasation of Humours within the *Cranium*, the Functions of the Brain begin to be abolished, and afterwards the same Cause continuing to act, the *Cerebellum* and *Medulla Oblongata* are compressed, and Life by that means is destroy'd. If the Blood extravasated from the ruptured Vessels, is not in so large a Quantity, as by its Compression to remove the Action of the Brain, *Cerebellum*, and *Medulla Oblongata*, it may yet prove prejudicial in another manner: For the Humours of the human Body when extravasated, are by a spontaneous Degeneracy corrupted, tho' more slowly where all Access of the Air is denied; but at last becoming putrid, and acrid, they bring on Inflammations and Suppurations of the Brain, by which they consume and destroy its tender Fabric. Hence, in practical Authors, many Observations prove, that Wounds and Contusions of the Head, which were thought very inconsiderable, have after a pretty long time brought on sudden Death. In Carcasses there has appeared a large Quantity of ichorous or purulent Matter, and often a considerable Consumption of the Brain, by this means. Instances of this Kind may be seen in *Bonatus's Sepulchretum Anatomicum*.

In such Cases, therefore, the principal Hope of Cure is placed in the Operation of the Trepan, in order to procure a free Discharge to the Humors; but if such is the Condition of the wounded Part, that this Operation cannot be performed in it, inevitable Death will follow: But the Places in which this Operation cannot be performed, are, principally, these following:

The inferior Parts of the Orbit of the Eye; that is, that Part of the Orbit of the Eye which constitutes the greatest Part of the Bottom of the *Cranium*, and which lies below the *Cranium*, but constitutes the superior *Lacunar* of the Orbit of the Eye; for this Part of the Orbit is formed by the *Lamella* of the *Os Frontis*, which in a prepared *Cranium* is pellucid, and hardly so thick as the Nail of one's Finger: But this *Lamella*, on which the anterior Parts of the Brain, together with pretty large Blood-vessels, lie, is, on account of its Thinness, perforated by a slight Wound, in which Case the extravasated Blood is lodg'd under the Brain, in the very Basis of the *Cranium*; for which Reason it cannot be evacuated by the Trepan. Hence it appears how dangerous Wounds, inflicted in this Part, are. *Ruyssch*, in *Observat. Anatom. Chirurg. Centur. Observat. 54.* gives us an Account of a Man, who was, with the Extremity of a Stick which was not very sharp, wounded in the Orbit of the Left Eye; and tho' the Wound appeared inconsiderable to those who had the Care of it, yet the Patient soon after died. And when, by public Authority, the Cause of his Death was enquired into, the *Cranium* being divided with a Saw, the Wound appear'd to have penetrated pretty deep into the Brain.

As for the inferior Parts of the temporal Bones; the Pits appearing in prepared Skulls, and excavated by the Pulsation of the Arteries of the *Dura Mater*, demonstrate, that considerable Arteries are distributed about the Temples: When, therefore, these are wounded, the extravasated Blood tends directly downwards to the Basis of the *Cranium*; and, on account of the large temporal Muscles situated here, there is no Place for the Trepan: All the Misfortunes are, therefore, to be dreaded, which are to be expected from an Extravasation of Humors producing unhappy Effects, either by their Compression, or Corruption.

As for the inferior Part of the *Os Ethmoides*; perhaps, at first, this Bone may seem to be so safely lodged, that it cannot be easily wounded: But if, when the Head is reclined backwards, a sharp-pointed Sword is driven up the Nostrils, it may easily penetrate as far as that Bone. Besides, if in the lateral Part of the Orbit of the Eye towards the Nose, a Wound is inflicted, it may by a gentle Force perforate that *Lamella* of the *Os Ethmoides*, which constitutes a Part of the Orbit of the Eye, and is called the *Os Planum*, and thus pass into the Cavity of the *Cranium*. *Bonetus*, in *Sepulchret. Anatom.* gives us an Instance of a Student of Law, who receiving a Prick of a Sword below the Orbit of the Left Eye, died apoplectic twenty-four Hours after. Upon laying open the *Cranium*, it appeared that the Wound had penetrated thro' the Orbit of the Eye and the *Os Ethmoides* near the *Crista Galli*, into the Right Ventricle of the Brain. The Basis of the Brain and Region of the *Cerebellum* were, also, full of Blood. It is sufficiently obvious, that there were no Hopes of a Cure in such a Case.

Other Wounds, penetrating into the Basis of the *Cranium*, prove infallibly mortal, for the same Reasons.

As to Wounds of the spinal Marrow; after nine Pairs of Nerves have arose from the *Medulla Oblongata* within the *Cranium*, all the rest of the medullary Substance of the Brain and *Cerebellum*, collected into one Trunk, and defended by the *Vertebra*, is stretched out to the *Os Sacrum*. From this spinal Marrow all the Members below the Head, and many of the *Viscera*, receive a great Part of their Nerves: If, therefore, a considerable Wound is inflicted in the superior Part of the spinal Marrow, its medullary Substance is destroy'd, and all the Action of the Brain and *Cerebellum* on the inferior Parts is remov'd; so far as it depends on the Soundness of these medullary Fibres: For the eighth Pair of Nerves called the *Par Vagum*, and the intercostal Nerves arising higher from the *Medulla Oblongata* within the Cavity of the *Cranium*, are distributed to many of the vital *Viscera*. Hence such a Wound is not succeeded by immediate Death, tho' Patients wounded in this manner all die sooner or later, according as the spinal Marrow is wounded deeper, or nearer its Origin. The Reason of this is sufficiently obvious; for the whole *Cerebrum* and *Cerebellum*, by their Fabric, secrete from the arterial Blood that highly-subtile Fluid, which, being thus secreted, is conveyed to all the Parts of the Body thro' the medullary Fibres, and the Nerves consisting of those Fibres collected together. Whilst, therefore, so long as the Quantity of the Liquid conveyed to the sound secreting Organ is the same, so great a Number of Vessels, which ought to contain and convey the secreted Liquor to its proper Places, is destroy'd, it follows, that the Function of the secreting Organ must first be disturb'd, and then destroy'd: Besides, large Blood-vessels are at the same time generally hurt. Hence the extravasated Humors easily reascend into the Cavity of the Brain, after the Cavity formed by the *Vertebra* is first full. But that such Wounds are mortal, is certain, from practical Observations. Thus *Bonetus*, in *Sepulchret. Tom. 3.* tells us of a Countryman who falling from a Tree had the second *Vertebra* of the Neck luxated near the *Atlas*, as afterwards appear'd in the Carcase. He liv'd for some Days in this manner, and then died: But others subjected to the like Misfortune, have died in a very short time.

Sennertus, in *Tom. 3. Lib. 5. Part 4. Cap. 3.* informs us, "That he knew a certain Butcher, who, when intending to kill Oxen, did not strike them in the usual manner, with an Ax in the Forehead, but thrust a small Knife into that Part of the spinal Marrow where the Head is joined to the *Vertebra* of the Neck; by which means the Animal immediately dropt down, as it were, apoplectic." *Galen*, also, observes, that Bulls in which the spinal Marrow is divided hard by the first *Vertebra* of the Neck, immediately fall down, and lose both Voice and Respiration.

In Puppies, the like Experiment was attended with the same Success.

Hippocrates, in *Lib. 1. de Morbis*, pronounces Wounds of the spinal Marrow mortal; and in *Prorrh. Lib. 2. Cap. 11.* he tells us, "That if the spinal Marrow is disordered, either by a Fall, by any other Cause, or spontaneously, the Patient loses the Use of his Limbs, in such a manner, as not to perceive when they are touched: Nor, in the Beginning of the Disorder, does he discharge his Excrements and Urine, un-

less with Difficulty: But when the Disease is of long standing, both Excrements and Urine are evacuated spontaneously, but the Patient dies soon after this." In this Place it is obvious, that *Hippocrates* treats of a Wound in the inferior Part of the spinal Marrow; notwithstanding which, he pronounces it mortal. But that some have escap'd; or, at least, led a very miserable Life for a long time after the spinal Marrow has been compressed by a Luxation of the *Vertebra* about the Loins, is certain from *Hildanus*, in *Observat. Chirurg. Cent. 5.*

But I know of no Instance in which any one has survived a Wound of the superior Part of the spinal Marrow.

With respect to a Division of the cardiac Nerves; thro' these is convey'd that fine Fluid separated, by the Fabric of the *Cerebellum*, from the purest arterial Blood, and which is requisite to the muscular Motion of the Heart.

In the *Pericardium* the Heart remains free, and adhering to no Parts except the Vessels, which either enter or run out from the Heart. Now all these Vessels with which the Heart is connected in the *Pericardium*, are free, moveable, and adhering to no adjacent Parts: The Nerves, therefore, which enter the Heart, must be convey'd to it along with the Vessels with which it is annex'd; for the Heart adheres to no other Part in the *Pericardium*: Hence the Nerves distributed to the Heart do not remain free, as one might possibly conjecture from anatomical Tables, but are applied to the Veins which convey the Blood into the Cavities of the Heart, and to the Arteries which receive the Blood expelled from the Heart. Physiology, from this surprising Position of the Nerves running to the Heart, explains its Systole and Diastole, whilst the same Cause which produces the Motion of the Heart, the Moment after, by the necessary Fabric of the Parts, destroys it. Hence, in one Moment of Life, the Heart is, as it were, contracted by a violent Spasm, and the next Moment becomes perfectly paralytic.

Hence it is obvious, that near the Heart the cardiac Nerves cannot be wounded, without wounding the large Vessels about the Heart; in which Case, inevitable Death will follow the Wound. But here we only consider simple Wounds of the Nerves of the Heart. But anatomical Observations inform us, that all the Nerves which are distributed to the Heart arise from the eighth Pair, the intercostal Nerves, or from the recurrent Nerves: But the Trunks of these Nerves may, in their Course, be wounded, and thus the Effects which these Nerves perform to the Heart, may be abolished.

Willis, in *Anatome Cerebri*, tells us, that, upon dividing the Skin in the Throat of a live Dog, he applied a tight Ligature to both Trunks of the *Par Vagum*; after which, the Animal immediately became torpid, and swell'd, and suffer'd convulsive Motions, accompanied with a great Tremor about the *Hypochondria*. This Symptom soon ceasing, the Creature lay, as it were, at the Point of Death, vomiting up its Aliments; but it liv'd after these Nerves were entirely divided for several Days, till it was almost destroy'd for Hunger.

But, upon opening its Body, the Blood coagulated within the Ventricles of the Heart, and in the large Vessels, was found formed into grumous Concretions. In Animals, however, which perish by Hunger, such Coagulations of Blood are not found. The Cause why the Life of this Animal was so long protracted, was by *Willis* deduced from the small Ramifications of the recurrent and intercostal Nerves distributed to the Heart.

Lower, in *Tr. de Corde*, tells us, that upon making the same Experiment, he observ'd, that the Heart began immediately to tremble and palpitate; and thus for a Day or two the Animal protracts a miserable Life, with a trembling Heart, and Sighs sent from his Breast: But so intense is the Pain of the Animal, that he cannot be confined, without very strong Ropes. But *Bhoni*, in his *Circulus Anatomico-physiologicus*, affirms, that an Animal which he treated in this manner expir'd in a Moment, by the Constriction of the Cords. *Vieussens*, in his *Neurographia*, tells us, that the Nerves of the eighth Pair, and those constituting the intercostal Pair, being transversely cut about the Neck, the Animal is forthwith seiz'd with a Languor, which is the Forerunner of approaching Death: He suffers tremulous Motions, his Strength gradually fails, and, in about twenty-four Hours he is deprived of Life. I made the same Experiment on a Dog, tying on each Side of the Neck, the eighth and intercostal Pairs: The Dog howl'd no more, but with a violent Effort utter'd a kind of obscure Noise: At certain Intervals he was seiz'd with an intolerable Madness, biting every thing which came in his Way with incredible Rage; but before he was seiz'd with the Paroxysm of his Madness, the Point of his Nose began to be surprisingly corrugated. He liv'd in this Condition from Six in the Afternoon till Eleven at Night; but I found him dead next Morning.

From all these Circumstances it is obvious, that a Division of the cardiac Nerves in Animals, is succeeded by Death sooner

or later; and that the Animal almost immediately labours under, as it were, the Agonies of Death; which happens from the Inability of the Heart any longer to expel the Blood contain'd in its Cavities. But we observe that, in some Diseases, Patients remain in such Agonies for two Days, or longer, because the Blood cannot be forced thro' the obstructed Arteries. The same seems, also, to have happen'd in these Animals, which after these Nerves were ty'd or divided, protracted their Lives for a considerable time: Perhaps, also, other small Nerves distributed thro' the Substance of the Heart, so long sustain'd its vital Motion. Thus in *Hist. de l'Academie des Sciences, An. 1734* we are told, that there was found a Ramification of a considerable Nerve, arising from the semilunar gangliform Plexus of *Viessens*, near the large mesenteric Plexus, ascending from the Abdomen to the Breast, and inserted into the Right Auricle and Basis of the Heart. Perhaps, also, the surprising Property of the Heart, by which, when divided from all the Vessels, it continues its Motion, might continue Life after the cardiac Nerves were destroy'd.

Thus it is known from Experiments, what happens in Brutes in consequence of a Division of the cardiac Nerves; but in Men it rarely happens that the Trunks of the eighth Pair, or of the intercostal Nerves, are wounded, but, at the same time, the Soundness of the adjacent Vessels is destroy'd, the wounding of which alone proves mortal: For the Trunks of the Carotids, and the large jugular Veins in the Neck, lie above these Nerves; and, behind, the lateral Processes of the *Vertebrae* hinder them from being easily wounded. Nor do I remember, says *Van Swieten*, to have found, either among Physicians, or Surgeons, a single Instance, in which the cardiac Nerves alone were wounded.

Secondly, Such as cause an Effusion of Blood from the wounded Cavities of the Heart; for which Reason deep Wounds penetrating its Cavities, are mortal.

As the Heart is a Muscle continually mov'd, and whose Parts so conspire, and are united, that one cannot want the Assistance of the other; and as it is the Fountain of Life, whence all the animal Functions flow; so many of the ancient *Greeks* and *Arabians* affirm'd, that Wounds of the Heart proved soon and infallibly mortal: But they seem to have asserted this rather from Theory, than from Experience.

There are some surprising Relations found in Authors, which, if true, would prove that Animals have liv'd without the Heart. Thus *Pliny* the Second, in *Lib. II. Cap. 37*. tells us, that the first Day *Caesar* the Dictator made a Procession in his purple Robes, and sat in a golden Chair, he twice found the Heart wanting in the Animals he sacrificed. *Plutarch*, also, and *Suetonius*, in their Lives of *Caesar*, affirm, that the Heart of the Sacrifice did not appear to him; which was look'd upon as a bad Omen; because an Animal cannot naturally subsist without an Heart. But the Haruspices often boldly imposed on the Credulity of the Multitude, that they might at Pleasure decree what was to be done. Hence these Testimonies are very suspicious; since they are so directly repugnant to the known Oeconomy of Animals.

For it is hardly credible, that the Heart was ever wanting in an human Creature, or in any other Animal, tho' the Incautious might be deceiv'd by the great Variety of the Situation, Figure, and Bulk, of the Heart, sometimes brought on by Diseases, as is certain, from practical Observations.

The celebrated *Boerhaave*, in the Year 1720. had a surprising Observation communicated to him by a skilful Anatomist in *Edinburgh*, which proves that there may exist in Nature, such Monsters as perplex the Knowledge of the Use of the Parts. This skilful Anatomist when carefully searching for the seminal Vessels, in a large, live, and robust Rat, found the Right Kidney double; but, upon opening the Membrane which cover'd it, the genuine Right Kidney appear'd; but the other Body, which he took for a Kidney, and which was included in its proper Covering, was of such a Bulk and Figure as the Heart of that Animal usually has, with its Base towards the superior, and its Apex towards the inferior Parts. This Heart when carefully examined had two Ventricles, divided by a kind of Partition; there was, also, a Left Auricle, Valves, and fleshy Columns; but there were not the least Traces of the Right Auricle, the *Vena Cava*, the pulmonary Veins and Arteries, nor the Aorta. Upon opening the Thorax, neither *Pericardium*, nor Heart, appear'd; but from the *Vertebra* of the Thorax, in the middle Space between the two Lobes of the Lungs, arose the Right Auricle, from which the pulmonary Arteries were distributed. The Vessels which return the Blood from the Lungs were united into one Trunk, forming the Aorta, which was afterwards distributed in the usual manner. The Animal was adult, and all the other *Viscera* form'd in the natural manner: There was, indeed, an Heart, furnish'd with

the usual Parts, but deviating from the natural Situation, and useless. Without the Action of the Heart, therefore, this Animal not only liv'd, but was sound, and agile.

It is sufficiently certain, from Experience, that some Animals have lived for some time after their Hearts have been cut out. *Galen*, in *Lib. 2. de Placitis Hippocrat. & Platon. Cap. 4*. tells us, that, in Sacrifices, the Victims, after their Hearts are taken out and laid on the Altar, respire, bellow strongly, and even run till they die by the Effusion of Blood. *Vesalius*, also, informs us, that he has seen Dogs, and especially Cats, after their Thorax was laid open, and all the Vessels of the Heart were constricted by a Ligature passed about the Base of the Heart, and the Heart itself was cut out below the Ligature, run a considerable Way, when the Cords, with which they were ty'd, were loos'd. After the Hearts were taken out of Puppies cut from the Uterus of a live Bitch, their Life remain'd for a Quarter of an Hour with a sensible Motion of their Members, and a certain whizzing Noise. It is, also, certain, from Zoology, that Worms and other Animals of a similar Species, have liv'd for a long time after their Hearts have been cut out; and after such Animals are divided into Parts, each Segment retains Life for a considerable time. But from the Observations of *Malpighi* and *Lewenboeck* it is certain, that Animals have, in their original State, liv'd the Life of Worms. Hence, perhaps, so long as these Animals remain in the Uterus, they retain something of their antient Tenacity, or Toughness of Life. *Boyle* in his Treatise *de Utilitate Philosophiae Experimentalis*, tells us, that a Frog, after its Heart was cut out, leap'd about, swam when put into Water, and with Agility jumping out of the Vessel full of Water, continued to leap about the Room for an Hour, and more.

Lord Verulam, in *Hist. Vita & Mortis*, tells us, that a certain Man, after the Executioner had cut out his Heart and held it in his Hand, was heard to utter three or four Words of Prayer; but that Author informs us, that the Criminal's Friends had given the Executioner a Reward for executing his Office quickly, and freeing the Malefactor from the racking Pains he would have otherwise been subjected to. Hence it is not very surprising, that, since the preternatural Cold a little constricted the divided Vessels, and since in these last Moments of Life, the Disposition of all the animal Organs was very intense, some Pressure of the Blood should as yet act for a few Moments on the Brain, by which Pressure on the Organs thus disposed, during that last Effort, the Criminal's Speech continued for a short time; especially if we consider, that the Lungs, after the Aperture of the Thorax, being collapsed and every-where contracted by a preternatural cold Air, expel'd their contain'd Air with a pretty strong Force. This Instance is not, therefore, repugnant to the Necessity of the Heart: But in the Experiment of *Vesalius*, where all the Vessels were ty'd, the contractile Arteries, their Elasticity being contracted by the cold Air, might force the Blood thro' the Brain and *Cerebellum*, and, consequently, continue Life for a considerable time.

The Experiments made on Frogs, Vipers, and Tortoises, which evince that these Animals may live a considerable time after their Heart is taken out, demonstrate, that the manner of Life in Animals cannot be limited by very general Rules, but that it is different in different Animals. So that it is not easy to give a general History of Life, since we can only draw our Observations from Experiments made.

But no certain Observations have evinced that the Heart was ever wanting in human Creatures, or that they have, for a considerable time, surviv'd the total Destruction of its Fabric: Hence the Reason is obvious, why considerable Wounds of the Heart are justly look'd upon as mortal. It is, however, certain, that all Wounds of the Heart are not mortal; and that they differ much from each other, according to the different Parts of the Heart in which they are inflicted.

For if, by a Wound, the Trunk of the coronary Vein or Artery, in the Base of the Heart, is divided, a speedy Death must inevitably follow; because, by a great Impetus, which is the strong Contraction of the Aorta, the Blood, which soon returns by the Veins, is, thro' the coronary Artery, transfus'd thro' the muscular Substance of the Heart; for at every Contraction of the Heart, the whole Heart becomes pale, because all the Blood is expressed: But the Moment after, when the Heart is in its Diastole, all the Vessels, running thro' its Substance, are fill'd.

But if a Wound has penetrated into the Right Ventricle of the Heart, the Blood will be discharg'd into the *Pericardium*, partly from the wounded Vessels of the Substance of the Heart, and partly from the Cavity of the Heart; and from the *Pericardium* it will be discharg'd into the Cavity of the Thorax, or flow from the external Wound: Such a Wound will be dilated, when the Heart is full; for at the time the Heart is constricted, the wounded Parts rather accede to each other: Nor, at that time, will there be a great Effusion of Blood. When the

Blood; however, is discharg'd, the Strength will be impair'd, tho' the Action of the Heart and Life still remain: But when the greatest Weakness is present, the Heart is almost at rest: If, at this time, there is no muscular Motion, the venous Blood will flow into the Heart with a calm Motion, and in a small Quantity. And if, in this Case, the Patient abstains from such Things as, by Nutrition, suddenly augment the Quantity of the Blood, and from Cordials which, by their stimulating Quality, always augment the Motion of the Fluids, it seems possible to preserve Life, and restore Health. For unless the Matter was confirm'd by practical Observations, in wounded Persons, and Women who have suffer'd Abortion, no one could believe with how small a Quantity of Blood, and how slow a Degree of its Circulation, a Man can live. Thus when, by a violent Hæmorrhage, the Quantity of Blood is greatly diminish'd, and the Strength impair'd, the Wound inflicted is hardly any more dilated, the Rudiments of a Concretion begin to be form'd, and gradually perfected, provided, by an increas'd Quantity and Motion of the Blood, those Parts are not broken which had begun to be concreted.

Besides, in Wounds of the Right Ventricle of the Heart it is to be observ'd, that the Lungs continue to act, and, by their Dilatation, prepare an easy Way for the Blood forced from the Right Ventricle of the Heart. Hence, in the time of the Systolic, on account of the free Passage thro' the Lungs, such a Quantity of Blood will not be express'd thro' the Wound. Hence arises a greater Opportunity of consolidating the Wound.

But Wounds of the Left Ventricle of the Heart seem to be far more dangerous; for if the Left Ventricle of the Heart is wounded, and not entirely perforated, such a Wound must necessarily be dilacerated, since the Left Ventricle of the Heart, by its strong muscular Force, in which it far surpasses the Right, presses its contain'd Blood into the Aorta, which makes a considerable Resistance, and dilates not only that, but all its Ramifications, throughout the whole Body: For the Fibres of the Left Ventricle of the Heart, being then distracted by the contain'd and resisting Blood, the Wound will be increas'd, till, penetrating into the Cavity of the Heart, it prepares a more easy Discharge for the Blood than thro' the Aorta, where there is a considerable Resistance: Or, if any Consolidation is begun here, it is to be fear'd, lest the Part being preternaturally weak, should be extended into an aneurysmatic Tumor, and the Action of the Heart be, by that means, disturb'd; so that Life may indeed be protracted, tho' with a Train of Miseries, which can only be terminated by Death.

But if the Left Ventricle of the Heart is perforated with a large Wound, a speedy Death infallibly ensues: But in all Probability, that Wound would, of all others, prove most suddenly mortal, which should divide the Beginning of the Aorta immediately above its Valves. But when the Left Ventricle of the Heart is perforated, the Valves of the Aorta sustain the Blood contain'd in the Arteries. Hence the whole arterial System remains full, after which, the Arteries, being contracted, propel the Blood; and thus Life may be sustain'd, for some time.

Medicinal Observations have evinced, that, after Wounds of the Heart, Men have liv'd for a considerable time, especially when only the Right Ventricle is perforated: Besides, some Observations evince, that a Consolidation of Wounds of the Heart is possible; Instances of which are found in *Thom. Barthol. Hist. Anatom. varior. Cent. 1. Hist. 77. Schenckius, Observat. Med. varior. Paré, Lib. 10. Cap. 32. Alst. Leips. An. 1705. and Miscellan. Cur. Dec. 2. An. 6.*

From all the Instances recorded in these Authors, we may conclude, that though Wounds of the Heart are always dangerous, yet they are not at all Times suddenly and infallibly mortal: It is, also, certain, that we ought not to despair in the most desperate Wounds, since, whilst a weak and languid Life is only sustain'd, such Consolidations of Wounds frequently happen, as could not have been expected.

Thirdly, Those Wounds which derive the Blood from the Heart, Brain, and *Cerebellum*, either into some Cavity of the Body, or out of the Body, and which cannot be cur'd on account of the Situation of the Places; such as large Wounds of the Lungs, Liver, Spleen, Kidneys, Pancreas, Mesentery, Stomach, Intestines, Uterus in pregnant Women, Bladder about its large Arteries, the Aorta, Carotid, Vertebral, and the like Arteries and Veins.

In the preceding Numbers of this Aphorism we have shewn, that those Wounds are mortal which destroy the Fabric of the *Cerebellum*, or which, by wounding the *Medulla Oblongata*, or the spinal Marrow near its Origin, or the cardiac Nerves, hinder the vital Influx of the Spirits secreted from the Blood by the Fabric of the *Cerebellum* into the Heart, and other Parts of the Body, from performing the Functions requisite for Life: But

that these vital Spirits may be separated by the Fabric of the *Cerebellum*, it is requisite that the Blood should, by the muscular Force of the Heart, be forced into the Arteries. Hence deep Wounds, penetrating into the Cavities of the Heart, are judg'd mortal. The whole Action of the Heart consists in receiving the Blood convey'd thro' the Veins, and propelling it into the Arteries, after it is receiv'd: All Wounds, therefore, which so injure the Vessels which convey the Blood to the Heart, or receive the Blood expel'd from the Heart, in such a manner that the Blood flows out of the Body thro' the open Wound, or is extravasated and accumulated in the Cavities of the Body, without returning again to the Heart prevent it from being convey'd in a due Quantity, and with a proper Impetus, thro' the Arteries of the Brain: Hence all the Functions of the Brain and *Cerebellum* must necessarily be disturb'd, and at last totally abolish'd. Nor is it of any Importance, whether the Vessels are wounded in their Course, before they are dispers'd thro' the Viscera, whose Fabric they constitute; or whether they are wounded in the Viscera with the like Effect, that is, such a considerable Effusion of the vital Blood as injures the Action of the Heart and *Cerebellum*. All the Wounds, therefore, of the Viscera, and Vessels enumerated in this Aphorism, are not absolutely mortal, unless under this Limitation: Besides, it is requisite that the Condition of the Wound made be such, that the Effusion of the Blood cannot be stop'd by Ligature, or the other Assistances of Art. Among the Wounds of this Kind are reckon'd, first,

LARGE WOUNDS OF THE LUNGS:

The Right Ventricle of the Heart receives all the Blood of the Body convey'd thro' the Veins, and propels it thro' the Lungs into the Left Ventricle: When, therefore, a large Wound is made in the Lungs, the Blood forc'd from the adjacent Heart will be discharg'd from the divided Vessels, and, consequently, will not return to the Left Ventricle of the Heart, but flow thro' the Wound made; or passing into the areal Cavity of the Lungs, it will be vomited up copiously; or, being extravasated into the Cavity of the Breast, it will hinder the free Expansion of the Lungs. Hence the mortal Effects of such Wounds are sufficiently obvious.

Medicinal Observations sufficiently evince the fatal Events of Wounds of the Lungs; Instances of which may be seen in *Bohnus de Renunciatione Vulnerum*. In practical Authors, Instances, also, occur, in which Wounds of the Lungs have been cur'd; but these Wounds have either been very slight, or such as that the Surgeon's Hand could have Access to them. See *Hildanus, Cent. 2. Obs. 32. and Cent. 1. Obs. 46.* It is, also, to be dreaded, that even slight Wounds of the Lungs may degenerate into Ulcers, which afterwards waste the Patient, by a slow Consumption. An Instance of this occurs in *Forestus, Obs. Chirurg. Lib. 6. Obs. 4.*

As for large Wounds of the Liver; the collected venous Blood of the abdominal Viscera is, by means of the *Vena Portæ*, convey'd thro' the Liver, and the Trunk of the *Vena Cava Ascendens* is inserted into the Liver, the Whole of which appears soft, and resembles a Sponge full of Blood. The hepatic Arteries, indeed, when compar'd with the great Bulk of the Liver, are very small; but considerable Ramifications of the *Vena Portæ* are distributed thro' the Liver. Hence it appears, that Wounds of the Liver are always very dangerous, and, if considerable Ramifications of the Vessels, distributed thro' the Liver, are wounded, always mortal, and that, for the most Part, very suddenly; because a large Quantity of Blood is discharg'd into the Cavity of the Abdomen, and thro' the Wound. Hence *Deliquium* and Death soon succeed. See *Hippocrat. Epidem. 7.* But it is sufficiently obvious, that those Wounds of the Liver are most dangerous, which are inflicted about the *Porta*, which are, for that Reason, pronounced incurable, by *Celsus*, in *Lib. 5. Cap. 26.* But the Wounds made in the thick Part of the Liver he asserts to be cured with Difficulty, though they are not absolutely incurable. *Hildanus*, in *Cent. 2. Obs. 34.* gives us a memorable Instance of the Cure of a Wound in the Liver; but, from the Description that Author gives, it appears, that the Wound did not penetrate to the large Ramifications of the hepatic Vessels. Tho' slight Wounds of the Liver are not forthwith mortal, yet they generally prove fatal at last. See *Tulpius, Observat. Medic. Lib. 2. Cap. 26.*

As for large Wounds of the Spleen; tho' *Democritus*, in *Epist. ad Hippocrat. de Natur. Human.* affirm'd, that the Spleen, which lies opposite to the Liver, was not only a useless, but, also, an hurtful Part of the Body; tho', by Experiments made on live Animals, it is certain, that the Spleen may be cut out, without destroying Life, or even greatly disturbing Health; and tho' *Mr. Boyle*, in his Treatise of the Usefulness of experimental Philosophy, tells us, that this has been done in Men; yet the Blood-vessels of the Spleen are so large, and so near the Heart, that mortal Hæmorrhages are justly to be dreaded after Wounds of the Spleen: Instances in which Wounds of this Organ have prov'd

prov'd mortal, may be seen in *Tulpius, Obs. Medic. Lib. 2. Cap. 29.* and *Bohnus, de Remunitione Vulnerum.*

But slight Wounds of the Spleen, as well as of the Liver, are not always absolutely mortal, tho' it is highly probable that they are always very dangerous.

As for large Wounds of the Kidneys; *Celsus, in Lib. 5. Cap. 26.* affirms, that Patients, who have their Kidneys wounded, cannot be preserv'd. The Person who considers the Largeness of the emulgent Arteries, will easily believe that a mortal Hæmorrhage may ensue, if the large Ramifications of these Arteries are divided, either in the Substance of the Kidneys, or at their Ingress into the Kidneys: And if, at the same time, the *Peritonæum* is wounded, the Blood will be discharg'd into the Cavity of the Abdomen; but if a Wound, inflicted in the posterior Part of the Body, wounds the Kidneys, whilst the *Peritonæum* remains entire, there will be a great Effusion of Blood into the pinguinous Coat lodg'd in the Interstices of the Muscles: Nor can the Blood flow so freely from the Wound in the Kidneys; nor is this Doctrine destroy'd by that Passage of *Hippocrates, de Intern. Affection. Cap. 15.* where he orders Section for the Stone in the Kidneys, in the following manner: "When the Pain is excessive, wash the Part aggriev'd with a large Quantity of warm Water, and apply tepid Fomentations; but when it becomes tumid, and protuberant, make an Incision hard by the Kidney [*κατὰ τὸν νεφρὸν*], and, having extracted the Pus, carry off the Sand by diuretic Medicines." For it is sufficiently obvious, that, in this Passage, he does not mean that an Incision should be made in the Kidney, and the Sand evacuated by that means.

That all Wounds of the Kidneys, however, are not mortal, may be seen in *Forestus, Lib. 25. Obs. 20.*

As for large Wounds of the Pancreas; if the Trunks, or large Ramifications of the Vessels running thro' the Pancreas, are divided, the Blood being discharg'd into the Cavity of the Abdomen, and becoming afterwards corrupted, the Effect of such a Wound may be Death: But as the Pancreas lies under the Stomach, it can rarely be wounded, but the Wound must, at the same time, pass thro' some of the other Viscera.

As for large Wounds of the Mesentery; how large the Blood-vessels, running thro' the Mesentery, are, and in what Order they are placed, *Eustachius, in Tab. XXVII. Fig. 2, and 3.* has beautifully demonstrated. Besides considerable Ramifications of the *Vena Portæ* and *Vena Cava*, large arterial Trunks, that is, the superior and inferior mesenteric Arteries, are, also, convey'd thro' the Mesentery. When, therefore, these Vessels are divided, by a wounding Cause, a mortal Hæmorrhage may ensue, and the Cavity of the Abdomen be fill'd with the extravasated Blood. An Instance of this is found in *Bohnus, de Remunitione Vulnerum*: *Ruyssch*, also, in *Adversar. Anatom. Decad. 2. N^o 4.* tells us, that Death follow'd a Rupture of the Vessels of the Omentum, whilst the whole Cavity of the Abdomen was fill'd with the Hæmorrhage. There is still another Danger attending Wounds of the Mesentery, which seems first to have been adverted to by *Ruyssch*: For that Anatomist, being for more than fifty Years employ'd, in *Amsterdam*, in inspecting the Bodies of those who were taken off by a violent Death, in order to make a Report to the Judges, with respect to the Condition of the Wounds, says, that he has frequently observ'd, that Wounds of the Mesentery prov'd mortal in two or three Days after the Patients had been rack'd with the most exquisite Pains: But, upon a careful Inspection, it was certain, that no other Part, of any Moment, was wounded. Besides, when Poulterers castrate Capons, if they see the Mesentery wounded, in the Operation, they immediately kill the Animal; because they know, from Experience, that it will soon die by such a Wound. The mortal Effect of such Wounds seems to depend on the wounding of the Nerves of the Mesentery. How great Influence the Nerves, dispers'd thro' the abdominal Viscera, have on the vital Functions of the human Body, is sufficiently obvious, from medicinal Observations in incarcerated Hernias, and Interceptions of the Intestines.

Perhaps something like this is hinted at by *Hippocrates*, in his *Coacæ Prænotiones*, when he tells us, "That those whose interior Nerves, whether small or large, are wounded, die, if the Wound is transverse, and large; tho' some escape, when it is small, and strait." *Cornarius*, instead of *ὅς ἐστι τὰ ἐντὸς*, reads *ὅς ἐστι τὰ ἐντὸς*; which Reading approaches near to this Opinion.

As for large Wounds of the Stomach and Intestines; we here consider such Wounds of these Parts as may, by a Rupture of their Blood-vessels, prove mortal, in consequence of the Effusion of Blood. For those Misfortunes, which succeed an Evacuation of the Contents of the Stomach and Intestines thro' the Wound, are treated of under the Article ABDOMEN. The Stomach, then, is surrounded by pretty large Vessels, which, about both its Orifices, descend towards its Bottom, and are, in their Course, by fre-

quent Anastomoses, join'd to similar Vessels rising upwards from the Bottom of the Stomach. Hence, when a considerable Ramification is divided, the Blood contain'd in all the other Vessels of the Stomach, will easily flow thro' the wounded Vessel. In practical Authors there are many Instances of Death succeeding Wounds of the Stomach; a memorable one of which accompanied with an excessive Hæmorrhage, is found in *Bonetus, Sepulchretum Anatomicum, Tom. 3.*

But the Intestines annex'd to the Mesentery, by its means receive their Vessels, which being applied on both Sides to the intestinal Canal, are, in that Part of the Intestines which is opposite to the Mesentery, mutually join'd, by Anastomoses. Wounds, therefore, of the Intestines, especially about the Mesentery, may divide pretty large Trunks of Vessels; by which means, large Effusions of Blood into the Cavity of the Abdomen, and Death, will happen. See *Bonetus Sepulchretum Anatomicum, Tom. 3.*

The Danger of Wounds in the large Vessels of the Stomach and Intestines, is much augmented by the continual peristaltic Motion of these Viscera; in consequence of which, such Wounds are never in a State of Rest: Perhaps, also, the like Misfortunes are produc'd by Wounds of the Nerves dispers'd thro' the Stomach, with those succeeding Wounds of the Mesentery.

In practical Authors, however, there are frequent Instances of Wounds of the Stomach and Intestines cur'd; so that all such Wounds are not to be look'd upon as mortal.

As for Wounds of the Uterus in pregnant Women; the Uterus, after a Woman has conceiv'd, and the impregnated Egg, by its increas'd Bulk, begins to fill the Cavity of the Uterus, is extended every Way, and in the like Proportion; all its Vessels are every way enlarg'd, and receive a greater Quantity of Humours. Hence the Uterus of a pregnant Woman is almost as thick as the Uterus, when contracted, in a Woman not pregnant; and yet it is distended to an incredible Bulk, by the Dilatation and Repletion of its Vessels. Hence *Hippocrates*, in *Lib. de Mulier. Morb. Lib. 1. Cap. 23.* tells us, "That when a Woman is pregnant, the Blood is gradually convey'd from the whole Body to the Uterus, and enlarges it." And hence he deduces the Reason why the Colour of pregnant Women is deprav'd; which is, that the pure Blood is daily convey'd from the Body of the Mother to that of the Fœtus. Hence it appears, that Wounds of the Uterus, when impregnated, are very dangerous; because its Vessels are distended by so large a Quantity of Blood. And this Danger is increas'd by the Fœtus, which, distending the Uterus, hinders it from contracting itself, and its Vessels. But if, immediately after a Wound inflicted in the Uterus, the Fœtus was suddenly excluded, there would be some Hopes that, in consequence of the Contraction of the Uterus, the Hæmorrhage might be stop'd, and the Wound consolidated; as it actually happens in the Cæsarean Operation. Instances of this may be seen in *Act. Lips. An. 1693.* and *Hist. de l'Acad. Royal. des Sciences, An. 1731.*

As for Wounds of the Bladder, about its larger Arteries; tho' *Hippocrates*, in his *Tr. de Morbis, Lib. 1. Cap. 3.* condemn'd Wounds of the Bladder as mortal, and affirms, that they could not be consolidated; yet it is certain, from frequent and undeniable Experiments, that, in Cutting for the Stone, Wounds of the Bladder are happily and successfully cur'd: Yet there is a Danger, lest the large Vessels running thro' the Bladder, being divided, produce an excessive Hæmorrhage. For the Vessels arising from the large adjacent Trunks of the Iliac Arteries discharge the Blood with a violent Impetus. The Origin and Course of these Vessels are found in *Eustachius, Tab. XII. Fig. 1.* This Danger is increas'd, because in those afflicted with the Stone, the Bladder is often thicker, and its Vessels more dilated, than in a natural State: But when these Vessels are divided, the Bladder, so long as the Stone remains in its Cavity, cannot totally contract itself; for which Reason they continue to discharge the Blood. But when the Stone is extracted, the Bladder contracted, and the Urine freely discharg'd thro' the Wound, the divided Vessels may be again clos'd.

As for Wounds of the Aorta; the Blood returning from the Lungs to the Left Ventricle of the Heart, is all forc'd into the largest arterial Vessel of the whole Body, which is call'd the Aorta, which being incurvated, tends downwards, and being incumbent on the Spine, and declining a little to the Left Side, as far as the *Os Sacrum*, is there divided into two equal Ramifications call'd the Iliac Arteries. During the whole of its Course from the Heart to the Part where it is divided, it retains the Name of the Aorta: Now it is sufficiently obvious, that when the Aorta itself is wounded, there are no Hopes of a Cure left, since, with a direct Impetus, it receives all the Blood from the Left Ventricle of the Heart, and there is no Access to the Hands of the Surgeon; for it lies conceal'd in the internal Parts of the Body incumbent on the *Vertebrae*: But such a Wound will prove the sooner mortal, the nearer it is to the Heart.

As for Wounds of the Carotids; these Arteries arise from the Curvature of the Aorta, which draws its Origin from the Left Ventricle of the Heart. This is at least the Case with the Left Carotid Artery, though for the most part, the Right arises from the Subclavian Artery of the same Side. These two Arteries on each Side of the Aspera Arteria, run down to the Larynx, where each of them is divided into two Ramifications, one of which lying principally towards the external Parts of the Head, is called the *external Carotid*, and the other which enters the Cranium, and is distributed through the Brain, is called the *internal Carotid*. Through their whole Course from their Origin out of the Aorta, or Subclavian Artery, to that Place where they are divided into two Ramifications, they are called simply the *Carotids*. In Mankind these Arteries are almost as large as the little Finger: Hence a large Hæmorrhage must necessarily happen when they are wounded, since being so near the Heart, they receive the Blood propelled from it with a great Impetus. It is true the Carotids, during this whole Course, are so near the external Integuments of the Body, that their Pulsation in the Neck may be easily perceived by the Finger. Besides, it is probable, that a Ligature may be safely applied to one of the Carotids, since a sufficient Quantity of Blood may be conveyed to the Head, by the means of the other, and the vertebral Arteries. In a Dog whose recurrent Nerves I had cut off eight Days before, I tied both Carotids, nor could I observe any Inconvenience produced by that means; for eight Days after I found the Animal brisk and lively. Then I tied the Jugular Veins without any observable Disadvantage to the Animal, and four Days after found him entirely in Health. But examining the Ligatures applied to the Carotids, I found them firm, and a thick compact Thrombus lodged between the Ligature and the Heart. Upon laying open the Brain I found no Change in it, but its Bulk appeared rather increased than diminished.

But if we consider the Difficulties which occur when the Carotid Artery is divided in a Man, it will appear, that such a Wound is justly to be called *mortal*; for an excessive Hæmorrhage may in a few Minutes put an End to the Patient's Life. But that such a Patient should be preserved, it would be requisite that a skilful Surgeon should be present the Moment the Wound is inflicted, in order to compress with his Fingers, against the resisting Aspera Arteria, both Extremities of the divided Carotid. Ligatures ought, also, to be applied to the Limbs, that thus the Veins being compressed, a smaller Quantity of Blood may return to the Heart, by which means the Impetus of the discharged Blood must be lessened. After these Measures are taken, both Extremities of the divided Carotid, are to be found out and tied; for it is not sufficient to tie that Part of the Artery which is next to the Heart, since the Blood would continue to flow through the other Extremity of the divided Artery, because the Carotids under the Basis of the Brain, are joined with each other, and with the Vertebral Arteries by pretty large Ramifications. From all these Circumstances it is obvious, that one Surgeon, tho' ever so dexterous, is not sufficient for Wounds of this Kind; but that two at least are absolutely requisite. Besides it is not probable, that the Extremities of the divided Artery can be found, without rendering the Wound larger by a Division of the Integuments. Hence the subsequent Death of the Patient would be imputed to the Surgeon, though he had acted with ever so much Care and Skill in the Discharge of his Office: But if the Patient should lose so much Blood, that falling into a Deliquium the Hæmorrhage should cease, such a Method may be tried.

As for Wounds of the Vertebral Arteries; the Vertebral Arteries arising from the Subclavian Arteries run on both Sides through the Perforations of the transverse Processes of the Vertebrae of the Neck towards the Cranium. In this Course they send off small Ramifications through the Joinings of the Vertebrae to the Spinal Marrow, and its Coverings; as, also, to the adjacent Muscles. When, therefore, these Arteries are divided, they cannot easily retract themselves and close their Orifices; and, as by their Ramifications sent off under the Basis of the Cranium, they communicate with the internal Carotids, hence the Blood conveyed through the Carotids, may be discharged from these Arteries when wounded. Hence it is obvious, that Wounds of them are exceedingly dangerous. In this Case there is no Opportunity of tying these Arteries when wounded, since their divided Extremities are concealed within these bony Perforations. The only Hope would be, if the Patient being extremely weakened by an Hæmorrhage, and a languid Life still remaining, the Extremities of the divided Artery could be consolidated by a small Quantity of mild and proper Aliment, without the Exhibition of Cardiacs. But that this is not absolutely impossible, is certain, from the Cures produced in Wounds of the Heart, and from a memorable Instance, in which the Patient lived after the Division of the Subaxillary Artery.

Now it is sufficiently obvious, that the same Danger attends Wounds of other large Arteries, such as the Emulgents or Iliacs, for Instance.

It is, also, certain, that Wounds of the large Veins are mortal, for the same Causes; but as most of the Veins lying near the Surface of the Body, may be more easily compressed, and as the Velocity of the Blood is not so great in the Veins, as in the Arteries, hence it is obvious, that all other Circumstances being considered, Wounds of the Veins are not so dangerous as those of the Arteries.

4thly, Those Wounds which absolutely prevent Respiration: Such as a Division of the Larynx, with a Retraction of the divided Parts; large Wounds of the Bronchia, broad Wounds which perforate both Cavities of the Thorax, and admit the external Air, and Wounds which penetrate the Diaphragm on both Sides of the Mediastinum, or which affect its nervous Parts.

In a Man, after it is brought into the World, that the Blood may pass from the Right to the Left Ventricle of the Heart, it is requisite that the Lungs dilated by the inspired Air, should make way for the Blood forced from the Right Ventricle through the Pulmonary Artery, into the Pulmonary Veins, and thence into the Left Ventricle of the Heart. Respiration is therefore so necessary to Life, that if it is destroyed but for a few Minutes, Life ceases. But in order to Respiration it is necessary the Air should freely enter and expand the Lungs. All Wounds, therefore, which hinder the Ingress of the Air into the Lungs, or their Dilatation by the Air are mortal: Of this Kind are the following:

A Division of the Larynx accompanied with a Retraction of the divided Parts: The Aspera Arteria consisting of cartilaginous Segments, being always open, and never capable of collapsing, nor of being easily compressed, preserves a free Passage for the Air into the Lungs. When, therefore, a Wound so divides this aerial Pipe, that the inferior divided Extremity shrinks back and conceals itself in the adjacent Parts in such a manner as not to admit the Air, the Patient's Life is gone. But if notwithstanding a very large Wound, a free Passage is preserved for the Air into the Lungs, such a Wound will not be mortal, as we find from incontestable Proofs. Frequent Instances occur to Physicians and Surgeons, in which Persons wearied of Life, have laid violent Hands on themselves in such a manner as to divide the Aspera Arteria, as, also, of Persons who have suffered that Misfortune by Robbers, who have nevertheless been afterwards totally cured. Instances of this Kind are found in *Tulpius, Observat. Med. Lib. 1. Cap. 50. Thom. Bartholin. Histor. Med. Cent. 5. Hist. 89. and Paré in Lib. 10. Cap. 31.*

As for large Wounds of the Bronchia; after the Aspera Arteria descends through the anterior Part of the Neck into the Thorax, about that Part where the Aorta, arising from the Heart, is incurvated, it is divided into two Ramifications, each of which is distributed to the Lobe of the Lungs on its respective Side. Then these Ramifications losing the Name of the *Aspera Arteria*, are called the *Bronchia*; and the Subdivisions of these Ramifications made in the Lungs, also, retain that Name. Since, then, the Office of the Aspera Arteria, and Bronchia, is to distribute the inspired Air through the aerial Cavities of the Lungs, the Air making its Way through large Wounds of these will be accumulated in the Cavity of the Thorax, and this Air being expanded by the Heat of the Place, will compress the Lungs, and by that means hinder the Whole of their Action. Hence ensue Suffocation and Death; especially if the Bronchia on both Sides are so wounded; for in this Case Respiration is totally destroyed. Hence *Hippocrates*, in *Casac. Prænot. 509.* tells us, "That the Patient dies, who having large Wounds so inflicted in the Aspera Arteria and Lungs, that in consequence of the Wound of the Lungs, less Breath is discharged by the Mouth than by the Wound." But the Danger of such Wounds is increased, because the Bronchia hardly seem capable of being hurt without dividing the Blood-vessels accompanying the bronchial Ramifications.

As for broad Wounds penetrating into both Cavities of the Thorax, and making Way for an Admission of the Air; so long as the Lungs are every-where contained in the Thorax exactly closed, they are always more distended than if they were every-where exposed to the free Air; for in this last Case they collapse, and are contracted into a smaller Space, especially by the contractile Action of the muscular Fibres, which connect the Segments of the Bronchia with each other; for in a natural State there is no Air between the Pleura and the Lungs; but a free Access of that Fluid into the Lungs is left through the Glottis. Hence the Lungs are more distended by the Air which enters by the Aperture of the Glottis, than they are compressed

compressed by the external Air acting on the Ribs and Diaphragm, because the arched Figure of the Ribs, and the Connection of the Diaphragm with the Ribs and Vertebrae, hinder the external Air from pressing the Diaphragm too far into the Cavity of the Breast, that thus there might be a proper Balance or Equilibrium, between the external Air, and that contained in the Lungs. This is the Reason why the Lungs always remain contiguous to the Pleura, even after Death, so long as the Thorax remains entire and close, as is sufficiently obvious, when, without wounding the Pleura, the Intercoastal Muscles are cautiously separated; for in this Case the Lungs appear contiguous to the Pleura, which on account of its Thinness, is generally pellucid: But when the Pleura is perforated, and the Air admitted into the Cavity of the Breast, the Lungs collapse, are immediately contracted into a smaller Space, and recede from the Contiguity of the Pleura. The Diaphragm before concave towards the Abdomen, highly tense, and thrust into the Cavity of the Breast, immediately becomes flaccid, and sinks downwards. From these things it is sufficiently obvious, that in a natural State the Lungs are every-where contiguous to the Pleura, and that no Air is lodged between the convex Surface of the Lungs, and the Cavity of the Pleura: Whilst therefore by Muscles subservient to that Purpose, the Ribs are elevated, and separated from each other, the Diaphragm contracted, and rendered plain, and consequently the Cavity of the Thorax enlarged, there would be a Space free from Air between the Pleura and the Surface of the Lungs. But the Air entering freely through the Glottis, so distends the Lungs, when the Breast is dilated, that they always remain contiguous to the Pleura, and thus Inspiration is performed. But when, in consequence of a Perforation of the Cavity of the Thorax, there is a free Access of the Air into that Cavity, the Pressure of the Air, which entered by the Glottis, is balanced; hence the Lungs will not be distended, but by their proper Contractility take up a smaller Space than before. If this happens in both Cavities of the Breast at one time, both the collapsed Lobes of the Lungs cannot be dilated by the inspired Air; hence the Right Ventricle of the Heart cannot force its Blood through the collapsed Lungs. Thus the Motion of the Heart will soon be suffocated, and Life, which depends upon it, destroyed.

This Doctrine has been sufficiently confirmed by numberless Experiments upon Dogs, and other Animals, made both by the Antients and the Moderns; particularly if the Orifices of the Wounds were larger than the Aperture of the Glottis: Though in case of smaller Wounds penetrating both Sides of the Thorax, Animals have been known to live some time.

As for Wounds penetrating the Diaphragm on both Sides of the Mediastinum; the Pleura lines both Cavities of the Thorax, but in such a manner, that each Cavity has its proper Membrane. The Cavities of the Thorax may therefore be conceived to be formed by the two Pleuras, resembling hollow Bladders, adjacent to each other, and adhering in the Place of Contact. The Duplicature of these two Membranes is called the Mediastinum, which divides the Cavity of the Thorax into two, but in such a manner, that the anterior Part inclines to the Left; for which Reason the Right Cavity of the Breast is larger than that of the Left, as is shewn in *Memoires de l'Acad. Royale des Sciences*, P. An. 1715. Since therefore the Mediastinum is not a simple Membrane, but formed of the two Bags of the Pleura adhering to each other, *Galen*, in *Tr. de Anat. Admin.* Lib. 7. Cap. 2. when describing the Membrane lining the Thorax, justly enough asserts, that of it are formed the Membranes dividing the Thorax [*ἡμετέρας διαπερσισσόμενης τῶν θώρακος*]. Now if a Wound is inflicted in the Diaphragm on each Side of the Mediastinum, the Air may by these Apertures enter the Cavity of the Thorax, and by that means hinder the Expansion of the Lungs, as we have already observed with respect to Wounds penetrating both Cavities of the Thorax.

But if we consider that the Liver and Spleen are situated near the Diaphragm, it is sufficiently obvious, that the Diaphragm can hardly be hurt in two distinct Places, without these Viscera being wounded. Hence Death succeeding such a Wound, cannot be ascribed alone to the Admission of the Air into the Cavities of the Thorax; for besides, these Viscera being pressed upon by the Action of the Diaphragm and abdominal Muscles, will block up the free Passage made to the Air by these Wounds. But such Wounds must farther be very large; hence such a Case seems rarely or never to happen.

As for Wounds dividing the nervous Part of the Diaphragm; the Middle of the Diaphragm is called its tendinous Centre, which is a pretty broad tendinous Space, or Aponeurosis, in which all the fleshy Fibres of the Diaphragm meet. It was formerly called the nervous Part of the Diaphragm, because the Antients called Tendons Nerves. It was for a long time believed, that by the Action of the fleshy Fibres of the Diaphragm, this tendinous Centre was every-where drawn downwards, and consequently that if a Wound should be inflicted

in this Part, every time the Diaphragm acts, the half-lacerated Fibres would be distracted, the Wound be augmented, and the Pain become so intolerable as to produce Convulsions and Death. But the celebrated *M. Senac*, in *Mém. de l'Acad. Royale des Sciences*, P. An. 1724. has demonstrated, that the Middle tendinous Part of the Diaphragm, on which the Heart included in its Pericardium is incumbent, does not descend in Inspiration, since the Motion and Situation of these would by this means be greatly disturbed, because the Pericardium with a pretty broad Surface adheres to this tendinous Part of the Diaphragm. This is, also, proved by the Structure of the Diaphragm, and its Connection with other Parts.

Wounds of the Diaphragm are succeeded by another Misfortune no less fatal, though not productive of so sudden Death, after the Patient has suffered the most exquisite Torments. And this happens when the Parts contained in the Cavity of the Abdomen are, by the Action of the Diaphragm and abdominal Muscles, forced into the Wound of the Diaphragm, dilate it, pass into the Cavities of the Breast, and thus by compressing the Lungs, and disturbing the Motion of the Heart, prove mortal sooner or later, after intolerable Agonies. Instances of this are found in *Paré*, Lib. 10. Cap. 32. and in *Sennertus*, Lib. 2. Part. 2. Cap. 13.

Hence appears the great Danger of Wounds of the Abdomen. *Hollerius*, however, in *Comment. in Aph.* 18. Sect. 6. *Hippocrat.* tells us, that in dissecting the Body of a Person who had been hanged, he saw a Wound in the fleshy Part of the Diaphragm, covered with a Cicatrix.

Fifthly, Those Wounds which prevent the Motion of the Chyle into the Heart, such as a Division of the Oesophagus, large Wounds of the Stomach, or small Intestines, an entire Division of the superior Intestines, and a Wound of the Thoracic Duct, or Receptacle of the Chyle.

In this Number are enumerated the Wounds of those Parts whose Soundness is requisite to swallow and digest the Aliments, and convey the Chyle prepared from them into the Mass of Blood, in order to restore those Parts which are daily lost by the Action of Life and Health.

As for a Division of the Oesophagus; an entire Division of the Oesophagus destroys all Passage of the Aliments to the Stomach; for that Wounds not entirely dividing the Oesophagus, have frequently been cured, is certain from various Observations in practical Authors. See *Schenckius*, *Observ. Med.* Lib. 3. Obs. 6. and *Bohnus de Renunciatione Vulnerum*. But when the Oesophagus, together with the Aspera Arteria, is totally divided, *Paré*, in Lib. 10. Cap. 31. tells us, that the Extremity of the divided Oesophagus is so retracted to the Stomach, that it cannot be united with the other Extremity, tho' in one Instance he by Suture so united the Wound of the Aspera Arteria, as to restore the Speech of the Patient, that he might discover the Person who wounded him; but he died on the fourth Day after. Another Instance of the same Kind is found in the same Place. But as the Oesophagus is covered with the Aspera Arteria, is incumbent on the Bodies of the Vertebrae, and has very large Vessels adjacent to its Sides, it is rarely wounded alone; for which Reason it is probable, that the Wounds of the adjacent Parts may in like manner prove the Cause of Death. To this Purpose *Boerhaave* gives us a memorable History in his *Atrocis nec descripti prius Morbi Historia*.

As for large Wounds of the Stomach; all the Aliments and Drink swallowed are received into the Cavity of the Stomach, by whose Fabric, the Affusion of the Humours, and their Continuance there, they are so changed, that being thence conveyed through the Intestinal Tube, they afford a Matter, which being resorbed into the small venous Ducts, mixed with the Blood, and farther elaborated, may restore what is lost from the Body by the Actions of Life. If, therefore, a large Wound is inflicted in the Stomach, its Contents will fall through the Wound out of the Body, or into the Cavity of the Abdomen; and thus all Nutrition will necessarily be destroyed. Besides, Wounds of the Stomach are dangerous, because its Substance is full of so many Arteries, Veins, and Nerves. But when Persons die of Wounds of the Stomach, soon after the Reception of the Wound, we cannot ascribe the succeeding Death to the Defect of Nutrition, but to the Wound made in the Substance of the Stomach. Two Instances of this Kind are found in *Bohnus de Renun. Vuln.* in which Death succeeded two Days after the Wounds were inflicted. But when Wounds of the Stomach prove mortal, because the Stomach cannot contain the Aliments taken, a slower Death ensues, and the Patient gradually wastes away for want of Nourishment. It has, also, sometimes happened, that such Wounds degenerating into fistulous Ulcers, have remained open for several Years, whilst the Patient could at Pleasure let his Aliments and Drink out at this Aperture, or retain them in it by closing the Wound by means of an external Apparatus. Two Instances of this Kind are found in

Schenckius

Schenckius, in Observationibus Medicinalibus rarioribus. In the *Philosophical Transactions*, No. 420. there are two remarkable Instances of perfect Cures produced in such Wounds of the Stomach, and which seem to evince, that all Wounds of the Stomach, even though large, are not absolutely mortal, when the Hands of the Surgeon can have Access to the Wound in order to unite it by Suture. Good Hopes may be entertained with respect to the Cure of small Wounds of the Stomach, provided it is not distended with Aliments or Drink; for in this Case the Stomach remaining contracted, its Wounds may be consolidated.

As for entire Divisions of the small and superior Intestines; such Wounds seem to be absolutely mortal; for the Extremity of the divided Intestine will discharge the Chyle into the Cavity of the Abdomen; and when this Chyle is corrupted, it will consume all the Viscera contained in the Abdomen, and hence certain Death ensues. But if either by Chance or Art, the Extremity of the divided Intestine grows to the external Margin of the Integuments, a Way will be made, through which by the peristaltic Motion of the Stomach and Intestines, all the Contents of the Intestine will be eliminated from the Body; for the Chyle conveyed from the Stomach thro' so large a Portion of the Intestinal Tube, and its Gyration and Windings, is by that means hindered from going out of the Body, before all that Part of it which is subservient to the Nutrition of the Body is resorbed by the Mouths of the lacteal and meseraic Vessels. If then the small Intestines are entirely divided in the superior Part, that is, where they are pretty near the Pylorus, the Body will necessarily be deprived of Nourishment, and the Patient will die of a slow Consumption, if the Contents are discharged through the Wounds of the Integuments; but if, falling into the Cavity of the Abdomen, they are there accumulated, they are there corrupted, and accelerate the Death of the Patient.

But Wounds both of the large and small Intestines in Parts more remote from the Stomach, as, also, such Wounds as do not entirely divide the Intestinal Tube, are always dangerous, though not absolutely mortal. Of this a memorable Instance is found in *Mém. de l'Acad. Royale des Sciences, l'An. 1705.* And in the *Philosophical Transactions* abridged, *Tom. 5.* we have an Account of a large Dog, in which the small Intestine was longitudinally divided, and upon replacing the Intestine without Suture, the Wound of the Abdomen was stitched up, and the Animal cured without any bad Symptom.

Various Observations of this Kind occur in practical Authors. It is, also, certain from many Instances, that Persons have survived total Divisions both of the small and large Intestines, when the Extremity of the divided Intestine was fixed to the external Wound, in order to procure a Discharge for the Fæces. But in this Case it is requisite the Length of the Intestine from the Stomach to the Part where it is divided, should be such, as that the Chyle prepared from the Aliments, and resorbed by the Lacteal and Meseraic Vessels, may be sufficient for the Nourishment of the Body.

As for Wounds of the Thoracic Duct, or Receptacle of the Chyle; all the Chyle resorbed by the lacteal Vessels from the Intestines, and a large Quantity of Lymph conveyed through the Lymphatic Veins, meet in this common Chanel. When this, therefore, is wounded, and discharges its contained Liquors, all those Effects cease which depend on a Mixture of the Chyle with the Blood for the farther Perfection of the Actions of the Vessels and Viscera, that is, Nutrition is destroy'd. It is true that the Orifices of the Meseraic Veins every-where open into the Intestines, reabsorb the thinnest Part of the Chyle and convey it directly to the Liver; but the white chylous Juice is only received by the Lacteals, and Life seems incapable of being sustained, if only the Meseraic Veins absorbed the thinnest Part, since by this means the Admission of the Chyle, properly so called, into the Mass of Blood, would be hindered. *Lower, in his Treatise de Corde,* has by beautiful Experiments demonstrated, that no Chyle is resorbed by the Meseraic Veins. And when the Entrance of the Chyle into the Blood is hindered, it is certain that Life cannot be long sustained.

It rarely happens in Mankind, that the Thoracic Duct alone is wounded; for it lies generally on the Middle of the Bodies of the Vertebrae, in the middle Space between the *Vena sine Pari* on the Right Side, and *Aorta Descendens* on the Left; so that the Aorta, for the most part, lies upon it; then rising higher, it runs upon the Bodies of the Vertebrae, under the Oesophagus, and under the Arch of the *Vena sine Pari*; thence above the Bodies of the Vertebrae, it inclines to the Left, proceeds under the Left Carotid, as far as the Middle of the last Vertebra of the Neck, and there being bent in the Form of an Arch, it tends downwards to the Left; and is terminated in the Left Subclavian Vein. During the Whole, therefore, of this Course, it is safely lodged, and adjacent to large Vessels, so that it can hardly be wounded without other Parts, the Wounds of which may be productive of Death.

Bonetus, in Sepulchret. Anatom. Lib. 4. has a remarkable Instance, in which from the succeeding Symptoms, the Thoracic Duct seems to have been wounded, tho' from the long time the Patient lived, it seems not to have been totally divided.

Wounds in their own Nature mortal, but curable by Art, are,

First, Wounds of any of the Contents of the Cranium, which are capable of being relieved by the Trepan.

In this Paragraph are considered those Wounds which prove infallibly mortal if left to themselves; but whose Effect, which is Death, may be prevented by proper Measures.

The Wounds of this Kind first specified, are those of the Encephalus, by which is meant every thing contained in the Cavity of the Cranium. Now it is certain from Anatomy and Physiology, that the Cavity of the Cranium is naturally exactly full. When therefore, by a Change of Figure in the Cranium, its Cavity is lessened; or when by a Rupture of the Vessels, the extravasated Humours are collected under the entire Cranium, the soft Fabric of the Encephalus is necessarily compressed, all the Functions depending on it are injured, and at last totally destroyed.

If, therefore, the Cranium pressed inward, or the extravasated Humours by their Quantity compress the Brain; or if the Juices becoming corrupted by their Continuance there, by their Acrimony corrode that tender Pulp on which Life and Health depend, Death will be the Effect of such a Wound: But if the extravasated Humours are lodged in such a Part of the Cranium, that they can be removed by an Aperture made with the Trepan, it easily appears that the Patient may be preserved. See *CAPUT.*

Two things are, therefore, requisite in such a Wound; which are, that the evident Cause of Death is found to be the extravasated Humour compressing the Brain; and that this Humour is lodged in such a Place, that it may be safely eliminated.

Secondly, Wounds of large Arteries or Veins, in Parts to which the Hands of the Surgeon cannot have Access.

It is absolutely necessary a Surgeon should know the Course of the large Arteries and Veins, especially in the Limbs; for large Trunks of Vessels wounded in the Cavities of the Body, will not admit his Hand. It is in a particular manner requisite, he should know those Parts of the Limbs where the large Arteries and Veins are so naked as to be easily compressed. Of this Kind in the superior Limbs, are the subaxillary Parts, and the anterior and superior Part of the Os Humeri, where the large Trunk of the Artery may be compressed almost to the naked Bone, and by that means Hæmorrhages from Wounds inflicted in the inferior Parts are easily stopt. In the inferior Limbs, similar Places are found in the interior and anterior middle Parts of the Thigh, as, also, under the Hams. In all these Places, Compresses strongly applied with a *Tourniquet*, so compress the Trunks of the Vessels as to hinder all Passage of the Blood. Thus mortal Hæmorrhages are prevented, and an Opportunity given the Surgeon, after the Suppression of the Blood, and the Dilatation of the Wound, if necessary, to find the wounded Artery, and apply proper Medicines, or Ligature, as he thinks fit. Hence, at present, no Wound of the Limbs seems absolutely mortal in consequence of an Hæmorrhage, which may be checked by a Compression of the arterial Trunks, especially in the subaxillary Parts, and in the Groins. And if the wounded Artery is lodged so deep, that it cannot be tied, the Amputation of the Limb is the only remaining Method to be taken for the Preservation of the Patient. But when Surgeons are ignorant of the Course of the large Vessels, they by Ligatures, and absorbent styptic Powders, such as *Gypsum*, hinder the Blood discharged from the wounded Vessel, from flowing through the Aperture of the Wound. And this Blood filling the whole *Membrana Adiposa*, and afterwards becoming corrupted, preys on all the Parts with a terrible Putrefaction, of which there are many melancholy Instances.

Thirdly, Wounds of the Viscera, to which the Surgeons Hands, and proper Medicines, can reach.

Unless it were certain from Experience, no one could believe that Parts, even of the vital Viscera laid bare by a Wound, may be cut off, left afterwards becoming corrupted, they should prove mortal. *Celsus, in Lib. 5. Cap. 26.* tells us, "That if any Part of the Liver or Lungs hangs out, it is to be cut off." There is a memorable Instance of this Kind recorded in *Tulp. Obs. Med. Lib. 2. Obs. 17.*

Fourthly, Such Wounds as are fatal thro' a Discharge of the Fluids, into those Cavities whence they may be taken without

out Danger of Life, as it happens in some Wounds of the Thorax, Abdomen, Ureters, Bladder, and Intestines.

Many Wounds prove mortal, not so much on account of the large Quantity of the extravasated Blood, as because that Fluid becoming corrupted by Time, and the Heat of the Part, by its putrid Quality corrupts and wastes the Viscera on which it acts. Thus, for Instance, when the Thorax is wounded, after a copious Hæmorrhage the Patient falls into a Deliquium, the divided Vessels contract themselves, and the Discharge of the Blood ceases. The Blood, however, remains in the Cavity of the Thorax, where becoming corrupted, and corroding the adjacent Lungs, it destroys the Patient by a slow Consumption. The same holds true in the Cavity of the Abdomen. But the Paracentesis may be instituted both in the Thorax and Abdomen; and thus the extravasated Blood may be eliminated, and all these Misfortunes prevented. But if a Wound is so inflicted in the Ureters, or Bottom of the Bladder, that the Urine flows into the Cavity of the Abdomen, it is sufficiently obvious, that in this Case, the Urine naturally disposed to Putrefaction, will far sooner become putrid, by which means all the Contents of the Abdomen will be greatly injured. But by perforating the Abdomen, all the Fluids collected in it may be evacuated; and by introducing a flexible Catheter into the Bladder, the Urine may be hindered from collecting itself in the Bladder, and distending it; hence the Bladder remaining always contracted, the Wound inflicted, will be the more easily consolidated. But if the Ureter is divided, after evacuating the Urine discharged into the Cavity of the Abdomen, a dry Diet is to be used; in which Case there are great Hopes, that the Extremity of the divided Ureter may be consolidated. The Use of the Kidney will indeed be destroyed by this means; but it is certain from many Observations, that the other Kidney may supply its Office, and that the Patient may enjoy perfect Health; for when the Cavity of one of the Ureters is obstructed by a Stone impacted in it, the Patient has often survived a great while, the other Kidney remaining sound, and in that Case having its Bulk, generally, greatly increased.

We know that the Urine flows from the Wound into the Cavity of the Abdomen, when little or no Urine is discharged, and the Abdomen is daily more and more distended by a Tumor.

The same, also, holds true in some Wounds of the Intestines.

A Wound of itself not mortal, may be prognosticated mortal, by these Causes:

First, By neglecting to purge off the discharged Pus, from which a purulent Tabes arises; or the extravasated Blood, which hence become putrefied.

Under this Class are comprehended such Wounds as are inflicted in those Parts, the Soundness of which may be removed without destroying Life, though such Wounds are sometimes succeeded by Death, not arising from the Wound as the Cause, but because by the Carelessness of the Patient, the Error of the Physician, some other Disease not arising from the Wound, or a Peculiarity of Constitution, such a Change is induced, as that the Functions requisite to Life are abolished. These Changes are produced by the four following things:

A Neglect to purge off the discharged Pus, from which arises a purulent Tabes.

From what is already said, it is obvious, that in every considerable Wound, Pus is not only formed, but is even requisite to a Separation of those things which would hinder the Consolidation of the Wound. Now if the Condition of the Wound is such, that the Pus formed in the Wound, falls into the Cavities of the Body, or, being too long left in the Surface of the Wound, is attenuated and resorbed by the open Orifices of the Veins, in this Case the whole Mass of Blood may be infected by a purulent Cacochymy, whence arise an hectic Fever, and a slow Consumption; now if it appears, that Pus lodged in any Cavity of the Body, might have been safely evacuated, or that the Resorption of the Pus, might have been prevented by a proper Depuration of the Wound, it is obvious, that the Death succeeding it is not to be ascribed to the Wound as its Cause, but to the Omission of purging off the extravasated Pus. When, after the Amputation of large Limbs, broad Wounds daily collect a large Quantity of Pus, a great Difficulty frequently happens in the Cure; for if often in a Day the Wound is cleansed, and the Pus wiped away, the Consolidation of the Wound is by that means prevented, and it degenerates into the Nature, as it were, of a Fontanel, and discharges an incredible Quantity of Fluids. Thus the Patients are wasted away by a true Consumption, while there is no

Fault either in the Fluids or Solids of the Body, because by the too great Formation of Pus, so much of the Nourishment of the Body is lost, that all the Parts are consumed. But if the Wound remains long covered, the Pus being, by its Continuance, and the Heat of the Place, attenuated and rendered more acrid, is resorbed by the open Mouths of the Veins, by which means it is mixed with the Blood, and induces a purulent Cacochymy and Consumption; or, being by a Translocation conveyed to some of the more noble Viscera, proves mortal; many Instances of which occur in Practice.

As for the Evacuation of the extravasated and putrefied Blood; Hippocrates, in *Aph. 20. Sect. 6.* affirms, "That Blood preternaturally discharged into the Abdomen, must necessarily be suppured." Galen, in his Comment on this Place, tells us, that some instead of *ἐς τὴν κοιλίαν*, read *ἐκ κοιλίας*, without the Article, by which an Effusion of Blood into any Cavity of the Body is denoted; and he adds, that this Opinion is confirmed by the Addition of the Word *preternatural*. Then the Sense of this Aphorism is, that Blood discharged from its natural Place into any Cavity of the Body, must necessarily be converted into Pus. Galen, in the same Place, tells us, that by Suppuration is meant every Corruption of Blood, but not a Conversion into Pus; properly so called. If a free Access is given to the Air, Blood discharged into any Cavity of the Body, is pretty soon putrefied, and proves mortal by corrupting the adjacent Viscera, or by being resorbed and destroying the tender Vessels of the Viscera by its putrid Acrimony. But if no Access is given to the Air, it may remain for a long time without Corruption, and sometimes being gradually attenuated, be again resorbed without any Harm, as it frequently happens after violent Contusions, when the Blood extravasated under the entire Skin, often remains for a Month and more, but afterwards gradually disappears without any farther Injury. When, therefore, Blood being discharged into the Cavities of the Body, and a free Access given to the Air, Death ensues, and in the Carcase it is not found, that the Wound is in its own Nature mortal, the Death of the Patient is to be ascribed to this Cause, if the extravasated Blood could have been safely evacuated by Art.

Secondly, By any Fault committed with respect to the Six Non-Naturals.

It is certain from Pathology, that the Non-naturals are divided into six Classes, Air, Meat, Drink, Rest, Retention, and Excretion, Sleep and Watching. They are thus called, because by the Use or Abuse of them, they are either natural Benefits, or preternatural Evils. The prudent Physician directs all these in a proper manner, and orders the Patient to abstain from such things as are injurious, and enjoins the Use of such things as are beneficial. Now, if by the Carelessness of the Physician, or the Obstinacy of the Patient, Faults are committed in the Use of the Six Non-Naturals, a Wound of itself not mortal, may be so changed as to bring on Death. Instances of this are found in *Paré, Lib. 10. Cap. 14. Hildan. Obs. Chirurg. Cent. 1. Obs. 20. ibid. Obs. 17. and ibid. Obs. 25.*

Thirdly, By a Neglect or Error of the Surgeon.

It is certain from many Observations, and confirmed by daily Experience, that Contusions and slight Wounds of the Head, when negligently treated, have produced terrible Symptoms, and Death. Many die of Hæmorrhages, who might have been preserved if the Trunks of the Arteries had, by proper Ligature, been compressed in those Parts, where they are almost naked. In Battles many of the Wounded die only because the Surgeons cannot take sufficient Care of so large a Number. The Death of wounded Persons is, also, frequently owing to the Error of Surgeons. Instances of which are found in *Paré, Lib. 10. Cap. 32. Hildan. Obs. Chirurg. Cent. 6. Obs. 80. and Hippocrates Epidem. Lib. 5. No. 22.*

Fourthly, By the Constitution of the Patient whether natural, morbid, manifest from the History of the particular Patient; or sometimes so singular, that it can only be discovered by this Effect. And this Constitution of the Patient is always to be had a due Regard to by the Physician in his Report to the Judges.

It is of great Importance in making Reports with respect to Wounds, to have a due Regard to the Temperament of the Patient, which, however, is often totally overlooked. In many Places, Physicians and Surgeons are, by public Authority, appointed to inspect the Bodies of those who are killed, and make a Report of what they have seen to the Judges. But they often do not consult the Physician or Surgeon, who before attended the wounded Person, in order to know his Temperament,

perament, previous Diseases, and the Symptoms subsequent to the Wound. But all these Things seem highly necessary, in order to make a faithful Report concerning the Wound: For some Persons have nervous Systems so capable of being irritated, that they are by the slightest Cause seized with Spasms, a *Tetanus*, or other like Misfortunes: Others, when they see the Blood flowing from another Person's Wound, fall into a *Deliquium*. Now it is probable, that in such Persons, violent Symptoms, and even Death, may be produced by a slight Wound; but whether the succeeding Death is to be ascribed to such a Wound alone, as its Cause, is hard to determine. Besides, in some Patients, towards the End of Life, hardly any Blood remains in the Body. Thus in phthical Patients, after Death only a few Ounces of Blood are sometimes found: Now if from such a Patient, by a slight Wound, the small Quantity of Blood should be evacuated, infallible Death will ensue; but that Death will not depend on the Wound alone. It is sufficiently known, that the *Lues Venerea*, and a malignant Scurvy, so corrode the Substance of the hardest Bones of the Body, that being rendered entirely carious, they may be broken by the smallest Force. If therefore, in such a Case, a Fracture of the *Cranium*, by a gentle Pressure, should be productive of Death, this Effect will not depend on the wounding Cause alone; but these, and other Circumstances of a like Nature, may be known from the Things observed in the Patient's Body before the Wound was inflicted. Perhaps there may be other Things latent, of which there never appeared any Sign, and which only discover themselves by the Infliction of the Wound: For when we consider what has been observed in the Bodies of Persons who have died suddenly, we find that Death has often been instantaneously produced by the most latent Causes; whereas before Death nothing of any Moment appeared injur'd. Now if in such a Person a Wound is inflicted a little before Death, the succeeding Death, which depends on a quite different Cause, would be unjustly ascribed to the Wound. Thus *Valerius Maximus, Lib. 9. Cap. 12.* tells us, "That in the End of Life, which is exposed to various and occult Causes, some Things are frequently, tho' undeservedly, called mortal; since they rather happen at the time of Death, than bring it on." Hence in such Cases it ought to be reported to the Judges, that the Wound was found such, that the Death succeeding it did not seem to be ascribed to the Wound as its Cause. Thus Physicians and Surgeons discharge their Offices faithfully, and the rest belongs to the Judges.

Upon this Doctrine depends the Report concerning Wounds, and a Determination of the Time in which they may prove mortal.

Judges, before passing Sentence on Murderers, generally order Physicians and Surgeons to examine the Body of the Person killed, in order to discover whether his Death was caused by the Wound: These Physicians and Surgeons accurately observe what Parts of the Body they find hurt by the Wound; and then by a common Consultation conclude whether the Wound was absolutely mortal; or whether, tho' mortal of itself, Death might have been prevented by Art; or whether the Wound has injured those Parts, the Soundness of which was not absolutely necessary to Life, and yet Death ensued, either from a peculiar Temperament of the wounded Person, or from the Carelessness or Neglect of those who had the Management of him. All these Circumstances are related to the Judges, and this is call'd giving a Report concerning Wounds, *Remunctio Vulnerum*. Hence it appears, how great Caution is necessary, since unskilful Surgeons, when examining a Carcase, rather make than inspect Wounds. We ought, as much as possible, to inquire into the Figure and Bulk of the wounding Instrument, the Situation of the wounded Person, and of him who gave it, at the Time it was inflicted; and into all the Symptoms which happened between the Reception of it and the Death of the Patient.

Besides, all those Things are to be consider'd which happen'd to the Patient, or were applied after the Wound was inflicted; then, by a prudent and cautious Incision, we are to investigate how far, and thro' what Parts the wounding Instrument pass'd: Thus from a Knowledge of the Use of the Parts wounded, we conclude whether the succeeding Death ought to be ascribed to the Wound inflicted, as its Cause, or not.

But it seems not to be easily determin'd to what Space of Time the Mortality of Wounds is to be limited. Many are of Opinion, that if the wounded Person survives nine Days, the succeeding Death is not to be ascrib'd to the Wound; and that if the Person dies before that Time, then the Wound inflicted is necessarily and absolutely to be accounted mortal: But a large Artery, divided either in the Arm or Leg, may, in a few Hours, or even sooner, put an End to a Person's Life, tho' this Wound was not absolutely mortal, but might have been cur'd by Art. Thus, also, extravasated Blood in the *Cranium*, if lodg'd in a Part from which it could not be extracted by Art, whilst its

Quantity is so small that, by Compression, it does not immediately disturb the whole Use of the Brain, may there remain for several Weeks, become gradually corrupted, and at last, by corroding the *Cerebrum, Cerebellum, and Medulla Oblongata*, produce Death; and such a Wound is justly to be reported as mortal, tho' the Person has surviv'd it so long. If the small Intestines are totally divided near the *Pylorus*, Life may be protracted for several Days, till, thro' a Defect of Nutrition, the Patient is gradually wasted away, and yet such a Wound is absolutely mortal. Hence it is obvious, that nothing certain can be determin'd with respect to the Mortality of Wounds, from the Time intervening between the Infliction of the Wound, and the Death of the Patient.

From the History of Wounds, also, already given, the Prediction of other Events which are to be foretold, will be easy.

In treating of the Prognostics of Wounds, we have determin'd those Things which, from a Knowledge of the Wound, might be foreseen, as its Consequences; we have, also, treated of the Life or Death of the wounded Person: The other Things relating to the possible or impossible, the easy or difficult Cure, and the Effects remaining after the Cure of the Wound, are evidently deduc'd from a perfect Knowledge of its Nature. For when we know from Anatomy, and the Doctrine of the Use of the Parts, what Parts are wounded, and what Functions are abolish'd or deprav'd, we may determine whether the Cure is possible or impossible, easy or difficult; or whether, after the Cure of the Wound, any of the Functions will remain injur'd. Thus, for Instance, if a Wound is inflicted on the Back of the Hand, the Physician, from Anatomy, knows that the Tendons of the Muscles which extend the Fingers are plac'd here; he therefore orders the Patient to stretch out his Fingers; and if he perceives that he is absolutely incapable of erecting his fore Finger, he concludes that the Tendon, compos'd of the united Tendons of the common extensor Muscle, and that of the *Musculus Indicator*, is divided: But if it is possible that the Extremities of the divided Tendon can be brought into Contact, and united, he may promise a perfect, tho' a difficult, Cure. But if this cannot be done, he may safely predict, that, after the Cure of the Wound, the Erection of the fore Finger will be always abolish'd, and never capable of being restor'd. In predicting Things of this Nature, both Physician and Surgeon ought to be very cautious; because all the Misfortunes which remain after the Cure of the Wound, will be ascrib'd to them, unless they have foretold that such Misfortunes will certainly happen, or, at least, are to be dreaded.

The Cause of the several Phenomena appearing when a Wound is inflicted in a visible Part of a sound and robust Body, is sufficiently obvious, to any one acquainted with the vital and animal Actions; and all these Symptoms have been already accounted for.

The exterior Coats of the Arteries, when prick'd, cut, bruise'd, broken, distracted, or corroded, whilst the internal Coat remains entire, are dilated, by the Impetus of the Blood, and form a Bag, or Sack, which often increases to the Bulk of an Egg, acquires callous Sides, has a Pulsation, is of a bright-red Colour, disappears upon Compression, but returns to its former State when that Compression is remov'd, enlarges its Artery, and by its Compression lessens the adjacent Vessels: This is call'd a true Aneurysm, the Causes, Signs, and Effects of which, are easily seen. An Aneurysm of the Heart, its Origin, Signs, and Effect, are hence to be accounted for, and understood.

We have already observ'd what Misfortunes follow when an Artery is entirely divided, or when a Wound penetrates into the Cavity of an Artery, so as not entirely to divide it: But in this Aphorism are consider'd those Misfortunes which are to be dreaded when Arteries are so wounded, that the Wound does not penetrate their Cavities, but only divides their external Coats. For it is certain, from Anatomy, that the Arteries, especially of the larger Kind, have pretty thick Coats, the exterior of which generally arises from the common Membrane, which lines that Cavity of the Body thro' which the Artery passes. Under this exterior Coat lies a thin cellular Coat, thro' which run many Vessels subservient to the Nutrition of the Arteries; under this lies the glandular Coat, which, perhaps, is no more than a Part of the former; and under the glandular lies the muscular Coat, which is thick, strong, separable into several Laminæ, and consisting of orbicular Fibres; and the last Coat, constituting the internal Cavity of the Artery, is thin, and compos'd of longitudinal Fibres.

Whilst the Blood is, by the Action of the Heart, continually forc'd into the full Arteries, they are observ'd to be manifestly and equally dilated thro' all their Circumferences; the Strength of

of the Coats composing the Arteries resists their too great Dilatation; and when the Action of the Heart ceases, by the Strength, especially of their orbicular Fibres, they are again contracted into their former Dimensions. Now if by the Separation of Cohesion, especially in the orbicular Fibres of any Part of an Artery (for Wounds of the external and cellular Coats are less dangerous) the Strength of the Sides is diminish'd, whilst the distending Cause remains, it will forthwith dilate the Artery more in that Part, change its equable conical Figure, and expand the weaken'd Part into a Sack; and this is call'd a true Aneurysm, which properly signifies no more than the Dilatation of an Artery.

The Cause, therefore, of an Aneurysm is, every thing which lessens the Cohesion of the Coats in any Part of an Artery; and it is certain, from frequent Observation, that this principally happens when Arteries are prick'd or cut: For in Venesection it frequently happens, that a Ramification of an adjacent Artery is wounded by the Point of the Lancet, a few Days after a Tumor begins to arise, which raises the Skin, has a manifest Pulsation, and is daily enlarg'd, unless it is in the Beginning check'd by the Application of Compress and Bandage.

As for Contusions of the Arteries; it has been frequently observ'd, that violent Contusions of an Artery have produc'd an Aneurysm; and a memorable Instance of this is found in *Lancisi, de Motu Cordis & Aneurysmatibus*: And I myself, says *Vanswieten*, saw a remarkable Example of the same Kind.

As for Distractions of the Arteries; in practical Authors many Instances occur, in which, after violent Efforts, lifting too heavy Burdens, excessive Sneezing or Coughing, the distracted Arteries have degenerated into Aneurysms. Of this an Instance is found in *Hist. de l'Acad. Royal. des Sciences, l'An. 1700*. It is, also, observable, that those Horses which are forc'd to strain hard in drawing great Weights up ascending Ground, have Aneurysms, and varicose Tumors, in the Veins of their posterior Legs. The like Misfortune is, also, sometimes observ'd, in Porters.

As for Corrosions of the Arteries; it is certain, that in some Diseases the Humours may so degenerate, that, becoming highly acrid, they corrode the hardest Parts of the Body; by the Scurvy the hardest Teeth are consum'd, and a *Lues Venerea* renders the largest and strongest Bones in the Body carious. A virulent Cancer, by its dire Contagion, consumes all the adjacent Parts. Thus in a Scurvy we often see, that when the Vessels are corroded, the extravasated Blood under the Integuments produces livid Spots, and mortal Hæmorrhages have been sometimes observ'd to proceed from the same Cause. Hence we may easily conceive how the Coats of the large Arteries may be so corroded as to be extended into an aneurysmatic Sack. Two Instances of this Kind are found in *Lancisi de Motu Cordis & Aneurysmatibus*.

By whatever of these Causes any Part of an Artery is weaken'd, it will in that Place yield more, and be expanded by the distending Blood: And as at every Pulsation of the Heart the distending Cause is afresh applied to the weaken'd Part of the Artery, the Capacity of the Aneurysm will be gradually increas'd. Hence Aneurysms are sometimes expanded to an incredible Bulk, especially if they happen in the large Trunks of Arteries. A memorable Instance of this we have in *Ruysschii Observat. Anatom. Chirurg. Cent. Observat. 38*: In the largest Aneurysms it frequently appears, that the Membranes of the extended Sack are very thick; whereas they might be suppos'd to be render'd thinner, on account of their Distraction. But this seems to happen because the Blood accumulated in such dilated Sacks, is concreted into polypous Masses, which being applied to the dilated Coat of the Artery, may greatly increase its Thickness.

We now come to inquire by what Signs an Aneurysm may be known, and distinguish'd from other Tumors; since it is certain from several Observations, that very skilful Surgeons in other Respects, have in this committed egregious Blunders, and by imprudently opening the Aneurysm, kill'd, instead of curing the Patient. An Aneurysm is, therefore, known to be present when the Causes already specify'd have preceded, and a Tumor arises in that Part where, from Anatomy, we know that a large Artery is situated; when a manifest Pulsation is perceiv'd in such a Tumor; and when, by a gentle Pressure, it disappears, or is greatly diminish'd, but immediately returns to its former Bulk when the Pressure is remov'd. But it is to be observ'd, that the Colour of the Skin is rarely chang'd by an Aneurysm, unless it is of long standing, or very large; for then the Skin being corroded or attenuated by the Distraction, its Colour appears red: Besides, in a small and beginning Aneurysm there is always a Pulsation; whereas when it has grown to a greater Bulk, the Pulsation is often not perceiv'd, partly because the Coats of the Aneurysm are become thicker, and partly because the Impetus of the Blood propel'd from the Heart cannot act so strongly on the Aneurysm, when large, as to elevate it at each

Pulsation of the Heart. But when an Aneurysm is compress'd, especially if it is large, and near the Heart, unless the Compression is made gently and gradually, there is great Danger lest the Patient should be suddenly suffocated, whilst the concreted Blood express'd from the Cavity of the Aneurysm so resists the Blood forc'd from the Heart thro' the Artery, that the Motion of the Heart is suddenly suffocated. Nor is a large Aneurysm, when compress'd by the Hand, to be all at once set at Liberty from the Compression, but gradually; otherwise the Patient falls into a *Deliquium*; because the Blood suddenly rushes into this empty Sack. For this Reason, upon compressing a large Aneurysm, the Patient immediately complains of an intolerable Oppression about his Breast. But when an Aneurysm happens in the internal Parts, it is not to be known without great Difficulty: But if the known Causes have preceded; if an unusual Pulsation is perceiv'd by the Patient; if the Motion of the Heart is disturb'd, and almost suffocated by an increas'd Velocity of the Blood arising from muscular Motion, or any other Cause, it is highly probable that there is an Aneurysm in the internal Parts.

The Misfortunes produc'd by an Aneurysm depend on this, that it, by its Bulk, compresses the adjacent Parts, and by that means disturbs and hinders their Action; that it changes the Cavity of the Artery, and destroys the equable Circulation of the Blood thro' it; by which means the Action of the Heart is at last greatly hinder'd. Hence it is obvious, that very various Disorders may be produc'd by an Aneurysm; but that all the Misfortunes arising from it are the worse, the larger, and the nearer the Heart it is.

Another Source of the Misfortunes arising from an Aneurysm depends on this, that the Fluid contain'd in the aneurysmatic Sack begins gradually to degenerate: For in a large Aneurysm the Blood is almost at Rest, or at least moves very slowly; hence the Blood has less Attrition and Heat, by which means it acquires a Disposition to that Degeneracy which happens from a Diminution of Motion and Heat; for polypose Concretions begin to be produc'd; and, when these are once form'd, they have a Power of associating to themselves similar Parts of the affluent Blood, by which means the former Mass is augmented, as is observ'd under the Article *FIBRA*: Hence in large Aneurysms, when dissected, very often much Blood is not found, but a surprising polypose Texture form'd of stagnant Blood, which by the Application of its own Substance so strengthens the weak Part of the Artery, that it does not soon break, but the Patient often lives a great while: At last the concreted Blood, together with the Blood stagnant between the *Lamina* of the polypose Substance, begins to be corrupted, and to acquire so remarkably a resolvent Acrimony, as totally to consume the adjacent Vessels, Membranes, Cartilages, and even the hardest Bones. Practical Authors abound with Observations of this Kind. But whilst the Blood continually acts on that corrupted Substance lodg'd in the Sack of the expanded Aneurysm, a putrid Cacochymy begins to be form'd; and hence an hectic Fever, gradually consuming the Body, arises. That large Aneurysms have terminated in this manner, is certain from Experience, unless by a Suffocation of the Circulation, or a Rupture of the Aneurysm, the Patients died before the Contents of the Sack acquir'd such a Degree of Malignity.

There is Danger of instantaneous Death from the Rupture of such an Aneurysm; for by this means the Patients die in a Moment, when they least expect it. Of this there is a memorable Instance in *Mem. de l'Acad. des Sciences, l'An. 1733*.

When an Aneurysm happens in the internal Parts of the Body, there is but small Hope of a Cure; all that can be done is, by weakening Life by means of Venesections, and a slender Diet, to diminish the Impetus and Velocity of the Circulation; For thus the Increase of the Aneurysm is as much as possible prevented. The greatest Rest both of Body and Mind, are, also, to be order'd, for the same Purpose. When there is Access to the Hands, if the Aneurysm has not already grown to a great Bulk, something may be hop'd from a prudent Compression; in which it is to be observ'd, that it is at the same time greatly expedient, gently to compress the Artery above the Aneurysm: Thus the Impetus of the Blood thro' the Artery is diminish'd, and when the Aneurysm is compress'd the Blood will not so easily regurgitate to the Heart. When nothing is to be expected from Compression, or when it has been us'd in vain, the Extirpation of the Aneurysm is the only Method remaining, which may be happily instituted, as we learn from Experience. *Ruyssch, in Obs. Anatom. Chirurg. Centur. Obs. 2*. gives us an Instance of this Kind, in which the Event was happy, tho' the Arm was already seiz'd with a Gangrene.

To this we may, also, refer an Aneurysm of the Heart, together with its Origin, Signs, and Effects. An Aneurysm of the Heart is a preternatural Dilatation of its Cavities. This Disorder frequently occurs in Practice, tho' it has not hitherto been very accurately describ'd. We may easily conceive, that

all those Misfortunes may happen to the Heart, which produce Aneurysms of the Arteries when their exterior Coats are destroy'd or weaken'd by Wounds, Contusions, Distractions, or Corrosions. For Observations made on Carcasses evince, that Wounds have penetrated to the Heart; and that Inflammations, Suppurations, and Erosions, have been found in it. A memorable Instance of this occurs in *Act. Phys. Med. Tom. 2.* But besides these Causes, other Circumstances occur, from which a preternatural Dilatation of the Heart frequently arises: For the Action of the Heart consists in forcing the Blood receiv'd from the Veins into its Cavities, into the Arteries; so that, by every Contraction of the Heart, its Cavities are totally evacuated: The Force of the Heart must, therefore, surpass the Resistance of the Arteries. But if this Resistance is so far increas'd as to surmount the Force of the Heart, that Organ cannot be totally evacuated; but the Blood being gradually accumulated in its Cavities, will dilate them. In the Heart is observ'd a surprising Property, by which, even after Death, it is excited to Contraction, by forcing Air, or tepid Water, thro' the Veins into its Cavities: Hence, when the Blood is not totally expel'd from its Cavities, the irritated Heart is frequently contracted, so as to expel its Contents, as appears evidently at the Point of Death, when the Heart is no longer able to expel the Blood into the Arteries: For then the Heart palpitates very quickly, till, being overcome by an invincible Obstacle, it at last ceases totally; but whilst the Heart endeavours, by its strong and frequently-repeated Efforts, to overcome the Resistance of the Arteries, the Fibres constituting the Sides of the Cavities of the Heart are strongly distracted, whilst the Fluid contain'd in the Cavities of the Heart, not capable of being express'd, is compress'd, and makes as great a Resistance as the hardest Body. Hence the Cohesion of the too much distracted Fibres of the Heart is weaken'd, and consequently the Dilatation of its Cavities is augmented.

Hence it is obvious that slight Causes are sufficient to render the Heart aneurysmatical: For whilst the Force of the Heart is able to surmount the Resistance of the Arteries, its Cavities remain in their natural Dimensions; but as soon as the Resistance of the Arteries begins to prevail over this Force of the Heart, its Cavities will begin to be dilated.

This Dilatation may happen either in the Right Cavity alone, when the free Circulation of the Blood thro' the pulmonary Artery is hinder'd; or it may happen in the Left Cavity of the Heart, when there is any Impediment in the Aorta; or when both these concur, a Dilatation will happen in both Cavities of the Heart. But it is to be observ'd, that an Impediment in the pulmonary Artery may produce a preternatural Distention of the Right Cavity of the Heart, whilst the Left Cavity retains its proper Dimension; but when the Left Ventricle is not able to expel its Blood, the pulmonary Veins cannot empty themselves into it: Hence neither can the pulmonary Arteries convey their Blood to the pulmonary Veins; by which means the Resistance to the Right Ventricle will be increas'd, so that it may be dilated by the same Causes. The Right Ventricle, which is far weaker than the Left, more easily yields to distending Causes: Hence all other Circumstances being alike, it will be more frequently distended, and dilated to a larger Capacity.

Many Observations evince, that in Carcasses the Heart has been found thus dilated, memorable Instances of which occur in the *Medical Essays, Vol. II. Hist. de l'Acad. des Sciences l'An. 1735.* and *Lancisi de Subitaneis Mortibus.*

Every thing therefore which increases the Resistance to the Blood forc'd from the Cavities of the Heart may produce a preternatural Dilatation of it; too great a Quantity of Humours in plethoric Persons, an Increase of the Circulation in acute Diseases, an Obstruction of the Blood thro' the Extremities of the Arteries by an inflammatory, atrabiliarious, or polyposse Condition, Faults of the Arteries, by which the Blood cannot pass freely thro' them, such as their excessive Callosity, their Degeneracy into a cartilaginous, or even a bony Substance, and Aneurysms of them, are the principal Causes why the Cavities of the Heart are distended beyond their natural Dimensions. It, also, happens, tho' rarely, that Air contain'd in the Cavities of the Heart surprisingly distends them. An Instance of this is found in *Ruyssch. Epist. Problem. 16.* In this Case perhaps the Blood, by an intensely quick animal Motion, or by Diseases, sends off its contain'd Air, which being collected in the larger Cavities, and rarefy'd by Heat, distends all the Parts.

That this Misfortune is present, or at least to be dreaded, may be known, if continual Palpitations of the Heart are present; if the Signs evince that the Lungs are so obstructed as not to allow a free Passage for the Blood; if the Pulse is very hard and full, with an intolerable Anxiety upon an Increase of Motion; then we justly conclude that such an Obstacle is lodg'd in the Aorta.

Then the Circulation is surprisingly disturb'd, and so various and astonishing Phenomena appear, as seem to surpass the Laws

of Nature; the Pulse is in every respect unequal, sometimes defective, and immediately after strong and brisk; Respiration becomes highly difficult, and Convulsions are often produc'd, whilst the Heart is at Rest, and immediately after contracted by a violent Spasm; thus for a Moment the Motion of the Blood thro' the Arteries of the Brain ceases, and immediately after is mov'd with the greatest Velocity; by which means the Secretion and Motion of the Spirits are greatly disturb'd; all the Senses, both external and internal, are often disturb'd; there is an intolerable Anxiety; and there is a violent Struggle between Life and Death, till the latter puts an End to the Patient's Misery.

Hence it appears why, after a long-continu'd Asthma, and violent inflammatory Diseases of the Breast, such terrible Disorders often remain.

When this Disorder is once form'd, no Recovery can be hop'd for, since a Weakness of the Heart being at the same time produc'd, the Difficulty of removing the Obstacle is increas'd: Hence the terrible Disease is augmented, together with all its Symptoms, especially if Life is pretty vigorous.

The Whole of what can be done by Art is, for some time to prevent the Increase of the Disorder, and by that means render Life more tolerable than it would otherwise be: This is done by keeping the Patient so easy and quiet, that the Motion of the Heart may not be greater than is absolutely necessary to the Continuation of Life. Hence great Rest, both of Body and Mind, is requisite; great Quantities of thin Fluids ought, also, to be drank, the best of which are Whey, Milk, and Water,edulcorated with Honey, and Spaw-waters mix'd with Milk; but the Aliments ought to be mild, thin, and exhibited in small Quantities at proper Intervals, that only a small Quantity of mild Chyle may be mix'd with the Blood. All stimulating Substances are, also, to be carefully avoided, and such Medicines used as dilute the Blood, open the Vessels, and lubricate the Passages; that there may be a quick and expeditious Circulation of the diluted Humours through the lubricated and opened Vessels.

If by the same Causes an Artery wounded in the like manner, remains infirm after the Cure, the same Misfortunes happen.

When in the most violent Diseases, and obstinate chronical Pains, especially of the Head, Surgeons open the temporal Artery, they are always careful, after a proper Quantity of Blood is discharged, so to secure the Wound of the Artery, by a Plate of Metal, or something of a like Nature, that the Force of the Blood distending the Artery at each Pulsation of the Heart, may not extend the Rudiments of the beginning Cicatrix beyond the equable Dimension of the Artery, and produce an Aneurysm: And if this Compression of the wounded Artery is neglected, such a Misfortune will almost always happen. This is frequently observed when unluckily in the Flexure of the Cubit, the adjacent Artery is opened with the Vein, and the Wound not secured by a proper Pressure; which is, also, far more difficultly obtained here than in the Temples, where the wounded Artery may be so pressed to the hard Cranium, that no Dread of a future Aneurysm remains. Hence in this Place, especially, we may safely institute Arteriotomy, which is perhaps too much abstain'd from by Physicians, tho' it may be safely perform'd by a skilful Surgeon; and, as *Severinus, de Efficac. Medic. Lib. 1. Part 2.* evinces, has often removed Disorders, after all other Means have been tried in vain.

When from the same Causes all the Coats of the Artery are destroyed together, and the Artery pours out its Fluids into the adjacent distended Parts, from whence it can find no Passage, there is formed a Collection of extravasated Blood, which is perpetually increased, and without any determinate Measure. This Tumor is soft, has scarcely any Pulsation, is livid, does not disappear by Compression, soon putrefies, and by that means causes a Gangrene of the neighbouring Parts. This is a spurious Aneurysm, the Cause, Signs, and Effects, of which, are known by this Description.

If an Artery is so wounded that the Cohesion of its Sides, being destroy'd, the Blood contain'd in its Cavity may be discharged, whilst this Blood is pent up by the entire Skin, or Fat, or Blood coagulated in the Wound; it will make a Way for itself in the *Membrana Adiposa*, which it will fill, and often raise to a large Tumor: For the distending Mass will be increased by the Blood continually flowing from the ruptured Artery, till the Skin can yield no farther, or the adjacent Parts hinder the farther Collection of the Blood in the *Membrana Adiposa*, or a Thrombus of coagulated Blood closes up the Aperture of the wounded Artery. After violent Contusions, such large Tumors often arise, and are of a livid, and often of a totally black Colour, in consequence of the extravasated and coagulated

coagulated Blood appearing through the Skin. In scorbutic Patients, after the Vessels are corroded, the like Misfortunes often happen; but as this generally happens in the smaller Arteries, the Part is not raised to a very great Tumor, but flat black Spots are form'd. That enormous Tumors are, however, sometimes produced by this Cause, is certain from an Instance recorded in *Severinus de Efficac. Med. Lib. 1. Part. 2.* which Observation evinces how large a Quantity of Blood may be collected in the *Membrana Adiposa*, and how long it may remain without Corruption after it is extravasated, provided a free Access is not given to the Air.

Because such a Tumor has some Signs in common with a true Aneurysm, Surgeons have given it the same Appellation, tho' for the sake of Distinction they have given it the Epithet of spurious; for in a true Aneurysm the Coats of the Artery, tho' weakened, remain coherent, and hinder the Discharge of the Blood; but in a spurious Aneurysm the ruptured Coats afford a free Passage for the Blood. The Antients used a less ambiguous Word, and called such a Disorder *Eccymosis*, which, according to *Galen*, in *Method. Medend. Lib. 4. Cap. 1.* generally happens with a Contusion and Rupture of the Vessels; tho' he, also, tells us, that it sometimes happens from an Anastomosis, a Transudation, or a Corrosion. Small Tumors, arising from extravasated Blood under the entire Skin, are still so called by Surgeons: And if from the Laceration of a large Artery a considerable Tumor is produced, especially if any Pulsation is perceived in it, it is generally called a spurious Aneurysm.

So far as I know, no mention is made of an Aneurysm in *Hippocrates*; and that Definition of an Aneurysm given by *Galen*, in *Tr. de Tumoribus præter Naturam, Cap. 11.* seems rather to agree with what we call a spurious Aneurysm. For he tells us, "That the Disorder of an opened Artery is called an Aneurysm. This happens when the Artery, being wounded, the adjacent Skin is brought to a Cicatrix, whilst the Wound of the Artery is neither united, covered with a Cicatrix, nor stop'd by Flesh." But the Signs by which he distinguishes this Disorder from other preternatural Tumors, rather agree with a true Aneurysm. For he adds, "Disorders of this Kind are known by the Pulsations of the Arteries; and when they are compressed, the whole Tumor disappears, the Substance producing it returning into the Arteries; and this Substance is a thin yellow Blood mixed with a large Quantity of fine Spirits. But this Blood is much hotter than that contained in the Veins, and when the Aneurysm is wounded, bursts out with such Violence, that it can hardly be stop't."

The Cause, therefore, of a spurious Aneurysm, may be every thing which destroys the Continuity of the Sides of an Artery, whilst the Skin remains entire; or in case there is a Wound, whilst the Aperture of the Skin is so closed up as to hinder the free Evacuation of the extravasated Blood: Hence, being congested in the *Tunica Cellulosa*, it distends the Part by a Tumor.

It is of great Importance to distinguish between a spurious and a true Aneurysm. Hence their respective Signs ought to be accurately known. We know that a spurious Aneurysm is present, from the preceding Causes, especially violent Contusions, because the Tumor increases far more quickly in a spurious than in a true Aneurysm. Besides, the Tumor is not circumscribed by very distinct Limits, because it is every-where dispersed thro' the *Tunica Cellulosa*; but in a true Aneurysm the Circumference of the Tumor is limited by the dilated Coats of the Artery: Add, that a true Aneurysm, at least in the Beginning, before it grows to a great Bulk, has a manifest Pulsation corresponding to that of the Arteries; whereas a spurious Aneurysm has not so manifest a Pulsation, tho' this Sign is sometimes fallacious, as is obvious in the Instance referred to in *Severinus*. A true Aneurysm, unless very large, totally disappears when pressed, because the Blood is forced into the Cavity of the Artery; but this does not happen in a spurious Aneurysm, which when pressed, yields indeed, but the Tumor is then augmented in the adjacent Parts. In a true Aneurysm, at least in the Beginning, the Colour of the Skin is rarely or ever changed; whereas in a spurious Aneurysm, the Blood extravasated under the Skin tinges it with a preternatural Colour.

The principal Effects of a spurious Aneurysm are, that the extravasated Blood, by its Bulk, hinders the Action of the adjacent Parts, and at last, by its Continuance, becoming corrupted, may acquire such an Acrimony as may produce the most violent Inflammations, Gangrenes, and Corrosions. But if the Access of the Air is hindered, the extravasated Blood may remain long uncorrupted, especially if antiseptic Fomentations are applied. For the Cure of this, and other Disorders of a like Nature, see *CONTUSIO*.

Other Effects of a large wounded Artery are easily understood, from Physiology; as, also, the Phenomena of a Nerve wounded.

All these are before explained.

But that the Cause may appear plain of those surprising Effects which arise from a Puncture, or partial Division of the Nerves; the following Considerations, from Anatomy and Theory, are to be adverted to.

Nothing is more surprising in medicinal Observations, than that in the soundest Person the gentle Puncture of a Nerve so disturbs all the Parts of the Body, that nothing of his former Health remains: For intense Pain, an acute Fever, *Deliriums*, violent Convulsions, Inflammations and Suppurations, a Gangrene, and sometimes Death, succeed a very slight Wound of the Nerves: Besides, it is certain from Experience, that very inconsiderable Changes induced on the Nerves, sometimes surprisingly disturb all the Actions of the Body.

Thus tickling the Soles of the Feet produces great Changes in the Body; for almost all the Muscles and Tendons of the Body are forthwith agitated, Laughter is forcibly extorted, and the Strength immediately destroyed. There have, also, been Instances in which Convulsions and Death have been produced by so slight a Cause, and even a feigned Attempt to produce this uneasy Titillation has produced the like Phenomena, in Persons who have before experienced it. The simple Agitation of a Feather in the Nares or Fauces, the Crawling of Worms in the Stomach, or the Fluctuation of Phlegm, thereby inducing a slight mechanical Change on the Nerves dispersed thro' these Parts, greatly disturb the whole Body.

Tho' from the hitherto known Structure of the human Body the surprising Effects arising from a Change of the Nerves in the human Body cannot be accounted for; yet from such a Knowledge we acquire great Light in those Disorders which succeed Wounds of the Nerves. Hence we are from Anatomy and Theory to consider the following Things:

Every visible Nerve is a Congeries of smaller Nerves mutually connected by extremely fine Membranes, Arteries, and Veins, with interwoven Lymphatics, and then all covered with a common Membrane.

Thro' all these Vessels composing a Nerve, their proper Liquid flows perpetually from the Heart, *Cerebrum*, *Cerebellum*, and *Medulla Spinalis*. These Vessels have always a considerable contractile Force.

As for visible Nerves; we have only treated of such as can be viewed by the Eye: For, as is already observed, Anatomists have found that these may be separated into other smaller Nerves, which are still so many Congeries of Nerves as yet smaller. *Lewenboeck*, in *Tom. 3. Epist. 36.* informs us, that he found a Nerve no larger than an Hog's Bristle to consist of at least thirty other Nerves, each of which was covered with its proper Membrane: He afterwards observed the same thing in far smaller Nerves. He, farther, observed minute and tender Blood-vessels running between these nervous Fibrils. Anatomical Injections, especially in young Carcases, sufficiently evince, that a large Number of Vessels run thro' the Substance of the Nerves; all visible Nerves, therefore, derive the smallest Part of their Bulk from the nervous Substance properly so called, which draws its Origin from the medullary Substance of the *Cerebrum* and *Cerebellum*, collected into the *Medulla Oblongata*, and spinal Marrow. Slender Coats covering the small Fibrils, connecting Membranes, and Vessels of all Kinds dispersed thro' them, constitute the principal Part of every visible Nerve: Thus these inconceivably tender Vessels are defended, and safely conveyed to those Parts of the Body, where, laying aside their thicker Coats, they ought to perform the Functions of Nerves. The optic Nerve, furnished with Coats from both Membranes of the Brain, in its Course appears tough and firm; but when, laying aside its Coats in the Bottom of the Eyes, it is expanded on the Retina, it is so soft, that unless it was sustained by the equable Pressure of the circumambient Liquid, it would fall into a kind of shapeless Mucus. But it is certain, from anatomical Injections, that numberless arterial Vessels run thro' the Middle of the Retina.

All the Vessels which constitute a visible Nerve, receive proportional Liquids propel'd by the Force of the Heart and Arteries; nor are we to doubt the Existence of those small Vessels which constitute the Coats covering the nervous Fibrils, since anatomical Injections evince, that arterial Ramifications convey the impell'd Fluids thither. But that the Nerves themselves, properly so call'd, are pervious, and that there is a perpetual Motion of a subtle Liquid thro' them, cannot be demonstrated to the Senses: But if we consider that the medullary Substance of the *Cerebrum* and *Cerebellum*, which is all continuous to the cortical and vascular Substances, is spent in constituting the nervous Fibrils, and is continuous to them; that so large a Quantity of the purest arterial Blood is convey'd to the

the Brain; that when the medullary Substance of the *Cerebrum* and *Cerebellum* is either destroy'd or compress'd, the whole Function of the Nerves arising thence is abolish'd; that when the Nerves are ty'd in their Course, all their Action is destroy'd under the Ligature, but remains entire above it, it will be sufficiently obvious that the nervous Fibrils receive an highly subtle Fluid secreted by the Fabric of the *Cerebrum* and *Cerebellum*, and convey it, during the Whole of Life, thro' highly-distinct Canals, to all the Parts of the Body; that the different Operations of Sensation and Motion may be perform'd.

Every wounded Nerve, therefore, suffers, not only as it is a Nerve, but, also, because it contains all Kinds of Vessels, the Soundness of which, and their Action depending upon it, is injur'd by the Wound.

But because in their Origin from the medullary Substance of the Brain, the nervous Fibrils, being distinct, are in their Course cover'd with their proper Membranes, and thus remain separated from their adjacent Fibrils; and as the whole Congeries of Nerves constituting the visible Nerve is cover'd with a pretty thick Coat; the Reason is obvious, why every visible Nerve appears tough and hard, tho' that which is properly call'd a Nerve arises from the soft Pulp of the Brain. The whole Contractility, therefore, of a visible Nerve, by which its divided Extremities retire from each other, depends on the Coats covering the nervous Fibrils, and the Vessels dispersed thro' them.

When therefore the Parts of a Nerve are intirely cut thro' and divided, they recede from the Place of the Wound, towards the fix'd Parts to which they are connected, and hide themselves in the surrounding Solids, by which they are compressed; and by this means their own Orifices, and those of their Vessels, are closed; so that no other Damage happens, besides what is already mention'd.

If such a Nerve as is describ'd in the preceding Aphorism is intirely divided, the Coats covering all the Fibrils, as, also, the Covering surrounding the Whole of them, collected together by their Elasticity and Connection with the other Parts, are retracted on both Sides: But as considerable Arteries, when divided and retracted, are by the Pressure of the adjacent Parts, under which they are lodg'd, and their own Contractility, so closed up, as to discharge no Blood, it is sufficiently obvious, that the tender nervous Vessels, and those distributed thro' their Coats, are forthwith closed, and can no longer transmit the Humours convey'd to them. All the Functions, therefore, which depend on the Soundness of these Vessels, will be destroy'd, and the Symptoms before-enumerated will happen.

If a Nerve is cut, or prick'd, in such a manner that some of the small Fibres are dissolv'd which compose the large Nerve when united, the dissolv'd Parts receding, will draw the smallest Fibres which connected the small Nerves to each other, and to the Vessels; from whence there will arise a perpetual and slow Laceration, and therefore a very great, acute, and continual Pain: But the Parts still cohering, will alone sustain the Force which the entire Nerve sustain'd before. They will therefore be more distracted and lacerated, and consequently afflicted with a more acute Pain. By their Distraction they will, also, be so compressed, as to prevent the Circulation of their Fluid. When the one Part divided, and the other cohering, are thus affected, the intermediate Vessels are compressed; hence the Blood, Lymph, and Spirits, are compressed, acted upon, and accumulated; for which Reason there is an Inflammation produc'd by the Blood, Lymph, and Spirits, about the Parts.

Hence the adjacent Nerves and Tendons, together with their Coats, as, also, the Muscles and Vessels, are stretch'd, constricted, and convulsed; by which means the Membranes of the *Cerebrum*, *Cerebellum*, and spinal Marrow, are contracted and vellicated, and the Action of the Brain is disturb'd.

Hence naturally follows a Series of all the Phenomena before enumerated.

If a visible Nerve, consisting of many small Nerves, cover'd with their proper Coats, and inclosed in a common Membrane, is so wounded, that some of these nervous Fibrils, by their Union constituting the large Nerve, are divided, whilst others remain entire, all those Functions will be destroy'd which depended on the Soundness of those Fibrils, whose Cohesion is now abolish'd. Besides, as has been already observ'd, these separated Extremities of the Fibrils will more recede from each other: But this cannot happen without a Distraction and Laceration of the slender Membranes connecting the nervous Fibres mutually applied to each other, and thus an acute and continual Pain will be produc'd. But the Fibrils left intire, will now alone sustain all that Force which before they bore united, whilst by the various Actions of the Muscles, the Flexions and Extensions of the

Joints, and the Pulsations of the Arteries, the Situation of the Parts is chang'd: They will, therefore, be necessarily more distracted; whence an intense Pain will, also, be produc'd. For if we suppose an intire Nerve to consist of an hundred nervous Fibrils collected into one Congeries, and that by a Wound fifty of these are divided, the remaining entire fifty will be more than doubly distracted by the same Causes; because half of the Cohesion, by which they resisted the distracting Causes, is remov'd: It is shewn under the Article OBSTRUCTION, that every Cause which distracts and lengthens the Vessels, lessens their Capacities, and may consequently produce an Obstruction; whence numberless Misfortunes may arise. Thus we begin to perceive what Misfortunes arise from Nerves wounded, but not intirely divided; for the divided Parts receding on both Sides, will contract the Orifices of the divided Vessels, and hinder the free Passage of the Humours thro' them. The Fibrils, as yet cohering, are less able to resist the distracting Causes; hence they will be elongated, and lessen the Diameters of their Vessels: By this means the free Circulation of the Humours thro' those Vessels will be hinder'd; and by the Impetus of the succeeding vital Fluid on the obstructed Places, an Inflammation will be produc'd, not only in the large Blood-vessels, but the same may, also, happen in the other decreasing Series of Vessels, as far as those of the smallest, that is, the nervous Kind. What enormous Symptoms may happen from this, is evinc'd by the Gout, the Rheumatism, and arthritic Pains; in which Disorders an Inflammation of the tender Vessels produces the most racking Tortures: But an Inflammation once form'd, may be succeeded by all its different Terminations, which are very various, according as the Inflammation is in larger or smaller Vessels. After a Phlegmon, a mild Suppuration happens: An exulcerated Erysipelas in the small Vessels, discharges a thin ichorous Fluid: A true Rheumatism never suppurates; and a Gout lodg'd in the most subtle nervous Vessels, consumes the most solid Parts into a kind of Calx. Hence numberless other Misfortunes may arise.

As for the adjacent Nerves; such is the Frame of the human Body, that when one small Nerve is wounded, the adjacent Parts, and sometimes those considerably distant, are affected. When the external hard Crust of a Tooth, being divided or corrupted, lays bare the tender nervous Fibrils dispersed thro' the Substance of the Tooth, the Access of the cold Air alone afflicts with an intolerable Pain, not only the affected Tooth, but, also, the whole Side of the Head in which it is fix'd: So that the adjacent Parts are frequently raised to a considerable Tumor. But when the pain'd Nerve is destroy'd, by the Application of Alcohol, or the Extirpation of the Tooth, all the Pain ceases. In *Hildanus*, and other practical Authors, there are various Instances in which the slight Puncture of a Nerve or Tendon, has not only immediately affected all the adjacent Parts, but, also, so far disturb'd all the Functions of the Body, as sometimes to induce Death. But whether the Propagation of a Disorder in one Nerve to all the adjacent Nerves, and to the Brain, happens by a Continuation of the Membranes covering the Nerves, and which are esteem'd Productions of the Meninges; or whether it happens from the Irritation of the nervous Substance, properly so call'd, and which arises from the medullary Substance of the Brain, we shall not here dispute: It is sufficient for our Purpose, that, after Wounds of the Nerves, these Misfortunes ensue, and perhaps both these Causes may concur to their Production. Thus the Membrane lining the Pelvis of the Kidneys is, by a continu'd Course, convey'd to the Ureters, Bladder, and Urethra; and when a sharp Stone, lodg'd in the narrow Part of the Pelvis, vellicates this internal Membrane, a Pain, and troublesome Strangury, are often perceiv'd in the Extremity of the Urethra. When, in Venesection, the tendinous Membrane covering the Muscles of the *Humerus* and *Cubitus*, is wounded by the Point of the Lancet, soon after Pain, Inflammation, and other terrible Symptoms, are produc'd throughout this whole Membrane.

He who compares the Phenomena before-mention'd with what has been said in this and the two preceding Aphorisms, will easily see why so many, and so terrible Disorders, are produc'd by Wounds of the Nerves.

Hence, also, we understand what Sort of Puncture, Laceration, or Wound of a Nerve, is so dangerous, and why; as, also, why the same Things happen, with respect to Tendons, Membranes, and many Kinds of Vessels.

The more tense the Nerve is, and the fewer Fibres of the wounded Nerve remain entire, the greater their Distraction will be, the more violent Symptoms will be produc'd, and the more intense Pain will be present: But such terrible Disorders do not accompany a Nerve, which is by no means tense, and which is entirely divided. But that the like Misfortunes should happen to the Membranes, is not surprising, since they have many Nerves dispersed thro' their Substance; as, also, to the Tendons, which being

Continuations of the muscular Fibres, and consequently seem to arise from the Nerves, as has been already observ'd. The same will, also, happen in the Vessels form'd of a Convolution of the Membranes; thro' which, also, are disseminated the Nerves subservient to Sensation, Motion, and Nutrition.

Having already treated of the Definition, Causes, Effects, Diagnostics, Prognostics, and other Circumstances, of a simple Wound; it now remains that we consider its general Cure.

In order, then, to the healing of a Wound, it is necessary,

First, To take away whatever being left there, hinders its Union, whether it proceeds from the Liquids and Solids corrupted, from the wounding Instrument, or any other Cause.

Secondly, To supply what is lost by a Regeneration of what is taken away.

Thirdly, To unite the separated Parts, and keep them in Union.

Fourthly, To form a Cicatrix as like as possible to the natural Skin.

A Cure is such a Change of a living Body, as removes that Condition which is call'd a Disease, and restores that the Removal of which produc'd the Disease. But a Wound is a recent and bloody Solution of Continuity in soft Parts, made by an hard and sharp Body. The Cure, therefore, of a Wound, is the Restoration of the natural Cohesion of the Parts separated by the wounding Cause. Now whether there is a simple Division of Parts, before cohering; or whether there is a great Loss of Substance, made by the wounding Cause, the remaining Life in the Patient, by an inimitable Artifice, unites what is separated, and restores what is lost. Physicians and Surgeons remove whatever can hinder this salutary Effort of Nature, and supply what can assist it; and this is all that Art can do. Let those who think they can do more, attempt the Consolidation of the slightest Wound in a Carcase; let them apply the most celebrated vulnerary Balsams, and cherish the Part with an Heat equal to that of a sound Body; and still the Event will evince, that the Nature of a created Body is alone sufficient for a Cure, and that, without that Nature, nothing can be produc'd by Art. In the following Numbers are recounted all those Things which are always requisite to the Cure of Wounds.

1. Every thing lodg'd in a Wound of a Nature foreign to the Parts of the human Body, can never adhere to them, and will, so long as it remains there, always hinder the Union of the separated Parts. When the elevated Skin is divided by the Lancet, and a Ball of pure Gold put into the Wound, its Lips will never unite; but, for many Years, there will remain an Ulcer, daily discharging Pus: But if that foreign Body is remov'd, its Lips, unless become quite callous by their continual Attrition with the hard Body, will in a few Days be consolidated. It is no matter whether that foreign Body is a Part of the wounding Instrument, or something else, which has penetrated the Wound along with it; or whether the extravasated Humours, or solid Parts, are so chang'd by the wounding Cause, as to lose those Properties requisite to their being again united to the live Parts. In Battles, Balls discharg'd from Guns, when they penetrate the Cloths, often carry into the Wounds large Portions of the Cloths; by which means the Consolidation of such Wounds is often protracted for several Months, and often for several Years. A memorable Instance of this occurs in *Memoires de l'Acad. Royale des Sciences, l'An. 1731*. It is therefore obvious, that such Things are, if possible, to be remov'd.

2. If a Wound is accompanied with great Loss of Substance, the Lips cannot be united and consolidated till the lost Substance is restor'd by a new Regeneration; for they are, as yet, too far distant from each other: And tho' they should be forcibly brought into Contact by Suture, or adhesive Plaisters; yet under the united Lips there would still remain a Cavity, in which the extravasated Humours would be collected, and form a sinuous Ulcer.

3. The Parts of the Body between which the wounding Cause is forced, gradually recede more and more from each other; but that a Wound may be cur'd, it is requisite the separated Parts should be again render'd contiguous. Here Art assists Nature, by uniting the separated Parts, and so fortifying them, that they may remain in that State.

4. But this cannot often be done when a strong Suppuration has consum'd a large Portion of the *Membrana Adiposa*; or when a considerable Quantity of the Skin is carried off by the Wound: For, in this Case, the Cicatrix is always more solid, smooth, and shining, than the adjacent Skin.

These are the general Intentions to be pursu'd in the Cure of all Wounds; and how these Intentions may be obtain'd, shall be hereafter specified.

Impacted Fragments of Metals, Stones, Wood, Glass, Balls discharg'd from Guns, Thrombuses of Blood, morti-

fied Flesh or Membranes, and broken Bones, are first of all to be remov'd, if they are discover'd.

Such Cases frequently occur in modern Battles, when warlike Machines, loaded with various Fragments of Stones and Metals, are exploded upon the Enemy, and render the Cure of the Wounds highly difficult: All these, if left in a Wound, when the Wound begins to swell, and be inflam'd, confuse the Parts they touch, render them callous, augment the Inflammation, and at last make them degenerate into fistulous Ulcers, not to be cur'd unless they are extracted by Art, or discharg'd by a Suppuration excited in the adjacent Parts. The same Caution is to be observ'd, if Thrombuses of concremented Blood, or solid Parts of the Body, cut off, and remaining free from all Connection with the live Parts, are lodg'd in the Wound: But if the Fragment of a Bone as yet coheres with the live Parts, there is some Hope that it may be again united with them. But it is to be always observ'd, that if the Extraction of such foreign Bodies, lodg'd in a Wound, cannot be made, without the Dread of more terrible Misfortunes, then they are rather to be left, and their Separation committed to Nature.

But how we may determine whether they are to be remov'd, or left, will be shewn in the next Aphorism.

We are to judge whether any Body is to be left, or taken away, by considering the Nature of the Wound, of the wounded Part, of the impacted Matter, the Strength of the Patient, and the Symptoms that will follow.

In Wounds, especially those of a dangerous Kind, great Caution is requisite, in determining whether foreign Bodies, lodg'd in the Wound, are to be remov'd, or left: If after a due Consideration of all Circumstances, it appears that the Patient will, by an Extraction of such Bodies, live more commodiously, or longer, then they are certainly to be remov'd: But if from Anatomy, and the Functions injur'd, the Condition of the Wound appears such, that certain and sudden Death is justly to be dreaded, they are to be left, lest the succeeding Death of the Patient should be imputed to the Physician or Surgeon: For it is prudent not to meddle with Patients whose Cases are absolutely desperate. If the wounded Part cannot be reach'd with Instruments, in order to the Extraction of foreign Bodies lodg'd in it, such Bodies are, in like manner, to be left. Thus, for Instance, foreign Bodies lodg'd about highly-tendinous Places, large Nerves, or the Brain itself, cannot be remov'd without the greatest Danger. But some Bodies, according to the different Matter of which they consist, may be more safely left in Wounds, than others. Thus numberless Observations evince, that leaden Balls have without any Inconvenience been lodg'd for many Years in the Body, and afterwards often made surprising Ways for their own Discharge: But if they had been made of Iron, or Copper, becoming corrupted by the Rust, they would have far more irritated the Parts they touch'd. We ought, also, to have a due Regard to the Strength of the Patient: For if the Weakness of his Pulse, the Coldness of his Extremities, and the cadaverous Paleness of his Countenance, evince that his vital Strength is already much impair'd, we ought in Prudence to abstain from searching the Wound with surgical Instruments: For surprising Instances evince, that foreign Bodies left in Wounds have afterwards spontaneously discharg'd themselves, tho' they could not before be extracted without the greatest Danger. A memorable Instance of this occurs in *Journal des Scavans, l'An. 1735. Avril*. Many other Observations occur in practical Authors, which sufficiently prove that it is sometimes expedient to leave foreign Bodies in Wounds, since they will afterwards be excluded by the Assistance of Nature alone.

From what has been said we may determine the Instrument, and Manner by which such foreign Bodies are to be remov'd.

We must first examine whether by the Wound made, a Part of the wounding Instrument left may be extracted, without a Dilaceration of the Parts; or whether the Wound ought to be dilated; or whether the Body may be more commodiously extracted, by making a fresh Wound in the opposite, or any other Part. Thus feather'd Darts cannot be extracted from the Wound they make, without a great Dilaceration of the adjacent Parts: Hence, in such a Case, the Wound is rather to be dilated, or, if it is possible, the Dart is to be protruded thro' the opposite Part, after making a new Wound. Forceps, of various Bulks and Figures, are describ'd by surgical Authors, for extracting foreign Bodies from Wounds; but they are not all at once, and with a great Impetus, to be extracted; since it is more expedient, after the Dart is laid hold of by the Forceps, gently to agitate it, in order to know whether in any Part it is so fix'd, that it cannot be extracted, without a great Dilaceration:

ration: For in this Case it is rather to be left. But since in Battles Gunpowder has been used, the Balls discharg'd from Guns could not be commodiously extracted by the Surgeon's Forceps; hence they invented other Machines, especially a spiral Perforator, so conceal'd in a hollow Pipe, that it might be safely pass'd to the Bottom of the Wound, till it reach'd the Ball there lodg'd; then, by gently twisting about the Perforator, they so fix it in the soft Lead, as to extract it.

After a Wound is depurated in this manner, if any thing is taken away from the Body, it ought to be restor'd, by a Regeneration of Matter similar to that which was lost. This comes to pass,

First, If the arterial, lymphatic, and nervous small Vessels, are in such a Condition, as to receive and transmit their own laudable Liquids. And,

Secondly, If this laudable natural Liquid is carried into these Vessels in a fit Quantity, and with a proper Impetus.

After all foreign Bodies are remov'd from a Wound, we are to consider whether the Wound is such, that only a simple Division of Parts, before cohering, is made by the wounding Instrument; or whether some Part of the Substance of the Body is carried off by the wounding Causes. In the former Case nothing more is requisite, but an Union of the separated Parts; but in the latter it is necessary there should be a Regeneration of the lost Substance. Tho' it is commonly believ'd that Parts of the Body cut off will no more grow to the Parts to which they before adher'd, tho' applied to them, yet some Observations evince, that this is not always to be despair'd of. Instances of this are found in *Garengot's Operat. de Chirurgie, Tom. 3.*

Observations of this kind prove the Possibility of *Talipotius's* Method of restoring some lost Parts of the Body; such as Noses, Ears, and Lips. An Instance of this kind is given by *Paré, in Lib. 23. Cap. 2.* and another by *Hildanus, Centur. 3. Obs. 31.*

But such Instances rarely occur; when, however, some Part of the Substance of the Body is carried away by a Wound, the adjacent Vessels, being lengthen'd, by a surprising Artifice of Nature, again form or restore that which was lost. But that this may be done, two Things are requisite:

I. By the inevitable Effect of Life and Health, some Parts of the Body are necessarily lost, and these are restor'd by the Aliments converted into our Nature by the Action of the Vessels and Viscera. There is therefore in a sound Body, such a Property, as enables it, from the ingested Aliments, to supply as much as was lost, and of the same Qualities: But all this is perform'd by the vital Motion of laudable Humours thro' Vessels that are sound, and proportion'd to the Liquids. It is therefore requisite the Vessels should have these Conditions, by which they may receive, convey, and return such Liquids, as in Health flow'd thro' these Vessels. Hence if, by too strong Compression, or powerful Desiccatives, the Vessels are too much contracted, the Surface of the Wound will become dry, and inflam'd; nor can the Vessels transmit those Fluids which, in Health, mov'd thro' them. If, on the contrary, the Wound is treated with too emollient Substances, the relax'd Vessels will yield to the impel'd Fluids, and consequently be dilated so as to admit Humours which ought not naturally to be in them; and the Vessels, thus expanded beyond their natural Capacity, by their contain'd Fluids, will form fungous Flesh, which will always retard the Cure of Wounds. The happy Restitution, therefore, of the Substance lost by a Wound, so far as it respects the Vessels, depends upon procuring a due Strength to those Vessels, so that they may neither too greatly resist, nor too easily yield to the impel'd Fluids. But as, in order to restore the lost Substance, all the Vessels, constituting the Surface of a Wound, must be elongated; hence it will be expedient the Parts should be kept a little more soft and relax'd, than in a natural State. When a Surgeon daily views the Surface of a Wound, he may see whether a greater or smaller Degree of Softness is requisite to the Regeneration of what is lost: For if the Surface of the Wound appears dry, and of a deep-red Colour; and if a little Pus is generated, he immediately knows that the Vessels in the Surface of the Wound too strongly resist the impel'd Liquids, so as not to transmit them: But if, in every Point of the Wound, an equable Humidity, and moderate Heat, appear; if the Bottom of the Wound begins daily to be equally elevated, and its Sides equally extended to the Centre, he sufficiently perceives that the Vessels have a due Degree of Laxity, so that they may yield to, and be elongated by the impel'd Fluids. But if a Wound is overflow'd with too much Humidity, and its Sides and Bottom are suddenly and unequally raised, we conclude, that the Vessels are too much relax'd. Hence Medicines opposite to this become necessary.

These are the Things to be observ'd in a Wound, with respect to the Vessels, in order to the Regeneration of lost Sub-

stance: We shall now consider what is requisite in the Fluids, in order to produce the same Effect.

2. The Substance lost by the Wound is to be regenerated; but this Substance consists of Fluids and Solids, or containing Vessels, and contain'd Fluids: There must, therefore, be convey'd to the Part of the Wound a Matter in which are lodg'd the Parts requisite to the Regeneration of the lost Substance. But a natural and laudable Liquid, according to the Laws of Health, mov'd thro' the Vessels, contains in itself all the Parts requisite for this Purpose; for by its means are daily restor'd, both in the Solids and Fluids, the Parts lost from the Body by the Actions of Health; for Aliments do not nourish till they are by the Fabric of the Body chang'd into a Quality like that of the human Fluids, and, losing their own Nature, assume that of the Body. It is therefore requisite that so much Health should remain as is sufficient, from the Aliments taken, to produce laudable and natural Humours. Hence the Reason is obvious, why the Restitution of lost Substance is highly difficult, and often absolutely impossible, in cacoehymic Habits, but very easy in good Constitutions: It is, also, requisite there should be a due Quantity of this good and natural Liquid, so as equably to fill all the Vessels. Hence appears the Reason why the Cure is difficult in Patients who, by an Hæmorrhage, have lost a large Quantity of laudable Fluids; and this Difficulty is still augmented, because it is principally by the due Quantity of laudable Humours that the crude Aliments are chang'd into our Nature, and mix'd with the good Juices. Nor are these Circumstances alone sufficient; but it is, also, requisite, that the natural Liquids should be, with a proper Impetus of Motion, convey'd thro' the Vessels: For when this Motion is languid, Nutrition is defective, or at least deprav'd; as evidently appears in weak Habits. When the Fluids are with too great a Velocity carried thro' the Vessels, the Body is destroy'd, but not recruited; as appears in Animals fatigued by too hard Labour, and in those Diseases where the Velocity of the Circulation is too great.

All that Art can do is, to render the Vessels such as they were in Health, and procure a Circulation of laudable Fluids thro' them with a due Force: The rest will be perfected by Nature, who is generally sufficient for her own Purposes.

By this means there will be an Impletion, Humectation, Extension, Elongation, of the wounded, retracted, obturated, compress'd, and almost juiceless Canals; an Implication of them with the adjacent Vessels; an Application to others, which are near them; and this is brought about by the Assistance of the reticular Plexuses; and at last, by the Help of a good Fluid, Conglutination is accomplish'd.

It is already demonstrated, that Arteries, even of a considerable Bulk, when divided, are gradually contracted, and closed up; and that, in consequence of this Circumstance, unless they are very large, the Hæmorrhage stops spontaneously: It is therefore sufficiently evident, that when small Vessels are divided, they are closed by the same Causes, and the Effusion of the Humours is, by that means hinder'd. Hence, by the Action of the Fluids on the obstructed Orifices of these Vessels, are produc'd an Inflammation, and slight Fevers; by which the Humours, being forc'd with a considerable Force into the constricted Extremities of the Vessels, protrude, elongate, and open them; or, by a benign Suppuration, separate from the live Parts the totally dry and mortified Extremities of the Vessels. But these Vessels no longer confin'd by the Skin, are, by the Force of the Liquid mov'd thro' them, gradually extended and elongated, and their Mouths, being open'd, they discharge their Liquids into the Cavity of the Wound: Hence the whole Surface of the Wound appears moist with Pus, and rough, as it were, with small *Papilla*, which are gradually more and more elevated, and are only the pulposus Extremities of the protuberating Vessels; and when this happens equably in all the Circumference of the Wound, the Mouths of the growing Vessels mutually meet each other, are applied and united, and thus the lost Substance is restored. If, after the Wound is clean, the mucous Congeries of the growing Vessels is daily deterg'd by the Surgeon, that which ought to restore the lost Substances is destroy'd; hence the Cure is retarded, and the Surface of the Wound degenerates into the Nature of a fordid Ulcer. The Whole, therefore, that Art can do, in order to the Regeneration of lost Substance, consists in procuring to the Vessels, and the Liquids mov'd thro' them, those Qualities which are requisite to perfect Health; and taking care that the Impetus of the Fluids mov'd thro' the Vessels, be neither too strong, nor too languid: All the rest is perform'd by Nature, as is already observ'd.

But this Conglutination seems to happen by the Application of a new Substance, and not by the Interposition of a soldering Juice, which, like Glue, unites the divided Extremities of the Vessels.

Vessels. For we observe, that if the Vessels free from the Skin and *Epidermis* are contiguous, they forthwith grow together. Thus the Edges of the Eyelids, if excoriated, have in one Night's time been found to grow so strongly together, that there has been a Necessity for dividing them with a Lancet. The Fingers, also, when left contiguous, after the *Epidermis* has been destroy'd by Gunpowder, have grown very firmly to each other; so great is the Tendency of the open Extremities of the Vessels to unite with others like themselves.

And whilst these are with an equal Force happening from every Point, especially of the Bottom and Sides, the Cavity of the Wound, from every Part to the Centre, is fill'd with solid and liquid Matter, like those which were lost.

If all the Extremities of the Vessels in the Bottom and Sides of the Wound are equally open'd, the Motion of the Humours thro' the Vessels will act equally on all the Parts: Hence, if there is not a greater Resistance in one Part than in another, there will in every Point be an equable Elongation of the Vessels; but if there is a greater Relaxation in one Part, than in those adjacent, the Vessels will be there more distended, and elongated: Thus there will be form'd a fungous Excrescence, which, by compressing the adjacent Vessels, will hinder the equable Consolidation of the Wound. But whilst, from all the Circumference of the Cavity of the Wound, the lengthen'd Vessels meet each other, and are united, such a Structure of the Vessels is restor'd, as regenerates the lost Substance. But tho' we cannot affirm, that this regenerated Substance is precisely the same with that which was lost, yet it is certain, from all the Phenomena, that it is highly similar to it; since Experiments evince, that not only large Blood-vessels, but, also, those of the small perspiratory kind, are thus regenerated: For if the mucous Congeries of growing Vessels in the Cavity of the Wound is rudely touch'd with a linen Cloth, red Blood is discharg'd; and if that Congeries is but gently touch'd, a thin Fluid is evacuated. If a polish'd Plate of Metal, or a Looking-glass, is applied, there will be form'd on the smooth Surfaces of these Bodies a moist Spot, which will soon disappear, without leaving any Sordes; a sure Proof that there is such a Congeries of Vessels, which contain and emit a subtle exhaling Fluid. Hence we may, with a great deal of Probability, conclude, that since in the regenerated Substance there are Blood-vessels, and small exhaling Vessels; there are, also, intermediate Series of decreasing Vessels to be found in it.

But this Regeneration of lost Substance in the human Body has its proper Limits; for no one ever saw so much as the least Articulation of the Finger restor'd after it was cut off. The Vessels, indeed, on the Surface of the Wound, are so concreted, as to form a Cicatrix; but the Part remains defective during the whole Remainder of the Patient's Life. Hence the lost Substance of the human Body seems possible to be regenerated, when, from all the Circumference of the Wound, the elongated Vessels can concur and unite in its Centre. But when, by a simple Elongation of the Vessels remaining in the main'd Part, so many organical Parts are to be restor'd, after they are cut off, Nature proves defective, and, by a good Cicatrix, secures the Part. Philosophers are, however, justly surpris'd that an Advantage denied to the human Species should be granted to some other Animals. Thus the celebrated *Reaumur*, in *Mem. de l'Academie des Sciences*, l'An. 1712. has shewn, that the Claws of Crabs and Crayfish, when totally separated from their Bodies, may grow again, and that oftener than once: Nor has it, as yet, been evinc'd by Experiments, whether, in these Animals, the Power of producing new Members can be exhausted. Thus we see, that, in physical Affairs, particular Observations teach us a great many Things; but that general Conclusions, deduc'd from a few known Observations, often prove fallacious.

Therefore to this End is requir'd first a proper Diet, that the Chyle, Serum of the Blood, and nutritious Matter, may be mild, glutinous, not easily putrefying, but of easy Digestion and Assimilation. Farinaceous Decoctions, either crude or fermented, Emulsions, Milk, Broths, ripe Fruits boil'd, and mild Pot-herbs, are particularly proper, if given in small Quantities, and often repeated; above all Things taking care to guard against Repletion, Hunger, and Thirst.

The Parts of the lost Substance regenerated are restor'd by the Fluids convey'd to the Wound; but the Liquids flowing thro' the Vessels are either crude, in consequence of the Aliments not being totally chang'd into our Nature; or such as, by the Action of the Vessels and Viscera, having lost their own Nature, have assum'd all the Properties of our Fluids. The

Chyle, by the chylopoetic Organs form'd from the Aliments, is for many Hours convey'd thro' the Vessels along with the Blood, as is obvious, from the Experiments of Mr. *Lower*. Hence such a crude chylous Juice is, together with the other Humours, convey'd to the wounded Part, and that in a greater Quantity than to the other Parts of the Body; because there is less Resistance in the wounded Part. Hence it has been observ'd, in large Wounds, that almost the whole nutritious Matter has been discharg'd from them, in consequence of which, the Body, depriv'd of its daily Recruits, has wasted away of a slow Consumption. Unless, therefore, by a proper Diet, mild Chyle is produc'd, the Wound will, by the acrid Chyle, be daily irritated, and cur'd with great Difficulty. But we here speak of considerable Wounds; for slight Wounds do not require so great Caution: Besides, the open Orifices of the Vessels discharge into the Cavity of the Wound a large Quantity of a Liquid, which, after its thinner Part is reforc'd, or dissipated, is converted into Pus: If, therefore, the Chyle convey'd hither with the Blood, consists of such Parts as naturally incline too much to a putrid Degeneration, the extravasated Humours will by their Stagnation, and the Heat of the Place, degenerate into a putrid ichorous Matter, but will not be chang'd into laudable Pus: Such Things are, therefore, to be avoided. But since Rest is necessary to wounded Patients, and since, at the same time, as is shewn under the Article *FIBRA*, muscular Motion, and Exercise of Body, contribute much to the Assimilation of the crude Aliments to our Nature; hence it is obvious, that we ought not to exhibit to such Patients Aliments of hard Digestion, but such as may be easily digested and assimilated; otherwise a large Quantity of crude, and very little concocted, Juice is convey'd to the Wound. But the Regeneration of lost Substance in a Wound can only be obtain'd from such Humours as are concocted, and converted into our Nature.

We shall now enumerate the Aliments which, by their mild Quality, and easy Assimilation, are principally subservient to this Intention. Oats, then, Barley, Buck-wheat, and Rice, boil'd with Water, or the Broth of Flesh, yield such a mild and easily-digested Nourishment; nor do they putrefy. From the Meals of these, excellent Aliments are, also, prepar'd, by a gentle Fermentation, by which means the farinaceous Lentor is taken away. Hence well-fermented Bread, especially Biscuit, and weak Flesh-broths without any Fat, are of singular Service in Cases of this Nature. Emulsions of soft farinaceous Seeds, prepar'd by Trituration with Water, have almost the Nature of Chyle. Milk, diluted with an equal Quantity of Water in the Winter-time, but in the Summer mix'd with more Water, may be used for common Drink: Milk, also, gently boil'd with farinaceous Substances, yields a mild Aliment. Ripe Summer Fruits, by their grateful Taste, and mild cooling Quality, are of singular Service; but they are to be gently boil'd, in order to remove all their stultent Qualities. All soft Pot-herbs, such as Lettuce, Endive, Spinage, Skirret, Vipers-grass, Carrots, Goats-beard, and Parsneps, boil'd in Broth, are excellent.

But tho' all these Things are salutary, they may, nevertheless, prove noxious, if exhibited in too large a Quantity: For by this means the Body of the Patient will be oppress'd, a large Quantity of crude Chyle will be mix'd with the Blood, and the Condition of the Wound chang'd. But if the Quantity of the Aliments to be taken is so divided, that some of it may be taken every two Hours, it will easily be assimilated, and the Humours convey'd to the Wound, will always have nearly the same Properties: But when the Patients take a large Quantity of Aliments only twice a Day, the Blood, loaded with a large Quantity of crude Chyle, will at one time be convey'd to the Wound; but at another time the Blood, when the Chyle is subdu'd, will have another Quality: So that, by this alternate Vicissitude, the Condition of the Wound will be disturb'd. Hunger is equally to be avoided with excessive Repletion; for Hunger denotes that the Body requires fresh Supplies: And all the Humours, unless qualified by a fresh mild Chyle, will become more acrid, and half putrid. For the acrid and putrid Urine, and the cadaverous Breath of Persons who have suffer'd Hunger for a long time, sufficiently evince this Degeneracy of the Humours. But we ought, in a particular manner, to take care that the Patients should not be afflicted with Thirst; for Thirst denotes the Dryness of the Body, or a Stagnation of the Fluids, or something of an acrimonious Nature mix'd with them: But all these are highly prejudicial to a Wound, since, in order to the Restitution of the lost Substance, an equable Humidity, in every Point of the Wound, and a free Circulation, and mild Quality of the Fluids, are absolutely requisite. Hence moist Aliments, and the liberal Use of mild Liquors, are requir'd: For, by this means, the whole Body will be moisten'd in all its Parts, the Fluids will be more diluted, and capable of a freer Circulation; and the acrimonious Particles, which would otherwise

wife prove injurious; being diluted by the large Quantity of Drink, will be eliminated by Sweat, or Urine.

A Consideration of the Temperament of the Patient, the Season of the Year, the usual Way of Living, and the Nature of the concomitant Disease, will direct us in the Choice and Preparation of these Things, that they may be useful to the Patient.

All the Directions laid down, with respect to the Diet, vary according to the different Constitutions of the Patients, so that no general Rule can be given: When, in the time of War, large Numbers of wounded Men are in the Hospitals, many of them die, who might otherwise have been preserv'd, only because the same Aliments are given to all; for the Whole that is requisite here is, that the remaining Health be preserv'd in the wounded Person, or restor'd, if it is defective. But every Person has a kind of Health peculiar to himself; hence, tho' different Persons may have their Solids and Fluids compos'd of highly different Parts, yet they may both be sound: This is call'd the constitutional Sanity; to which we are, therefore, carefully to advert. For Physicians, by their proper Signs, distinguish the hot and the cold, the moist and the dry, the bilious, the sanguine, the phlegmatic, and the atrabiliarious Constitutions; and observe, that various, and even opposite, Aliments are proper for Persons of different Habits: So that each may preserve a perfect Health. Thus, for Instance, when the Constitution of the wounded Person is known to be aqueous, and cold, thin diluting Drinks are to be avoided, and corroborating and rousing Substances exhibited: But if the Humours are thick and compact, the solid Parts tense and firm, the Constitution is said to be hot and dry; and then these Things are beneficial, which would have been hurtful in the other Case. Hippocrates, in *Tr. de salubri Victus Ratione*, tells us, that "Those who are of a fleshy soft Habit of Body, and of a reddish Colour, ought for a great Part of the Year to use a dry Diet; for their Constitution is moist: But such as are of hard slender Constitutions, or of a yellowish or blackish Colour, ought to use moist Aliments for a considerable time; because their Constitutions are dry."

But the various Seasons of the Year require a different kind of Life in the same Person: For, during the Summer Heats, Degeneracies of the Humours quickly happen; but in the Cold of the Winter they are brought on more slowly: For the Flesh of Animals can, in the Winter Cold, be preserv'd for several Weeks without Corruption; whereas the same Flesh would have been wasted to a putrid Gore, in a few Days, during the Heat of the Summer. Hence the sagacious Antients carefully distinguish'd the various Methods of Life, according to the various Seasons of the Year. Thus in the Winter they recommended liberal Eating, generous Liquors, but in a small Quantity, eating few Pot-herbs, and only such as were of an heating and drying Nature, and all roasted Aliments: But in the Summer they recommended a large Quantity of thin Drink, boil'd Aliments, and a large Quantity of Pot-herbs. In the Spring they order'd the Quantity of Drink to be gradually increased, but to be more diluted; instead of roasted Meat, they substituted that which was boil'd: They, also, gradually lessen'd the Quantity of the Aliments, lest a great Change should be suddenly induc'd on the Body; and thus they proceeded to their Summer Diet. Then, in the Autumn, they increased their Aliments, and diminish'd their Drink, tho' they order'd it to be more generous, till at last they came gradually to their Winter Diet. But as Battles generally happen in the Summer-time, and Flesh-broths are then only given to the wounded Persons, they are often in a very languishing Condition, and earnestly desire acidulated Drinks, and ripe Fruits, which, however, they are often forbid.

Besides, the various Ages of Patients indicate different Regimens, with respect to Diet.

Custom, also, which justly deserves to be call'd a second Nature, is, in this Case, to be consider'd. If the hardy Ploughman, accusom'd to live on coarse Bread, and salted or smok'd Flesh, in order the better to sustain his daily Fatigues, is wounded, and constrain'd to live on Flesh-broths alone, his Strength will be soon impair'd. Hence more solid Aliments safely may, and even ought to be exhibited to such a Patient. Thus Hippocrates, in *Aphor. 50. Sect. 2.* tells us, "That Things we have been long accusom'd to, tho' worse, are usually less troublesome than those Things we are not accusom'd to." The same Author, also, in his *Treatise de Victu Aetiorum*, tells us, that People easily bear Aliments they have been accusom'd to, tho' they are not naturally good; whereas they ill bear those Aliments they have not been accusom'd to, tho' they are not of themselves bad. He, also, asserts the same concerning Drink. Hence the prudent Physician ought to make a due Allowance for the Custom of the

Patient; tho' in so doing he should run counter to the general Rules of his Profession.

As for the Nature of the concomitant Disease; we have hitherto treated of the Methods to be pursu'd, when a healthy Person is wounded: But if there is a considerable Cacochymy before the Infliction of the Wound, such a Regimen, with respect to Diet, ought to be order'd, as is most contrary to that Degeneracy of the Humours which is to be dreaded from the Disease, or the Cacochymy accompanying the Wound. If, for Instance, a putrid scorbutic Cacochymy is present; or if, by a violent Fever, all the Parts tend to a Putrefaction; we use scarcely any thing but Preparations of Milk, Oats, Rice, and acescent Summer Fruits: But we ought carefully to abstain from Eggs, Flesh, and Broths prepar'd of them. If a languid mucous Sordes is lodg'd in the whole Body, the languid Strength of the Patient is to be excited, by roasted Flesh, Wine, and Aromatics.

From all these, accurately known, and mutually compar'd, we conclude what Meats and Drinks are to be exhibited, and in what manner they are to be prepar'd: For a great Diversity of the same Aliment arises from the different Method of its Preparation. Recent Veal, when boil'd, yields a Broth which may be exhibited even when there is some Dread of a putrid Degeneracy in the Humours, especially if it is mix'd with a small Quantity of Lemon-juice; but if the same Flesh, left for some Days in the open Air, is boil'd, it yields a Broth which becomes putrid much sooner: But when Veal is roasted, it is still more dispos'd to Putrefaction; because its Salts and Oils are render'd more acrid by the Fire. Crude farinaceous Substances are hurtful to People of phlegmatic Constitutions, but they may be used when fermented. The same holds true with respect to many other Preparations of Aliments.

Whatever is acrid, or too much augments the Impetus of the Blood, is to be carefully avoided; for which Reason, saline, aromatic, and acid Substances, together with acrid Pot-herbs, and Wine, are bad for Wounds.

So mild and benign is the Disposition of our Humours in Health, that the Blood itself, and all the Liquors secreted from it, except the Bile and Urine (which, however, owe their Acrimony chiefly to Rest and Stagnation), that, instil'd into the Eye, they excite no Pain: Wherefore, since the Loss of Substance, which we suffer in Wounds, is to be regenerated and recruited by Supplies from these Humours convey'd to the Part affected; it seems highly to deserve our Care, that nothing acrid or stimulating, or that is easily susceptible of an acrimonious Quality, be receiv'd into the Body: For acrid Things are noxious to Wounds, by irritating the crude Parts, and, by their Stimulus, exciting a greater Motion in the Humours, and so increasing the Impetus of the vital Liquid upon those extremely tender Vessels which repullulate in the Wound; whence they often degenerate into a fungous Flesh; or an Inflammation, excited by that Increase of Motion, renders the Superficies of the Wound imperforable, by obstructing the Capillaries, whence the Cure is further retarded: For whatever is thus affected, must again be separated by undergoing a Suppuration.

All Stimulants, therefore, by whatever Title recommended, are in their own Nature prejudicial to Wounds, the Body of the wounded Person being supposed to be in Health. But if, for Instance, the Patient at the same time labour'd under a putrid Cacochymy, an Ingestion of Acids would be of Service, instead of being detrimental. But we would not be understood as if a few Grains of Salt, or some Drops of Juice of Lemon, added to Broths, would hurt the Patient; for the Addition of so small a Quantity might be useful, by way of Precaution, against a Degeneracy of these Liquors towards a Putrefaction; and can by no means prove Stimulants of the vital Forces: For if some such thing was not mix'd with the Broths, the Patient would in a short time abhor them.

The Use of Wine is disapprov'd, for the same Reasons, unless where Custom, or a Languor, demand the contrary: For Multitudes indulge themselves every Day in drinking Wine, and other spirituous Liquors; and if they should be compel'd to abstain from them, would immediately languish, and be disturb'd in all the Functions of their Body. For such Subjects, therefore, a moderate Quantity of Wine, either pure, or diluted, as Custom, or the Measure of Strength, shall seem to require, cannot but be proper.

Meats, also, subject to Putrefaction, Broths too thick, with alcalescent Herbs, as Radishes, Cresses, Cabbage, and the like, are improper, and prejudicial.

We are not only to attend to the Nature of Aliments at the time of their Ingestion, but to the Mutations to which they are subjected by the Heat of the Body during their Residence in the internal Parts. For, as we before observ'd, the nutritious Humours, which are generated of the Aliments, will be convey'd to

to the Wound, and there be partly discharg'd thro' the open Orifices of the Vessels, into its Cavity: If these Aliments, therefore, are in their own Nature very subject to Putrefaction, it is to be fear'd that the Humours which take their Course to the Wound will be converted not into good and laudable Pus, but into a putrid Ichor: And since Fish, especially Sea-fish, will very soon putrefy, nor can be kept unless season'd with much Salt; for this Reason they are forbidden. Thick Flesh-broths, Jellies prepar'd of Shavings of Hartshorn, or Scrapings of Ivory, will, within the Space of four-and-twenty Hours, in Summer-time, dissolve into a putrid kind of Liqueur. To this it may be added, that such thick Broths oppress the Stomach, and are not easily digested. It is a Property in some Plants, after a spontaneous Putrefaction, not to become aced, as do Multitudes of others, but to be resolv'd into a fetid, volatile, pinguious Alkali. In some Plants there is an acrid, alkaline, volatile Salt, to be found even before Putrefaction; as in Radishes, Mustard, Cresses, and the like; which are all hurtful to Wounds; because they are too much inclin'd to putrefy, and irritate the Part with their acrid Stimulus. But the greatest Danger is from those which are subject to putrefy; because all our Humours have a natural Tendency to a putrid Degeneracy. But those Vegetables which in their own Nature are aced, resist the spontaneous Degeneracy of our Humours; whereas the former conspire with it, and promote it. See the Catalogue of calefcent Plants, which are injurious in this Case, under the Article **ALKALI**.

Foods difficult to be converted into Chyle and Blood, as are those harden'd by Salt, Smoak, or the Air, or abounding with Fat, as Bacon, fat Fishes, as, also, Geese, Ducks, and the like Birds, which feed on Fish; with viscid Aliments, as grofs, leguminous, crude, farinaceous Foods, and Eggs, are bad Aliments.

They who daily exercise their Bodies with hard Labour, feed heartily on the hardest Meats, and very well digest them, but care not for lighter Food, which, indeed, would not supply the Strength necessary for sustaining the Body under so much Toil and Fatigue as they are oblig'd to undergo. But they who lead an idle Life, find themselves very much disorder'd after eating Meats of hard Digestion; whence it may be taken for a general Rule of Diet, with respect to Persons in Health, that *the harder the Labour, the harder must be the Food*. For hard Meats, which are not easily converted into good Chyle, add Weight and Inertness to a Body at Rest: And since Rest is necessary in Wounds, such Foods will not, in that Circumstance, admit of a good Digestion, and due Assimilation, which latter is absolutely requir'd, in order to the Regeneration and Restoration of the lost Substance in the Wound. But here some Allowance is always to be made for Custom, since they who have all their Life-time been accusom'd to such hard Meats, cannot, without Difficulty, be brought to live on lighter Foods.

The Flesh of Animals and Fishes, harden'd with Salt, or in the Smoak, or dried in the Air, are far more difficult to be converted into good Chyle and Blood, than if they were fresh and new; but fat Things are most prejudicial in this Case, as being always very difficult of Digestion, and being long retain'd in the Body, contract a very bad sort of rancid Acrimony. If a weak Person eats plentifully of Bacon at Dinner, he will be subject, in the Evening, to Eructations of a fat Oil, which burns the Fauces, and, being thrown into the Fire, kindles up a Flame; so long is this pinguious Substance retain'd in the Stomach undigested; and, tho' fluid, is not transmitted thro' the *Pylorus*. The same is true of fat Fishes, as Eels, Salmon, and others, and particularly of the Livers of Fishes; in which there is such a Redundance of Oil, that it may be expressed pure: And tho' this mild kind of Oil be extremely grateful to the Palate, it is very speedily converted into a very noxious rancid Matter. Hence a skilful Surgeon will know whether his Patient has indulg'd himself in such Food, by an immediate Alteration in the Wound for the worse: For the oleous Particles, being convey'd to the Wound, there obstruct the Capillaries, and, being render'd more acrid by Settlement and Heat, excite an Inflammation difficult to be resolv'd. And because this oily Matter very much abounds in many Fishes, whose external Superficies is defended by its Transudation, and their Bodies secur'd from Diffuence and Maceration in the Water in which they live; hence Birds which feed on Fish are difficult of Digestion. For tho' Aliments receiv'd are, by the natural Functions, converted into the Nature of the Receiver, yet there often remains something of its former Qualities; whence we observe such different Tastes in the Flesh of Animals, according to the Variety of Foods in which they live. Ducks, Geese, and the like Birds, if they live only on Fishes, their Flesh will have the nidorous and ungrateful Smell of Fish; and tame Hares, fed upon Cabbage-leaves, will have an abominable Faetor at the Table: The Patient, therefore, is directed to abstain from such Foods.

Again; all the grosser Kinds of leguminous Foods, or Pulse, and crude, farinaceous Vegetables, generate a viscid Chyle, whose Viscidness, by hard Labour and Exercise, may be subdu'd; but in Persons at Rest is productive of numerous Disorders.

And, in the last Place, Eggs, tho' justly recommended as an Aliment proper for restoring weak Bodies, if they are recent, and diluted in Broths, and especially their Whites; yet as they are subject to Putrefaction, are, in such Cases, sparingly to be used; but if they are harden'd by Boiling, they are observ'd to be difficult enough of Concoction.

To the due Cure of Wounds are conducive such Medicines as remove the Impediments to Consolidation, and are generally exhibited in the Form of a Decoction. These Medicines are various, according to the Variety of the Impediments which are to be remov'd; for none will suit all Cases.

We have hitherto treated of such things as are to be observed in a Regimen of Diet for Wounds, to the end that good Liquids, being convey'd through sound Vessels to the wounded Parts, may procure a Restoration of the lost Substance. But the wounded Person was there supposed to be healthful in other respects; and, therefore, if there be either in the Body of the Person affected, or in the wounded Part itself, any corporeal Circumstance which proves an Obstacle to a Regeneration of the lost Substance, it is to be removed. Inquiry, therefore, is to be made about this Impediment, whether it be seated in the Fluids or Solids, or in both; whether it lies in the Wound itself, or in such things as are convey'd to the Wound by means of the Circulation; or, whether the Humours by too impetuous, or too remiss a Conflux to the Part, disturb or hinder a Regeneration. Since, therefore, the Nature of such an Impediment may be so various, and even so far, that the Consolidation of a Wound may be impeded by opposite Causes, it plainly appears, that there can be no such thing as an universal Remedy, and that they are vain Boasters who pretend to it. *Helmont*, under a false Persuasion that Pus was generated in a Wound by an Acid, would have every vulnerary Potion contain an occult Alkali, and that of the volatile Kind. *Blas humanum*, No. 53. Others cry up their own Nostrums; and hence it is that we are over-stock'd with such a Variety of celebrated Formulæ of vulnerary Decoctions. But let there be only a just Motion of good and laudable Fluids through the Vessels to the Wound, and the thing is done which was required. The Art of Medicine, therefore, can do no more than remove or correct an Impediment, when it is known, by proper Remedies: And this is the full Extent of its Power; all the rest of the Work is perform'd by Nature. But those vulnerary Remedies were generally prepared in the Form of Decoctions, because by this means the Virtue of the Medicines diluted with Water might conveniently mix with the Blood, and be equally distributed through the whole Body. The various Sorts of Medicines required in these Decoctions are comprised under the following Heads:

For this Reason they are chosen, as the Nature of the Case requires, out of Attenuants, Inspissants, Mitigants, or Stimulants, such as are endued with a singular Virtue of correcting the contrary Quality, Aperitives, Laxatives, and Astringents, and consequently oftentimes out of Opposites.

Attenuants: If it appears by Observation of Signs, that the Impediment to the Cure depends on too great a Spissitude of the Humours, which incommodes their Course through the Vessels, it is plain, that the proper Vulneraries in this Case, are all such Remedies as divide and attenuate the Humours to such a Degree as to facilitate their Passage through those Vessels, in which, by the Laws of Health, they are to flow. It has been demonstrated under the Article **OBSTRUCTION**, that this Immeability, or Incapacity of Circulation of the Fluids, may proceed from various Causes, for which several Remedies are recommended under the same Article, by which these Causes may be removed or corrected. Hence again arises a vast Variety of vulnerary Medicines with regard only to their Way of Action by Attenuation. For quite other Remedies are required for attenuating an inflammatory Spissitude, than what are adapted to an atrabilious Tenacity, or cold glutinous Lensor of the Humours, by which they are incapacitated for Circulation. The following vulnerary Decoction and Drink are of an attenuating Virtue:

Take of the Leaves of Spurge-laurel, Male Speedwell, Rue, each one Handful and an half; Root of Avena, one Ounce; Flowers of the Lesser Centaury, two Pugils: Boil them in three Pints of Water, and with it mix Salt of Carduus Benedictus, one Dram; Syrup of the Five opening Roots, three

three Ounces. The Dose is four Ounces, four times in a Day, warm.

Inspissants.] In too great a Thinness, or aqueous Languor of the Fluids, inspissating Remedies take place. But this Thinness of the Humours is either attended with an Acrimony, as it often happens in the Scurvy, where the thin and acrid Blood is frequently extravasated from the Capillary Vessels, and forms scorbutic Ecchymoses, [See ECCHYMOSES.] and in this Case very soft and glutinous Inviscants are required; or else this Tenuity and Incompactness of the Humours is owing to the Weakness of the Vessels, and their not acting with sufficient Force upon the contained Fluids; and then the proper Remedies are all such vulnerary Inspissants as augment the Force of the Vessels; and of these we have treated under the Article FIBRA. And hence it appears, also, that opposite Remedies are recommended under the same Head, *Inspissants*; for such Medicines as are proper in the former Case, would be very prejudicial in this last. The following is a vulnerary inspissating Drink:

Take of Orpine, *Consolida major & minor*, Mallow, Pellitory of the Wall, each one Handful: Boil them in three Pints of Water, and mix with it two Ounces of Syrup of Marshmallows. The Dose is four Ounces warm four times in a Day.

Mitigants.] These are such Remedies as by their soft and particularly oily Particles, involve and obtund all the acrid Corpuscles in such a manner as to render them unactive. Hence the Medicines here meant, are not such as are induced with a singular Quality opposite to a certain kind of Acrimony, but such as by a soft Viscidity obvolve, or envelope and mitigate all manner of acrid Particles. Such especially are all those Remedies which the Shops call *Emollients*, which mitigate the Acrimony of the Fluids, and soften and lubricate the solid Parts of the Body.

A vulnerary mitigating Drink:

Take of Seeds of White Poppies bruised, three Ounces; Flowers of Mullein, two Ounces; Leaves of Bugle, two Handfuls; Root of Scorzonera, two Ounces; Root of Liquorice, an Ounce: Boil them in three Pints of Water. The Dose is four Ounces warm four times in a Day.

Exciting Remedies, or Stimulants.] When the vital Forces are in a languishing State, and a Coldness, Inertness, Paleness, and a mucous State of the Humours are predominant, without Signs of an attending Acrimony, then all such Medicines as by a grateful aromatic Stimulus increase and quicken a languishing Motion, are proper to be advised; of which Nature are Aromatics, Wine, and the like.

A vulnerary stimulating Drink:

Take Roots of Masterwort, and Swallow-wort, each one Ounce; Leaves of Rue, Scordium, each one Handful; Seeds of Burdock bruised, ten Drams; Seeds of Cardamom bruised, four Drams; Flowers of Lavender, and the Lesser Centaury, each two Ounces: Boil in three Pints of Water, and exhibit four Ounces warm four times a Day.

Such as are endued with a singular Virtue of correcting a contrary Quality.] This Disorder must first be known and discovered, before we can fix on an opposite Remedy endued with this singular Property; and the Fault here must lie either in the Solids or Fluids, or in both. As to the Solids, the Disorder may consist in their too great or little Cohesion; for Remedies in these Cases, consult the Article FIBRA.

Vulnerary Drinks endued with a singular Virtue of correcting their opposite Quality:

1. For a Corrective of a glutinous Quality, see the Attenuating Drink prescribed above.
2. For a peccant Acid:

Take of Mustard-seed, half an Ounce; Root of wild Radish, Leaves of Hedge-mustard, and Cresses, each two Ounces: Give them a slight Boiling in two Pints of Water, covering the Vessel. The Dose is two Ounces four times in a Day.

3. For an Alkali:

Take of the Root of sharp-pointed Dock, two Ounces; Leaves of Sorrel, two Handfuls; Root of Wood-forrel,

one Ounce; Flowers of Borage, twelve Drams: Boil them slightly in two Pints of Water, and exhibit as the preceding.

4. For a peccant oleous Quality:

Take of Tamarinds, two Ounces; Crystal of Tartar, six Drams; Roots of Grass, five Ounces: Boil in two Pints of Water, and with the strained Liquor mix two Ounces of Rob of Elder; exhibit as before.

Aperitives.] By this Name are called all those Remedies which promote a free Circulation through all the Vessels; for which Purpose are required a due Mobility of the Fluids, and a just Aperture of the Vessels. Medicines for these Effects are, also, various, as they are adapted either to the Diseases of the Solids or the Fluids, which obstruct the free Passage of the Humours through the Vessels.

Laxatives, Astringents.] Either of these will be found necessary with regard to the undue Measure of Strength or Weakness in the solid Parts.

From the Premises it appears, that there is no such thing as a general Remedy, which is of Virtue sufficient for removing all these Impediments; but that there are particular Medicines accommodated to each Case.

In our Choice of these Medicines we are directed by the Nature of the Disease, and the general Titles of the Medicines, under the two foregoing Aphorisms.

When we are acquainted with the Age, Sex, Temperament; and Way of Life, of the Patient or wounded Person, and the Diseases which may have preceded, or now attend the Wound, we thence furnish ourselves with Indications of what ought to be done, and by what Remedies. To illustrate the Matter by an Example: If a Person of a close Contexture of the Solids; and an atrabilious Tenacity of Blood, happens to be wounded, the Wound will be dry, and not discharge good Pus; and if it be in the Summer-season, the Patient very hot and thirsty, and makes but little Urine, and that high-coloured, and of a rank Smell, in that Case Decoctions of Avens, Borage, Bugloss, and the like remarkably mollifying and demulcent Herbs in Whey, or pure Water, with an Addition of Syrup of Violets, Juice of Lemons, Rob of Elder, or the like; drank in good Quantities, with an Application of warm Cloths dipt in the like emollient Decoctions to the wounded Part, will in a short time change the State of the Wound, the Dryness will be corrected, the diluted Humours will take their free Course thro' the relaxed Vessels, and the Wound will be happily cicatrized. But if another Person happens to be wounded in the Winter-time, who is of a pale and cold Complexion, and appears all over bloated from a lax Contexture of the Solids, and a mucous Coldness and Inactivity of the Humours, and has besides lived an idle Life, his Wound will appear pale, cold, and somewhat swelled, and will continue in the same State without much Alteration. If the Patient in this Case be treated in the same Manner as the other wounded Person, he would become much worse, both as to his Wound, and the Condition of his whole Body. But if, on the contrary, you treat him with Infusions, or small Decoctions of the Roots of Avens, Masterwort, Elecampane, Angelica, Contrayerva, *Virginian* Snake-weed, and the like, with a moderate Addition of Wine; he will in a few Hours begin to be heated, and to sweat; and the Colour of his Wound will be changed from pale to red, and a new Life, as it were, will return into the flaccid Parts, the lost Substance will be regenerated, and the Wound will be consolidated. If the wounded Person be very hot and feverish, after Venesection administered, Decoctions of Tamarinds, Sorrel, and the like, will be of Service. But where we cannot attain to so clear a Knowledge of the latent Impediment, and the vital Forces are in a pretty firm State, and capable of putting in Motion a large Quantity of such Decoctions, in this Case we exhibit Decoctions of China Root, Sarsaparilla, Scorzonera, Skirrets, and the like; for these are Remedies which dilute, attenuate, dissolve without Violence, relax and open the Vessels; and by that means cause a just and equable Circulation; and a plentiful Elimination, by way of Urine and Sweat, of many Corpuscles, which by their Stay would be very injurious to the Body; this is all that can be done in the present Circumstance.

A dry and moderately warm Temperature of the Air, free from putrid Exhalations, and frequently renewed, is always best for Wounds.

When Multitudes of wounded Persons lie sick together in Hospitals, in one Room, the Air is filled with putrid Exhalations

tions, whence the Sick are very much incommoded, and many of them die, who might otherwise have been saved; for which Reason those Places ought frequently to be aired by opening the Windows, that fresh Air may be admitted, and the putrid Vapours dissipated. Suffumigations are much recommended for this Purpose; but fresh Air is more comfortable to the Patients. But a Want of fresh Air is most of all prejudicial in Wounds of the Head, as we are taught by Observation. Moreover such a Temperature of the Air is required, as is qualified for cheering and refreshing the Patient by its mild, and, as it were, vernal Warmth. For a cold Air is always hurtful to Wounds; for the Parts which are stript of their Integuments by the Wound, are immediately sensible of the Cold, to which they are unaccustomed, and are very much incommoded by it. Hence it is that we are told by *Hippocrates*, 5 *Aph.* 20. that "Cold is biting to Ulcers, hardens the Skin, excites Pain without Suppuration, and produces Blacknesses, feverish Rigors, Con-vulsions, and a Tetanos." But besides a Warmth, a Dryness of the Air is, also, required, since an hot and moist Air is very much disposed to Putrefaction; for in such a Season the Flesh of slaughtered Beasts is soon corrupted, and dissolves into a putrid Sanies. We know indeed how to procure a Temperature of the Air by artificial Means, in what manner we please, according to the Exigencies of the wounded Patients; for by kindling a good Fire, particularly of aromatic Woods, we diminish the Cold of the Air, and correct its Humidity. If the Season be too hot and dry, by sprinkling the Floor several times in a Day with cold Water, or strewing the same with the green and flourishing Branches of the Elder, Lime, or Willow-trees, dipt in Water, we can procure a very grateful Refrigeration of the Air. Such a Temperature of the Air, as the present Exigence requires, is demonstrated by the Thermometer and Hygrometer.

The Belly is to be kept soluble by the Use of Emollients, Laxatives, and Eccoprotics.

We speak not here of such Medicines as cause an Evacuation of the Belly or Intestines in a violent manner, for this is not the thing here required; but the Intention to be answered is, that the Patient may go to Stool without much forcing and straining himself. For we see Persons who discharge their hard Fæces with great Difficulty, hold their Breath with strong Efforts, and have their Faces strained and red, and sometimes even livid. By such Efforts an Hæmorrhage may possibly return to the Wound, and those Parts which began to unite in a Coalition be again dilacerated, especially if the Wound be inflicted on the Parts near the Anus. Hence it is prudently ordered, that such Patients as on account of extracting the Stone, or for a Fistula in Ano, are to have a Wound inflicted on those Parts, should, some Days before the Operation, have their large Intestines evacuated by some gentle Cathartic and Clysters, so that no Fæces may remain; after which, for some time, they are allowed nothing but Broth of Flesh, sufficient to sustain Life, but scarce leaving any Fæces in the Intestines; so that after the Operation is performed, they can live for a long time commodiously enough without going to Stool. Hence we are told by *Hippocrates*, *Lib. i. de Morb.* that Costiveness is bad for a wounded Person.

The Belly is evacuated without much Straining, if the Fæces be soft, and the intestinal Tube sufficiently lubricous to admit an easy Descent of the Fæces. Hence it is, that, in lean and slender Bodies, the Belly is often costive; for in such Subjects every thing that is soluble in the Fæces is exhausted by the strong Force of the Intestines, whence they become very dry, compact, and hard; and at the same time the Intestines, for want of being sufficiently lin'd with a soft smeetic Matter, afford but a difficult Passage for the Fæces. For this Reason, very fat Broths, very soft Greens, emollient Decoctions, and mild expressed Oils, by mollifying the Fæces, and lubricating the Passages, will answer this Intention. The like Substances injected in Form of Clysters have the same Effect, and are of particular Service in Adhesions of the hard Fæces to the last Intestines, or near the Anus; for, in that Case, they give immediate Relief: Whereas other Exhibitions require a longer Time for their Conveyance to the affected Places. And it is often to be fear'd, that a sudden Tenesmus, or Desire of going to Stool, being excited, the wounded Person will be obliged to strain hard, and make strong Efforts, for the Excretion of the indurated Fæces.

EMOLLIENT REMEDIES, for the Purpose aforesaid, are,

1. Fat Broths, of fresh or unsalted Beef.
2. Mollifying Greens boiled in Broth, a Catalogue of which you have under the Article FIBRA.
3. Emollient and moistening Drinks and Clysters, specified under the aforesaid Article.

4. Oils, especially such as are expressed and recent, particularly Oil of sweet Almonds, and Oil of Olives.

Laxatives are almost the same as Emollients.

After the Exhibition of these emollient and lubricating Substances, or, as it is often practised, in Conjunction with them, are given such Things as, by their gentle Stimulus, promote the Excretion of the abdominal Fæces, without disturbing the Body, or rendering the Excrements liquid: For after taking Purgatives, the Belly is always observed to be bound. But such Medicines as are for our Purpose, are called *Eccoprotica* [see that Article], Eccoprotics, because they only expel the gross Fæces contained in the Intestines.

ECCOPROTICS are,

1. Ripe, Summer, acido-dulcid, pulpos, and succulent Fruits; particularly Winter-cherries, Berries of Elder and Dwarf-elder, Figs, all Sorts of Garden-cherries, Cloudberries, Berries of the Stone-bramble, Strawberries, Jujubes, Apricots and Peaches of the common Sort, white and blue Garden-plums, Damask Prunes, common Prunes, Prunellas, and red Plums, white, black, and red Currants, Blackberries, white and red Raspberries, Sebestens, Tamarinds, all Kinds of Grapes, Cranberries, and Gooseberries.
2. The recent Juices and Musts of these Fruits.
3. Cassia, two Ounces; Manna, two Ounces; Tamarinds, two Ounces; Pulp of Tamarinds, two Ounces; Juice of pale Roses, one Ounce; roasted Aloes, six Grains; Raisins, four Ounces; Galbanum, half a Scruple; Roots of Polypody of the Oak, an Ounce and an half; Rhubarb, a Scruple and an half; Infusion of Rhubarb, one Dram; Syrup of Marshmallows, three Ounces; Syrup of Succory with Rhubarb, one Ounce and an half; Syrup of Fumitory, two Ounces; solutive Syrup of Roses, one Ounce and an half; simple Syrup of Violets, two Ounces; simple Honey diluted in Water, two Ounces; *Pilule Ruffi*, six Drams.

Whether the Remedies above-mentioned are really *Eccoprotics*, that is, Evacuators merely of the abdominal Fæces, in the strict Sense of the Word, seems a Question; for all of them, exhibited in a large Dose, purge the Fluids by Stool. Thus the recent Juices of Summer Fruits, and the Musts made of them, Manna, Cassia, Honey, Tamarinds, taken in large Quantities, or repeated Doses, not only cause a Discharge of the abdominal Fæces, or Contents of the Intestines, but most effectually fuse the Humours, and evacuate them by Stool; and such Medicines are properly called *Cathartics*. The ancient Physicians made a just Distinction in this Case; for *Aesclepiades* was of Opinion, that *Cathartics* caused a Colliquation of the Body [*συσχένει τὸ σῶμα*], and then evacuated the colliquated Matter, which existed not before. *Galen, de Natural. Fac. Lib. i. Cap. 13.* And *Thessalus*, as appears from his own Words cited by *Galen, Lib. adversus Julian. Cap. 8.* concludes, that Matter was converted into Corruption by the purging Medicine, and then excreted either upwards by Vomit, or downwards by Stool; and proves the same by an Instance of an Athleta, of a good Habit of Body, in which all things were disposed according to Nature; and yet, after a Cathartic exhibited, the same Person voided very corrupt Matter by Stool, which doubtless in so sound and robust a Body, did not exist before. *Galen*, who believed that Cathartics attracted things in the same State as they were pre-existent in the Body, is very earnest in his Invectives against this Opinion; but his Arguments seem not satisfactory. Certain it is, that Scammony, given to the soundest Person, fuses the Blood into a putrid Water, which is evacuated by Stool; and the whole Body may be quite emaciated by its repeated Use; so that the Paleness, the collapsed Vessels, and the Decay of Strength, are a sufficient Proof, that there was no Evacuation of corrupt Matter which was pre-existent, but that the good Humours were corrupted by the virulent Force of the Medicine, and discharged from the Body.

Since, therefore, all those Medicines which have the Name of *Eccoprotics*, when given in large Quantities, have a cathartic Virtue; and since Numbers of Cathartics, exhibited in small Doses, only irritate, by a gentle Stimulus, in such a manner as to procure an Expulsion of the Fæces contained in the Intestines alone, it appears, that this Effect may be obtained, if both the one and the other be exhibited only in small Doses, so as to cause no great Disturbance in the Body, nor induce any considerable Alteration in the Humours, but only keep the Belly in a soluble State, which is the sole Intention to be answered in this Case.

Hippocrates, also, carefully distinguished an Evacuation of the Fæces alone from Purgation in his Book of *Prognostics*, where, after he had treated of the Matter discharged by Spit,

he says, "For whatever in these Places cease not upon Expectoration, nor a Discharge of the abdominal Faeces, [*περὶ τῆς τοῦ κοιλίου ἐκκρίσεως*] nor Phlebotomy, nor Diet, nor Purgations [*καθάρσεις*], will be sure to excite a Suppuration."

Sleep is to be procured by Anodynes, moist Food, and Narcotics.

Nature has but one Way to repair the Waste, or Defect, of that very subtle Fluid, I mean the Spirits, and that is, by maintaining only a vital Motion during a total Cessation of animal Motion, or, in other Words, by a quiet Sleep. When a Person is fatigued with hard Labour, or spent with Meditation, and makes a Repast on very wholesome Food, unless at the same time he refreshes his Body with gentle Sleep, he will find himself oppressed with a Dulness of Spirits, and an Heaviness of Body. But after a good and quiet Rest by Sleep, what an Agility of Body, and what a Serenity of Mind, immediately succeeds! and what a Clearness and Perspicuity of Thought and Apprehension does the Student experience, when he addresses himself to his Morning Meditations, after a full and quiet Night's Sleep! Hence, though by an Ingestion of Meat and Drink, we are able to restore what, by the established Laws of Life and Health, is daily lost from the Body, yet Sleep is the principal Time for the Accomplishment of this End, and for rendering the Aliment fit to succeed in the Room of the lost Substance. For a stronger Respiration with a more potent and equable Action of the Heart and Arteries in the time of Sleep, perfects and disposes all the Humours in such a manner as to render them extremely well qualified for restoring what was lost, whilst the changing, applying, and consolidating Causes, act with so great Liberty. This was perhaps meant by *Hippocrates, de Insomniis*, where he says, "For the Soul is waking, and since it is employed in ministering Supplies to the Body, has no Leisure for itself, but furnishes Recruits for every Part of the Body, particularly the Senses of Seeing, Hearing, Feeling; for Walking, Acting, and all bodily Motions are accompanied with Cogitation; but is not employ'd about itself. And when the Body is at Rest, the Soul is in Motion; and extending itself into the several Parts of the Body, has the Government of them as of its own House, and discharges itself all the Actions of the Body." Hence it appears how pernicious long Watching is to wounded Persons, and how necessary Sleep is to the Regeneration of the lost Substance, and the Consolidation of the Wound. If Sleep, therefore, be wanting, it is to be procured by means of Anodynes which remove Pain; for Watchings, especially in wounded Persons, proceed from Molestation by Pain, though anxious Cares, or violent Passions of the Mind, may produce the same Effect. But Remedies which remove Pain operate three different Ways; for they act either by removing the corporeal Cause which makes such an Alteration in the Body, as to occasion in the Mind that troublesome Perception called Pain; or by effecting such a Disposition in the Part of the Body to which the dolorific Cause is apply'd, that it can either not at all, or but weakly be affected by it; or, in the last place, though the Cause of the Pain be not removed, and the Condition of the Part affected remains unaltered, they operate, however, by taking off the Sense of the Pain. Thus, for Instance, when a Part under an Inflammation is pained, the Cause of the Pain is an inflammatory Blood, which, on account of its Denseness, is incapacitated for Circulation, and sticks in the Vessels, and by the Impetus of the vital Liquid presses with great Force upon the obstructed Vessels. Every thing, therefore, which is capable of rendering the impacted Blood moveable in such a manner as that it may flow with a free Current through the obstructed Vessels, will remove the Pain by removing the Cause. But if by an Application of very soft Cataplasms, or Fomentations, the solid Parts are relaxed to such a Degree, as easily to give Way to the distending Causes without Danger of a Rupture, though there remains the same inflammatory Denseness of the Blood, and the same protrusive Impetus of the vital Liquid, yet the Pain will either cease, or at least be very much diminished. And, in the last Case, when neither of the former Effects is produced, but the Cause of the Pain remains, and the Condition of the Part affected continues the same, yet let there be exhibited a Grain or two of Opium to a Patient not accustomed to it, and all Sense of the Pain will cease, tho' the exciting Cause continues to act. Hence all Remedies which one or other of these three Ways are the Means of removing Pain, ought to be called *Anodynes*. But established Custom has now appropriated that Name to such Medicines as either remove the Cause of Pain, or cause such an Alteration in the pained Part that it shall not be affected, or at least in a very slight measure, by the same Cause. And as for those Remedies

which only take away the Sense of Pain, without affecting any Mutation either in the Cause of the Pain, or in the Part affected, they are called *Narcotics*, that is, *Stupefactive*. In former times, however, stupefactive Remedies were called *Anodynes*; for *Caelius Aurelianus*, treating of the Tooth-ach, says, that "Many of the antient Physicians at the time of the Paroxysm, prescribed the Application of such Medicines as the *Greeks* called *Anodynes*, and which we may call *Removers of the Pain*, which, as they are to be used in the Night-time, remove the Sense of Pain, but not the Pain itself." And *Celsus*, in *Lib. 5. Cap. 25.* tells us, that "Those Medicines are called *Anodynes*, which, by Sleep, alleviate Pain; but that it is wrong ever to use such Medicines, unless absolute Necessity calls for it."

Besides, the Causes of Pain in a Wound are, the Distraction of the Parts as yet cohering, whilst the Lips of the Wound are retracted; the Tension of the nervous Fibres from a Retraction of large divided Trunks, which, also, draw the small lateral Nerves; or, a Distraction of the Fibres which remain entire, when tense Nerves are half divided or punctured: An inflammatory Tumor of the Bottom and Lips of the Wounds, and the Acrimony of the Humours discharged into the Cavity of the Wound, and irritating the raw Parts. Anodynes, therefore, are all those Medicines which by diluting, relaxing, moistening, correcting, or obtunding Acrimony, and resolving distending Tumors, remove the Cause of the Pain; or so change the Part affected, as that it is not by the Cause of the Pain so stimulated, as to excite in the Mind the ungrateful Perception called *Pain*.

ANODYNES are,

1. Diluents.
2. Laxatives.
3. Moistening Substances; for all which, see *FIBRA*.
4. Correctors of Acrimony.
5. Such as resolve distending Tumors. See *FIBRA*.

As for a moistening Diet; all farinaceous Seeds bruised may, by a strong Pressure, yield a large Quantity of Oil; and the same Seeds, when triturated with Water, yield Emulsions, in which the mild Quality of the Oil remains, without any Dread of a rancid Corruption. From these, therefore, or Decoctions of such farinaceous Seeds with Water, Milk, or Broth, we have a moistening Diet in which Water predominates, but so adheres to the farinaceous Lensor of the Seeds, that it does not easily slip out of the Body, but remains long in it. Such Food, long persisted in, alleviates the most obstinate Pains, by relaxing all the Solids, and rendering the Quality of all the Humours mild.

As for Narcotics; if the Pain neither remits, nor yields to the preceding Medicines, or is so intense that it cannot be borne without great Injury, till the Cause of the Pain is remov'd; then there are such Medicines as, without removing the Cause of the Pain, destroy the Sense of it in the Mind: For the highest Cause of Pain may be lodg'd in the Body, without any Sense of Pain in the Mind; as is obvious in apoplectic Patients, who are not sensible of the Application of live Fire to any Part of their Bodies. There are many Substances of a narcotic Quality, such as Henbane, Nightshade, Dutoy, and many others; but the Use of all these is suspected, especially if exhibited internally; because they greatly disturb the Operations of the Mind. The Use of Poppies is, by numberless Experiments, found to be far safer. As the *European Poppies* are of small Efficacy, a pretty large Dose of them must be exhibited. The Juice of the *Asiatic Poppy*, known in the Shops by the Name of *Opium*, if exhibited prudently, and in a due Quantity, excellently soothes Pain; which, however, if its Cause is not remov'd, will return a few Hours after, when the Efficacy of the Medicine ceases. *Galen*, in *Method. Medend. Lib. 12. Cap. 8.* tells us, that *Opium* proves hurtful, by its cold Intemperature. Many others have embraced the same Opinion, and for that Reason have either used it with great Terror, mixing it with the hottest Substances, in order to correct this formidable Coldness, or absolutely condemn'd it as a deleterious Substance. The Person who has once tasted the hot Bitterness of *Opium*, will easily believe that a cold Quality is unjustly ascrib'd to *Opium*; but this excellent Medicine has long been branded with this Mark of Infamy; so that many Physicians have not only rejected, but even abhorred the Use of it. A great Part of the Fame and Reputation *Paracelsus* acquir'd was owing to the surprising Cures he perform'd by his *Laudanum*. The Inhabitants of *Asia*, especially such of them as are by their Religion debarred from the Use of Wine, daily use large Quantities of *Opium*, without any Injury: They, also, who most condemn *Opium*, use it, without any Dread, in the grand official Compositions, as the *Theriaca*, *Mithridate*, and *Philonium*, in all

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of which there is a large Quantity of *Opium*: Others, with a sordid View to Interest, secretly give *Opium* disguised with other Medicines, that they may seem, by other *Arcanums*, to do that which is owing to *Opium* alone. It is true, most Physicians were once of Opinion, that the medicinal Efficacy of Mithridate, the *Theriaca*, and other Compositions of a like Nature, did not depend on the concurring Force of all the Ingredients, but that, from a certain Union of them all, a new and highly-efficacious Medicine was produced: For which Reason, they recommended old *Theriaca*, and preferred it to that which was newly prepared. Tho' this Opinion seems pretty specious, yet any Person, who considers the Matter, will easily perceive, that there is an hot Quality in these grand Compositions, but that their principal Virtues depend upon *Opium*. The Mithridate of *Damocrates*, older than any of the rest, consisted of so many different Ingredients, that *Pliny*, in *Lib. 29. Cap. 1.* said, "Some of the Gods must have been Author of such a Fraud, since the Craft of Man could never have invented such a Medicine, which discovers a ridiculous Ostentation of Art, and a monstrous Pretence to Science." But *Andromachus*, who liv'd under *Nero*, and was one of his principal Physicians, retain'd most of the Ingredients in the Mithridate of *Damocrates*, and added some others, especially the Flesh of Vipers, and thus made a new Antidote, which, from that Circumstance, he call'd *Theriaca*. He wrote a small Greek Poem, dedicated to *Nero*, in which he gives a Description of his *Theriaca*, which he calls *γαλήνη*, that is, *Tranquil*. Nor is this to be wonder'd at; for the cunning *Andromachus* added a third Part more of *Opium* to his *Theriaca*: So that the Mithridate of *Damocrates* began to lose its Credit, and the *Theriaca* alone was highly extol'd, and has ever since retain'd its Reputation: A sure Proof that *Opium* was not only daily used, but, also, produc'd salutary Effects, even in the Times when it was condemn'd almost by all Physicians.

All the officinal Preparations from the Flowers, Leaves, and Juice of the Poppy, may be so exhibited, as only gently to obtund the Senses, or, by a larger Dose, to induce a profound Sleep, or, by an unskilful Use of them, a mortal Apoplexy. It often happens, that a small Dose of them alleviates Pain without inducing Sleep, but a gentle Ease of Body and Mind is produced, which cannot be describ'd, even by those who have experienc'd it. But this Medicine, tho' exhibited in the same Quantity, does not produce the same Effects on all Patients. Whilst, therefore, a Physician is ignorant of the particular Constitution of the Patient, it is expedient to dissolve a few Grains of *Opium* in some proper Vehicle, and give it in Spoonfuls every Quarter of an Hour, till the Sense of Pain is alleviated: But the same Quantity of *Opium* exhibited all at once, produces a greater Effect than when it is given in separate Doses. They who have often used this Remedy, are no longer reliev'd by it, unless its Quantity is gradually augmented: And it is certain, from undeniable Observations, that by gradually augmenting the Dose, some Persons have, without any Injury, daily taken incredible Quantities of *Opium*. Narcotics are always attended with this Disadvantage, that they render the Patient costive; but this Symptom is easily remov'd by a gentle Clyster: Such Medicines, however, externally applied to the Part affected, afford great Relief. Hence Cataplasms and Fomentations of emollient Herbs, with the Addition of the Leaves of Henbane and Garden-poppies, are of great Use.

Narcotics are such Medicines as blunt the Quickness of the Senses; and are either,

1. The most mild Purgatives; such as the bruised Seeds of white Poppies, two Ounces;

The Syrup of white Poppy-heads, one Ounce and an half;

The Syrup of *Diacodium*, one Ounce and an half; and

The Syrup of wild Poppy-flowers, three Ounces:

Of all which various safe Medicines may be prepar'd. Thus,

For a mild Draught.

Take of the distilled Water of wild Poppy-flowers, three Ounces; of the distilled Water of Bean-flowers, one Ounce; of the distilled Waters of Peony and Elder-flowers, each one Ounce and an half; of the distilled Water of the Flowers of the Lime-tree, one Ounce; and of the Syrup of wild Poppy-flowers, one Ounce and an half: Mix for a Draught.

The same, somewhat more hypnotic.

To the former Mixture, instead of the Syrup of wild Poppy-flowers, add the same Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads.

A mild Emulsion may be prepared thus:

Take of sweet Almonds, Pine-kernels, and the Seeds of white Poppies, each one Ounce; and of the distilled Water of

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wild Poppy-flowers, a sufficient Quantity: Make into an Emulsion; with ten Ounces of which mix one Ounce of the Syrup of wild Poppy-flowers.

The same, a little more paregoric.

To the former Emulsion add, instead of the Syrup of wild Poppy-flowers, the same Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads. Or,

2. Stronger Narcotics: Thus,

For PILLS.

Take of the purest *Opium*, two Grains: Make into three Pills; of which let the Patient take one for a Dose, taking a second an Hour after, if the first produces no Effect; and the third after that, if the two first prove ineffectual.

For a POWDER.

Take of the purest *Opium*, a little dry, two Grains; and of red Coral, and Pearl-sugar, each half a Dram: Mix into a Powder, to be divided into three Doses; to be exhibited in the same manner with the preceding Pills.

For a PRESERVE.

Take of the preceding Powder of *Opium*, one Dose; and of Marmalade of Quinces, one Dram: Make into a Bolus; to be used and repeated in the same manner with the preceding Preparation.

For DROPS.

Take of the best *Opium* dried, one Dram; and of rectified Spirit of Wine, one Ounce: Make into a Tincture; the Dose of which may be thirty Drops, in two Ounces of distilled Baum-water, and half an Ounce of the Syrup of wild Poppy-flowers. Or,

Take of *Opium*, a little dried, one Dram; and of the Spirit of Vinegar, one Ounce: Make into a Tincture; the Dose of which may be thirty Drops, in two Ounces of the distilled Water of wild Poppy-flowers, and half an Ounce of the Syrup of wild Poppy-flowers.

A hot MIXTURE.

Take of the Tincture of *Opium*, prepar'd with rectified Spirit of Wine, seventy Drops; of the Syrup of white Poppies, six Drams; and of the distilled Waters of Citron and Orange-peel, and Cinnamon, each two Ounces: Make into a Mixture; of which let the Patient take one Spoonful every Half-hour, till the Pain is allay'd.

A cold MIXTURE.

Take of the Tincture of *Opium*, prepar'd with Spirit of Vinegar, eighty Drops; of the Syrup of Mulberries, six Drams; and of the distilled Waters of Borage, and wild Poppies, each three Ounces: Make into a Mixture; to be used, in the same manner with the former.

An Emulsion may be prepared thus:

Take of the bruised Seeds of white Poppies, two Ounces: With Barley-water reduce to an Emulsion; with ten Ounces of which mix of the Syrup of *Diacodium*, one Ounce and an half; of the Tincture of *Opium* prepared with rectified Spirit of Wine, twenty Drops; of distilled Cinnamon-water, two Drams; and of distilled Citron-peel-water, ten Drams: Of this Preparation let the Patient take an Ounce and an half every Half-hour, till the Pain begins to be alleviated.

An Epithem may be prepared thus:

Take of the Tincture of *Opium*, prepared with Spirit of Vinegar, three Drams; of the distilled Waters of Elder and Rose-flowers, each three Ounces; of the Vinegars of Elder and of Roses, each half an Ounce: Mix all together; to be applied with Cloths to both Temples.

It is of great Service, in Cases of this Nature, so to apply Demulcents to the Part affected, as to remove the Cause which deprives the Patient of Sleep, which is the Pain in the Part affected. This Intention is answered by the following Preparations, applied tepid, and preserved in the same State of Tepidity, till the Pain is alleviated. A Cataplasm may be prepar'd thus:

Take of the recent Leaves of Garden-poppies, one Handful; of the recent Leaves of black Henbane, half an Handful; and of the recent Leaves of Marshmallows, four Handfuls;

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Handfuls : Boil in new Milk, and towards the End add of the Meal of Linseed, one Ounce; and of the recent expressed Oil of Linseed, two Ounces: Make into a Cataplasm.

A Fomentation may be thus prepar'd:

Take of the thin expressed Juice from the preceding Cataplasm, three Pints: With which mix half a Dram of pure *Opium*, for a Fomentation.

The Patient's Mind is to be kept serene, Venery is to be avoided, and Rest enjoind.

As violent Commotions of Mind are capable of inducing strange Changes on the Body, and disturbing all its Functions, they must always prove hurtful to wounded Patients: But a calm Serenity of Mind, undisturb'd either by the Consciousness of Guilt, or the Dread of Want, and supported by the cheering Hopes of future Prosperity, is of great Service to wounded Persons: An Excess of Joy is equally prejudicial with other Commotions of Mind. *Sanctorius*, and others who have wrote on the statical Part of Medicine, have observ'd, that Cheerfulness renders the Body highly perspirable, and sensibly lighter than at other Times: But this denotes a free Circulation thro' all the Vessels, and an expeditious Exercise of all the Functions, that is, perfect Health.

Venery is to be avoided; nothing more throws the nervous System into Commotions, than the Use of Venery: Hence it is, by the unanimous Consent of Physicians, accounted prejudicial to wounded Patients; and the fatal Event has been prov'd, by melancholy Instances. Hence, in the Diet of wounded Persons, all those Things are to be avoided, which may stimulate to Venery; such as Oysters, Crabs, and Lobsters.

That Rest is absolutely necessary to wounded Persons, is sufficiently obvious: For by Motion those tender Vessels which are regenerated in the Wound, under the Appearance of a soft *Mucus*, are destroy'd.

There are two Circumstances requisite to the Regeneration of lost Substance in a Wound; that is, that a laudable Fluid should, in a due Quantity, and with a proper *Impetus*, be convey'd to the Wound; and that the Vessels, receiving the Humours convey'd to it, should only receive and transmit such Liquids as, in a State of Health, ought to be convey'd thro' them. Hitherto we have treated principally of those Things which ought to be observ'd in the Diet, and the Use of Remedies, that a good Disposition of the Fluids, convey'd to the Wound, may be produc'd. We now come to treat of that Disposition of the transmitting Vessels in a Wound, which is requisite to the Restoration of the lost Substance, and the Union of the separated Parts.

That the Canals may be kept in a due Condition, and the Fluids in the Wound preserv'd from corrupting, and by that means hindering the Actions above-mentioned, the Part is to be defended from the Air; the Wound is to be fomented with mild balsamic Vulneraries, fill'd with Lint for the sake of an equable Compression, and treated with such Medicines as are friendly to the Nerves.

After the Infliction of a Wound, the Extremities of the divided Vessels are retracted, lessen'd, and resist the Fluids forc'd thro' them: Then an Inflammation begins to be form'd in the Bottom and Lips of the Wound; this is succeeded by a Generation of Pus; and whilst this happens, the Extremities of the open Vessels are gradually protruded from the Bottom of the Wound upwards, and from all its Circumference towards the Centre; and these Extremities resemble a tender *Mucus*, of which is regenerated the Substance lost in the Wound. It is therefore obvious, that, to this Purpose, it is requisite these pulpos Vessels should retain a due Softness; and that the Humours, discharg'd from the Vessels into the Cavity of the Wound, should be of a mild Quality. For if, by a spontaneous Degeneracy, they should acquire an Acrimony, the pulpos Substance growing again, will be destroy'd. Both Intentions are in some measure answer'd by preventing a free Access of the Air: For it is certain, from Experience, that the Parts of Animals may, for a very long time, be preserv'd from Corruption, if they are carefully kept from all Access of the Air; whereas they often become putrid in a few Days, when expos'd to the free Air. *Boyle*, in his Treatise of the Usefulness of Experimental Philosophy, tells us, that the roasted Flesh of Goats and Fowls, cut in small Pieces, immersed in melted Butter, and kept in a close Vessel, were preserv'd free from Corruption, and retain'd their natural Taste for above six Months, in a Ship returning from the *East-Indies*, tho' the Air was intensely hot. Besides, the Air, acting freely on a Wound, dries and destroys the ten-

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der Extremities of the growing Vessels; so that these, becoming mortified, *Sordes* are produc'd in a Wound, before pure; and these *Sordes* must be separated, before a Consolidation can happen. For this Reason, many have imagin'd that something of a poisonous Quality was lodg'd in the Air, when they saw that so great Changes were produc'd in Wounds by its free Access to them. For this Reason, also, the most skilful Surgeons order Wounds to be dress'd as seldom as possible.

The whole Surface of the Wound ought, therefore, to be so cover'd, as to be defended from the Air: This is best done by vulnerary Balsams, especially of the native kind; which, by their thick Unctuousity, adhere to the Parts, and contain in themselves a mild Aromatic, and at the same time an Acid, which resists Putrefaction, but which is, however, so sheath'd up in a pinguious Substance, as not to prove prejudicial by its Acrimony: For by a chymical Analysis all native Balsams yield an acid Liquor, and a fragrant, thin, aromatic Oil; whilst a tough Resin remains in the Bottom of the Vessel. When these native Balsams, gently warm'd, that they may spread equably, are in a small Quantity applied to the Surface of a Wound, they cover the tender Vessels, prevent the Access of the Air, hinder the drying of the Parts, and preserve the extravasated Humours from Putrefaction. Hence it is obvious, that only a small Quantity of these Balsams is requisite; and that those Surgeons act preposterously, who incumber Wounds with too large a Quantity of them: For they are heterogeneous Bodies in a Wound, which, by the Interposition of their Bulk, hinder the Concretion of the Parts. Most native and artificial Balsams act almost in the same manner.

The mild vulnerary Balsams for pure Wounds, are,

1. The native Balsams of *Capivi* and *Gilead*, Liquidamber, that of *Mecha*, *Opobalsam*, the Palm Balsam, those of *Peru* and *Tolu*, and that of Turpentine.
2. Simple artificial Balsams, such as rectified Oil of Wax, the thick Oils of Turpentine, Linseed, St. John's-wort, Roses, Nightshade, sweet-scented Trefoil, and fresh Butter.
3. Artificial compound Balsams. Thus,

Take of the Flowers of Sulphur, four Drams; and of the Oil of Linseed, or Olives, four Ounces: Boil over a gentle Fire, till the Sulphur is totally dissolv'd.

Take of the best *Gum Elemi*, cut small, one Part: Dissolve over a gentle Fire, and add an equal Quantity of pure native *Venice* Turpentine: Pass the Solution thro' a linen Cloth, and add two Parts of the Marrow of Beef, boil'd, and separated from its Membranes. This, like the *Limentum Arcaei*, is an universal Balsam.

Take of the Wood of red Sanders, one Pound; and of common Water, four Pints: Boil for two Hours; strain and infillate to the Consistence of a thick Extract, with which mix two Drams of Dragon's-blood reduc'd to a fine Powder. Mix a little of this with the preceding Balsam, till it acquires an agreeable red Colour; and this is the red Balsam.

Take of the Oil of Olives, one Pound and an half; and of the Wood of red Sanders, half an Ounce: Boil gently, till the Oil is of a deep red Colour; then strain it boiling-hot thro' a linen Cloth, and dissolve in it of yellow Wax, one Pound; and of the best Turpentine, one Pound and an half. This resembles the Balsam of *Lucatellus*, and is render'd still better by the Addition of one Ounce of *Peruvian* Balsam.

All these are to be dropt warm into the Wound, which is to be cover'd with a Pledget dipt in the Balsam; and the Dressings are to be renew'd every twenty-four Hours.

We are, also, to consider, that the equable Covering of the Skin is wanting in the Wound: Hence the pulpos growing Vessels, cover'd with a soft Balsam, and fomented with a moist Warmth, will easily yield to the distending Liquids, will be augmented in all their Dimensions, and, being dilated, will admit foreign Humours. Hence the whole Surface of the Wound will degenerate into a flocculent Substance call'd fungous Flesh. This will be prevented, if such a Degree of Pressure is applied to the Wound as is sufficient to supply the Defect of the Skin which before compressed it: This may be done by filling the Cavity of the Wound with soft and dry Lint, slightly anointed with a mild Balsam, in that Part where it touches the Surface of the Wound; then let the Lint be so secur'd, by a Plaster or Bandage, as by a gentle Pressure to prevent the excessive Dilatation of the Vessels; guarding, at the same time, against too strong a Pressure, which might destroy the tender Vessels, or suffocate the Motion of the vital Humours thro' the Parts. By

such a gentle Pressure the *Membrana Adiposa*, every-where in the adjacent Parts confin'd by the Skin, is hinder'd from rising in the Wound, where it would degenerate very soon.

Plaisters are of Use to retain these Things in Wounds, and are hardly of any other Service than that produc'd by their safe tenacious Quality.

This will not easily be believ'd by those Surgeons who generally ascribe the happy Cure of Wounds to their Plaisters; and in this Case almost every one pretends to an *Arcanum* of his own: But if the before-enumerated Conditions of a Wound are present, it is cur'd, whatever Plaister is applied, provided it contains nothing in itself which may prove hurtful by disturbing the begun Work of Nature, or by removing the Conditions requisite to the Regeneration of the lost Substance, by its excessive *Stimulus*, or any other Cause. That it is so, is obvious, from this, that altho' every Surgeon has his favourite Plaister, known only to himself, yet they are all equally successful in their Cures, if the other Remedies have been in the same manner applied to the Wound. It is true, Plaisters, applied to the Skin, may, besides their requisite Tenacity, contain such Ingredients, as being mov'd, and render'd active by the Heat of the Body, may insinuate themselves into the bibulous Vessels, and by that means considerably affect not only the Part to which they are applied, but, also, the whole Body: Such as blistering Plaisters, mercurial Plaisters, and many others. But such Plaisters we do not here consider, since, in this Case, it is only requisite the Dressings applied to the Wound should be retain'd in their Place; for which Intention Tenacity alone is sufficient. Hence Plaisters, prepar'd of Lead, or its various Calxes, boil'd in Oil to a due Degree of Tenacity, are of great Use; because they are easily borne by those whose Skins are inflam'd by the Application of almost any pinguious Substance. Such are the red Lead Plaister, *Diapalma* Plaister, the *Emplastrum Diapompholygos*, the Cerufs Plaister, the red defensive Plaister of *Vigo*, and many others, which in this Case produce the same Effect.

The red defensive Plaister is prepar'd thus:

Take of the Oil of Roses, and white Wax, each six Ounces; of *Armenian Bole*, and Dragon's Blood, each an Ounce and an half; and of the Powder of red Roses, half an Ounce: Mix all together over a Fire, and agitate till cold.

The same End is, also, answer'd by the *Emplastrum Defensivum Cœruleum*, and the red Lead Plaister.

The Fluids convey'd to the Wound, and extravasated in it, the half-mortified Fibres, and the obstructed and tumefied Vessels, produce in the Wound Pus, Ichor, Sordes, and fungous Flesh.

At the renewing of each Dressing, the Wound is to be carefully view'd, in order to observe whether there is any Change induc'd on its Surface, which may hinder the Regeneration of the lost Substance, and the Consolidation of the Wound: For if all the Parts are red, clean, and equably moist, we know that the Vessels and Humours have the due Conditions requisite to the Cure: But if the Wound is dry, or fordid, we certainly know, that it cannot be consolidated till these Sordes are remov'd, and the Humours equably convey'd thro' the Vessels in every Point of the Surface of the Wound. But these Impediments to the Consolidation arise either from the extravasated Fluids degenerating into a foreign Nature, or from an Obstruction and Tumefaction of the Vessels, or from both these Causes together: For many Parts in a Wound may be partially divided, and yet adhere to the sound Parts, tho' they are totally depriv'd of the vital Influx of the Fluids. Hence they are mortified, and ought to be separated from the sound Parts; for so long as they remain there, they, like an heterogeneous Body, hinder the Consolidation of the Wound: But after the Orifices of the Vessels, on the Surface of a Wound, begin to discharge their Humours, these collected Humours, by their Stagnation, the Heat of the Place, and the Dissipation of their thinner Parts, are chang'd into a mild unctuous Liquid call'd Pus; which, tho' always a good Sign, as we have already observ'd, may yet prove hurtful, when too long left in the Wound; for then it is corrupted, and becomes acrid: But if the Surface of the Wound is moist with a thin Ichor, but not with a laudable Pus, there will never be a good Consolidation so long as this Symptom is present. But this is understood, if such a thin Sanies appears in the Wound after it has been cover'd with a proper Dressing for twelve Hours, or more: For if, an Hour after all the Pus is remov'd, the Wound is uncover'd, no Pus will appear, but a far thinner Liquid; which, however, when left

there, will be converted into Pus. But by Ichor we here mean that thin Liquid, generally of an acrid Quality, which, by its Continuance in the Wound, will never be converted into a laudable Pus, but always become more and more acrid. But such an Ichor is either form'd from an Extravasation of such Fluids as cannot be converted into laudable Pus; or from Pus too long left in the Wound: For in this Case it is again attenuated, and becomes acrid. For when a suppurated Part of the Body is, at a proper time, laid open with a Lancet, a laudable and thick Pus is discharg'd: But if such a Part remains too long before it is open'd, the contain'd Pus is again attenuated, and, upon opening the Place, a thin Sanies is discharg'd, instead of a laudable Pus.

Sordes are form'd in a Wound, either by the half-divided Parts, or the mortified Parts, as yet not separated from such as are sound, or by the Vessels dilated and distended with a stagnant Liquor; in which Case, the Surface of the Wound does not appear pure and red, but white, almost like Bacon. And unless these Sordes are separated from the live subjacent Parts, they are chang'd into a yellow, and sometimes a brown Colour, and denote the worse Degeneracy, the more their Colour recedes from white, and inclines to brown.

Fungous Flesh is principally form'd, when the Surface of the Wound is not compress'd with a Force equal to that with which the entire Skin compresses the adjacent Parts: Hence the *Membrana Adiposa* rising, swells, and soon degenerates into fungous Flesh, as is already observ'd; and especially if, by a Fever, the *Impetus*, and Velocity of the Circulation, are increased: For, in this Case, the dilated Vessels rise, if not prevented by a due Compression. For we see that almost every Part of the Body, when the equable Pressure upon it is remov'd, rises into a Protuberance, which makes less Resistance than the Part in its natural State did. Thus in Wounds of the Head, or after the Application of the Trepan, when a Part of the *Cranium* is remov'd, and at the same time the *Dura Mater* divided, the Substance of the Brain rises in surprising *Funguses*. If the Integuments of the Abdomen are divided by a Wound, and the *Peritoneum* at the same time is left entire, unless the Part is secur'd by a proper Bandage, soon after the Contents of the Abdomen, being press'd into the less-resisting Place, and the *Peritoneum* being dilated, will produce an *Hernia*. The Origin, therefore, of fungous Flesh, in a Wound, is the natural Consequence of the Diminution of the equable Compression.

So long as all these are present in a Wound, they will hinder its Consolidation; for they are heterogeneous, and consequently ought to be remov'd: And how this is done, is shewn in the next Aphorism.

These Things are generally remov'd by the Help of Digestives, Abstersgents, Corrosives, Exsiccants, and often by Compression.

When skilful Surgeons see the Surface of a Wound so degenerating that it is not every-where red and moist, but white, yellow, or brown Sordes appear, they know that the best Balsams are not sufficient: Nature, indeed, alone, by a benign Suppuration, endeavours to separate these corrupted Parts; but the subjacent live Vessels, incumber'd with these adhering Sordes, are not able easily to remove them: Hence these half-mortified Parts, adhering long to them, are corrupted, and degenerate into a worse Quality: Then they apply such Remedies as mollify these sordid Parts, but at the same time resolve them by their saponaceous Quality, and by their gentle *Stimulus* irritate the subjacent live Parts, that there may be a more easy Separation of those Sordes from the vital Vessels to which they adhere. These are call'd Digestives, a chirurgical Word, taken from the Digestion of the Stomach. For this Purpose, Surgeons take any native Balsam, such as Turpentine, for Instance; this they triturate with the Yolk of an Egg, so as to subdue the oleous Tenacity of the Balsam to such a Degree, that it may be diluted in Water; then they add a certain Quantity of Honey, which, by its saponaceous Quality, divides and resolves Concretions. Such a Medicine, laid upon a Pledget, they apply to the sordid Surface of the Wound: The Sordes, thus soften'd and resolv'd by the saponaceous Quality of the Medicine, are, by the Formation of a laudable Pus, separated from the sound Parts, and the Wound is render'd pure. *Hippocrates*, in *Tract. de Affectionibus*, beautifully represents the Use of such Medicines in impure Wounds, in the following manner: "Pinguious Substances are improper for Parts that are either inflam'd, sordid, or inclining to Putrefaction; for cooling Medicines are adapted to inflam'd Parts; and for such as are sordid, and inclining to Putrefaction, acrid Remedies, which cleanse by exciting a certain *Stimulus*, are most conducive." And in his *Treatise de Locis in Homine*, he informs us, that the laudable Humours convey'd through the Vessels to the Wound, remove the Sordes, soften'd, and render'd capable of a more

more easy Separation by such Medicines: His Words are, "If an Ulcer is to be clos'd or filed, the Parts are to be rendered tumid; for the Flesh regenerated by the nutritive Juices in Conjunction with the Assistance of Nature, propels and forces out that sordid Flesh, which by the Medicine was disposed for a Separation."

A Digestive may be thus prepared:

Take of Native Turpentine, one Ounce; and one Yolk of an Egg: Mix intimately; and then incorporate with half an Ounce of Honey of Roses.

As for Abstergers; these are somewhat more acrid than Digestives. If, therefore, to Digestives we add a little Aloe, Myrrh, and Venice Soap, we have an Absterger, which only differs in Degree from a Digestive, since it is somewhat more stimulating.

As for Corrosives; these are far more acrid than the preceding Medicines, and mortify the Parts they touch, since they induce a Crust on the Surface of the Wound to which they are applied; and under this Crust the vital Vessels by their Motion, and the Fluids conveyed to them, gradually separate and expel the mortified Parts. All these Medicines, indeed, totally deprive the Sordes, adhering to the live Vessels, of a vital Influx of the Fluids; but by this means alone we can never obtain a Separation of the mortified Part, which Nature alone produces by a benign Suppuration. But Corrosives are of this Use, that in a Moment, and, as it were, by a single Touch, they prevent the Influx of the Humours into the obstructed and dilated Vessels which produce the Sordes in Wounds, and which obstinately resist the Efficacy of milder Abstergers. Hence they induce a kind of gangrenous Crust on the Surface of the Wound, to which Crust the softest Digestives are now-and-then to be applied, that the Eschars formed by the Corrosives, being softened by their means, may, by the Action of the live subjacent Vessels, be separated from the sound Parts to which they adhere; and thus the Surface of the Wound be rendered pure. Hence it is obvious, that the prudent and rare Use of Corrosives is requisite, unless after the Eschars are fallen off, the Wound still appears impure. Those Surgeons are, therefore, in the Wrong, who believe that a Wound can be cleansed by Corrosives alone, since they only hinder the Increase of the Sordes, by converting them into a mortified Eschar, which ought afterwards to be softened and separated by a Suppuration. Besides, by a too frequent Application of Corrosives, the pure and live Parts are affected in the same manner, by which means the Sordes are increased, not diminished. *Galen*, in *Methodo Medendi. Lib. 3. Cap. 6.* furnishes us with a beautiful Instance of this Kind.

Corrosives are divided into various Classes, according to their different Degrees of Acrimony. Those are most efficacious which consist of an highly strong Acid united with a metallic Glebe. Among these the most useful is the Lunar Caustic; for it consists of an highly concentrated Spirit of Nitre, and the purest Silver mutually united; and as this Corrosive is of a solid Consistence, and may be moulded into any Form, it may be applied more safely than almost any other Corrosive; for other Corrosives applied to a Wound act equally on all its Surfaces; but this may be applied to each Point in it, and by a momentaneous Touch produces an Eschar. Hence the Effect of this Corrosive is greater or less, according as it is applied for a longer or shorter time; and as often all the Parts of the Surface of a Wound are not covered with equally thick Sordes; hence they do not require an equally strong Action of a Corrosive. And this Caution is best of all observed by the Application of the Lunar Caustic.

First, The mildest Corrosives are burnt Alum, the Ashes of green Wood burnt, *Mercurius Dulcis*, white precipitate Mercury, and White Vitriol.

Secondly, Stronger Corrosives are red precipitate Mercury, Colcothar of Vitriol, and *Vigo's Troches* of red Lead. And

Thirdly, The strongest Corrosives are Butter of Antimony, the *Lapis Infernalis*, corrosive Sublimate Mercury, Oil of Tartar per Deliquium, and Oil of Vitriol. The stronger Corrosives are, the more prudently they ought to be used.

The following may serve as a Formula:

Take of Aloe, and Myrrh, each one Dram; of the Salt of Tartar, two Drams; and of common Water, two Ounces: Mix and boil them to an Elixir.

But the Eschars formed by Corrosives, are to be softened by the Application of the mildest Remedies, that they may be soon separated from the subjacent live Parts; and when they are fallen off, it appears, whether the repeated Use of Cor-

rosives is necessary, or whether the Wound may be rendered pure by mild Digestives, and Abstergers.

As for Exsiccant Medicines; when a Wound is moistened with a large Quantity of too thin an Humour, then such Medicines as absorb the Liquids, and corroborate the Vessels, are highly beneficial. Of this Kind are the earthy bibulous Substances reduced to an impalpable Powder, left by the Roughness of their Parts, they should irritate the raw Wound, such as the Ashes of burned Bones, Mastich, Olibanum, and Sarcocolla, which not only absorb the Fluids, but, also, corroborate the Vessels.

An Exsiccant may be prepared thus:

Take of Verdegrise, five Ounces; of crude Alum, one Ounce; of strong Vinegar, seven Ounces; and of pure Honey, fourteen Ounces: Boil up into an Ointment.

The following Substances are, also, exsiccant: Alum gently calcined, Quick-lime-water, Blood-stone, Mastich, Dragon's blood, and Gum Sarcocol.

As for Compression; this Method is principally expedient when Sordes are formed by the dilated Vessels degenerating into a fungous Excrescence: for after such a spongyous Flesh is destroy'd by Corrosives, a similar Excrescence will soon be produced afresh, unless the Luxuriancy of the Parts is prevented by a due Compression, as is obvious from the so frequent Regeneration of fungous Excrescences of the Brain. For this Reason, skilful Surgeons often fill the Wound with nothing but dry Lint, which they secure by a moderately tight Bandage; or they sometimes, also, use a thick Pledget, one Side of which is applied to the Surface of the Wound, whilst the superior Part, being covered with some vulnerary Balsam, prevents the Access of the Air.

These things are to be used till a white, mild, viscid, smooth, equal, and inodorous Pus is formed; under which the Sordes are absterged, the contused and tumid Parts consumed, and those corrupted by the Air separated, the Cavities filled, and the divided Parts conglutinated.

All the Medicines, mentioned above may check the Vessels when too easily distended, and convert the half-mortified Parts, together with a Part of the live Vessels, into a gangrenous Eschar; but they cannot separate this Crust from the subjacent live Parts; for this Nature alone performs by means of a Suppuration; nor is there any other Way in which it can be done. But the Sign of a Suppuration is the Generation of Pus, as is already observed. When, therefore, a laudable Pus appears in a Wound, we know that the Vessels are so disposed as to transmit their proper Fluids, and that these Fluids have the Properties requisite to Health. We have already spoke of the things requisite, that the Humours conveyed to the Wound, should be of a laudable Kind. But here we only treat of those Impediments which are lodged in the Wound itself, and hinder the Regeneration of the lost Substance, and the due Consolidation of the separated Parts; for so long as these Sordes are lodged in the Wound, they will hinder the Cure as much as any other foreign Body would. But when by proper Medicines laudable Pus is formed in a Wound, we know, that by this means all that may be separated from the live Vessels which could hinder the Cure of the Wound. But this Pus ought not only to have the Conditions here specified, but ought to be of the same Kind, and in an equal Quantity in every Point of the Surface of the Wound; for it often happens, that the whole Surface of the Wound is not covered with Sordes, but only a certain Part of it. In this Case the pure Parts will yield a laudable Pus, and the others will discharge a Liquid of a different Quality. The Pus will not, therefore, be every where of the same Kind, but various in different Parts of the Wound. And in this Case, the sordid Places alone require the Application of the Medicines specified above, but which are improper for the pure and live Parts of the Wound.

Under this Pus, whatever half-lacerated Substance adheres to the live Parts, and all the Extremities of the obstructed Vessels, together with the obstructing Matter, are disengaged and separated, and the pervious Vessels freely transmit the Humours. Hence all the Tumor of the Lips of the Wound arising from an Obstruction of the free Circulation of the Humours, begins to disappear; the Parts that were contused, or corrupted by the Admission of the Air, separate; the tender Vessels, covered with a laudable Pus, as with a mild and natural Balsam, are elongated, meet those adjacent to them, are united with them, and form a new Texture of Vessels, by which the lost Substance is regenerated in the Wound, and the separated Parts united.

The Whole, therefore, that Art can do, is to remove the Impedi-

Impediments which hinder the Generation of a laudable Pus in the Wound, and Nature alone is sufficient for the rest.

Then such things as generate Flesh, are to be applied, which are mild Digestives.

These Remedies are by Surgeons called *Sarcotics*, though, strictly speaking, there is only one *Sarcotic*, which is Nature herself, restoring the lost Substance under the mild Pus. This, as is already observed, is beautifully described by *Galen*, when he says, that the Matter of the Flesh to be generated is laudable Blood; and that the Producer or Author of such Flesh is Nature. All other Remedies, to which an incarnating Quality is ascribed, only remove Impediments, and afford Assistance; and they are none else than such as by a due Pressure confine the Vessels, and procure the same Disposition of them, which they generally have in a State of Health. These Effects they produce by preventing the Access of the Air, by cherishing the Parts, and so confining the extravasated Humours; that they may by a due Continuance be converted into laudable Pus.

For a Wound, when pure, is injured by the Application of every acrid Substance, since by this means the tender Vessels beginning to grow, are destroyed; and when these are mortified, new Sordes are produced from them, which must be again separated. Hence, in this Case, mild vulnerary Balsams are only proper: But we know, that the Cure of a pure Wound proceeds well if there is a reddish Colour in the Wound; for too red a Colour denotes an Inflammation; if there is a due Quantity of laudable Pus; if the Bottom and Lips of the Wound grow equably; if nothing is raised above the equable Surface; if the Lips of the Wound are not higher than the adjacent Skin, but appear equal and not corroded; and, if in the Lips of the Wound a pale-bluish Colour begins to appear, which indicates that a Cicatrix is forming.

Sarcotic, or incarnating Medicines, are the vulnerary Balsams.

Take of yellow Wax, black Pitch, and common Rosin, each half a Pound; and of Linseed-oil, two Pounds: Mix all duly together. This is the *Basilicon*, or *Tetrapharmacum*: Or,

Take of yellow Wax, six Ounces; of the Oil of the Flowers of St. John's-wort obtained by Infusion, two Pounds and an half; to which, when fused over a gentle Fire, add of dried Resin of the Pine triturated, and of the best common Colophony, each one Ounce and an half; when they are melted, take them off the Fire, and straining them through a Linen Cloth, add two Ounces of the best Venice Turpentine, stirring them with a Stick. When they begin to thicken, sprinkle into them of the best Mastich, and Olibanum, each one Ounce; and of Saffron finely triturated, one Dram. This is the *Unguentum Aureum*.

But if when those things are done which answer the first Intention, it appears, that none of the Substance of the Body is taken away, the Lips are to be united in such a manner, that the Parts naturally united, may again be applied to each other, and retained in that Situation.

The general Intentions to be pursued in the Cure of every Wound are already enumerated, and it has been observed, that all heterogeneous Bodies, whether left in the Wound by the wounding Instrument, or form'd by a Corruption of the Fluids or Solids, ought to be removed, because they hinder the Union of the separated Parts. It has, also, been shewn how, by what means, and with what Cautions, these foreign Bodies ought to be removed. If, therefore, after these Measures are taken, it appears, that some of the Substance of the Parts is lost, that is first to be restored, before there can be an Union of the separated Parts. And how this Restitution of the lost Substance is to be obtain'd, has been, also, shewn. But if there is only a simple Division of Parts before cohering, made by the wounding Cause, without any Loss of Substance, or any foreign Body left between the separated Parts, the Intention of Cure is, of all others, the most simple; and that is, so to apply the spontaneously receding Lips of the Wound to each other, and to retain them in that Situation, that there may be such a Situation of all the Parts, as there was before the Division. The Union of the Parts thus disposed, is very soon performed by Nature alone, even in the largest Wounds, if the now mentioned Conditions are present. In this Case, the best vulnerary Balsams interposed between the Lips of the Wound, are injurious, because they are heterogeneous Substances, which can never unite with the Parts of the Body. But the Application of the Parts separated, to each other, is only requisite, without the Interposition of any other Remedy.

How easily wounded Parts grow, not only to those with which they were naturally united, but, also, to those with which they never before cohered, may be seen in some memorable Instances recorded by *Hildanus*, *Cent. 6. Obs. 7. Schenkii, Observ. Medicin. Lib. 6. Obs. 23.* and *Celsus, Lib. 5. Cap. 28.* If, therefore, this Concretion is so easy in Parts which never before naturally cohered, it is much more to be expected, when Parts before united again become contiguous.

The first of these is done,

First, By procuring to the Part the same Situation it had whilst in a State of Rest, before it was wounded.

Secondly, By a gentle and equable Compression of the Parts to each other, that they may be contiguous to each other in every Part of their Surface, and remain at Rest.

1. It is of great Use to know the Situation of the Parts in a Man at Rest, and especially in an healthy Man when sleeping; for then all voluntary Motion ceases, and the Parts of the Body left to themselves, are disposed in their most natural Situation. It will then appear, that no Articulation of the Body is extended, but that they are all gently bended; for in a sound Person, when sleeping, the Fingers are never extended, nor are the Legs ever stretched out in a strait Line with the Os Femoris, but all the Articulations are gently bended. The same holds true with respect to the rest; for the Muscles which bend the Articulations, are generally found stronger than the Extensors; for which Reason the Articulations, when at Rest, always appear gently inflected. This, also, appears in a perfect Palsy, in which Case all voluntary Motion ceases; for if the whole Arm is paralytic, the Fingers are always found inflected, and remain in that Condition; so that after the Palsy is cured, it is often impossible to extend the Fingers, because the Ligaments of the Articulations are become rigid, and the Flexor Muscles not elongated for so long a time, are by their proper Contractility shortened. Hence the Extensors of the Fingers cannot surmount these Obstacles. *Hippocrates*, who carefully observ'd the natural State of the Parts of the Body, in order to know how far in Diseases it receded from it, and to distinguish their various Degrees of Violence, has in his *Prognostics*, when treating of the Manner in which the Patient lies, beautifully taken notice of this in the following manner: "The Patient should be found by the Physician lying on his Right or Left Side, with his Arms, Legs, and Neck, a little inflected, and his whole Body moist; for in this manner many sound and healthy Persons lie." When this is neglected in the Cure of Wounds, the Parts often grow together in another Situation than they had naturally, or an unseemly Deformity arises from the distracted Parts, or the natural Motion of the Parts is often much depraved. A memorable Instance of this is found in *Hildanus, Cent. 1. Observ. Chirurg. Obs. 83.*

In the first Dressing of a Wound this is carefully to be attended to; for the raw Parts, when united, are soon conglutinated. Hence the Error committed cannot be corrected, without a cruel Division of the concreted Parts.

2. The Parts of the Body separated by a Wound, by their proper Contractility, gradually recede more and more from each other, as is already observed. But that they may be again agglutinated, it is requisite they should remain in Contact. Hence by an artificial Pressure, that Force is to be surmounted, by which they endeavour to recede from each other. But it is in a particular manner to be observed, that this Union of the Parts ought to be made in the whole Surface of the Wound; for if the Lips of a deep Wound are contiguous, whilst the subjacent Parts are at a Distance from each other, there will remain in the Wound a Cavity, in which the extravasated Humours will be collected, and make the Wound degenerate into a sinuous Ulcer. This is performed by the Application of Compresses, and a proper Bandage, so compressing the adjacent Parts, that the Lips of the Wound may be contiguous in the Bottom, as well as in the Skin itself. But it is requisite this Compression should be moderate, lest there should be too great an Angustation of the Vessels in the compressed Parts, by which means an Inflammation, and all its Consequences, may be produced. It is, also, requisite there should be a perfect Rest of the wounded Part. Hence the wounded Limb is to be secured in such a manner as that it may be immovable; for often during Sleep, or thro' the Carelessness of the Patient, the Motion of the wounded Member changes the Situation of the Parts, by which means the Lips of the Wound are separated, and the concreted Parts dilacerated. Hence the happy Event of the Cure is destroyed.

The Parts are retained in Union,

First, By adhesive indented Plaisters, with Loops or Eyes at their Extremities, applied on both Sides of the Wound, and

and drawn together by Threads; these are used in long transverse Wounds of the Skin, and the more lax Parts.

According to the Diversity of Wounds, various Methods are requisite to keep the contiguous Parts in a due Union, and this is done,

1. By what Surgeons call the *dry Suture*, in order to distinguish it from Sutures made by the Needle; they take some adhesive Plaster, capable of adhering strongly to the sound Skin. For this Purpose they use common Glue, Hing-glass, or any other Substance of a proper Tenacity. This they spread upon strong Linen Cloths which will not easily yield; these, when gently warm'd, that they may adhere the more strongly, they apply on both Sides at some Distance from the Lips of the Wound. Then at Pleasure they draw together these Plaisters by Threads affixed to them, and the Skin adhering to these Plaisters, is on both Sides so drawn together, that the Lips of the Wound may become contiguous; and as these Plaisters do not cover the Wound, the Surgeon can commodiously see whether the united Lips of the Wound have their natural Situation; and if they deviate from it, this Deviation may be easily corrected. As the Bulk of Wounds varies, so a different Number and Figure of these Plaisters are requisite. In small Wounds, whose Lips are at a small Distance from each other, such digitated Plaisters are sufficient without Loops. But in large Wounds, whose Lips recede much from each other, it is safer to apply Plaisters which may be drawn together by Cords fixed in their Loops. See *Tab. XXV.* with the Explications; and the Article *SUTURA*.

But it is sufficiently obvious, that only the Skin is drawn together by these Plaisters, whilst, if the Wound is deep, the subjacent Fat being highly moveable and lax, will not follow the Skin. Hence such Plaisters are generally only of Use, where the Skin alone is divided, and the Parts being sufficiently lax, can easily follow it. Hence they are principally of Use in slight Wounds of the Face, and Integuments of the Head; as, also, in slight Wounds of any other Parts of the Body.

When the Lips of the Wound are united by an adhesive Plaster, we must apply a Pledget dipt in some vulnerary Balsam, in order to prevent the Access of the Air. And leaving the Plaisters on, we are daily to view the external Surface of the Wound, in order to discover whether every thing is right.

Adhesive Plaisters may be thus prepared:

Take of the Diapalma Plaster, a sufficient Quantity; and a little Olive-oil: Dissolve together for a Plaster.

Or,

Take of common Pitch, a sufficient Quantity: Spread on a Linen Cloth, and apply.

Secondly, The Parts are retained in Contact by Bandages, and the Application of Compresses, that the divided Parts being equally applied to each other, may remain in that State, and be united, which is easily obtained by a proper Method of Compression. And this Method is proper in longitudinal Wounds.

Superficial Wounds do not require this, but only deep Wounds, in which it is requisite, that the Parts in the Bottom of the Wound should be as contiguous as the external Surface, before a good Cure can be obtained. In the right Application of these, the Skill and Dexterity of the Surgeon are principally known. Bandages rolled round any Part, equally compress the Surface thereof. But by the Application of Compresses, the Compression of the Bandage, though remaining the same, may act more upon some Places than others. By this means we can determine and regulate the Degree of Compression, so as that all the Points of the Surface of the Wound may become contiguous. But it is sufficiently obvious, that this Method is of no Use, unless the Parts adjacent to the Wound are soft, and consequently capable of yielding: If, for Instance, a deep Wound is longitudinally inflicted in the Thigh, by the Application of Compresses to both Sides, and the Use of a proper Bandage, the soft Parts may be equally compressed, so that the divided Parts in the whole Surface of the Wound may again be rendered contiguous. In other less fleshy Places, this is not so easily obtained. But in such Places rarely Wounds happen so deep as to require this. *Hippocrates*, in his *Treatise de Medici Officina*, when treating of the various Uses of Dressings, seems to point at this Method in the following manner: "But when any Parts are divided, they are to be contracted, but the Contraction is to be made at a certain Distance from the Lips of the Wound, and the Compression is to be made gradually, at first very small, then greater, and its greatest

"Degree is to be terminated by the mutual Contact of the Parts divided."

Though this Method is, of all others, most successfully used in longitudinal Wounds, yet it may, also, be sometimes used to Advantage in transverse Wounds of the Parts. A memorable Instance of this is found in *Mem. de l'Acad. des Sciences, l'An. 1722.*

Thirdly, The Parts are retained in Contact by Sutures made with Needles of Steel, which in small Wounds may be strait, but in large Wounds crooked, with a sharp Point, and waxed Thread in their Eyes. These Needles are to be introduced at a sufficient Distance from the Wound, and are to pass to its Bottom in such a manner, that the Point may emerge at an equal Distance on the opposite Lip of the Wound. Then taking the Needle quite through, the Thread is to be so drawn as to retain the Lips of the Wound in Contact; and after the Application of a slight Compress, a Knot is to be tied on it. This Method is to be repeated as often as the Length of the Wound requires, beginning either at the Middle, or one of the Ends of the Wound. Then the Lips are to be anointed with some proper Balsam, and applying slight Compresses over the Knots, the Whole is to be covered with a Plaster.

This Union of the Parts separated by a Wound, is called the *bloody*, or *true Suture*, since the Conjunction of the Parts by adhesive Plaisters hardly deserves the Name of a *Suture*. In this Case it is particularly requisite, that the Union should be made with as little Pain, and Irritation of the Parts, as possibly may be; for when such an Operation is roughly performed, it is often succeeded by a violent Inflammation, which hinders the Union of the Parts brought into Contact. For this Purpose, pretty strong Steel Needles are requisite, though not too brittle, lest they should break. A conical Figure in these Needles would be prejudicial, because the gradually augmented Thickness would make them pass with Difficulty through the Parts. Hence such are used, whose anterior Part being prismatic with sharp Edges, easily passes through the Flesh, and makes Way for the rest of the Needle which is conical or cylindrical. In Wounds which are not deep, strait Needles of this Kind are sufficient; but in deep Wounds, crooked ones are necessary, that being protruded to the Bottom of the Wound, the Points may the more easily emerge. A different Curvature of these Needles is requisite, according to the different Depths of Wounds: Unless the Eyes of these Needles had on each Side a Groove for containing the Thread, whilst the Needle was drawing through their Eyes, the Threads protuberating on each Side could not follow, without a Dilaceration of the Parts. The Thread is to be waxed, that it may easily pass through the Parts, and not imbibe the Humours; for tumefied Threads would compress the Parts through which they pass. Besides, the Humours resorb'd by the Thread, becoming acrid by their Continuance, and the Heat of the Place, may irritate the Parts. The Needle with a Thread in it is to be entered at a sufficient Distance from the Wound, lest there should afterwards be a Dilaceration of the Parts, if it was entered too near the Wound. These Needles ought to be thrust to the Bottom of the Wound, and then protruded upwards, that they may again emerge at an equal Distance on the opposite Side of the Wound; for unless they penetrate to the Bottom of the Wound, the superior Parts will be brought together, whilst the inferior will remain at a Distance; and form a Cavity in which the extravasated Humours being corrupted by their Stagnation, will of the pure Wound form a fistulous Ulcer. Hence the Parts united must again be divided.

When the Threads are passed through, by a gentle Compression of the Hands, by which, as *Celsus*, in *Lib. 5. Cap. 26*, expresses it, "the Skin, as it were, spontaneously follows its Guide," the Lips of the Wound are to be rendered contiguous, and retained in that Union by drawing the Threads together. But in order to avoid Pain, and the Dilaceration of the Parts as much as possible, Compresses, especially of waxed Linen, left by imbibing the Humours they should prove injurious, are to be applied before the Knots are tied. According as the Length of the Wound is greater, or its Figure more or less angular; more or fewer of such Sutures are required; for if the Stitches, as *Celsus* in the Place before quoted, informs us, "are at too great a Distance from each other, they do not retain the Parts in Contact; but if they are too near each other, they excite an intense Pain, because the oftener the Needle passes through the Parts, the more of them are galled by the Thread, and the greater Inflammations arise, especially in the Summer." A Pledget dipt in a mild vulnerary Balsam is laid upon the Wound. Then by a proper Bandage, or the Application of a Plaster, the whole Apparatus is retained in its due Situation.

If a violent Inflammation, or an intense Pain, do not arise, the Wound is to be left in this Situation for two or three Days; then removing the Bandage, or Plaster, we are to observe, whether from the Smell any Corruption is formed by the extravasated Humours, and if it is so, the Pledget is to be cautiously removed, and another dipt in the like Balsam applied; or a few Drops of the Balsam may be dropt upon the old Pledget, so that it may be still left on the Wound. When it appears, that the Lips of the Wound are grown sufficiently firmly together, the Threads are gently and prudently to be drawn, in order to know, whether they may be commodiously taken out; and this, for the most part, is very easily done; and the small Wounds left are soon filled up.

But if a violent Inflammation, and intense Pain, and an excessive Tension of the Parts succeed the Suture, it is better to cut it again, and cure the Wound without Suture; for unless this is done, a Train of terrible Symptoms will succeed; and when it is too late, force the Surgeon to do that, which if it had been seasonably done, might have proved more beneficial.

The various Kinds of Sutures, and the different Methods of performing them, are described by the Authors who have wrote on chirurgical Operations, and under the Article SUTURA.

These Sutures are proper in Wounds that are recent and not bloody; but, however, without any violent Hæmorrhage; in simple Wounds, without any Contusion, or Fracture of the Bones; full, that is, without any Loss of Substance, transverse, oblique, or angular Wounds.

But they are prejudicial in Wounds attended with any considerable Hæmorrhage, old, sanious, purulent, sordid, contused Wounds, those with Loss of Substance, such as are covered with Crusts, such as are dangerous in consequence of a Wound of some large Vessels, such as are very deep, such as are greatly inflamed, such as are poisoned, and such as are inflicted in Parts which necessarily move.

In this Aphorism is determined for what Wounds Sutures are beneficial, and for what they are prejudicial.

They are proper, then, for recent bloody Wounds: For if the Wound has been inflicted for some time, and especially if there has been a free Access of the Air to it, the Extremities of the Vessels in the Surface of the Wound will be mortified. Hence they must be separated from the live Parts by a Suppuration, nor can they grow together; so that it would be to no Purpose to make an Union by Suture.

They are proper in Wounds not accompanied with great Hæmorrhages: Because the extravasated Blood will distract the Lips brought together by Suture; hence a Dilaceration, Pain, an Inflammation, and all its Consequences, will be produced.

They are proper in simple Wounds: That is, Wounds in which there is no Contusion, or at least a very inconsiderable one. Hence Hippocrates, in *Traët. de Ulceribus*, informs us, that Wounds made with a sharp Instrument may be cured without Suppuration; but if a Contusion is present, they are to be so treated as to bring on a Suppuration as soon as possible; for it is necessary the contused Flesh should become putrid, and be converted into Pus.

They are proper in full Wounds: That is, Wounds in which there is only a Division of the Cohesion without any Loss of Substance; for if any Part is taken away by the Wound, the separated Parts cannot be rendered contiguous without distracting them from their natural Situation. Hence such a violent drawing together of the Parts will always be succeeded by an unseemly Cicatrix, and an Injury of the Functions.

They are proper in pure Wounds: That is, Wounds in which nothing of an heterogeneous Nature is left by the wounding Cause, in which there are neither Sordes, grumous Concretions of Blood, nor fungous Flesh; for all these must be separated and eliminated from the Wound before a Consolidation can be expected.

Sutures are, also, proper in transverse, oblique, and angular Wounds: Because in these Cases, neither adhesive Plaisters, nor artificial Application of Bandages and Compresses, are sufficient to render the Parts contiguous, and retain them in Union.

But Sutures are prejudicial in Wounds where there is a large Hæmorrhage: Unskilful Surgeons, whilst without any Distinction they unite all Wounds by Suture, often do a great deal of Harm; for what Advantage is it to unite separated Parts, when after they are united, they cannot grow together; or when the extravasated Humours, retained by the Lips of the Wound, must afterwards be evacuated by cutting the Suture? A shameful Instance of this Kind is given by *Paré*, in *Lib. 10. Cap. 32.* Unless, therefore, the whole Surface of the Wound is pure and sound, and no Substance lost, Sutures will always be injurious. Besides, if a Wound is inflicted in a Part of

the Body, through which large Blood-vessels or considerable Nerves run, nobody will dare to force a Needle deep into such a Part, except one, who being ignorant of Anatomy, is not apprised of the Danger. There is the same Danger when the Wound is too deep, because the Needle may easily hurt the Tendons, and membranous Parts; and when these are injured, violent Symptoms generally succeed. Besides, when a Wound is very dry, the divided Parts cannot be so brought together, as to be contiguous in all the Points of their Surface, unless the Threads passed through the Parts, are strongly draw'd together. Hence a Dilaceration, and violent Inflammation, are greatly to be dreaded. If an Inflammation has seized the wounded Part, and if it is roughly treated by Suture, the Inflammation will frequently be so increased as to bring on a Gangrene, and the obstructed Extremities of the inflamed Vessels, together with the obstructing Matter, must, by a mild Suppuration, be resolved and separated, before the Surface of the Wound can be pure and fit for Union.

If the wounding Instrument is infected with Poison, so as to produce anomalous, malignant, and virulent Symptoms, unless a particular Antidote, capable of destroying the Force of the Poison, is known, the whole Hope of a Cure consists in increasing the Afflux of the Humours to the wounded Part by Suction, or the Application of Cupping-glasses, and thus eliminating the virulent Matter; or by the actual Cautery, the infected Part is in a Moment to be destroyed, lest the Infection should be communicated to the rest of the Body. It is, therefore, sufficiently obvious, that Suture retains the virulent Matter of the Wound, which ought to have been expelled with all possible Expedition.

It is, also, sufficiently evident, that an absolute Rest of the Parts, united by Suture, is requisite; for if these Parts are moved, the same will happen as if the Threads passed thro' them were continually drawn. Hence a perpetual Irritation, Pain, Inflammation, and all their Consequences, will happen. We can check all those Motions which depend on the Will; but those Motions which are absolutely necessary to the Continuation of Life, will always continue; and this is the Reason, why Wounds of the Thorax do not admit of Suture, especially if they are inflicted on the convex Surface of the Ribs; for at every Inspiration the Breast being dilated, the united Parts will be distracted with the most intense Pain. For this Reason, also, when Surgeons by Suture unite Wounds of the Abdomen, lest the Viscera should be expressed through the Wound, they so secure the Abdomen by Swaths, that the Patient respires almost without moving it. The Rashness, therefore, and Imprudence of those Surgeons, who indiscriminately stitch up every Wound like a Piece of torn Cloth, are greatly to be condemned.

Fourthly, The Parts are retained in Contact by a Needle passed through the Lips of the Wound, and a Thread so wrapt about it as to hinder them from receding from each other, but keep them united. This Method is proper in large and gaping Wounds of the pendulous Parts of the Body.

The former Suture was performed by Thread passed through the Holes made by the Needle, and then bringing the Lips of the Wound together by a drawing of the Threads. But in this Method, the Needle is not taken out of the Parts perforated, but left in them, and then a Thread is on both Sides so wrapt about, that the Lips of the Wound perforated by the Needle, and brought together, may remain contiguous. This Method was principally used in the Cure of the Hare-lip, that is, when that Part of the superior Lip, which is under the Nose, is divided. But afterwards Surgeons, with great Success, ventured to unite large and gaping Wounds of the pendulous Parts of the Body by the same Suture: But because in the Hare-lip the Parts are divided from the Birth of the Patient, hence the callous Surface is on both Sides cut off with a Pair of Scissars, and in the superior Angle a slight Wound is, also, made with the Scissars, that the Parts to be united may acquire the Nature of a fresh Wound; for if any thing of a callous Nature is left, there will never be a laudable Union of the Parts there. Then when the Lips of the Wound are duly applied to each other, the Needle is entered at the Distance of four Lines from the Wound, and forced thro' the Middle of the Substance of the Lips, till on the opposite Side the Needle emerges at the like Distance from the Wound. Thus the Needle is left in the Wound, and the Parts are retained in Union, by wrapping a Thread cross-ways about it. According to the different Largeness of Wounds, more or fewer of these Needles are used, that in every Point the separated Parts may be rendered perfectly contiguous. But lest the sharp Points of the Needles left in the Wound should hurt the Patient, they are to be cut off by the Scissars, and small Pieces of Sponge are to be laid under the Extremities of the Needles, be-

cause these accommodate themselves far better to the Figure of the Parts than Compresses. But that such Needles may be passed through the Parts expeditiously, and without Vacillation, they are fixed in an Handle, because by the Fingers of the Surgeon alone they cannot be so surely convey'd through the Parts. Besides, in order to avoid those Misfortunes which might arise from the sharp Extremities of the Needles remaining, (for hard Steel cannot be cut by Scissars without great Force, so that by this Concussion the Situation of the united Parts may be changed) Surgeons use Steel Needles, but whose posterior Parts are made of pure Silver: Then passing the Needles through the Parts, they leave the Silver Part in the Wound, cutting off the Steel Part, together with a certain Portion of the Silver which is cut with a far less Force than Steel. The same Operation is, also, excellently performed by pretty large Steel Needles, which can be firmly held by the Fingers alone, and whose cloven-Tops contain Silver Pins blunt at both Ends, which are left in the Wound, and secured by Threads passed about them. See *Garengeot, Traité des Operations de Chirurgie, Tom. 3.*

When the united Parts are firmly grown together, these Pins are to be taken out, and the Wounds left by them are easily consolidated.

The last Intention is answered by taking care, that the Parts correspond to each other just in the manner they did in Health; and that they are thus retained in such a manner as not to be too much pressed, nor too much relaxed, by avoiding all burning, styptic, and astringent Applications, but especially by taking care, that the Pressure be equal on all the Parts of the Wound.

All these Ends are obtained by doing as is above directed, and then applying mild desiccative Medicines; and, lastly, by washing the Cicatrix with spirituous Liquors.

We have already enumerated the four general Intentions of Cure in Wounds; and having considered the first three, we now come to treat of the fourth and last, which is, after having restored the lost Substance, and united the Parts separated by the wounding Cause, to induce a Cicatrix as like to the natural Skin as possible; for if there is only a simple Division of the Parts made by a very sharp Instrument, and the divided Parts are immediately united in their natural Situation, they will so grow together, as that no Mark of the inflicted Wound will be left; and in this Case the Wound is cured without a Cicatrix; for a Cicatrix after a perfect Cure of a Wound, is that Mark by which the Part of the Integument where the Wound was, is distinguished from the adjacent Skin. The most perfect Cure, therefore, of a Wound is, when no Mark of it remains. But when this cannot be obtained, the Beauty of the Cure consists in rendering this Mark as like as possible to the adjacent Skin; for when by the wounding Cause, or a Suppuration succeeding the Wound, any Part of the Substance of the Body is lost, something new will be generated in its stead, and this new Substance will never have absolutely the same Qualities with that which was lost. Hence it may be distinguished from the adjacent Parts.

The Beauty of a Cicatrix depends principally on the three following Circumstances:

1. If the Cure is such, that the united Parts are in the same Situation they had before the Wound was inflicted.
2. If the Cicatrix does not rise beyond the equable Surface of the adjacent Skin. And,
3. If the Cicatrix is not hollow.

The first is obtain'd by taking care that the Lips of the Wound, by means of adhesive Plaisters, Suture, or proper Bandage, may correspond to each other as in Health. The second is obtain'd, if, by a moderate Pressure, the Defect of the confining Skin is supplied, lest the Vessels, depriv'd of this Covering, being distended by their Liquids, should rise above the equable Surface of the Skin; for when this is neglected, or the Wound treated with very emollient Medicines, a Ridge is form'd, and an unseemly Cicatrix produc'd. And the third is obtain'd by procuring a laudable Restitution of the lost Substance. An hollow Cicatrix generally happens, because the Pressure of the adjacent Skin forces the *Membrana Adiposa* into the Place of the Wound, and makes it rise, which there degenerating into *Sordes*, and fungous Flesh, is by a Suppuration consum'd, so as not to grow again. Hence the soft Fat, which ought to support the Skin, being destroy'd, the Cicatrix will remain depressed and hollow. Hence it is obvious, that a deep and hollow Cicatrix cannot, often, be prevented, when, for Instance, the Fat is destroy'd by the wounding Instrument, or a violent Suppuration. Thus *Hippocrates*, in *Aph. 45. Sect. 6.* tells us, "That if Wounds continue a Year, or longer, Abscesses will necessarily happen in the Bone, and cause deep and hollow Scars." And in *Tr. de Ulceribus, Cap. 4.* he tells us, "That if a Part of the Bone is remov'd, either by Burning, Cutting, or any other Method, the Cicatrices of such Wounds will be hol-

low." It is sufficiently known, what deep and unseemly Cicatrices remain after the *Membrana Adiposa* is consum'd by venereal Ulcers.

Hence the Reason appears, why, if the Surgeon intends to form a beautiful Cicatrix, he ought to avoid burning, styptic, and astringent Medicines: For by means of all these the live Vessels are either destroy'd, or so constricted, as not to transmit the Fluids; but a Suppuration coming on, the mortified or obstructed Extremities of the Vessels must be separated. Hence there will be a Loss of Substance, a Consumption of the Fat, and consequently a proportionably hollow Cicatrix. Hence it is, also, obvious, how much the Beauty of the Cicatrix is assisted by an equable Pressure, which prevents the rising of the too much distended Vessels.

The Signs of a beginning Cicatrix are these following: The Margins of the Wound or Ulcer, about to be consolidated, begin to appear more white and solid, and this Whiteness is gradually convey'd from all the Circumference to the Centre: In the mean time, in the open Surface of the Wound a like Whiteness begins to appear here-and-there; and if this Surface equably meets the Edges of the Lips, a laudable Cicatrix is form'd: A pure Wound, also, before moist in every Point of its Surface, becomes dry in those Places where the white Rudiments of the Cicatrix appear. Hence those cicatrizing or epulotic Medicines are always most commended, which are gently drying and corroborating. Hence Plaisters prepar'd of Lead, or its Calxes, and the fine Powders of Colophony, *Olibanum*, and *Sarcocolla*, are generally with Success applied to Wounds or Ulcers tending to a Cicatrix.

Cicatrizing and epulotic Medicines are these following; the red desiccative Ointment, the *Unguentum Diapompholygos*, the *Unguentum Calcis*, the *Unguentum Nutritum*, the white Ointment of Roses, the *Emplastrum Album Coctum*, the *Emplastrum de Lapide Calaminari*, or the grey Plaisters, the *Emplastrum de Minio Rubrum*, the *Sparadrapum of Gualtherus*, Colophony from boil'd Turpentine, and reduc'd to Powder; Frankincense, *Olibanum*, and Mastich.

Hence we may perceive the Vanity, and foolish Boasting, of those who pretend, that, by their *Arcanums*, they can cure all Kinds of Wounds, without leaving a Cicatrix. Prudent and skilful Surgeons, after a large Loss of Substance, or a long Suppuration, will never foretel that the Cicatrix will be beautiful; and of this the Patient ought always to be admonish'd, lest he should ascribe the Deformity of the Part to the Carelessness of his Surgeon.

It is, also, expedient, now-and-then to foment the Cicatrix with the Spirit of Rosemary, the *Spiritus Matricalis*, or some other of a like Nature; for all these spirituous Liquors have a Power of rendering the Flesh of Animals firmer: For the Part of the Cicatrix remains weak, being only cover'd with a thin Pellicule; so that it is more easily hurt than the adjacent Parts. Hence it is often expedient, that the Part, after its Consolidation, should for a considerable time be cover'd with a mild lead Plaister, or a Piece of soft Alum Leather; lest, by the Attrition of the Cloths, or the Injuries of the Air, the Wound should again break out.

HÆMORRHAGE CONSIDER'D AS A SYMPTOM OF WOUNDS.

If a large Quantity of Blood flows from a Wound, by the Causes already specified; it is to be stop'd,

First, By the actual Caustery.

Secondly, By Corrosives.

Thirdly, By Astringents.

Fourthly, By tying up the Artery.

Fifthly, By cutting quite thro', or entirely dividing the wounded Artery. And,

Sixthly, By Bandage, and pyramidal Compresses.

Having consider'd the Things belonging to the general Cure of Wounds, we shall now treat of some Symptoms incident to them, which are often so violent, as greatly to endanger the Life of the Patient. Hence it is requisite these Symptoms should be remov'd, or at least greatly diminish'd, before the Cure can be attempted. The principal Symptoms of this kind are, Hæmorrhages, Pain, and Convulsions.

A large and impetuous Discharge of Blood from a Wound, always denotes that large Vessels, containing red Blood, are wounded, and especially arterial Vessels: Because Veins, unless large, or render'd tumid by the Application of a Ligature, rarely discharge much Blood, and never with so great an *Impetus* as that which flows from the Arteries. If there is so great a Loss of Blood, that fatal Effects are justly to be dreaded from it; and if there is no Hope that by a Debilitation of the vital Force, or the Contraction of the Artery, it will spontaneously stop, then we are to have recourse to the Methods known in Surgery, in order to stop the Eruption of the Blood. But most of the Means which check the Effusion of the Blood, retard the Cure of

of the Wound : For the Extremities of the Vessels, being destroy'd by the actual Cautery, Corrosives, Ligatures, or Compressions, must be separated, before the Consolidation of the Wound can be obtain'd.

Various Means are used for stopping Hæmorrhages ; but all of them act either by constricting the Orifice of the divided Vessel, or by coagulating the Blood in the Extremity of the Vessels, or by producing both these Effects at once.

1. The most instantaneous Method of stopping Hæmorrhages is reckon'd that of touching the Vessel, discharging the Blood, with a red-hot Iron ; for, by this means, the Blood is forthwith burnt into a thick Mass, no longer capable of Resolution : So that it closes up the Orifices of the open Vessel. The Vessel itself is, at the same time, shrivel'd up, and constricted, by the Action of the Fire ; by the Concurrence of which two Effects, the Blood is stoppt. This Method was long used by Surgeons ; for which Reason, in the Amputation of Limbs, and in other Operations where a great Hæmorrhage was dreaded, they had always actual Cauteries, of various Figures and Sizes, in Readiness ; that, by their Application, they might stop the Blood.

Thus, by the later Greeks and Arabians, by *Paulus Ægineta*, *Avicenna*, and others, Hæmorrhages were suppress'd by the actual Cautery, after the Amputation of Limbs. *Guido de Cauliaco*, and after him some others, used boiling Oil for the same Purpose. *Vesalius*, in *Chirurg. Mag. Lib. 5. Cap. 12.* in the Amputation of Limbs, orders the Flesh to be cut with a red-hot Knife, that by this means the Hæmorrhage may be stoppt. But this Method is attended with so many Disadvantages, that it is scarcely ever used ; for it is a difficult Matter to procure a due Degree of Heat to the Iron ; since, if it is too hot, that which is burnt is often carried off with it ; and if it is not sufficiently hot, the Hæmorrhage is not stoppt by it. Besides, actual Cauteries produce intense Pain, a violent Inflammation, and all its Consequences ; and all that which is destroy'd by the Burning, must afterwards, by a Suppuration, recede, and be separated from the live Parts. Hence there is great Danger, lest, the Eschar falling off in a few Days, the Hæmorrhage should return ; in which Case, it is stoppt with greater Difficulty than at first : For the cauterized Vessel, when the Eschar is fallen off, will be shorter ; for which Reason it cannot at all, or at least without the greatest Difficulty, be laid hold of, and ty'd. Hence the cruel Application of the Cautery must be again repeated, whilst the same Danger remains, lest the Hæmorrhage return, after the new Eschar is fallen off. Hence, after skilful Surgeons knew how to stop Hæmorrhages by a Compression or Ligature of the Vessels, the actual Cautery was more rarely used. And *Galen* himself condemns the Use of Escharotics, as unsafe in stopping Effusions of Blood. For in *Method. Medend. Lib. 5. Cap. 4.* he tells us, " That as much of the Part as is burnt into a Crust, so much of the natural Flesh is lost and remov'd " when the Crust falls off : For which Reason the Wound " appears naked, and without Flesh ; and in many, after the " Separation of the Eschar, a Profusion of Blood has happen'd, " which could not be suppress'd without great Difficulty." Hence *Galen* is against the Use of Escharotics, except in the greatest Necessity ; and he affirm'd, that they were principally useful where the Hæmorrhage proceeds from the Corrosion of the Vessels, by a putrid Blood : For, by this means, the Blood is stoppt, and the spreading Putrefaction forthwith destroy'd, by the Action of the Fire.

2. The Application of live Fire, by means of hot Irons, or the Use of boiling Oil, were call'd, simply, Cauteries, or actual Cauteries ; but there are some highly acrid Remedies which destroy the Parts to which they are applied, and burn them into Eschars, in the same manner as the Application of Fire does : These, from the Similarity of their Effects, were, also, call'd Cauteries ; but because they did not actually contain Fire, they were distinguish'd from the others by the Epithet potential : They are, also, call'd Corrosives, because, by corroding, they consume and destroy the Parts to which they are applied ; but the Eschars, form'd by these, must, also, be separated, and fall off : Hence arises the same Danger of a fresh Hæmorrhage as if actual Cauteries had been applied. Besides, as all Corrosives are highly acrid, they often greatly irritate the adjacent nervous or tendinous Parts, whence it is certain violent Symptoms sometimes arise. The most celebrated Remedy of the Antients, for this Purpose, was, *Cyprian Vitriol*, form'd into a small Ball, or reduc'd into a fine Powder, laid upon Lint, and applied to the Orifice of the divided Vessel : The Blood, almost by the single Touch of this Vitriol, is coagulated into a *Thrombus*, which, like a Covering, closes up the divided Vessel, constricts it, and burns its Extremity into an Eschar ; but a Ball of Vitriol cannot remain applied to the Orifice of the Vessel, unless secured by a proper Bandage, which alone might prove sufficient.

Corrosives are, white Vitriol, the *Lapis Infernalis*, and Oil of Vitriol.

Under the Article *FIBRA*, Astringents, so far as they strengthen the Cohesion of the solid Fibres of the Body, are consider'd ; but here we only treat of the Use of Astringents in stopping Hæmorrhages : This Effect, then, they produce, either by constricting the Orifice of the divided Vessel ; or by coagulating the Blood as it flows out, so as to close up the Orifice of the Vessel ; or by producing both these Effects at once : Besides, there are, also, other Remedies, which, tho' they do not in a great measure coagulate the Blood, nor constrict the Vessels, yet stop the Hæmorrhage, and in this respect only deserve the Name of Astringents. Such are volatile Mill-dust, the Powder of Plaster of *Paris*, and other bibulous Bodies, which absorb every Liquid they touch, and, with it, grow into a pretty hard Mass, which is capable of closing the divided Vessel, and stopping the Hæmorrhage. But if large Arteries are divided, these Powders will be carried off by the *Impetus* of the discharg'd Blood ; so that they are not much to be trusted to. Hence, after the Amputation of large Members, when Surgeons applied these bibulous Substances to the Surface of the Wound, both Night and Day a Servant was order'd to press the whole Apparatus with his Hand, that they might remain firmly applied. Hence it is obvious, that little is to be expected from these bibulous Substances, unless they are secur'd and assisted by a proper Compression.

Among the Remedies which act by coagulating the Blood, or constricting the Vessels, the most celebrated is *Alcohol*, especially when warm, which in a Moment converts the Serum of the Blood, notwithstanding its Fluidity, into a scissile Mass, and at the same time strongly contracts the solid Parts of the Body. Hence the soft Parts of Animals, preserv'd in *Alcohol*, become hard, and are diminish'd in Bulk : By both these Effects *Alcohol* may effectually stop Hæmorrhages. But the Extremity of the divided Vessel, being, by the Application of the *Alcohol*, contracted and indurated, will afterwards be separated ; and the *Thrombus* of Blood, harden'd by the *Alcohol*, will either be remov'd spontaneously, or protruded by the *Impetus* of the Blood acting upon it. Hence the Hæmorrhage will return, unless, by a proper Bandage and Compression, the *Thrombus*, form'd by the *Alcohol*, is retain'd in the Orifice of the divided Vessel. Besides, by the Heat of the Body, the volatile *Alcohol* is immediately dissipated : Hence its Action is only momentaneous, unless it is continually applied afresh, and its too sudden Exhalation prevented, by the Application of a Bladder anointed with Oil. It is therefore obvious, that the Use of *Alcohol* is not safe without a proper Compression. *Vanfweiten* gives a memorable Instance, in which the Blood flowing from a very small Artery could not be stoppt by *Alcohol*. Hence it is obvious, that if Hæmorrhages from small Arteries cannot sometimes be stoppt by *Alcohol*, it may, also, often prove fallacious, in Cases where large Arteries are divided.

Oil of Turpentine, unless hot, scarcely stops Hæmorrhages. The soft Parts of Animals, immersed in this Oil, become hard, tho' slowly ; but Oils require a far greater Degree of Heat, before they boil, than Water : Hence warm Oil of Turpentine, by burning the Solids, and coagulating the Blood, may stop an Hæmorrhage ; in which Case, it will act like an actual Cautery, which is already described. But highly strong and acrid fossil Acids, such as the Spirits of Nitre and Sulphur, are Corrosives, of the Use of which we have already treated. But the other mild Astringents, such as Dragon's-blood, the Bark and Flowers of Pomgranates, and others of a like Nature, seem not to be so efficacious, that much Good can be expected from them alone, in stopping Hæmorrhages. Hence, also, it appears, what Judgment we are to form of the many slyptic *Arcanums* so much extol'd by many Surgeons. Small Arteries, and even such as are considerably large, when entirely divided, close spontaneously, especially when the vital Principle is weaken'd by a liberal Hæmorrhage. Many of these boasted Specifics were acrid Corrosives, and others of them milder Corrosives, which were, by Bandage, pressed to the wounded Vessel : Hence the Blood was often stoppt rather by the Compression alone, than by the Application of the Remedy. Whilst *Petit*, as he tells us in *Mem. de l'Acad. des Sciences, l'An. 1735.* about the End of the last Century, made many Experiments, with respect to these *Arcanums*, he found, that slight Hæmorrhages might sometimes be stoppt by them ; but that, in the Amputation of Limbs, they did not produce the desired Effect. Hence it is obvious, that those who boast of such *Arcanums*, are not rashly to be trusted.

Astringents are,

1. Those Substances which contract the Vessels, such as *Alcohol*, Spirit of Turpentine, recent Juice of unripe Quinces, Dragon's-blood, Puff-ball, and *Crocus* of *Mars*.

2. Those Substances which coagulate the Blood ; such as *Alcohol*, Spirit of Nitre, Spirit of Sulphur, calcin'd Vitriol, Sugar of Lead, the Bark and Flowers of Pomgranates, and the Blood-stone.

4. If the Surgeon's Hand can have Access to the divided Artery, so as that it may be ty'd, the Hæmorrhage will soon be stopt, by the Application of a Ligature. This Method was commended by *Galen*: For, in *Method. Medend. Lib. 5. Cap. 3.* after having enumerated various Methods of stopping Hæmorrhages from Wounds, he adds, "Another Method of closing the Extremities of the Vessels is, by applying a Ligature to them, or by compressing and constricting them with the 'Fingers.'" But he seems to have used this Method only in Wounds: For, so far as I remember, he has not describ'd the Amputation of sphacelated Limbs. In Amputations of the large Limbs, where violent Hæmorrhages are dreaded from a Division of large Arteries, *Celsus*, in *Lib. 6. Cap. ult.* makes no mention of the Ligature of the Vessels; tho' in *Lib. 5. Cap. 26.* when describing the Cure of Hæmorrhages from large Wounds, he tells us, that when all other means have been tried in vain, "the Veins, discharging the Blood, are to be laid hold of, and about the Part where the Wound is made, so ty'd in two Places, that they may unite, and have their Orifices closed up." After *Galen*, all Physicians and Surgeons stopt the Hæmorrhages, succeeding Amputations, with Caustics; and *Vesalius*, in *Chirurg. Magn. Lib. 5. Cap. 12.* when describing this Operation, orders the Flesh to be cut to the Bone with an ignited Razor, and the large Vessels to be afterwards burnt with ignited Irons. As *Paré* abhor'd this cruel Method, and observ'd that many, on whom it was practis'd, died, and that only a few escaped, after the most intense Pain, he was the first, as he informs us, in *Lib. 12. Cap. 35.* who ty'd the Vessels after Amputations, drawing them out with a Forceps, and with a double Thread tying them together with a Portion of the adjacent Flesh: But if the Ligature slipping off, the Hæmorrhage return'd, he with a Needle perforated the fleshy Parts adjacent to the divided Vessel, and, by drawing the Thread upon a Compress applied, he closed the Orifice of the divided Vessel, as he tells us in the same Book, *Cap. 33.* Afterwards, almost all Surgeons, neglecting actual and potential Causteries, used Ligatures, which they applied two Ways; for they either drew out the Extremity of the divided Artery with a Forceps, and ty'd it by passing a Thread about it; but if the Thread was too tightly applied, it often gradually cut the Artery; in consequence of which, the ty'd Extremity fell off too soon, and the Hæmorrhage not only return'd, but was more dangerous than before; because the Vessel, being render'd shorter, could not be so easily closed by a new Ligature: Hence *Dionis*, in his *Cours d'Opérations de Chirurgie, Demonstrat. 9.* after the Thread is passed about, and a Knot ty'd on it, orders, that one End of the Thread should, by a Needle, be pass'd thro' the Substance of the Vessel, in order to hinder the Ligature from falling off too soon. But this Method, as being too difficult, was afterwards rejected. But if a slight Ligature is applied to a naked Artery, the Blood, continually acting on the Part ty'd, protrudes the Ligature, and makes it fall off: So that *Paré's* Method prevail'd, which is, tying the Artery together with a Part of the adjacent Flesh; for thus the Extremity of the Artery is excellently closed; nor is there any Danger of the Ligature's slipping off so easily. It will be sufficiently obvious, that tying the Vessels is preferable to burning them, if we consider the following Circumstances: Whilst by live Fire, or potential Caustics, the Extremity of the Vessel is burnt, and the Blood in it coagulated, the burnt Parts produce an Eschar, which covers the Orifice of the divided Vessel; to this Covering there adheres a *Thrombus* of coagulated Blood, which fills the Cavity of the divided Artery; and when the Eschar falls off, the *Thrombus* alone, lodg'd in the Cavity of the Vessel, sustains the *Impetus* of the impel'd Blood: But the Extremity of the Vessel, being open by the Separation of the Eschar, will easily transmit the *Thrombus*, which will therefore be expel'd, and make a free Passage for the Eruption of the Blood: But whilst the Vessel is closed by Ligature, its Sides will be brought together, and hence the *Thrombus* beyond the Ligature will touch it with a narrow Apex, whilst its broader Basis will block up the Cavity of the Vessel. After, therefore, by a Suppuration, the Part ty'd, together with the Thread, falls off, tho' the Artery is not, as yet, totally consolidated, yet the *Thrombus*, being broader at its Base, cannot be transpress'd thro' the narrow Extremity of the contracted Artery: Perhaps the narrower Part of the *Thrombus* may come out, but its larger Part will close up the Vessel, and stop the Hæmorrhage. Mr. *Petit*, in *Mem. de l'Acad. des Sciences, l'An. 1731.* has beautifully explain'd this, and illustrated it by the Addition of a Figure of the *Thrombus*.

This Method is, therefore, far more safe than any of the rest, tho' it is not absolutely free from Disadvantages; for it is often succeeded by an intense Pain, and violent Inflammation, whilst the Arteries are ty'd, together with the adjacent Flesh, especially if the divided Nerves are at the same time comprehended within the Ligature. Hence convulsive Motions often happen in the

Part, by which the Ligature may be destroy'd, and the Hæmorrhage return.

5. The entire Division of the Artery is principally useful when the wounded Artery, being neither too large, nor too near the Heart, is only partially divided; for, in this Case, the Hæmorrhage will proceed, because the Fibres being retracted by their own Elasticity, the Wound of the Artery will be enlarg'd: But if such an Artery is entirely divided, we have already shewn, that its Extremities recede, and are conceal'd under the adjacent Parts, where, by their own Contractility, and the Pressure of the contiguous Solids, they are entirely closed, and the Hæmorrhage is, by that means, stopt. When, therefore, the Blood continually flows in a small Quantity from a Wound, the Place of the Wound whence the Hæmorrhage seems to proceed is to be scarified with a Knife, in order to make a total Division of the wounded Artery. *Galen*, in *Tr. de Curandi Ratione per Venæsectionem, Cap. ult.* tells us, that he used this Method with Success, "in a Man who by a Wound in the *Malleolus* had the Artery wound-ed, in such a manner, that the Hæmorrhage did not cease, till *Galen*, being call'd, made a total Division of the Artery." He afterwards adds, that the Wound was cur'd without an *Aneurysm*, which is greatly to be dreaded in such a Wound of an Artery, whilst the weak Cicatrix is, by the Blood, extended into a dilated Sack.

But it easily appears, that such an entire Division is not safe, unless the Artery is small, and not near the Heart: For, in this Case, the Hæmorrhage would not cease; tho' the Artery was entirely divided; but the divided Vessel must be closed up by a Ligature, or some other Method.

It has happen'd, that an Artery wounded, and not entirely divided, has been so secur'd by Compression, that the Blood has stopt; but, in this Case, so strong a Compression of the Artery is not always requisite, as entirely to abolish its Cavity: Such a Compression is sufficient, as hinders the free Efflux of the Blood from the Wound of the Artery, and retains the bloody *Thrombus* between the Lips of the Wound, which is the principal Impediment to the Discharge of the Blood; and which, afterwards, growing firmly to the Margins of the Wound, restores the Soundness of the wounded Part. An Instance of this is found in *Mem. de l'Acad. des Sciences, l'An. 1735.*

6. Compression of the divided Vessel is, of all others, the best, and most natural Method, of stopping Hæmorrhages, and that which all Men spontaneously use when they see the Blood flowing from a Wound, that is, by compressing the wounded Part with their Fingers. But this Compression may act either perpendicularly on the open Surface of the divided Vessel, or it may be applied to the Sides of the Vessel, and thus render them contiguous to each other: In the former Case the Efflux of the Blood is hinder'd; but as the *Thrombus*, form'd by the coagulated Blood, is of the same Bulk with the Orifice of the Wound, when the Compression is remov'd, it is easily expel'd, by the *Impetus* of the Blood acting upon it: Hence, in this Case, the Pressure ought to act upon the divided Vessel till the *Thrombus* of coagulated Blood is concreted with the Sides of the Vessel, which does not happen soon: But such a Compression, when strong, and long applied, may produce many bad Symptoms; an Inflammation, for Instance, and all its Consequences.

But if the compressing Cause acts on the lateral Part of the divided Vessel, its Sides will come together, and, being render'd contiguous, will grow together in a pretty broad Surface: And as the *Thrombus* of coagulated Blood, lodg'd behind the compress'd Part, is almost cylindrical, it cannot be forc'd out by the Sides of the Vessel, tho' a perfect Union is not, as yet, form'd. It is therefore sufficiently obvious, how much this Method is preferable to all others: For if the Aperture of the Vessel is only closed, the Hæmorrhage ceases. But this is excellently obtain'd by such a Compression, and the contiguous Sides of the Vessel will soon grow together, without any Necessity for a Separation of the mortified Parts, which must happen after the Application of actual and potential Caustics, and even after the Ligature of the Vessels: Besides, when the Vessel is ty'd, there is only an Union of its Sides in a small Surface, where the Thread is plac'd: But, by a lateral Pressure, the Sides of the flatten'd Vessel are united in a greater Surface; for which Reason they will adhere more firmly, and make a stronger Resistance to the Action of the Blood attempting its Discharge. But the Parts never sooner and better grow to each other, than when they are divided by a recent Wound; for, in this Case, only the Union of the Parts is requisite, and Nature performs the rest. But this is most perfectly obtain'd by this Method; whilst to the raw Wound, not irritated by Corrosives or Ligatures, such a Compression is applied in those Parts where large Vessels are divided.

But that the Hæmorrhage may be happily stopt, and the Wound at the same time cur'd, it is principally requisite, that the Pressure should act only on the Sides of the divided Vessel; but not on the rest of the Surface of the Wound. Hence Surgeons

geons prepare a small Ball of Paper, long chew'd between the Teeth, or of Lint, which they apply to the Part of the Wound which ought to be compress'd; upon this they lay one somewhat larger, and over it one still larger, and so on, till the Apparatus is so prominent, that, by a Bandage, it may be commodiously press'd to the divided Vessel; for thus an inverted Pyramid, as it were, is form'd, whose Apex, being applied to the Side of the Vessel, only communicates the Pressure of the Bandage applied, to that Part of the Wound where it is requisite. *Petit*, in *Mem. de l'Acad. des Sciences, l'An. 1731*. has describ'd and represented, by a Table, a beautiful Instrument, by the Application of which, the divided Vessel might be safely compress'd, and the Trunk of the Artery above the Wound contracted at Pleasure: The Compression, also, of the divided Vessel, may be augmented or diminish'd, at Pleasure, by the Use of the same Instrument, the Sureness, Safety, and Use of which, he has there confirm'd, by a memorable Example: See TORCULAR.

It is therefore obvious, that an artificial Compression of the Vessel stops the most dangerous Hæmorrhage, when other Remedies have been try'd to no Purpose; and that this alone is sufficient, in all Cases; whereas the other Remedies are only useful in particular Circumstances. But this Compression acts best, if, being apply'd to the Side of the divided Vessel, it compresses its open Orifice, tho' in the most difficult Cases a perpendicular Pressure on the Surface of the divided Vessel has sometimes happily stop't Hæmorrhages; a memorable Instance of which is found in *Mem. de l'Acad. des Sciences, l'An. 1732*. It sometimes, also, happens, in the Amputation of a Leg, that the Artery which perforates the superior and posterior Part of the *Os Tibiæ*, and sometimes runs an Inch thro' the Substance of the Bone, being divided, continues perpetually to discharge the Blood, if, being lodg'd in that bony Canal, it is by the Saw divided with the Bone. It is sufficiently obvious, that in this Case a Ligature can be of no use: And in the last-quoted Part of the *Mem. de l'Acad. des Sciences*, we have an Instance, in which Compression alone, by Lint apply'd to the Orifice of the divided Vessel, remov'd so dangerous a Symptom.

But in Cases of this kind a stronger Compression is requisite, than if, by lateral Compression, the Sides of the flatten'd Vessels were render'd contiguous; because the Largeness of the divided Vessel remains always the same. Hence the *Thrombus* of concremented Blood, closing up the divided Vessel, may be easily expell'd, unless it is retain'd by a strong Compression.

In this Case Revulsion is of no Service, unless the wounded Arteries are small, and there is a *Pletthora*. The same is true with respect to Aliments, Drink, and internal Medicines: What has been said of an Hæmorrhage, may be apply'd to a Flux of Ichor; tho' the greatest Help we have, in this Case, is from the thicker Balsams.

In this Case Revulsion is of no Service. *Galen*, in *Method. Medend. Lib. 5. Cap. 3*. when laying down the Method of stopping Blood discharg'd from Wounds, tells us, that this is done "by closing up that which is divided, and by deriving and translating what was carried thro' it, to some other Part." But as he was ignorant of the modern Doctrine of the Circulation of the Blood, it is not to be wonder'd at, if he embrac'd the Opinion, that Revellents may be of great Use in stopping Hæmorrhages from Wounds. But if a large Artery is divided, Venesection in another Part of the Body will be of no Use, since the Blood will certainly flow thro' the open Wound of the Artery, till the Patient dies, or, at least, falls into a *Deliquium*. I saw, says *Vanswieten*, an Instance, in which repeated Venesection could not stop the Hæmorrhage arising from the drawing of a Tooth. It can therefore be of no Use when a large Artery is divided, since it cannot prevent the Efflux of the Blood from so small an Artery; nor can any Good be expected from other Revellents, which act by any Friction or Irritation of the Parts distant from the Wound, since they are rather injurious, because they increase the Motion first in the Part, and then in the whole Body.

But where there is a large Quantity of Blood, and when that Quantity is not sufficiently diminish'd by the Hæmorrhage, Venesection may be beneficial, where the wounded Vessels are small; that the Quantity and *Impetus* of the Blood being diminish'd, the wounded Vessels, when not too much distended, may contract themselves.

As for Aliments and Drink; when an Hæmorrhage is stop't by the Remedies specified in the preceding Aphorism, we ought always carefully to avoid such Aliments and Drinks which can suddenly too much increase the Quantity and *Impetus* of the Blood till the wounded Vessel is sufficiently consolidated: And in this Respect a proper Regimen with regard to Diet, is of great Importance. But it is sufficiently obvious, that nothing can be expected from it, in order to stop the Hæmorrhage; for an excessive Loss of Blood requires a present Remedy: And

tho' it should be granted, that Meat and Drink could contribute any thing to this Effect, yet too great a Time is requir'd, before the Chyle, produc'd from the Aliments, can come to the Wound. The same holds true with respect to Medicines taken internally, which are, by some, falsely said to be efficacious in stopping Hæmorrhages: For it appears, from what has been said, that the strongest Astringents cannot so stop a dangerous Hæmorrhage, that they may be safely trusted to, even tho' applied in large Quantities to the divided Vessel. Nothing is, therefore, to be expected from them whilst, being taken internally, mix'd with the Blood, and chang'd by the Force of the Body, they are, by the Action of the Circulation, convey'd, in a small Quantity, to the wounded Part: For, in this Case, they will pass thro' the open Orifice of the Wound, along with the Blood. Besides, all the Remedies capable of stopping an Hæmorrhage, produce their Effect by constricting the Vessel, or by coagulating the Blood, or by doing both these at once. If, therefore, these Remedies, when mix'd with the Blood, and flowing thro' the Wound, had such a Quality, they would prove mortal, by constricting the minute Vessels of the Lungs, or coagulating the Blood, and so hindering its Passage thro' the Lungs, before they could come to the wounded Part. When small divided Arteries, by their proper Contractility, and a Diminution of the *Impetus* of the Blood, in consequence of the Loss of it, are spontaneously closed, as is already observ'd, then the stopping of the Hæmorrhage, which is owing to quite different Causes, is ascrib'd to the Use of such Remedies, many of which are greatly extol'd, and may be safely exhibited, since they neither do Harm, nor Good. No prudent Surgeon will, however, confide in them, and, neglecting more efficacious Remedies, expose his Patient to the greatest Danger.

As for a Discharge of Ichor; it sometimes happens that Wounds, even of a slight kind, are accompanied with a terrible copious Discharge of thin Lymph, the large arterial lymphatic Vessels being probably wounded; since it is hardly to be supposed that the venous lymphatic Vessels, being divided, could discharge so large a Quantity of Lymph; because the sanguiferous Veins, when wounded, unless they are very large, discharge but a very small Quantity of Blood, unless a Ligature, or some other Obstacle, is plac'd between the Heart and the Wound. But we ought carefully to distinguish that Flux of Ichor which arises from Wounds of the lymphatic Vessels, from that which succeeds Punctures of Nerves and Tendons, or violent Inflammations: For, as we have already observ'd, far other Remedies are requisite in the latter, from those proper in the former Case. Here we only treat of that Flux of Ichor which arises from Wounds of the Vessels; in which Case, the Remedies proper for stopping Hæmorrhages, may be beneficial. We have already observ'd, that an artificial Compression of the Vessel was the safest, and most efficacious Method of stopping Hæmorrhages, even of the most violent kind. It is, also, certain from Experience, that the same Method may remove a Flux of Ichor: Of this we have a memorable Instance in *Ruyfch. Observ. Anatom. Chirurg. Centur. Obs. 41*. But when a Flux of Ichor succeeds the Puncture of a Nerve, such a Compression would soon make the inflam'd Parts pass into a Gangrene. Excellent Effects are, also, produc'd by the native Balsams, especially of the thicker kind, which, by their oleous Lentor, are capable of closing up the Wound of such a Vessel, and are observ'd to be friendly and salutary to the wounded Parts, tho' they are only used in Punctures of the Nerves and Tendons: And when these are applied pretty warm to the Wound, as they generally are, perhaps the tender Vessels, by the greater Heat, contract and close themselves.

PAIN CONSIDER'D AS A SYMPTOM OF WOUNDS.

If any nervous Fibre, arising from the Brain, is so extended as to threaten its Dissolution, the Idea of Pain is produc'd.

Pain is a Perception, in the Mind, of something which produces Uneasiness, and to which we have naturally such an Aversion, that, with our utmost Efforts, and even without the Concurrence of our Will, we mechanically attempt the Removal of that which we believe to be the Cause of the ungrateful Perception: For a sound Person has a Power which he can by no means remove from himself, of perceiving certain Ideas, on account of a Change induc'd on some Nerves. If an ignited Iron is apply'd to any Part of the Body of a Philosopher, wrapt up in the most profound and abstruse Meditations, the Train of his Thoughts is immediately chang'd, and that ungrateful Perception, call'd Pain, forthwith excited in his Mind. But it is impossible, by Words, to explain what that Perception in the Mind is, since it is only known to him who endures the Pain; for there is not form'd in the Mind a Representation of any Object different from the Thought of the Pain, but there is a perceiving Power present: For no one, when in Pain, imagines that

there

there is without himself any external Object similar to that Pain which he feels; but all affirm, that they themselves are in Pain.

The Idea of Pain, properly speaking, leaves in the Mind no Remembrance of itself; for the Person who is in Pain, and is next Moment freed from it, is sensible, indeed, that the Cause of Pain was present; but he has no longer an Idea of Pain, nor can he, by any means, excite it in his Mind, without the Presence of a fresh Cause of Pain, which, first changing his Body, may induce a proportionable Change on the Ideas of his Mind.

But what that Change of the Body is, and in what Parts it happens, from which the Idea of Pain arises in the Mind, we may know from Experiments: For it is demonstrable, that only the Nerves arising from the Brain are capable of being so affected, as to excite the Idea of Pain in the Mind: For if a Nerve, which is alone distributed to any Part of the Body, is destroy'd, such a Part may be cut, or burnt, without exciting the Idea of Pain in the Mind, tho' all the other Parts remain sound: But all the Nerves in the Body arise either from the *Medulla Oblongata*, which contains the medullary Substance of the *Cerebrum* and *Cerebellum*; or from the spinal Marrow, which is a Continuation of the *Medulla Oblongata*, and, besides, contains a medullary Substance, arising from its own cortical Part: Yet that Affections of those Nerves only, which arise from the medullary Substance of the *Cerebrum*, are capable of exciting the Ideas of Pain in the Mind, is obvious from this, that in all those Disorders in which the Action of the *Cerebrum*, by means of the Nerves, is remov'd, no Pain is felt. Persons excessively drunk, or perfectly apoplectic, in consequence of the Humours extravasated in the Brain, have no Sense of Pain, tho' live Fire is apply'd to the Parts of the Body; the same, also, frequently happens to Patients under excessive epileptic Fits: Hence it appears, that a Change of those Nerves alone which arise from the Brain, is capable of exciting the Idea of Pain in the Mind: But this Change of the Nerves arising from the Brain, which is capable of exciting the Idea of Pain, seems to be such a Dissolution of them as if long continu'd, or render'd very intense, would produce a Solution of Continuity in these Nerves: For if the healthiest Person, who has no Pain in any Part of his Body, and has no Fault either in his Solids or Fluids, is prick'd under the Nail of the Finger or Toe, with the smallest Pin, an excessive Pain, capable of rendering the Patient convulsive, immediately arises, only from such a mechanical Change of the nervous *Papilla*: Nor is it of any Importance what the Cause is, or how it acts; for, provided it so disposes such a nervous Fibre arising from the Brain, that it is very near to a Rupture, without breaking (for when the Nerve is destroy'd, the Pain ceases), that ungrateful Perception call'd Pain will be excited in the Mind.

But that the chang'd Condition of the Nerve may produce the Idea of Pain in the Mind, it is requisite the Action of this Nerve on the Brain, and of the Brain on it, should remain free and uninterrupted by any Obstacle: For if the Nerve, in its Course, is ty'd, tho' its Extremity should be distracted, lacerated, or cut, the Sense of Pain will not be excited in the Mind. The same will happen, if, whilst the Nerve remains free in all its Course, the Functions of the Brain are injur'd: Hence it is obvious, that, by this Change of the Nerve, something is chang'd in the Brain; and that, from this Change in the Brain, the Idea of Pain arises in the Mind. It therefore seems highly probable, that the Idea of Pain may sometimes arise in the Mind, tho' no Change happens in the Nerves; that is, when the Brain, from any other Cause, receives such a Change as it would have receiv'd, if a nervous Fibre, in any Part of the Body, had been so dispos'd, as to be in Danger of a Dissolution. This is confirm'd by practical Observations; for it frequently happens, that those who, by the Calamities of War, or other Misfortunes, lose their Legs, complain of a Pain in the Toes of the Leg they have lost: And in some it has been observ'd, that a Sense of such a Pain was the Sign of imminent Convulsions; the Brain, which is the Origin of all the Nerves, being chang'd. Nor does this happen only soon after the Amputation, but a long time after. See *Miscellan. Curios. Decur. 1. An. 2. and Hildan. Obs. Chirurg. Cent. 3. Obs. 15.* Whilst, therefore, in some Persons, the Brain, which is subservient to Sensation and Motion, and from which all the Nerves arise, is more easily affected than in others, the former will be obnoxious to many Disorders and Pains, which they ascribe to external Causes, but which really derive their Origin from the too easy Mobility of the common Sensory.

Hence, when Sydenham, as he tells us, in *Dissert. Epistolar.* perceiv'd that Venesection, Purging, and some other Measures, were of no Use in those surprising Disorders which proceed from a disturb'd Motion of the Spirits, he concluded, "That as the exterior Portion of a Man's Body consisted of Parts obnoxious to the Senses; so, without doubt, his interior Frame is to be consider'd as consisting of a due Series, and, as it were, Fabric of Spirits." But this interior Frame, being intimately

"join'd, and, as it were, united with the Constitution of the Body, is more easily or difficultly chang'd from its proper State, according to the greater or less Strength of the constituent Principles we receive from Nature." Hence, in such Disorders, when Pains, in various Parts of the Body, resembled the most different Distempers, he justly accus'd the Irregularity, and inordinate Motion, of the animal Spirits alone, and apply'd the Whole of his Care and Skill only to sooth and regulate them; by which means, he knew, from Experience, all the Pains, and Variety of Symptoms, which in this Disease imitated the most different Distempers, were mitigated. This is sufficiently confirm'd by this, that, in delicate Constitutions, Perturbations of Mind alone are able to produce a Train of terrible Symptoms, tho', immediately before, no manner of Change was discover'd in the Solids and Fluids.

If, therefore, we should suppose that all the perceiving Points in the Body remain, and that all the not-perceiving Points were abolish'd, we should have an Idea of that interior Frame mention'd by Sydenham; but, by this means, a great many Parts of the Body would be taken away. The whole Heart, so much agitated and inflam'd in the most acute Distempers, is not itself sensible of Pain, but an uneasy Sense of Anxiety arises; the whole Lungs are often consum'd by a purulent *Tubercle*, without any Pain: The same, also, happens to the Kidneys, tho', at the same time, the *Pelvis*, and interior Membrane of the Ureters, when indispos'd, are subject to intense Pains. The whole Liver is sometimes consum'd by an Abscess, without any Pain; but if the exterior Membrane of the Liver is affected, an intense Pain is present.

The Idea, therefore, of Pain, in the Mind, follows such a Disposition of a nervous Fibre in the Body, as endangers its Dissolution; tho', at the same time, it seems highly probable, that the Idea of Pain may be excited, tho' no Change happens to the Nerves, but only to the Brain, from which these Nerves derive their Origin. Nor does this appear only in those Nerves which, as it were, guard the Body, and, being dispers'd every-where, warn the Person to remove or avoid every thing, which, being about to act, or at present acting, would destroy the Part: But we, also, observe, that the same infallibly happens in other Nerves, from a Change of which, the most distinct Ideas arise in the Mind, and such as are equally lively with any others, tho' no external Object has acted on the Organs of Sense; but a Change is only induc'd in the common Sensory by Diseases. Thus phrenetic Patients see strange Objects, and frequently hear terrible Noises, tho' there is no external Object to excite these Ideas, by inducing a Change of the Nerves. The same happens in melancholic *Deliriums*, and maniacal Ravings.

The Pain is the more intense, the nearer the Fibre is to a Rupture; and the gentler, the nearer it is to its natural Tension.

Since, from the Definition of Pain, it is obvious, that Pain is perceiv'd when a nervous Fibre is so dispos'd as to be in Danger of a Dissolution; it naturally follows, that the Pain is the more intense, the more the Cause, exciting it, distracts the Fibres; provided the Cohesion, as yet, remains: For when the Cohesion is destroy'd, the Pain ceases; and, on the contrary, the less the Distraction of the Nerve is, the less will the Sense of Pain be. This is obvious, in the Racks us'd by Judges, in order to extort from Malefactors a Confession of their Crimes: For, hanging the Person up by the Hands, they apply to his Feet Weights, which are gradually increas'd: Hence, by the greater Distraction of the Parts, the Pain is gradually increas'd, to the greatest Degree; but as soon as these Weights are remov'd, the Pain is diminish'd. Many Nerves, in the human Body, are so lax, that they bear Extension without any Pain; but when the Nerves, dispers'd thro' the *Periosteum*, are stretch'd upon the Bones, the smallest Increase of Tension produces the most intolerable Pain: Hence arise those excessive Pains, whilst, in a *Lues Venerea*, bony Tumors distend and dilacerate the incumbent *Periosteum*. Hence arises the Severity of that sort of Torment us'd by Executioners, when, by a Screw, they force the *Periosteum* on the Spine of the *Tibia*, to the hard Bone, gradually augmenting the Pressure. For the same Reason, the most intense Pains happen in the smallest Nerves: For the largest Nerves have but a small Part of their Bulk which may be call'd truly nervous. Hence it may easily happen, that such large Nerves may be distended without a Distraction in their nervous Fibrils, but only in the callous Coats covering those Fibrils. But when a Nerve is small and tense, and especially when it is destitute of such Coats, an intense Pain is produc'd in it by the slightest Cause. This is obvious in the Tooth-ach, when the adamantine Crust of the Tooth, being corroded, and the minute Nerves dispers'd thro' the internal Substance of the Tooth, destitute of their Coats, are, by the Action of the Air, seiz'd with intolerable Pain, which cannot be allay'd till the affected Nerve is destroy'd, by

an increas'd Distraction, the Application of proper Remedies, of the Drawing of the Tooth.

Hence it is obvious, that the greatest Degree of Pain, in the same Part, is but short; but a less Degree may continue long, and be increas'd, or remit.

Since Pain supposes such a Condition of a Nerve as endangers its Rupture, that is, a Solution of its Continuity; and since the Pain is the more intense, the nearer the nervous Fibre is to a Rupture; it is obvious, that the greatest Pain is then present, when the nervous Fibre is breaking; but when it is broken, all the Pain ceases, which before arose from the too great Distraction of this Fibre. The greatest Pain, therefore, denoting that the nervous Fibre will soon break, will be short; because, when the Fibre is broken, it ceases. Thus, when a Wound is inflicted with a sharp Razor, a short and momentaneous Pain is only produc'd; and, in the Gout, the Violence of the Paroxysm is observ'd to end the sooner, the more intense the Pain is; when a Tooth becoming carious, the Nerves dispers'd thro' its Substance are divested of their Coats, sometimes, by Suction, such Nerves are distracted, and such an intense Pain is produc'd, that the most robust Man cannot bear it, even for a few Moments: But when the nervous Fibrils are broken, the Pain soon ceases. The Drawing of a Tooth is attended with great Pain, which immediately ceases, after the Operation is over: The highest Pain will therefore soon destroy the affected Nerve, or so affect the Brain, as that all Perception of Pain ceases: On which Occasion, a Syncope, or an Abolition of all vital Motion, generally happens. Nor can the most racking Pains proceed any farther; for Persons in such a Condition, like a Carcase, feel no more. Thus it is certain, from many Experiments, that Malefactors, condemn'd to the Rack, become immediately, as it were, dead; and are no longer sensible of the most exquisite Torments.

It seems to be repugnant with this Circumstance, that violent Tooth-achs torment People for several Days, or even Weeks: But the Reason of this is, that the small Nerve which enters the Tooth, and is divided into minute Fibrils, is distributed thro' all its Points: Hence tho', by the greatest Pain, one such Fibril is destroy'd, the Misfortune proceeding to the others may long protract the excessive Torments.

But as a milder Pain supposes a smaller Tension of the affected Nerve, and consequently less Danger of a Rupture, it is sufficiently obvious, that such a Pain may be long protracted: And as between the natural Tension of a Nerve, and the greatest Distraction, next to a Rupture, numberless intermediate Degrees may be conceiv'd, it appears, that such Pains may continue long without the Destruction of the affected Nerve, and be increas'd or diminish'd according to the greater or less Degree of Distraction. But these Pains, which happen in Parts of the Body pretty near the Heart, and are accompanied with a violent Fever, soon cease; the affected Part being destroy'd: But in Parts remote from the Heart, and free from a great Agitation of the Humours, long-continu'd, and often returning Pains, may happen; without a sudden Destruction of the affected Parts. A violent and inflammatory Iliac Passion often takes off the strongest Man, in a few Hours: But the Gout, by repeated Paroxysms, often racks the Patient for twenty Years, before it destroys the affected Nerves; in which Case, the Pain in the Extremities is diminish'd, or ceases: But the Matter which before prey'd upon the Limbs, is convey'd to the internal Parts, and produces the most terrible Misfortunes.

The Cause, therefore, of Pain, is every thing capable of producing such an Extension or Disposition of a Nerve.

Under the general Name of the Cause of Pain is comprehended every thing which so distracts or disposes a Nerve, before not affected with Pain, as that it is in Danger of a Rupture: Nor is it of any Importance, whether this is done by Pressure, Distraction, or Corrosion; since the Effect will always be the same; that is, the Idea of Pain will be excited in the Mind. With respect to Intensity, or Duration, there may be a Difference between the Pains excited by different Causes, but in other respects the Effect will be the same.

Hence it is obvious, that a great Variety of Causes may excite Pain in the healthiest Body: But that the latent Cause of Pain may be regularly trac'd by the Physician, and, when known, remov'd, we ought to reduce the hitherto-known Causes of Pain to certain Classes; which is done in the next Aphorism.

To this, then, belong,

First, The Force of natural Contraction sustain'd by fewer Fibres, whilst some are divided.

Secondly, Whatever, by over-filling a Vessel form'd of a Contexture of nervous Fibres, distends it. To this belong an

Obstruction, a Plethora, a redundant Cacochymy, and an Increase of the circulatory Motion.

Thirdly, Whatever distracts the nervous Fibres; as Luxations, Tumors, and external Force. And,

Fourthly, Whatever wounds, or corrodes.

1. This is already treated of, when, speaking of the worst Species of *Paronychia*, in which this happens, when the Tendon of the Flexors of the Finger being affected, an intense Pain is produc'd: For the Bone of the last Phalanx of the Finger often falls off, after the Patient has suffer'd the most racking Pain: But before the Bone can fall off, the Tendon affix'd to it must be separated from it, which is not done all at once, but by a slow Distraction; for no Parts of the Body, so small as the Fingers, have so strong Muscles affix'd to them: And, in this Disorder, those Muscles being contracted, the Fingers always appear bended. When, therefore, the Tendon begins to be separated from this small Bone, the remaining Fibres sustain the whole Force of the contracted Muscles, and are, by a slow, but continual Laceration, torn from the Bone to which they adhere: Hence an intense Pain often so disturbs the whole Brain, that an acute *Phrenitis*, Convulsions, and often Death, succeed. No Degree of Patience is able to support those Torments, by which the Parts are gradually torn from the live Bones. A singular Instance of this we have in the Conduct of *Philotas*, mention'd by *Quintus Curtius*, in *Lib. 6. Cap. 11*:

2. It is shewn, under the Article *FIBRA*, that the large Vessels consist of Membranes which contain Vessels of all Kinds, even the least in the Body, such as the Nerves: Every thing, therefore, which distends the Sides of the large Vessels, will, by a Parity of Reason, distract the Nerves dispers'd thro' them: But from such a Distraction, as is before observ'd, arises the Idea of Pain in the Mind. It may be doubted, whether all the Vessels in the Body have in their Membranes perceiving Nerves; since, as we have already observ'd, many of the *Viscera*, which are, from Anatomy, known to consist of a Congeries of Vessels, are, however, often gradually consum'd and destroy'd, almost without Pain. Hence this will only be true so far as the Membranes, constituting the Vessels, have Nerves arising from the Brain, and subservient to Sensation, distributed thro' their Substance: But that this happens in many Vessels, is obvious; because no Point in the Surface of the Body can be wounded by the Point of the smallest Pin, without a Discharge of the contain'd Humours from the wounded Vessels; and a Perception of Pain: The principal Causes which distend the Vessels furnish'd with nervous and perceiving Fibres, are these following:

Obstruction: This always supposes a Blocking-up of the Canal thro' which the Fluids ought to be convey'd by the vital Motion: Hence it necessarily follows, that the Fluids convey'd to the obstructed Place of the Vessel, and not able to make their Way thro' it, must dilate, attenuate, and at last resolve or open the Sides of the Vessel, as is shewn under the Article *OBSTRUCTION*. It is therefore obvious, that the nervous Fibres constituting the Sides of the obstructed Vessels, becoming highly tense, and at last breaking, may excite the Idea of Pain, which will have various Degrees of Intensity, according to the different Degrees of Distraction: When, in a Pleurisy, the Arteries, obstructed by the stagnant Blood lodg'd in the intercostal Parts, are distended by the succeeding Blood, an intolerable Pain is produc'd, and is always the more intense, the greater the *Impetus* is with which the Blood acts on the obstructed Parts. Hence, when this *Impetus* is lessen'd by Venesection, the Pain either ceases, or is diminish'd. Hence Obstruction, properly speaking, is not the Cause of Pain; but the succeeding Blood, by dilating the obstructed Vessel, excites the Pain.

As for a Plethora; it is shewn, under the Article *PLETHORA*, that a Redundance of laudable Blood not only distends the Vessels, but may, also, produce a Rupture in them: Hence all the Degrees of Pain which can arise from a preternatural Tension, or a Rupture of the Vessels, are excited by this Cause alone. This is sufficiently evinc'd by violent Head-achs arising from Repletion alone, and which are happily cur'd by Venesection. Women, also, before their excessive Plenitude is remov'd by the menstrual Discharge, from this Cause perceive Pains in various Parts of their Bodies; which, however, are happily remov'd, when the redundant Blood is evacuated thro' the dilated Vessels of the Uterus.

As for a redundant Cacochymy; every Degeneracy of the Humours from the Conditions requisite for Health, is comprehended under this Name: Now too great a Distention of the Vessels may be produc'd by a Congestion of other Humours, as well as by a Redundance of laudable Blood: Hence, also, Pain will be excited, in consequence of the Distraction of those nervous Fibres which constitute the Membranes of the Vessels. Here we do not treat of that Acrimony which degenerating Fluids may acquire, and by which they may excite Pain, by corroding or irritating the Parts. When a stagnant aqueous *Colluvies*, congested

gested in the *Membrana Adiposa*, in an *Anasarca* of the Legs, the Pain arises from this Cause alone.

As for an Increase of the Circulation; it is shewn, under the Article SANGUIS, that an Increase of the Circulation alone, by an Augmentation of the Heat, produces a greater Rarefaction of the Fluids: Hence follows a greater Distention of the Vessels; and the thicker Parts of the Fluids, entering the dilated Vessels, produce Obstructions, Distractions, and Inflammations. But all these cannot happen without a Distraction and Dilaceration of the nervous Fibres dispers'd thro' the Membranes of the Vessels: Hence it is sufficiently obvious, that Pain is excited by that means. In Fevers, by an increas'd Motion of the Blood alone, a Pain of the Head and Limbs may be produc'd, which again ceases when the Fever is diminish'd, or remov'd.

Every thing which forcibly distracts the Parts of the Body, diminishes their Cohesion, and may, consequently, induce a Solution of Continuity, if this Distraction is continu'd, or augmented: But, according to the Definition of Pain, such a Condition of a Nerve as threatens the Solution of its Continuity, excites the Idea of Pain in the Mind: A Distraction, therefore, of the Parts furnish'd with nervous Fibres, by whatever Cause, will produce Pain. Hence when Bones, luxated from the Cavities which naturally contain'd them, distract the Ligaments securing the Articulation, an intense Pain is produc'd, which, upon the Reduction of the Bone, immediately ceases, unless the Ligaments distracted by the Luxation, or the adjacent compress'd Parts, are already inflam'd: A sufficient Proof, that the Pain, happening after a Luxation, arises only from this Distraction of the Ligaments. Hence *Hippocrates*, in *Tr. de Articulis*, Text. 29. tells us, that they who have the *Humerus* luxated and reduc'd without Pain, or any Inflammation of the adjacent Parts, and for that Reason are negligent, ought to take great care that the reduc'd Bone do not again slip out: For which Reason he orders Physicians to warn them of this; because, in such Cases, the Luxation returns far more easily than if the Parts were inflam'd.

Hence it is obvious, that the Effect will be the same if a Tumor, form'd by whatever Cause, distracts the Parts: For in an inflammatory Gout, and some other Disorders, such as a *Spina Ventosa*, or an *Exostosis*, a Distraction of the Nerves dispers'd thro' the Ligaments of the Joints produces exquisite Pain. How great Pain may be excited by external distracting Force, is obvious, from the Method of racking Malefactors; in which, by the Application of Weights, or the Use of Pulleys, the Parts of the Body are distended.

Every Wound, as is obvious, from its Definition, is the Solution of Continuity in a soft Part; but when the wounding Instrument divides Parts before united, that Condition of a Nerve is produc'd by which its Dissolution is threaten'd: Pain is therefore excited; but it is only momentary, if the Parts are divided by a quick Action of the Instrument; yet there is Pain at the Moment the Wound is inflicted: But the Pain which arises some time after the Wound is inflicted, depends on the Distraction of the Parts, in consequence of the Recession of the Lips of the Wound from each other. Hence this Pain succeeds the Wound inflicted, but does not arise from the Wound as its immediate Cause, but from the Change induc'd on the Wound from the Contractility of the Parts: For a Nerve, next to Rupture, produces the Idea of Pain in the Mind; but when the Nerve is totally divided, the Pain ceases. Hence, when a Wound is making, Pain is produc'd; but when it is made, it ceases.

All Corrosives, apply'd to the Body, and render'd active by the Heat thereof (since, except Fire alone, they hardly act upon a Carcase) divide and destroy the Parts, by numberless minute Wounds. Hence, as is evident, a pretty intense and long-continu'd Pain is produc'd.

Hence the various Causes of Pain in a Wound are known.

If the things hitherto taken notice of are apply'd to a Wound, it appears, that a great Number and Variety of Causes, exciting Pain in a Wound, may happen: For the wounding Instrument, at the time the Wound is inflicting, is the Cause of Pain. The Parts of the wounding Instrument, left in the Wound, may produce Pain: The Lips of the Wound, receding from each other, half-divided Nerves, and large Nerves divided, retracted, and distracting the small Ramifications above the Wound, may excite the most intense Pain. When the Lips of the Wound are afterwards inflam'd, render'd tumid, and retorted, and, at the same time, the Celerity of the Circulation is increas'd by a slight Fever, new Causes of Pain are present. When the Humours, discharg'd into the Cavity of the Wound, acquire an acrid Quality, they excite Pain, by corroding and irritating the Parts: The same Effect will, also, be produc'd, by the Application of acrid Substances, of whatever kind. When, by a Suppuration, the obstructed Extremities of the Vessels are gradually sepa-

rated from the live Parts, Pain is, in like manner, produc'd, but ceases when the Pus is form'd: All these Things are to be carefully distinguish'd, that, knowing the Causes of Pain in a Wound, we may apply proper Remedies.

Hence, also, we understand the Effects of a Wound; which are, Inquietude, Jactation, Watching, Fever, Heat, Thirst, Dryness, Convulsions, and Gangrene.

When Pain is present in the Body, its Effects succeed, which are principally observ'd to be these following:

Inquietude and Jactation: When we perceive Ideas, there arises in the Mind a certain Change, which is either grateful, or disagreeable, or, sometimes, rather totally void both of Pleasure and Pain: Thus, when a Person thinks that a Circle is divided into two equal Parts by its Diameter, the Idea affords neither Pleasure nor Pain; but if the Hand, when cold, is put near a moderate Fire, all say that this is pleasant; and if live Fire is apply'd to the Hand, all will affirm, that this is displeasing. In what manner this happens, perhaps, cannot be explain'd, tho' every one finds such Things in himself. But the Sense of Pleasure and Pain, which accompanies the perceiv'd Idea, produces some Effects in us which the strongest Efforts of Reason cannot overcome, whatever arrogant Philosophers have asserted to the contrary. For the Will endeavours by all means to retain the grateful Sensation present to the Mind, and to destroy the ungrateful one; and then succeed mechanical Motions not determin'd by the previously-conscious Mind, but truly necessary and physical, by which we endeavour to remove or avoid that which excited the ungrateful Perception in the Mind. This is a certain Ingredient in the human Nature, of which it cannot divest itself. If a Philosopher, involv'd in profound Meditations, receives a Prick of a Pin in his Finger, he will immediately draw back his Hand, tho' there is not in his Mind any Consciousness of that Motion excited: Hence the Sense of Pain, like a faithful Guardian, advises us, as it were, to remove that which would destroy the Body. Thus we see that Men in Pain, by a various Position of the Parts of their Bodies, and often by a continual Agitation, endeavour to find such a Situation as may remove, or at least diminish the Sense of Pain. Hence arises the Inquietude and Jactation in excessive Pains: But when, by the least Motion, the Pain is increased, the Patients remain immoveable, as is obvious, in the most racking Gouts, and Rheumatisms.

As for Watchings; when an healthy Person has all his Senses lock'd up by a natural Sleep, he is rous'd and awak'd by all those Things, which strongly affect the Organs of Sensation: Much more, therefore, will Sleep, when not present, be prevented by Pain, which so efficaciously affects the Brain. For this Reason, the antient Physicians, in lethargic Disorders, pull'd the Hairs from the Nostrils, lash'd the Limbs with Nettles, and apply'd acrid Substances to the Parts of the Body; that, being rous'd by the Sense of Pain, the excessive Drowsiness might be remov'd.

As for a Fever; this almost always succeeds excessive Pains, even in those Diseases which naturally have no Tendency to a Fever; such as a Gout, and *Lues Venerea*: For when such an intense Pain racks the Patient, some Degree of a Fever is generally present.

Hence *Hippocrates*, in many Passages, acknowledges Pain to be among the Causes of Fevers: For in *Prænot. Coac.* No 75. he tells us, "That from violent Pains arise long-continu'd Fevers." And in No 31. *ibid.* and in *Lib. 1. Proorrh.* he informs us, "That malignant Fevers arise from Pains of the *Hypochondria*." When the Articulation of the *Humerus* slips towards the posterior Parts, he tells us, that it is intensely painful, and excites the most violent Fevers. And in his *Tr. de Fracturis* he informs us, "That unless any luxated Articulation is speedily reduc'd, a Fever will, in the healthiest Person, be produc'd by the Pain."

Since, therefore, a Fever almost always succeeds an intense Pain, we may easily understand how Heat is the Effect of an increased Circulation by the Fever; and Dryness, the Effect of a Dissipation of the Fluids by a brisker Circulation, may arise from Pain: But when Dryness and preternatural Heat are present in the Body, Thirst always forces the Patient to alleviate these Symptoms by copious Drinking.

As for Convulsions; these principally happen in those, the Whole of whose nervous Systems is highly delicate, and susceptible of the smallest Impressions: Hence Infants are so often subject to Convulsions, on account of Gripes in the Intestines, arising from an Acid.

As for a Gangrene; this is such an Affection of a soft Part, as, in consequence of an Abolition of the vital Influx and Efflux of the Humours, tends to a Mortification. Hence, with respect to a Nerve in great Pain, a Gangrene is such a State of that Nerve, by which it tends to a Mortification, since it will

soon be totally ruptured in consequence of its violent Distraction. When a violent Pleurisy, accompanied with intense Pain, is not suddenly relieved, or when Respiration is by the Violence of the Pain so hindered, that the Patient is in Danger of being suffocated, livid Spots appearing on the Part affected, denote a mortal Gangrene. In an inflammatory Iliac Passion, after the most intense Pains, a Gangrene in a few Hours arises, upon which the Pain ceases, but Death soon succeeds. In a malignant Paronychia, within a few Hours, the Part is often affected with so intolerable Pain, that the corrupted soft Parts are dissolved into a gangrenous Gore, and the Bone of the affected Finger falls off mortified. But a Gangrene principally succeeds Pain, when an Inflammation and violent Fever are present at the same time; for then, by the increased Impetus of the Circulation, the Parts are quickly destroy'd.

In this Case the Difference of Anodynes is to be estimated and determined by the Diversity of the Causes producing Pain.

There is only one proximate Cause of Pain, and that is such a Disposition of a nervous Fibre arising from the Brain as threatens its Dissolution. Every thing, therefore, which removes such a Disposition of the nervous Fibre, will be a Remedy for the Pain: But because such a Condition of the Nerve may depend on a great many different Causes, hence a proportionable Variety of Anodynes is requisite, since distinct Remedies must be applied for removing each particular Cause. Hence it is necessary, that the particular Cause of the Pain should be known before we can determine what will weaken or remove this Cause. We have already enumerated the Causes of Pain, and reduced them to distinct Classes; and the following Aphorism proposes the Remedies suited to these Causes.

The Cause of Pain is, therefore, taken away,

1. By relaxing the distended Fibre.
2. By resolving whatever is concentered.
3. By diminishing the Motion of the Fluids, and lessening the distending Matter.
4. By removing the unequal and violent Traction.
5. By correcting the present Acrimony.
6. By dissolving it; and,
7. By removing that which dissolves the Fibres.

1. Such a Distraction alone as is ready to produce a Rupture, excites Pain: Now if we can by any Art manage things in such a manner as that the Fibre may be distracted without Danger of a Rupture, the Pain ceases, tho' the Cause distracting the nervous Fibre continues to act. If we attempt to break a Piece of dry and rigid Wood it breaks; but if it is macerated in Water, it may be bent. Thus a green fallow Twig may be twisted without breaking; but when dry, an Attempt to bend it, breaks it. Hence in Disorders, accompanied with the most intense Pain, such Remedies have in all Ages been used as relax'd the solid Parts of the Body. In the Iliac Passion, *Hippocrates* ordered the Body to be fomented and anointed with Oil. In a Pleurisy he commanded the affected Side to be covered with the most soft and tepid Substances, injoining at the same time, the internal Use of things of a like Nature. *Galen*, as is already observed, on himself allay'd the most intense Pain, and prevented the Convulsions to be dreaded from it, by continually applying warm Oil to the Part affected. Whilst a Phlegmon, by an inflammatory Tumor of the subjacent Membrana Adiposa, distends the Skin, and by a Distraction of the cutaneous Fibres produces Pain, tho' such a Tumor being entirely irremovable, tends to a Suppuration, and consequently the distending Cause not only remains, but is rather increased, yet if Cataplasms of the most emollient Substances are continually applied, the Pain will be mitigated, since the nervous Fibres are so relaxed, that they may be distracted, without Danger of a Rupture. A large Quantity of any soft expressed Oil taken internally, greatly alleviates iliac, colical, and nephritic Pains. The Steam of tepid Water affords great Relief to Parts affected with the greatest Pain. When by the Puncture of a Nerve immense Pains are produced, skilful Surgeons continually foment the Parts affected, with the most emollient Substances. Hence they affirm, that emollient and relaxing Medicines are an universal Remedy against Pains, because they remove the proximate Cause of Pain which is the Danger of Rupture in the nervous Fibre; whilst other Remedies act only on the remote Causes of the Pain. And tho' we should be ignorant of the particular Cause so disposing the nervous Fibres as to produce a Sense of Pain, yet these Medicines may always be used with Safety and Advantage; for they have this good Property, that they are sufficient for removing many of the remote Causes of Pain, without augmenting those which they cannot remove; for the Vessels being relaxed, the distending stagnant Fluid

passes more easily through them, and at the same time, all Acrimony is corrected by such Medicines. But every thing which augments the Strength and Contractility of the Parts of the Body, whilst the Cause distending the Fibres remains the same, will increase the Pain. Thus a Pleurisy is observed to be far more violent in robust Persons accustomed to Exercise, than in Patients of weak and lax Constitutions; in whom, also, luxated Bones are far more easily reduced than in Persons of firm Habits; for in some, the Elongation of the Ligaments is so easy, that the Reduction may be made without Pain. When Executioners, in racking Malefactors, forcibly distract all the Parts of the Body, they greatly increase the Pain by sprinkling cold Water upon them. When, therefore, the Efficacy of emollient and relaxing Substances can reach the Part affected, it will never fail to produce an Effect: If, for Instance, the nervous Fibril in the middle Substance of a Tooth is pain'd by too great a Tension, that Pain must necessarily be allay'd by relaxing Medicines. The same holds true, when from a Disorder of the Marrow of a Bone intolerable Pains arise; as, also, when in a malignant Paronychia, the Cause of the Disorder is lodged under the cartilaginous Part which covers the Tendons of the Flexor Muscles of the Fingers. It may, also, sometimes happen, that tho' the Pain is very intense, yet other Symptoms prohibit the Use of relaxing and emollient Medicines. Thus, for Instance, if from a latent or exulcerated Cancer, an intense Pain should arise, Emollients would prove hurtful, because they would greatly increase the Putrefaction, and fungous Excrescence of the Cancer. But almost in all other Cases, relaxing Medicines are universally used for alleviating Pains.

2. When a Stone impacted in the Ureters produces Pain, the Persons who could dissolve that calculous Concretion would remove the Pain. All those things which are capable of resolving Blood concentered by an inflammatory Density, will alleviate pleuritic Pains. The same holds true in all other Cases, where an obstructing Matter stuffing the Vessels, or Tumors arising from a Concretion of congested Matter, press or distend the adjacent Parts. Under the Article OBSTRUCTION, are considered the various Manners in which the Molecules of the human Fluids before separate, may become concentered; and under that Article are, also, specified the Remedies capable of dividing these Concretions. Hence the Nature of the Concretions ought to be investigated from what has been said, before we can find a Remedy, which, by resolving that Concretion, will remove the Pain arising from it.

3. All Pain supposes a remaining Principle of Life; and if it arises from a stagnant Humour distending the obstructed Vessels, it will be the more intense the more brisk the Circulation of the Blood is. Hence in a Pleurisy when a violent Fever is present, an intense Pain is produced, because the Humours are impetuously forced on the obstructed Part, and by dilating the Vessels, forcibly distract the nervous Fibres constituting the Texture of these Vessels. Every thing, therefore, which diminishes the Impetus and Velocity of the Circulation of the Humours, will alleviate the Pain, as is certain from daily Experience; for Venesection till the Patient falls into a Deliquium, forthwith either removes, or at least greatly abates, the most acute pleuritic Pains. Hence the ancient Physicians in the most violent Pains, recommended Venesection till a Deliquium was brought on. And *Galen*, in *Comment. 1. in Aphor.* tells us, that he removed a long and fixed Pain in that Part of himself where the Liver is joined to the Diaphragm, by opening the Artery between the Thumb and fore Finger of his Right Hand, and permitting the Blood to flow till it stopt spontaneously. For the same Reason, the Antients, as we find from *Cap. 23. of the last quoted Work*, recommended great Rest in the most acute Diseases, which are generally accompanied with an intense Pain of the Head. Nor in such Cases is Venesection only useful, because by weakening Life it diminishes the Motion of the Blood, but, also, because by means thereof the Quantity of the distending Humours is lessened. In plethoric Patients intense Head-achs are frequently present, tho' the excessive Motion of the Blood is checked, and almost suffocated by the Redundance of the Humours to be moved. But as soon as by a spontaneous Hæmorrhage from the Nose, or a liberal Venesection, the Redundance of the Blood is diminished, the Pain forthwith ceases, because the Matter which distends the too full Veins is removed.

But a Diminution of the Motion of the Blood is not only beneficial in those Cases, where an excessive Velocity of the Circulation, or too great a Distension of the Vessels produce Pain, or augment it when produc'd by any other Cause; but it is, also, highly beneficial in alleviating those Pains which arise from an acrimonious Quality of the Humours; for acrid Substances rendered active by the Circulation of the Blood and Heat of the Body, may produce bad Effects: But in a Carcase where there is no Motion,

Motion, except only the common Heat of the Atmosphere, they produce scarcely any Effect. Thus *Helmont* and *Petit* inform us, that Cantharides applied to a Carcase, produce no Effect. And in *Mem. de l'Acad. Royale des Sciences l'An. 1732.* we are told, that a potential Caustic applied to the Skin of a Carcase produced little or no Effect in fifteen Hours; but when the Part to which it was applied was cherished by warm Linen Cloths, it destroy'd the Skin, and a Part of the subjacent Fat. It is observable, that those Diseases in which the Pain arises from an Acrimony of the degenerating Humours, are always rendered worse by an Increase of the Circulation, or an Augmentation of the Heat, which succeeds that of the Circulation. The nocturnal Pains, which so severely afflict those labouring under a *Lues Venerea*, are by the Heat of the Bed so increased, that the miserable Patients are forced every Night to get out of Bed in order to cool their Bodies, and by that means alleviate their Pain. When an acute Fever seizes a Person labouring under a malignant Scurvy, the Pains are greatly increased, and sometimes the Vessels being suddenly burst by the augmented Impetus of the acrid Humours, the Blood is discharged every-where. Thus, in *Mem. de l'Acad. Royale des Sciences l'An. 1699.* we have an Instance of a malignant Scurvy greatly increased by the Heat of the Air. The same is evinced by many other Observations.

In what Manner, and by what Means the Motion of the Fluids thro' the Vessels may be diminished, is shewn under the Article SANGUIS; but the distending Matter can only be removed by Evacuants.

4. When by a Luxation the Bone slips out of the Cavity of its Articulation, it distracts the Ligaments, and presses upon the adjacent Parts. Hence arises Pain, which soon ceases, or at least is greatly diminished, as soon as the Bone is replaced; for some Degree of Pain often remains after the Reduction, in consequence of the Ligaments; for which Reason they are frequently inflamed. The same holds true, when the tendinous Parts half-torn, and continually elongated by an unequal Traction excite an intense Pain; for if, in that Case, by a proper Situation of the Part affected, and a due Application of Compress and Bandage, this unequal Traction is hindered, the Pain ceases. This is evinced by a memorable Case related in *Mem. de l'Acad. Royale des Sciences l'An. 1728.* But if the distracting Force cannot be removed, when, for Instance, the luxated Bone cannot be reduced on account of the Tumor, and violent Inflammation, then emollient and relaxing Substances are alone proper, since by their means the Fibres may be elongated without Danger of a Rupture.

5. When without a too great Motion of the Humours, any Signs of an excessive Distension of the Parts by a Concretion or Accumulation of the Fluids, or without any external distracting Force, a Pain arises, then we begin to think of the Acrimony of the Humours, which is often said to produce that Pain which arises from other Causes. For a great Degree of Acrimony is very rarely found in the Blood, since the tender Vessels of the Brain would soon be destroy'd if the acrid Humours passed through them. Hence acrid Humours are scarcely ever found, except in the *Primæ Viæ*, or when stagnant or extravasated Humours lodged in any Part of the Body become acrid, either from their own Nature, or a particular Caco-chymy, as in a *Lues Venerea*, and Scurvy. Hence such an Acrimony of the Humours in particular Parts is always bad. If it is, therefore, certain, that Acrimony is the Cause of the Pain, it is sufficiently obvious, that the Pain is removed or mitigated by correcting that Acrimony. But this is done either by a specific Medicine opposite to the known Acrimony; when, for Instance, an acrimonious Acid is enervated, and rendered mild by terrestrial Absorbents, or by alkaline Salts; or the same End is obtained by the general Remedies against Acrimony of all Kinds, such as diluent, obtunding, and inviscating Substances, by which all Acrimony is subdued and corrected.

6. When in a malignant *Lues Venerea* the Bones are affected, intolerable Pains arise from a slow Corrosion and Tumor of the affected Bones distending the highly sensible Periostium: But when in such Cases the Body is filled with a large Quantity of the Decoction of Guaiacum, and a Sweat excited by kindled Spirit of Wine, that Decoction is convey'd thro' all the Vessels, the latent Poison is deterged and carried out of the Body, and the Pain either greatly alleviated, or totally removed. The same will happen when there is a considerable Caco-chymy of the acrid scorbutic Kind; for Instance, in the Body of a wounded Person: For in that Case, the Humours convey'd to the Wound, soon acquiring a greater Degree of Acrimony, may excite Pain. This acrid and irritating Matter is washed away and corrected by highly soft and gently diaphoretic Medicines, such as all the vulnerary Decoctions exhibited in large Quantities.

7. So long as the Remains of the wounding Instrument,

the Fragments of the wounded Bone, or any other Substances, which can by their acute Figure and Rigidity injure the Parts, remain in the Wound so long, the Pain will continue, especially because the Parts perpetually irritated become inflamed and tumid. Hence the Parts pressed to this foreign Body left in the Wound are more lacerated, till it is extracted by surgical Instruments, or expelled by a due Suppuration. But in what Manner, and with what Cautions such Bodies should be removed from Wounds, has been already specified.

The Sense of Pain is taken away whilst the Cause remains;

First, by rendering the Nerves insensible by means of Compression, Cutting, or Burning: And,

Secondly, By obtunding the common Sensory by the Force of Narcotics; and by these some of the Effects arising from the Sense of Pain are taken away.

The most perfect Cure of Pain is the Removal of its Cause. But sometimes the Causes even of the greatest Pains are latent, and when they are known they cannot often be removed. But the ungrateful Sense of Pain requires an Alleviation, since by its Effects such as Restlessness, Watchings, and Fevers, the Body will be so changed that terrible Misfortunes may succeed. In this Case, the only remaining Method to be taken is to remove the Sense of Pain, tho' its Cause remains. But the Sense of Pain is produced when there is a free Commerce between the Brain and the affected Nerve, and when the Functions of the Brain remain entire: All things, therefore, which destroy the Sense without removing the Cause of Pain, act either on the affected Nerve, or on the Brain itself.

1. It is certain from Experience, that when a Nerve which alone runs to any Part of the Body is destroyed, all Sense of Pain in that Part is abolished, as has already been observed; for the Change produced in the Extremity of the Nerve, so affecting the common Sensory, that an Idea of Pain arises in the Mind, is by the Soundness of the affected Nerve convey'd to the Brain. Every thing, therefore, which destroys the Soundness of the Nerve between the Brain and that Part of the Body to which the Cause exciting Pain is applied, will remove all Sense of Pain, tho' the Cause of that Pain not only remains, but, also, continues to act with the greatest Violence. They who in consequence of a Luxation of the Spine of the Back, have the spinal Marrow compress'd, feel no Pain from the Application of live Fire to their Legs. Nor is it of any Importance, whether by a violent Compression the Commerce is hindered between the Brain and the compressed Part of the Nerve, or whether by Cutting or Burning, the Continuity of the Nerve is destroy'd. When in the Amputation of Limbs the Vessels are by a tight Ligature compressed, in order to stop the Hæmorrhage, there arises at the same time such a Stupor and Insensibility of the Parts from a Compression of the Nerves, as greatly diminishes the Pain of the Operation. A certain Empiric of *Amsterdam* cured the Tooth-ach by twisting the Patient's Hairs about his Fingers, and then by a strong Pressure of his Thumb below the Lobe of the Ear, confusing the Nerve lodged there, which distributes Ramifications to the superior Jaw. The same Effect was produced by compressing the Nerve which on both Sides enters the inferior Jaw, under the first *Dens Molaris*. The most violent Tooth-ach is allayed by all those things which destroy the pain'd Nerve in the Tooth. Hence, if by a Corrosion of the Tooth, free Access may be had to the Nerve, they burn it with an Iron Probe red-hot, which affords present Relief, provided the Heat of the ignited Iron reaches the pain'd Nerve. This Method was commended by *Hippocrates*, who in *Traët. de Affectionibus*, tells us, "That in a Tooth-ach, if the Tooth is corroded and loose, it is to be drawn; but if it is neither corroded nor loose, it is to be burned." Others with a similar Effect, put highly acrid distilled Oils, such as those of Cloves, and Origanum, into the hollow Tooth, which by their hot Quality immediately destroy the Nerve they touch. In many other Pains which obstinately resisted the Efficacy of other Medicines, *Hippocrates* used live Fire, or Scarifications, by both which means he removed the Sense of Pain, by destroying the Nerves. Thus, in *Traët. de Affectionibus*, after recommending many Remedies against Head-achs, he adds, "But if the Disorder of the Head is so violent and long-continued, that it cannot be removed by purging the Head, the Patient's Head must either be scarified, or the Veins in its Circumference must be burned, since there is no Hope of Relief from any other Remedy." And in his *Tr. de Locis in Homine*, he tells us, "That in Head-achs we are to use Venesection; but if the Pain does not cease, but continues for a considerable time, we are to burn the Veins in the Head, by which means

" means the Patient will recover." In several other Passages he gives the same Directions with respect to the Cure of an Head-ach. In *Tr. de Affectionibus*, in a violent ischiadic Pain, he orders "the Part affected, where-ever it is, to be softened by Baths, Fomentations and Liniments, the Body to be rendered soluble, and a Purge to be exhibited after the Pain is alleviated; after which the Patient is to drink Asses Milk. But if the Pain seizes one Part, fixes in it, and cannot be removed by Medicines, it is to be burned whatever Part it is." In *Tr. de Internis Affectionibus*, when treating of the same Disorder, he tells us, that if after the Use of various Remedies, the Pain is not alleviated, the Part where-ever it is, is to have many deep Crufts burned upon it, in the bony Parts by Fungi, but in the fleshy Parts by ignited Iron. The same Directions are, also, given in *Aph.* 59. and 60. of *Seç.* 6. and in other Passages of his Works.

Hence, in *Asia*, the *Moxa* is greatly used for removing arthritic Pains, and even the Gout; whilst the Inhabitants take the old Leaves of a sort of Mugwort triturated, and freed from all their hard and fibrous Parts; and having thus reduced them to a soft kind of Down, they make them up into pyramidal Bodies, the Base of which they apply to the Part affected. Then kindling the Apex or Top of the Pyramid, the Fire gradually descends and burns the Part; this is so mild a Cure, that *Kempferus*, in *Amœnitat. Exotic.* tells us, he has an hundred times seen Children submit to it without shrieking, or testifying the least Sign of Pain. Hence, in *Asia*, the Use of the *Moxa* is so frequent, that every six Months, for the sake of Health, many submit to have some Parts of their Bodies burned by it; and even those who are confined to perpetual Imprisonment, are permitted to come abroad, in order to enjoy that Advantage.

But because in consequence of the Destruction of the Nerve, all the Functions depending on its Soundness, are abolished, so this Method of alleviating Pain is not used, except when the Pain is very intense, and the Medicines specified above have been used in vain, or when the Condition of the Part affected is such, that these Remedies cannot be so applied, as by their Efficacy to remove or correct the Cause of the Pain.

1. When the Cause of the Pain cannot be removed, or when it is of no Importance, or absolutely impossible to destroy the pained Nerve, without injuring the Soundness of which it cannot without great Loss or Danger be remov'd, then the only Method remaining is so to change the common Sensory, as to render it insensible of Pain; for that the Cause of the highest Pain may be in the Body, without any Sense of Pain, even tho' the Soundness of the Nerves remains, is obvious from apoplectic Patients, and Persons excessively drunk, who are entirely deprived of all Sensation. Now there are in Nature Medicines, which, for a certain time, remove the Sense of Pain in the Mind, tho' they by no means take away or correct the Causes of that Pain. These, from the Stupor they induce, are call'd *Narcotics*, which we have already treated of. The principal of these is Opium, which by a surprising Quality removes the Sense of Pain, whilst it remains in the Stomach; for a Grain or two of Opium, when swallowed, by its resinous Tenacity, which renders it difficult to be dissolved, remains long in the Stomach, and generally for eight Hours at least, allays the Sense of Pain; and which is surprising, a Pill of undissolved Opium is frequently vomited up next Morning. Hence it does not seem to act, because being dissolved and mixed with the Humours, it is, by the Laws of the Circulation, convey'd to the Brain; but because it remains applied to the internal Surface of the Stomach, and induces such a Change on the Nerves dispersed there, as is able to obtund the sensitive or perceiving Power of the Brain; for the great Influence of the Nerves dispersed through the Fabric of the Stomach, on the common Sensory, is sufficiently evinced from many Diseases in which the Functions of the Brain are greatly disturb'd, tho' the material Cause of all these Symptoms is only lodged in the Stomach. Corrupted Bile lodged in the Stomach, excites violent Head-achs, Vertigos, and Deliriums; but when that fordid Matter is carried off by Vomits, all these Symptoms cease. This is confirmed by many Poisons, which even when they remain in the Stomach, induce surprising Changes on the Body; but as soon as they are removed from it, all the Symptoms produced by it cease. This is confirmed by *Wepfer*, in *Cicut. Aquat. Hister. & Noxæ*, where he gives us the History of two Boys, and six Girls, who eat the *Cicuta Aquatica*.

It is, therefore, highly probable, that Opium lodged in the Stomach may, only by its touching the Nerves there, produce such a Change in the common Sensory, as that tho' the Cause of Pain, and the Soundness of the Nerves remain, yet the Idea of Pain is not excited in the Mind. And Heaven, whose Designs are always pregnant with Compassion to the wretched State of Mortals, seems to have granted us these Remedies, in order to allay for a time these intolerable Pains, whose Causes can-

not be removed, or at least weaken'd, except in a long time. Hence *Sydenham*, being convinced by many Experiments, concluded, that without Opiates, Medicine would be very imperfect; and adds, that the most celebrated Preparations of Opium neither increased its Virtues, nor corrected that Malignity, of which many falsely supposed it to be possessed. Certainly the prudent Exhibition of due Doses of Opium produces no bad Effects, even tho' continued for some Months. Hence the learned *Joannes Terentius Lynceus*, in his Notes on *Hernand. Rerum Mexican. Novæ Hispan. Thesaur.* justly affirmed, that as all the Inhabitants of the Eastern and Southern Parts of the World every Day used Opium, Thorn-apples, and Bang, with Safety, it was to be lamented, that such a Number of Mortals should, through Ignorance of this Remedy, be cut off by violent and racking Pains, who might be preserved, if induced by the universal Consent of Physicians, they used it more frequently. And though *Prosper Alpinus*, in *Med. Lib. 4. Cap. 1.* condemns Opium as poisonous, yet he is obliged to confess, that the *Egyptians*, who used it daily, perceived no Harm from it, though some of them gradually increasing the Dose, used three Drams of it each Day. But if such as were long habituated to it suddenly gave over the Use of it, they were seized with Syncopes, and other violent Symptoms, till they again used it, or drank large Quantities of the most generous *Aretian* Wine with Aromatics.

It is not to be denied, that the imprudent Use of Opium exhibited in large Doses, has produced Deliriums, Convulsions, and mortal Apoplexies. But many Medicines which are every Day safely exhibited in moderate Doses, prove injurious when used to Excess. A memorable Instance of this with respect to Opium, is found in *Hist. de l'Acad. des Sciences P. Ann. 1735.* But though that surprising Case proves, that a large Quantity of Opium exhibited to one not accustomed to it, may produce numberless terrible Symptoms, and Death; and even that by its poisonous Quality the Fluids of the human Body may be corrupted, yet it is certain from numberless Experiments, that it is a safe Medicine when prudently used; for in Diseases it is a matter of great Importance to alleviate Pain; and nothing prevents the Removal of the known Cause of the Pain by other Remedies, whilst by Narcotics the Sense of Pain is obtunded. But it is carefully to be remembered, that though there is then no Sense of Pain, yet the Cause of Pain continues to destroy the Body. For when in the most painful inflammatory Disorders, such as a Pleurisy for Instance, the Pain is soothed by Narcotics, a violent Inflammation proceeding to destroy the affected Vessels, produces a Gangrene, and the Patient awaking out of his Sleep often dies suddenly: Such fatal Events are then ascribed to the Remedies, whereas they are only owing to this, that the Physician hearing no more of the Patient's Complaints, falsely imagines, that the Disease is become milder, though it continues with equal, and sometimes, perhaps, with greater Violence, after the Exhibition of such Medicines; for when by a Suppression of all animal Motion a profound Sleep is induced, the vital Motions are augmented. But in inflammatory Disorders there is too great a Velocity of the Circulation. Hence in these the Use of Narcotics seems never to be safe, unless by Venesection, and other liberal Evacuations, the excessive Force of the Disease is previously broken. *Sydenham*, in *Febr. Contin. Ann. 1661.* carefully gives the same Caution, though from Experience he had learn'd the salutary Effects of Narcotics in many Diseases, and used them boldly. In what Manner, and with what Cautions, Narcotics are to be exhibited, has been already specified. The Remedies adapted to this and the preceding Aphorism are before enumerated, when treating of the Means of procuring Sleep.

By these Remedies are removed all the Effects produced by the Sense of Pain, such as Restlessness, Jactation, and especially Watching: But the other Effects depending on the Cause of Pain, so far as it endeavours to destroy the pained Nerves, continue, tho' the Sense of Pain is soothed.

CONVULSIONS CONSIDER'D AS A SYMPTOM OF WOUNDS.

A Convulsion is a violent, unavoidable, and alternately repeated Contraction of a Muscle.

Here we only treat of a Convulsion which arises from a Wound as its Cause; for a febrile Convulsion arises from quite different Causes, and consequently requires a different Cure.

Every Convulsion is an Affection of a Muscle; and when the Muscles act, their Tendons are stretched; and since this is done alternately, the Tendons are at one time stretched, and at another relaxed. Hence, when Physicians, in feeling the Pulse, perceive the Tendons, as it were, to leap, in consequence of a Convulsion of the Muscles of the Arm, they generally call that Symptom a *Subsultus* or *Leaping of the Tendons*. But as the Antients included the Tendons under the general Name

Name of *Nervus*; for the Ligaments and Tendons were by them call'd *νῆδες*, as well as the Nerves arising from the Brain and Spinal Marrow, as we find from *Galen, de Usu Part. Lib. 15. Cap. 1.* Hence *Celsus* calls that Disorder, which is at present commonly call'd *Convulsions*, a *Distension of the Nerves*.

In every Convulsion there is a Contraction of the Muscle, which if it was voluntary, would not constitute a Disorder. Hence it is added in the Definition, that it is an involuntary Contraction of a Muscle. Besides it is requisite this Contraction should be violent, otherwise there would be no Difference between a Convulsion and a Tremor, in which the Muscles are, without the Concurrence of the Will, alternately relaxed and contracted; but these Contractions are only weak, whereas in a Convulsion they are violent. It is, also, added in the Definition, that this Contraction is alternately repeated, that is, ceases for a short time, and then begins again.

But it is to be observed, that if the Cause, whatever it is, which produces the involuntary Contraction of the Muscle, continues to act without an alternate Intermission, then the Muscle remains constantly contracted so long as the Action of that Cause continues. That this Disorder is to be ranked among Convulsions, is sufficiently obvious, because the same occasional Causes at one time produce the alternate involuntary Contractions of the Muscles, and at another, their steady, though involuntary, Rigidity. This appears in epileptic Patients, in whom, during the Paroxysm, the alternate Convulsions are at one time present, and a little after they become rigid like Statues, almost all the Muscles of the Body being contracted, whilst soon after they again fall into the alternate Convulsions. What the ancient Greek Physicians call'd *σπασμοί*, is by the modern Physicians call'd Convulsions. A Tetanus was by them call'd, that Species of Disorder in which the Muscles, being involuntarily contracted, became rigid; which *Distemper Celsus*, in *Lib. 2. Cap. 1.* calls a *Rigor*; but gives the Name of *Distension of the Nerves*, to what they call'd *Spasmus*; for the Name of *Convulsion* in this Sense is only found among the modern Physicians; though in *Aræteus de Morb. Acut. Lib. 1. Cap. 6.* when treating of a Tetanus, and its Differences, the Word *ἐνσπασμὸς* occurs, which is properly enough translated *Convulsio* in the Version. But the Author seem to have used *Tetanus* and *Spasmus* promiscuously for the same Disorder, as is sufficiently obvious from the same Chapter. And *Galen, in Comment. in Sect. 4. Aphor. No. 57.* tells us, "That a Tetanus is a Convulsion, though the Parts seem not to be convulsed, because they are equally drawn forwards and backwards."

Hence we may conclude, that though at present the Word *Convulsion* is used, when an involuntary violent and alternately repeated Contraction of a Muscle is present, yet under its more general Signification, we may, also, include that involuntary and violent Contraction of a Muscle which remains without alternate Remissions, since these Words were formerly promiscuously used, and since the Disorders often arise from the same Causes, and seize the same Parts, that is, the Muscles. That Species of Convulsion in which the Muscles remain'd contracted, they divided into the *Tetanus*, in which the Patient was strait, but so rigid, that he could not be bended in any Direction; the *Emprosthotonus*, in which the Body being bended forward, remain'd stiff and inflexible in that Position; and the *Opisthotonus*, in which the Body was incurvated backwards in the like manner. Besides, a *Tetanus* may be either universal, when all the Muscles of the Body being thus affected become rigid in a Moment; or it may be partial, when, for Instance, by a spasmodic Contraction of the Muscles of the Jaw, the Mouth is obstinately closed.

The Cause of Convulsions is, whatever drives the nervous Fluid with alternate Force into the convulsed Muscles.

An human Creature has a surprising Faculty by which it can at Pleasure, by means of the Muscles subservient to the Will, excite a Motion, sustain and direct it, augment and diminish it, suppress it after it is excited, and again renew it after it is suppressed. And these so delicate Motions excited in the Body, and which by so great a mechanical Force change other Bodies, seem to be hardly corporeal with respect to their Principle, and are all performed without any Knowledge of the Cause, or Instruments requisite to this Purpose; for the most skillful Anatomist can perform these Motions no better than the most ignorant and illiterate Child. But what is most surprising is, that in exciting these Motions, no physical Change appears in the Body, except in the thing changed; and when by the Influence of the Will such an arbitrary Motion is suppressed, no Mark of so great a Change remains. And all these things may be done in an almost imperceptible Portion of Time; for whilst one wills to elevate his Arm, it is elevated. In order to this, as is obvious from Physiology, it is only requisite, that there should be a free Commerce between the Brain and Muscles, by means of the Nerves convey'd from the medullary Substance of the Brain to the Muscles subservient to the Will. Since, therefore, a Convulsion from its Definition is such an alternate Excitation of Motion, and a Suppression of it when excited; and since we can at Pleasure imitate such a Convulsion, as Beggars

feigning epileptic Fits do, it is obvious, that a Convulsion may be excited by every Cause, which without a Concurrence of the Will, by means of the Nerves, induces such a Change on the Muscles, as a sound Person could bring about by the Act of Volition: And as we are ignorant of the Manner in which, by the Will, we excite Motion, but only observe the Effect, so we may be equally ignorant of that last Change in the common Sensory, by which a Convulsion is produced. All that Art can do is, to observe those Changes of the Body which are succeeded by such an involuntary Contraction of the Muscles, and then to remove or correct these known Changes, though we by no means understand in what manner these Changes of the Body affect the common Sensory, or that Part of the Brain where the Mutability of Thought is produced by the Change of the Body, and the Mutability of the Body by the Change of Thought.

But because it is certain from medicinal Observations, that many things capable of exciting Convulsions may happen to the Body, and as we only here treat of Convulsions as they succeed a Wound as their principal Cause, so we are to inquire what things there may be in a Wound itself, by which Convulsions have been observed to be excited: And these are enumerated in the following Aphorism.

And, therefore, the Cause of Convulsions may be inherent in the Wound itself, whether it be foreign Matter irritating the Parts, or the Condition of the wounded Nerve, or a previous excessive Evacuation of Blood.

As for a foreign Matter irritating the Wound; if that tender pulposus Production of the medullary Substance of the Brain, which constitutes the Substance of a Nerve, properly so called, and which in the larger Nerves is fortified by so many Coats, that it may be safely convey'd to the destin'd Parts, is irritated by an acrid Substance, or by any other Body, which by its mechanical Figure or Hardness, is capable of injuring or destroying that soft Pulp, Convulsions may be produced by that means. Now there may be lodged in the Wound, Nerves and Tendons divided, or so stript of their Coverings, that acrid Substances may be easily convey'd to the internal Part of that pulposus Substance which is so easily irritated: Thus it is certain, that when naked Nerves are only touched by Fluids to which they are not naturally accustomed, violent Pains and Convulsions are produced. When by the Caries of a Tooth, the hard Crust covering the small Nerves dispersed through its Substance is corroded, the cold Air acting on these naked Nerves, a Particle of Sugar, or the softest Butter touching them, throw the Patient into Convulsions, on account of the intense Pain. The touching of a Tendon divested of its Coats, in a Moment renders the Patient rigid, by producing an universal Tetanus, as is already observed; whereas Tendons covered with their mucous, or pinguedinous Coats, may be protracted, elongated, or sewed together, without any great Pain. Since, therefore, in a Wound these highly sensible Parts are often rendered naked, a Part of the wounding Instrument, Fragments of the Bones, or other things of a like Nature left in the Wound, may, by irritating the Parts, produce the most violent Symptoms. The same will happen from the Humours discharged into the Cavity of the Wound, and acquiring an acrid Quality; as, also, from acrid Substances applied to the Wound.

As for the Condition of the wounded Nerve; it is already shewn, that Nerves and Tendons pricked, or half torn, produce Convulsions, and other violent Symptoms, which is evinced by many practical Observations.

As for a previous excessive Evacuation of Blood; when so great a Quantity of Humours is discharged from the Body, that the remaining Part, by the Force of the Heart convey'd thro' the Vessels, is not able to fill them equably, the Pressure on the Arteries of the Brain is wanting; hence the Motion of the Spirits through the Nerves of the Brain ceases; and hence arises a Palsy of all the Muscles, and from a similar State of the *Cerebellum a Deliquium*; so that all the nervous and arterial Fluids begin to stop. In the mean time the Parts being contracted by the greater Cold succeeding a Diminution of the Circulation, convey the venous Blood to the Heart, which, being fill'd, contracts itself, and with the greatest Velocity moves the Blood through the empty Arteries, since nothing resists it when thus impel'd. In this Case, therefore, the Blood is moved with a violent Impetus through the Vessels of the Brain. Hence the Motion of the Spirits into the Muscles becomes very quick, but ceases immediately, though it will return again when the Heart, which is gradually fill'd, contracts itself. In one Moment, then, the strongest Cause of Motion is apply'd to the Muscles, but next Moment ceases. Hence arises that alternate, violent, and involuntary Contraction of the Muscles, which we call *Convulsions*.

This is evinced by what daily happens in the killing of Animals; for when by a Division of the Carotid Arteries in Calves, Sheep, and Hogs, the Blood flows out with a full Stream, about the Death of the Animal the Flux of Blood begins to cease, and only return at certain Intervals for the Reasons now alleged; and then the Animal is always strongly convulsed till it dies. When by Abortion, or after Labour, Women lose large Quantities of Blood from the open Vessels of the Uterus, they are often seized with Convulsions, and frequently die suddenly.

iently. The same is, also, to be observed, when by an excessive Purging, too great a Quantity of Humours is carried out of the Body. Hence *Hippocrates*, in *Aphor. 3. Sect. 5.* tells us, "That after the Loss of much Blood, Convulsions, or an Hiccup, are bad Signs." In *Aphor. 39. Sect. 6.* he tells us, "That Convulsions proceed both from Repletion and Inanition." Thus, also, in *Aphor. 4. Sect. 5.* he affirms, "That Convulsions, and an Hiccup, succeed excessive Purging;" for Convulsions arising after excessive Evacuations denote, that there is so great an Evacuation of Fluids from the Body, that the empty Vessels collapse, and the Blood propel'd from the Heart, cannot propagate the Motion it has receiv'd, through the full Vessels, but rushes freely into the empty Vessels. Hence the due and equable Pressure on the Vessels of the Brain on which Life and Health depend, is wanting. Hence it is obvious, how great Danger accompanies Convulsions arising from excessive Inanition.

Hence, also, the Effect of a Convulsion, which is a Perturbation of all the Functions, is known.

The Effects of Convulsions are not only surprising, but almost numberless; for not only all the Solids and Fluids, but, also, the Actions depending upon them are disturbed; for when by this alternate and violent Contraction the Muscles are at one time rigid, and at another time flaccid, the Motion of the Blood through the Muscles is at one time hindered, whilst next Moment it freely passes through the flaccid Muscles with the greatest Impetus. The Veins adjacent to the convulsed Muscles are quickly emptied, in consequence of which, the Impetus of the venous Blood towards the Heart is accelerated. Hence the equable Reception of the Blood into the Heart, and its Expulsion from it, are greatly disturbed. Respiration is, also, surprisingly disturbed, since it becomes laborious, and cannot be performed without the greatest Uneasiness. Sometimes, also, a violent Suffocation happens, as *Aretaeus de Causis & Signis Morb. Acut. Lib. 1. Cap. 6.* has observed, when describing the Effects of a *Tetanus*. Nor is a less Disturbance observed in the animal Actions; for those enormous Motions of the Muscles are not determined by the Will, but happen in an involuntary manner, and often without the Knowledge of the Patient. Often, also, all the external and internal Senses are totally abolished, or surprisingly disordered; nor is it to be wondered at, since the Convulsions testify, that the Brain, on which Life and Health depend, is affected. In the natural Actions surprising Changes are, also, often observed, since when the Jaw-bones are frequently so constricted and closed, that they cannot be separated by a Wedge, Deglutition is impossible. Inflations of the Stomach and Intestines, often distend the Abdomen, so that it is ready to burst. Sometimes neither the Faeces nor Urine are discharged, whilst at other times, both are evacuated without the Knowledge of the Patient. In a word, every thing in the Body is so surprisingly chang'd by Convulsions, that nothing of the former Health remains, and the miserable Patients are hardly known by their intimate Acquaintances. All these Changes are accurately observed and described by *Aretaeus*, who in the Passage last quoted, concluded, that it was lawful to wish for the Death of such Patients, that their miserable Lives, and excessive Torments, might end together.

For if such Patients survive, violent Symptoms often remain, such as Distortions of the Limbs, Distractions of the Muscles, and a Destruction of the Functions of the Brain. Thus it is certain from Experience, that Palsies, Atrophies, and Folly, have remained incurable, during Life, after violent Convulsions.

Sometimes, also, Convulsions are succeeded by an Abolition of all the vital, animal, and natural Functions, which is Death. *Hippocrates*, in *Aphor. 2. Sect. 5.* tells us, "That Convulsions accompanying a Wound, prove mortal." *Aretaeus*, in the Passage last quoted, when treating of Convulsions, tells us, "That they generally happen on account of Wounds; when for Instance, Membranes or Muscles, or Nerves, are punctured, in which Case, the Patient generally dies; for Convulsions happening after a Wound are mortal."

Convulsions are cured, 1. By artificially removing whatever irritates the Parts. 2. By correcting or dissipating the Acrimony. 3. By removing the morbid Condition of the Nerve by proper Remedies. 4. By Repletion with some mild, friendly, liquid Aliment, often taken in small Quantities. And, 5. By stopping the Haemorrhage.

Though Authors abound with antispasmodic Remedies, yet every one must perceive, that as Convulsions arise from so different, and even often, opposite Causes, there can be no universal Remedy for them. But after investigating the Cause, we must determine the Remedy capable of removing, or weakening this known Cause. But as Convulsions after Wounds arise, either from some irritating Matter lodged in the Wound, or from a Puncture or partial Division of the Tendons, Membranes, and Nerves, or lastly, from an excessive Loss of Blood, so the whole Intention of Cure must be directed to these three Indications. Hence, in the first and second Numbers following, we shall treat of those means which remove or mi-

tigate the irritating Matter. In the third, we shall consider these Methods which remove the preternatural Condition of the affected Nerve or Tendon. And in the two last Numbers we shall specify those Remedies by which a Loss of Blood may be stop'd, and that Portion of it which is lost, restored.

1. *As for a Removal of irritating Substances*; if a Thorn is fix'd in any nervous Part, under the Nail, for Instance, in such a manner as to wound the nervous Papillae, after an intense Pain Convulsions frequently arise, which cannot be easily removed so long as the Thorn is lodged there. Hence we are as much as is possible, in the first Dressing, to enquire, whether such a Substance is lodged in the Wound. But how this is to be done, and with what Cautions such Substances are to be removed, we have already specified.

2. *As for correcting or dissipating the Acrimony*; Acrimony rarely arises in a Wound from the Humours convey'd to it, unless there is a great Cacoehymy in the Body before, or large Quantities of acrid Aliments have been eaten. This far more frequently happens from the imprudent Application of acrid Remedies, such as Arsenic, or other corrosive Medicines to the wounded nervous or tendinous Parts. But these Applications when known, are to be removed or weakened by Medicines, which by an opposite Virtue are able to correct the known Acrimony. In this respect nothing universal can be determined, but a Remedy suited to each particular Acrimony is to be applied. The softest Balsams are, however, beneficial, because they hinder the Parts from being corroded by the acrid Substances, and at the same time weaken them by sheathing them up in their mild Fat as has been already observed. The Medicines belonging to this Number are found under the Article ACIDA, and ALCALI.

3. *As for a Removal of the Condition of the Nerves by proper Remedies*; the Cause of Convulsions arising from a Wound, is frequently such an Injury done to a Nerve, as that being partially divided, its remaining entire Fibres are distracted. Hence arise excessive Pain, Convulsions, and the other Symptoms already enumerated. But all these arise from a slow and continual Distraction of the nervous Fibres, which is always accompanied with Pain, as is obvious from the Definition of it already given. Those Remedies, therefore, which remove the Pain, will, also, cure the Convulsions arising from it. But these Remedies act either on the Cause of the Pain, or render the Nerve incapable of Sensation, by destroying the Commerce between it and the Brain; or lastly, they so obtund the common Sensory, as that it cannot perceive that Change of the Nerve produced by the Cause exciting the Pain. But that all these things have been with Success used for the Cure of Convulsions, will be obvious from what follows.

For among the things recommended above for removing Pain, the most considerable and universally useful, are relaxing and emollient Substances, by the Application of which the nervous Fibres may be so disposed, as that they may be distended without Dread of a Rupture; and these have in all Ages been used for removing Convulsions: Thus for the Cure of a *Tetanus*, *Hippocrates*, in *Tr. de Morb.* recommends warm and fat Broths prepared of Fowls, together with tepid, moist and pinguious Fomentations, contained in Bladders and Bottles, and applied every-where, but especially to the Parts affected. He, also, orders the Patient to be liberally and frequently anointed with warm Oil. And in his *Tr. de internis Affection.* for the Cure of a *Tetanus* arising from a Wound, he orders Unctions with pinguious Substances before a Fire, Fomentations, Steams of hot Liquors, Sweats excited by pouring warm Water on the Patient, and the drinking of tepid Milk and Water, if the Patient can; if not, he orders it to be pour'd into his Nostrils. Besides, in *Aphor. 22. Sect. 5.* when mentioning the Use of warm Substances, he says, that they alleviate Pain, Rigors, Convulsions, and a *Tetanus*. And on the other hand, in *Aphor. 39.* of the same Section, he affirms, that Cold produces Convulsions, and a *Tetanus*; for Heat relaxes all Bodies, so that they may be distracted and bended without Danger of breaking; whereas Cold contracts and renders every thing brittle, as is obvious from daily Experience. The same Measures are recommended by *Celsus*, in *Lib. 4. Cap. 3.* who orders Patients thus affected, to bathe in warm Oil, or warm Water in which Fenugreek has been boiled, with an Addition of a third Part of Oil. *Galen*, when afflicted with a violent Distraction of the Ligaments, freed himself from approaching Convulsions by continually anointing with warm Oil, and perceived the Convulsions just coming upon him, as soon as the Use of the Oil was intermitted. *Aretaeus de Curat. Morb. Acut. Lib. 1. Cap. 6.* orders the like Measures to be taken for the Cure of a *Tetanus*. Hence it is obvious, that the antient Physicians unanimously recommended the most emollient Remedies which so effectually allay Pain, for the Cure of Convulsions.

It is, also, sufficiently obvious, that if a Nerve, the Wound of which disturbs the common Sensory, can, without the Danger of a greater Evil, be destroy'd by Compression, Division, or Caustics, there is no longer any Dread of Convulsions, because the Commerce between the Brain and the affected Nerve, is removed. This is evinced by practical Observations in the Cure

of a certain Species of Epilepsy, in which there is felt, in a particular Part of the Body, the great Toe, for Instance (a Case of which Kind, says *Van Sweiten*, I myself have seen) a certain Titillation, as if Ants crept through the Part (See *ALBADARA*). And this titillary Motion ascends through the Leg, Thigh, and Abdomen, to the Præcordia, upon which the Patient falls down convulsed all over his Body. If, when he first perceives the Disorder beginning in his great Toe, he speedily applies a tight Ligature below the Knee, he is freed from the Paroxysm. In similar Cases it is often beneficial to burn deep, by means of a Caustic, into the Part where this surprising Motion first begins, in order to destroy the small Nerve, the Disorder of which is capable of disturbing the whole Body in so surprising a manner. Something like this is found in *Celsus*, *Lib. 5. Cap. 26.* where he tells us, "That a Muscle when wounded, is to be divided, because when wounded it proves mortal; but when it is divided, the Disorder of the Part may be cured."

But those things, which by their narcotic Quality so obtund the common Sensory, as to remove the Sense of Pain, are often surprisingly efficacious in checking these convulsive Motions, as is often observed, especially in hysteric Convulsions; though among the Antients we do not find, that these Remedies were frequently used in such Cases. But *Hippocrates*, in *Lib. de intern. Affection.* for the Cure of a *Tetanus*, among other Remedies, orders the Head and Body to be anointed with a warm Infusion prepared of the Seeds of Henbane and Wine, with the Addition of an equal Quantity of Oil.

4. As for a Repletion with some mild, friendly, liquid Aliment; *Hippocrates*, in *Aphor. 22. Sect. 2.* in the Cure of Diseases, lays it down as a general Rule, "That the Diseases arising from Plenitude, are cured by Evacuation, and those proceeding from Inanition, by Repletion." When, therefore, in consequence of a Division of the Blood-vessels, there is a great Loss of Blood, so that the equable Pressure on the Vessels of the Brain is by that means disturbed, the Convulsions arising thence, have an excessive Inanition for their Cause, so that they will be cured by Repletion. The most celebrated Antispasmodics, such as Spirit of Hartshorn, and of Raw Silk, the Tincture and Oil of Amber, of Castor, and the finest distill'd aromatic Oils, which in other Cases are so efficacious in checking the inordinate Motion of the nervous System, are in this Case prejudicial by their Stimulus, by which, augmenting the Motion of the Blood, they expel that small Quantity of it which remains in the Body through the divided Vessels till the Patient dies. The whole Cure consists in distending with a new and laudable Liquid the Vessels collapsed, in consequence of too great an Inanition. But here there is a considerable Difficulty; for the Aliments by the concurring Action of the Viscera and Vessels, and by their Mixture with a large Quantity of laudable Humours pre-existing in the Body, are assimilated to our Natures, and acquire the Properties requisite in human Fluids, as is shewn under the Article *FIBRA*: But after a great Loss of Blood, this Quantity of laudable Humours is wanting, which in a State of Health absorbs that small Quantity of crude Juice convey'd through the Thoracic Duct into the Subclavian Vein. By the same Cause, also, the Action of all the Viscera and Vessels is weakened. Hence the two most efficacious Causes which change crude into concocted Juices are wanting, or at least, very languid. All, therefore, that can be done with Success, is to exhibit such Liquids as are most similar to the Humours in a sound State, such as contain nothing of a stimulating Acrimony, but may be easily borne by a weak Body, and subdued by the remaining languid Action of the Viscera and Vessels. All those things will, therefore, be beneficial which contain a Nourishment almost like that prepared in a sound and robust Body; but especially Broths prepared with Flesh, and in which the Juices before elaborated in the Body of the Animal are dissolved by the boiling Water. And such Broths are still better with the Addition of a small Quantity of Citron-juice, which hinders their easy Degeneracy to Putrefaction. For the same Reason a little Sorrel may be boiled in them, with the Addition of Rice, Barley, Oats, and other soft Grains. All these are to be exhibited frequently, but in small Quantities, lest the weak Body should be overpowered, and that there may gradually be such a Repletion as may sustain Life; and at the same time keep it so low, that the wounded Vessels may be consolidated, without any Dread, lest by a sudden Repletion of the Vessels, or an increased Circulation, those Parts should be again lacerated, which had begun to be united; for unless it was confirmed by unexceptionable Facts, it could hardly be believed, how small a Quantity of Blood is sufficient for the Support of Life. The Propriety of this Method is evinced by its happy Success in Women, who, by Abortions, have lost so much Blood as to be seized with Convulsions, and given over for irrecoverable. A memorable Instance of the surprising Efficacy of Broth, after a great Loss of Blood, may be seen in *Louise de Corde*.

5. As for stopping the Hemorrhage; We have already explained, how an Hemorrhage from a Wound may be stopt and shewn, that many Hemorrhages may be stopt by different Applications and Operations. But when the Hand has no Access to the wounded Vessels, as, for Instance, when the Vessels of

the internal Parts of the Body are wounded, then tight Ligatures applied to the Arms and Thighs, are highly beneficial, that thus the Veins being compressed, the easy Return of the Blood to the Heart from these Parts may be prevented. By this means the Hemorrhage is, at least for a time, stopt, and, perhaps, an Opportunity given to the wounded Vessels to contract themselves, and be consolidated. But after the Hemorrhage is stopt, these Ligatures are not to be removed all at once, but gradually slackened, lest the Hemorrhage should return. If the Patient enjoys great Ease both of Body and Mind, if Life is kept as low as possible, and the Patient not supported by Cordials, there is still some Hope of a Cure even in the most dangerous Cases.

A small Tumor, and Inflammation in a Wound, are good; but they prove hurtful if too much increased. Baths, and Fomentations, together with anodyne and antispasmodic Substances, applied to the wounded Parts, and to the Whole of the Patient, are beneficial; for which see *INFLAMMATIO*.

It is already observed, that on the second or third Day there appears in the Lips and Bottom of a considerable Wound, a greater Heat, Pain, Redness, and Tumor, and that all these Symptoms continually happen to a Wound inflicted even in the soundest Body. Such a slight Inflammation, therefore, which is almost always accompanied with a gentle Fever, is never bad; for the divided Extremities of the Vessels being contracted, resist the impel'd Fluids. Hence arises an Obstruction; and by the Force of Nature, accompany'd with a slight Fever, acting with a greater Impetus on the obstructed Extremities of the Vessels, a gentle Inflammation is produced, which is succeeded by a benign Suppuration separating the Extremities of the obstructed Vessels, together with their stagnant Fluids, and restoring a free Circulation of the Humours through the whole Surface of the Wound; by which means a Regeneration of the lost Substance, and an Union of the divided Parts are brought about. The same Observation is made by *Hippocrates*, who pronounces it a bad Sign when Tumors do not appear in large Wounds. In another Part he commends lax Tumors in a Wound, but condemns such as are crude, as being Signs of a greater Inflammation. *Celsus*, in *Lib. 5. Cap. 26.* beautifully expresses this in the following manner: "When a Wound swells too much, it is dangerous; but if it swells not at all, is still more dangerous. The former is a Sign of a violent Inflammation, and the latter of a Mortification; nor is a Fever terrible in a large Wound, when it lasts only whilst the Inflammation is present. But that Fever is dangerous which either succeeds a slight Wound, lasts beyond the time of the Inflammation, or brings on a Delirium." But when by a great Obstruction about the Wound, or an Increase of the Circulation by means of a Fever, the Pain, Tumor, Redness, and Heat, are greatly increased, we know from the Obstruction of the Phenomena common to all Wounds, that there is a greater Inflammation than is requisite. If, therefore, this Inflammation should proceed, it would destroy the Part by a gangrenous Corruption; or at least, a far stronger Suppuration would ensue, separating the irresolvable inflamed Parts from the other live Parts, which cannot happen without a great Loss of the Substance of the Body, especially of the *Membrana Cellulosa*, which seems to be the principal Seat of a Suppuration. Hence a slow Consolidation of the Wound, an unseemly Cicatrix, and all the Misfortunes arising from too great a Consumption of the Parts by a strong Suppuration, may ensue. It is, therefore, requisite the too violent Inflammation should be removed by proper Remedies, which is done by relaxing the Vessels, and resolving the Fluids, which by their inflammatory Tenacity, had become stagnant. Hence Baths, and Fomentations prepared of the most emollient Herbs are of great Use. It is, also, carefully to be observed, whether the Cause of the Inflammation is lodged in the Wound itself, or whether it is owing to the Violence of the Fever, or the inflammatory State of the Blood. In the former Case, Topics are often sufficient; but in the latter, an universal Remedy; checking the increased Circulation, or resolving the inflammatory Spissitude, is requisite. With respect to such Medicines see *OBSTRUCTIO*; and *INFLAMMATIO*:

Antispasmodics are, 1. Laxatives. 2. Diluents. 3. Resolvents. 4. Absorbents, such as Crabs-eyes, Pearls, Ivory, Hartshorn, Goat's-blood, Boar's-tooth, and Elk's-hoof. See *ACIDA*: And; 5. Opiates, which are already considered.

Extravasated Blood fallen into any Cavity of the Body, should be immediately brought away by a proper Situation of the Body; by Suction with a Pipe, if recent; otherwise after proper Dilution, by dilating the Aperture of the Wound, or by making a fresh Incision.

Besides those Parts of the Body in which the Humours secreted from the Blood are accumulated for their proper Uses, or being collected, are eliminated from the Body, there are hardly found any Cavities in the Body: Thus the Cranium, Thorax, and Abdomen, are full; for when Wounds are made into the Cavities, their Contents burst out as soon as they can find a Passage. But the Blood flowing from the divided

vided Vessels may so compress the Parts contained in these Cavities of the Body, as to possess the Place naturally occupied by the Viscera lodged in them. Blood, therefore, extravasated into these Cavities, by its Pressure, injures the Action of the Viscera contained in them, and afterwards becoming corrupted, it may, by its Acrimony, corrode and corrupt every thing it touches. Whilst it is, also, attenuated and render'd putrid, being resorbed by the bibulous Veins every-where open, both in the external and internal Parts of the Body, it infects the whole Mass of Blood with a putrid Taint, and produces the most terrible Disorders. *Hippocrates*, in *Aphor. 20. Sect. 6.* tells us, "That if Blood is preternaturally discharged into the Abdomen, it naturally corrupts and suppurates." And *Galen*, in his Comment on this Aphorism, by the Word *καταρρέειν*, understood any preternatural Cavity, and tells us, that by the Word *Suppuration*, any Degeneracy of the Blood is here meant. But by the Word *εκχυσμός*, is probably meant, not a *Suppuration*, properly so called, but only that the Blood extravasated, and contained in a preternatural Cavity, after a Suppuration makes a Way for itself through the Parts, tho' the extravasated Blood is not converted into Pus, properly so call'd.

Besides these large Cavities of the Body, there is under the Skin, and every-where in the Intestines of the Muscles, the cellular or pinguinous Coat, which being easily dilated, yields to the extravasated Blood, and may be distended often to an inordinate Bulk, as is obvious in spurious Aneurysms, and Sugillations, after violent Contusions. The Blood lodged in these preternatural Cavities may, in like manner, by its Pressure and Corruption, produce many Misfortunes; for which Reason it ought to be soon removed, if it can be commodiously done. But it is to be observed, that extravasated Blood may for a long time remain incorrupted, provided the Air has not free Access to it; and that sometimes by the Application of diluting and resolvent Medicines, it may be so attenuated as to be resorbed by the bibulous Vessels, and gradually disappear. See **CONTUSIO.**

But when Blood is extravasated into any Cavity of the Body, and proves injurious by compressing the Parts; or if its Corruption is dreaded, and no Hopes of its Dissipation remain, it is then to be evacuated by Art: And this is done.

By the Situation of the Body: Which ought to be such, that the extravasated Blood may, by its proper Gravity, be discharg'd from the Orifice of the Wound. In order to this, it is of great Importance to know the Posture of the Patient when he received the Wound; and he is then to be placed as nearly as possible in the same Posture, otherwise the *Membrana Adiposa* often so closes up the Wound of the Skin, that no Blood can be evacuated. Then let the Orifice of the Wound be put in a declining Situation, that the Blood may have a free Passage. Thus, for Instance, if there is extravasated Blood in the Cavity of the Abdomen, it will be expedient to lie flat on the Belly. *Paré* evacuated Blood lodged in the Cavity of the Breast, and saved the Patient by ordering him to lie with his Feet elevated, and his Head low.

As for Suction with a Pipe; this is useful when Blood is extravasated into the Cavity of the Abdomen, and especially that of the Breast. In which Cases they take a flexible Pipe of Lead, Leather, or Whalebone, with an obtuse Point, lest it should injure the Parts. By means of this introduced into the Cavity of the Body, the extravasated Blood may be evacuated either by Suction, or the Application of a Syringe. But when the Blood is collected under the Skin in the Cells of the *Membrana Adiposa*, it is sufficiently obvious, that this Method is of no Use.

But unless the extravasated Blood is sufficiently fluid, it can neither be evacuated by Suction, nor the Situation of the Body. If, therefore, the Blood is formed into grumous Concretions, it is to be so diluted as that it may easily pass through the Orifice of the Wound, or the Aperture of the Pipe. In this Case we take Water, with an Addition of a proper Quantity of Honey, or Venice Soap, and a little Sea Salt and Wine. This Liquor is to be injected tepid; and shaken gently, or agitated by the Motion of Respiration with the concreted Blood, which it dilutes and dissolves. Then by the Situation of the Body, or Suction, the injected Liquor is to be evacuated, and this is to be repeated till the injected Liquor returns pure, and not ting'd with any bloody Colour. Thus *Paré*, by a simple Decoction of Barley with Honey, brought out the Blood lodged in the Cavity of the Breast; and when next Day he injected an Infusion of Centaury, Wormwood, and Aloes, in order to cleanse the Parts the better, he found the Patient complain of a certain ungrateful Bitterness and Nausea. But it is sufficiently obvious, that these Measures cannot be taken so long as there is any Danger of an Hemorrhage.

The extravasated Blood, when coagulated, is diluted by these or other Preparations of a like Nature.

Take of common Honey, two Ounces; of Venice Soap, two Drams; of Sea Salt, four Drams; and of Rain-water, twelve Ounces: Mix all together. Or,

Take of Sal Ammoniac, and Nitre, each three Drams; of the recent Urine of a sound Person, twelve Ounces; and of common Honey, two Ounces: Mix all together. Or,

Take of Aloes dissolved in Water, duly cleansed from its resinous Faeces, and again gently inspissated, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of French White Wine, two Ounces: Mix all together.

The prudent Injection of these Preparations when tepid, and a gentle Conquassation of them with the stagnant Blood, dilutes it, resolves it, preserves it from Putrefaction, and prepares it for an Evacuation. Hence such Preparations are much used, when extravasated Blood becomes stagnant or coagulated in the large Cavities of the Body.

As for a Dilatation of the Aperture of the Wound, or a fresh Incision; if the Wound is too narrow, or if the *Membrana Adiposa* forced into its Aperture obstructs its Orifice, then Dilatation becomes requisite. It sometimes, also, happens, that the Aperture of the Wound is pretty high, and the extravasated Blood situated in a Place so far below it, that it cannot be evacuated through the Orifice of the Wound, unless the Posture of the Body is inverted, which the Patient cannot bear without great Uneasiness. Thus, when in a Wound of the superior Part of the Thorax, a large Quantity of Blood is from the divided Vessels discharged into the Cavity of the Thorax, that Blood lodg'd towards the posterior Part of the Thorax, where the Diaphragm descending deep, much enlarges its Capacity, will remain, nor can it easily be evacuated through the Wound, unless the Patient was to stand on his Head. Hence that Blood is rather to be evacuated by making a new Aperture towards the posterior and inferior Part of the Thorax on the affected Side. The same holds true, when by a Wound inflicted about the Loins, Blood is lodged in the Cavity of the Abdomen, and this Blood by its Gravity falls to the anterior and inferior Part of the prominent Abdomen. Hence it will be far more easy, by the *Paracentesis* perform'd in this Place, to evacuate the Blood, than, by a Compression of the Abdomen, and a Change of Posture in the Body, to eliminate it thro' the Aperture of the Wound: It is, in like manner, requisite, there should be a new Aperture of the Wound, when Blood, extravasated in the *Membrana Adiposa*, descends into a lower Part.

If the Wound descends among the firm Parts of the Body, way must be made for the *Sordes*, by Pressure, Lotion, Ligature, and a fresh Aperture, or Dilatation of the Wound.

It sometimes happens that the Instrument, when forcibly applied, descends pretty deep into the Parts, especially into the *Membrana Adiposa*; then the Liquids, discharged from the divided Vessels into the Cavity of the Wound, and the Pus collected, will remain there, and, by their proper Gravity, descending into the easily-dilated *Membrana Adiposa*, will augment the Depth of the Wound; nor can they easily be discharged from the Orifice of the Wound, which is situated higher. The collected Matter, also, often makes surprising and sinuous Ways for itself thro' the *Membrana Adiposa*, between the Muscles, from which Circumstance there afterwards arises a great Difficulty in the Cure: This is best discovered, if, by a Syringe, tepid Water is gently injected into the Orifice of the Wound; for the greater or lesser Quantity of the Water injected will determine the Deepness of the Wound, and the Largeness of the concealed Cavity: For when the Deepness of a Wound is examined by the Probe, whilst this Operation is rudely performed, the Probe, passing thro' the *Membrana Adiposa*, will form a new Cavity: Hence the Cure will afterwards be more difficult. A memorable Instance of this is found in *Hildanus, Observat. Chirurg. Cent. 4. Obs. 84.* So that it is far safer to inject Water, provided it is gently done; for if it should be injected with Violence, the Water might lacerate the *Membrana Adiposa*, and form surprising Sinuses.

As for Pressure and Ligature; when, by an Injection of tepid Water, or the prudent Introduction of the Probe, we know how far the Wound penetrates, we then apply to that Place a Compress, which is to be secured by a Bandage; by which means the collected Humours are hindered from descending farther into the Cavity of the Wound; then, at each Dressing, the Situation of the Compress is to be gradually changed, so as to proceed more and more towards the Aperture of the Wound; thus ascending slowly from the inferior Parts: The Orifice of the Wound is, in the mean time, to be kept open, that the Contents of its Cavity may be discharged; hence the Bandage is to be so ordered, as only to compress the lower Part of the Wound, but leave its Orifice entirely open, which, for the same Reason, is never to be closed by a Tent.

As for Lotions; when the extravasated Humours become stagnant in the Cavity of the Wound, and remain long there, as they cannot be easily evacuated, on account of the superior Situation of the Orifice of the Wound, they are corrupted by their Continuance and the Heat of the Place, and may, therefore, acquire a very malignant Degree of Acrimony. The most laudable Pus, when long retained in a Wound, becomes ichorous, thin, and acrid: By this means, the whole Surface of the Wound will be so affected, as to become sordid; but so long as the Surface of the Wound is not pure, there will never be

be an Union and Consolidation of the Parts, tho' they are rendered contiguous, by proper Compression and Ligature. It is, therefore, requisite the Wound should be first depurated by Digestives: But these cannot be applied to all the Surface of the Wound, unless they are previously so diluted, that, when injected into the Aperture of the Wound, they may penetrate thro' all the Parts of it. The Medicines, therefore, before recommended for cleansing fordid Wounds, are proper in this Case; but they ought to be diluted in Water, or some other such Vehicle, that they may be of a duly-penetrating Quality. Aloes and Myrrh, mixed with the Yolk of an Egg, together with a little *Sal Ammoniac* and Honey, and then diluted with a little Water, are the best Medicines for answering this Intention.

As for a new Aperture, or Dilatation of the Wound; after some Days Trial of Compression, and the Application of a Ligature acting on the Bottom of a deep Wound; as, also, after injecting depurating Digestives, if the Condition of the Wound is not changed for the better, we are to think of other Expedients. If the Orifice of the Wound is so small, that the Liquids, collected in the Cavity of the Wound, cannot be discharged, then the former is to be dilated: But if the Situation of the Orifice of the Wound is such, that the Liquids contained in its Cavity can neither, by their proper Gravity, nor a Change of the Patient's Posture, be eliminated, then we are to think of a new Aperture, thro' which all those Things, which, being left in the Wound, would prove prejudicial, may be commodiously removed. In order to this, the Orifice of the Wound is closed with a Tent, so that nothing can be discharged; then the congested Humours will be spontaneously collected in the lower Part of the Wound, and there form a Tumor, which will indicate the Part where the new Aperture is to be made. The same may be done, when, by injecting Water, the Bottom of the Wound protuberates outwards; as, also, when a Probe, introduced into the Aperture of the Wound, can so reach its Bottom, that its Point may be felt by the Surgeon's Finger; for then the Integuments may be safely cut upon the Point of the Probe, in order to make a new Aperture: But if the Wound descends deep through thick muscular Parts, though in such a manner as that the Bottom of the Wound does not lie near the Skin, but is concealed in the more internal Parts, it is far more difficult to make a new Aperture with Success: In this Case it is most expedient, after closing the Aperture of the Wound, to apply the most emollient Cataplasms to that Part where the Bottom of the Wound is suspected to be, that the external Parts, being softened, may easily yield to the Liquids collected in the Cavity of the Wound; by which means, the Place proper for the Incision will be found.

Dilatation is made by the Knife, Lint, Sponge, Gentian-root, and other such Substances, introduced dry, with a Thread ty'd to them, which swelling, and absorbing the Humours, by this means dilate the Wound.

The best Dilatation of a Wound is made by the Knife; the Pain is, indeed, intense, when the live Parts are dividing, but it soon ceases, whilst the other Things, subservient to the Dilatation of a Wound, by a slow Dilaceration, excite a pretty acute and long-continued Pain, and, at the same time, confuse the Margins of the Wound; and these confused Parts must afterwards be separated by a Suppuration: Hence those, who, thro' a groundless Dread, will not permit the Incision to be made by the Knife, are racked with greater Torments.

But, in order to dilate a Wound without the Knife, they introduce into its Orifice Lint, or the like dry and bibulous Bodies, which, by absorbing the Humours convey'd to them, are distended; by this means they distract and enlarge the too narrow Orifice of the Wound. Nor is the Force of bibulous Bodies, render'd wet, small, in removing from each other the Substances which confine them; for Water has a surprising Property, known from Fact tho' not easily explain'd, by which it distends and enlarges the Bodies into which it insinuates itself, and that so effectually, that, by this Force alone, immense Weights are rais'd, and the hardest Stones cloven by dry wooden Wedges, introduc'd into them, and afterwards moisten'd, as the Quarry-diggers generally do in separating from the Rocks those enormous Stones from which the Mill-stones are work'd. See *Mem. de l'Acad. des Sciences, P. An. 1730.* and *Boyle, on the Usefulness of Experimental Philosophy.* Nor do we, as yet, know the Limits of this surprising Power. It is, however, sufficient for our present Purpose to know, that it is capable of surmounting very great Obstacles. They, therefore, put into the Orifice of the Wound dry Lint, wrapt up into a Tent, or a Piece of the most fungous Gentian-root, or a Piece of compress'd Sponge; then, by an adhesive Plaister, or proper Bandage, they so secure these, that they cannot slip out, whilst, by a Resorption of the Humours convey'd to them, they begin to swell: Thus the whole Force, by which these bibulous Bodies are distended, is employ'd in dilating the Wound. But among the various Substances us'd for dilating Wounds in this manner, none can be compress'd into so small a Space, and yet afterwards swells so much, by the Resorption of the Fluids, as Sponge; for which Reason, it is generally prefer'd to the others, especially if, by an artificial Preparation, its Efficacy, for these Purposes, is aug-

mented. Some use strongly to compress a Bit of Sponge, by wrapping a Thread about it, and then introducing it into the Orifice of the Wound, in such a manner, that the Knot of the Thread may remain without the Wound, and be cut off with Scissars: But as this cannot be done without Difficulty, the Design is far better obtain'd, in the following manner: They melt Rosin and Wax with a little Oil, in order to make a Plaister of a pretty tenacious Consistence; in this Plaister, melted over the Fire, they immerse a pretty large Piece of pure and dry Sponge, which is to be every-where penetrated by the melted Plaister; then they place the Sponge between two Plates of Iron, moderately warm, and, by the strong Action of a Press, express as much of the pinguious Substance from it as they possibly can, leaving it in the Press till it is totally cold; then the Sponge is compress'd into its smallest Bulk, and is so compact, that, like Wood, it may be cut into any Shape: That Substance, of an emplastic Nature, which remains in the Sponge after its strong Expression, keeps the dry Parts of the Sponge apply'd to each other, whilst, at the same time, it does not hinder Water, and all-*aqueous* Fluids, from entering into the bibulous Sponge, and distending it to its former Dimensions. When, therefore, a Sponge, by strong Pressure reduc'd to the narrowest Compass, and introduc'd into the Orifice of a Wound, is, by the Humours, distended to the greatest Dimension which it is capable of, it is sufficiently obvious, how great a Dilatation may be produc'd by this means: Besides, a Sponge, thus prepar'd, has this Advantage, that it can be cut into the smallest Shreds capable of entering the narrowest Orifices of Wounds and *Fistulas*; which Advantage cannot be obtain'd by Lint, Gentian-root, or any other Substance us'd for that Purpose.

But to all these Tents, whether of Sponge, or any other Substance, a Thread must be ty'd, lest they should slip into the wider Cavity of the Wound, and there produce many bad Consequences; for without this Caution, they could not be extracted, without great Difficulty. *Van Swieten. Com. in Boerb. Aphor.*

Of GUN-SHOT WOUNDS.

Gun-shot Wounds are attended with worse Consequences than those which are inflicted with sharp Instruments, as the Parts are more bruised and shatter'd, especially when the Bones, Joints, or some of the principal Members, receive the Shot.

As Wounds of this kind have generally an Eschar form'd upon them, little or no Effusion of Blood at first ensues, unless some of the large Veins or Arteries be wounded; but when, after some Days, the Eschar falls off, a violent Hæmorrhage is produc'd, which, without the Assistance of a Surgeon, may occasion the Death of the Patient. For the first Days, also, little or no Matter is discharg'd; whence it is not surprising, that no Wounds are so subject to Inflammations, Pains, Gangrenes, and Putrefaction, as Gun-shot Wounds.

As these Eschars resemble those produc'd by the Application of a red-hot Iron, they were formerly imagin'd to be produc'd by the Heat of the Bullet; but they rather appear to be produc'd by the sudden Collision of the Parts: And to this Collision may be ascrib'd all those Inconveniences which accompany those Wounds. Formerly it was thought that these Wounds were poisonous; but this Opinion seems to be ill-grounded, as neither the Powder, nor the Ball, have any poisonous Substance in their Composition.

Gun-shot Wounds are more or less deep: In some the muscular Parts, in others the larger Blood-vessels, the Bones, or *Viscera*, are wounded. Sometimes the Ball penetrates thro' the Part, and sometimes remains fix'd in it; sometimes Pieces of the Cloths, or Wadding, are forc'd into the Wound.

Wounds of this kind, in the *Cranium*, are commonly extremely dangerous: For tho' they may appear but slight, and the Ball may seem only to have lightly graz'd upon the Part; yet their Consequences are so pernicious, that either the *Cranium* itself is fissur'd in several Places, or the internal Blood-vessels are broke, and the Blood is discharg'd into the *Sinuses* of the Brain. It is sometimes surprising how slight a Wound of this kind, will occasion a speedy Death, unless the Blood in the *Cranium* be timely evacuated, by the Assistance of the Trepan. But these Wounds, in the *Cranium*, are dangerous, in Proportion to their Violence.

Internal Wounds, of this Sort, are difficult to heal; but if none of the larger Veins or Arteries are lacerated, they may admit of a Cure. When the Bones or Joints are shatter'd by the Ball, violent Inflammations, a Gangrene, *Sphacelus*, *Caries*, and incurable *Fistulas*, can scarcely be avoided; which either require Amputation, or deprive the wounded Part of Sense and Motion.

If any Part of the Cloths, Linen, Skin, or Wadding, is lodg'd in the Wound, it ought not to be heal'd before the extraneous Substance be extracted: This Caution must be observ'd with regard to carious Bones, and offensive Splinters.

In the Cure of these Wounds, observe the following Rules: 1. To extract any foreign Substance lodg'd in the Wound. 2. To suppress the Hæmorrhage. 3. To promote Suppuration. 4. To fill the Wound with new Flesh. 5. To induce a Cicatrix.

As soon as the Surgeon is call'd, he should carefully see if he can find any extraneous Substance conceal'd in the Wound; if there is, he should immediately extract it with his Hand, if possible,

possible, or else with a toothed or hollow Forceps, or with a two-prong'd Hook (as represented in *Tab. XXIV. Fig. 3, 4, 5, 6, 8*). If the Substance lodg'd in the Wound be deeply seated, the Wound must be search'd with the Probe, and the Substance with all convenient Expedition be extracted; for this Operation is much easier perform'd when the Wound is recent, than when it becomes tumefy'd and inflam'd. Another bad Consequence, attending a Delay in this Case, is, that the Balls, sinking deep under the Muscles, cannot be taken out, and, consequently, malignant *Fistulas*, a Stiffness of the Limb, and other bad Symptoms, are produc'd. In extracting these Balls, the Operator must take particular Care, not to break any of the Veins, Arteries, Nerves, or Tendons, which would occasion very dangerous Consequences; upon which account, he should introduce the Forceps shut, and not open them till the Point touches the Ball.

If the Ball, or other extraneous Body lodg'd in the Wound, has sunk deep, or if the Wound be so narrow, that it cannot be conveniently extracted, the Orifice must be enlarg'd by Incision, on that Side which may seem most safe and proper: But particular Care must be taken, not to wound a Nerve, Vein, Artery, Ligament, or Tendon. When an extraneous Substance is lodg'd in a Wound of this kind of some Standing, the Orifice of which is contracted, with the Swelling and Inflammation, this Sort of Incision is often very beneficial; for it not only opens a convenient Passage for discharging the inspissated Blood, but, also, prevents violent Inflammations, and the like Inconveniences. But as two Balls frequently happen to be lodg'd in the same Wound, the Surgeon, after one is extracted, must carefully search for another; for as long as any extraneous Substance is conceal'd in the Wound, the Cure will be protracted.

In extracting these foreign Substances, the Patient should be plac'd in the same Posture he was in when the Shot enter'd his Body; for, by changing the Posture of the Body, the Shot is subject to be lost in the Muscles, Membranes, or Fat, so as not to be reach'd by the Probe, or other Instrument: But when the Ball has penetrated so deep, as to be felt by the Finger on the opposite Part of the wounded Limb, the Surgeon ought to consider, from the Disposition of the wounded Parts, whether it be preferable to extract the Ball by the Orifice of the Wound, or by laying the opposite Part of the Member open by Incision: But if the Wound can neither be enlarg'd, nor the Shot extracted, without endangering the Nerves and Arteries, it ought to remain in the Wound, till the Pain is abated, or till the Passage is render'd so easy by Suppuration, that they work themselves out. On the other hand, extraneous Bodies ought to be extracted, without Delay, when, by their Continuance in the Wound, they threaten to raise Convulsions, Pain, and other pernicious Symptoms. If the Ball has penetrated into any of the Cavities of the Body, whence it cannot be conveniently or safely extracted, the best Method is, to leave it where it is lodg'd, and heal the Wound: In this manner they have long continu'd, and often, during Life, without any Danger, or Inconvenience; and sometimes they will work themselves into other Parts of the Body, whence they may be safely and easily extracted.

When the Shot is lodg'd in the Bones, it ought to be extracted in the same manner, with the notch'd Forceps, or Hook: If that Method proves unsuccessful, it may be brought out with a Screw: But where the Shot is cover'd with much Flesh, as in the Calves of the Legs and Thighs, a peculiar Sort of Screw is requir'd, like that delineated in *Tab. XXIV. Fig. 7*. But if the Shot is too firmly fix'd to yield to any of these Methods, it must be suffer'd to remain in the Wound till it is loosen'd by Suppuration. Balls lodg'd in the Joints must be extracted with the utmost Expedition; for, in this Case, Delays are extremely dangerous: Nor can violent Pains, Inflammations, and Caries of the Bones, which generally require Amputation of the Limb, be, without Difficulty, prevented.

When, in a Gun-shot Wound, the Joint or Bone is extremely bruised, it is better to remove the Limb immediately by Amputation, than to labour long in vain, to obtain a Cure: For as the natural Form of the Joints can never be restor'd, so the Nerves, Tendons, and Ligaments, which adhere to the shattered Bone, being broken, violent Inflammations, a Gangrene, and *Sphacelus*, are by these means induc'd: But when the Collision of the Bone is not very violent, the Surgeon should gently remove any Splinters of the Bone, or extraneous Substance lodg'd in the Wound, which may then be cur'd after the usual Method.

If a large Artery, of the Arms or Legs, should be wounded by the Shot, which may appear from the Effusion of Blood, the *Tourniquet* must be immediately apply'd, to stop the Hæmorrhage, till the Artery can be stich'd up with a crooked Needle and Thread: and this Method I have successfully try'd. But if this should be impossible to be perform'd, the Limb must necessarily be amputated, taking care, first, to apply the *Tourniquet*, a little above the Wound, in order to stop the Hæmorrhage.

The Wound being cleansed, and the Effusion of Blood stop'd, if necessary, the first Intention of Cure is, to prevent, or, at least, alleviate the Swelling and Inflammation: For this Purpose, let the Wound be fill'd with Lint dipt in warm Spirit of Wine, and apply Compresses, moisten'd in the same Liquor, or in camphorated Spirit of Wine, or in Spirit of Wine diluted with Lime-water.

The next Intention is, to forward the Suppuration of the bruised and corrupted Parts; and, for this Purpose, besides the common digestive Ointment made of Turpentine and the Yolk of an Egg, the following may be used:

Take of *Unguentum Basilicon*, and *Arcaus's Balsam*, each an Ounce; Spirit of Wine, and Oil of Eggs, each a Dram: Mix, and make them into an Ointment.

Add to these, if the Corruption is violent, a little Myrrh, and Aloes, *Theriaca*, *Unguentum Fuscum*, and, in Parts not very nervous, a little red Precipitate.

In Wounds where the Ball has quite penetrated the Limb, pass a long, blunt Needle (see *Tab. XXVI. Fig. 1*), arm'd with a small linen Cord, well moisten'd in the Ointment above-prescrib'd, thro' the Middle of the Wound, like a Seton; let this Cord be drawn backwards and forwards, and kept in the Wound, till, from its Redness, it appears that the corrupted Parts are thrown off, and that the Wound is ready to heal: then the Cord may be drawn out.

You may now proceed to incarn, and induce a neat Cicatrice, with balsamic Medicines, as in other Wounds. Some use here a vulnerary Water, call'd, by the French, *L'Eau d'Arquebuse*. See *AQUA SCLOPETARIA*.

The concomitant bad Symptoms of Gun-shot Wounds, such as the Hæmorrhage, Fever, Swelling, Inflammation, Pain, and Convulsions; may be treated as in other Wounds, unless where the Violence of the Collision and Confusion make them more subject to Corruption and Putrefaction. If, as it almost always happens, the Lips of the Wound become black, livid, flaccid, and fetid, Care must be taken to separate the corrupted Flesh from the sound: For this Purpose, apply the *Unguentum Egyptianum*, diluted with Spirit of Wine, or mix'd with an equal Quantity of the digestive Ointment; or a little red Precipitate may be add'd to the digestive Ointment; then put on the Compresses, after they have been thoroughly moisten'd with warm camphorated Spirit of Wine, mix'd with *Theriaca*; or with Lime-water strengthen'd with Spirit of Wine. If the Corruption penetrates deep into the Flesh, Scarifications and Incisions must be made, till the latent corrupted Humours are discharg'd, and the Applications reach to the sound Parts: If these Remedies are not effectual, more powerful Medicines must be used for consuming the Flesh; such as the *Aqua Phagedenica*, made of Lime-water and Mercury Sublimate; or one Pound of Lime-water mix'd with one Ounce of crude Quicksilver dissolv'd in two Ounces of *Aqua Fortis*. These Applications are, also, useful, in a Caries of the Bone; but in Wounds of the Joints or Ligaments, as these acrid Applications cannot be made with Safety, we must have recourse to Balsamics; such as the *Eau d'Arquebuse*, *Peruvian Balsam*, Tincture of Myrrh and Aloes, prepar'd with *Sal Ammoniac*, and Spirit of Wine, Essence of Amber, Spirit of Mastich, *Hungary Water*, Oil of Turpentine diluted with this Water, and the like; which must be infil'd into the Wound moderately warm.

Internal balsamic Medicines which resist Putrefaction, are, at the same time, not to be neglected: Of this kind are, the *Elixir Proprietatis*, the Essence of Myrrh and Aloes, the Essence of Amber, *Peruvian Balsam*, and the like; thirty or forty Drops of which may be given to the Patient, for several Days. If the Patient be very weak, let him take some cordial Pills, with the *Confectio Alkermes*, and some cordial Syrup: Proceed in the Remainder of the Cure as in other Wounds.

By the Explosion of Guns it often happens, that some Grains of Gunpowder enter the Skin of the Face, and produce unseemly Spots, if they are not timely taken out: When the Grains do not entirely penetrate the Skin, they may be taken out with a Forceps, or a Quill shap'd like a Tooth-pick, or an iron Instrument in the Form of an Ear-pick; but if they reach below the Skin, before they can be laid hold of, the Skin must be laid open with a slender Knife, or Lancet, and then they may be extracted as before: The Operation must be repeated till all the Grains are taken out, and Care must be taken, that they are not broken in the Extraction, otherwise the Spots will continue. *Heist. Chirurg.*

Mr. Ranby, in his *Method of treating Gun-shot Wounds*, tells us, that, in removing the Accidents produc'd by the Ball of a Musquet or Pistol, the first Intention is, if possible, to extract the Ball, or any other extraneous Bodies which may be lodg'd in the wounded Part; and whenever Misfortunes of this kind are attended with an excessive Effusion of Blood, in consequence of the Rupture of some considerable arterial Vessel, it is absolutely necessary, with all Expedition, to stop the Hæmorrhage, by taking up the Artery with a proper Needle, and so carefully, that the Hold may not prove elusive; because, in Cases of this Nature, no Applications, however styptic, are to be depended on.

In order to get at the Ball, or any other foreign Matter infesting the Wound, Searches by the Probe are to be used as sparingly as possible; since it is certain, from Experience, that such a Practice is highly detrimental to the Patient: And where there is an absolute Necessity for this Method, the Finger is always to be prefer'd, as the best, and least dangerous Probe.

If the Ball, or any other Substance, is lodg'd near the Orifice of the Wound, or is, by the Finger, perceiv'd to be under

the Skin, tho' at some Distance from the Mouth of the Wound, we must, in the former of these Cases, remove the extraneous Matter, with all Expedition; and, in the latter, cut upon it, and take it out: But if the Ball, or other Substance, should be sunk so deep, as to be absolutely beyond the Reach of the Finger, it is by no means advisable to extract it, by forcibly introducing a Pair of long Forceps: Since it is certain, from Experience, that such a Practice seldom fails to produce a Train of terrible Symptoms; and since numberless Instances occur, in which Balls, after having been lodg'd in the Body for many Years, without incommoding the Patient, have, in Process of time, work'd their Passage to the Surface, and were, consequently, easily extracted.

As Wounds, made by the Balls of a Musquet, or Pistol, are but small; so it is necessary to dilate them, with all Expedition; but if they should be inflicted near a Joint, or in a very membranous or tendinous Part, the Knife, as well as Forceps, should be used, with the greatest Caution, and no larger a Dilatation made, than is absolutely requisite for the free Discharge of the Matter lodg'd within: For Wounds in the Joints, whether produc'd by a Bullet, a cutting Instrument, or any other Cause, are always dangerous. And such Parts as are membranous, or tendinous, never fail to suffer, by being expos'd to the sensible Impressions of the Air.

If a Ball has gone entirely thro' any Part, both Orifices, where it can be done with Safety, are to be dilated, and both carefully kept open, especially that in the most depending Part: Tents are never to be us'd where there is a Possibility of avoiding them; light, easy Dressings, are always best, and ought to be secur'd with a Bandage of thin Flannel, if it can be had; no tighter than is necessary to keep them on the Part.

When the wounded Person has not suffer'd a great Loss of Blood, it is expedient, immediately, to take a large Quantity from a Vein open'd in the Arm, and to repeat Venesection the second, and even the third Day, if Circumstances call for it: This timely Precaution will prevent a good deal of Pain and Inflammation, promote the Digestion, and contribute to prevent a numerous Train of complicated Symptoms, which otherwise generally interrupt the Cure, miserably harass the poor Patient, and too often endanger his Life.

During the first twelve Days after the Reception of the Wound, it is proper to observe a cooling Regimen, both with respect to the Medicines prescrib'd, and the Diet requisite for the Support of Nature: And as, in Circumstances of this Nature, the Body should, by all means, be kept soluble, a Stool should every Day be procur'd, either by emollient Clysters, or some gentle Laxative taken internally.

All Applications of an hot and spirituous Nature are remarkably injurious, and productive of such Pain, that the wounded Part can by no means bear them. The first Dressing should consist of Lint, either dry, or moisten'd with a little Oil, and secur'd by a very slight Bandage; the next should consist of a proper Digestive, warm'd, and cover'd with the Bread and Milk Poulitice, mix'd with a Quantity of Oil sufficient to keep it moist; and where there is great Tension, and the Wound large, a proper Fomentation is to be us'd: This Course is to be continu'd till the Wound is clean, after which, it is to be heal'd in the ordinary manner: This Method generally promotes a constant and easy Perspiration, abates the Pain, greatly facilitates the Digestion, and removes all Apprehensions of an approaching Inflammation. The Reason why the Lint should be moisten'd with Oil is, the great Ease procur'd to a contus'd Wound from such an Application, in comparison of a drying and absorbent Dressing; which, instead of giving a free Discharge to the sanious Blood, and preventing an Inflammation by unloading the Part, would possibly obstruct the Mouths of the capillary Vessels, and hinder Nature from getting rid of that Incumbrance, which, it is observable, she so much endeavours to throw off.

When an Inflammation seizes any Part, in consequence of the Lodgment of a Bullet, or any other foreign Body which might have been safely extracted immediately after the Reception of the Wound, all Attempts to dislodge such extraneous Matter must be postpon'd, till the Swelling is, in some measure, abated, and the inflammatory Disposition of the Fibres nearly remov'd; unless the Ball, or other offending Matter, lies at no great Distance from the Orifice, and there is, on that Account, a Certainty of removing it, without any great Uneasiness to the Patient.

When a Wound is of such a desperate Nature, as to render Amputation necessary, which frequently happens when it is inflicted in any important Joint, it is expedient to perform the Operation immediately, and without Delay; lest, by postponing it, an Inflammation, which is reasonably to be dreaded, should prevent a Work which ought rarely to be attempted during the Continuance of so unlucky a Circumstance. The neglecting this favourable Juncture of taking off a Limb, frequently reduces the Patient to so low a State, and subjects the Blood and Juices, to such an Alteration, as must unavoidably render the subsequent Operation, if not entirely unsuccessful, yet, at least, exceedingly dubious: And even in Wounds where Amputation is not necessary, it is equally advisable, not to defer the Measures proper to be taken, lest, in consequence of the exposing the Parts to the Air, a Series of very dangerous Symptoms should be brought on.

Wounds contiguous or adjacent to any considerable Artery are ready to bleed afresh, upon any Motion of the Patient, or the Return of a free Circulation of the Blood into the Part, which was at first obstructed by the Violence of the Injury done it; and this generally happens when the Eschar begins to separate: For this Reason, we should never attempt a forcible Removal of the Eschar, but patiently wait for its perfect Separation; without being in the least shock'd at the Opening of the Arteries, which is found to be almost inevitable: But the Approach of this Accident may be frequently predicted, from the Patient's complaining of an excessive Weight and Fulness of the Limb, which Symptoms are always accompanied with more or less Puffation; an infallible Prognostic of the Consequences: When these Symptoms appear, Bleeding, and the use of the Bark, are instantly to be order'd, in whatever Part of the Body the Wound is inflicted.

I have known, says our Author, several Instances of Persons losing their Lives, from the starting of an Artery, before the Surgeon could come to their Assistance; especially where an Amputation has preceded; and I dare affirm, the Quantity of Blood lost, particularly after an Amputation, has not amounted to twelve Ounces; which I cannot account for otherwise than by the Drain which had been made from the Mass of Blood, both before and during the Operation: Whence the sudden Discharge, tho' of so small a Portion of Blood, after the great Quantity before lost, gives a Check to the Circulation, and produces immediate Death: This Reflection ought to be a Lesson of Instruction to every Practitioner, to be particularly careful in tying the Vessels.

Repeated Bleedings in the Beginning are attended with many Advantages, since they generally prevent, and always lessen any feverish Paroxysms, and seldom fail to guard against Impostumations: The Body must always be kept in a laxative State, and when the Patient is rack'd with Pain, we must have immediate recourse to proper Preparations of Opium.

Probes, Forceps, Mallets, Chissels, and various other Instruments, ought never to be us'd, except in Cases of absolute Necessity; since, without doing any Honour to the Surgeon, they not only rack the Patient with Pain, but, also, expose his Life to Danger. But, for a farther Confirmation of this, let us suppose a Ball lodg'd in any Part beyond the Reach of the Finger, and entirely out of the Way of being perceiv'd by the external Touch: In such a Case, it must evidently appear, upon the least Reflection, that thrusting first a long Probe in quest of the Bullet, and then a Pair of long Forceps, either with or without Teeth, into a Wound of this kind, tho' with a kind of Certainty, to extract the foreign Matter, must either contuse, or irritate and inflame the Parts to a great Degree, and, consequently, do as much, or, perhaps, more Mischief, than the Ball did at first by forcing its Passage so far into the Parts: And should the Forceps lay hold of any Nerve, Artery, or even common Membrane of a Muscle, together with the Ball, which, in all Probability, must continually happen, very shocking Consequences must necessarily attend such a Practice: Nor would Attempts of this kind prove less injurious, in Cases where Bullets are lodg'd in the Cavities of the Abdomen, or Thorax; whereas it is certain, from Experience, that Lead may lie for a long time in several Parts of the Body, without producing any considerable Pain, or even Inconveniencies.

Chissels ought, on no Occasions, to be us'd, since they too frequently split the Bone up to the next Joint, or shatter it in such a manner, that, instead of promoting a Cure, by safely removing the Part affected, they generally bring on Symptoms worse than the original Disorders they were intended to remedy: A good Knife is certainly all that is necessary, for taking off a Finger; or should one of the Bones of the *Metacarpus* require Amputation, a small Spring-saw does the Work, with great Ease and Safety. With respect to the use of the *Peruvian Bark* in Gun-shot Wounds, see the Article *QUINQUINA*.

VULPANSER. Offic. Bellon. des Oyse. 159. *Vulpanser sive Chenalopez.* Jonf. de Avib. 94. *Chenalopez, Vulpanser.* Mer. Pin. 179. *Tudorna.* Bellon. des Oyse. 172. *Tadorna, quibusdam Vulpanser.* Raii Ornith. 362. *Tadorna Bellonii, Vulpanser quibusdam.* Ejsd. Synop. A. 140. **THE SHELL-DRAKE, BURROUGH-DUCK, or BER-GANDER.**

It is observ'd in maritime Places; and the Fat, which is the Part us'd in Medicine, is recommended, by some, against the Herpes, and Tumors of the Face. *Dale.*

VULPECULA MARINA. The Sea Fox, otherwise called *Simia Marina*, or *Alopecias Oppiani*. This is a very large Fish, of the cetaceous kind, the Fat of which is esteem'd emollient, and resolvent.

VULPES. Offic. Schrod. 5312. Aldrov. de Quad. Digit. 195. Raii Synop. A. 177. Schv. Quad. 133. Ind. Med. 125. Jonf. de Quad. 92. Charlt. Exer. 15. Gein. de Quad. Digit. 966. Mer. Pin. 167. **THE FOX.**

Adapted to medicinal Uses are the *Fat, Lungs, Liver, Gall, Milt, Skin, Blood, the whole Animal, and its Dung.* The *Fat* is of use in Convulsions, Contractions, Tremblings, and the like Disorders; also, in Pains of the Ears, Wounds of the Head, and an *Alopecia*. The *Lungs* are consolidating, and abstergent, and therefore of Efficacy in Diseases of the Lungs, and

and Straitness of the Breast: The *Liver* of a Fox is of use in hepatic and splenetic Cases; the *Gall* cures a *Pterygium* of the Eyes; the *Spleen* removes a Hardness and Tumor of that Part; the *Skin*, with the Hair on it, is successfully wrapt about such Limbs as are refrigerated, or infested with arthritic Pains; the *Blood*, dry'd and triturated, cures the Stone in the Kidneys and Bladder; for which Purpose, it is said to be more effectual if taken recent: The whole Fox, or its Flesh, burnt, is commended for Disorders of the Breast: The Animal, boil'd in Water, or Oil, is a Remedy for Affections of the Nerves, and therefore good in Contractions, and Pains of the Joints; and the *Dung*, in the last Place, clears the Skin from Asperities. Dale, from Schroder.

VULSELLA. The same as **VOLSELLA**.

VULSIO. This is sometimes us'd to express a Convulsion, or Spasm.

VULTUR. Offic. Schroder. 5. 324. Schw. A. 373. *Vultur niger*. Aldrov. Ornith. 35. Gesn. de Avib. 707. Raii Ornith. 66. Ejusd. Synop. A. 9. Jonf. de Avib. 7. *Vultur nigriscans*. Charlt. Exer. 71. *Vautour brun*. Bellon. des Oyse. 85. **THE VULTURE.**

The Parts in use are, the *Flesh*, *Fat*, *Brain*, *Gall*, and *Dung*. The *Flesh* is esteem'd effectual in cephalic Affections, as the Epilepsy, *Hemicrania*, and the like: The Decoction of it is said to be good for cutaneous Diseases; and the *Fat* is proper for the Nerves: The *Brain* strengthens weak Heads; the *Gall* is said to cure the Epilepsy, being taken in Wine; and the *Dung*, by its nidorous Smell, to precipitate the Birth. Dale from Schroder.

VULVA. The Female Pudendum.

VULVARIA. A Name for the *Chenopodium Foetidum*.

UVULA. See **PALATUM**.

Of an excessive Extension of the UVULA.

It sometimes happens, from various Causes, that the *Uvula* swells, and extends itself to such a Degree, as to descend almost upon the Larynx, or *Aspera Arteria*, and, by that means, to cause a Difficulty not only of Respiration, but of Speech, and Deglutition. If the Disorder be recent, and excited by an Inflammation, as may be known from the Pain attended with a Heat and Redness, it will be proper to treat it with Gargarizations and Injections, endu'd with a lenient and resolvent Virtue, such as simple Water mix'd with a little Spirit of Wine, or a Decoction of the Funguses of the Elder-tree, Barley-water, a Decoction of the Flowers of the *Ligustrum*, or Mallows, mix'd with a small Quantity of Nitre, Alum, or *Sal Ammoniac*: With these must be used internal, tempering Medicines; and if the Inflammation be more violent than ordinary, Blood is to be taken away from the Arm or Foot, the Belly is to be evacuated, and Clysters are to be administer'd, in order to prevent a Quinsey, or Inflammation of the *Fauces*, which may prove of very pernicious Consequence: Scarifications, also, are not improper in this Case; for I have long since found them of Service, when try'd upon myself, as well as others, not only by allaying, but preventing an Inflammation of the *Uvula*. If the Swelling of the *Uvula* be occasion'd by a pituitous Humour, it is generally white, and void of all Pain and Inflammation. In this Case there is nothing better than the use of a Gargarism of warm Spirit of Wine, temper'd with a little Water, or one prepar'd of some astringent Decoction, as that of Roses, Flowers of the *Ligustrum*, Rinds of Pomgranates, and the like, mix'd with a little Spirit of Wine, or Spirit of *Sal Ammoniac*: But if the Disorder will not yield to these Remedies, we must take another Method for the Cure, or Digestion of the pituitous Matter; which is, to take some pounded Ginger, or Pepper, mix'd with an equal Quantity of Pomgranate-rinds, in Form of a Powder, or made up with Honey, and with a small Spoon, *Tab. XXII. Fig. N.* apply it to the diseased Part, not neglecting, however, the use of internal Medicines, both purgative and digestive: Sometimes all these means prove of little Effect, and the affected *Uvula*, from a Redundance of the pituitous Matter, becomes swell'd, and extended to such a Degree, as to hang down upon the very *Aspera Arteria*, and, by that means, prove a considerable Impediment to Respiration, as well as Speech and Deglutition. In this Case, the Use of Medicines is insignificant, and there remains no Remedy, but to separate as much of the *Uvula* as extends beyond its natural Dimensions. There are several Ways of making this Separation: The first is, by Ligature; and because this Way of Operation cannot be performed merely by the Hand, there is a proper Instrument contrived for the Purpose, and represented *Tab. XLII. Fig. 6.* from *Heldanus* and *Scultetus*. Here a thick Thread, *A*, is, by help of a pretty long Needle, *Fig. 7.* drawn thro' this hollow Instrument, so as to make a Noose within the Ring *B*; thro' this Noose so much of the *Uvula* is depressed as is judged to be superfluous, and, by drawing the Thread *C*, it comes under a strong Constriction, or Ligature: This done, the Instrument is withdrawn, and the Ligature left on the *Uvula*, and is to be straitened, now-and-then, every Day, till the lower Part of the *Uvula* falls off. But this Method, tho' ingenious enough, is too slow, and troublesome, as well to the Patient as the Sur-

geon. A more expeditious Way is, first, to depress the Tongue with a flat Probe, or Spatula, *Tab. XXII. Fig. P* or *R*, and then, with long Scissars, to cut off the superfluous Part of the *Uvula*; but Care is to be taken, in this Operation, that no more nor less of the *Uvula* be separated, than just as much as is required: For if too small a Part be cut off, the Operation is both troublesome, and of little use to the Patient: On the contrary, if too little be left, the Speech is injured. If the Surgeon be not dexterous enough to hold the Spatula right, and, at the same time, to manage the Scissars as exactly as he ought, the best, and most commodious Method of Operation, as it is esteemed by some, is, what is performed by help of an Instrument invented by a Peasant of *Norway*; in which Country this Disease, it seems, is very frequent. *Bartholine* and *Scultetus* have given us a pretty accurate Description of this Instrument: A Knife, adapted to the Purpose, is fastened to a broad Iron Plate, perforated in its fore Part, in such a manner, that the Knife is impelled by a Spring, and cuts off the superfluous Part of the *Uvula*. The famous *Rau* has, I think, made some Alterations in this Instrument [see *Tab. XLII. Fig. 8.*], so as that the Spring is wanting; but the *Uvula*, being extended, and depressed through the Perforation *A*, as far as is required, is, with the Knife *C*, by strongly depressing the Stick *B*, separated at one Stroke. In this Operation the Instrument is; by means of the Handles *D*, *D*, so held in the Mouth, as to depress the Tongue in the most convenient manner, and render the Use of a *Speculum Oris* unnecessary.

The superfluous Part of the *Uvula* being thus cut off, it will be proper to let the Blood flow for a little while; and then, in order to stop the same, and to comfort the diseased Part, it will be proper to gargarize with red Wine warm, or with Vinegar, or *Oxyrcras*, also, warm: If the Blood be not, by this means, repressed, it is to be stopped, by an Application of burnt Alum, with the Spoon, *Tab. XXII. Fig. N.* or, after the manner of the Antients, with an Iron heated, but not to the Degree of Redness, and held to the Place till the Blood stops: But when the *Uvula*, as it sometimes happens, besides its Intumescence, is, at the same time, infested by some venereal Contagion, the Surgeon is not to put his whole Confidence in his Dexterity of Hand, but to make use, also, of proper Medicines, if he hopes to make a perfect and effectual Cure. *Heister, Chirurg.*

UZEG. *Lycium Indicum creditum Alpino*. Park. *Indicum Alpino putatum*. J. B. *Lycium Indicum alterum*. C. B.

This is a Shrub rising up with a Multitude of very strait Branches, three Cubits and more in Length, which shoot forth firm, numerous, hard, and ligneous Roots, which run obliquely; the Branches are furnished with many long and very sharp Spines, some of which are clothed with Leaves; about the Bases of the Spines grow four or more Leaves, of unequal Sizes, smaller and tenderer than Olive-leaves, and not narrow'd into a Point, but rounded like Box-leaves; the Flowers are small, and numerous, not bellied, but from a pretty narrow Tube gradually dilating, open at last into a labiated Figure, of a pleasant and smiling Aspect; they have their inner Bosom tinged with yellow, with some purple Spots where the Petals part; and in all other Parts have a Mixture of the Colour of the Hyacinth with the Violet, but far excel them, both in the rich and most grateful Fragrancy of their Smell. *Veslingius*. These Flowers are succeeded by small black Fruit, resembling that of the *Ebulus*, smooth, and of a bitter and astringent Taste. *Prosper. Alpinus, de Plantis Egypti*.

Whether the Juice prepared of this Shrub be the *Lycium Indicum* of the Antients, may be more easily guessed, from the Characters of the Plant, than the Language of the Egyptians, as *Veslingius* observes.

P. Alpinus found it upon a Branch of the Nile, called *Calig*, ten Miles above *Alexandria*.

The Juice brought into Egypt from the neighbouring Parts of *Arabia* and *Ethiopia*, condensed in Bottles, has manifest Characters of the *Lycium Indicum*, says *Veslingius*, especially when it is rightly prepared; but *Alpinus* believes the *Lycium* in use among the Egyptians, and brought from *Arabia*, to be spurious; for it is hard, he says, and black on the Outside, like the Juice of *Acacia*, and, when broken, is of the Colour of Aloes on the Inside; is of a faint, tho' not unpleasant Smell, of a sweetish Taste, astringent, but not at all bitter; viscous, and, when handled, sticks to the Fingers: For which Reason, he believes it not to be the true *Lycium*, especially since it has neither Bitterness, nor, when kindled in the Fire, yields a redish Spume, as it is recorded by many of the true *Lycium*.

The Egyptians use this Juice for all Sorts of Ulcers, particularly of the Mouth, Ears, Nostrils, Anus, and Intestines; as, also, for an Hæmoptoe, Dysentery, and Diarrhoea, and for other Fluxes of the Belly and Uterus. Being anointed on any Part, it effectually secures it from a Flux of Humours.

There is, in the *German Ephemerides*, *An. 13. Obs. 1. p. 9, 10, 11.* a Method of preparing *Lycium Indicum* from a Species of *Acacia*. *Raii Hist. Plant.*

UZIFIR. *Cinnabar*. *Rulandus*. *Ussur*, is the same.

W.

WAAGENBOOM. A Name for the *Lepidocar-podendron, folio saligno lato, caule purpurascente.*

WAGA H. M. A filiquous Indian Tree, with a tetrapetalous, stellated Flower, and flat Pods three Inches in length. It is very like the *Intsia*, but without Spines, and climbs about high Trees. The Pods are two Inches in Breadth, thin and very flat, when dried of a reddish Colour, and have a Cortex of a Snow-white Colour on the Inside. The Beans are astringent, bitter, round, and smooth, a little flattish, lying in a transverse Position, with respect to the Pod, and of a green inclining to a Chestnut Colour.

It is an Ever-green, and grows in the thick Woods of *Warapouli*, and other Parts of *Malabar*.

The Juice of this Tree, together with Lemons, and green Turmeric, boiled for a considerable Time in Oil of the Cocoa-Nut, is good to anoint for the Leprosy; it is of great Use also in inveterate Ulcers. *Raii Hist. Plant. 1766.*

WAMCABEC *Insula Maragnanica* De Laet. The Name of a Tree resembling an Apple-tree. The Fruit is yellow; the Kernels are acrimonious, and, therefore, not eatable. *Raii Hist. Plant.*

WARICORAMARI FRUCTUS. The Fruit of the *Waricoramari*. The Name of a Fruit, said to grow near the River *Arriwar*, of no Use in Medicine. *Raii Hist. Plant.*

WARNAS. Vinegar of the Philosophers. *Rulandus.*

WATTA-TALL. The Name of a Tree which grows in *Malabar*. The Leaves bruised and infused together with green Tobacco and Rice, are said to cure inveterate and verminose Ulcers. Of the same boiled in Water, Baths are pre-

pared, said to be good against chills Fevers: Of the Flow and Fruit contused, tied in a Rag, and boiled in Woman Milk, an Errhine is made, which is recommended in the same Fevers. *Raii Hist. Plant.*

WELLIA TAGERA H. M. A filiquous Plant of *Malabar*, with a pentapetalous Flower, and long flat Pods, with transverse Partitions between the contained Seeds. It grows to the ordinary Height of a Man, with a Stem as big as a Man's Arm, and is transplanted from Woods into Gardens, only on Account of its Beauty; it is an Ever-green.

All the Parts of this Plant, the Root excepted, are exhibited with an Addition of Cummin, white Sugar, and Milk, against a virulent Gonorrhœa. The Leaves boiled in Cows Milk, or used in Baths, expel the Gout. The Bark triturated with Sugar and Water is proper in the Diabetes. The Bark of the Root, and green Saffron mixed with Milk, give Relief under the nodous Gout, called by the *Malabrians*, *Sonida badda*. *Raii Hist. Plant.*

WINTERANUS CORTEX. See **CORTEX WINTERANUS.**

WISANCK. A Name for the *APOCYNUM SYRIACUM.*

WISMAT. *Rulandus* explains this, *Leprosum, non tractabile, vel malleabile, rude stannium.*

WITTEBOOM. The Dutch Name for the *Conocarpodendron, foliis argenteis, sericeis, latissimis.*

WURTZII UNGUENTUM FUSCUM. This is an Ointment invented by *Felix Wurtzen*, not unlike the *Unguentum Egyptianum*, and of much the same Virtues.

X.

XAGUA MARTYRIS *Nieremberg.* A Kind of Indian papyriferos Tree. The Fruit is said to fatten Swine.

XALXOCHILT. A Name for the *GUAJAVA.*

XANTHIUM. See *BARDANA MINOR.*

XANTHOBALANUS. The same as *CHRYSOBALANUS.* *N. Myrepsus, Sect. i. C. 349.*

XANXUS. A large Sea Shell, found near *Ceylon*, like those with which Tritons are painted. It is, like other Testacea, alkaline and absorbent.

XELSES. The Name of a Star in *Paracelsus*, which, he says, shines upwards, but not downwards.

XENEXTON. An Amulet worn at the Neck as a Preservative against the Plague. *Paracelsus.* It is, also, wrote *Xenechton.*

XENINEPHIDEI. Certain imaginary Spirits mentioned by the Adepts, said to delight in discovering the occult Properties of Things to Men.

XENOPHILI ANTIDOTUS. The Name of an Antidote described by *Aetius*, Tetrabib. 3. Sermon. 3. C. 13.

XENOPREPES. *ἑνωπρεπής.* *Hippocrates*, in his Treatise of Fractures, uses this Word, to express, unusual, uncommon, or foreign.

XERANTHEMUM.

The Characters are;

The Root is fibrous and annual; the Leaves are somewhat hoary, resemble those of the Olive-tree, and are disposed in alternate Order. The Calyx is squamous, smooth, silver-colour'd, and consists of a quadruple or quintuple Series of Scales lying one upon another. The Flowers are dry, consisting of flat Bractæe, barren, destitute of Ovary or Stamina, rigid, cuspidated, with a flosculus Dish, whose Florets are of the same Composition. The Seeds have a foliaceous Head.

Boerhaave mentions seven Sorts of *Xeranthemum*, which are;

1. *Xeranthemum*; flore simpliciter, purpureo, majore. *H. L. Jacca, Olea folio, capitulis simplicibus, C. B. P. 272. Ptarmica Austriaca, Dod. p. 710.*

2. *Xeranthemum*; flore pleno, purpureo, majore, *H. L.*

3. *Xeranthemum*; flore simpliciter; albo, *H. L.*

4. *Xeranthemum*; flore pleno, albo, *H. L.*

5. *Xeranthemum*; flore simpliciter, purpureo, minore, *T. 499. Jacca, Olea folio, minore flore, C. B. P. 272.*

6. *Xeranthemum*; capitulo variegato. *Jacca, folio olea, capite variegato. Sher.*

7. *Xeranthemum*; flore purpureo, simpliciter, minimo, semine maximo. *H. L. Flor. 2. 37. Boerb. Ind. Alt. Plant.*

Xeranthemum is from *ἄνθος* (*Xeros*) dry, and *άνθος* (*Anthos*) a Flower, that is to say, a dry Flower. *Clusius* calls it *Ptarmica*, not because it provokes Sneezing, but because it has some small Resemblance of the *Ptarmica* of *Dodonæus*. It is commonly called *Immortalis Herba*, the immortal Herb, because its Flower may be preserved many Years, as consisting of rigid Bractæe, which found like so many thin Plates of Metal. The Virtues of this Plant in Medicine are unknown. *Hist. Plant. ascript. Boerhaave.*

XERAPHIUM. The Name of a drying Topic described by *Aetius*, Tetrabib. 4. Sermon. 2. C. 13.

XERASIA. *ξηρασία*, from *ἄνθος*, dry. A Species of *Alopecia*, consisting in a Dryness of the Hairs, for want of due Nutriment.

XERION. *ξηρίον*. A dry Medicine reduced to Powder: The same as *Cataplasma*.

XEROCOLLYRIUM. A dry Collyrium.

XEROMYRON. A Composition of dry Aromatics reduced to Powder; called, however improperly, a dry Ointment.

XEROPHTHALMIA. It is the same as *SCLEROPHTHALMIA.*

XEROTRIBIA. *ξηροτρίβια*, from *ἄνθος*, dry, and *τριβω*, to rub; a dry Friction.

XESTES. *ἑξήκω*. A Sextary.

XIPHIIUM.

The Characters are;

It has the Fruit and Flower of the *Iris*, with a bulbous Root.

Boerhaave mentions eleven Sorts of *Xiphium*, which are;

[+ A]

x. *Xiphium*;

1. Xiphium; Persicum; præcox; flore variegato. T. 363. *Iris, bulbosa, Persica*, Park. Parad. 172.
2. Xiphium; angustifolium; flore albo; labio inferiori rictus aureo. *Iris bulbosa* III. *sive versicolor*. Clus. H. 211.
3. Xiphium; angustifolium; flore variegato, petalis repandis flavis cum maculâ aureâ; petalis incumbentibus pallidè cærulescentibus, petalis erectis pallidè cærulescentibus cum lituris violaceis.
4. Xiphium; angustifolium; flore ex violaceo-purpureo & cæruleo pallescente variegato notata.
5. Xiphium; angustifolium; flore luteo, inodoro. T. 364. *Iris, bulbosa, lutea*. J. B. 2. 705.
6. Xiphium; angustifolium, cæruleo-violaceum; non odorum. *Iris, bulbosa, flore cæruleo & purpureo*. H. Eyf. Æst. 4. F. 10. Fig. 1.
7. Xiphium; angustifolium; petalis repandis aureis; petalis incumbentibus pallide flavis; bifidis, erectis verò ex cæruleo & pallido striatis.
8. Xiphium; angustifolium; petalis repandis ex viridi ferrugineis, petalis incumbentibus vietè cæruleis, bifidis erectis verò violaceis.
9. Xiphium; angustifolium; cæruleo-violaceum; non odorum; majus.
10. Xiphium; angustifolium; petalis repandis albis; erectis dilutè cæruleis; incumbentibus pallidè cærulescentibus.
11. Xiphium; angustifolium; petalis repandis aureis; incumbentibus pallidè flavis, erectis dilutè cæruleis. *Boerb. Ind. Alt. Plant.*

The Name is from the Greek *ἔπιφος* (*Xiphos*) or *ἔπιφιδιον* (*Xiphidion*) a small two-edged Sword with a sharp Point, to which its Leaves have a Resemblance; so that the Greek Name *Xiphium*, is the same in Sense with the Latin *Gladiolus*.

The Plant is of an acrimonious Quality like the *Gladiolus*. *Hist. Plant. ascript. Boerhaave.*

XIPHION, is also a Name for the *Gladiolus*; *floribus uno versu dispositis; major; floris colore purpureo rubente.*

XIPHOEIDES. *ἔπιφιδιος*. An Epithet for the Ensiform Cartilage of the Sternum.

XIPHYDRIA. Limpins. Oribasius, Collect. Medic. L. 2. C. 58. mentions them as the Product of *Ægypt*.

XIR. Mercury. *Theatrum Chymicum*. Vol. 5.

XISINUM. Vinegar. *Rulandus*.

XOCHINACAZTLIS, seu *Flos Auriculæ*, Hern. 30. Raii Hist. 2. 1671. *Fructus oblongus, cineraceus, acidulus*, C. B. P. 406. *Orjeulas seu Orichelas*, Hughes.

It grows in *New Spain*, and the Flower enters the Composition of Chocolate, in order to give it a fine Smell, and a pleasant Taste.

The Plant is hot and dry, dissolves Flatulences, attenuates Phlegm, and heats and strengthens a weak and cold Stomach.

XOCHIOCOTZO QUANHUITL. The same as *Li-quidambra*. See *AMBRA*.

XOCOXOCHITL, seu *Piper Tavaſci* Hernandez. A Name for the *Cassia Caryophyllata*. See *CARYOPHYLLUS*.

XYLAGIUM. A Name for the *Lignum Sanctum*. See *GUAIACUM*.

XYLOALOE. Aloës Wood. See *AGALLOCHUM*.

XYLOBALSAMUM. See *BALSAMUM*.

XYLOCASIA. The same as *CASIA LIGNEA*. See *CINNAMONUM*.

XYLOCINNAMOMUM. The Wood of the Cinnamon Tree.

XYLOCOCCA. *ξύλοκκα*. The internal Grains of the Fruit of the Carob Tree. *N. Myrepsus*. Sect. 1. C. 6.

XYLOCOLLA. The same as *TAUROCOLLA*.

XYLOGUAIACUM. Guaiacum Wood.

XYLOEBENUM. Ebony Wood.

XYLON.

The Characters are;

It has the Leaves of the *Makva* or *Alcea*. The Flower is monopetalous, Bell-shaped, open, multifid, adorned with a pyramidal staminous Tube. The Fruit is divided into four or more Cells, gaping at the Top, and full of Seeds covered with Cotton.

Boerhaave mentions three Sorts of *Xylon*, which are;

1. *Xylon*; arboreum. J. B. 1. 346. *Gossypium, arboreum, Göttnersgiar*. Alp. *Ægypt* 2. 38.

This is a shrubby Plant, cultivated in some Gardens in *Ægypt*, and differs from the herbaceous *Gossypium* only in Tallness, and the Figures of its Trunk, Branches and Leaves. It grows to the Height of ten Cubits, and has a hard and ligneous Trunk and Branches. The *Ægyptian* Surgeons make their Tents of the Cotton which this Tree produces, instead of Lint, which is in Use among us, for the Cure of Wounds and Ulcers, for they use no Lint: They employ it, also, as we do Lint, in stopping an *Hæmorrhage*. They also make very frequent Use of the Mucilage of the Seeds

in all burning Fevers, and Poisons, which threaten an Erosion of the Stomach and Intestines, and for Coughs proceeding from Distillations of acrid and salt Humours. *Prosper Alpinus de Medicina Ægyptiorum*, Vol. 2. p. 38.

2. *Xylon*; five *Gossypium Herbaceum*. See *BOMBAX*.

3. *Xylon*; five *Gossypium ex Cypro*. *Volk. Boerb. Ind. alt. Plant.*

It has the Virtues of the *Alcea* and *Althæa*. The Seeds are very serviceable in Diseases of the Breast, and in violent Coughs, and promote Expectoration. *Hist. Plant. ascript. Boerhaave.*

XYLOSTEUM.

The Characters are;

The End of the Pedicle forms a Calyx, consisting of two larger and four shorter Leaves, two of which latter are interposed, one on each Side, between the greater. In this Calyx grow two round Ovaries, which have their Apex adorned with a quinquefid Calycle, and shoot out from the Centre of their Top a long Tube furnished with a globous Apex. The Flower grows on the Apex of the Ovary within the Calyx, and is monopetalous, oblong, tubulous, Bell-shaped, quinquefid, expanded, and furnished with five Stamina, which grow out of the Inside of the tubulous Part of the Flower.

Boerhaave mentions but one Sort of this Plant, which is;

1. *Xylosteum*; *Pyrenaicum*. T. 609. *Chamæcerasus, Pyrenaica, folio Oleæ, fructu gemino, rubro, Grossulariæ similis*. Schol. Bot. Par? H. R. D. *Boerb. Ind. alt. Plant.*

It is called *Xylosteum* from *ξύλον*, (*Xylon*) Wood, and *ὀστέον* (*Osteon*) a Bone, because its Wood in Whiteness and Hardness resembles a Bone. *Hist. Plant. ascript. Boerhaave.*

There is no Mention made of its Virtues.

XYLOSTEUM. A Name for the *Chamæcerasus*; *Alpina; fructu gemino, rubro; duobus punctis notato*, and also for the *Chamæcerasus; dumetorum; fructu gemino, rubro*.

XYMPATHESIS. Sympathy.

XYMPHYSIS. The same as *SYMPHYSIS*.

XYNAGOGES. *ξύναγωγος*. The Sphincter Muscles.

XYNCLERLÆ. *ξύνκληρλαι*, of *ξύν*, Attice for *σύν*, and *κληρ*, a Preposition importing some Tie or Union, State, Condition, are Concerts or Agreements in Circumstances. Thus *ξύνκληρλαι καθήκοντων*, 6 *Epid. Sect. 7. Aph. 2.* are Conjunctions or Complications of morbid Affections, and here spoken of a Cough, in Conjunction with a Quinsy and Peripneumony. Others understand by *ξύνκληρλαι*, in that Place, no more than a fortuitous Concourse of Affections, which happened in the same Manner as if they were appointed to meet together by the Chance, *τῷ λόγῳ*, "of a Lot."

XYNERISIS. *ξύνερσις*, of *ξύν* for *σύν*, and *ἐρίσθαι*, to establish, fix firmly, to rest upon; is a firm Cohesion or Connexion. Thus *ξύνερσις ὀδόντων*, 7 *Epid.* is a firm Connexion, or what we call clenching of the Teeth, expressed 5 *Epid.* by *ὀδόντων στήλησις*, (*Syntripſis*) Contrition, or rather Confection of the Teeth. The Verb *ξύνερσθαι* is used in the same Sense, *Lib. 2. πρὸς γυναικ.* *Lib. de Morb. Sacro*, and *ξύνερσθαι* in *Coac. 235.* where, for *συνέλθω*, I read *ξύνερσθαι*, *Foessus*.

XYRIS, *Iris fætida*, *spatula fætida*, Offic. *Spatula fætida*, plerisque *Xyris*, J. B. 2. 731. *Xyris*, Ger. 53. Emac. 60. Raii Hist. 2. 1190. *Xyris sive spatula fætida*, Park. Theat. 256. *Gladiolus fætibus*, C. B. P. 30. *Iris sylvæstris quam Xyrim vocant*, Raii Synop. 3. 375. *Iris fætissima seu Xyris*, Tourn. Inst. 360. STINKING GLADDON.

The Root of Gladwyn, which is a Species of wild Iris, or Flower de Luce, is thick and spreading in the Earth, with many Fibres, from which spring many Leaves, longer, narrower, and sharper pointed than the common Flower de Luce, of a very strong Smell: The Stalk arises from among the Middle of the Leaves, smooth and round, and bearing two or three Flowers on the Tops, included in thin Skins or Husks before they are opened, each Flower consisting of nine Leaves, whereof the three Falls are of a dull Colour, full of Purple Veins; the Arches are of the same dull Colour, and the Uprights are of a whitish Purple towards the Top. They are smaller than most other Flower de Luces, and are succeeded by large, somewhat triangular Pods, which, when ripe, burst open into three Parts, like Pionies, shewing the roundish Seed. It grows in Hedges, Thickets and Bushes, particularly by *Jack Straw's Castle* beyond *Islington*, and in the Back Road or Lane which goes from the End of *Newington* to *Southgate*, and flowers in June. The Root only is used, and but seldom.

It is reckoned by some a Specific against the King's Evil and scrophulous Swellings, both given inwardly, and applied outwardly. It is said likewise to provoke Urine, and to be useful in hysterick Disorders. *Miller's Bot. Off.*

The Root smells like the *Cotula*, or Buggs, but is endued with such Virtue and Acrimony, as to render it, as we are assured by *Dioscorides*, effectual in Wounds of the Head, and Fractures, and in drawing out Splinters, and all Kinds of missile

missile Weapons without Pain. Made into a Composition, with a third Part of *Flos Æris*, a fifth Part of the Root of Centaury, and with Honey, and applied with Vinegar, it cures Tumours and Inflammations. The Root bruised in Passum is taken for Convulsions, Ruptures, Sciatica, Strangury, and Fluxes. The Weight of three Oboli of the Seed taken in Wine, is a most effectual Medicine to provoke Urine; the same drank in Vinegar, wastes and consumes the Spleen.

It is taken for a Looseness, in the same Manner as *Rhabarbarum* and *Asarum*, and cures the Disease by diverting the morbid Matter, and discharging it by Urine. It is usual with the poorer Sort and Rustics in *Somersetshire*, to take

the Decoction, or even Infusion of the Root, after the Manner of Iris, for a Purge.

I should be loth, says *J. Baubine*, to use so very hot a Root for all Kinds of Fluxes of the Belly, perhaps its Use might be tolerated in a pituitous Flux. The Root taken inwardly is of extraordinary Service in the Scrophula, says Dr. *Needham*.

The Powder of the dry'd Roots is a very useful Remedy in the hysteric Passion, Orthopnea, and hypochondriac Affections. *D. Bowle*, *Raii Hist. Plant.*

XYSMA. *ξύσμα*. A Strigment: Any Thing scraped off from a Body; from *ξύω*, to scrape.

XYSTER. *ξύστης*. A Lenticular, or Raspatory.

XYSTOS. *ξύστος*. Scrap'd Lint.

Y.

YARIN. *Flos Æris*. *Rulandus*. See *Æs*.

YAWS.

The *Yaws* is a Distemper epidemical, or rather endemical to *Guinea*, and the hotter Climates in *Africa*, seldom failing to attack each Individual of both Sexes one Time or other in their Lives, but most commonly in Childhood or Youth; it makes its first Appearance in little Spots on the Cuticle, level or smooth with the Skin, at first no larger than the Point of a Pin, which increase daily, and become protuberant like Pimples; soon after the Cuticle frets off, and then, instead of finding Pus or Ichor in this small Tumor, you only find white Sloughs or *Sordes*, under which is a small red Fungus growing out of the *Cutis*, increasing gradually to very different Magnitudes, some less than the smallest Wood-strawberry, some as big as a Rasp-berry, and others even exceeding in Bigness the largest Mulberries, which Berries they very much resemble, being knobbed as they are. While they are coming to this Height, the black Hair that grows out of the Parts now covered with the *Yaws*, changes gradually to white; I do not mean appears white by the Ichor of the *Yaws* drying upon it, as all the Skin does towards the End of this Distemper, but the Substance of the Hair itself is changed from black to a transparent white, like the white Hairs of old Men.

I think it impossible to calculate the exact Time that the Distemper requires to go through these different *Stadia*: Some Constitutions may be more adapted to produce this nauseous Distemper, or to receive it from others by Infection; nay the same Constitution may be apt to receive or produce it at one Time more than at another; and if it is produced by external Infection, the Degree and Quantity of Infection may hasten or retard the Symptoms. This I know by Experience, that Negroes who were lusty, in good Plight, and had full Nourishment allowed them, in a Month after discovering the white Spots, have had several *Yaws* as big as a Mulberry; and in Negroes that were low in Flesh, and have had but a poor scanty Diet, in three Months Time none of the *Yaws* have exceeded a common Straw-berry in Size.

The *Yaws* appear indeterminately on all the Parts of the Body, but the most and biggest are generally on the Groins, about the Privities and *Anus*, in the Armpits and Face. When the *Yaws* are very large, they are few in Number, and when many in Number, they are small in Size. All this Time the Patient is in good Health, does not lose his Appetite, and seems to have no other Uneasiness but what the Nastiness of the Sores occasion, for they are not painful except they are touched too roughly. This is the natural Appearance of the Distemper, when left to itself, and in this State it will continue a long Time, without any sensible Alteration; and what might be the Consequence in Time, I cannot pretend to tell you, whether it might not consume itself, and cure as soon as the peccant Matter is thrown entirely out and exhausted: Or, whether these *Funguses* might not turn corrosive Ulcers, and at the same Time affect the Bones with *Nodes*, *Exostoses* and *Caries*, as it does when the Cure is attempted without Success: Or, whether it might not alter the Diameter of all or some of the Excretory Ducts of the miliary Glands, and adapt them to excrete a Fluid more viscid than the natural Sweat, or insensible Transpiration, which drying on the Skin would render the Patient scorbutick or scabby, that is, leprous. This I imagine to be the most probable Conjecture, and that as soon as the *Funguses* are dry, the Infection is exhausted. This Distemper being infectious, it is the Business of the Negro's Master to seek for a Cure, as well for the Sake of the Negro affected, as for himself, Family, and other Ne-

groes on the Estate, that have not had it before, who are in danger of being infected.

The *Yaws* do not prove often dangerous, if the Cure is undertaken skilfully at a proper Time, and the Patient has not undergone any Course of Physic for them before; but if the Patient has been once salivated, or taken any Quantity of Mercury, and the Skin once cleared, and they appear again, they are always difficult to cure, and often incurable; and indeed I am of Opinion, that the following Train of terrible Symptoms owe their Original as much to the untimely and unskilful Use of the Mercury, as to the Distemper itself. I am induced to this Belief by these Reasons:

All the Negroes that have had the *Yaws* in *Africa*, and have been cured there, never have them again here, or any bad Symptom that seems to proceed from them; and in the Course of nine Years Practice here, I never had any Patient that relapsed when I was first employed, nor ever lost one, tho' I have cured Numbers of both Sexes, and of all Ages. Nor is it to be admired that the *Africans* should understand their Country Distemper better than we *Europeans*; they, probably have had above three thousand Years to gain Experience of it by Observation, we have not had one hundred Years.

As soon as a Negro is perceived to have the *Yaws* coming out upon him, he must be removed to a House by himself, or, if you cannot be sure whether it is the *Yaws* or not, shut him up seven Days, and look upon him again as the *Yaws* are commanded to do with their Lepers, *Levit. xiii.* and in that Time you may commonly be certain. As soon as you are convinced that the Eruptions are really the *Yaws*;

Take Flowers of Sulphur, one Scruple; Camphire dissolved in Spirit of Wine, five Grains; *Venice* Treacle one Dram, and of Syrup of Saffron a sufficient Quantity to make a Bolus, which is to be taken every Night at Bed-time.

Repeat this Bolus every Night for two or three Weeks, or till the *Yaws* are at their Height, which is easily discovered by their being at a Stand, neither increasing in Size or Number; then is the Time to throw your Patient into a gentle Salivation by Calomel, without any further Preparation of the Body. Give the Calomel in small Doses at a Time, that it may neither vomit nor purge. I never exceeded five Grains at a Time in Pill or Bolus, and repeated the Dose, once, twice, or thrice a-day, as I found the Patient could bear it, and never designedly raised the Salivation to above a Quart spitting in twenty four Hours: Very often by the Time you have got the Salivation to this Height, all the *Yaws* will be covered over with a dry scaly Crust or Scab, which in Patients that have been full of them, makes a very terrible Figure. These Crusts or Scabs fall off daily in small white Scales, and in ten or twelve Days leave the Skin smooth and clean: Then I leave off giving any more Calomel, and let the Salivation go off gradually of itself. After the Salivation, sweat them twice or thrice in a Frame or Chair with Spirit of Wine, and prescribe the following Electuary:

Take of *Æthiops Mineral*, an Ounce and an half; Gum Guaiacum, half an Ounce; *Venice* Treacle and Conserve of red Roses, of each one Ounce; Oil of Sassafras twenty Drops; and Syrup of Saffron a sufficient Quantity to make an Electuary. Let two Drams of this Preparation be taken Morning and Evening.

I likewise order them to drink the Decoction of Guaiacum and Sassafras, fermented with Syrup or Molasses, for their constant Drink, while they take the Electuary; and to be continued for a Week or a Fortnight after the Electuary is done.

Sometimes after all the other Yaws are fallen off, the rest of the Skin is clear, and the Salivation is over, there remains one large Yaw, high knobbed, red and moist; this is commonly called the *Master Yaw*, and has cost many a Negro his Life, by the Practitioners believing that this required another and another Salivation; in reality this requires no more than being destroyed by a gentle Caustick, or mild Escharotic, about an eighth or tenth Part of an Inch lower than the Skin, and then it will cure up as easy, and as soon as any other Ulcer of the same Bigness and Figure. I commonly have used red Precipitate and burnt Alum, of each equal Parts, for my Escharotic; digested with yellow Basilicon one Ounce, and red Precipitate one Dram; and cicatrized with Lint pressed out of Spirit of Wine, and with the Vitriol Stone.

After the Yaws are cured, some Patients are afflicted with Carbuncles in their Feet, which sometimes render them incapable of walking, or if they do walk, it is with much Pain.

This Distemper seems to be owing intirely to the yawy Matter being confined by the Hardness of the Cuticle in the Soles of their Feet, by continually walking barefooted. Sometimes the whole Sole of the Foot will be affected, and they cannot bear any touching it, and at other Times there is only one Spot, no bigger than an *English Shilling*. In Time the Pain brings on an Inflammation and Suppuration, and the Patient is easy; it seems to be cured, and often is so, by the whole yawy Fungus being consumed by the Suppuration. At other Times, in five or six Weeks, as the Skin hardens, the Pain, Inflammation, &c. begin again, and thus the Symptoms go and return for Years, till either the Fungus is consumed by the frequent Suppurations, or destroyed by Art. The Planters and Negroes try many *Nostrums* for this Malady, but the only effectual Method is by Bathing and Paring to destroy the Cuticle, and then proceed as in the *Master Yaw*. The gentle Escharotics are to be preferred, especially here, and all imaginable Care is to be taken to avoid the Tendons and *Periosteum*.

In Children under six or seven Years old, who cannot be supposed to have Sense enough to go through a Salivation, at the proper Time of salivating, I begin to give them a Grain or two of Calomel in white Sugar once a-day, once in two Days, or once in three Days, so as only to keep their Mouths a little sore till the Yaws dry, and falling off in white Scales, leave the Skin clean. This succeeds always, but requires a longer Time than in Adults.

I have thrice had the Mother with her sucking Child under my Care for the Yaws; both Mother and Child were full of them. Two of the Children I cured by curing their Mothers, without giving the Children any Medicine but what they received from their Mothers in sucking their Milk; the third Child, who was both bigger and older than the former two, when his Mother was well, his Yaws were dry, and in one white Crust or Scab, but did not scale off, and I was obliged to finish his Cure with three or four small Doses of Calomel, and a Course of *Æthiops*. I have been well informed, that even in Adults the *Æthiops Mineral*, given in large Doses for three or four Months, will make a perfect Cure: I never tried it, because it requires so long a Time, and there is no trusting a Negro to take his Medicines himself, and the Planters neither care to lose their Labour, nor to take the Trouble of attending them so long; but I am convinced it would succeed with Safety.

Some may be surprised, that in my Mercurial Course for this Distemper, I neither prepare the Body with bleeding and purging before the Salivation, nor purge after it. As to the first, the Distemper is cutaneous, or rather the Skin is the natural emunctory by which the peccant Humour is thrown off in this Disease, by a very extraordinary and preternatural Crisis. All that I mean by a preternatural Crisis is, that the Cause of this Distemper, like the Small-Pox, can never be concocted, so as to go off by any of the natural Secretions; and the Funguses here are as natural as the Pustules in the Small Pox; for if you salivate your Patient before the Yaws are at their Height, the best that you can expect is their appearing again soon after the Salivation: And what can be expected from Bleeding and Purging, but retarding the Yaws in coming out to their Height, and probably carrying off some Fluids that are absolutely necessary to Nature in her Operation, or perhaps intimately mixing the Cause of this Distemper with the Fluids, so that an intire Separation can never be procured afterwards?

And as to purging after Salivation, if the morbid Matter is intirely exhausted, what Occasion is there for Purges? Can we propose carrying the Matter off by the Intestines, which naturally seems to go off by the Yaws themselves? Is it not more probable, that some small Particles that are left about the Skin, might be washed off by the natural Perpiration and Heat, which by purging may again be returned to the Blood, and create fresh Disorders? Add to all this, the *Master Yaw*, when in full Bloom, is merely topical, and easily cured by Topics, tho' it contains Infection enough to produce the Yaws in Hundreds by Inoculation.

The venereal Disease and the Yaws, as far as I have described the latter, are very distinct Distempers, but the Symptoms, in consequence of the Yaws ill-cured, coincide so exactly with the Symptoms of an inveterate *French Pox*, and too promiscuous Copulation of the Negroes renders them so liable to the venereal Taint, that in most Cases it will be very difficult, if not impossible, to distinguish them, especially if the Patient has had both Distempers at any Time in his Life before his present Complaints.

The Symptoms are, violent Pains in the Limbs, even nocturnal, which with some are attended with Nodes and Exostoses, in others with Ulcers, which render the Bones carious. I shall not pretend to determine which Distemper they belong to; but I think if a Patient, that never had any Symptoms of the venereal Disease, and had the Yaws, was to labour under these Symptoms, I should make no doubt of their proceeding from the Yaws, and more so, if these Symptoms did not yield to the Method of Cure that either palliates or cures the Pox, but rather irritates and increases them. I shall give an Observation or two, where I think the Case proceeded from the Yaws, and leave you to judge for yourself.

In the Year 1727 I was desired to look upon a young Negro Man, long afflicted with Ulcers in his right Leg and Foot, occasioned, as was supposed, by the Yaws being ill-cured in his Child-hood; he seemed to be healthy in every other Respect, and had undergone several Salivations and Courses of Physic unsuccessfully. I found two of the *metatarsal* Bones consumed, and the other three carious, the *Os Calcis*, and the lower *Epiphysis* of the *Tibia* were likewise carious. I told the Lady to whom he belonged, that it was not in my Power to serve him; these Bones would rot, and not exfoliate, and if I proceeded to Amputation, as they desired, I either should not be able to cure up the Stump, or if I did, he would not long survive it: However, upon the continual Entreaties of both the Mistress and Negro, I at last condescended to amputate his Leg.

I bled and purged him twice or thrice, and made him an Issue in the opposite Leg, and one in each Arm. Some Days after they were digested, I took off his Leg at the usual Place, and cured the Stump with all the Ease imaginable, and he was very glad to walk about on his wooden Leg. About a Month after the Stump was perfectly cicatrized, he was seized with a Fever, and in a few Days after, with a violent Pain and Inflammation in his Thigh and Knee of the amputated Leg; in a Fortnight after the Approach of the Fever, I found a Fluctuation of Matter in his Ham, and opening it by Incision, discharged a Pint of Matter at first. As the Imposthume digested, the Fever wore off, and he recovered; he is now alive and in Health, but keeps the Incision still open as an Issue.

A young Woman of a good Education came from England here, as a School-mistress to a Gentleman's Daughter; some time after, she married an Overseer, who gave her the Yaws; as soon as she perceived the Distemper, being much frightened, she went to a Planter, who used to cure a great many Negroes; there was then but just Yaws enough to show that Distemper. He immediately shut her up in the Hot-house, (as they call it here), and that Night anointed her with the mercurial Unction, according to *Serjeant Wiseman's* Proportion of the Quick-silver. This once anointing threw her into a deep Salivation, which lasted between six and seven Weeks: Four Weeks of that Time she could not speak a Word, and the Saliva was deeply tinged with Blood. After the Salivation she seemed perfectly well, soon recovered her Strength, and engaged to go to England with a Gentleman's Lady as her Chambermaid, and accordingly embarked in May or June 1728.

Some Weeks after she arrived in London, she was attacked with violent Pains in her Arms and Legs, and applied herself to a Surgeon or Apothecary of her Acquaintance, who gave her many Medicines to no Purpose; for while she was under his Care, an Ulcer broke out in her Leg, and another in her Arm: Upon this her Money beginning to fall short, and thinking she had a better Chance of getting well in a Country where her Distemper was known, than where they knew little of it, (at least those she applied to) she got a Passage to this Island again.

In August 1729, she came to me begging my Assistance; she was really an Object of Charity, and I promised to give her my utmost Endeavours to serve her, without the least Prospect of Gain. The Pains of her Limbs then continued severe, and she had five or six Ulcers in different Parts of her Arms and Legs, all covered with an *Hyperfarcosis*.

I told her she must be very sincere in answering what Questions I asked her; for as her Husband had given her the *Yaws*, he might as well have given her the *venereal Disease*, and that I should have more Hope of curing her, if the present Symptoms proceeded from the last, than if they were the Consequence of the first. She told me she never had any venereal Symptom in her Life, either before she had the *Yaws* or since, that a few Days before she discovered she had the *Yaws*, her Husband left her, and went to Sea, his first Profession; that she had never seen him since nor conversed criminally with any other Man. Her sincere and sensible Way of answering every Question I could ask her, as they occurred to me, and the good Character she bore among her Acquaintances, as well as its being her Interest to tell me the Truth, which she might without any Shame, convinced me she was sincere, and had no Design to deceive me, or ruin herself.

I immediately dressed the Ulcers with gentle Escharotics to destroy the *Hyperfarcosis*, and put her into a Course of *Æthiops*, with the Decoction of the Woods in Lime-water, and gave her gentle Cathartics twice a Week with *Mercurius Dulcis*. After a Month or six Weeks spent in this Method, I found it had no Effect; for after the *Funguses* were consumed, the Ulcers seemed to digest a few Days, and then gleeted again, and never in the least contracted. I then threw her into a gentle Salivation with *Calomel*, designing to keep her long in it gently; after she had spit about a Quart a-day for four Weeks, finding it not answer, the Ulcers enlarging, and the Pains becoming more violent, I was resolved to let it go off: But at Night there fell a great Rain, and the Room not being tight in the Roof, was very wet. The next Day the Salivation stopt, and she had a Fever for a Fortnight, which at length went off, and left her so weak and emaciated, that I was afraid she would die consumptive at last.

I then put her into the Milk-Diet, and ordered her a Decoction of *Sarsaparilla* and *China* Roots, to be drunk for her constant Drink, with one third Milk. In about eight or ten Weeks she recovered her Strength and Flesh, and was advised by some of her Neighbours to use a Diet-drink that a certain Negro made, which they said had cured Numbers in her Case, after all other Means had failed. This she used six or seven Months, and dressed the Ulcers with Tincture of Myrrh, bathing them every Dressing with warm Lime-water: But both they and her Pains increased; the Bones became carious in every Ulcer, and she lingered under the Distemper to the End of the Year 1734, and died.

When I come to this Island, it was the Practice here, as soon as the *Yaws* appeared, to give the Patient 25 Drops of a Solution of two Drachms of *Mercur. sublimat. corrosiv.* in eight Ounces of strong Rum in the Morning, drinking warm Water after every Puke, and they would vomit and spit all the Forenoon. This Dose they repeated every Morning, increasing the Quantity five Drops every Dose they took, in a few Days they were seemingly well: But I observed that most that had been treated after this manner, either broke out again, or in process of Time complained of gnawing Pains in their Bones, or were subject to Ulcers in several Parts of their Bodies. The Disease at its second Appearance was long in coming to an Height, and required a longer Course of Mercury to clear their Skin; and sometimes, after all, they would relapse a third and fourth Time.

Of those Patients that were affected with Ulcers, I have succeeded with some by Salivation, and long Courses of the *Æthiops*, with the Decoction of the Woods in Lime-water, many I have been foiled in, and never been able to cure, but left them, I think, rather worse than I found them, to linger out their Days miserably. Nor can I pretend to better Success in those that have complained of Pains in their Bones, they have generally ended in *Nodes*, *Exostoses*, and *Caries*, and the Bones of the Arms and Legs break without any external Violence.

A Negro Man, called *America*, belonging to Sir William Stapleton, after having had the *Yaws*, complained of Pains in his Limbs, and had been useless in the Plantation for nigh twenty Years, most of his Bones being full of *Nodes* or *Exostoses* and *Caries*. In the Year 1733 his *Os humeri* broke in the Middle, without any external Accident. I reduced and dressed it as a common Fracture. About six Weeks after, when the *Callus* ought to have been grown strong, I found the Ends of the Bones move easily one on another; and upon a gentle Extension of his Arm, the Ends of the Bones were a full Inch distant from each other. In about twelve Months more the *Os humeri* was consumed entirely within an Inch of the *Scapula*, and about the same Distance from the Elbow. Soon after this he died tabid.

It is worth while to compare the Description of the *Leprosy* among the Jews in Chap. xiii. of *Leviticus*, with the Account which I have here given of the *Yaws*; the two Distempers seem to have a great Resemblance to each other. *Edinburgh Med. Essays*.

Upon the Coast of *Antigua*, they have a large turbinated Shell, which they call the *Conch*. This they calcine, and give to the Negroes and others labouring under the *Yaws*, as is said, with great Success, insomuch that they esteem it an almost infallible Remedy; but it must be continued for some Time.

YAYAMA. A Name for the *Ananas*; *aculeatus*; *Fructu Pyramiditato*; *carne aurea*.

YC. Good. *Rulandus*.

YEAR. A Medicine. *Rulandus*.

YDRARGYROS. Quicksilver. *Rulandus*.

YECOTL. The same as PALMA-PINUS.

YELION. A barbarous Word for *Yalos*, Glass.

YERVA. The same as CONTRAYERVA.

YERVA MORA. The Spanish Name for the *Arbor bacifer Canariensis*, *Syringa cerulea foliis, purpurantibus venis, fructu monopyreno*. The Name of a Plant now very common in the English Gardens, but of no Use in Medicine.

YETTUS. The Name of an opaque, hard Stone of a red Colour, used instead of the *Lapis Lydius*, or Touch Stone.

YGROPISSOS. Liquid Pitch.

YLECH. See ILECH.

YLEIDOS, or YLIADOS. See ILIADOS.

YLIASTER. The same as Iliaster. See ILIADOS.

YOMO. YOS, or YN. Verdigrise. *Rulandus*.

YPSILOGLOSSI. A Name for the Muscles called *Basioglossi*.

YPSILOIDES OS. The *Os Hyoides*.

YQUETAIA. A Plant of *Brasil*, as yet but little known, but whose Virtues are highly extolled by a French Surgeon settled in *Portugal*, who found it in *Brasil*. M. *Marchand*, with the Assistance of M. *Hombert*, has made a Discovery that this rare and foreign Plant is every Day trodden under our Feet, and is no other than the *Scrophularia aquatica major*. They ascribe to the *Yquetaia* the Property of depriving Senna of its ill Taste and Smell without diminishing its Virtue, which would much facilitate the Use of a Cathartic so excellent on other Accounts. And the very same Property is found to belong to the Species of *Scrophularia* before mentioned, but was unknown before it came to be discovered by the Resemblance of this Plant to the *Yquetaia*. If this *Brasilian* Plant proves as good as it is said to be for the Pleurisy and Apoplexy, possibly the *Scrophularia* may carry on the Resemblance thus far, and come in for an equal Share of the same Virtues. M. *Marchand* is persuaded that we bestow not enough of our Time in studying the Plants of our own Country, which are often of as much Value as Exotics, and that the Misfortune they lie under in being Natives of our own Soil, and growing among us, has too much injured them in our Esteem. *Histoire de l'Acad. des Sciences* 1701.

YRCUS. A male Cony, whose Blood is said by the Spagiriasts to mollify Glass, and Flints. *Dornæus*. *Rulandus* calls it *Yrius*.

YRIDES, or YRIDE. Orpiment. *Rulandus*.

YRIS. Iron. *Rulandus*.

YSAMBRA. A Species of Poison, prepared in Spain of Hellebore; or Hellebore itself.

YSIR. The Powder, or Philosopher's Stone in a dry Form.

YSOPUS. The Art of Separation in Chymistry. *Rulandus*.

YSPAR. The same as YSIR. *Rulandus*.

YTZAMOTL. A very large Indian Tree, from which a Species of Manna is procured not unlike ours, but somewhat harder, and more glutinous. *Raii Hist. Plant.*

YUCCA.

The Characters are;

The Root is thick, and as it were tuberos, and the Plant has the Appearance of a Tree. The Leaves resemble those of the Aloe, are rigid, with an aculeated Apex, narrow and long. The Flowers are monopetalous, Bell-shaped, divided into six Segments, naked, disposed in long Spikes, with a single Row, and embracing an Ovary, which becomes a tri-lobular Fruit, as in the Aloe.

Boerhaave mentions but one Sort of *Yucca*, which is;

Yucca; foliis Aloes, C. B. P. 91. *Boerb. Ind. A. 2.* 132.

Yucca, Offic. *Yucca sive Yucca Peruviana*, Ger. Emac. 1543.

Raii Hist. 2. 1201. *Yucca sive Yucca*, Park. Parad. 434.

INDIAN BREAD.

It grows in *America* spontaneously, but is cultivated with us in Gardens.

It is of no Use in Medicine, and is even said to be poisonous, tho' erroneously, since it conduces to the Sustentation of Life, by affording a Sort of eatable Bread prepared of the Root reduced to a Flour. And the Root itself may be eaten with Safety, and even with Advantage, without any Preparation.

This Plant is not the same as that of whose Root they make the Bread called *Cassavi*, commonly eaten in *America*, as some have erroneously thought. *Raii Hist. Plant.*

The thick and fleshy Root affords a soft Pulp, which some condemn as Poison, others affirm to be esculent. Consult the Historians. The recent Root eaten is poisonous, but being bruised, then dried in the Sun, affords a Bread commonly eaten by the *Indians*. The Juice of the Root is so poisonous that they take Care to convey it deep under Ground, that it may not come to the Taste of Animals, to which it would certainly prove mortal. *Hist. Plant. ascript. Boerhaave.*

YXIR. A good Medicine.

YZTACTEX. *Calceatol, seu virga nigra Saxorum.* Hernandez.

Z.

Z. This Letter formerly stood as a Mark for several Sorts of Weights. Sometimes it signified an Ounce and half, and very frequently stood for the eighth Part of an Ounce, that is, a Dram or half a Sicilicus. From an ancient Copper-plate it appears to be the Character of a *Duella*, or the third Part of an Ounce, consisting of eight Scruples. *Rbodius ad Scribonium Largum.*

ZZ. This double Letter among the ancient Physicians used for *Myrrh*, *quædam*, because *ζωμην*, *Zmyrne*, was as much as *quædam*, *Smyrne*. At present by ZZ is generally understood *Zingiber* or *Zinziber*. *Gorræus.*

ZAAR, with the *Arabians* and *Persians*, signifies Poison, whence *Belzaar*, for *Bezoar*, is as much as to say, the Lord or King of Poisons. *Castellus.*

ZAARA in *Avicenna*, is a Name for the *Vigilia morboſa*, or morboſus Watching.

ZACCHARUM; used by some for *Saccharum*, as is also *Zuccarum*, by *Salmaſius de Manna & Saccharo.*

ZACCON. *Caſt. Zacon Hiericuntæ, Foliis Oleæ, J. B. Prunus Hiericuntica, Folio anguſto Spinoſo. C. Bauh.*

This is a Species of exotic Plum-tree, growing in the Plain of *Jericho*, about the Bigneſs of an Orange-tree, with Leaves reſembling thoſe of an Olive-tree, but ſmaller, narrower, more pointed, and very green. The Flowers are white, and the Fruit of the Bigneſs of a Plum, round, green at firſt, but as they grow ripe, yellow, and incloſing a Stone like that of a Plum. From the Fruit they extract an Oil by Expreſſion, which is good to diſcuſs and reſolve cold and viſcous Humours. The Tree is called *Zaccon*, becauſe it grows near the Churches of *Zaccharus* in the Plains of *Jericho*. *Lemery des Drogues.*

ZACINTHA.

The Characters are;

The Calyx is ſquamous. The Ovary becomes a little ſtri-ated Head, having in the Middle an erect Axis, in which grow a Multitude of Eggs, which, when ripe, fall off with their Involucrum or Cover, and are as ſo many Capſules, containing ſmall downy Seeds.

Boerhaave mentions but one Sort of *Zacintha*, which is;

Zacintha; five *Cichoreum vernicarium. Tourn. Inſt. 476. Boerb. Ind. A. 90. Park. Theat. 779. Zacintha, Cichoreum verrucarium, Offic. Cichoreum verrucarium ſive Zacintha, Ger. Emac. 289. Raii Hiſt. 1. 255. Cichoreum verrucarium ſive Zacintha, Hieracii adnumerandum, J. B. 2. 1013. Chim-drilla verrucaria foliis Cichorei viridibus, C. B. P. 130. Inbybus ſive Endivia lutea, verrucaria, Hiſt. Oxon. 3. 53. WART SUCCORY.*

It grows ſpontaneouſly and plentifully in ſome Parts of *Italy*, but is cultivated with us in Gardens, and flowers in *June*. The Plant is diuretick and edulcorating, and allays the immoderate Heat of the Blood. *Mont.* It is reported to be of ſurpriſing Virtue in removing Warts, whether it be eaten in Salads, or the Juice thereof rubbed on them. *Raii Hiſt. Plant.*

ZACYNTHIUS. A patronymic Epithet of liquid Bitumen. *Galen. de C. M. G. Lib. 4. Cap. 13.*

ZADURA. *Ξαδουρα*, a barbarous Name, but adopted by the latter *Greeks*, for an exotic Root, round and ſmooth, and of the Colour of Ginger; it is imported from the *Indies*, and is good againſt the Peſtilence. *Gorræus.*

ZAFFABEN. Putty. *Rulandus.*

ZAFFRAMEN. Crocus. *Castellus.*

ZAFFRAN, ZAFFRAN. Signifies *Crocus* principally, and next to that *Oker*. *Rulandus Johnson.*

ZAGU. *Ferd. Lopez. Sagu pigofetta. Cluſ. Arbor fari-*

It has the fibrous Root of the *Aſarum*, and the Fibres, which appear, a great Part of them, above Ground, are in Taſte and Smell not inferior to the *Nardus*, and far ſuperior to the common *Valerian*. The Leaves are ſerrated, like thoſe of the *Nettle*, the Stalks Purple, round and ſmooth, and four Cubits in Length, on the Tops of which the Flowers grow in Tufts, and are of a white Colour, inclining to a Purple.

It grows in rocky Places in *Braſil*. The Taſte of this Plant is exactly like that of *Aniſe*. A Pugil of the Root bruised, and taken in Water or Wine provokes Sweat in thoſe who labour under any Pains, and mitigate the ſame in a ſurpriſing Manner. *Raii Hiſt. Plant.*

nifera Cluſ. extot. Arbor vaſta in Regno Fanſar. Polo Veneto.

This is a large Tree, reſembling the Palm-tree, and growing in the Iſland of *Ternate* near the Equator. At the Top it bears a round Head like a Cabbage, in the middle of which is a kind of farinaceous Subſtance, of which the Inhabitants of the Country make Bread.

ZAHIR. An Arabic Name in *Avicenna*, for a kind of dyſenteric Flux from the Inteſtinum Rectum, attended with a tenſive and abraſive Senſation. *Castellus.*

ZAIBAC, *Zaibach, Zaibar*, Names for Mercury, or Quickſilver. *Rulandus, Schroder.*

ZAIDIR. Copper, or Verdigreaf. *Dorn. Rulandus.*

ZALE. *Ξαλιν*, in *Mohſcion de Morb. Mulier.* ſignifies a Storm.

ZAMIAE. Are thoſe Nuts of the Pine-tree which have looſen'd themſelves, and unleſs they be gather'd will hurt the reſt which are not yet fully ripe. *Plin. Lib. 16. Cap. 26.*

ZANDIK. Aqua foliate. *Rulandus.*

ZANTHOXYLUM. See LIGNUM FLAVUM.

ZAOCEL. Taxus. *Rulandus.*

ZAPHARA, *Zaffara*. The mineral Matter of Biſmuth, which belongs to *Smalt* or *Amanſa*, which ſtains Glaſs with a bluifh Colour, whence it is uſed by Potters for the ſame Purpoſe. *Cæſalpinus* call'd it a Stone, others Earth, and ſome *Lazarius ex Biſmutho. Castellus.*

ZAPHIRUS. Corruptly for *Saphirus*.

ZAPOTUM, *Zapote*. Is a Fruit of *New Spain* in *America*, called by the *Spaniards Zapote blanco*, of the Shape and Size of a Quince, of an agreeable Taſte, but not wholeſome, and incloſing a Kernal which is ſaid to be dangerous Poiſon. This Fruit grows on a large Tree called by the *Indians Cochitſapotl*, whoſe Leaves are like thoſe of the Orange-tree, diſpoſed by Threes at Intervals, and its Flowers very ſmall, and of a yellow Colour.

ZARAS. Gold. *Rulandus.*

ZARUTHAN. A hard and unequal Tumour of the Breſt attended with a Pain which is not quite continual, and a burning, Heat much reſembling that of a Cancer, whence it is called a *ſpurious Cancer*. The Cauſe is ſuppoſed to be an ichorous, aduſt and acid Blood. *Castellus.*

ZARDA. A Diſeaſe in Horſes. *Castellus.*

ZARIFU. Tin. *Rulandus.*

ZANNA. A Medicinal Earth, found in that Part of *Armenia* which borders on *Cappadocia*, very drying, of a pale Colour, and very eaſily diſſolv'd like Calx. It is called by the Natives *Zarina*, but in *Syria*, *Zarnacha*. The Mountain whence it is taken is near the City called *Bagauona*, and the Territories about it *Agarra*. The Earth itſelf, without the Mixtures of any heterogeneous Subſtance, is ſuppoſed to be of a drying Quality, without Stimulation. But ſince there is no Body perfectly free from Mixture, the Nature of what enters its Compoſition is to be examined, with reſpect to Gravity and Taſte. If there be any Aſtringency diſcover'd, its Coldneſs is to be eſtimated in Proportion to that Aſtringency; if it appears to be acrimonious, its Heat is in Proportion to that Acrimony. With reſpect to Lightneſs, and Gravity, the firſt ſhews a cupious Mixture of Air throughout its whole Compoſition; but the more ponderous it is found, the more of pure Earth it contains. Now it is the Property of Earth not to be fuſed when ſubjected to the Fire, and to be eaſily diſſolved into Clay when it is moiſtened with Water. *Oribaiſius, Med. Collect. Lib. 15.*

ZAR-

ZARNACHA. See the preceding Word.
ZARNEG, *Zarneq, Zarnich.* Orpiment. *Rulandus.*
ZARSA PARILLA. See **SARSAPARILLA.**
ZATANEA. The Flower of *Agnus Castus*; it is also called **ZUCCAJAR.** *Rulandus.*

ZATA-HENDI Raii. A Name for the *Majorana*; *rotundifolia*; *scutellatu*; *exotica.*
ZAUIHIRON. Oriental Crocus. *Rulandus.*

ZEASPELTA. Offic. *Zea five Spelta*, L. B. 2. 412. *Raii Hist.* 2. 1242. *Ger.* 62. *Emac.* 69. *Zea dicoccos, five Spelta vulgo*, Park. *Theat.* 1122. *Zea dicoccos vel Zea major*, C. B. P. 22. *Theat.* 413. **SPELT WHEAT.**

Zea is a Sort of Wheat with the Husk or Chaff, so closely adhering to it, as not to be separated by Threshing. They will have it called *Zeia*, *Zeia*, or *Zeia*, *Zeia*, *Zeia*, *Zeia*, from Living, because before the Invention of Wheat, Men lived thereon. The most ancient Romans, as we are informed by *Dionysius Halicarnassensis*, called *Zea* by the Name of *Far*, which, however, is a Word of ambiguous Signification.

Zea, or Spelt, is not unlike Wheat, with a manifold Root, whence arise numerous, slender, jointed, firm Stalks, higher than those of Barley, but shorter than those of Wheat. The Spike, or Ear, which is in Flower about Midsummer, is a Palm, or a Palm and half in length, rough, compressed, generally without a Beard, tho' sometimes furnished with a longer or shorter one, and bearing a double Row of Grains, or the Grains so disposed that the Middle of one Grain shall answer alternately to the Beginning of another. The Grains are closely included in a manifold Husk, a Pair of Husks being joined to a Pair of Grains, and are longer than those of Wheat, of a sharp Back, and a russet Colour. The Husk pertinaciously adheres to the Grain, and will not be separated from it by the Stroke of the Flail, by which, says *J. Bauhine*, you may distinguish it from the common Wheat, which it otherwise so well resembles, that when both are stript of their Coats and Husks, it will be difficult to know the one from the other.

It grows in many Parts of *Italy*, *France* and *Germany*, thriving well enough in any Sort of Soil, even tho' more humid than ordinary, tho' delighting most in a rich and fat Soil.

Zea is sown in Flower, and reaped at the same Times with Wheat. If *Zea* be husked and cleaned, and afterwards sown, it is changed into Wheat on the third Year, if we may believe *Theophrastus*. And *Pliny* says, "We are told that *Zea* and *Tiph* being a degenerate Kind of Grain, return to "Wheat, if husked and sown, tho' not immediately, but on "the third Year." We deny not but that it may sometimes happen for *Zea* to pass into Wheat, but see no Reason why such an Effect should always follow, when it is sown decorticated; let the Authors speak for themselves.

The *Germans* make Bread of Spelt, as white as those of Wheat, but lighter, and less nutritive; while new it is sweet, and easy of Concoction, but when stale it is not so grateful, and is besides difficult to be digested. Puddings are prepared of the same with Milk, Almond Milk, Wine, or Beer and Sugar, which are good for sound as well as sick Persons. Broth or Gruel made of the Flour is astringent, and therefore adapted to the same Purposes as one prepared with Rice, being proper in a *Hæmoptysis*, *Dysentery*, *Diarrhæa*, and the like, especially when boiled with the Feet of Calves or Weathers; outwardly, also, it serves the same Intentions.

The Antients, we may observe, unanimously condemn Bread made of *Zea* or Spelt, whence it is plain, says *C. Bauhine*, that this *Zea* was different from that which *Pliny* says, the Romans called *Seed*, [See **ALICA**.] of which was prepared that excellent Food *Alica*. *Raii Hist. Plant.* p. 1242.

ZEBD. Butter. *Rulandus.*

ZEBET. Dung. *Idem.*

ZEC. *Tragacanthum*, or *Tragacanthum*. *Rulandus.*

ZEDOARIA. Zedoary.

We have two Kinds of this Root, one named *Zedoaria longa*, C. B. P. the other *Zedoaria rotunda*, C. B. P. But they are both the Roots of the same Plant, the Body of which is round, and the Protuberances, or Ramifications, long. The Plant they belong to is a kind of *Colchicum*, described by *Herman* in the *Paradisus Batavus*. They are brought from the East Indies, and have an aromatic, camphorated Taste. They are reckoned attenuant, detergent, emmenagogue, carminative, anthelmintic, cordial, alexipharmic, stomachic, diuretic, &c. The Dose is from five Grains to half a Dram in Substance, and it may be used in Infusion like Tea. Some correct Opium with this Root. *Simon Pauli* pretends it is the best Carminative now known, and values it as a grand Specific for voiding Wind. *Geoffrey*.

The first Sort is thus distinguish'd.
ZEDOARIA LONGA. Offic. C. B. P. 31. Park. *Theat.* 1612. *Raii Hist.* 2. 1340. *Zedoaria*, *Ger. Emac.*

1623. *Gedwar aut Geid.* var. *Ejusd.* *Zedoaria Zeilanica Camphoram redolens*, Boerh. *Ind. A.* 2. 128. *Haronkaba*, *Herm. Mus. Zeyl.* 50. **ZODOARY.** Dale, p. 251.

This has a Root two, three or four Inches in Length, and as thick as the little Finger, and ending at both Extremities in a blunt Point. It is white on the Outside, and within of an Ash Colour inclining to brown, of a dense, solid, fat and ponderous Substance, and of a fine Taste and Smell, bitterish, moderately acrimonious, with a kind of Heaviness, and emitting, while pounded or chew'd in the Mouth, a Fragrance highly aromatic, a very small Portion of it sweetening the Breath, and penetrating into the Head.

Chuse what is large, thick, full, and not wrinkled, of a fattish, viscous Substance, resisting in some measure the Teeth, on account of its Solidity, remarkably fragrant, and without Perforations; the longer to preserve it, it must be kept in a dry Place. It grows spontaneously in the Woods of *Calecut* and *Cananor* in the Kingdom of *Malabar*, and is supposed to be the *Zerumbet* of the *Arabians*, the *Gistus Arabicus* of the *Anguillara*.

The Part in use is the Root, which is tuberous, nodous; somewhat compressed, Ash-colour'd on the Outside, of an acrid, bitterish, aromatic Taste, and a fragrant Smell.

It is heating, drying, inciding, discutient of Flatulences, and Alexipharmic; and is principally used in Pains of the Chollic, and of the Stomach: It cures the Bites of venomous Animals, stops a Lientry, represses Vomiting, provokes the Menses, and kills all manner of Time infesting the Belly. Dale from *Schroder*.

The second Sort is thus distinguish'd.

ZEDOARIA ROTUNDA. Offic. C. B. P. 31. Park. *Theat.* 1612. *Raii Hist.* 2. 1340. *Malankua*, *Hort. Mal.* 11. 17. Tab. 9. *Colchicum Zeylanicum flore violæ odore, & colore Ephemero.* *Herm. Par. Bat. Prodr.* 324. **ROUND ZEDOARY.** Dale, p. 251.

This Species in Weight, Solidity, Colour, Taste and Smell is altogether like the *Long Zedoary*, and differs only in its Figure, which is globous, an Inch in Thickness, or Diameter, with a Superficies somewhat uneven, and tuberous, with the Marks of the Fibres which have been cut off, resembling the Bulb of the *Arum*, and sometimes ending in a short Mucro, or Point, at which, while it yet adheres to the Ground, it usually shoots forth a Bud. It grows plentifully in *Java* and *Sunda*.

The *Round Zedoary* seems not to differ from the *Long*; but only in being a distinct Part of the same Root. For *C. Bauhine* thinks that *Avicenna* called the round Part *Zedoary*, and the long Appendix *Zerumbeth*, not knowing from what Plant, or in what Country the Root was produced; but when he happen'd to see it imported into the *Persian Gulf*, sometimes cut into round, sometimes into oblong Portions, imagin'd them to be distinct Species.

The Root cut into Slices, dry'd, and preserved in Sugar, is more excellent and commodious for Use than Ginger. C. B.

It agrees in Virtues with the *Long Zedoary*, but is seldom found in our Shops. Dale.

Besides the two before-mention'd, *Raii* gives us from *C. Bauhine* two others, which are,

First, *Zedoaria tuberosa foris nigricans*. C. B.

This Sort is of around Figure, like the *Aristrolachia rotunda*, blackish without, and sometimes of an Ash Colour, and whitish within, and of the usual Taste of *Zedoary*. It is to be had, as *Clusius* writes, at some Perfumers at *Amsterd.* who call it *Black Zeduar*. *Lobel* joins it with the common *Round Zedoary*.

The second is the *Zedoaria Geidwar*, *Avicenna Garfia*. C. B.

This is a Root of the Size of an Acorn, almost of the same Figure, and of a subluclid Colour; but it may more properly be said to be like the smaller Bulb of the *Anthora* or *Aphodelus*; it is of an Ash Colour without, and yellowish within, hard and solid, and of an acrid and heating Taste.

Garcias observ'd this to be sold at a great Rate in the neighbouring Provinces to *Cbina*; and says, it is difficult to be obtain'd, unless it be from some strolling sort of Mountebanks, which the *Italians* call *Jogues*. The same Author supposes *Zedoaria* to be a corrupt Word, and that it ought to be called *Geidwar*.

C. Bauhine thinks that the *Arabians* gave the Name of *Zerumbeth* to three sorts of Plants. The first was the *Long Zedoary* of the Shops, which was the *Zerumbeth* of *Avicenna*, as appears from its Description. The second was what we call the *Zedoaria rotunda*, or *Round Zedoary*, which is the *Zerumbeth prima Serapiani*, and the *Zedoaria Avicenna*. And the third is that remarkable Tree on Mount *Libanus*, with the Leaves of the *Salix*, and the Smell of the *Lenan-Tree*, the *Zarucio*

Z. crabo at present unknown to us, unless, perhaps, it be the *Saffas-Syrorum Rauwolfii*.

Zedoaria was unknown to the ancient Greeks; the more dern, as *Aetius* and *Aetuarus*, call it *Zadac*, (*Zadar*) *Zadepa*, (*Zadura*) and *Zadipa* (*Zadera*) borrowing the Name from the *Arabians*.

It has the Leaves of *Zingiber*, or Ginger, but larger, longer and broader, and also the Root of the same Plant; it has much the Taste too of Ginger, whence in *Calicut* it is called *wild Ginger*, as we are told by *Garcias*.

They make three Species, which, by some of the most skilful Botanists, are supposed to be all Roots of one and the same Plant.

The Root of *Zedoary* is esteemed hot and dry, fattens the Body, and strengthens it when weak; as the *Arabians* say, and dissolves Flatulences. It takes away the Smell of Onions, Garlick and Wine, is good for the Bitings of venomous Beasts, stops a Looseness, resolves Abscesses of the Uterus, represses Vomiting, and is effectual in the Wind-Cholic. The modern Physicians use it as a Preservative against pestilential Airs, and mix it with a Multitude of Compositions. It is good for the Stomach in promoting Concoction, and heating that and the other Viscera. The *Germans* prepare a *Vinum Zedoriatum*, or Wine of *Zedoary*, for the before-mention'd Purposes, by bruising *Zedoary*, and hanging it in a Bag in a Vessel full of boil'd Must. *Raii Hist. Plant.*

ZEFR. Pitch. *Rulandus*.

ZEGI, *Zetus*, *Zexi*, Vitriol. *Idem*.

ZEHERECH. Flowers of Copper, called also *Alkas*. *Idem*.

ZEIA, *ζία*. See *ZEA*.

ZEITRABRA, in the Jargon of the Alchymists, signifies *fluxile*. *Rulandus*.

ZELOTUM. *Mercurius lapideus*. *Idem*.

ZELOTYPIA, *ζήλωσις*, Jealousy, is a vehement Affection of the Mind, in which one of the conjugal Pair suspects the other of Adultery, and is here mention'd because it comes within the List of morbid Causes. *Castellus*.

ZELPHO. See *ZENDO*.

ZEMA, *ζημα*, from *ζωω*, to boil; Broth, Decoction; in *French*, *Bouillon*, is a Term sometimes used for *Decoction*, in *Apicius de Re Culinaris*. It is also read *ζημα*, in *Dioscorides*, *Lib. 6. Cap. 7*.

ZEMASARUM, *Cinabrium*, vel *Cynobrium*. *Rulandus*. I suppose he means *Cinnabar*. *Rulandus*.

ZEMECH. *Lapis Lazuli*. *Idem*.

ZENDA. A general Term coin'd by *Paracelsus*, by which he would signify extraneous or equivocal Generations, effected without a seminal Principle. But *Zerenda*, *Zerunda*, or *Zerundis*, signifies such a monstrous Generation of Men in particular, as in other Animals, the same is expressed by *Zelphi*.

ZENECHDON, an *Arabic* Term from *Zenech*, signifying in that Language *Arsenic*; it means the same as *Diarfenicum*, or a Composition of *Arsenic*. *Blancart*.

ZENEXTON. See *XENEXTON*.

ZENEXTOR. *Mercury*. *Paracelsus*.

ZENGIFUR. The same as *Zemasarum*, that is, *Cinnabar*. *Rulandus*.

ZENICON, *ζηνικόν*, the Name of a Poison in use among the *Gauls*, called *Celtæ*. It had the Denomination of *Venenum Cervarium*, or *Deer's Poison*, and was of so great and speedy Efficacy, that as soon as a Deer, or other Beast, fell down under a Wound from an Arrow ting'd with this Poison, the Hunters were obliged to run immediately, and cut away the Flesh, for the Breadth of a Span, round the wounded Place, before the Poison could disperse itself, and induce a Putrefaction. The Antidote to this Poison was said to be the Leaf of an Oak, or a Beech, or of the *Laurus Alexandrina*. *Castellus*.

ZENITH, besides its proper Signification, is, in a very improper and enigmatical kind of Sense, made to signify the first menstrual Efflux. *Castellus*.

ZEOCRITHON. *Boerb*. A Name for the *Hordeum*; *distichum*; *Spica brevioris & latioris*; *Grani confertis*.

ZEOPYRON, *ζεόπυρον*, a kind of Corn which is a Medium between *Zea* and *Wheat*, as the Term imports: It grew in *Bithynia*, and is mentioned by *Galen de Alm. Fac*. It is also a Name for the *Triticum spica Hordei Londinensibus*.

ZEPHENUM, ZEPHENA, Terms in *Paracelsus* to signify the Extremity or external Periphery of any Perforation of the Ears or Lips. The Contraction of this Periphery into a preternatural kind of Roundness, constitutes the first Sign of the Leprosy. *Castellus*.

ZEPHYRUS. The same as *FAVONIUS*, which see. *Zephyrus festus*, in *Hartman*, is an Expression for a Mole.

ZENI. Vitriol. *Rulandus*.

ZERICUM. *Arsenic*. *Idem*.

ZERNA. An ulcerated Impetigo. *Dornaeus*. *Ruland*. We meet, also, with *Zerna* for *Lepra* or *Impetigo*, in Writers of the Alchymistic Strain. *Castellus*.

ZEROS. A Name in *Pliny*, *Lib. 37. Cap. 9*. for a pellucid Gem, resembling another called *Iris*, and having its Crystal distinguish'd with black and white Spots.

ZERTA, the Name of a Fish which lives both in Sea and Rivers; and therefore called by *Gesner*, *Capito Anadromus*, because it passes out of the Sea into the River *Elb*. It is reckon'd among Fishes of good Juice. *Castellus*.

ZERUMBET. *Offic. Garz. Zinziber latifolium Sylvestre*, *Herm. Cat. Hort. Lugd. Bat. 636. Prod. Par. Bat. 386. Comm. Hort. Amst. 371. 1. Kua, Hort. Mal. 11. 13. Tab. 7. Walingburi, Herm. Mus. Zeylan. 51. ZERUMBETH*.

This is set down in the Catalogue of Simples in the Dispensatory; but it is not known what it is, being never seen in our Shops, the round *Zedoary* being taken for it. *Herman*, in his *Catalogus Hortens. Lugd. Bat.* gives the Figure of a *Zingiber latifolium Sylvestre*, which he proposes for the *Zerumbet* of the *Arabians*; but the Descriptions they give both of this, and several other Parts of the *Materia Medica*, are so short and lame, that little is to be learn'd from what they say of them. *Miller's Bot. Off.*

It grows spontaneously in the Kingdom of *Malabar*, and agrees in Virtues with the long *Zedoary*. *Dale*.

ZERZERA. The same as *QUERQUERA* or *EPIALOS*, which see.

ZESTOLUSIA, *ζεστολία*, from *ζωω*, to be of a fervent Heat, and *ωσιν*, Washing or Bathing; a Bathing in hot Water, as oppos'd to *ψυχρολυσία*, (*Psychrolusia*) Cold Bathing. The Word occurs in *Galen, Lib. 3. de sanit. tuend. Cap. 8*.

ZETÆ, with the Antients, were *Vaporaries*, or Rooms which had a Stove underneath, on whose Floor they diffused hot or cold Water, as the Season requir'd; and by transmitting the Vapours through Pipes placed in the Wall, heated or cooled the *Zetæ* at Pleasure. *Castellus*.

Zetæ, or *Zeteculæ*, were also private Rooms in Baths, and other Edifices, furnished with Beds for the Entertainments of Feasting and Gallantry.

ZEUS. The Name of a Fish, called also *Faber*. *Pliny, Lib. 9. Cap. 18*. See *FABER*.

ZIAZAA. The Name of a Gem, from the Place where it is found, of so various Colours that it cannot be said to be of any Colour. It is said to render the Wearer litigious, and to excite terrible Visions in Sleep. *Castellus*.

ZIBACH. The same as *Zeibar*, which see.

ZIBELLINA, *vulgo Sebela*, or *Zobela*; a kind of Weasel, which we call *Sable*, whose Skin is well known to bear a great Price.

ZIBETHUM.

The Animal which produces the Civet, is distinguished by Authors after the following Manner. *Animal Zibethicum*, *Offic. Raii, Synop. A. 178. Animal Zibethi, Caius de Animal. 43. Aldrov. de Quad. Digit. 340. Catus Zibethinus, Schrod. 5. 280. Zibethicum Animal Americanum, Rech. in Herm. Hyæna veterum, Bellon. Obs. ed. Clus. 94. THE CIVET CAT*.

The Animal which yields Civet, is a kind of wild Cat, called by the Antients *Hyæna*. There are two kinds of it; one that comes from *Holland*, and another that comes from *Guinea*, which is browner than the former. When Civet is mix'd with Musk and Ambergrease, or lower'd by a Mixture of any other Powders, it has a very fine Smell; but alone, the Smell is disagreeable. It is very little used in Physic. Some rub Children's Navels with it, to cure their Colics; and it was formerly applied to the Pudenda of Women in Hysterical Fits; but this last Practice is not only useless, but hurtful. *Geoffroy*.

Civet is a fat and unctuous Substance, of the Consistence of Honey or Butter, and of a most fragrant and grateful Smell.

It is hot, moist and anodyne, of frequent Use in the Pain of the Colic, and to anoint the Navels of Children for Pains in the Belly; it is also applied to the Pudenda, or the Pit of the Navel, in hysterical Fits. *Dale* from *Schroder*.

Civet is not the Seed, nor Sweat, nor Testicles, nor Scrotum of the Animal call'd the *Civet Cat*, as some would persuade us, for these have no Smell; but it is a peculiar Excrement, secreted by Nature, and collected in some little Bags of a glandulous Substance, which in the Male are seated between the Penis and Testicles, in the Female between the Uterus and Anus. The best is what comes from *America*, and is not adulterated with Butter; the black imported from the *East Indies* is not good. *Dale*.

ZIBIBLÆ, or *Zibebæ*, are a large sort of Raisins, much resembling the Stones of Dates, whence they are also called *Dattily*; they consist of much Pulp, but very little Juice.

ZICCARA.

ZICCARA. *Guatimalensium. Capote, De Lart.*

It is a Fruit resembling a Pine-Nut, and contains twenty, and sometimes thirty Kernels. *Raii Hist. Plant.*

ZIGIR, *Gyr*, in *Dioscorides, Lib. 1. Cap. 7.* is an Epithet of a kind of aromatic Cassia, of a Purple Colour inclining to black, and esteemed of greater Value than ordinary, and more fragrant. Some read the Word *Gizir, γίζιρ*.

ZIMEX. *Verdigrease. Rulandus.*

ZINARIA, is an *Arabic* Term, and Epithet of a vicious and preternatural kind of Bile, called by the ancient Physicians *Eruginous*.

ZINCHUM.

Zinch, named *Zinchum Officin. Zinchum seu Marcasita pallida Schrederi, Zinch vel Tutenague Gallor.* is a metallic, sulphureous, heavy Substance, resembling Lead in Colour, fusible and ductile to a certain Degree, being very hard to break, inflammable and volatile. It seems to have been quite unknown to the Antients, and even the Moderns knew very little about its Nature or Origin, till *Stahl* explained it in his *Dissertation de Metallurgia*. It is extracted from the Lead-Ore of the Mines of *Gosselar*, which Ore is very hard to melt, though it appears neither stony nor barren to the Eye, but rich and shining. Three Substances are separated from it; Lead, Zinch, and a kind of *Cadmia Fornacea*, which being melted with Copper, makes a Prince's or Bath Metal.

The Furnace, in which this Ore is melted, is so disposed as to have the Side and Back Wall of Brick, but the Foreside is shut by Plates of a greyish fissile Stone, about a Finger's-breadth in Thickness. During the Time of the Fusion, this Foreside being much thinner than the rest, remains considerably cooler; and they increase this Cold by often sprinkling it with Water, and covering it with wet Clothes. The Ore, which is put in the Furnace at one Time, is about twelve Hours in melting; and as soon as the Fusion is begun, Bellows are set a blowing upon it, by which the Zinch mixed with the Lead is driven in form of Flowers or Vapour against the Brick Walls, to which it sticks, to about the Thickness of a Writing-Pen, and of the Consistence of very hard and half-vitrified Grey Tartar. At proper Intervals of Time, they open the Furnace, and beat this Substance off from these Walls, because, otherwise, it would in time become so thick as to make the Capacity of the Furnace too small for Use.

On the Front, or stony Part of the Furnace, is found not only a Substance like that just mentioned in Form of melted Stone, but also another resembling melted Metal, with Streaks of a Substance half-burnt, or reduced to Ashes, running through it. Therefore at the End of each Operation, or Period of melting, having removed the burning Coals from the Bottom of this Part of the Furnace, they substitute others in their Room, reduced to small Pieces, and not burning. Then, by repeated Strokes of Hammers, they shake the Wall, and the Zinch which sticks to it runs down between the Laminæ of the half-burnt Substance in form of a melted Metal, emitting a white lucid Flame, and in few Minutes Time would all fly off in a whitish or Ash-colour'd Vapour, if it were not received and extinguished by the Coal-dust placed under it; for as soon as it mixes therewith, the Flame ceases, and it hardens into Metal. When it is cold, they remove it, separate it from the Coals; and having melted it again over such a gentle Fire as is sufficient to melt Tin, it is cast into proper Masses or Pigs.

The Advantage to be made of this Metal is very uncertain, because sometimes the Workmen lose all their Labour employed about it, either because the Heat has been too great, the Bellows have been blown too fiercely, or through some other Neglect.

That Part which sticks to the Brick-Walls, from whence it is broke off at proper Intervals, as has been said, makes the *Cadmia* used in Prince's Metal; but before it is fit for that Use, it is mixed with the *Scoria*, and other Refuse of Metals, and exposed in Heaps for a long time in the open Air, where being penetrated to some Degree by the Air, or something contained in it, it rarifies a little, and swells, and then it becomes fit to communicate a Gold Colour to Copper, by being melted with it. This Substance is called, very properly, *Cadmia Fornacea*, by *Stahl*; for tho' its Origin be different from that of Tutty, the *Cadmia Fornacea* of *Agricola*, yet its Nature and Effects are nearly the same, for both equally give a yellow Colour to Copper.

The Lead is found melted at the Bottom of the Furnace; and the Workmen are of Opinion, that no Part of the Zinch remains in it, because they think the Fire to which the Lead continues so long exposed, is more than sufficient to evaporate all the Zinch.

Zinch is a Metallic Substance, but sulphureous and perfectly volatile. *M. Homberg* observed, long ago, that when thrown into a red-hot Crucible, it emitted many Fumes, and when stirred with an Iron-Rod, it presently took Fire, and a white

fining Flame appeared, like that which is seen by firing a Mixture of Nitre and Sulphur. At the same Instant, the whole Cavity of the Crucible was filled with very small, white, light, smooth Filaments, like Threads of Cotton, or of a Cob-web. If these Filaments be carefully collected, and afterwards the remaining Zinch be stirred in the same Manner as before, this Operation may be continued so long till almost the whole Substance of the Zinch shall be converted into these Filaments or Flowers. By macerating these Flowers in distilled Vinegar, *M. Homberg* prepared an inflammable Oil of very great Subtlety, which he judged to arise from the Zinch; but I should rather think was owing to the distilled Vinegar. The white Flowers taken inwardly are sudorific, and sometimes purge both upwards and downwards, being given from four to twelve Grains. Externally applied, their Effects are in nothing different from those of *Pompholyx* or *Nihil Album* of the Shops. They dry very powerfully, without Acrimony; and gently astringe and consolidate. They are much recommended by *Barbette* as a sure Remedy in an *Ophthalmia*, and Flux of sharp Lymph, being dissolved in Rose-Water; by another in Fissures of the Nipples, being spread on a fine Linnen Rag; and by *Emanuel Koning*, in Ulcers, arising from a long Confinement in Bed. They are likewise of Service in drying Ichorous Ulcers.

Of Zinch and Copper melted together is made the finest kind of Prince's Metal, so called from Prince *Rupert*, who is said to have invented it. It is made in this Manner:

Take of Copper, three Ounces; melt it in a Crucible; and while it remains in Fusion, add an Ounce and a half of Zinch. Mix them well, and then immediately remove them from the Fire. The Mass, when cold, will be of a beautiful Gold Colour, and in some Degree ductile.

The Pewterers use Zinch in whitening and purifying Tin, mixing it in the Proportion of one to six hundred. *Geoffroy*.

ZINDULUS. A River-Fish, much commended for its Tenderness and Friability.

ZINETUS. A Species of *Marcasite*, much resembling Copper. *Paracelsus Archidox. Lib. 3.*

ZINGAR. *Verdigrise*, or Flowers of Copper. *Rulandus.*

ZINGI. *Fructus stellatus sive Anisum Indicum. I. B. 1. 586. Raii Hist. 2. 1835. Anisum Indicum. Offic. Anisum stellatum seu sinense & Philippense. Cod. Med. 10. Anisum Indicum stellatum, Ger. Emac. 1035. Anisum peregrinum, C. B. P. 159. Anisum exoticum Philippinarum Insularum, Park. Theat. 1569. Fœniculum Sinense, Redi Exper. Nat. 172. Cardamomum Siberiense. Patavinorum, Hort. Besian. Euonyma ad Philippinarum Insularum, Anisum spirans, nuculas in capsulis stelliformiter congestis, proferens, Pluk. Almag. 140. INDIAN ANISE.*

The Kernel of this Fruit, which is brought from the *East Indies*, is good for the Cholic.

ZINGIBER. *Offic. Zingiber, Zinziber. C. Comm. Plant. Ufu. 92. Zinziber, Ger. 54. Emac. 61. Zingiber, C. B. P. 35. Theat. 651. Raii Hist. 2. 1314. J. B. 2. 743. Zingiber Orientale, Park. Theat. 1613. Zingiber Indigenis Gingibil fœmina, Pison. Mant. Arom. 187. Iris latifolia, tuberosa, Zingiber dicta, flore albo, Hist. Oxon. 2. 350. Mangaratia, Pison. 227. Chilli India Orientalis seu Zingiber fœmina, Hern. 169. Inschi, Com. Flor. Mal. 148. Inschi vel Inschi-kua, H. M. p. 11. 23. GINGER.*

This is a yellowish, white, and flatish round Root, somewhat knotty and branch'd, of an aromatic Smell, and a very hot biting Taste. We have two Sorts, white and black. The White is the best, being the Root only dried and cleansed; the other is the same scalded, and of a darker Colour, more shrivel'd, and is less used in Medicines. *Morison* and *Herman* believed Ginger to be a Species of Iris; but others, as *Piso* and *Hernandez*, say it is a Reed or Cane, to which, by the Figure of the Leaf, which I have seen, it seems to come nearer than to an Iris. It is brought at present principally from *Jamaica*, and the *Carribbee* Islands, though it grows in both the *East* and *West Indies*.

Ginger is used in Food as well as in Physic. It heats and comforts the Stomach, expels Wind, helps Digestion, prevents the Colic, and strengthens the Bowels. It is brought over, preserved in Syrup, from the aforesaid Places, which is much better than any preserved here. *Miller's Bot. Off.*

Zingiber, by the *Greeks* called *Ζίζυβη*, took its Name from the *Indian* Word *Zengibil*, and has one and the same Name among all Botanists. It is described by *C. Baubine* as having a Root which runs three or four Palms deep in the Ground, after the Manner of the *Arundo*, and is of an irregular Figure, somewhat flat, divided by frequent Joints into many lateral Parts or Branches creeping on all Sides, of the Length of 21. Inch and half, or more, and of the Thickness of a Man's Thumb, or less, whitish, or of a light brown on the Outside, and of a white friable, tender Substance within, interspersed with

with Veins running lengthways, of a Taste like Pepper, very hot and acrimonious, and of an aromatic Smell. It has somewhat of a fervid Taste, when green, as we are assur'd by *Acosta*, but is not so biting as when dry; and the more humid the Places are in which it grows, the less Acrimony it retains. It has the Leaves, as *Garcins* writes, of the *Iris Aquatica*, or *Gladiolus*, not of the *Arundo*; but *Acosta* gives it the Leaves of the *Lachrima Jobi*. Others, as *Linschoten* and *Ruellius*, make it have the Leaves of the *Arundo*, which seems most probable to us, since *Lobel*, and *Bodæus a Stapel*, who saw the Plant when green, tell us, that in Stalk and Leaves it has the Appearance of an *Arundo* newly sprung up; and therefore *Margrave* and *Hernandez* seem to be the less exact in their Comparison, when they make it resemble the *Iris* or *Gladiolus*. The Stalk is not of any considerable Thickness, but rises to the Height of a Foot, or a Foot and a half, and is adorn'd with a small Head, resembling in some measure that of *Stachas*. *Hernandez*.

There are two sorts of *Zingiber*, the Male and the Female; the last is what we have described, the Male, called by the *Mexicans*, *Anchoas*, has Leaves which grow not above three Feet in Height, and are rougher and thicker than those of the common or Female *Zingiber*, and are distinguish'd by one single strait Nerve running lengthways, growing on both Sides to the Stalk without Pedicles, single towards the Bottom, but thicker and more frequent towards the Top; the Root is also larger and thicker, and has a more acrid Taste mix'd with a kind of Bitterness. *Hernandez*.

The Roots are of different Weight and Bigness, but all smooth and tuberous, and spreading upon the Surface of the Ground like those of the young *Arundo*.

It grows in all Parts of the *East Indies*, and is propagated from the Root or Seed by way of Culture; for what grows spontaneously is of no Value. It does not seem natural to *America*, but was transported from the *East Indies*, or the *Philippine Islands*, to *Brasil* and *New Spain*. That of *Malabar* is most esteemed; and they plant it in a fat, well dung'd and manured Soil, setting a Root, which has one or two Joints, in a Pit, and immediately watering it more or less, according to the Dryness of the Ground. The next Year after planting they take it up again, and pass it for *Zingiber*. The usual Season for collecting it is the Beginning of *January*, when the Leaves are wither'd. After these Roots are a little dry'd, they cover them with Mud, lest being deprived of their native Humidity, they should be eaten by the *Teredo*, to which on other Accounts they are very obnoxious: But *Linschoten* assures us that they collect the Roots into a Heap of a certain Bulk, which they cover with Potters Clay, and carefully secure it from all Injuries by Air or Winds; and this is the Method by which they manage the recent Roots, and defend them from the Worms. In the Spicery Shops we meet with white and red Roots, but they are of the same Kind with the others, only stained with Oker, or whiten'd with Chalk, to keep them from the *Teredo*.

To preserve the Roots, they first take off the Bark, and then put them into Brine or Vinegar, and let them macerate for an Hour or two; after which they expose them to the Sun for almost an equal Space of Time, then take them again under Covert, heaping Clothes upon them, and suffering them to lie till all their Humidity be exhale'd. If the Roots are to be transported to a distant Place, they inclose them in Boxes, and watering them, cover them at Night with Earth, but leave them open in the Day-time. Being thus prepared, they season them not only with Sugar, but Brine and Vinegar; after which they have no remarkably hot Taste, nor leave any ungrateful Filaments in the Mouth: But if there be too much Cookery used about them, or they pass through too many Washings and Cleansings, they lose not only their hot Taste, but Part of their aromatic Acrimony.

Green *Ginger*, preserved with Sugar, is imported from the *East Indies*, and is proper for old Persons, and those of cold and phlegmatic Constitutions, especially when it is new; it is also good for viscid Phlegm in the Lungs.

The *Indians* use the Leaves in Broths, Sallads, and other tulinary Preparations; the green Roots cut small with some other Herbs, and season'd with Oil, Salt and Vinegar, serve them for a Sallad. New *Ginger* is also an excellent Remedy with them against the Cholic, Celiac Passion, and Lientery, a long Diarrhæa proceeding from Cold, Wind and Gripes, and other like severe Disorders, as *Bontius*, while in the *Indies*, often happily experienced, as he himself assures us. It ought, however, to be administer'd with proper Cautions, that they who abound with hot Blood, whether sick or sound, should be very sparing in the Use of it, because all *Ginger* kindles a Heat in the Blood, and opens the Mouths of the Vessels. *Piso*.

Ginger, as well as *Pepper*, is more used in culinary than medicinal Preparations; because, among all Spices, those two only have very much of an acrimonious, and but little of an

aromatic Quality. *C. B. Galen* infers, that *Ginger* is not of so fine Parts as *Pepper*, because its Heat, tho' equally strong, is not so soon felt, but lasts longer; hence he concludes *Ginger* to be of a grosser, and more humid or aqueous Substance: For as in dry Reeds, a Flame is very soon kindled and dispersed, whereas in moist, like green Wood, it is more slowly kindled, and lasts the longer; so it is in Medicines.

Dioscorides says, that *Ginger* greatly loosens the Belly; but this must be understood of the tender and fresh Roots, which contain a considerable Quantity of Humidities, capable of lubricating and opening the lower Passage, as we observe in the *Iris*; for when they are old, they are rather drying, and bind the Belly, by promoting a good Digestion.

The Roots are sometimes added to Cathartics, to increase their Force, tho' being exhibited with the more violent Medicines of that Kind, they correct their Malignity. *Ginger* obsterges and dissipates Infractions of the Stomach and Lungs, by consuming the superfluous Humour, and comforts and strengthens the Brain and Memory: It is also of Service in Dulness of Sight, proceeding from Humidity; it stimulates to Venery, and dissolves Flatulences. In whatever manner taken, whether fresh or dry, it corroborates the Stomach, and promotes Concoction; it is an Ingredient in Antidotes.

ZINGIBER FUSCUM. *C. B. Zingiberis species Mechinum dicta.* *L. B.* This is different from the common Sort, not only in being less mature, and worse, but as it is of a more compact Consistence, harder, and interwoven with fewer Fibres, of an Ash-Colour inclining to black, of a more acrid Taste, and not so subject to be eaten by the *Teredo*; this is also preserved, and sold in the Shops.

ZINGIBER AFFINIS CORTICE SQUAMATO. *C. B. Zingiberis Mechini rara Varietas.* *J. B.* This is a Root resembling the common *Zingiber*, or *Mechinum*, but has a finer Appearance, is distinguish'd by many Nodes, and jointed almost like the *Doronicum*. It has a Bark like the *Gingiber*, of a Lemon kind of Colour, is of the Thickness of a Man's Thumb, and destitute of Fibres; it is also ponderous and solid, and being broken shews white Veins. The Taste is acrimonious and aromatic; and if it be not eaten out with Rottenness, much more acrid and dryer than that of *Zingiber*. *Raii Hist. Plant.*

Ginger is good for the Stomach, Thorax, and the other Viscera, restores lost Appetite, and resists the Putrefaction and Malignity of the Humors. *Dale*.

ZINGITES, or ZINGRITES. The Name of a fabulous Stone, of the Colour of Glass, mention'd by *Albertus Magnus*, to which he ascribes many imaginary Virtues, as that, if worn about the Neck, it cures the *Nyctalops*, restrains Hemorrhages, and prevents Alienation of Mind.

ZINIAR. Verdigrease. *Rulandus*.

ZINIAT. Ferment. *Rulandus*.

ZINK. See **ZINCHUM**.

ZINZALA. A small Fly, or Gnat.

ZINZIBER. See **ZINGIBER**.

ZINZIFUR, or ZENGIFUR. Cinnabar. *Libanius*.

ZINZILLA. The Shingles.

ZIRBALIS HERNIA. A Rupture caused by the Descent of the Omentum; from,

ZIRBUS. The Arabic Name for the Omentum.

ZIZANION. *Zizanthus*. The same as **LOLIUM**.

ZIZERIUM. The Intestines of Fowls of the Gallina-cæous Kind. *Apicius*.

ZIZIBI, or ZIBEBÆ. *Rulandus* uses this Word, as *Castellus* imagines, to express Raisins of the Sun; or, perhaps, Jujubs.

ZIZIPHA. A Jujub.

ZIZIPHUS.

The Characters are;

The Leaves are conspicuous for three Nerves or Fibres; the Calyx is monophyllous and quinquefid. The Flower is rosaceous, pentapetalous, herbaceous, small, sessile, and almost destitute of a Pedicle. The Ovary in the Bottom of the Calyx becomes an Oval Fruit resembling an Olive, and including under its Pulp a Stone divided into two Cells, each full of an oblong Kernel; the Pedicle is short.

Boerhaave mentions two Sorts of *Ziziphus*, which are;

1. *Ziziphus*, *Tourn. Inst.* 627. *Boerb. Ind. A.* 2. 245. *Jujuba*. *Offic. Jujuba Arabum sive Zeiziphus Dodonæi.* *Ger.* 1318. *Emac.* 1501. *Jujuba majores oblongæ.* *C. B.* P. 446. *Ziziphus sive jujuba major.* *Park. Theat.* 250. *Raii Hist.* 2. 1533. *Zizyphus rutila.* *Jonst. Dendr.* 86. THE JUJUBE TREE.

The Jujube-Tree has several crooked Branches with small whitish Twigs, on which grow winged Leaves made of several Pinnæ, growing not directly opposite, with an odd one at the End; they are small, oval, and finely serrated about the Edges. Towards the Top of the Twigs, at the setting on of the Leaves, grow small, yellowish five-leaved Flowers, followed by roundish red Fruit, in shape of a small Olive, of a pleasant

a pleasant, sweet, somewhat clammy Taste, including an hard oblong Stone, pointed at both Ends. They grow in *Italy* and *Spain*.

Jujubes are mollifying and pectoral, good for Coughs, Pleurifies, and hot sharp Humours, falling on the Lungs; they help the Heat and Sharpness of Urine, and the Gravel; but they are now quite out of Use, and are hardly to be met with in the Shops. *Miller's Bot. Off.*

The *Jujube-Tree* flowers in *May* and *June*, and the Fruits are gather'd in Autumn, or later, together with the Sprays; and being collected into Bundles, after an Insolation of some Days, are hung up at the Roofs of the Houses. Some crop the Jujubes, and strewing them on Hurdles, or Matts, expose them to the Sun so long as till they grow wrinkled. They are sold fresh in great Quantities by the Fruiterers at *Venice*.

It is doubted whether this Tree were known to the ancient *Greeks*. *J. Baubine* says, he is much inclin'd to think that the *Lotos* of *Theophrastus*, and the *Osteo-Lotos* of *Pliny* are the same with the *Lotos* of *Athenæus*, and that the *Lotos* of *Athenæus* is the *Jujuba*.

The *Serica* in *Galen*, which most suppose to be *Jububes*, are judg'd by that Author to be of small Efficacy towards the Preservation of Health, or Cure of Diseases, being eaten only by Women and Children who set no Bounds to their Appetite, and affording but little Nourishment, tho' difficult of Concotion. By the later *Greeks*, however, and *Arabians*, they have been received into the *Materia Medica*, and applied to medicinal Uses. They are moderately hot and moist, and therefore used in Julaps or Decoctions, mitigate the Heat of burning Fevers, and correct the Acrimony of the Blood. They are also good for Disorders of the Breast and Lungs, stubborn Coughs, Roughness of the *Aspera Arteria*, and Difficulties of Breathing. They are also of Service in Diseases of the Kidneys and Bladder, Heat of Urine, and the like Disorders. *J. Baubine* thinks Syrup of *Jububes* proper to be exhibited in pulmonary Disorders proceeding from a cold as well as a hot Cause, contrary to *Matthioli* and others, who judge it convenient only in hot Affections of the Lungs, for they are sweet and moderately hot. We are assured, from Reason and Experience, says *C. Hoffman*, that *Jububes* have the Virtue of cooling and correcting hot and acrimonious Humours.

An Ziziphus; quæ Jujube Americana; spinosa; Lotti Arboris foliis & facie; fructu rotundo, parvo, dulci. Cat. Hort. Beaumont. Leguanaria vulgæ. H. A. 1. 141. Boerh. Ind. Alt. Plant.

Jububes are pectoral and aperient, and enter the Composition of pectoral and nephritic Decoctions; they are compar'd with Dates and Figs. *Hist. Plant. ascript. Boerhaave.*

Besides the foregoing Species of *Jujube*, *Dale* mentions the following;

ZIZYPHA. *Offic. Zizyphus Cappadocica*, Ger. 1306. Emac. 1491. *Zizyphus Cappadocica Olea Bohemica*, J. B. 1. 27. *Olea Sylvestris folio molli, incano*, C. B. P. 472. *Raii Hist.* 1576. *Oleaster Cappadocicus*, Park. Theat. 1441. *Elæagnus Orientalis angustifolius, fructu parvo Olivæ formi, subdulci*, Tourn. Cor. 54. **WILD JUJUBE.**

This is a Tree of a moderate Bigness, of the Size of the *Salix*, according to *Dalechampsius*, with a whitish Bark, which is very much wrinkled and thick in the Trunk, but thinner and smooth on the Branches, and cover'd with a soft kind of Down. The Leaves are soft, and much unlike those of the *Ziziphus*, but resemble more those of the *Salix*, or rather are like those of the Garden-Olive, sometimes disposed alternately, sometimes irregularly, about an Inch and half in Length, and near an Inch in Breadth, or narrower, whitish all over, especially the lower Part, furnished with a short and soft Down, moderately obtuse, and adhering to a short Pedicle. From the Bosom of the Leaves proceed the Flowers, which are of a Silver Colour, cut into six cuspidated Parts, and sweet-scented, or, as *Clusius* says, of a strong tho' not unpleasing Smell, which affects the Head. The Berries are oblong, resembling small Olives, or Jujubes, white, fungous, and cover'd with a sweet Flesh or

Pulp, which has an Apex like a Pin, and includes a Stone containing a hard channel'd Kernel.

It grows in *Syria*, *Ethiopia*, and on Mount *Libanus*, as *Rauwolfius* observed; it also grows spontaneously in the Woods of *Bohemia*, as we are told by *Matthioli*, and it is found in the Hedges, together with the *Ramnus* and *Vitex*, near the City of *Guadix*, in the Kingdom of *Granada*, in *Spain*. *Clus.* It flowers in the Beginning of Summer, and the Fruit is ripe in Autumn.

I doubt not, says *Dalechampsius*, quoted by *J. Baubine*, but from the Flowers might be distill'd a Water of a very fine Smell, and an Oil might be prepared of an exquisite Fragrancy; but there are no medicinal Uses mention'd of this Plant. *Raii Hist. Plant.* p. 1576.

ZMILACES. A sort of Gem, said, by *Pliny*, L. 37. C. 10. to be found in the River *Euphrates*.

ZOARCHIA, or XOARCHIA. The Name of an Antidote describ'd by *N. Myrepsus*, Sect. 1. C. 241.

ZOEPIHILOS. The pompous Name of an Antimonial Medicine, invented by *Quercetan*, and describ'd by *Schroder*, L. 3. C. 17.

ZONA. The Shingles.

ZONITIS. A Name for a Species of *Cadmia*, collected in Furnaces in the Shape of a Zone, or Girdle.

ZOOMINERALIA. A Name for certain Substances, which have the Appearance of an Animal, and Mineral Nature; as Pearls, and all sorts of *Testacea*.

ZOOPHTHALMOS. A Name for the *AEIZOON*.

ZOOPHYTON. A Substance which partakes of an Animal and Mineral Nature.

ZOOTOME. The Anatomy of Brutes.

ZOPISSA. Some call the Pitch and Rosin scrap'd off Ships by this Name: Some call it *Apochyma*: It is said to have a dissipating Virtue, because it has been long macerated in Sea-Water. Others understand by *Zopissa*, the Resin of the Pine-Tree. *Dioscorides*, L. 1. C. 98.

ZOPYRI ANTIDOTUS. The Name of an Antidote describ'd by *Scribonius Largus*, Nq. 169. *Celsus*, L. 5. C. 23 takes Notice of another Antidote, given by *Zopyrus* to King *Ptolemy*, which he there describes.

ZORABA. Vitriol. *Rulandus*, 610.

ZORONISIOS. The Name of a Gem, said to be found in the River *Indus*.

ZOSINIS ILLITIO. The Name of an Unguent, recommended against Tremors, by *Paulus Aegineta*, L. 8. C. 19.

ZOSTER. The same as *ZONA*.

ZOTICUS. A Name given by *Hartman*, to a Species of

Calomel.

ZUB, or ZUBD. Crude Butter. *Rulandus*.

ZUCCAIA. See *ZATANEA*.

ZUCCARUM. Sugar.

ZUCCHA. The Gourd, or the Pumpkin. *Raii Hist. Plant.*

ZUITTER, or ZITTER. A Marcasite. *Rulandus*.

ZULAPIUM. A Julap.

ZYGÆNA. The Name of a Fish with a monstrous Head, describ'd by *Aldrovandus*.

ZYGIS. A Name for a Species of *Serpyllum*. *Raii Hist.*

ZYGOMA, or Os Jugale. The Name of a Bone of the superior Jaw. See *CAPUT*.

ZYGOMATICUS MUSCULUS. The Name of a Muscle of the Lip, thus call'd, and which arises fleshy from the *Os mali*, near its Conjunction with the long Process of the *Os Squamosum*, and is inserted near the Angle of the Lips. Its Use, is with its Partner, to draw both Lips upwards.

ZYMAR, ZYNAR, or ZINSER. Verdigrease.

ZYME. *Zyma*. Ferment. Leaven.

ZYMOMA. *Zymoma*. Ferment; or, fermenting Liqueur.

ZYMOSIS. *Zymosis*. Fermentation. In *Hippocrates*, *Epidem.* L. 4. it imports a flatulent or *CEdematous* Tumor of the Liver.

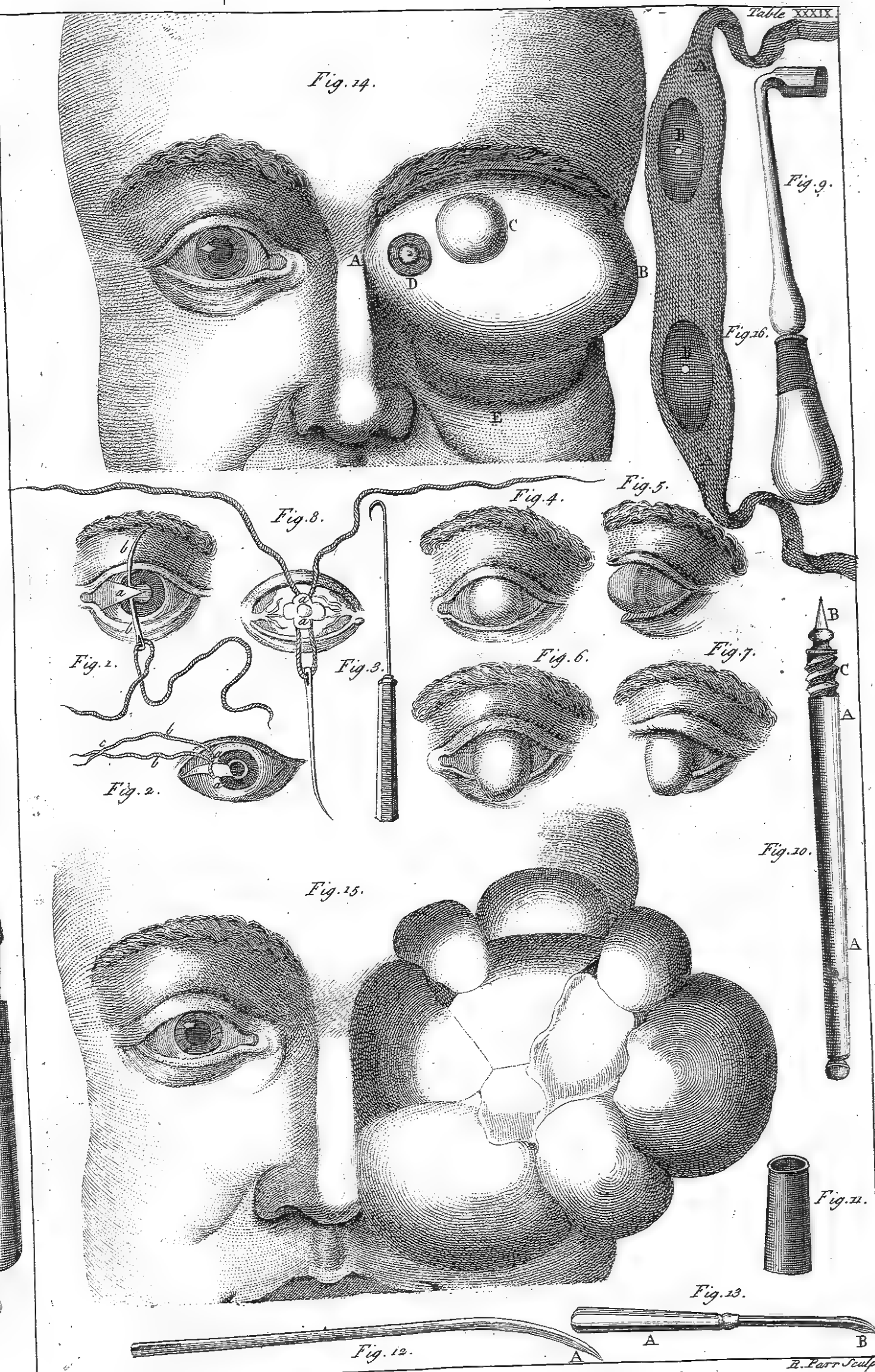
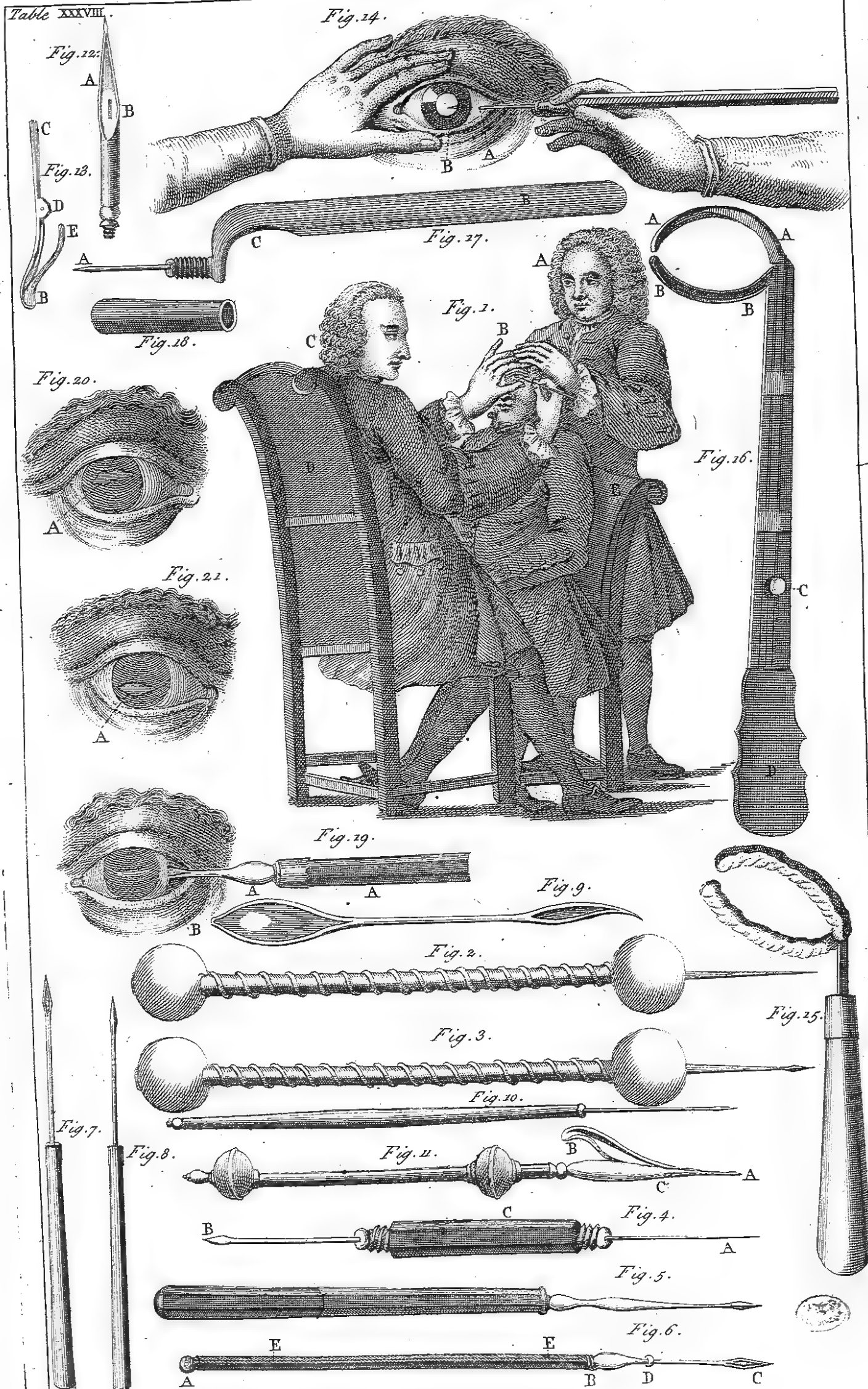
ZYTHOGALA. Beer Poffet-Drink.

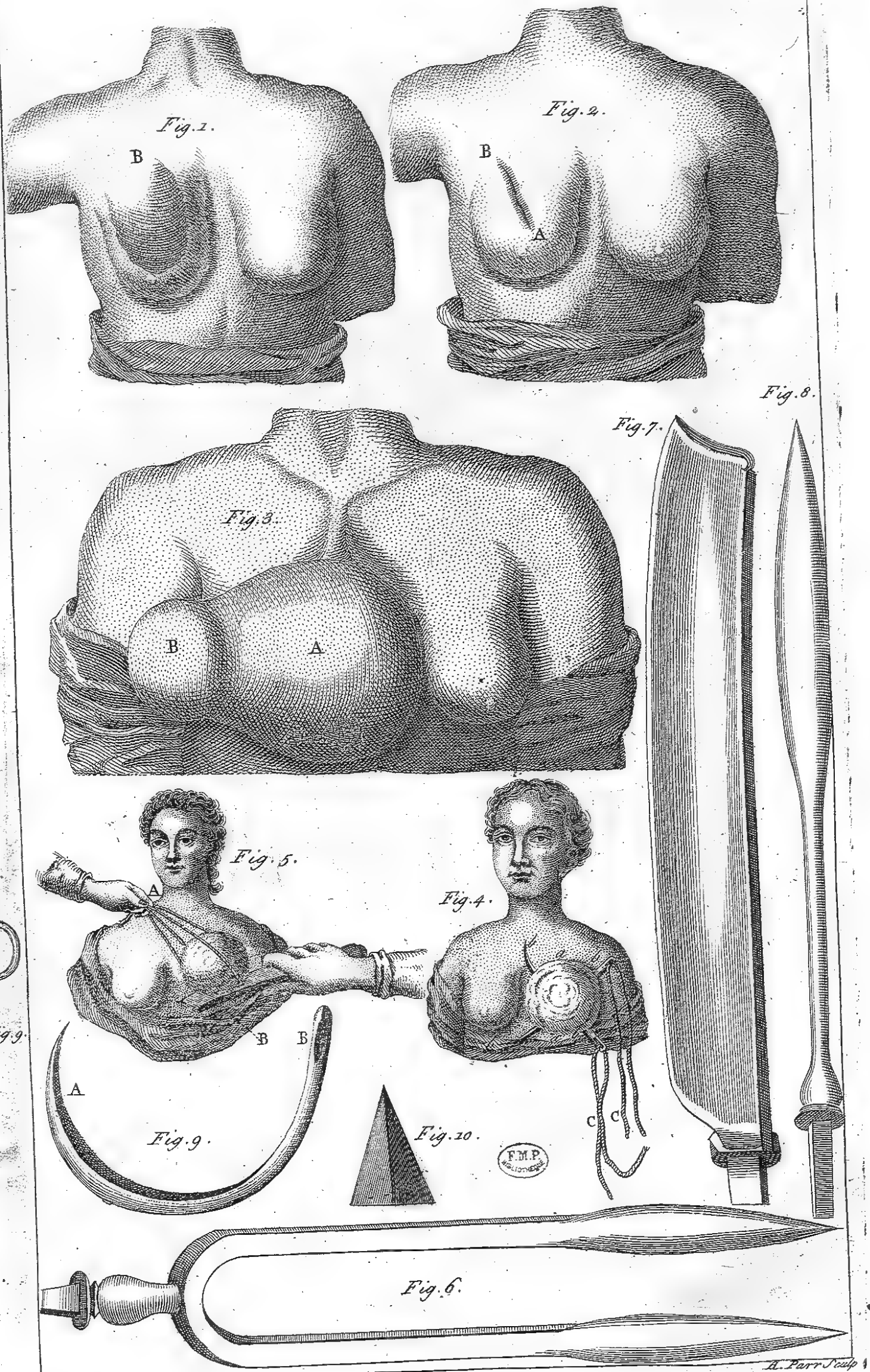
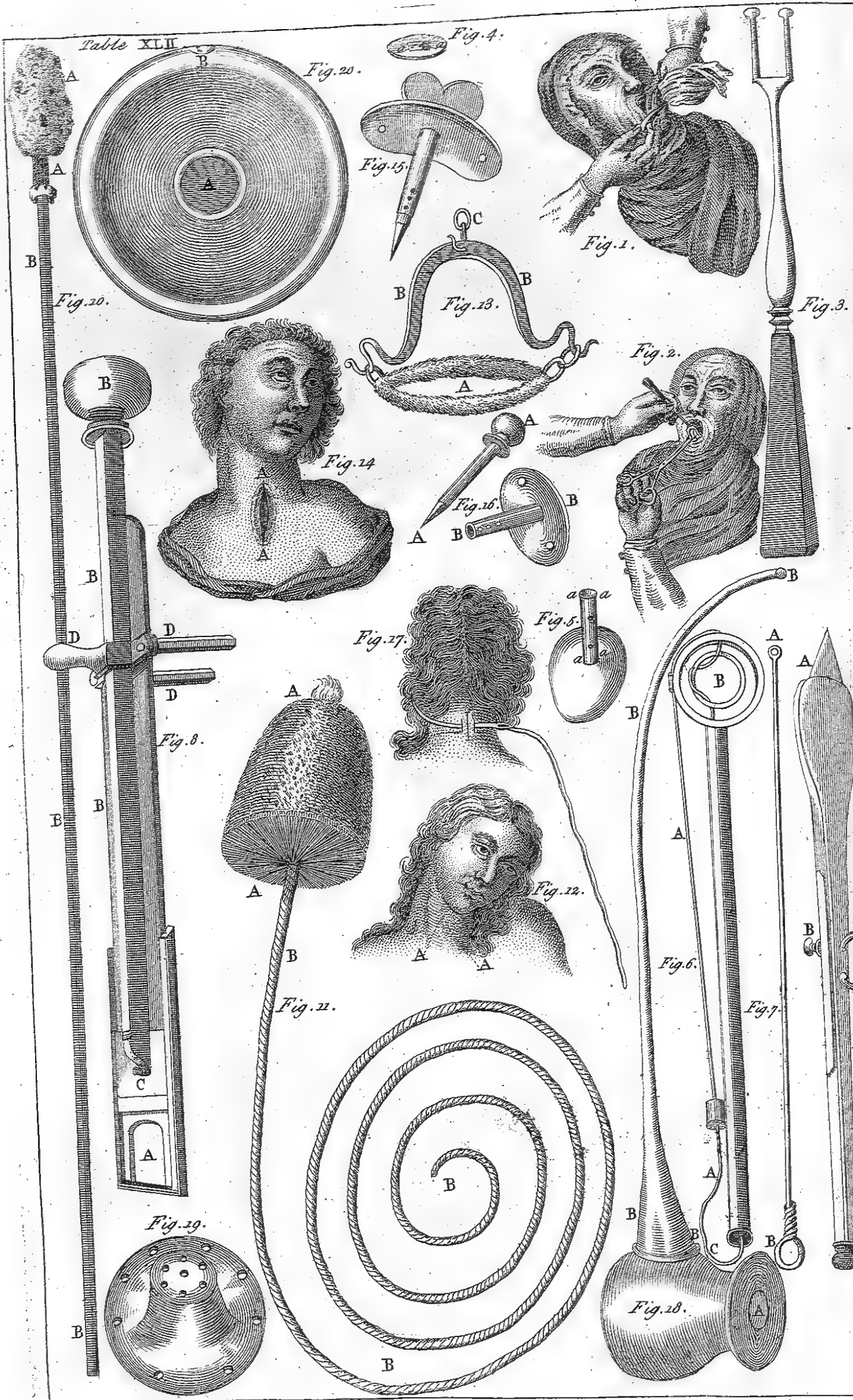
ZYTHOS. *Zythos*. Beer. *Dioscorides*, L. 2. C. 119.



ADVERTISEMENT.

THOSE who have ever been concern'd with the Mechanical Manufacturers of Books and Plates, will not be surpriz'd to find some Typographical Errors, and Inaccuracies of the Engravers, tho' all possible Care has been taken to prevent them. But there are some Errors of greater Moment than those of the Press. Thus under the Article *Amygdalus*, in a Prescription quoted from *Paulus Aegineta*, *ονόμελι* is translated, *Wine and Water*, instead of *Honey and Water*. And under the Article *BUSSII SPIRITUS BEZOARDICUS*, in the Prescription for this Medicine, *three Pints of the highest rectify'd Spirit of Wine*, which should be added after *Oil of Cedar, or of Juniper, half an Ounce*, is entirely omitted.





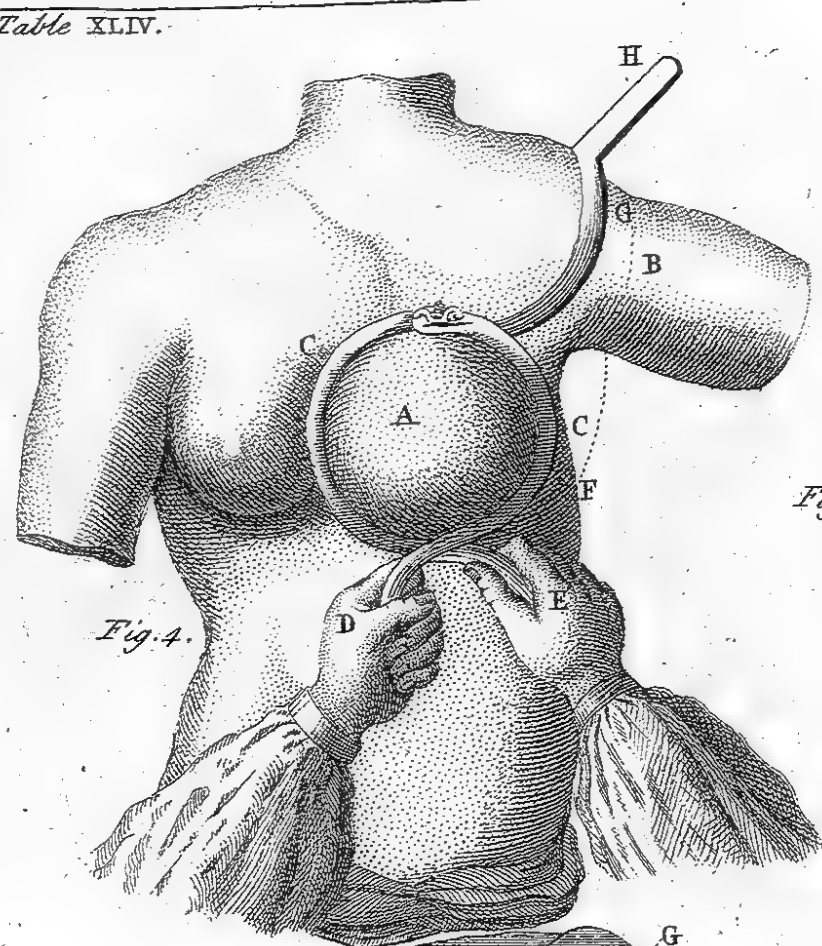


Fig. 2.

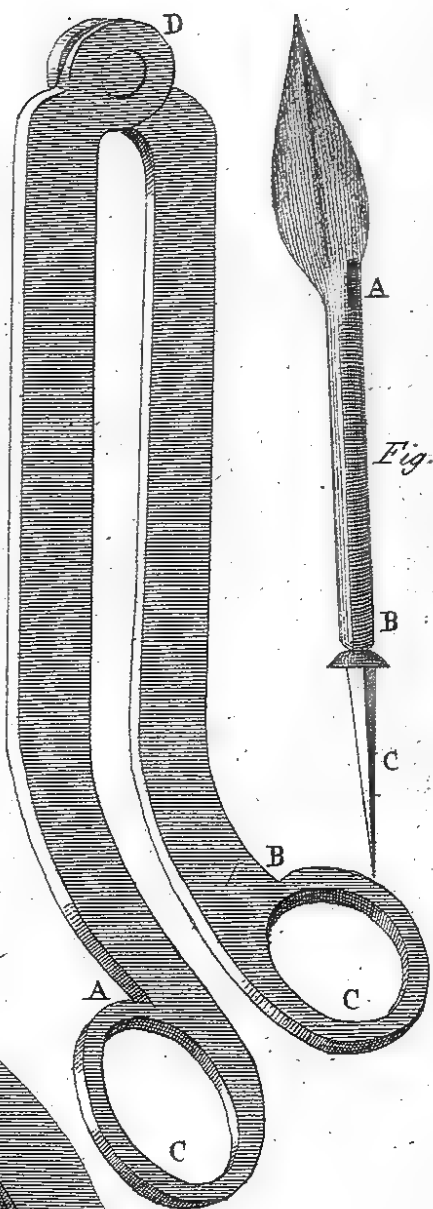


Fig. 5.

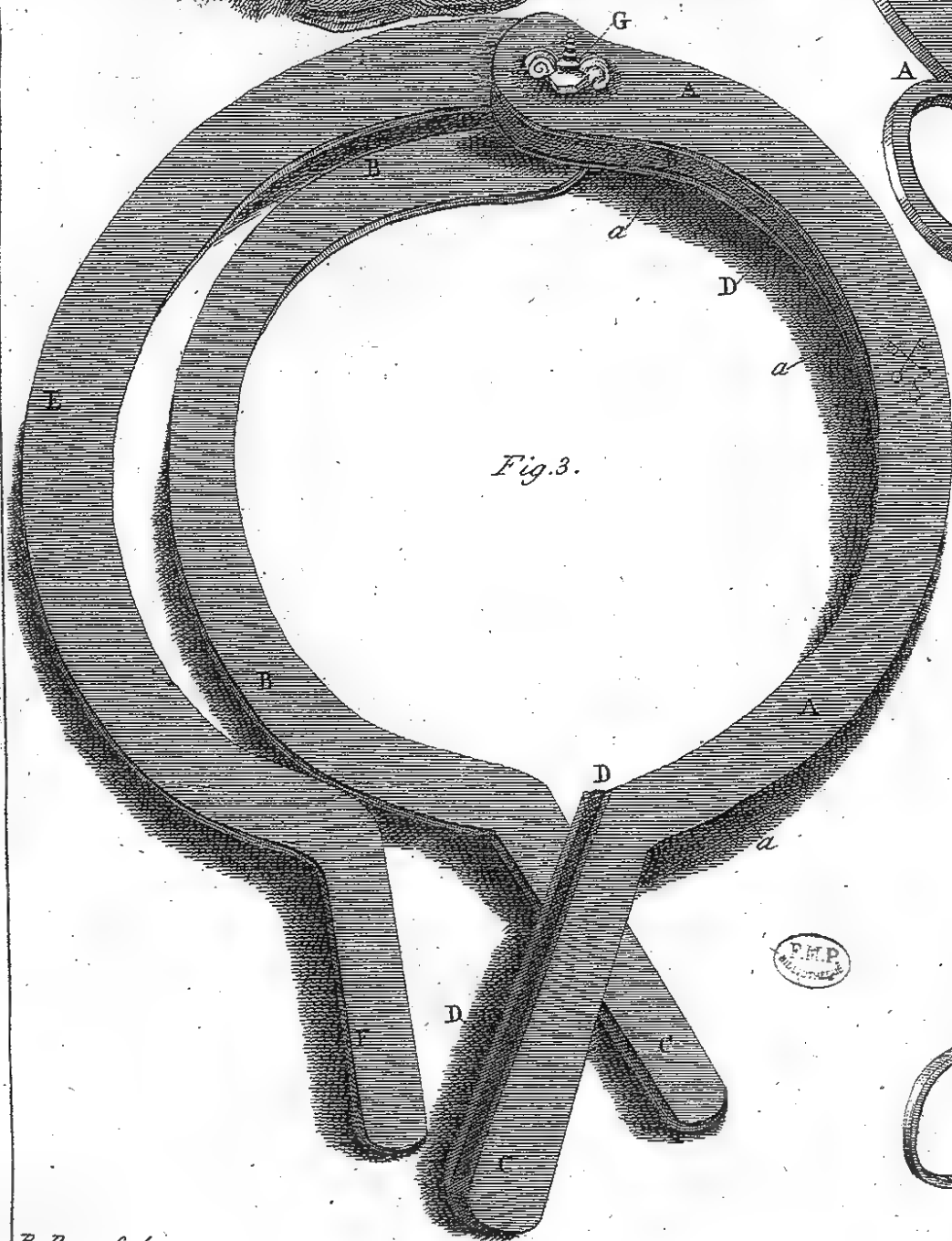
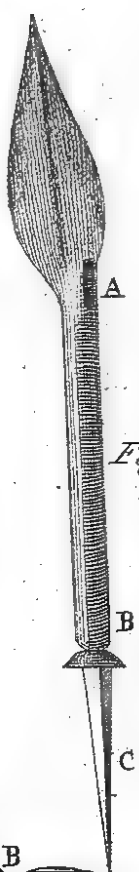


Fig. 3.

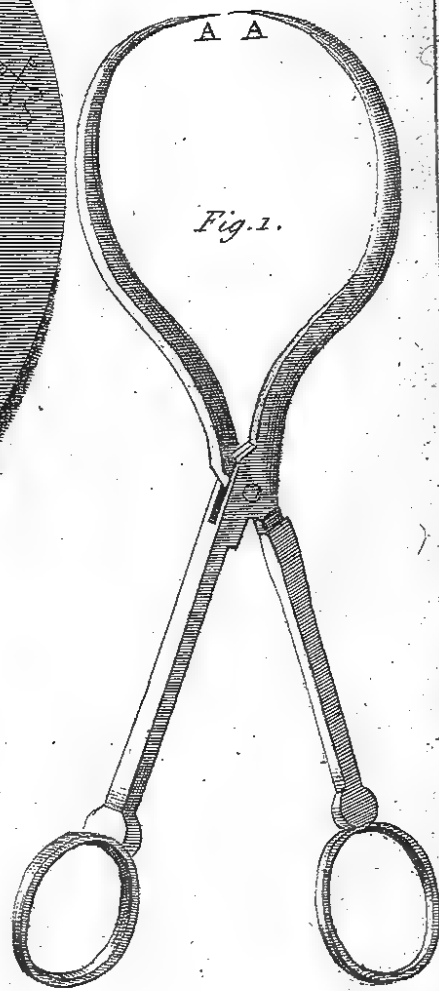


Fig. 1.

F.M.P.

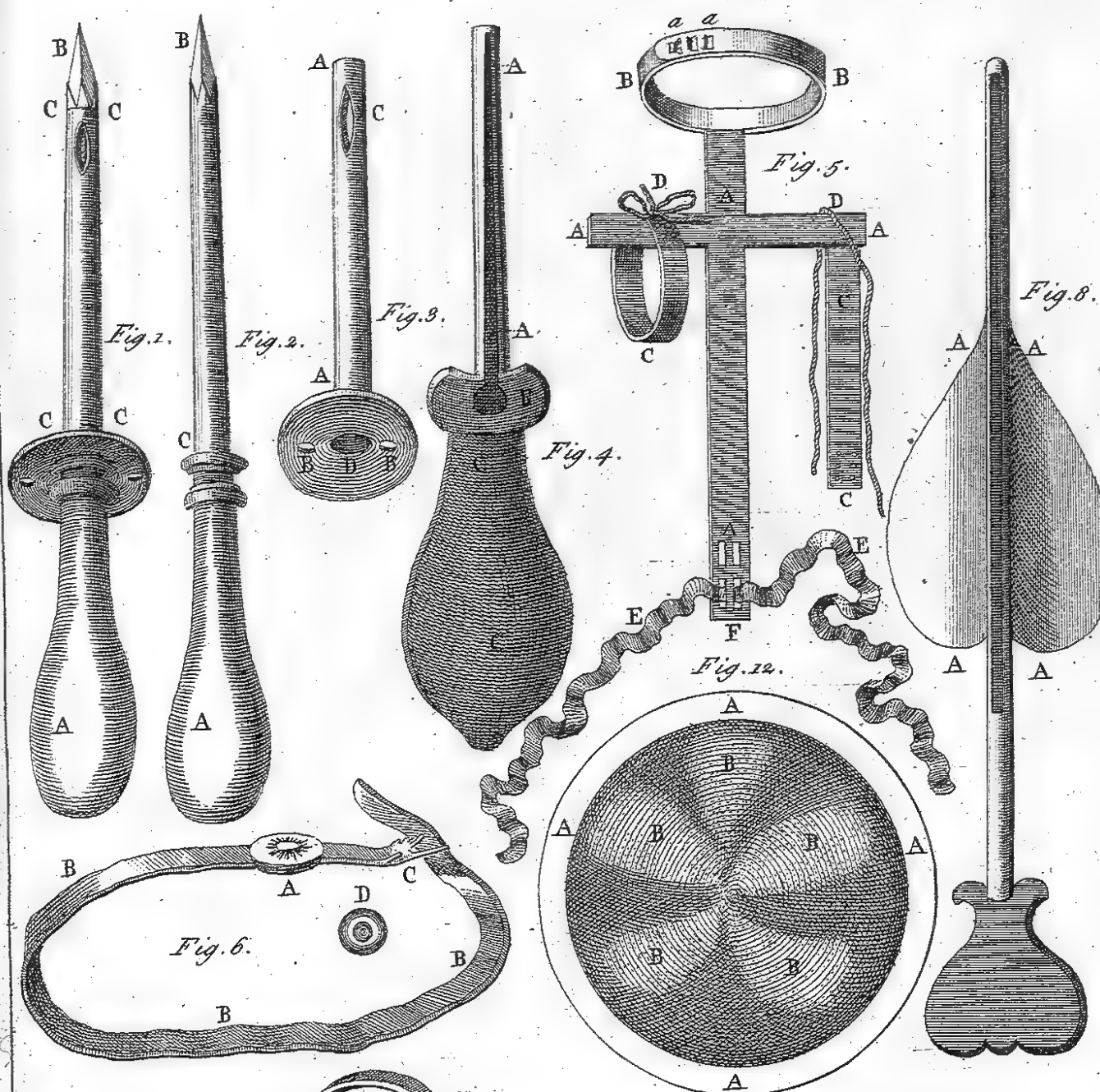


Fig. 8.

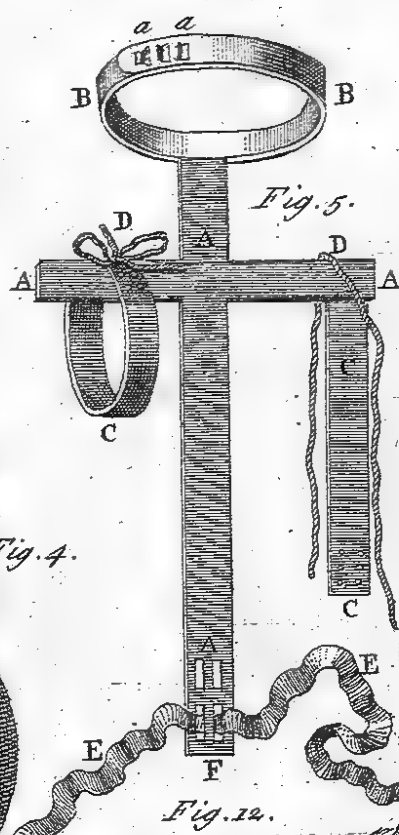


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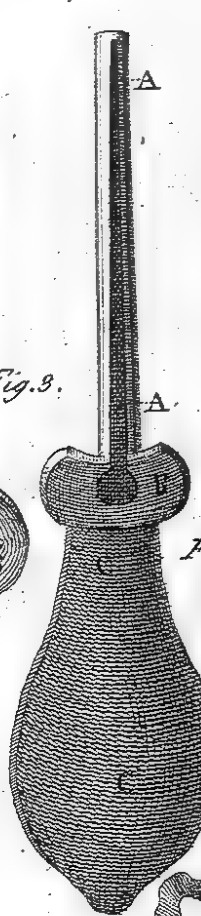


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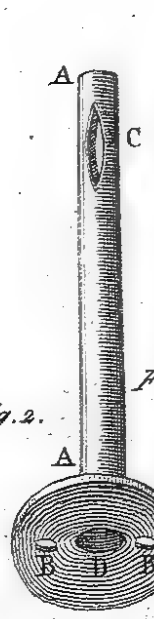


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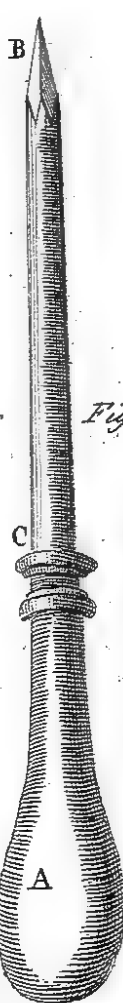


Fig. 2.

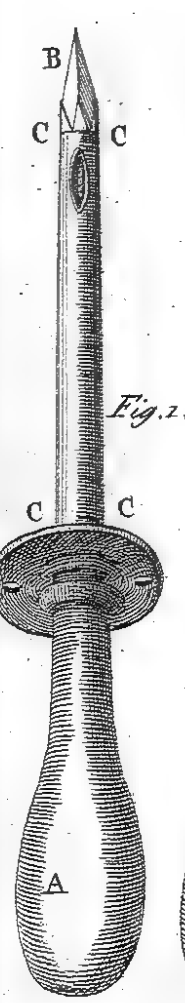


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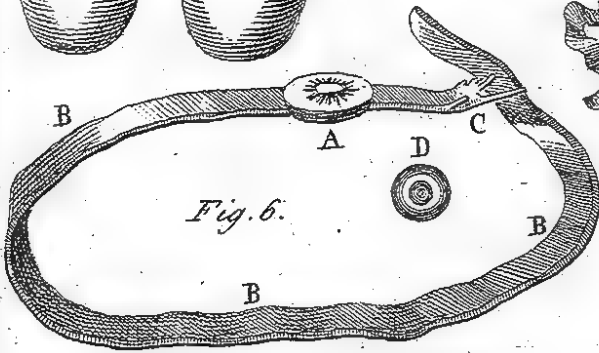


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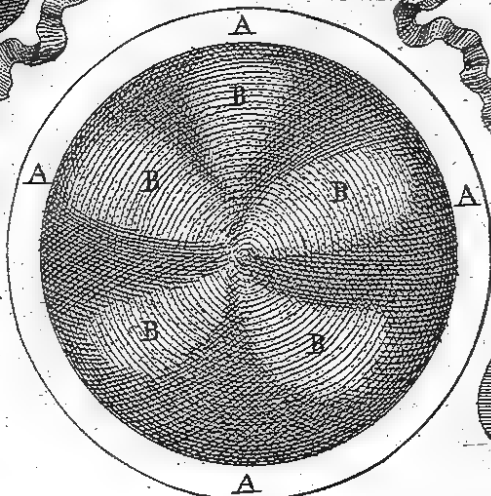


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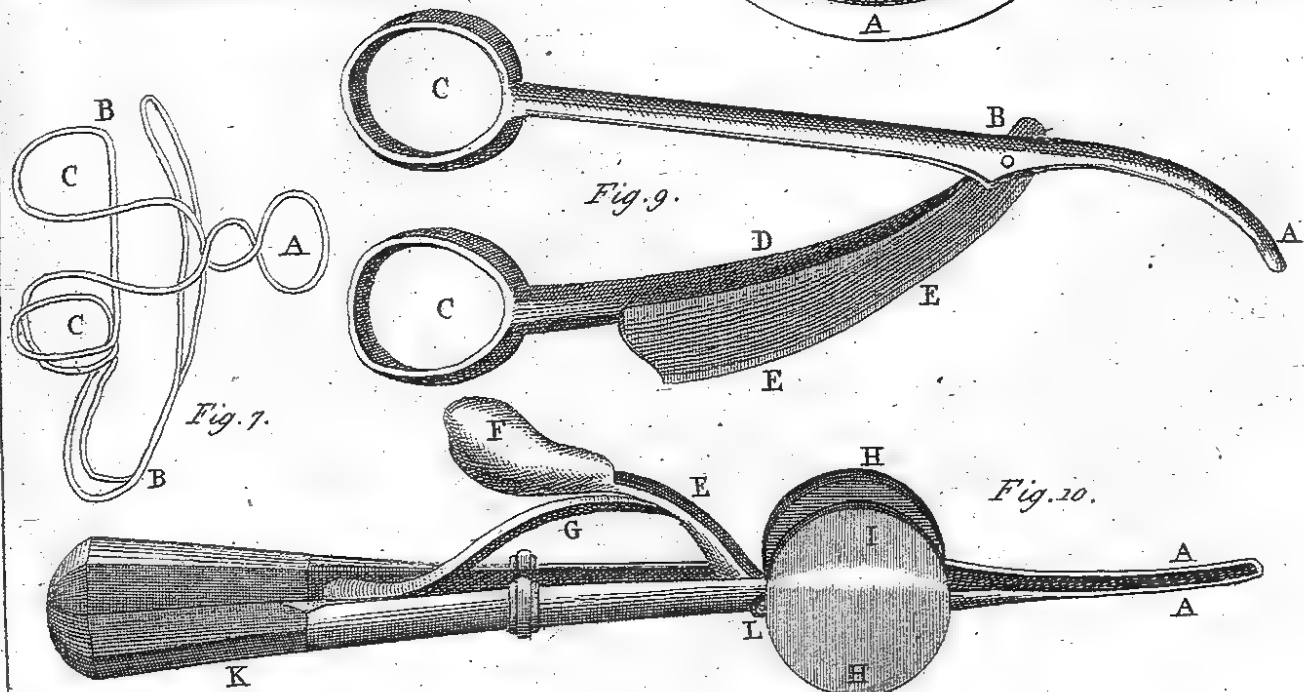


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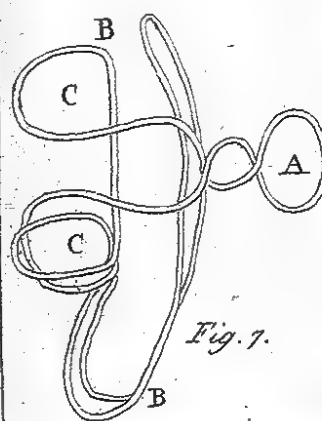


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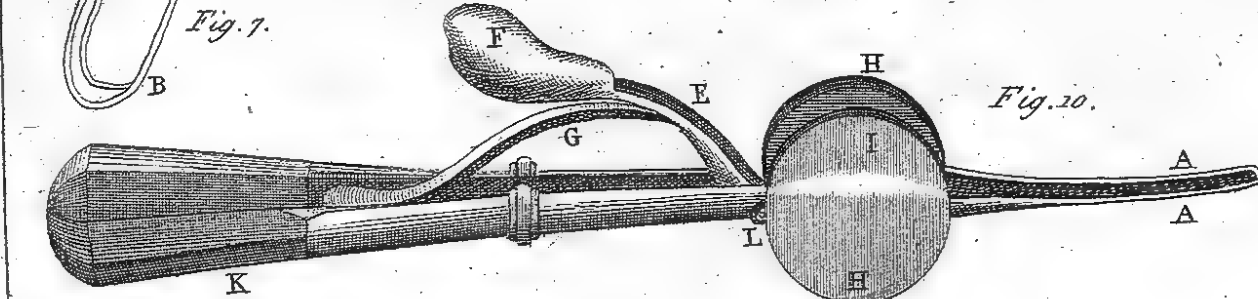


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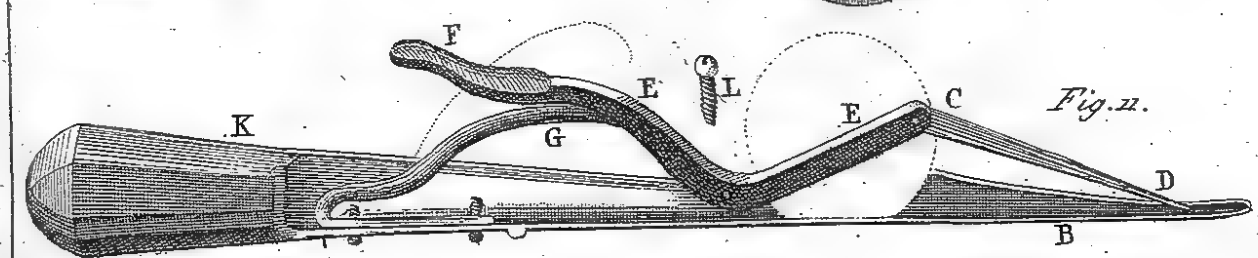


Fig. 11.

Table XLVI.

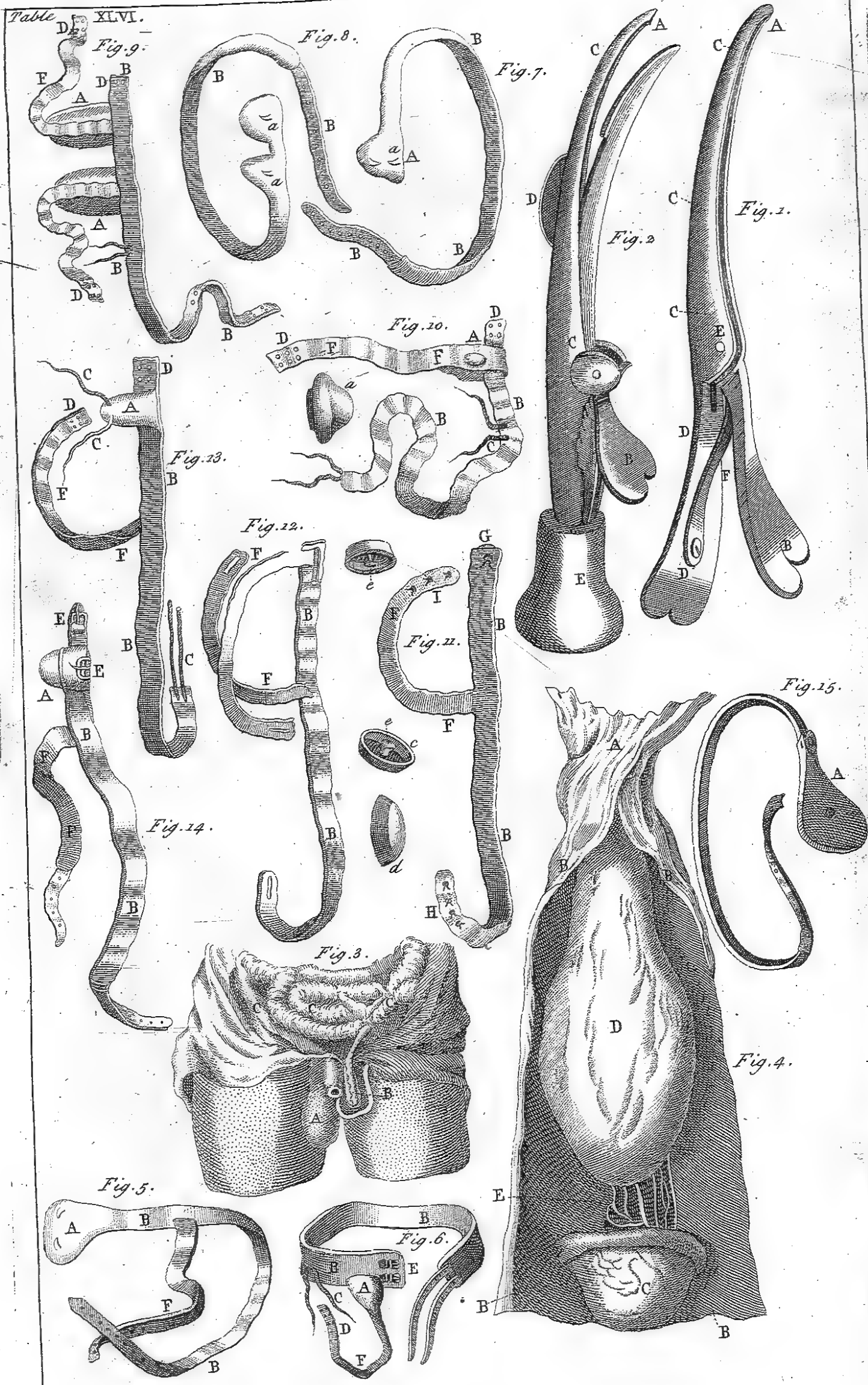
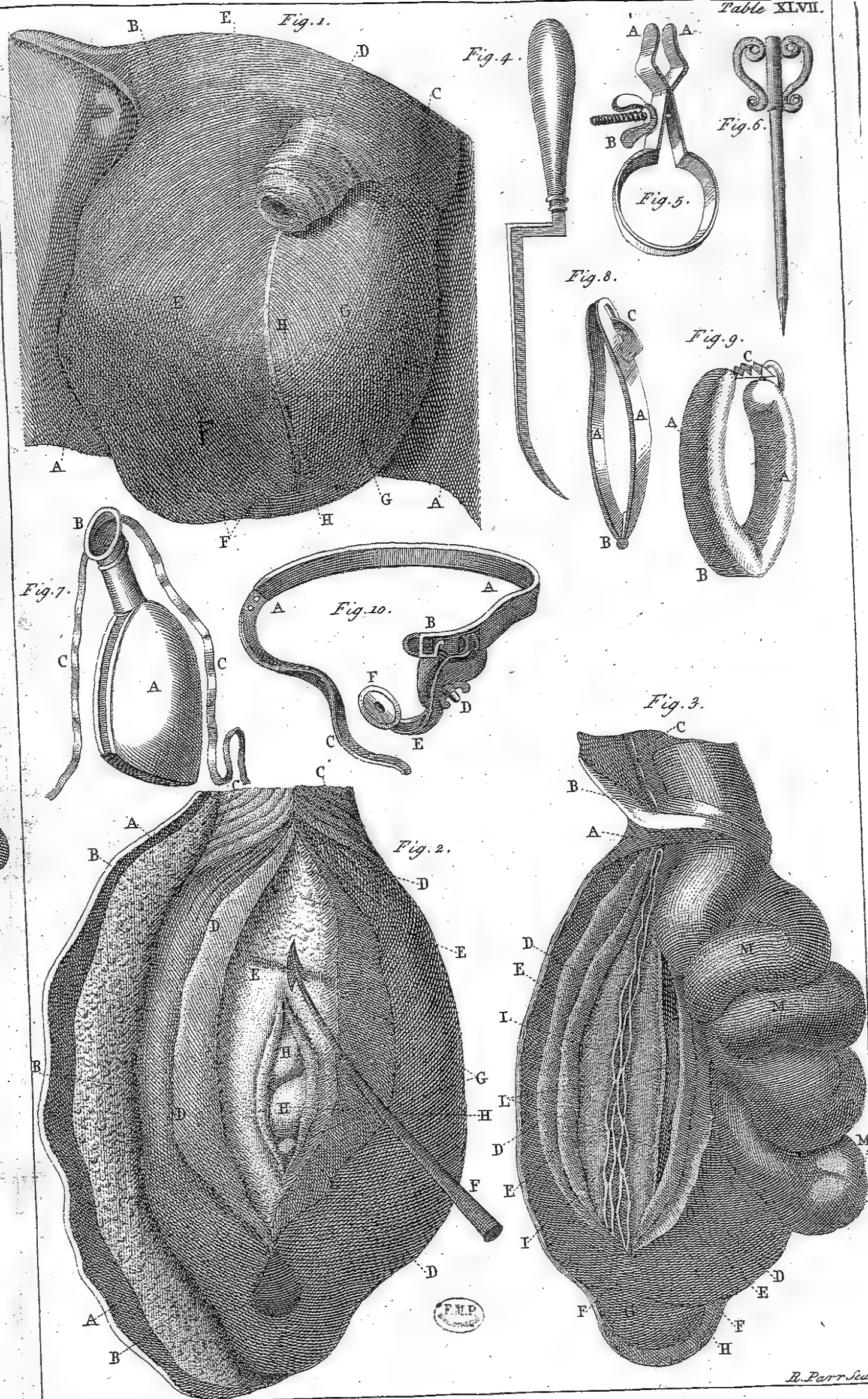


Table XLVII.



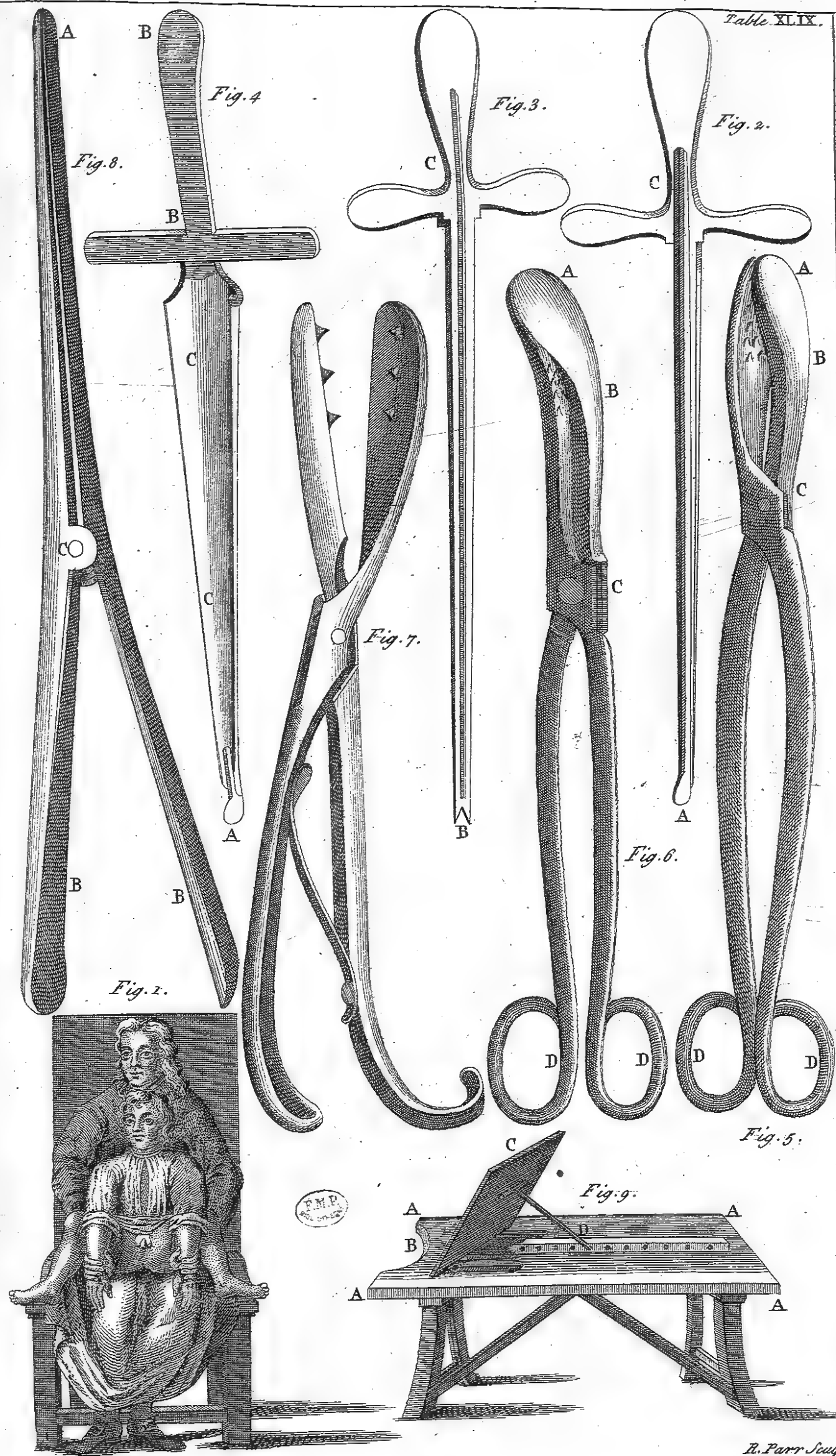
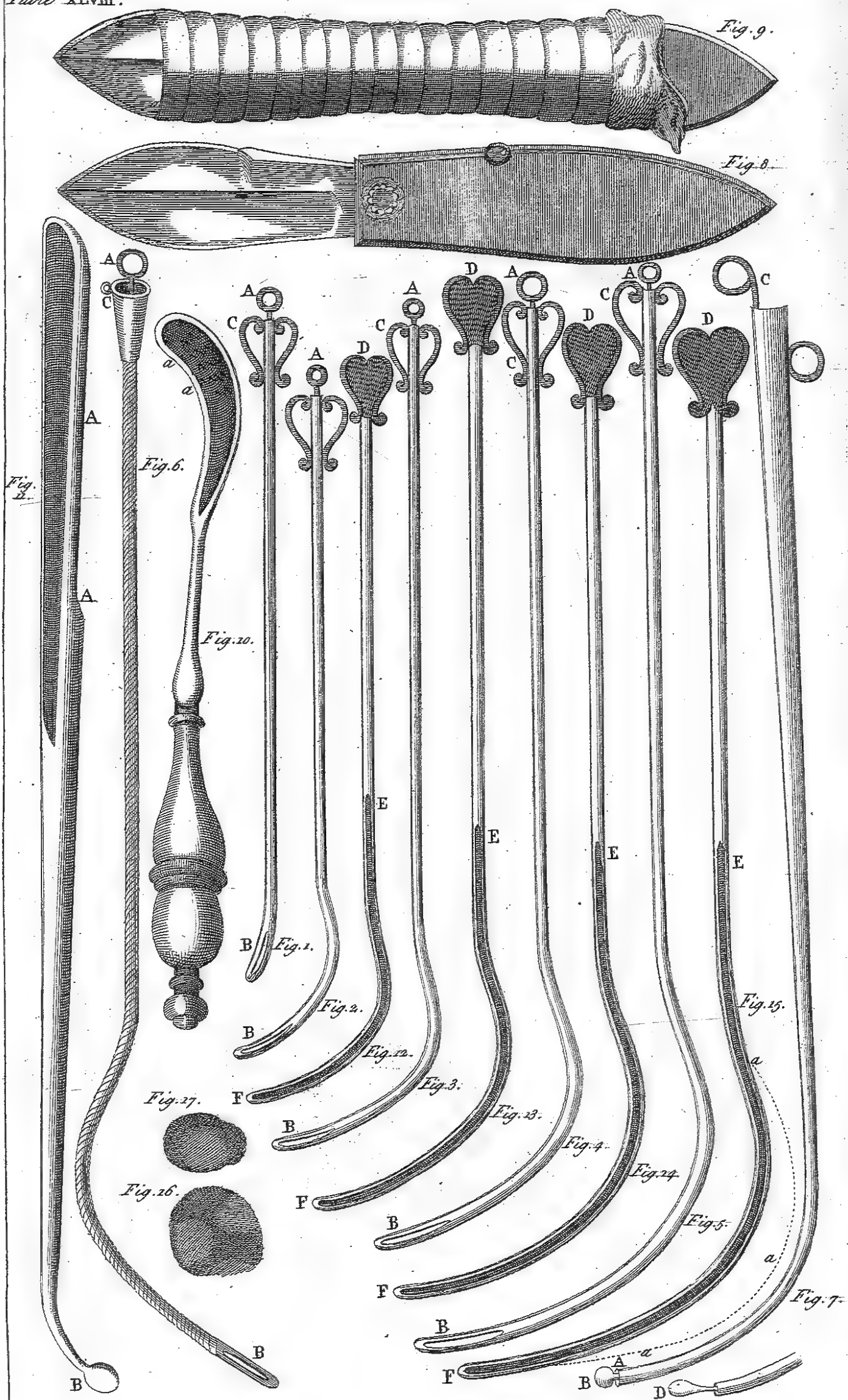


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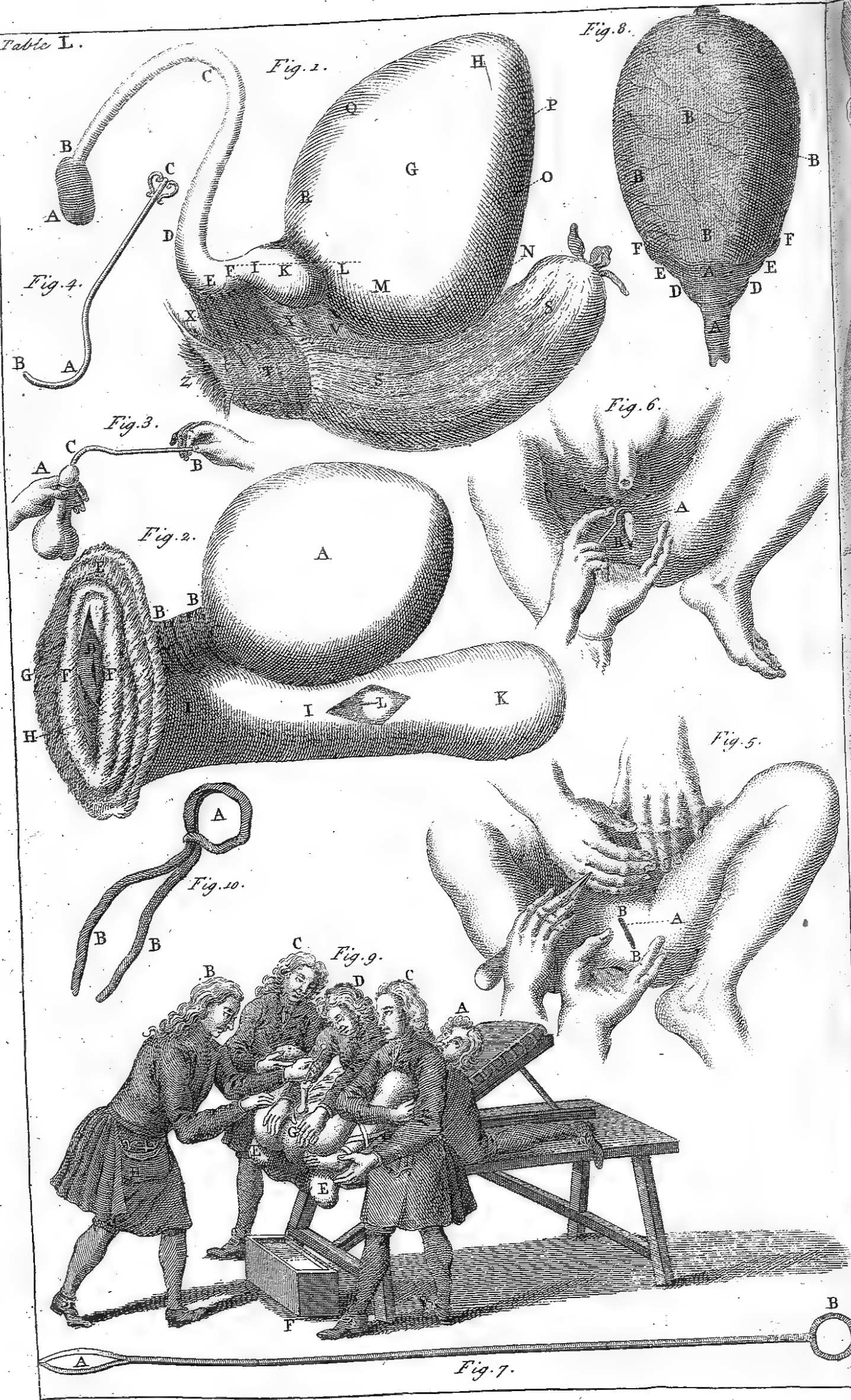


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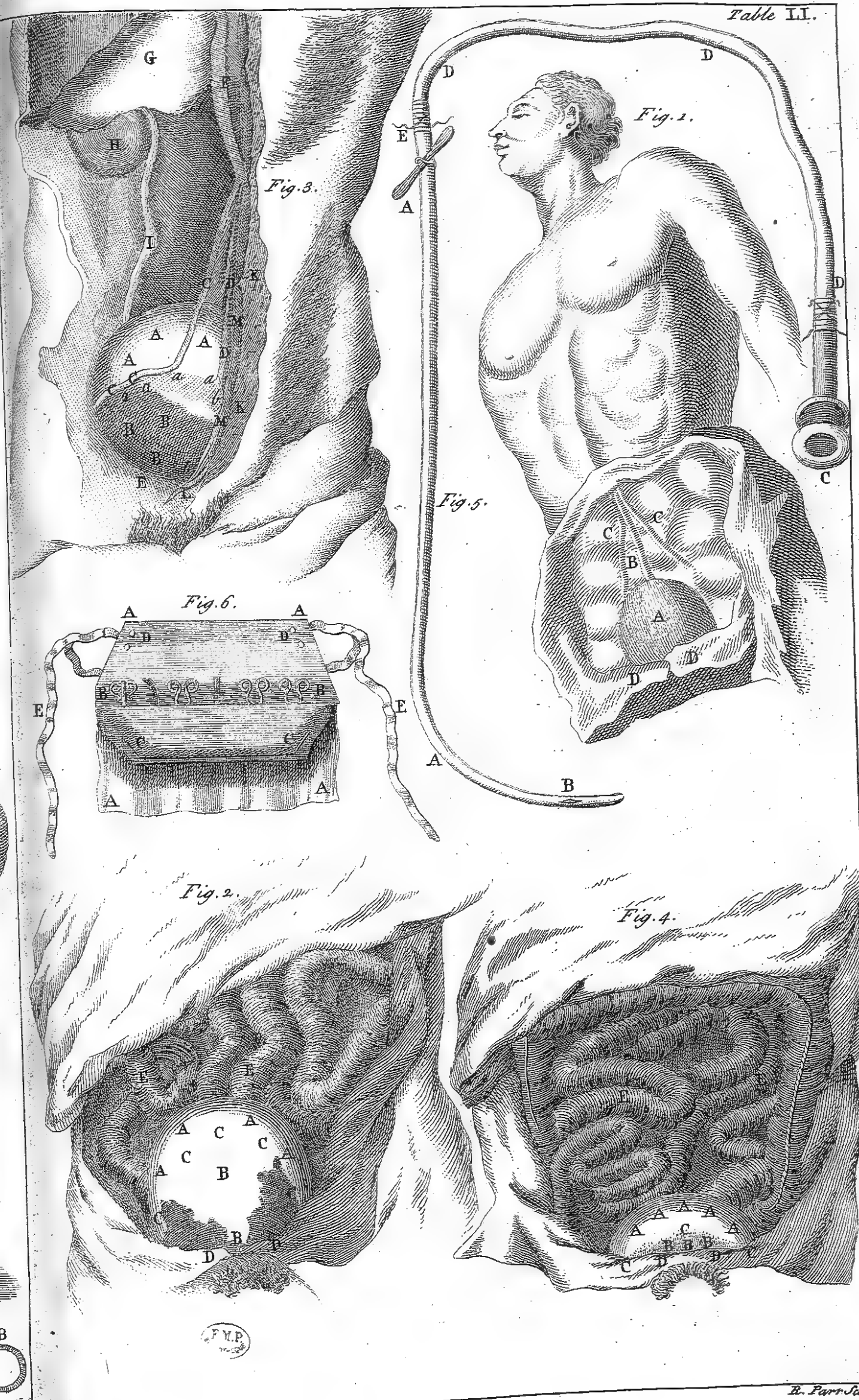


Table LII

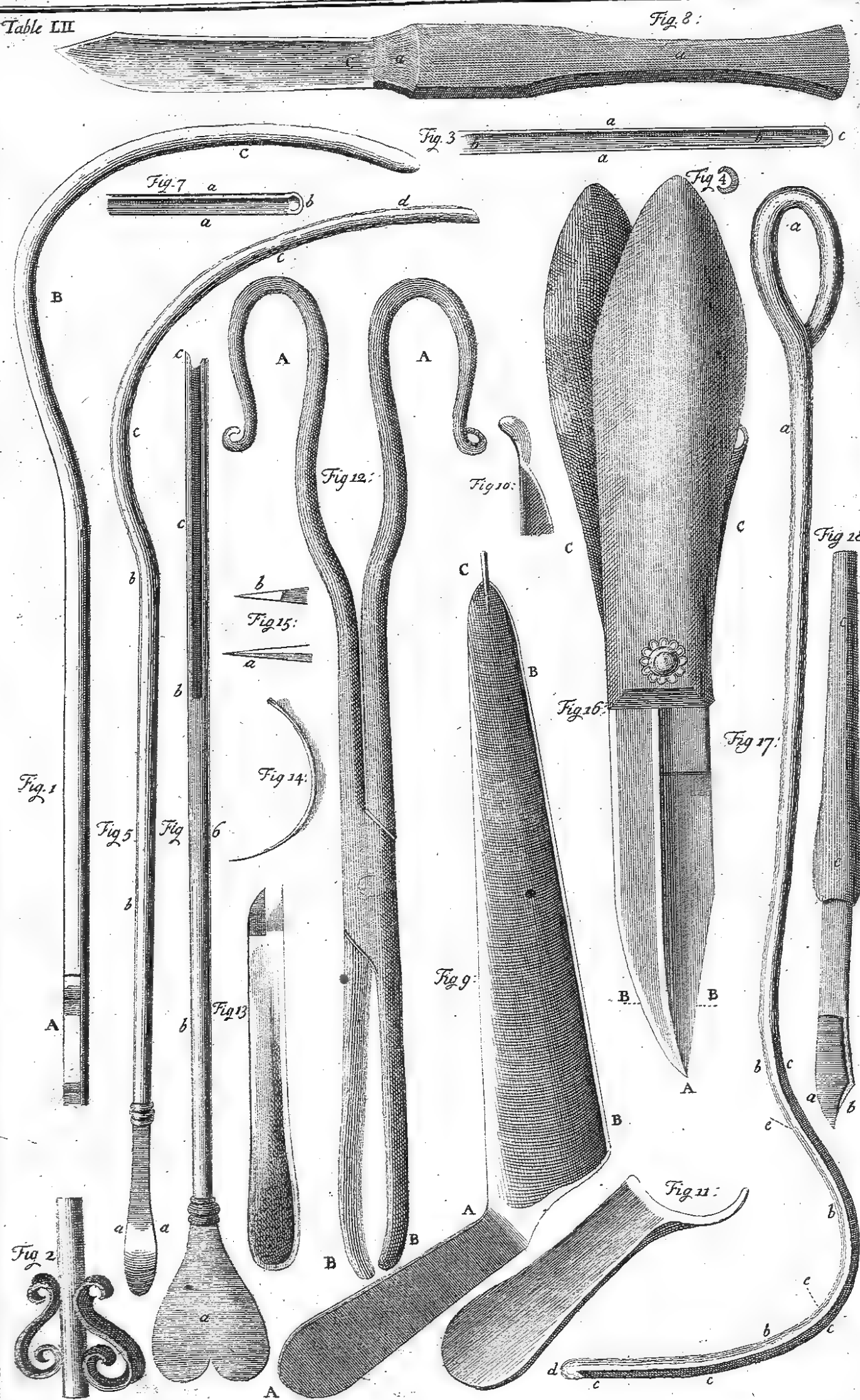


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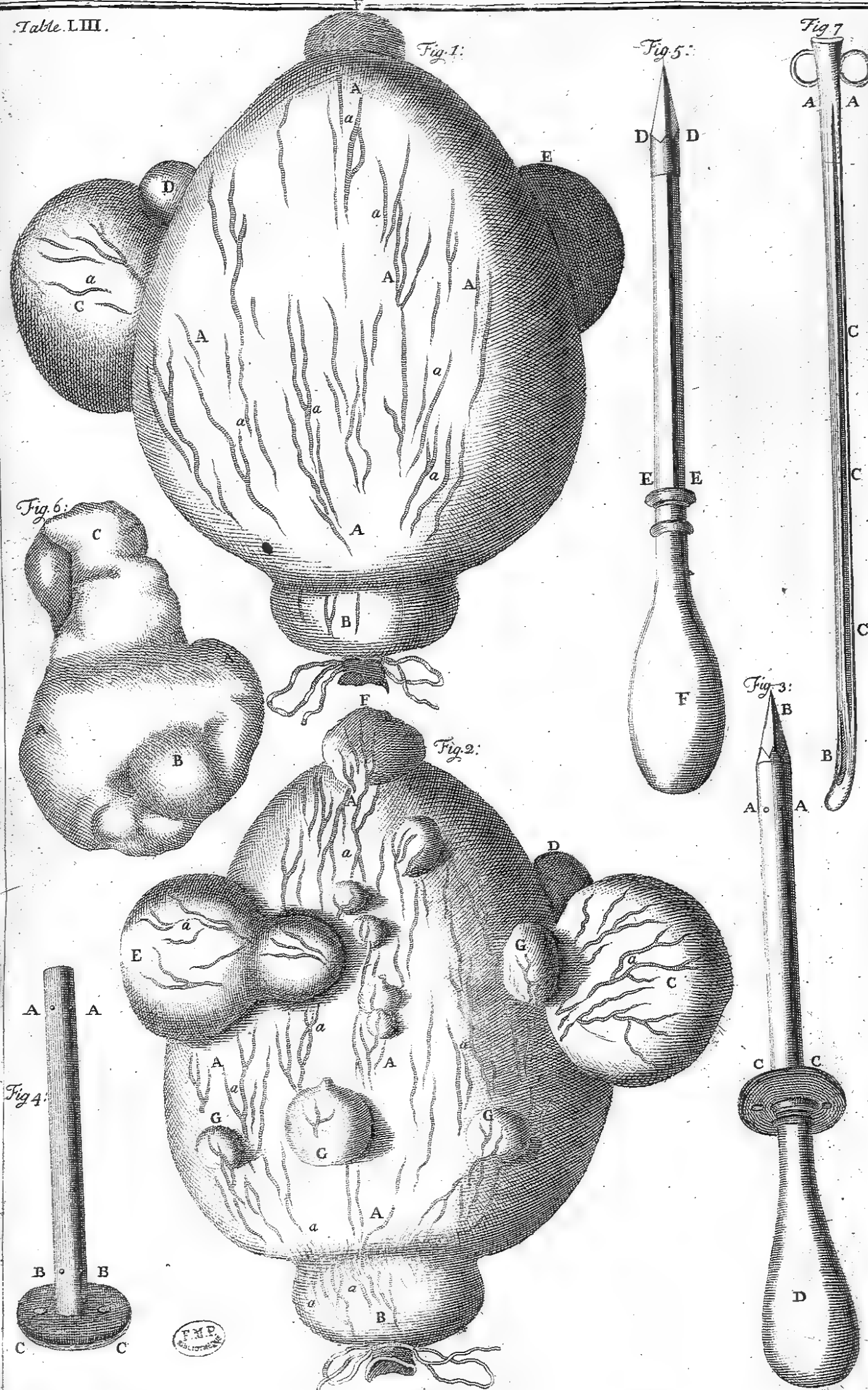


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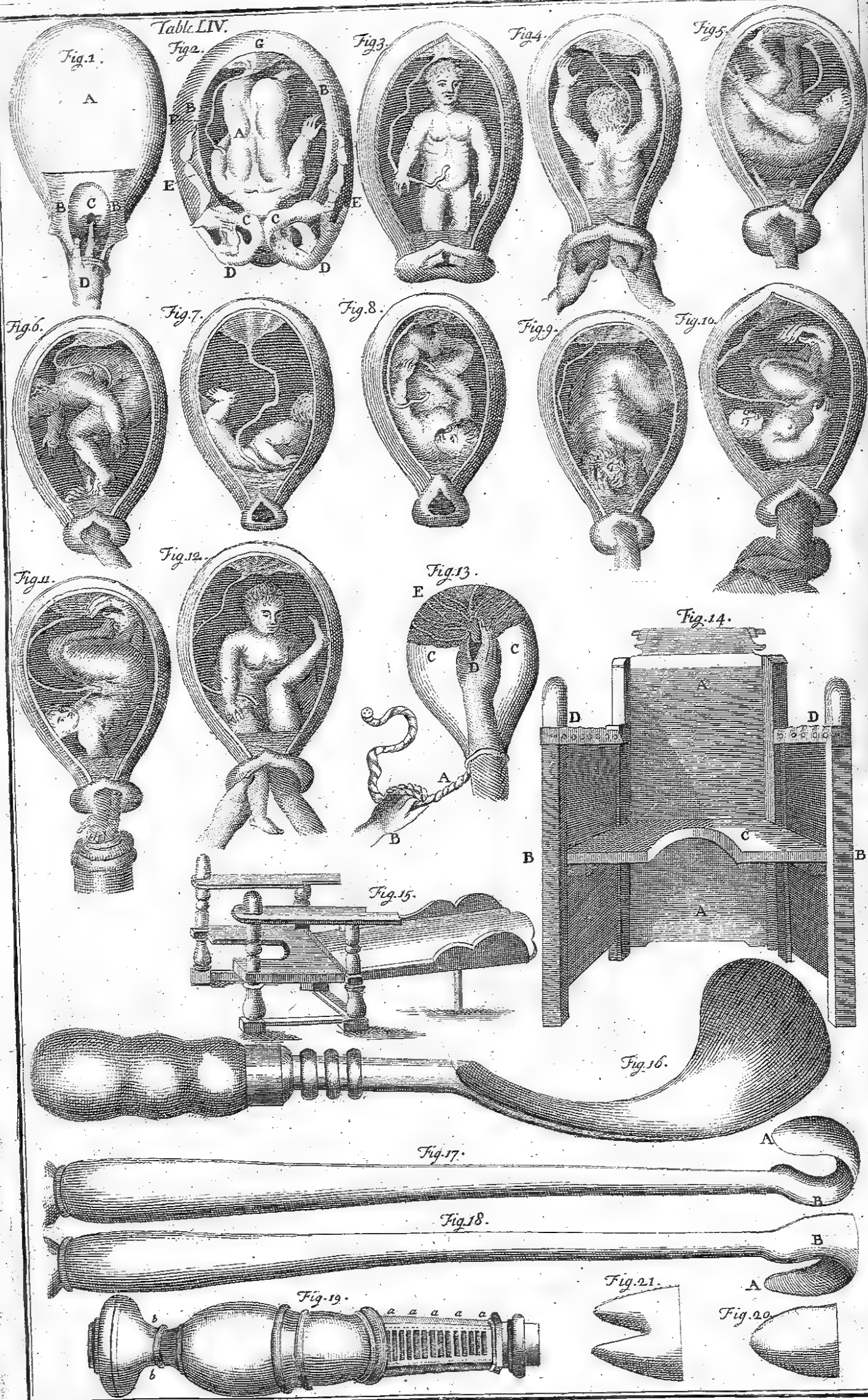


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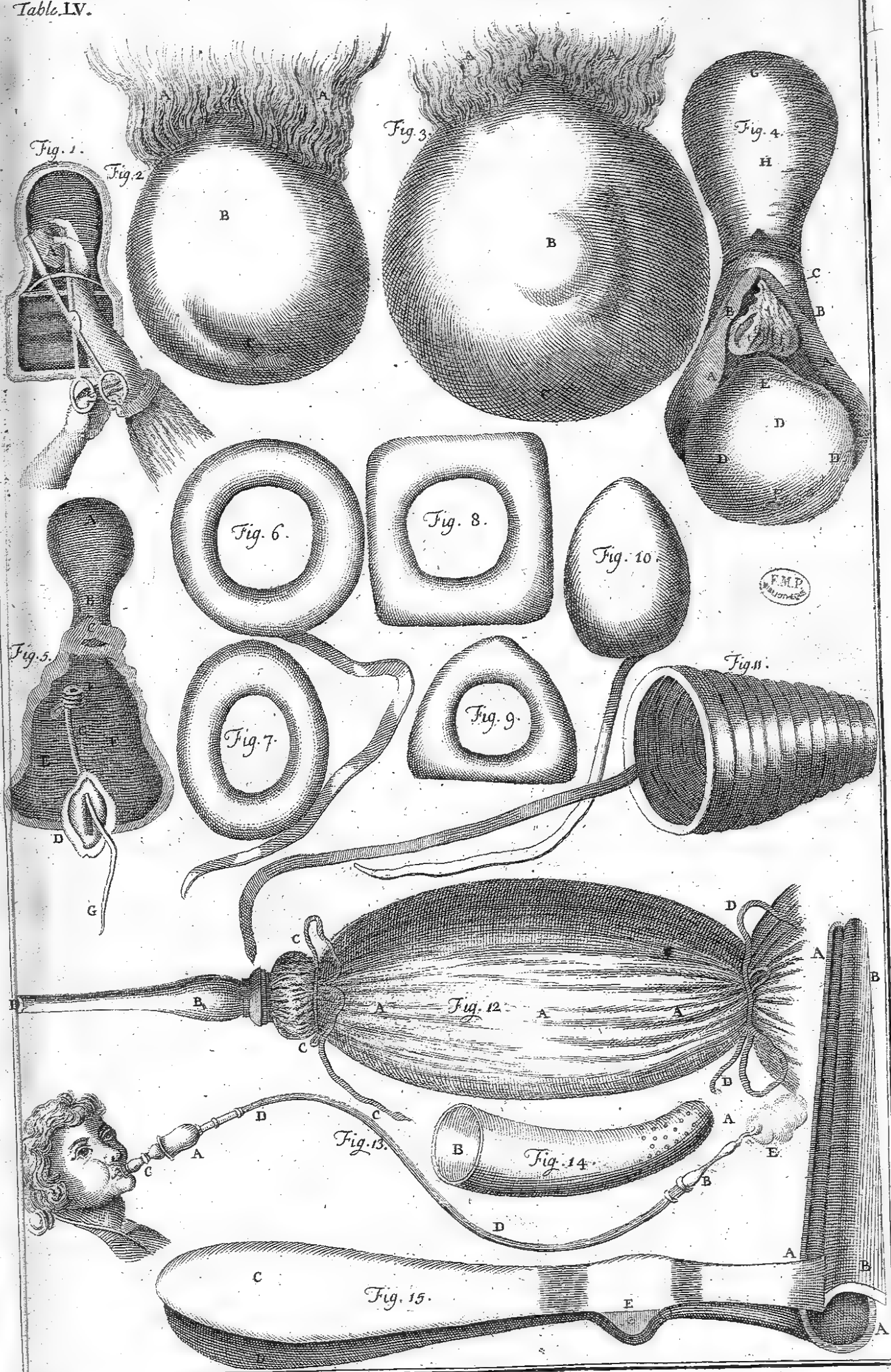


Table LVI

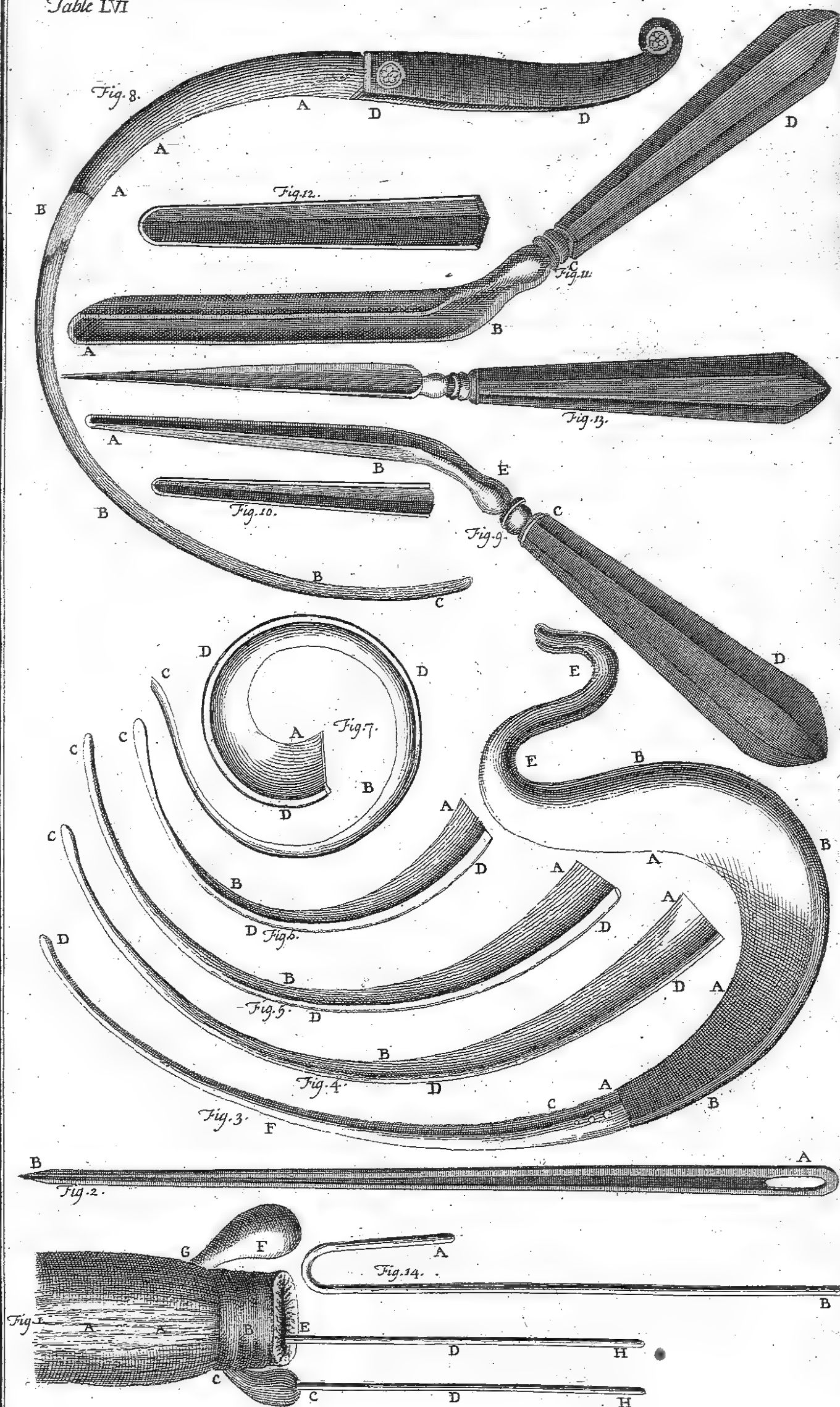
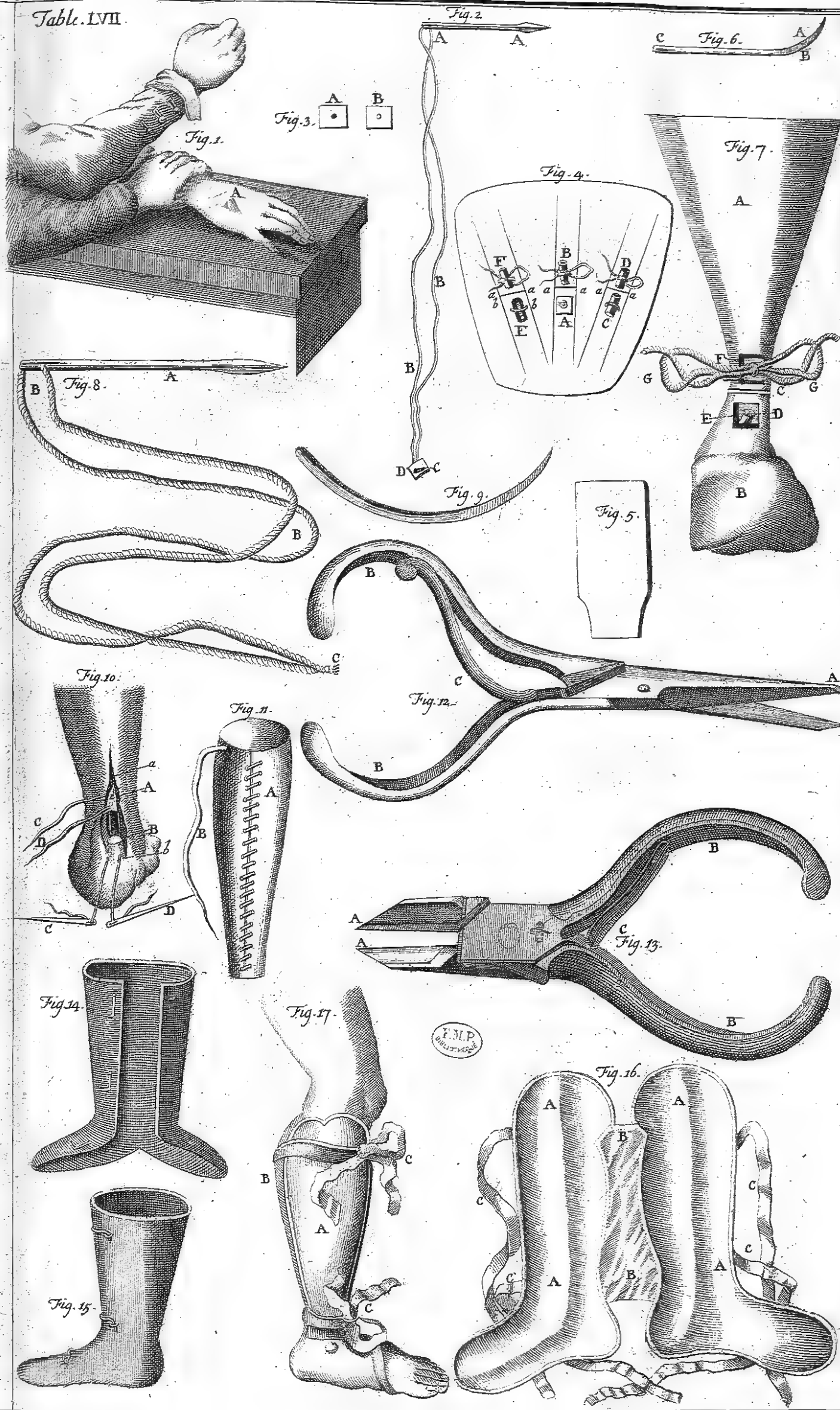
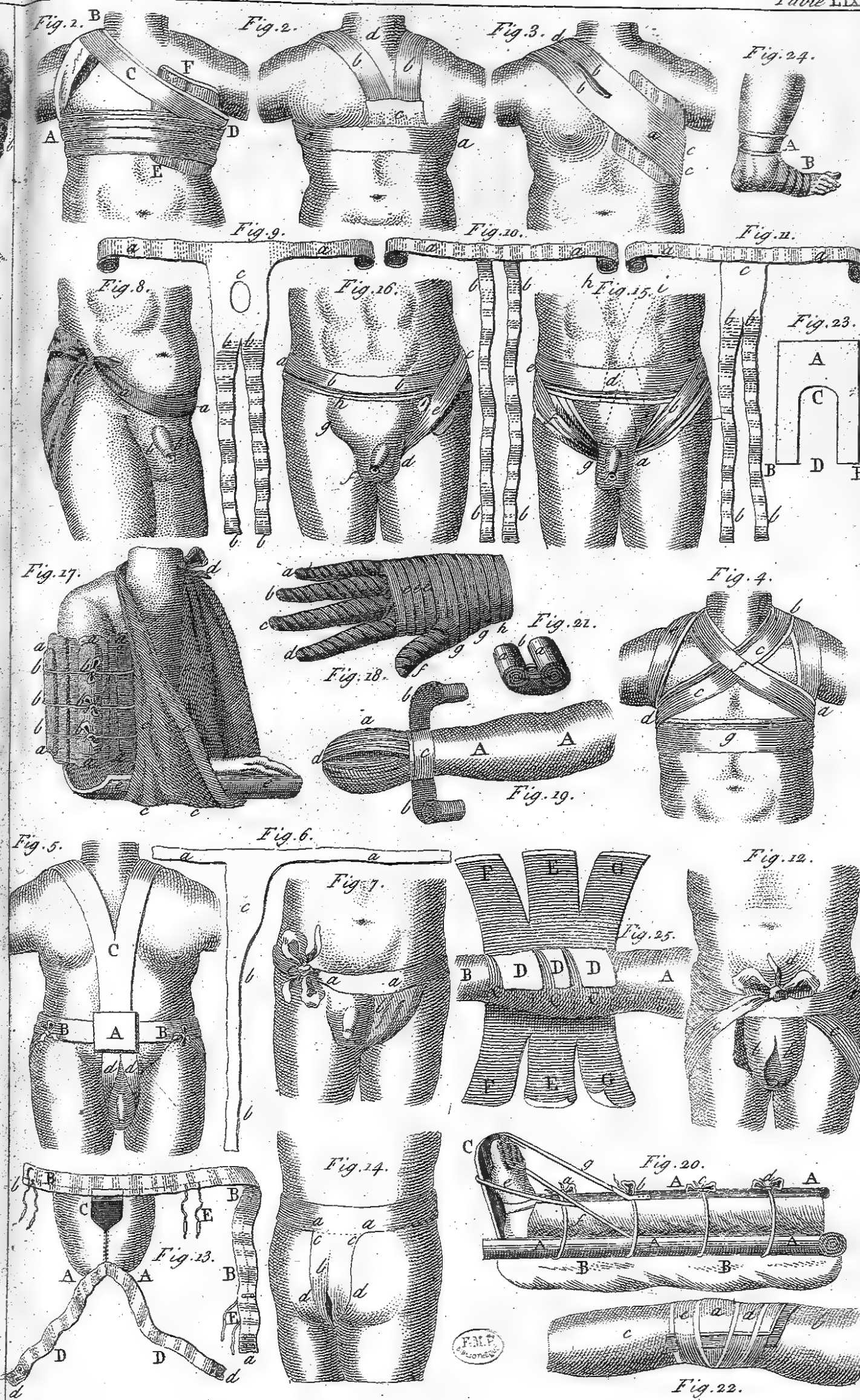
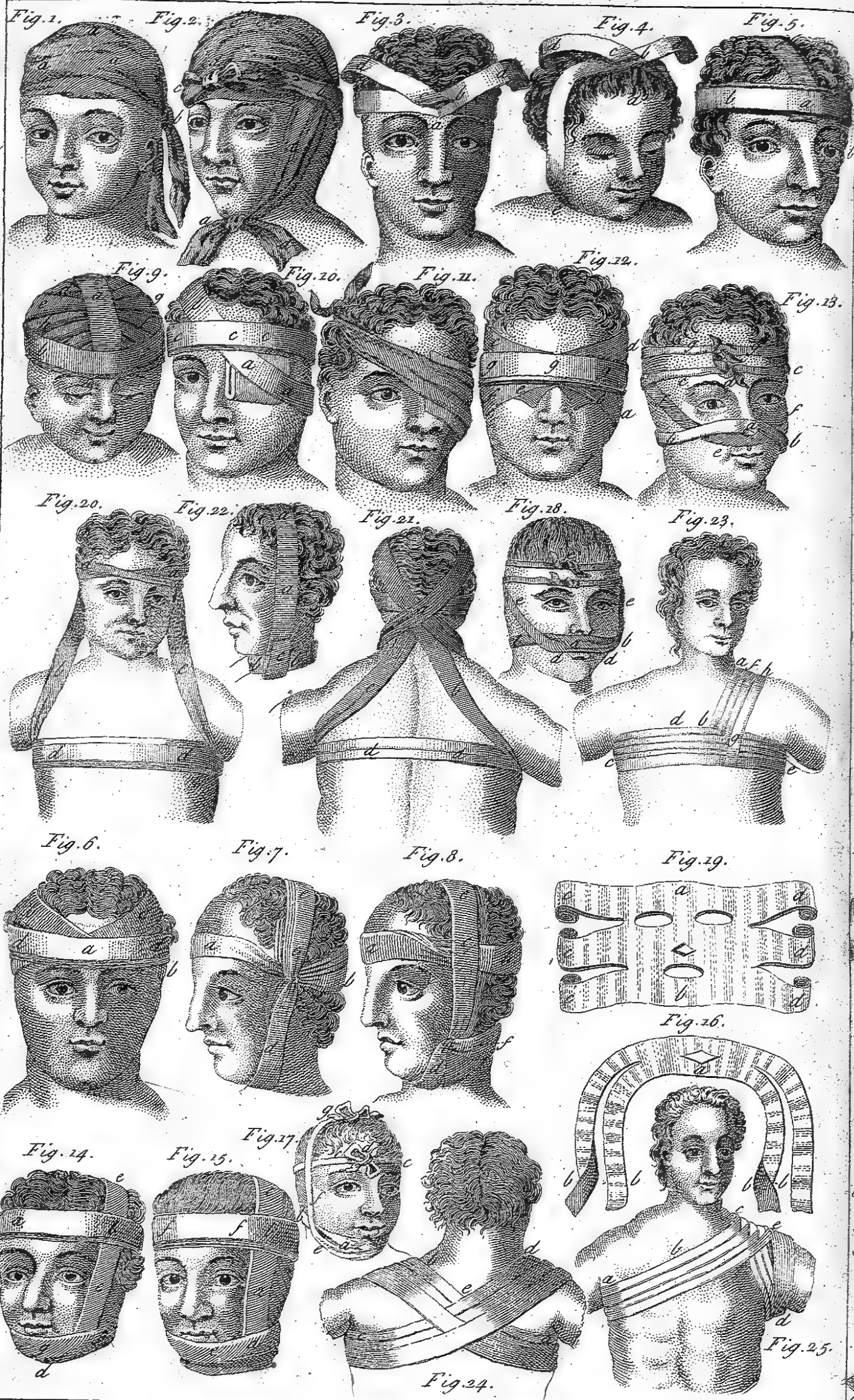
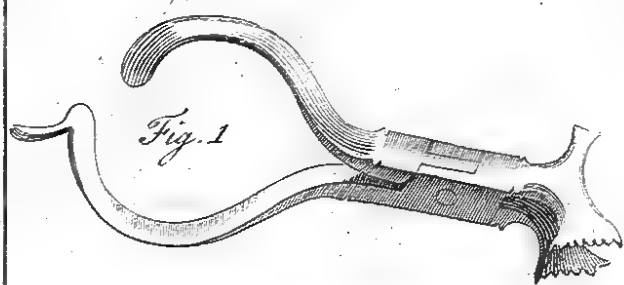


Table LVII







*The ROMANS divided their As,
Libra or any Integer, after the
following manner.*

	Unciæ	
1	As	12
$\frac{11}{12}$	Deunx	11
$\frac{5}{6}$	Dextans	10
$\frac{3}{4}$	Dodrans	9
$\frac{2}{3}$	Bes	8
$\frac{7}{12}$	Septunx	7
$\frac{1}{2}$	Semis	6
$\frac{5}{12}$	Quincunx	5
$\frac{1}{3}$	Triens	4
$\frac{1}{4}$	Quadrans	3
$\frac{1}{6}$	Sextans	2
$\frac{1}{12}$	Uncia	1

ATTICK Measures of Capacity for things Liquid.

										English Wine Measure.					
										Gall.	Pints.	Sol.	Inch.	Dec.	
200 Χίλιον										0	—	$\frac{1}{120}$	0	0.35	$6\frac{5}{12}$
2	Χίτην									0	—	$\frac{1}{60}$	0	0.0712	$\frac{5}{6}$
$2\frac{1}{2}$	$1\frac{1}{4}$	μύρον								0	—	$\frac{1}{48}$	0	0.089	$\frac{11}{48}$
5	$2\frac{1}{2}$	2	κόρυς							0	—	$\frac{1}{24}$	0	0.178	$\frac{11}{24}$
10	5	4	2	κόλαρος						0	—	$\frac{1}{12}$	0	0.356	$\frac{11}{12}$
15	$7\frac{1}{2}$	6	3	$1\frac{1}{2}$	όξυβαρον					0	—	$\frac{1}{8}$	0	0.535	$\frac{3}{8}$
60	30	24	12	6	4	κονία				0	—	$\frac{1}{2}$	2	1.41	$1\frac{1}{2}$
120	60	48	24	12	8	2	έξος			0	—	1	—	4.283	
720	360	288	144	72	48	12	6	Χούς		0	—	6	—	25.698	
8640	4320	3456	1728	864	576	144	72	12	μικροτρίς	10	—	2	—	19.626	

ATTICK *Measures of Capacity for things Dry.*

						English Corn Measure.				
						Pecks, Gall. Pints, Sol Inch.				
το μετρον						0	0	0	0,276 $\frac{2}{3}$	
10	σταυρος					0	0	0	2,763 $\frac{1}{2}$	
15	1 $\frac{1}{2}$	οξιδραχον				0	0	0	4,144 $\frac{3}{4}$	
60	6	4	μοτυλον			0	0	0	16,579	
120	12	8	2	ξενας		0	0	0	33,158	
180	18	12	3	1 $\frac{1}{2}$	χονιξ	0	0	1	15,705 $\frac{3}{4}$	
8640	864	576	144	72	48	μωδ. μω.	4	0	6	3,501

N.B. Besides this Medimnus which is the Medicus there was a Mediunnus Georgicus equal to 6 Roman Modij
N. 2 There are some other Measures (mention'd by Authors) of uncertain Value easily reducible to those of the Tables.

ROMAN Measures of Capacity for things Liquid.

										English Wine Measure.			
										Gall.	Pints.	Sallinc.	Dec.
Ligula.....										0	0 $\frac{1}{48}$	0	11 $\frac{7}{12}$
4	Cyathus.....									0	0 $\frac{1}{12}$	0	46 $\frac{9}{32}$
6	1 $\frac{1}{2}$	Acetabulum.....								0	0 $\frac{1}{8}$	0	704 $\frac{1}{2}$
12	3	2	Quartarius.....							0	0 $\frac{1}{4}$	1	409
24	6	4	2	Hemina.....						0	6 $\frac{1}{2}$	2	818
48	12	8	4	2	Sextarius.....					0	1	5	636
288	72	48	24	12	6	Congius.....				0	7	4	942
1152	288	192	96	48	24	4	Urna.....			3	4 $\frac{1}{2}$	5	33
2304	576	384	192	96	48	8	2	Amphora.....		7	1	10	66
46080	11520	7680	3840	1920	960	160	40	20	Culeus.....	143	3	11	095

Note 1. Quadrantal is the same as the Amphora, Cadus, Congiarius, & Dolium denote no certain Measure.
 Note 2. The Romans divided the Sextarius as the Libra into 12 equal parts called Cyathi and therefore they denominated their Calices, Sextantes, Quadrantes, Trientes according to the number of Cyathi which they contain'd.

ROMAN *Measures of Capacity for things Dry.*

							English Corn Measure.					
							Pecks.	Gall.	Pints.	Sol.	Inc.	Dec.
Ligula.....							0	0	0	$\frac{1}{48}$	0	01
4	Cyathus.....						0	0	0	$\frac{1}{12}$	0	04
6	$\frac{1}{2}$	Acetabulum.....					0	0	0	$\frac{1}{8}$	0	06
24	6	4	Hemina.....				0	0	0	$\frac{1}{2}$	0	24
48	12	8	2	Sextarius.....				0	0	1	0	48
384	96	64	16	8	Semimodius.....			0	1	0	3	84
768	192	128	32	16	2	Modius.....		1	0	0	7	68

The EXPLANATION of *some of y^e more usual* Characters
of *Weights and Measures found in* Greek & Roman Authors.

q Amphora.	Κομ. μετρήτης	p. A. Libra.	= Sextans.	μ. μ. α
q S. Urna.	Χ. Χ. Θ.	pp. Dupondium.	= Quadrans.	Λ. Λ. λ. ι. ρ. α
Ε Congius.	Ξ. Ξ. Ξ. ρ. ρ.	— Uncia.	= Triens.	Ζ. δ. γ. γ. ι. α
Δ Sextarius.	Χ. κοτύλη	Ε S. Semiuncia.	= Quincunx.	Δ. δ. ρ. α. χ. μ. η
Δ S. Hemina.	Ξ. δ. Ξ. β. α. ρ. ο. ν	γ g. Sicilicus.	S S. Semilibra.	γ. γ. ρ. α. μ. ι. α
Q. Quartarius.	κ. κ. α. θ. ο. ρ. ο. ς	U. Sexrula.	V. Septunx.	ο. ο. β. β. ο. ρ. ο. ς
K ^v Cyathus.	β. β. μ. ρ. ο. ρ. η	— Drachma.	S. Bes.	Κ. ε. κ. ε. ρ. α. τ. ι. ο. ν
M. Modius.	Χ. χ. λ. ι. μ. η	T. S S. Scriptulus.	S = Dodrans.	Χ. χ. α. ρ. ο. ς
MS. Semimodius.	μ. ε. μ. ε. δ. ι. μ. ο. ς	— Obolus.	S = Dextans.	
	Χ. χ. ο. μ. ρ. ι. ξ	N. Siliqua.	S = Deunx.	
		Qu Chalcus.	V. Semifextula.	
		O. Granum.	Δ. Binæ Sextulæ.	
		X * Denarius.	— Drachmæ sex.	





EXPLICATION

O F

The TABLES in Volumes II. and III.

TABLE XXXVI.

FIG. 1.

REPRESENTS an actual Cautery for making Issues in the Head. A, the Handle; B, the Part applied to the Head.

FIG. 2.

A Shews the Cannula, or Tube, for receiving the actual Cautery of the last Figure.

FIG. 3.

Is a Trepan. A represents the Crown; B, the Place where the Crown is fixed by a Screw; C, the superior Part on which the Hand is fixed in the Operation; D, the Handle or Arch by which the Trepan is turned round; E, the Spike in the Crown. Some chuse the Crown fixed otherwise than with a Screw, but *Heister* says the Difference is not material.

FIG. 4.

Is the Spike screw'd out of the Crown.

FIG. 5.

Represents the Key which serves to screw in and out the Spike.

FIG. 6.

Denotes the Lenticular Knife for smoothing the rough Edges of the Perforation of the Bone made by the Trepan.

FIG. 7.

An Instrument called a Depressor, with a circular, flat Button at its End, for pressing down the Dura Mater, in order to discharge the latent Blood. By some it is named a *Meningophylax*.

FIG. 8.

A pointed Instrument, which, after the Crown is unscrew'd, is to be fixed in the Trepan at B, in *Fig. 3.* for beginning the Perforation in order to introduce the Spike, and, also, for perforating Bones affected with the Spina Ventosa, whence it is called the perforating Trepan, or Perforator. A, the Point. B, the Screw by which it is fastened to the Trepan.

FIG. 9.

A Hair-brush for cleaning the Crown of the Trepan.

FIG. 10.

An Instrument called the exfoliating Trepan, used in abrading Bones affected by a Caries. A, the Point; B B, the Sides or Wings, which, in turning round, scrape the Bone.

FIG. 11.

A Linen Ball, with a long Thread, used in dressing Wounds of the Cranium made by the Trepan.

FIG. 12.

A Pledgit, or round Compress made of Lint, armed with a Thread.

FIG. 13.

Another round Pledgit of Lint, but without a Thread, for filling the Perforation of the Cranium.

FIG. 14.

The Leaden Plate of *Belloste*, which is sometimes proper to be applied over the Dressings.

FIG. 15.

Shews how the Plate should be bent before it is applied.

FIG. 16.

A represents an encysted Tumor, or *Atheroma*, on the superior Eye-lid; B, another on the inferior Eye-lid.

FIG. 17.

A large, depressed Wart, on the superior Eye-lid, with a slender Root, which obstructed the Opening of the Eye, and was extirpated by *Heister* with a Ligature made of a filken Thread.

FIG. 18.

An external Tubercle on the Eye-lid, sprouting from a small Root, commonly called an Excrescence, and, also, a *Sarcoma*.

FIG. 19.

Shews a *Phalangosis*, or *Ptofsis*, of the superior Eye-lid. A represents the Disorder itself in the left Eye; B B the Instrument contrived by *Bartisch* for removing the Disorder C, adapted to the right Eye; D D, the Screw by which the Arms or Plates of the Instrument are screwed hard together.

FIG. 20.

A similar Instrument, improved by *Verduyn*, and represented by *Ruyssch. Epist. Anatom. 13.* A A and B B represents the two Plates, or Arms, without Perforations; C C the Screw for confixing and removing the Tubercles. D, the Hinge.

FIG. 21.

An Instrument of the same Kind, but larger, contrived also by *Verduyn*, with Perforations a. a. a. a. for making a Suture in this Disorder of the Eye.

FIG. 22.

An Instrument for the same Purpose, improved by *Rau*, in his *Epistle de Septo Scroti*, which is incurvated, and shuts differently. A, shews how the Needle is introduced through the Perforations; B, the Thread drawn through for uniting the Wound of the Eye-lid.

FIG. 23.

Represents an Eye with the Eye-lids, A A conglutinated or concreted; a Disorder called by the *Greeks* *Ancyloblepharon*.

FIG. 24.

Is a slender grooved Probe, useful in the Cure of the *Ancyloblepharon*.

FIG. 25.

A small crooked Bistory, with spherical Point, used in various Disorders of the Eye.

† D

FIG.

An EXPLICATION of the TABLES in Vol. II. and III.

FIG. 26.

A. A. Shews the Form of an Incision in the lower Eye-lid, when they are two short, or retracted.

FIG. 27.

A represents a Tubercle in the greater Canthus of the Eye, called in Greek *Encanthis*.

FIG. 28 and 29.

Represents *Sarcomata*, *Hypersarcosis*, or fleshy Excrescences, sprouting between the Eye and its Lids; A is one growing under the inferior Eye-lid; B another under the superior Eye-lid.

FIG. 30.

A small Hook used in removing these Tubercles, and other Disorders about the Eyes; whose curved Point A may be sometimes single, and sometimes double, by the Help of the moveable Ring B. as in Fig. 31. C. C. D. D. are the Handles.

TABLE XXXVII.

FIG. 1.

Is an obtuse Hook, bent in a particular Manner, useful for separating the Eye-lids in some Operations on the Eye and Eyelids, call'd by the French *Hameçon Plat*. A. is the obtuse Part of the Hook; B the Handle.

FIG. 2.

Represents a Needle A. fixed in a Handle B. for elevating and dividing the Blood-Vessels of the *Tunica Adnata*, and for the same Purposes in a *Pterygium*.

FIG. 3.

A Beard of Rye for making the *Ophthalmorystum*, or Eye-brush. A. denotes the Hooks with which the Veins of the Eye are lacerated in Scarification.

FIG. 4.

Is the Eye-brush, composed of ten, twelve, or fifteen of these Beards, tied together and cut; A. the Handle; B. the Part with the Hooks, with which the Scarification of the Eye-lids, and sometimes of the Eye, are performed.

FIG. 5.

Is the Eye-rasp of *Celsus* and *Ægineta*, made like a Spoon; A. the Handle; B. the rough convex Part, with which the Antients used to scarify the Eye.

FIG. 6.

Represents the left Eye, the *Puncta Lachrymalia* of which are seen at *a. a.* and the lachrymal Caruncle between these is shewn at *b.*

FIG. 7 and 8.

Represent the lachrymal Ducts, as they proceed from the Eyes to the Nose; *a. a.* the lachrymal Sac; *b. b.* the *Puncta Lachrymalia*; *c. c.* the Ducts leading from the *Puncta* to the Sac; *d. d.* the nasal Duct; and *e. e.* the Opening of this Duct into the Nostrils.

FIG. 9.

Shews how the lachrymal Duct is conjoined with the Left Eye; *a. a.* are the *Puncta Lachrymalia*, *b.* the Caruncle; *c. c.* the Ducts between the *Puncta Lachrymalia* and the lachrymal Sac; *d.* the lachrymal Sac; *e.* the nasal Duct; *f.* the Opening of the Nasal Duct into the Nostrils.

FIG. 10.

A. B. represent the Tumor, or *Hernia*, of a relaxed lachrymal Sac, called a lachrymal *Hernia*, and, also, an *Anchylops*.

FIG. 11.

A very small, slender Silver Probe, a little bent, armed with a small Olive-shaped Head at *a.* used for clearing Obstructions in the nasal Duct when the Eye is watery or fistulous, as proposed by *Anel*.

FIG. 12.

Anel's Probe, which that it may more easily penetrate the obstructed Nasal Ducts, is made stronger, by being made thicker towards the other Extremity *b.*

FIG. 13.

Another Probe for the same Purposes, but more convenient, as it is shorter.

FIG. 14.

A Silver Syringe after *Anel's* Manner, for injecting proper Liquids by the *Puncta Lachrymalia*; A is the small Tube,

the Extremity of which only can be introduced into the *Punctum Lachrymale*; B, the Piston; C, the upper Part to be held in the Right, and D the Part to be held in the Left Hand.

FIG. 15.

A, Another small Tube of a different Shape, but for the same Purpose, which may be joined to the same, or a like Syringe, by the Screw B.

FIG. 16 and 17.

Shew different Ways in which the lachrymal Sac may be relaxed or distended.

FIG. 18.

Represents how Abscesses and Tubercles may sometimes be formed, which may corrode them near the lachrymal Ducts; *a.* one upon the superior Duct; *b.* another on the inferior Duct.

FIG. 19.

a is a *Fistula Lachrymalis* perfectly formed, with a large Orifice; *b* is another with a smaller Orifice. The prick'd Line *c. d.* shews where the Lachrymal Fistula may be cut.

FIG. 20.

Is a Steel Instrument for compressing the lachrymal Sac, taken from *Platnerus*; A is the Button to be placed upon the Sac; B, the Hinge; C, the Screw which presses the Button on the Sac; D, its upper Part, which rises over the Forehead; E, the Hook with which the Strap, F, with many Holes, is tied, for fixing and securing the whole Instrument on the Head.

FIG. 21.

Is an Iron Instrument for burning the *Os Lachrymale*, when affected with a Caries; A, the Part with which the Bone is burnt; B, the Handle.

FIG. 22.

An Iron Cannula adapted to the preceding Cautery, of which the Part A is to be fixed upon the Bone affected with a Caries before the Cautery be applied; B is the Handle.

FIG. 23.

Is an Instrument made of Silver or Brass, which at *a* is concave like a Spoon, to cover and secure the Eye, while the Cautery is passed through the Aperture *b*, to the carious Bone; *c* is the Handle. This Instrument may, also, be used for covering the Eye, when an Incision is to be made in the *Fistula Lachrymalis*.

FIG. 24.

Is an Instrument for perforating the Integuments, lachrymal Sac and Bone, or even the *Os Unguis*, after the Sac is opened; A, the Point; B, the Handle.

FIG. 25.

A. B. are small Tubes, which, according to *Woodhouse's* Method, are to be inserted into the Perforation of the *Os Unguis*, and the Wound is to be healed up over it.

FIG. 26.

A Tube of the same Kind, but a little larger, which may be used for the same Purpose, and may be most properly made of Lead or Gold.

FIG. 27 and 28.

Are Silver Tubes, used by *Platnerus*, furnish'd with Margins, to keep open the new made Passage to the Nostrils, till it becomes callous.

FIG. 29.

The Forceps of *Lemoriere*; A, its sharp, crooked Point, with which the *Os Unguis* is perforated; B. B., its Handles for opening and shutting its Points.

FIG. 30.

The upper Part of the same Forceps opened, as it is used when the Perforation of the *Os Lachrymale* is required to be larger.

FIG. 31.

Is the Shape of the Wax-Candle which *Lemoriere* used for keeping open the Perforation of the Nose, instead of a Tent; A, its Head; B, the End which is introduced into the Nostrils.

TABLE XXXVIII.

FIG. 1.

Shews the proper Posture of the Patient, Surgeon, and Assistant, in couching for a Cataract. See CATARACTA.

FIG. 2.

Is a Silver Couching-Needle, used by the Antients, with a slender, round Point like common Needles.

FIG.

An EXPLICATION of the TABLES in Vol. II. and III.

FIG. 3.

Another Needle for the same Purpose, with a triangular Point.

FIG. 4.

Another Couching-Needle, with one steel Point A small, the other B broader; C is the Handle, which may be made of Silver, Brass, Ivory, or Wood.

FIG. 5.

Another Couching-Needle, with a broader Point, but sharp, properer for the Purpose than those with smaller Points.

FIG. 6.

A Needle similar to the last, but groov'd towards the Point, which is recommended by *Brisseau*, and described under the Article CATARACTA.

FIG. 7 and 8.

Are two Needles from *Solingen* and *Nuck*, said to be invented by *Smalfus*, which are used together in the same Operation. That represented by *Fig. 7.* is grooved and sharp, like that of *Brisseau*. But that at *Fig. 8.* is blunt, and so fitted, that it may be introduced into the Eye thro' the Groove of the other, in order to depress the Cataract, while the other is drawn back.

FIG. 9 and 10.

Are two Needles for the same Intention with the two last. They are taken from *Albinus*.

FIG. 11.

Is a Needle contrived, also, by *Albinus*, for extracting membranous Cataracts, which is so contrived, that the Point A, by depressing the Handle B, opens like a Pair of Pliers in the Eye; though I question if it was ever used successfully.

FIG. 12 and 13.

Represent the Parts of this Needle separate. *Fig. 12.* is the grooved Point which receives the other Point, *Fig. 13.* made so slender that it may be received into the former, and together with that commodiously introduced into the Eye. Near B, *Fig. 12.* is a small Perforation, fitted to receive the prominent Part D of *Fig. 13.* which are fastened together with a small Pin at C, *Fig. 11.* like a Joint. *Fig. 13.* E is a Spring which firmly retains the two Points, *Fig. 11.* in contact, and prevents them from receding, till by depressing the Handle B, they open like a Forceps, for taking hold of and extracting the Membrane.

FIG. 14.

Shews how the Eye should be held in one Hand, whilst the Needle is introduced by the other at A; and, also, how the Needle appears behind the Pupil in depressing the Cataract.

FIG. 15.

Is called a *Speculum Oculi*, or an Instrument contrived to keep the Eye steady in Couching and other Operations.

FIG. 16.

Is another Instrument of the same Kind, but more commodious, as the two Arches AA, and BB, may be widen'd or contracted by the Button C. D is the Handle.

FIG. 17.

Is a Needle, directed by some, for depressing a Cataract in the Right Eye with the Right Hand, A, the Point of the Needle; B, the Handle; C, an Incurvation for resting on the Nose.

FIG. 18.

A Sheath for the Point of this Needle.

FIG. 19.

Is taken from the Appendix to the fourth Edition of *Chefelden's Anatomy*, to shew how the Needle should be directed in opening and dividing the closed or contracted Uvea.

FIG. 20.

A denotes the Manner of dividing the Uvea, in its Middle, by the same Instrument, to transmit the Rays of Light to the Eye.

FIG. 21.

Shews how Mr. *Chefelden* cut a concreted Uvea in the lower Part A, because of an *Albugo* in the middle Part of the Cornea of this Eye.

TABLE XXXIX.

FIG. 1.

Represents an *Unguis* on the Eye, a; and, also, the Method of passing a Needle and Thread under it, bb, for its Removal.

FIG. 2.

Represents another Sort of *Unguis*, or *Pterygium*, aa, with a Thread drawn through bb, the Extremities of which are tied in a Knot, making a Kind of Loop, having been first tied with a double Knot aa, that the *Unguis* may not slip out in the Separation.

FIG. 3.

Is a Hook used in curing *Ungues*, and other Tubercles of the Eyes.

FIG. 4.

Is a front View of a *Staphyloma*, or Protuberance on the *Tunica Cornea*, which was cured by *Heister*.

FIG. 5.

A lateral View of the same *Staphyloma*.

FIG. 6.

A front View of another *Staphyloma*, larger and more depending, cured also by *Heister*.

FIG. 7.

A lateral View of the same *Staphyloma*.

FIG. 8.

Is a smaller *Staphyloma*, aa, having a Needle with a double Thread passed under it, from *Solingen*.

FIG. 9.

A concave Rasp for abrading carious Bones in a *Fistula Lacrymalis*, from *Platerius*.

FIG. 10.

An Instrument invented by *Mecklen* for penetrating the Cornea in an *Hypopyon*. AA, the Handle; B, the Knife, or rather the Point of a Knife, armed with a Button at its Base, that it may not penetrate too deep into the Eye; C, a Screw to fix in the Case, *Fig. 11.*

FIG. 12.

A large Needle for making Setons, which may also serve to perforate the *Tunica Cornea* in a *Hypopyon*, if a Piece of Plaster be put round the Part A, which answer the same Intention with the Button mentioned in the last Fig.

FIG. 13.

Represents an Instrument designed to perforate the Cornea in an *Hypopyon*. A, its Handle; B, its triangular Point a little bent like the Needle. Its Point must, also, be armed with a Piece of Plaster.

FIG. 14.

AB represents a scirrhus Eye, swelled to the Size of a Hen's Egg; C, a Tubercle growing out of the large Tumor, like a black Berry; D, the vitiated Cornea and Tumor; E, the lower Eye-lid greatly depressed by the Tumor.

FIG. 15.

A prodigious Fungus of the Left Eye, which weighed half a Pound, and, as well as the last, was cured by *Heister*.

FIG. 16.

A Bandage contrived by *Solingen*, for curing squint Eyes in Children. AA, are two concave Plates of Silver, Ivory, or Ebony; BB, are small Perforations in the Middle of the Plates; CC, the Bandage itself for keeping the Plates fixed upon the Eyes; thus the Children may acquire a Habit of turning their Eyes forwards to the Perforations, and by Degrees acquire a better Way of looking.

TABLE XL.

FIG. 1.

An Instrument inserted in a Tube, used in burning the external Part of the Ear called Antitragus, in order to remove the Tooth-ach; A, the Tube; B, its Handle; C, the Cautey appearing without the Tube; D, the Handle of the Cautey.

FIG. 2.

An acoustic Instrument, shaped like a Horn or Trumpet; of which the narrow Part A, is put into the Ear, and the broad Part BB, is held in the Hand, and opposed to the Sound, which greatly augments the Faculty of Hearing.

FIG.

An EXPLICATION of the TABLES in Vol. II. and III.

FIG. 3.

Is another acoustic Instrument, with its Tube wreathed several Times; it is held by the Handle B, and its narrow Part A, is applied to the Ear, and the broad Part C, receives the Sound.

FIG. 4.

Another Instrument for the same Purpose contrived by Deckers; it is made of Silver, and the turbinated Part A, is applied to the Ear, and then it is tied fast with the Strings B B, so as to be concealed by the Wig or Hair, and without the Trouble of holding it in the Hand.

FIG. 5.

An Instrument for holding the Lobes of the Ears while they are boring.

FIG. 6.

A Needle of Silver or Steel; A, its Point; B, its other End, with a Tube for receiving a leaden Wire. This Needle not only serves to bore the Lobe, but also to introduce the leaden Wire into the Perforation.

FIG. 7.

The leaden Wire to be left in the Perforation till it heal.

FIG. 8.

Another Needle for the same Purpose, but slit at one End like a larding Needle, for receiving the leaden Wire.

FIG. 9.

A Pair of blunt Forceps, from Palfyn, for extracting the Polypus of the Nose.

FIG. 10.

Another Pair, perforated towards the Extremities, for taking firmer Hold of the Polypus.

FIG. 11.

Another Pair of Forceps, with the Extremities crooked, for extracting Polypuses of the Nostrils which depend towards the Fauces.

FIG. 12.

An Instrument for applying a Ligature to a Polypus, which is not too deeply rooted. A, the Handle; B, the obtuse Point, with an Eye like a Needle, through which passing a waxed Thread, it may, by means of the Instrument, be brought round the Root of the Polypus. The Curvature C, is useful for the easier surrounding and laying hold of the Root of the Polypus.

FIG. 13.

Represents a Polypus extracted by Heister with the last mentioned Instrument. A, the Root which grew to the internal and middle Part of the Nose; B, the Part appearing without the Nose.

FIG. 14.

Shews Part of a Face, in which not only the Nostrils were concreted, but the upper Lip bent backwards, and firmly joined to the Nose.

FIG. 15. and 16.

Are two Pipes of Lead or Brass, with Wings designed to keep open the Nostrils, after they have been opened by Incision. Fig. 15. for the Right Nostril, and Fig. 16 for the Left.

T A B L E XLI.

FIG. 1.

Represents the Head of an Infant about two Years old, afflicted with a Hare-lip A; and the whole of whose Palate was fissur'd, and in the Left Side two *Dentes Incisores* appearing.

FIG. 2.

Exhibits a Needle, or rather a small Instrument furnished with a Head, as also a triangular Point, and contriv'd for joining Hare-lips.

FIG. 3.

Represents a like Instrument with a flat Point, and made of Brass or Silver.

FIG. 4.

Exhibits another Needle or Instrument, with a flat Point, but without a Head.

FIG. 5.

Represents two Needles of this Kind passed through a Hare-lip, and a Thread twisted orbicularly about them.

FIG. 6. and 7.

Represent two *Tenacula*, by some used to prevent the too large Effusion of Blood in the Operation for the Hare-lip. The Edges of the Lip are to be laid hold of by the Part A B, and secured by moving the Ringlets C C to B. B.

FIG. 8.

Is a Needle in Form of a larding Pin, invented by Mr. Petit, a French Surgeon, for the commodious Perforation of Hare-lips, and the Insertion of the Pins for their Retention. A denotes the Fissure into which, after the Needle is half passed through, a certain Fibula is introduced, and by that Means conveyed into the Lip.

FIG. 9.

Represents a flexible Silver Fibula, with a Head at each End, and recommended by Mr. Petit.

FIG. 10.

Exhibiting another Fibula, with a Head at one End only, and which Mr. Heister prefers to the foregoing in several Respects.

FIG. 11.

Represents the Face of a Man afflicted with a Cancer of the inferior Lip. The Letters *a a a* exhibit the corroded Lip, or the open and exulcerated Cancer, the Teeth and Gums, in the mean time appearing; and the Letters *b b b* represent the cancerous Tumor situated in the internal Part of the Left Corner of the Mouth.

The remaining Figures of this Table, which relate to the Instruments used in Operations on the Teeth, are explained at the Conclusion of the Article *DENTS*.

T A B L E XLII.

FIG. 1.

Represents the Method of dividing the Frenum of the Tongue in Children with the Knife.

FIG. 2.

Shews how the same Operation is to be performed with a Kind of Fork and a Pair of Scissars.

FIG. 3.

Is the Fork used in this Operation for sustaining the Tongue, according to its proper Size.

FIG. 4. and 5.

Are thin Plates of Gold or Silver for supplying such Parts of the Palate as may be consumed, having a Piece of soft Sponge fixed at *a a*.

FIG. 6.

Represents the Brass Instrument of *Hildanus*, for taking off the Uvula by a Ligature. A A is the Thread or Ligature properly disposed and fastened in the Instrument; B, the Part which takes Hold of the Uvula; C, that Part of the String to be drawn with the Hand. But the true Size of the Instrument is three Fingers Breadth larger than it is in the Figure.

FIG. 7.

Is a Brass or Steel Wire, furnished with an Aperture A, to convey the Strings through the preceding Instrument, to the Size of which it should be proportioned. B, its Handle.

FIG. 8.

Represents an Instrument to make an Abcision of the Uvula, A, the Part which is to receive the Uvula; B B, the Part by which the Knife C is thrust forward to cut off the Uvula; D D D is the Handle of the whole Instrument, to be held in the left Hand.

FIG. 9.

Is an Instrument that may be call'd *Paristhmotomus*, serving to scarify the Tonsils, when inflamed, or open them when suppurated. A, the concealed Scarificator; B, the Button by which it is to be gently thrust out in the Operation; C, the Handle by which the Instrument is to be held firm. The true Size of the Instrument exceeds the Figure about two or three Fingers Breadth.

FIG. 10.

Is an Instrument contrived for extracting from the Fauces the small Bones of Fish, Thorns, &c. A A is a Sponge; B B a Rod of Whalebone to which the Sponge is to be fasten'd.

FIG. 11.

A Brush for the Stomach, *Ventriculi Excitua*; A A, the Brush, made of fine Hairs; B B, the Handle of Brass Wire, covered with Silk, by which it is to be introduced into the Stomach.

FIG. 12.

Exhibits the wry Neck; A A, the two Mastoide Muscles, which are to be divided in their lower Parts, when preternaturally contracted.

Fig.

An EXPLICATION of the TABLES in Vol. II. and III.

FIG. 13.

Represents an Instrument for straitening the Wry-Neck; A, the Collar, lined with Fur, which should be exactly fitted to go round the Neck; B B, an Iron Arch which is connected to the Collar, and furnished with the Ring C, by which the Patient is to be suspended.

FIG. 14.

A A, Exhibit the Part and Manner in which the Integuments are to be divided in *Tracheotomy*.

FIG. 15.

Is a Kind of *Trocar* with a sharp and triangular Apex for piercing the *Aspera Arteria* in that Operation.

FIG. 16.

Is another Kind of these Instruments proposed by *Dekker*; A A, is the Point; B B, the Pipe which contains the Point, and is left in the perforated *Trachea*.

FIG. 17.

Is that Part of the Neck in which the transverse Seton should be made.

FIG. 18.

Is a Glass Instrument, whose Bowl A, being applied to the Nipple, and the Part B B, in the Patient's Mouth, the Nipple, if too small, and the Milk may be both drawn out by Suction.

FIG. 19.

Is a small Cucurbit. of Ivory or Alabaster, for drawing out small Nipples, and covering them when ulcerated.

FIG. 20.

Is a small Glass Cucurbit to draw out the Nipple, but especially the Milk.

TABLE XLIII.

FIG. 1.

A B, exhibit a latent or occult Cancer, occupying but Part of the Breast, and reaching from the Nipple almost towards the Shoulder.

FIG. 2.

A B, represent the simple and rectilinear Cicatrix left after the Cure of that Cancer.

FIG. 3.

A. B. Shew a large occult Cancer occupying the whole Breast; which weighed twelve Pounds, when it was extirpated by *Heister* with the Knife.

FIG. 4.

Shews the Method formerly practised in extirpating a cancerous Breast, *a a*, with large Needles *bb*, and Threads *c c*, perforating the lower Part.

FIG. 5.

Exhibits the Manner of joining these Threads after they are drawn through, in the Hand A, to elevate the affected Breast, and afterwards amputate it with the large Knife B.

FIG. 6.

Is a Fork proposed by *Solingen* and *Bidloo* for piercing large cancerous Breasts, and afterwards amputating them.

FIG. 7.

Is a large Knife for amputating cancerous Breasts.

FIG. 8.

Is an Instrument of *Bidloo*, resembling a Sword, for elevating small cancerous Breasts, when they are intended to be cut off.

FIG. 9.

A, Is a large, broad, crooked Needle, for making a longitudinal Seton, which may also be furnished with a wooden Handle at the Part B, to force it more easily through the Skin of the Neck.

FIG. 10.

Shews the Point of this Needle, in its true Size, viewed on the internal or concave Side.

TABLE XLIV.

FIG. 1.

Is the Forceps or Tenaculum of *Helvetius*, serving to squeeze and hold up the cancerous Breast by its two Arches A A, while the Surgeon takes it off by cutting below them.

FIG. 2.

Shews another Instrument for this Purpose, also invented by *Helvetius*; A, B, its two Sides or Wings; C C, the Rings for the Fingers by which it is held or shut; D, the Hinge on which it moves.

FIG. 3.

Represents a new Instrument for amputating cancerous Breasts. A A, is a double semicircular Bristle Plate, so joined at the lower Part, C, as to leave an Interstice, D D D, to receive and direct the crooked Knife, E F. The undermost Part of the double Plate appears by the Letters *a a a*. B B, is a semicircular fingle Plate, so joined with the other by the Button or Screw at G, that they together form a complete Circle, and exactly compress the Breast. C C, the Handles of the semicircular Plates. F, the Handle of the Knife; which, when the Legs of the Plates are shut may pass through the Fissure D, as is shewn in the following Figure.

FIG. 4.

A, represents the cancerous left Breast of a Woman; B, the Arm extended; C C, the semicircular Plates, which compress and raise the Breasts from the Under-parts; D, the left Hand of the Surgeon holding the two semicircular Plates; E, his right Hand, with the Handle of the Knife, guiding it upwards, in the Direction F, G, H, to divide the Breast.

FIG. 5.

Is a particular Needle for making a transverse Seton; A, the Eye of the Instrument through which the Cord or Thread is to be drawn; and when it has passed through the Integuments to B, the Cord is to be drawn out of the Eye, and left in the Wound whilst the Instrument is drawn back again; C, the Part of the Instrument which is to be fastened in a Wooden Handle.

For the Explanation of TAB. 45, and 46, see HERNIA.

TABLE XLVII.

FIG. 1.

Represents an *Enterocoele* on the right Side, as it appears before any Incision is made in the Integuments out of *Mauchart's Differt. de Hernia incarcerata Scroti*, whence the two subsequent Figures are also taken.

A A, the Thighs drawn asunder, that the Hernia may be more distinctly viewed; B, the right Groin distended by a Prolapsus of the Intestine; C, the left Groin, sound, flat and more depressed than the other; D, the Penis retracted, as it usually appears in this Disorder; E E, one Side of the Scrotum, very much swelled and distended from the Groin almost to the Bottom; F F, the Bottom of the Scrotum, neither swelled nor distended, in which the Testicle may be felt separate, and not confused with the Intestine; G G, the other half of the Scrotum, in its natural State and Figure; H H, the Suture which divides the Scrotum in the Middle.

FIG. 2.

Exhibits the affected Side of the Scrotum laid open by Incision; A A, the Skin opened the whole Length of the Scrotum, and drawn aside that the subjacent Parts may come in View; B B B, the Membrana Adiposa divided and drawn aside in the same Manner; C C, the Ring of the *Musculus Obliquus Externus* which being preternaturally dilated, permits the Peritonæum, or Bag with its included Intestine, to fall through; D D, the Aponeurotic Coat of the Testicle, called Dartos, which invests the whole external Surface of the Bag, including the Intestine and Testicle, divided in the Middle, and separated from the Bag, to which it internally adheres, and then drawn on each Side; E, the Cellular Membrane of the Peritonæum which is here conspicuous, and inflated with the Pipe F; G, the internal Hernial Sac formed by a Dilatation of the internal Membrane of the Peritonæum, immediately containing the Intestine, and divided in the Middle, so that the Intestine appears marked H H.

FIG. 3.

Represents the Situation of the Intestine and other Parts in the Scrotum, together with the internal Hernial Sac. A tendinous Fibres from the Aponeurosis of the oblique external Muscles, marked D D, in the preceeding Figure; B, the external Membrane of the Peritonæum, turned a little backward, which being naturally elongated, is called the Process of the Peritonæum, or *Tunica Vaginalis* of the spermatic Vessels and Testicle; but when preternaturally distended, it makes, together with the Aponeurotic Membrane, (See D D, Fig. 2.) the external Part of the Hernial Sac; which could not

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not be here represented without Confusion; C, the interior Membrane of the Peritonæum, which, by preternatural Distention, being protruded into the Scrotum, forms the internal Hernial Sac next the Intestine; DD D, the same Membrane continued to the Septum, which usually forms the *Tunica Vaginalis* upon the Testicle, turned a little aside, as is the lower Side EE, that the subjacent spermatic Vessels may appear; FF, the *Tunica Vaginalis* loosely investing the Testicle opened; opened, so as to shew, G, the Body of the Testicle, now covered only with the *Tunica Albuginea*; H, the Epididymis or Parastata; II, the *Corpus Pampiniforme*, or the spermatic Artery and Vein, between the external and internal Membranes of the Abdomen, thus burst through the Ring of the Abdominal Muscles; L, the Canal called *vas deferens*; MM, Part of the Intestinum Ilium, included in the internal Bag, but here taken out and laid on one Side, variously convolved.

FIG. 4.

Is a Knife contrived by *Guillemeau*, for dividing the Preputium in a Phimosis, and denudating the Glans.

FIG. 5.

Is an Instrument contrived by *Dr. Frew* for retracting the Preputium in a Phimosis; A A, are two elastic Plates which are contracted or dilated by the Screw B.

FIG. 6.

A kind of very thin Trocar, design'd for perforating the Glans of the Penis, especially in Children and new born Infants.

FIG. 7.

Represents the Brass or Steel Réceptacle, recommended to be fasten'd between the Thighs for receiving the Urine in Cases of Incontinency. It should be large enough to hold about half a Pint. B, denotes the Mouth of the Vessel to receive the Penis; and CC, the Strings for tying it round the Body.

FIG. 8.

Is an Instrument made of two Iron Plates cover'd with Leather, A A, which is design'd to stop an involuntary Flux of Urine, by being applied to the Penis, and compressing the Urethra. B, is the Hinge on which the Plates move; C, a Turn-ketch to open and shut the Instrument at Pleasure.

FIG. 9.

Is nearly the same Instrument, only a little improv'd; the Difference consisting in having a graduated Ketch, C, whereby it may be contracted or enlarged at pleasure, according to the Size of the Penis. The rest is explained by the Letters in the preceding Figure.

FIG. 10.

Represents another Instrument for the Incontinency of Urine taken from *Nuck*. A A, the Steel Girt or Belt to pass round the Body; B, the Buckle, by which the Leather-part, C, is fasten'd. D, the Screw, which presses against, and raises the Plate E, whose Button, F, being defended with a Compress, is urged against the Urethra in the *Perinæum*.

TABLE XLVIII.

FIG. 1.

Represents the Copper or Silver Pipe called a Catheter, used principally in Women either in searching for the Stone, or in procuring a Discharge in a Suppression of Urine.

FIG. 2, 3, 4, 5.

Are Silver Catheters of various Sizes, to be applied for the same Purposes in Male Subjects, according to the Patient's different Age and Size of Body. A A, is the Handle of the concealed Silver-Wire, by which it is to be drawn out of the Cannula, when that may be necessary; B B, oblong Apertures on both Sides of the Extremities of the Instruments which admit the Urine to be discharg'd; CC, the Handles of the Catheters.

FIG. 6.

Represents a flexible Silver Catheter, which is sometimes very necessary to discharge the Urine, when another Catheter must be introduced several times successively, which might occasion an Inflammation of the Urethra, or it may be conveniently left in the Bladder, when the Passage of the Urine is entirely stop'd by a Stone. The Letters A, B, and C, denote the same Things here as in the preceding Figures.

FIG. 7.

Exhibites another Silver Catheter without lateral Apertures, having only one Opening at its End, marked A, which is shut by the Button marked B; which is in a manner the Extremity of the included Wire: If the Handle of the Wire, C, be

press'd, the Button comes out in the Manner represented by D. in the adjacent Figure, by which means the suppress'd Urine will enter by the Mouth of the Catheter, and be discharged through it.

FIG. 8.

Is a large open Knife, or Bistoury, which has been hitherto mostly used in the Operation of Lithotomy; and is by some termed Lithotomus.

FIG. 9.

Is the same Instrument, armed with a Piece of narrow Linen wound round it, in such a manner as not to leave above an Inch of the Edge uncovered, sufficient to make the Incision.

FIG. 10.

Is the Hook which is sometimes necessary for extracting the Stone in the several Methods of Lithotomy; it being furnished with small Teeth in its concave Part for more firmly holding or retaining the Stone.

FIG. 11.

An Iron Instrument, having a long narrow Spoon at one End; and, being round at the other, is also furnished with a round Button for performing the Office of a Probe and Director, which is often used with various Intentions for the Stone in the Bladder by the Lithotomists.

FIG. 12, 13, 14, and 15.

Denote Steel and groov'd Catheters, which are commonly used in cutting for the Stone by the *Apparatus major*, that the Knife might be guided in the Groove. D D, represent their Handles; E E, their Grooves.

FIG. 16, 17.

Are two Stones of an unusual Size, which *Heister* successfully cut out of a sort of Hernia of the Urethra before the Scrotum.

TABLE XLIX.

FIG. 1.

Represents the Manner in which a Boy should be held in the Operation of cutting for the Stone, according to the Direction of *Celsus* and *Tolet*; which is neither proper nor convenient.

FIG. 2, 3.

Represent the ensiform Directors, often used in the *Apparatus major*, and in the lateral Operation. FIG. 2. is furnished with a small oblong and obtuse Beak A, and is generally denominated Male: The other, at Fig. 3. B. has a Groove, and is generally the Female Director.

FIG. 4.

The Concave or canulated Director, called by the *French* *Gorget*, which is generally prefer'd to the two preceding. A, the Beak of the Instrument which is introduced by the Groove of the Catheter; B B, its crucial Handle; CC, the Channel or Groove through which the Finger is pass'd, and then the Forceps into the Bladder.

FIG. 5.

A Pair of straight Forceps for extracting the Stone out of the Bladder, furnished with Teeth, of which Kind it may be necessary to have some larger.

FIG. 6.

A crooked Pair of Forceps, to be used principally when the Stone lies towards the Side of the Bladder.

FIG. 7.

Represents a Pair of large Forceps, furnished with large and sharp Teeth; of a pyramidal Figure, fitted for breaking large Stones within the Bladder: But the Instrument may be made as large again as the Figure, to exert the greater Force.

FIG. 8.

Represents an Instrument called a Dilatator, being designed to widen the Wound in Lithotomy, though it is now little used. The Beak A, like a Crane's Bill, is inserted in the Wound; and the two Arms, B B, being press'd together, the Beak of the Instrument opens by means of the Hinge marked C.

FIG. 9.

Shews a commodious Table, adapted for performing the Operation of Lithotomy, marked at each Corner with the Letters A A A A. The Letter B, denotes the Place on which the Patient is to be seated, being hollow, that the Corners may more commodiously support the Feet. C, the Prop for supporting the Patient's Back; which for the greater Convenience, is capable of being elevated or depressed more or less, to raise the Patient higher or lower, as the Surgeon may see proper, by means of the Iron Rod marked D.

TABLE

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T A B L E L.

FIG. 1.

Represents the Urethra of a Male Subject, freed from the other Parts of the Penis, together with the Bladder, prostate Gland, and Intestinum Rectum, all viewed on their left Side, and figured as much as possible to the Life, so as to exhibit the natural Disposition of them as they appeared in a Lad aged fourteen. A, the Glans Penis; B C D E F, the Urethra in its natural Curve Position; E, the Bulb of the Urethra; F, a Part of the Urethra, termed membranous; G, the Body of the Bladder itself; H, its Bottom; I K L, the Neck or Entrance of the Bladder, invested with the prostate Gland, and deprived of its muscular Fibres, which compose the Sphincter of the Bladder, to render it the more conspicuous; I, is the Beginning or Apex of the Gland; K, the Body of it; L, its Extremity or Margin next the Bladder; M N, denote the lower Part of the Bladder next the Intestinum Rectum, in which is formed the left Cavity, which often makes as it were a kind of Depressure in the Rectum, in which Stones are lodged; N O P, denote the back Part of the Bladder, which lies next the Os sacrum, and Cavity of the Abdomen, being covered with the Peritonæum; Q R, is the anterior Part of the Bladder in our erect Position, but the uppermost when we lie supine: It is this Part which is divided in the high Operation, being not invested with the internal Membrane of the Peritonæum, but is free and separated from the Cavity of the Abdomen, as may be plainly perceived by inflating or injecting some Liquor into the Bladder of a dead Subject; but concerning this we shall be more particular in our Explanation of the succeeding Table. S S, represent the Intestinum Rectum connected to the Bladder; T, the Sphincter Ani, or Muscle destined to close the Mouth of the Rectum; V, is part of the left seminal Vesicle; X X, the Interstice between the Intestinum Rectum, Bulb of the Urethra, and Neck of the Bladder, filled partly with the Membrana Adiposa, and partly composed of muscular Fibres detached from the Sphincter and elevating Muscles of the Anus.

FIG. 2.

Represents the Position of the Bladder and Urethra in Women, as they are seen on the left Side, together with their Connection to the Uterus and Vagina, taken from *Alghisi*. A, denotes the Bladder; B B, its Sphincter Muscle, including the Urethra, marked C C; D, the external Orifice of the Urethra opening into the Vagina; E, the Clitoris and its Preputium; F F, the Nymphæ; G G, the Labia Pudendi; H, the external Orifice of the Uterus called the Os Vaginæ; I I, the Body of the Vagina; K, the Uterus itself; L, the internal Orifice of the Womb seen through a lateral Slit made in the Vagina.

FIG. 3.

Shews the Manner in which the Catheter is to be introduced into the Urethra. A, denotes the Surgeon's left Hand elevating the Penis; B, his right Hand introducing the Catheter into the Vagina, so that the convex Part of the Catheter looks towards the Abdomen.

FIG. 4.

Denotes the Position into which the Catheter is to be turned in the Urethra. When it has reached the Bulb, marked E, in *Fig. 1* it is to be then inverted, so that the concave Part of the Instrument may be turned towards the Abdomen; and the Extremity of it marked B, gradually insinuated through the Neck of the Bladder into its Cavity. C, denotes the Handle of the Catheter, by which it is to be guided by the right Hand.

FIG. 5.

Exhibits the ancient Method of Lithotomy used by *Celsus*, performed by introducing the two Fore-fingers into the Anus, whereby the Stone and Neck of the Bladder are thrust outward in the Perinæum, and the Incision, B B, is there made upon the Stone in the most prominent Part of the Perinæum, marked A.

FIG. 6.

Shews the Method of extracting the Stone marked A, by the Hook B, when it sticks in the Wound so as not to be extracted from the Bladder by the Fingers alone.

FIG. 7.

Is a Brass Instrument of Mariners, adapted to extract Stones out of the Urethra. A, that Part of the Instrument, which is to be insinuated into the Urethra behind the Stone, and by

means of which the Stone may be laid hold of and cautiously drawn out. B, the round Handle, by which the Instrument and Stone are to be then drawn out of the Urethra.

FIG. 8.

Represents an anterior View of the Bladder taken out of a Boy. A A, denote the Necks of the Bladder and Beginning of the Urethra; B B, the Body of the Bladder; C, its Bottom, with the adjacent Parts of the *Urachus*; D D, the prostate Gland investing the Urethra; E E, the seminal Vessels, in part visible on each Side, which in Adults are more protuberant, and extended up to F F; where, being hollow internally, they form a sort of Sinus in the Bladder on each Side, in which the Stone often lies concealed; they may therefore not improperly be called the Sinuses of the Bladder, which are yet wanting in the Bladders of Infants and Children; the Figure of the Bladder in Adults is therefore somewhat different from that in Children. The Bladder indeed resembles the Form of a Pear in both of them; but with this Difference; that in Children the Apex of the Pear is downwards to the Urethra, as in this Figure; but in Adults the Apex of the Pear is upwards, the Bladder being broadest downward, as may be seen in *Fig. 1* of this Table, and in *Fig. 1*, and 2. of Table 51.

FIG. 9.

Represents the Manner in which the adult Patient should be placed and held for Lithotomy, according to *Alghisi*, which is in part different from the Method of *Tolet*, and other modern Operators. A, denotes the Posture of the Patient; and B, the Surgeon with the Catheter in his left Hand, and the Incision-Knife in his Right; C C, two of the Assistants, who are placed on each Side of the Table, to secure the Patient's Limbs, holding the Foot in one Hand, and the Knee in the other; D, the Assistant, who kneels upon the Table, and, by striding over the Patient, keeps his Body from rising or moving, while with his Hands he draws up the Scrotum, and extends the Skin of the Perinæum; E E, a Cushion placed under the Patient's Buttocks; F, a Vessel placed beneath the Patient to receive the Blood, and perhaps the Fæces, discharged in the Operation; G, denotes the Part of the Perinæum in which the Incision is to be made; H, the Case for containing the Instruments, to be fastened about the Waist of the Operator; this is represented by itself in Tab. 51. *Fig. 6*.

FIG. 10.

Exhibits one of the open Nooses with which *Raw* used to fasten the Patient's Hands and Legs together. A, the Loop for containing the Wrist; B B, its two loose Ends to be fastened round the Leg.

T A B L E II.

FIG. 1, 2, 3.

Are taken from Mr. *Chefelden's* Treatise of the high Operation, in order to the Position and State of the Bladder when distended with Liquor, preparatory to the Operation. These Figures have been already sufficiently explained under the Article LITHOTOMIA.

FIG. 4.

Represents the Abdomen opened, the Bladder being but slightly distended, either by the Urine or any other Liquid, to shew how small a Space is remaining between the *Ossa pubis* and Bottom of the Bladder covered with the Peritonæum A A A, being the Part where the Incision is to be made in the Bladder, B B. This Figure has been also explained under the Article LITHOTOMIA.

FIG. 5.

Is also taken from Mr. *Chefelden*, and denotes the Pipe or Tube by which the Liquor is conveyed into the Bladder, in order to distend it for the Operation. A A, is a Silver and inflexible Catheter which is to be passed through the Urethra into the Bladder; B, the Aperture in each Side, by which the injected Liquor enters the Bladder; C, a Brass-Pipe which is to be adapted to a sizeable Syringe. D D D, a flexible Pipe made of Leather, or of the Ureter of an Ox which joins the Brass-Pipe and the Catheter; and thus the Injection will be more easily performed than if the whole was an inflexible Tube, as was used by *Rossatus*. E, the Part of the flexible Tube which is tied with a Thread to the Catheter, where there is also a transverse Handle, which serves to hold the Catheter steady, that it may not hurt the Patient during the Injection.

FIG. 6.

Represents the Case for holding the several Instruments for Lithotomists, disposed in their proper Order. This is to be fastened

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fastened round the Lithotomist in the Manner represented at *Fig. 9. Tab. 50.* and was always used by *Raw*, as being more ready and expeditious, than to trust to an Assistant, who may chance to be attending something else. A A A A, the Case itself; B B, the Instruments disposed in their proper Order; C C, the Side or Cover of the Case; which may be fastened with the Buttons marked D D, that so the Instruments may be concealed from the Patient's Sight, to prevent him being intimidated; E E, the Strings by which the whole is fastened round the Waist of the Lithotomist.

TABLE LII.

FIG. 1.

Represents a lateral View of *Raw's* groov'd Catheter, as it is delineated in its true Figure and Thickness by *Albinus*. But *Heister* observes, that, in 1706 and 1707, while he was *Raw's* Pupil, he used a common groov'd Catheter, like that represented in *Tab. 48.* only it was a little thicker than those commonly used. A, denotes a lateral View of its Handle; B, the Part which he asserts to be more crooked than the common ones; tho' it seems to be less crooked than those which have been figured for the *Apparatus major*, by *Tolet*, *Alghisi*, *Garengot*, *Le Dran*, *Heister*, and others. C, denotes the Beak of the Catheter, which is longer and straighter than the common.

FIG. 2.

Exhibits an oblique View of the Handle of this Catheter, which may as well be made in the Form of a Heart, like that in *Tab. 48.* or else flat and solid, as that of *Mr. Cheselden* in *Fig. 6.* of this Table, or with a Ring like that of *M. Le Dran* in *Fig. 17.* of this Table.

FIG. 3.

Represents the Beak or Groove of *Raw's* Catheter, in which may be seen its thin, but smooth and obtuse Sides, marked *a a*, between which is the large Groove marked *b b*; C, is the Termination of the Groove in a smooth and obtuse Point.

FIG. 4.

Is a transverse Section of the groov'd Part of this Catheter, to shew its Form and Depth, that the Knife may not easily slip out of it.

FIG. 5.

Exhibits the grooved Catheter of *Cheselden*, which is more slender and less crooked than that of *Raw*, and the common Sort; *a a*, denotes the Edge of its Handle in the Shape of a Heart; *b b*, the Body of it in a rectilinear Form; *c c*, the Curve and grooved Part; *d*, the Beak of the Instrument, which has little or no incurvation.

FIG. 6.

Represents the flat Side of the Handle of this Catheter *a*, with Part of its Groove, *c c*, and its whole Body, *b b*.

FIG. 7.

Denotes the straight Beak of the Groove in *Cheselden's* Catheter, whose Sides, marked *a a*, are smooth and obtuse like *Raw's*; but its End, *b*, is left open, and not made obtuse or closed as in the other Catheters. But I am not sensible of any Advantage that attends this particular Make, nor does its Author mention any.

FIG. 8.

Is the Incision-Knife of *Mr. Cheselden*, which he uses in cutting for the Stone, whose Blade is fixed to the Handle, *a a*, and its Point directly in the Middle.

FIG. 9.

Shews the concave Part of *Mr. Cheselden's* Director, B B, having its Handle, A A, inclined to the left Side, for the commodious Introduction of the Forceps through it into the Bladder; C, the Extremity of its Beak terminating in a flat Point, shewn side-ways in *Fig. 10.* and in *Fig. 11.* its Handle is represented separate.

FIG. 12.

Is the common small Forceps of *Cheselden*, most frequently used by him in extracting the Stone; but for large Stones, *Douglas* represents a Pair three Inches longer. A A, the Handles, shaped like Hooks, which are commonly in others in the Form of Rings; and in the large Forceps one Handle is represented annular, and the other like a Hook. B B, are the two Ends of the Forceps made so as not to shut quite close, left in searching for the Stone they should lay hold on and hurt the Bladder.

FIG. 13.

Represents the internal Surface of one of the Jaws of these Forceps, which is concave, and furnished with many small Teeth inclining backwards, towards the Handle, that it may hold the Stone firm.

FIG. 14.

Gives a lateral View of a Needle, used by *Cheselden* in taking up any Artery that may be divided in the Operation.

FIG. 15.

a, Represents the convex and angular Point of the same Needle towards the Point; *b*, its Concave or internal Part, which is smooth.

FIG. 16.

The Bistoury or Incision-Knife of *Le Dran*; A, its Point; the Lines B B, shew how far the sharp Edges extend; C C, the two Sides of the Handle.

FIG. 17.

Is a new Catheter of *Le Dran*, which he uses for the lateral Operation instead of *Raw's*; *a a*, its Handle; *a b*, its Body; *b b b*, its Concave or crooked Part; *c c c*, the Groove in its convex Part; *d*, its obtuse Point; the Lines, *e e*, denote the Length of the Fissure in its Groove.

FIG. 18.

Is the Incision-Knife recommended by *Garengot* in the lateral Operation.

TABLE LIII.

FIG. 1.

Represents a human Bladder taken from a Male Subject, in the anterior Part of which may be seen various empty Tubercles, or Cells, which are distended by inflating the Bladder, in which Cells the Stone lies sometimes concealed. A A A A, shew the pyramidal Figure of the Bladder; B, denotes the prostate Gland investing the Neck of the Bladder, which is tied with a Thread near the Urethra; C, is the preternatural Cavity formed on the right and posterior Side of the Bladder; D, represents a less Cavity of the same kind; E, shews a like Cavity on the left Side, another of which is at the Bottom of the Bladder, marked F; *a a a*, are the Blood-Vessels which are distributed on the Bladder.

FIG. 2.

Represents a posterior View of the same Bladder, being explicable by the same Letters; to which add, G G G G, Cells which are still smaller, and not to be discerned on its anterior Part.

FIG. 3.

Exhibits the Trocar of *Denys* in its Silver Canula, which differs from the common, in its having three Apertures at the End of the Canula, two of which are visible at A A, the other being in the back Part; through these Apertures the Urine passes into the Pipe; B, the triangular Point; C C, the Plate of the Canula perforated with two Openings. D, the Handle of the Instrument.

FIG. 4.

Represents the Canula of the Trocar alone, in which A A, denote the Apertures at the End of the Canula in the preceding Figure; B B, represent other corresponding Apertures through which the Urine flows, after it has entered by those at A A; these Apertures do not appear in *Fig. 3.* being obscured by the Plate C C.

FIG. 5.

Exhibits the Perforator out of its Canula. D D, the Part of its Body immediately below the Point, which is made cylindrical to fit the Canula; but the Part between D D, and its Handle E E, is triangular, and made a little concave on each Side, so as to give a Passage to the Urine; F, its Handle.

FIG. 6.

Represents a Stone of an uncommon Size and Figure, which *Heister* extracted without much Difficulty by the high Operation; it weighed near four Ounces; and its Representation was given by that Author, for the Conviction of those who deny that large Stones can be extracted by the high Operation. A A, the Basis of the Stone, which lay near the Neck of the Bladder; B, a small Eminence of it which lay near the Neck of the Urethra; C, the upper Part which lay next the Bottom of the Bladder.

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FIG. 7.

Represents the Silver Catheter, which is strait and hollow for Women, being of a particular Make, different from that represented in *Tab. 48. Fig. 1.* A A, are two Rings near its Handle; B, an Aperture in its Side near that Extremity, which is to be passed into the Bladder, opposite to which there is another similar Opening; C C C, a Groove in the convex Part of the Catheter, serving for various Uses, and particularly for directing the Male Conductor into the Bladder, and for guiding the Knife when the Neck of the Bladder is to be divided, as in grooved Catheters.

TABLE LIV.

FIG. 1.

Shews the Method of examining the State of the *Os Uteri* with one or two of the Fingers, to discern whether it be in an oblique or strait Direction, or whether it be dilated or contracted; whence the Operator may form a Judgment concerning the Delivery, whether it will come naturally, or preternaturally, easily, or difficultly, speedily, or after a considerable Time. A, denotes the Uterus; B B, the Vagina laid open; C C, the internal Orifice of the Uterus as yet contracted, but in its right Situation; D, represents the Manner of examining the Mouth of the Uterus with one or more of the Fingers, which, if obliquely situated, either forwards toward the *Os Pubis*, backwards on the *Os Sacrum*, or towards either Side, denotes a difficult Delivery.

FIG. 2.

Represents the natural Posture of the Child in the Birth, with its Head protruding into the *Os Uteri*, under the Arch of the *Osfa Pubis*. A, the Infant; B B, the Uterus laid open that the most usual Situation of the *Fœtus* in a natural Birth may be viewed; C C, the *Osfa Pubis*; D D, the *Osfa Ischii*; E E, the *Osfa Ilei*; F, the Umbilical Cord; G, the *Secundines* adhering to the Uterus.

FIG. 3.

An Infant presenting with its Feet foremost.

FIG. 4.

Shews the Buttocks offering first, the Method of applying the Fingers to extract and promote the Birth.

FIG. 5.

Represents the *Fœtus* in a transverse Position, with its Back towards the Mouth of the Uterus; with the Hand of the Surgeon endeavouring to find the Feet by turning the Infant in the Uterus.

FIG. 6.

Exhibits the Manner of apprehending the Infant's Feet, turning and extracting them.

FIG. 7.

Shews a *Fœtus* also in a transverse Position, with its Belly towards the *Os Uteri* and Vagina; in which Posture the Navel-string frequently protrudes to the great Danger of the Child's Life.

FIG. 8.

Represents the Head obstructed by the left Side of the Bones of the Pelvis, and the Neck being violently contorted, by the Contraction of the Uterus, the Birth is thus rendered extremely difficult, and sometimes impracticable.

FIG. 9.

Shews the Infant's Head inclined towards the right Side of the Pelvis, and how it may be brought by the Hand to a direct Situation, immediately after the Discharge of the Waters.

FIG. 10.

Is a *Fœtus* presenting the Elbow or Shoulder to the Mouth of the Uterus, and the Method of introducing the Hand and Arm as far as the Elbow, for finding the Feet in this and other preternatural Postures, by which the Child should be turned and extracted, as shewn in *Fig. 6.*

FIG. 11.

Shews the Method when the Arm of the Infant is protruded, of introducing the Hand to search for the Feet, and extract the *Fœtus*.

FIG. 12.

Represents the Infant with one Foot protruded, and the Method of searching for and extracting the other.

FIG. 13.

Exhibits the Manner of separating the *Secundines* from the Uterus, when they do not immediately follow the Child. The Navel-string, A A, is held by the left Hand, B, while the right Hand, D, is guided into the collapsed Uterus, C C, to the Placenta, E, which is hereby separated from the Uterus.

FIG. 14.

Represents a Chair frequently used in delivering Women. A A, its Back; B B, the Sides; C, the Seat, having a semicircular Piece cut out of the Middle, that the *Os Coccygis* may be free, and yield to the Egress of the *Fœtus*; D D, the Handles of the Chair, which are grasped by the Patient in each Hand.

FIG. 15.

Is another Chair for the same Use, with a flexible Back, that if the Birth should be preternatural, it may be let down, and the Patient inclined on it, as if upon a Bed, to facilitate the Delivery; but, in defect of this Chair, a common Bed or Table may suffice.

FIG. 16.

Gives an Idea of the broad Steel Hook used by *Palfyn* for extracting a live Infant without Injury, when its Head obstinately sticks in the Vagina; but its true Size is as large again as the Figure. It is necessary to be supplied with two of them, that one may be applied to each Side of the Head.

FIG. 17, and 18.

Represent lateral Views of the Hooks generally used by *Heister*, in extracting a *Fœtus*; A A, their Points; B B, their Backs.

FIG. 19.

The Handle of these Hooks with Notches, *aaaaa*, in that Part which corresponds to the Back of the Instrument, that, by feeling with the Thumb, the Operator can know how the Point is directed toward the *Fœtus*, without hurting the Uterus. And in the Groove, *bb*, a String may be fastened, by which the Extraction may be also forwarded by an Assistant.

FIG. 20.

Represents a View of the anterior Part of the Hook separate.

FIG. 21.

Exhibits a double prong'd Hook, which may be sometimes used for the same Purpose.

TABLE LV.

FIG. 1.

Represents the Uterus, with a Mole adhering to it. A, is a Mole, such as *Sigismunda* happily extirpated, with a Pair of large obtuse pointed Forceps, in a Lady of Quality.

FIG. 2.

Exhibits a Prolapsus Uteri without Inversion. A A, the Pudenda; B, the Uterus appearing externally; C, the internal Orifice of the Uterus, which here appears on the Outside of the Pudenda.

FIG. 3.

Shews a Prolapsus Uteri, which is at the same time inverted. A A, the Pudenda; B, the inverted Uterus protruded, without any Appearance of its internal Orifice shewn by C, in the preceding Figure; C, the lower Part of this inverted Uterus.

FIG. 4.

Represents a peculiar kind of Prolapsus Uteri, as it was first denominated; though it was in reality no more than a falling down of the Vagina, according to the Observation of *Widmannus*, in *Ephem. Nati Curios. Cent. 8. Obs. 98.* where the History of the Case is more fully delivered, and the Figure of the Parts represented as large as the Life. A A, the Labia Pudendi; B B, the Nymphæ; C, the Clitoris lodged between them; D, the protruded Body, resembling a falling down of the Uterus, though it is only a Relaxation of the whole interior Coat of the Vagina, which is prolapsed and changed into a Tumor. E, its Root at the external Orifice of the Vagina; F, its Basis or broader Part, with a Mouth resembling the internal Orifice of the Uterus; this derives its Origin from the Recess of the Coat of the Vagina from the

An EXPLICATION of the TABLES in Vol. II. and III.

internal Mouth of the Uterus, which it naturally covered; GH, the Uterus itself seated in the Pelvis. We have omitted here the Tubes, Ovaria and Ligaments, as not necessary for our Purpose.

FIG. 5.

Is taken from the chyrurgical Observations of *Meckren*, to shew a Prolapsus of the Vagina and Uterus together. A, the Uterus; B, its Neck; C, its internal Orifice; D, the Pudenda; EE, the Vagina laid open; F, the Root of the Tumor appearing without the Vagina, resembling a Prolapsus Uteri; G, the Ligature with which the Root of the Tumor was compressed during its Removal.

FIG. 6, 7, 8, 9, and 10.

Represents various sorts of Pessaries. Fig. 6. is round like a Ring, to which are fastened Strings for extracting it out of the Vagina. That at Fig. 7. is of an elliptic or oval Figure; Fig. 8. is quadrangular; Fig. 9. triangular; they are made of Cork, or Wood wax'd over, or else of Silver or Gold made hollow. Fig. 10. is solid like an Egg, but less convenient than the former.

FIG. 11.

Is an elastic Pessary of Iron Wire, turned into a conical Form, as described by *Goelicke*. This has also a String fastened to it; but if there was another fixed to the opposite Side, it might be drawn out so much the more easily.

FIG. 12.

Represents the Machine used in *Germany* and *Holland*, for injecting Clysters. AA, is the Bladder for containing the Liquor, which, for Adults, is about two or three times larger than the Figure, and holds about a Pint or more. BB, the Pipe of Bone or Ivory to transmit the Liquor into the Intestines; CC, the superior Ligature which should be untied after the Pipe is introduced into the Patient's Anus; DD, the inferior Ligature, by which the Bladder is closed, and the Liquor prevented from running out.

FIG. 13.

Represents a Machine for impelling the Smoak of Tobacco into the Anus and Intestines; A, is the Brass Bowl or Capsuli, which contains the burning Tobacco; B, the Ivory Pipe which is to be introduced into the Anus; C, the Pipe, which being in a Person's Mouth when the Tobacco is on fire, the Smoak E, is thereby blown through the flexible leathern Pipe DD, into the Patient's Bowels.

FIG. 14.

Denotes a Brass Pipe for conveying Fumes or Vapours into the Vagina. A, is the upper Part full of small Holes, which must be inserted in the Vagina; B, the lower Part, open, for receiving the Pipe of the Funnel.

FIG. 15.

Is a Speculum Ani, or Instrument for dilating the Anus or Vagina, in order for inspecting these Parts when diseased. AA, and BB, represent the hollow Beak shaped like a Cone, consisting of two Sides or Canals, AA, and BB, which being shut, a little warmed and lubricated with Oil, are to be gently passed into the Anus or Vagina. When the Handles C, and D, are pressed together, the two Sides of the Beak gradually widen, and dilate the Anus or Vagina, for Inspection; E, is the Hinge in manner of a Ginglymus.

TABLE LVI.

FIG. 1.

Exhibits the two kinds of Fistulas in the Anus. AA, is part of the Intestinum Rectum; B, the Sphincter Ani; CC, a perfect or complete Fistula of the Anus, terminating with one Aperture externally, and the other in the Intestine; DD, a flexible Probe or Silver Wire passed through the two Orifices of the Fistula, and bent so as to come through the Anus, E; the two Sides of the Wire intercepting the fleshy Parts to be divided, are drawn gently outward, for the more safe and convenient Performance of the Incision. F, represents an imperfect or incomplete Fistula, having only the Orifice G, opening into the Intestine; HH, denote the two Extremities or Heads of the Silver Wire.

FIG. 2.

Represents an Instrument like a large Needle from *Garengest*, made of flexible Silver, having an Eye marked A, for the Transmission of a Thread, when the Intention is to use a Ligature in cutting the Fistula after the Manner of the Antients; it may also serve to convey a Slip of Linen through a Wound

or Ulcer in the Manner of a Seton; B, the Point of the Instrument, which is to perforate the Intestine in an incomplete Fistula, and then to be bent and brought out through the Anus; it has a Groove running through its whole Length by which it may serve to guide the Knife instead of a Director.

FIG. 3.

Is a kind of Syringotomus taken in part from *Garengest*. AAA, denotes the concave and sharp-edged Part for cutting; BBB, the convex Back which is obtuse; CD, the Silver Wire or probe End which is flexible, and beginning at the Letter C, terminates at the Point D; the Part marked EE, being bent in Form of a Hook, serves as a Handle to facilitate the cutting of a Fistula when it is very hard or callous. F, denotes where the Instrument terminated, as made according to *Heister's* Directions, without the Part DF; by which means he found it more commodiously perform its Office, than if it were of the whole Length here represented.

FIG. 4, 5, 6, and 7.

Represent several common Syringotomi of the Antients, of different Sizes or Curvatures, and furnished either with obtuse or sharp Points, according to the different Circumstances of Fistulas; in which AB, denotes the cutting Part; C, the probe End; D, the convex and obtuse Back.

FIG. 8.

Is a Knife or Syringotomus, first published by *Bassius*. AAA, denote the Edge of this falciform Knife; BB, the flexible probe End made of Silver; C, its Point; DD, its Handle.

FIG. 9, 10, 11, 12, and 13.

Represent Instruments recommended to *Heister* by *Rungius* a Surgeon in *Bremen* in curing these Fistulas; especially Fig. 9. which is a sort of grooved Probe or Director, furnished with a peculiar Handle; AB, its grooved Probe or Director; CD, the Handle; E, the Part where the Probe is bent in a peculiar Manner, according to the Use for which it is designed. Fig. 10. gives a direct View of the Groove in the Director, as the former gave an oblique one. Fig. 11. AB, is a large Canal to be passed into the Anus, for the Reception of the Edge and Point of the Knife, Fig. 13. in cutting Fistulas, that it may not injure the adjacent Parts; CB, its Handle inclined to the opposite Side. Fig. 12. gives a direct View of the Cavity of this Canal, that its Width may be the better perceived. Fig. 13. is a long and narrow Knife, which, in cutting for a Fistula, is conducted through the Groove of the Director, Fig. 9. into the Cavity of the Canal, Fig. 11.

FIG. 14.

Is a flexible Silver Probe or Wire, so inflected that the bent Part A, may be introduced through the Intestine into the internal Orifice of the Fistula, F, for the more convenient and certain Incision of it.

TABLE LVII.

FIG. 1.

Represents *Meckren's* Method of removing Ganglia, by beating with the Fist on the Tumor, A.

FIG. 2.

AA, Shews a small, slender, straight Needle, with a flat Point, for the Suture of Tendons of the Hand; BB, a strong but slender waxed double Thread, with a Knot, C, at the End; with a square Bit of Leather, D, through the middle of which the Needle and Thread are passed up to the Knot.

FIG. 3.

A, and B, exhibit two Pieces of Leather, perforated in the Middle, used in making the Suture of the Tendon of *Achilles*, as at Fig. 7. EF.

FIG. 4.

Represents three different Methods of performing the Sutures of Tendons; aa, aa, aa, shew the Places where the exterior Tendons of the Fingers are divided in the Back of the Hand; A, the Manner of fixing the Knot of the double Thread on a square Piece of Leather on the superior Part of the Tendon; B, shews the Method of tying the double Thread with a slip Knot upon a small round Compress in the other inferior Part of the Tendon. C, shews the Knot of the double Thread intercepted upon the End of the Tendon by a round Compress instead of a square Piece of Leather, the other Ends of the Thread D, being fastened with a Slip-knot, on a like Compress as before. E, denotes the Method of Suture used by *Nuck*,

An EXPLICATION of the TABLES in Vol. II and III.

Nuck, in which the upper End of the Tendon is perforated in two distinct Places, *bb*, with two small Needles and one Thread, the Loop-end of the Thread being intercepted by a Bit of Leather, or round Compress, *E*, after which the other End of the Tendon is perforated on its Inside in two Places by the same Needles, and the Ends of the Thread tied upon a Compress or Bit of Leather.

FIG. 5.

Represents a Splint, made of thin Wood or the stiffest Past-board, used in a Suture of the Tendons of the Back of the Hand, which, being applied to the Palm of the Hand, keeps the Fingers properly extended.

FIG. 6.

Is the small crooked Needle of *Garegeot*, for making the Sutures of Tendons, which is preferred by the Moderns to the strait Needle, because it can be better held, and more easily transmitted through the Tendon; but it has no sharp or cutting Edges at its Point, like the common crooked Needles, Tab. 22. lest it should wound the transverse Fibres of the Tendon. *Garegeot* thinks there may be a sharp Edge in its concave Part, *A*, but *Heister* prefers it on the Convexity, *B*. The Eye of this Needle is not made sideways, as is common, but answering to its Concavity and Convexity, for the more easy Transmission of the Thread. This small Needle is for the lesser Tendons, as those of the Hand; but for the larger, as the *Tendo Achillis*, the Needle must be proportionably stronger, as at Fig. 9.

FIG. 7.

Shews the Method of uniting the *Tendo Achillis* by Suture, as taken from *Kisneri Dissertatio de Tendinum Læssonibus*. *A*, the Bottom of the Calf of the Leg; *B*, the Heel into which this Tendon is inserted or fixed; *C*, the Wound or Division of the Tendon; *D*, the Knot of a strong double Thread, with a Piece of Leather, *E*, under it; *F*, the same Thread fastened with the Slip-knot, *G G*, upon another square Piece of Leather. But the generality of Surgeons chuse to perforate the upper Part of the Tendon first, and to make the Slip-knot upon its lower End.

FIG. 8.

A exhibits a large, strong and strait Needle with a flat Point, recommended by some for the Suture of the *Tendo Achillis*, and the Tendon of the *Extensor Tibia*; *B B*, the double waxed Thread armed with the Knot, *C*, at its Extremity.

FIG. 9.

Is a large crooked Needle, shaped like that at Fig. 6. for the Suture of the *Tendo Achillis*.

FIG. 10.

Shews *Cowper's* Method of performing the Suture of the Tendon of *Achilles* with two Needles. *A, B*, the two Ends of the divided Tendons; *C, D*, two strait Needles with Threads, by which the Tendon is again united; *a b*, the Incision of the Integuments, for the easier Access to both Ends of the Tendon.

FIG. 11.

Is a kind of Stocking made of Leather or coarse Linnen, to be fasten'd tight about the naked Leg, by the Lace *B*, to be constantly wore for Varices and œdematous Swellings of the Legs, especially when recent.

FIG. 12.

Represents a Pair of strong Scissars for extirpating Part of the Nail of the great Toe, when it runs into the Flesh; it has one obtuse Point *A*, to rest easy upon the Flesh; *B B*, its two Handles, by the Compression of which the Scissars cut, and they are again opened by the Spring *C*.

FIG. 13.

Is a Pair of Nail-Scissars described and recommended by *Garegeot* for the same Purpose. The cutting Parts, *A A*, are concave and sharp-pointed; and its two Handles, *B B*, are closed by Compression and opened by the Spring *C*.

FIG. 14.

Exhibits the Boot of *Paré* open, for Children who are either *Vari*, having their Feet inflected inward, or *Valgi*, having their Feet turned outward.

FIG. 15.

Shews the same shut by three small Hooks.

FIG. 16.

Another Machine for reducing distorted Legs to their natural Figure, proposed by *Hildanus* in Cent. 6. Obs. 89, and 90. *A A*, the two Sides, made of stiff Leather, or of Plates of Iron or Brass, according to the Strength of the Child, which must be exactly fitted to his Leg; *B B*, is a Piece of soft and flexible Leather, by which the two Sides are connected; *C C*, the two Ligatures on each Side, by which the Machine is fastened tight about the crooked Leg.

FIG. 17.

Represents the preceding Instrument fastened upon the Leg, which is explained by the same Letters; but only the Inner side of the Instrument can be here viewed.

TAB. LVIII, and LIX. See FASCIA.

T A B L E LX.

FIG. 1.

A convenient Forceps made use of in the Operation to take out the circular Piece of Bone, of the Trepan when it does not stick to the Saw; the Contrivance by which they readily lay hold of it, is to make the Extremities that are to grasp it, with an Arch of the same Circle as the Saw is. Upon one of the Handles there is aded a little Elevation to lift up any small Splinter, but it is not of much Use.

The Remainder of this Plate is explained in the Tables.

T A B L E LXI.

This is already explained in the Plate.

T A B L E LXII.

This is already explained in the Table.

T A B L E LXIII.

FIG. 1.

Represents the Backside of the Leaf of the *Asa Fœtida* taken from *Kempfer*.

FIG. 2.

Represents the Foreside of the same Leaf.

FIG. 3.

Represents the Seeds of the same Plant.

FIG. 4, 5, and 6.

Represent the Roots of the same Plant.

FIG. 7.

Is a Medal of *Alexander*, the Son of *Ammon*. The Reverse is the *Silphium* of *Cyrene*, in token of the Oracle of that Country, which declar'd him to be the Son of *Hammon*.

FIG. 8.

Is another Medal, either of *Hammon* or *Old Battus*. The Reverse, as the first, is the *Silphium*, with the Legend *XY* for *Cyrene*.

FIG. 9.

Represents the whole *Asa Fœtida* Plant, as preserv'd in a very ancient Manuscript of *Dioscorides*, and now in the Imperial Library of *Vienna*.

A N I N D E X

O F

Those ENGLISH Words which are different from the LATIN Names contained in this DICTIONARY.

N. B. *Those Articles which are the same in English as Latin, are not inserted here, as being to be found under their proper Heads.*

A	BELE	See	Populus alba	Amethyft	See	Amethyftus
Abceffes			Abceffus	Ammoniac (Gum)		Ammoniacum
Abciflion			Abciflio	(Salt)		Ammoniacum
Abforbents			Abforbentia	Amputation		Amputatio
Abftergents			Abftergentia	Amulets		Amuleta
Abftinence			Abftinentia	Analeptics		Analeptica
for three Days			Diatritos	Ananas (wild)		Karatas
Acacia (Baffard)			Pfeudo-Acacia	Anatomy		Anatome
Acceffion			Epiginomena	Anchovies		Apua
Ach (the Head)			Cephalalgia	Anemone (Wood)		Anemonoides
Achilles			Preface, p. 5.	Aneurifm		Aneurysma
Acids			Acida	Angelica (Berry bearing)		Aralia
Acron			Preface, p. 7. and p. 40.	Anger		Ira
Acupuncture			Acupunctura	Angola Seeds		Abrus
Adder			Vipera	Animals (Dung of)		Fimus
Ægimius			Preface, p. 10.	(Musk)		Mofchus
Ægineta (Paulus)			Preface, p. 75.	Animalcules		Animalcula
Æthiops Mineral			Æthiops Mineralis	Anife		Anifum
Aetius			Preface, p. 75.	(Indian)		Zingi
Agamede			Preface, p. 6.	Anodynes		Anodynâ
Agaric			Agaricus	Ant		Formica
Agate			Achates	(Horfe)		Formica
Agrimony			Agrimonia	Antelope		Antilopus
(Hemp) and its Kinds			Eupatorium	Anthony's Fire (Saint)		Eryfipelas
(naked headed)			Eupatoriophalacron	Antimony and its Preparations		Antimonium and Pref. p. 80.
(Water Hemp)			Bidens	Anxiety (febrile)		Pyretos and Alyfmos
Ague (Quartan)			Quartana Febris	Apollonius		Preface, p. 44.
Air			Aer	Apophlegmatifms		Apophlegmatifmus
Alabafter			Alabaftum	Apoplexy		Apoplexia and Gutta
Albertus Magnus			Preface, p. 79.	Appetite		Appetitus
Albinus			Preface, p. 95.	(voracious)		Pica
Alcalies			Alcali	Apples (Love)		Amoris Poma
Alcmæon			Preface, p. 7.	(mad)		Melongena
Alder Tree			Alnus	(Thorn)		Stramonium
Ale			Alla	Apricots		Armeniaca malus
Alexander			Preface, p. 35.	Archangel and its Kinds		Lamium
Alexanders			Smyrniun	(spotted)		Galeopfis
Alexipharmics			Alexipharmaca	(yellow)		Galeopfis
Alexiterials			Alexiteria	Aristotle		Preface, p. 35.
Aliments			Alimenta	Arnoldus de Villa Nova		Preface, p. 79.
(white)			Cibus albus	Arnotto		Achiotl.
Alkanet			Anchufa	Aromatics		Aromaticâ
Allegator			Crocodilus	Arrows		Telum
All-Heal (Æfculapius's)			Ferula	Arrow-Head		Sagitta
(Candy)			Ferula	Root		Sagittaria Alexipharmica
(Clowns)			Galeopfis	Arsenic and its Kinds		Arsenicum
(Hercules's)			Paftinaca Olufatri folio	Arifmart and its Kinds		Perficaria
All-Spice			Pimenta under Caryophyllus	(codded)		Balfamina
Almamom			Preface, p. 76.	Artemifia		Preface, p. 50.
Almanfor (Abn Jufar)			Preface, p. 76.	Arteries		Arteria
Almonds			Amygdalus	Arteriotomy		Arteriotomia
Aloes			Aloe	Artichoke and its Kinds		Cinara
of Brafil			Caraguata	(Jerufalem)		Battata Canadenfis
(Water)			Aloides	Articulation		Articulatio
Wood			Agallochum	Artorius		Preface, p. 63.
Alp			Rubicilla	Afa fætida		Silphium
Alteratives			Alterantia	Afclepiades		Preface, p. 45 to 50.
Alum			Alumen	Afh Tree (common)		Fraxinus
Amber and its Preparations			Ambra	(round leav'd)		Fraxinus; folio rotundiore
Ambergrife			Ambra	Afp		Afpis
Americans			Preface, p. 9.	Asphodel		Asphodelus

I N D E X.

- | | | | |
|---|--|--|--|
| <p>Asphodel (Jeffer Bastard) See
(true Lancashire)
(least Scottish)</p> <p>Aspin Tree</p> <p>Ais</p> <p>Affarabacca</p> <p>Asthma</p> <p>Astringents</p> <p>Astronomy</p> <p>Atoms</p> <p>Atrophy
in Children</p> <p>Attenuating Medicines</p> <p>Avens</p> <p>Aurelianus (Coelius)</p> | <p>Pseudo-Asphodelus</p> <p>Ibid</p> <p>Ibid</p> <p>Populus Tremula</p> <p>Afinus</p> <p>Afarum</p> <p>Dyspnoea</p> <p>Astringentia</p> <p>Astronomia</p> <p>Atomus</p> <p>Atrophia</p> <p>Infans</p> <p>Attenuantia</p> <p>Caryophyllata</p> <p>Preface, p. 46 and p. 55.</p> | <p>Bellini</p> <p>Belly
Ach (dry)</p> <p>Ben Nut
(white)</p> <p>Benjamin Tree</p> <p>Benzooin and its Preparations</p> <p>Berries (Bane)
(Cloud)
(Cnidian)
(Crow)
(Dew)
(Goose)
(Goose)
(Indian)
(Juniper)
(Kermes)
(Knot)
(Moor)
(Soap)</p> <p>Beryl</p> <p>Betony (Water)
(Wood)</p> <p>Bezoar and its Preparations
Mineral
Nuts</p> <p>Bile</p> <p>Bindweed and its Kinds
(Lavender leaf'd)
(Mountain)
(Rough)</p> <p>Birch Tree</p> <p>Birds
(Black)
Foot</p> <p>Birth (After)</p> <p>Birthwort</p> <p>Bishops Weed</p> <p>Bismuth and its Preparations</p> <p>Bistort</p> <p>Bite
of a mad Dog</p> <p>Bitter (Holy)
(sweet)</p> <p>Bittern</p> <p>Bittum</p> <p>Black Disease
Tail</p> <p>Bladder
(urinary)</p> <p>Blite and its Kinds</p> <p>Blood</p> <p>Bloodwort</p> <p>Blubber (Sea)</p> <p>Blushing</p> <p>Boam Tree (the white)</p> <p>Boar</p> <p>Boiling</p> <p>Bole its kinds and Preparations</p> <p>Bone
binder</p> <p>Borax and its Preparations</p> <p>Borrage</p> <p>Bottle (blue) and its kinds</p> <p>Bower (Ladies)
(Virgins)</p> <p>Bow-legg'd</p> <p>Box-Thorn
Tree</p> <p>Boyl</p> <p>Brain</p> <p>Brakes (common)</p> <p>Bramble</p> <p>Bran</p> <p>Brank
Urine</p> <p>Brasil Wood</p> <p>Bras</p> <p>Bread
(Indian)</p> <p>Bream</p> <p>Breasts
(Inflammation of the)
(turgid)</p> <p>Briar (the common)</p> <p>Brick</p> <p>Brine</p> | <p>See Preface, p. 93.</p> <p>Abdomen</p> <p>Colica Pictonum</p> <p>Balanus Myrepsica</p> <p>Behen album</p> <p>Benzooinum</p> <p>Benzooinum</p> <p>Christophoriana</p> <p>Chamæmorus</p> <p>Cnidia Grana</p> <p>Uva Gruina</p> <p>Empetrum</p> <p>Rubus repens fructu casto</p> <p>Grossularia</p> <p>Cocculus Indus</p> <p>Juniperus</p> <p>Chermes</p> <p>Chamæmorus</p> <p>Oxycoccus</p> <p>Arbor Saponaria</p> <p>Beryllus</p> <p>Scrophularia radice fibrosa</p> <p>Betonia</p> <p>Bezoar</p> <p>Ibid</p> <p>Bonduch</p> <p>Bilis</p> <p>Convolvulus</p> <p>Cantabrica</p> <p>Soldanella</p> <p>Smilax</p> <p>Betula</p> <p>Aves</p> <p>Collyrion and Merula</p> <p>Ornithopodium</p> <p>Secundinae</p> <p>Aristolochia</p> <p>Ammi</p> <p>Bismuthum</p> <p>Biftorta</p> <p>Morsus</p> <p>Hydrophobia</p> <p>Hiera Picra</p> <p>Amara-Dulcis</p> <p>Ardea Stellaris</p> <p>Preface, p. 9.</p> <p>Melas</p> <p>Melanurus</p> <p>Vefica</p> <p>Renes</p> <p>Blitum</p> <p>Sanguis</p> <p>Lapathum folio acuto rubente</p> <p>Urtica marina</p> <p>Enchymoma</p> <p>Aria</p> <p>Porcus</p> <p>Coctio</p> <p>Bolus</p> <p>Os</p> <p>Osteocolla</p> <p>Borax</p> <p>Borago</p> <p>Cyanus</p> <p>Clematitis</p> <p>Ibid</p> <p>Valgus</p> <p>Lycium</p> <p>Buxus</p> <p>Furunculus</p> <p>Cerebrum</p> <p>Filix Fæmina</p> <p>Rubus</p> <p>Furfur</p> <p>Fagopyrum</p> <p>Acanthus</p> <p>Brasilia</p> <p>Aurichalcum</p> <p>Artos and Panis</p> <p>Yucca</p> <p>Scardula</p> <p>Mammæ and Thorax</p> <p>Ibid</p> <p>Gynæcomastus</p> <p>Cynobatos</p> <p>Later</p> <p>Muria</p> |
|---|--|--|--|
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- ## B
- | | | |
|---|---|---|
| <p>Back See</p> <p>Bacon</p> <p>Bacon (Roger)</p> <p>Badger</p> <p>Balaustines</p> <p>Baldness</p> <p>Balsam, its Kinds and Preparations</p> <p>Apple (Male)
of Capivi</p> <p>Balfamics</p> <p>Bambu Cane</p> <p>Bandages (the Application of)
(the Doctrine of)</p> <p>Banila's</p> <p>Barbel</p> <p>Barberries</p> <p>Barberry Bush</p> <p>Barbut</p> <p>Bark and its Kinds
(Coneffi)
(Indian)
(Peruvian)</p> <p>Barley
(Indian Caustic)
(naked)</p> <p>Barm</p> <p>Barrenwort</p> <p>Basil</p> <p>(Bush) and its Kinds
(Cow)
(Wild)
(Great wild)</p> <p>Basil Valentine</p> <p>Basilisk</p> <p>Bat</p> <p>Baths</p> <p>Baum and its Kinds
(Molucca)
(Turkey)</p> <p>Bay (sweet flowering)
(wild)</p> <p>Beach Tree</p> <p>Bead Tree</p> <p>Beans of the Ancients
(Bengala)
(Buck)
(Egyptian)
(Garden)
(Horfe)
(St. Ignatius's)
(Kidney)
(Italian Kidney)
(Stinking)</p> <p>Bear</p> <p>Bears Ears (yellow)
Foot</p> <p>Beaver</p> <p>Bed-Straw (Ladies)
(red Ladies)</p> <p>Bee-eater</p> <p>Bees
Wax</p> <p>Beetings</p> <p>Beet and its Kinds</p> <p>Beetle (the common)
(Oil)
(the slow legg'd)</p> <p>Bell-flower (Syrian)
(Coventry)</p> | <p>Dorsum</p> <p>Lardum</p> <p>Preface, p. 79.</p> <p>Taxus</p> <p>Balaustia</p> <p>Alopecia</p> <p>Balsamum</p> <p>Balsamina</p> <p>Copaiba</p> <p>Balsamica</p> <p>Arundo Tabaxifera</p> <p>Deligatio</p> <p>Fascia</p> <p>Vanilla</p> <p>Barbus</p> <p>Berberis</p> <p>Berberis</p> <p>Barbota</p> <p>Cortex</p> <p>Coneffi</p> <p>Cascarilla</p> <p>Quinquina</p> <p>Crithe and Hordeum</p> <p>Cevadilla</p> <p>Triticum Spica Hordei</p> <p>Fermentum</p> <p>Epimedium</p> <p>Basilicum</p> <p>Ocymum</p> <p>Lychnis</p> <p>Acinos</p> <p>Clinopodium</p> <p>Preface, p. 79.</p> <p>Basiliscus</p> <p>Vespertilio</p> <p>Balnea</p> <p>Melissa</p> <p>Molucca</p> <p>Moldavica</p> <p>Magnolia</p> <p>Tinus prior Clusii</p> <p>Fagus</p> <p>Azedarach</p> <p>Behen album</p> <p>Excrefcencia</p> <p>Menyanthes</p> <p>Faba Ægyptia</p> <p>Faba</p> <p>Faba minor</p> <p>Faba Sti. Ignatii</p> <p>Phaseolus</p> <p>Ibid</p> <p>Couhage</p> <p>Urfus</p> <p>Auricula Urfi</p> <p>Helleborus Niger</p> <p>Castor</p> <p>Gallium</p> <p>Ibid</p> <p>Merops</p> <p>Apes</p> <p>Cera</p> <p>Protogala</p> <p>Beta</p> <p>Scarabæus Pilularis</p> <p>Proscarabæus</p> <p>Blatta</p> <p>Campanula</p> <p>Viola marina</p> | <p>Beryl</p> <p>Betony (Water)
(Wood)</p> <p>Bezoar and its Preparations
Mineral
Nuts</p> <p>Bile</p> <p>Bindweed and its Kinds
(Lavender leaf'd)
(Mountain)
(Rough)</p> <p>Birch Tree</p> <p>Birds
(Black)
Foot</p> <p>Birth (After)</p> <p>Birthwort</p> <p>Bishops Weed</p> <p>Bismuth and its Preparations</p> <p>Bistort</p> <p>Bite
of a mad Dog</p> <p>Bitter (Holy)
(sweet)</p> <p>Bittern</p> <p>Bittum</p> <p>Black Disease
Tail</p> <p>Bladder
(urinary)</p> <p>Blite and its Kinds</p> <p>Blood</p> <p>Bloodwort</p> <p>Blubber (Sea)</p> <p>Blushing</p> <p>Boam Tree (the white)</p> <p>Boar</p> <p>Boiling</p> <p>Bole its kinds and Preparations</p> <p>Bone
binder</p> <p>Borax and its Preparations</p> <p>Borrage</p> <p>Bottle (blue) and its kinds</p> <p>Bower (Ladies)
(Virgins)</p> <p>Bow-legg'd</p> <p>Box-Thorn
Tree</p> <p>Boyl</p> <p>Brain</p> <p>Brakes (common)</p> <p>Bramble</p> <p>Bran</p> <p>Brank
Urine</p> <p>Brasil Wood</p> <p>Bras</p> <p>Bread
(Indian)</p> <p>Bream</p> <p>Breasts
(Inflammation of the)
(turgid)</p> <p>Briar (the common)</p> <p>Brick</p> <p>Brine</p> |
|---|---|---|

Bronchetomy See Angina
 Brooklime Anagallis Aquatica
 Broom Genista
 (Butchers) Bruscus
 (Common) Cytifo-Genista
 Rape Orobancha
 (Spanish) Genista
 (Syrian) Alhagi
 Tree Spartium
 Contusa
 Bruises Scopula
 Brush Brutus
 Brutus Preface, p. 63.
 Bryony and its Kinds Bryonia
 Buck Dama
 (The Roe) Capreolus
 (Stone) Ibez
 Thorn, and its Prep. Rhamnus
 Wheat Fagopyrum
 Buffalo Bubalus
 Bugs Cimex
 (Church) Milipedes
 Bugle Bugula
 Bugloss and its Kinds Buglossum
 (Stone) Onofma
 (Vipers) and its Kinds Echium
 (Wall) Ibid.
 Bull Bos
 Finch Rubicilla
 Fifts Lycoperdon
 Burbot Mustela
 Burdock Bardana major
 (Woolly-headed) Arctium
 Burn-Cow Buprestis
 Burns Ambusta
 Burnet, and its Kinds Pimpinella
 Saxifrage Tragofelinum
 Bur-reed (Branched) Sparganium
 Bush (Juniper) Juniperus
 Buffard Grigallus and Otis
 Butter Butyrum
 Burr, and its Kinds Petasites
 Butterfly Papilio
 Butter-wort Pinguicula
 Buzzard Buteo

C.

Cabbage, and its Kinds See Brassica
 Cachexy Cachexia
 Cackrel Mena
 (The white) Smaris
 Cæsarian Section Cæsarea Sectio
 Cagatrum Preface, p. 83.
 Cajou Tree Acajaiba, and Anacard. Occid.
 Calambac Wood Agallochum
 Calamine Cadmia
 Calamint, and its Kinds Calamintha
 Caltrop, and its Kinds Tribulus
 Calf Vitulus
 (Sea) Phoca
 Calves Snout Antirrhinum
 Camel Camelus
 (Hay) Schoenanthus
 Camphire Camphora
 Campion, and its Kinds Lychnis
 Canary Bird Serinus
 Cancer Carcinoma
 Candle Candela
 (the Wick of a) Ellychnion
 Cane (the Sugar) Sacchar
 Cap (the black) Ficedula
 (odoriferous) Cucupha
 Capers Capparis
 Capon Capo
 Carawaies Carum
 Carbuncle Carbunculus
 Cardamoms Cardamomum
 Cardiac Passion Cardiac Passio
 Cardiacs Cardiac
 Cardonet Cinara
 Carmelite Water Carmes
 Carminatives Carminantia
 Carob Tree Caroba
 Carp Carpio
 Carpus Preface, p. 82.
 Carrion Cenebria
 Carrot, and its Kinds Daucus

Carrots (Candy) See Myrrhis
 (deadly) Thapsia five Turbith Gar-
 Cartilage Cartilago
 Caruncle Caruncula
 Cashew Nut Acajou
 Cafoar Emeu
 Caffebhomius Preface, p. 95.
 Cafferius Ibid.
 Caffia Lignea Tree Cinnamomum
 Caffiny Alaternus
 Caffio-Berry Bush Ibid.
 Castration Castratio
 Cafumunar Caffumuniar
 Cat Catus
 (Spanish) Genetta
 Cats-Tail Typha
 Catapasm Catapasma
 Cataract Cataracta and Amaurosis
 Catarrhs Catarrhus
 (in Children) Infans
 Cathartics Cathartica
 Cathartics Cathartica
 Catheter Catheterismus
 Catmint Cataria
 Catterpillar Eruca
 Cause Causa
 Caustics Caustica
 Causteries Ibid.
 Cawl Epiplon
 Cedar Cedrus
 of Libanus Ibid.
 (Refin of the) Cedria
 Wine Cedrinum Vinum
 Celandine Chelidonium
 Cellular Membrane Cellulosa Membrana
 Cellus Preface, p. 59.
 Cement Cementum
 Centaury Centaurium minus
 (Great) Centaurium majus
 Cephalics Cephalica
 Cerate Ceratum
 Cerufe Cerufa
 Chaffinch Fringilla
 Chalazion Chalaza
 Chalcedony Chalcedonius
 Chalk Creta
 Chamelaon (black) Carthamus
 Chamois Agagropila and Capra Alpina
 Chamomile, its Kinds & Prep. Chamemelum
 Champignon Amanita
 Chancres Lues Venerea
 Chardon Cactos
 Charlock Sinapi
 Chaff Tree Agnus Castus
 Cheese Cafeus
 Rening Gallium
 Cherries Cerasus
 (Birds) Padus, under Cerasus
 (Black) Cerasus nigra
 (Cornelian) Cornus
 (Morello) Cerasus acida nigricantia
 (Red) Cerasus rubra
 (Rock) Mahaleb, under Cerasus
 (Winter) Alkekengi
 Chervil Chærophylum
 Chefnut Castanea
 (Horse) and its Kinds Hippocastanum
 (Scarlet flowering Horse) Pavia
 Chian Wine Chium Vinum
 Chiches, (red and black) Cicer rubrum & nigrum
 (white) Cicer album
 (wild) Cicer sylvestre
 Chickweed Alfine
 (Berry-bearing) Cacubalum
 (Moufe-Ear) Myosotis
 (Sea) Herniaria
 Chicres Dracunculi
 Chilblane Pernio
 Children (Diseases of) Infans
 China (Bastard) Senecio Asiaticus
 Root China
 (American) China Occidentalis
 Chiron Preface, p. 5.
 Chitterling (Sea) Enterophyton
 Chives Schcenoprasium, under Cera-
 Chocolate Cacao
 Cholagogues Cholagoga
 Chopine

Chopine	See	Chopino	Consumption	See	Consumptio, Phtisis, and Ta-
Chough (Cornish)		Graculus			bes Dorsalis
Christopher (Herb)		Christophoriana	Contrafflure		Contrafflura
Chronical		Chronicus	Contrayerva		Dorffinea
Chryfolite		Chryfolithus	Contufions		Contufa
Chyle		Chylus	Convulfion		Emprophotonos, and Spaf-
Chymiftry		Chemia, and Preface, p. 79.	(febrile)		mus
Cicely (sweet)		Myrrhis	in Children		Pyretos
Cinnabar, its Kinds and Prep.		Cinnabaris	Convulfion as a Symptom of		Infans
Cinnamon		Cinnamomum	Wounds		Vulnus
Tree (the wild)		Canella alba			
(Winters)		Cortex Winteranus			
Cinquefoil		Quinquefolium	Coot		Fulica
Circe		Preface, p. 5.	Copper		Æs
Circulation (different Kinds of)		Circulatio	Copperas (white)		Vitriolum album
Circulatory Glafs		Circulatorium	Coral, its Kinds and Prepar.		Corallium and Gorgonias
Circumcifion		Circumcifio	Tree (American)		Corallodendron
Citron, and its Preparations		Citreum	Coralline (Sea)		Corallina
Citrus		Citrullus	Cord		Funis
Civet		Zibethum	(umbilical)		Funis umbilicalis
Claret		Claretum	Cordee		Chorde
Clarification		Clarificatio	Coriander		Coriandrum
Clary, and its Kinds		Sclarea	Cork Tree		Suber
(Æthiopian)		Æthiopis	Corns		Clavus
(wild) and its Kinds		Horminum	(St. Peter's)		Briza
Clavicles		Claviculæ	Cornel Tree		Schagri Cottam
Claw (Hobgoblins)		Oftacites	Cornelian		Carneolus Lapis
Clay		Argilla	Corpulence		Obefitas
(Potters)		Ceramice	Correction		Correctio
(Tobacco-Pipe)		Cimolia alba	Corrosives		Corrodentia
Cleavers		Aparine	Coftiveness in Children		Infans
Cleaving-Stone		Schiftus	Coffmary		Balfamita mas
Cleopatra		Preface, p. 50.	Cotton Bush		Bombax
Cloth		Pannus	(Grass)		Linagrostis
Cloves		Caryophyllus	Cough		Tuffis
Clove Berry Tree		Ibid.	(Chin)		Pertuffis
July Flowers		Caryophyllus ruber	Counter-opening		Contra-Apertura
Clysters		Enema	Poison		Contrayerva
Cnidian Berries		Cnidia Grana	Cow (the Burn)		Bupreffis
Coagulation		Coagulatio	(Sea)		Manati
Coalefcence		Coalefcencia	Cowper		Preface, p. 95.
Coals		Carbo	Cowflips		Primula Veris
(Cannal)		Amphelitis Terra	(Great)		Ibid.
Coarctation		Coarctatio	Cow-weed		Chærophyllum
Cobalt		Cadmia	Crab, and its Kinds		Cancer
Cochineal		Cochinilla	(Tree)		Agriomela
Cock		Gallina Domestica	Craffh		Aftacus Fluviatilis
Cockle		Lychnis and Pectunculus	Crane		Grus
(Baffard)		Chama	Crane Bill and its Kinds		Geranium
Cod-fifh		Afellus	Creepers (the bearded)		Crupina
Coddy Moddy		Larus	Creffes, and their Kinds		Nafturtium
Coeliac Paffion		Coeliaca Paffio	(Indian)		Acriviola
Coelius Aurelianus		Preface, p. 46, and p. 55.	(Meadow)		Cardamine
Cohobation		Cohob	(Sciatica)		Lepidium
Coition		Venus	(Swines)		Ambrofia
Coleworts		Braffica	(Turkey)		Lepidium
(Sea)		Crambe	(Water)		Silymbrium aquaticum
Colic		Colica	(Winter)		Barbarea
(nervous)		Colica Pictonum	Creft		Crifta
Colliflower		Braffica florida	Cribration		Cribratio
Colliquation		Colliquatio	Crickets		Grillus
Colocynth		Colocynthis	(Baulm)		Cicada
Colophony		Colophonia	Crifes		Crisis
Coltsfoot		Tuffilago	Critical Days		Ibid.
(Strange)		Cacalia	Crocodile		Crocodilus
Columbines		Aquilegia	Crofwort, and its Kinds		Cruciata
Comb (Venus's)		Scandix	Crow-Berries		Empetrum
Combing the Head		Pectinatio	(the Carrion)		Cornix
Comfrey		Symphytum	Fifh		Coracinus
Compreffes		Spleniz and Plumaceolus	Foot		Geranium and Ranunculus
Concentration		Concentratio	Crown Imperial, and its Kinds		Corona Imperialis
Concretion		Concretio	Crucible		Crucibulum
(Polypofe)		Polypus	Crudity		Cruditas
Condensation		Condensatio	Cryftal		Cryftallus
Condyle		Condylus	(Rock)		Ibid.
Cone		Conus	Cryftallines		Cryftallineæ
Coney		Cuniculus	Cryftallization		Cryftallizatio
Confection		Confectio	Cubebs		Cubebæ
Conformation		Conformatio	Cuckow		Cuculus
Congelation		Congelatio	(Pint)		Arum
Congeffion		Congeffio	Cucumber, and its Kinds		Cucumis
Connexion		Endefis	(fingle-feeded)		Sicyoides
Conquaffation		Conquaffatio	(wild)		Elaterium
Conferves		Conferva	Cucurbit		Cucurbita
Confiftence		Confiftentia	Cudweed (common)		Filago
Confound (Sarracens)		Doria	(Golden)		Abfinthium
Conftitution		Temperamentum	(Sea)		Gnaphalium
			Cumin		Cuminum

I N D E X.

Cumin (wild)
Cupel
Cupping-Glass
Currants, and their Kinds
Cyder
Cypress
(horned wild)

See Hypocoum
Cupella
Cucurbitula
Ribes
Pomaceum
Cypressus
Ibid.

D

D Affodil, and its Kinds
(wild)
Daisy (common)
(French)
(Ox-Eye)
Dandelion
Dane-wort
Darnel
Darts
Dartwort
Date Tree
Dauke (Mountain)
Day (critical)
(fortieth)
Dealbation
Debility (febrile)
Decoction, and its Kinds
(vulnerary)
Decortication
Decrepitation
Decubiture
Deers Balls
Deer (Fallow)
(Rain)
Defluxion
De Graaf
Deliriousness (febrile)
Delivery (different Meth. of)
Democritus
Dentition
Denudation
Deobstruent
Depression
Depuration
Derivation
Des-Cartes
Deficcation
Despumation
Desquamation
Deterfive
Detonation
Devil's-Bit
Dew
Dew-Berry
Diamond
Diana (the Tree of)
Diaphoretics
Diaphragm
(Inflammation of the)
Diet
Digestion
(Difficulty of)
Digestives
Dilatation
Dill
Diluents
Diocles Carystius
Discutients
Disease (black)
(the dry)
(venereal)
Dissection
Distaff-Thistle
Distillation
Distribution
Dittander
Dittany (Bastard)
of Crete
Diuretics
Dock
(great Water)
(sharp-pointed)
Dodder
of Thyme
Doe
Dog
(the Bite of a mad)

Narcissus
Bulbocodium
Bellis minor
Globularia
Bellis major
Dens Leonis
Sambucus humilis
Aira
Telum
Sagittaria Alexipharmaca
Palma
Oreofelinum
Crisis
Quadragesimus Dies
Dealbatio
Pyretos
Decoctio
Traumaticum decoctum
Decortication
Decrepitatio
Decubitus
Boletus
Dama
Rangifer
Defluxio
Preface, p. 95.
Pyretos
Obstetricatio
Preface, p. 10.
Dens
Denudatio
Deobstruens
Depressio
Depuratio
Derivatio
Preface, p. 92.
Deficcatio
Despumatio
Desquamatio
Deterforius
Detonatio
Scabiosa
Ros
Rubus
Adamas
Dianæ Arbor
Diaphoretica
Diaphragma and Præcordia
Paraphrenitis
Diæta
Digestio
Dyspepsia
Digestivum
Dilatatio
Anethum
Diluentia
Preface, p. 33.
Discufforia
Mêlas and Morbus niger.
Auante
Lues Venerea, and Pref. p. 80.
Dissectio
Atractylis
Distillatio
Distributio
Lepidium
Fraxinella & Tragium alterum
Dictamnus Creticus
Diuretica
Lapathum
Britannica
Lapathum acutum
Cuscuta
Cuscuta minor
Dama
Canis
Hydrophobia

Dog-Bane
Berry-Tree
Stones
Tooth and its Kind
Dolphin
Double-Tongue
Dove
(Ring)
Foot
Dragon Tree
(Bastard)
Dragons
(Great)
Blood
Head (American)
Drake
(Shell)
Drank
Dream
Drop
Dropfy
of the Breast
Dropwort
Drowning
Druids
Drunkennes
Duck
(Burrough)
Ducksfoot
(Meat)
Ducts
(salival)
Dundiver
Dung of Animals
Dutroy
Du Verney
Dyers-Weed
Dyscrasy
Dysentery
Dysury

See Apocynon Syriacum
Cornus
Orchis
Dens Canis
Delphinus
Bislingua
Columba
Palumbus
Geranium
Draconis Sanguis
Dracunculoides
Drancunculus
Dracunculus major
Draconis Sanguis
Dracocephalon
Anas
Vulpanfer
Bromus and Ægilops
Somnium and Insomnium
Gutta
Hydrops
Asthma
Filipendula and Ceanothe
Submersio
Preface, p. 8.
Ebrietas
Anas
Vulpanfer
Anapodophyllon
Lenticula
Meatus
Salivales Ductus
Mergus
Fimus
Stramonium ferox
Preface, p. 95.
Luteola
Dyscrasia
Dysentery
Calculus, Dysuria, and Urina

E

E Agle (the Golden)
Stone
Ear, and the Disorders there-
of
Wax
Earth and its Kinds
(Black)
of Blois
of Chios
(Eretrian)
(Fullers)
of Malta
Nut
of Samos
(Sicilian)
of Silenusia
of Sinope
Earwig
Ebony
Ebriety
Ebullition
Eccathartics
Educoration
Eels
(Conger)
(Lamprey)
Pout
(Sand)
Effervescence
Eft
(Water)
Eggs
(White of)
(Yolk of)
Egypt (State of Medicine in)
Elasticity
Elder, its Kinds and Prepara-
tions
Elecampane
Election
Electuary
Elements
Elephant
Foot, and its Kinds
[† H]

Aquila
Ærites
Auris
Cerumen
Terra
Pnigites
Bolus Blesensis
Chia Terra
Eretria Terra
Cimolia purpurascens
Creta
Bulbocastanum
Samia Terra
Bezoar Minerale
Creta Selinusia
Rubrica Sinopica
Forficula
Ebenus
Ebrietas
Ebullitio
Eccathartica
Educoratio
Anguilla
Conger
Lampetra
Muffela
Sandilz Anglorum
Effervescencia
Lacertus
Salamandra Aquatica
Ovum
Albumen
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Smalt	Smaltum	Starch	Amylum
Smaragd	Smaragdus	Starling	Sturnus
Smelling	Olfactus	Starwort (Bastard)	Afteroides
Smelt	Eperlanus	(Golden)	After Atticus
Snails	Cochlea	(Sea)	Tripolium
Snake	Anguis	(Yellow)	Afteriscus
(Rattle)	Boicinga	Staves-acre	Delphinium
Root	Serpentaria Virginiana	Steel	Chalybs and Mars
(Senecca Rattle)	Ibid	Steno	Preface, p. 95.
Weed	Afarum Virginianum	Sternutation	Sternutatio
(Virginian)	Serpentaria Virginiana	Sternutatories	Errhina and Sternutatorium
Wood	Colubrinum Lignum	Stimulating	Stimulans
Snap Dragon	Antirrhinum	Stichwort	Alfine
Sneezing	Sternutatio	Stockfish	Salpa
Sneezewort	Parmica	Stomach	Coelia, Stomachica and Ven-
Snipe	Gallinago		tricularis
Snoring	Renchos and Stertor	Stomach Passion	Stomachica
Snow	Nix	Stomachics	Ibid
Soap	Sapo	Stone [a Disorder]	Calculus
Berries	Arbor Saponaria	Stone	Lapis
Solefish	Solea	(Arabian)	Arabicus Lapis
Solomon	Preface, p. 6.	(Armenian)	Armenus Lapis
Solvent	Menstruum	(Affian)	Affius Lapis
Solution and its kinds	Solutio	(Azure)	Lapis Lazuli
Soot	Fuligo	(Blood)	Hæmatites

I N D E X.

Stone (Celestial) See Vitriolum
 (cleaving) Schiftus
 (Dog) Orchis
 (Eagle) *Ætites*
 (Fire) Pyrites
 (Goats) Orchis
 (Green) Præfius and Thyites Lapis
 (Honey) Melitites
 (Jews) Judaicus Lapis
 (Lime) Calcarius Lapis
 (Load) Magnes
 (white Load) Ibid.
 (Marking) Rubrica Fabrilis
 (white Marking) Morochthus
 (Medicinal) Medicamentofus Lapis
 (Memphis) Memphites
 (Mill) Molaris Lapis
 (Nephritic) Nephriticus Lapis
 (Onyx) Onyx
 (Perigord) Petracorius Lapis
 (Phrygian) Phrygius Lapis
 (Pumice) Pumex
 (Samian) Samius Lapis
 (Sardian) Sardonyx
 (Small Pox) Lapis Variolæ
 (Spleen) Ophites
 (Spunge) Spongiæ Lapis
 (Star) Afrites and Corallium
 (Thracian) Thracius Lapis
 (Toad) Lupus marinus
 (Unicorn) Unicornu foffile
 (Warming) Thermolithus
 Stone-Gluer Lithocolla
 Stools Dejeçtio
 Storax Tree Styra
 Stork Ciconia
 Strangulation Strangulatio
 Strangury Straguria
 Stratification Stratificatio
 Strawberries Fragaria
 (barren) Fragaria Sterilis
 Strawberry Bay Adrachne
 Tree Arbutus
 Stricture Strictura
 Strigments Strigmentum
 String (Navel) Funiculus umbilicalis
 Stupe Stuppa
 Stupefaction Ecplexis
 Stupidity Morofis
 Sturgeon Sturio
 Styptics, and their Kinds Styptica
 Sublimation Sublimatio
 Subfervency Servitus
 Succory Chondrilla
 (Bastard) Catanancee
 (Garden) Cichoreum
 (Gum) Chondrilla altera
 (Wart) Zacintha
 (wild) Cichoreum
 Sudorifics Sudorifica
 Suet Sebum
 Suffumigation Suffumentum
 Sugar, and its Kinds Sacchar
 Sugillation Sugillatio
 Sultan (sweet) and its Kinds Amberbobi and Cyanus
 Sumach, and its Kinds Rhus
 (Myrtle, leaved) Coriaria
 (Venice, and red) Cotinus
 Sun Sol
 Burning Ephelis
 Flower, and its Kinds Corona Solis
 Supper Coena
 Suppression Suppreffio
 (Fire of) Suppreffionis Ignis
 Suppository Suppositorium
 Suppuration Suppuratio
 Surgery Chirurgia
 Suture Sutura
 Swallow Hirundo
 (Indian) Ibid.
 Swallow-wort Afclepias
 Swammerdam Preface, p. 95.
 Swan Cygnus
 Sweat Ephidrosis and Sudor
 (Febrile) Pyretos
 Sweating Sicknefs Sudor Anglicus, and Preface,
 p. 80.
 Swift Apos

Swimming
 Swine (wild)
 Swooning
 Sycomore Tree (the Cyprian)
 (the Egyptian)
 Sylvius de la Boe
 Sympathy (Powder of)
 Symptom
 Syncritics
 Syrups, and their Kinds

See Natatio
 Aper
 Syncope
 Ficus
 Sycomorus
 Preface, p. 87.
 Sympatheticus
 Symptoma
 Syncritica
 Syrupus

T

T Acamahac Tree
 Tachenius (Otho)
 Tail
 Talc
 Tamarinds
 Tamarisk
 (German)
 Tanfy
 (wild)
 Tar
 (Barbadoes)
 Tare (common)
 (Strangle)
 (white)
 Tarentinus (Heraclides)
 Tarragon
 Tarras
 Tartar, and its Preparations
 Tasse
 Tea
 Tears
 Tear's (Job's)
 Teafel (manur'd)
 (wild)
 Teeth, and their Disorders
 (Grinding of the)
 Temperament
 Temperating Medicines
 Tench
 Tendon
 Tents
 Terrible (Herb)
 Test
 Testicles
 Texture
 Thea (Mexico)
 Themifon
 Theodorus Prifcianus
 Theffalus
 Thirst
 (Febrile)
 Thistle (Arabian)
 (St. Barnaby's)
 (Carline) and its Kinds
 (Cotton)
 (Creeping Way)
 (Distaff)
 (Fifth)
 (Globe) and its Kinds
 (little Globe)
 (Golden)
 (Holy)
 (Lady's)
 (Melancholy)
 (Pine)
 (Purging)
 (Sow)
 (Smooth Sow)
 (Star)
 (Theophrastus's)
 upon Thistle
 (Torch)
 (woolly headed)
 Thograi
 Thorn Apple
 (Black)
 (Box)
 (Buck)
 (Chriff's)
 (Egyptian)
 (Evergreen)
 (Goats)
 (Haw)
 (Purging)

Tacamahaca
 Preface, p. 87.
 Cauda
 Talcum
 Tamarindi
 Tamarifcus
 Ibid.
 Tanacetum
 Pentaphylloides
 Pix liquida
 Piffellæum Indicum
 Vicia
 Aracus
 Vicia
 Preface, p. 44.
 Draco-Herba
 Alabastrum
 Tartarum
 Guftus
 Thea
 Dacyron
 Lachryma Jobi
 Dipfacus
 Ibid.
 Dens
 Stridor Dentium
 Temperamentum
 Temperantia
 Tinca
 Tendo
 Turundæ
 Alypum
 Cupella
 Testiculi
 Textura
 Botrys Mexicana
 Preface, p. 51.
 Ibid. p. 58.
 Ibid. p. 53.
 Sitis
 Pyretos
 Spina Arabica
 Calcitrapa
 Carlina
 Acanthium, under Carduus
 Carduus Hamorrhoidalis
 Atractylis
 Acarna, under Carduus
 Echinopus
 Ritro
 Scolymus
 Cnicus fylveftris
 Carduus Mariæ
 Cirfium
 Cnicus
 Glaucium
 Sonchus
 Ibid.
 Calcitrapa
 Acanus, under Carduus
 Carduus caule crifpo
 Cereus
 Carduus Erioccephalus
 Preface, p. 78.
 Stramonium
 Prunus fylveftris
 Lycium
 Rhamnus
 Paliurus
 Acacia
 Mefpilus
 Tragacantha
 Mefpilus Aquifolio
 Hippophaes

I N D E X.

Thorn (Ram)	See	Tumor (Scrophulous)	See
(Swallow)		(Strumous)	Scrophula
(white)		Tunny-fish	Ibid.
Thornback		Turbith (French)	Thunus
Thorow Wax		Turbot	Sefeli
Throatwort		Turks Cap	Rhombus
(American)		Turkey	Lilium
Thrush		Turmeric	Meleagris
Thrush [a Bird]		Turnep	Curcuma
Thunder		(black)	Rapa
Bolts		(red)	Leontopetalon
Stones		Turnsole	Chryfogonum
Thyme, and its Kinds		Turpentine	Heliotropium
(Lemon)		Tutian	Terebinthus
(Mother of) and its Kinds		Tutty	Androsamum
Tiger		Tway Blade	Cadmia
Tin, and its Preparations			Bifolium
Glass			
Tinctures, their Kinds and Preparations			
Titmouse			
Toad			
Tobacco, its Kinds and Preparations			
Pipe Fish			
Toddy Tree			
Tongue, and its Disorders			
(Adders)			
(Harts)			
Tonfils			
Toothwort			
(greater)			
Topaz			
Topics			
(obstructing)			
Tormentil			
Tortoise, and its Kinds			
Touch			
me not			
Tournequet			
Traces (Triple Ladies)			
Trallian (Alexander)			
Transfusion			
Travellers Joy			
Treacle, its Kinds and Preparations			
Tree			
(Judas's)			
of Life			
(wayfaring)			
Trefoil Acacia			
(Base Tree) and its kinds			
(Bean) and its kinds			
(Birds-foot)			
(common)			
(hairy shrubby)			
(Marfh)			
(Pile)			
(Shrub)			
(—) of Montpellier			
(stinking)			
(stinking Bean)			
(sweet)			
Trepan, and the Operation thereof			
Trithemius			
Trituration			
Troches, and their Kinds			
Trout			
Truffles			
Tschestum			
Tubal-Cain			
Tubercles			
on the Gums			
Tulip, and its Kinds			
(African)			
(chequer'd)			
Tree, and its Kinds			
(Laurel leav'd)			
Tumefaction			
Tumor			
(Flatulent)			
(OEdematous)			
(Scirrhus)			
Rhamnus			
Rhamnoides			
Mespilus			
Raia			
Perfoliata			
Campanula			
Cardinalis Flos			
Aphtha			
Turdus			
Tonitru			
Belemnites			
Ceraunia			
Thymus			
Serpillum			
Ibid.			
Tigris			
Jupiter			
Bismuthum			
Tinctura			
Parus			
Bufo			
Nicotiana			
Acus			
Mamei			
Lingua			
Ophioglossum			
Lingua Cervina			
Scrophula and Tonfilla			
Dentaria and Squamaria			
Anblatum			
Chrysopafus			
Topica			
Emphrastica			
Quinquifolium			
Testudo			
Tactus			
Balsamina			
Torcular			
Orchis			
Preface, p. 75.			
Transfusio			
Atragene			
Theriaca			
Arbor			
Siliquastrum			
Arbor Vitæ			
Viburnum			
Cytifus			
Ibid.			
Ibid.			
Lotus			
Trifolium			
Cytifus			
Menyanthes			
Lotus			
Medicago			
Dorycnium			
Trifolium			
Anagris			
Melilotus			
Caput			
Preface, p. 8r.			
Trituratio			
Trochisci			
Trutta			
Amanita			
Preface, p. 9.			
Ibid. p. 79.			
Tuberculum			
Epulis			
Tulipa			
Hæmanthus			
Fritillaria			
Tulipifera			
Magnolia			
Dioncofis			
Epanaestafis, Effere, Hydrocephalus, Sarcoma, Scleroma, and Steatoma			
Emphysema			
OEdema			
Scirrhus			
Tumor (Scrophulous)			
(Strumous)			
Tunny-fish			
Turbith (French)			
Turbot			
Turks Cap			
Turkey			
Turmeric			
Turnep			
(black)			
(red)			
Turnsole			
Turpentine			
Tutian			
Tutty			
Tway Blade			
Valentine (Basil)			
Valerian, and its kinds (Greeks)			
Valfalva			
Valve			
Vanelloes			
Variegation			
Veal			
Vectius Valens			
Vehicle			
Veins			
Vellications			
Venery			
Venefection			
Verdigrife			
Verjuice			
Verney (Du)			
Vervain, and its Kinds			
Veficatories			
Vetch (bitter)			
(Chickling)			
(Cock's Head)			
(Horsehoe) and its kinds			
(Kidney)			
(Sea Kidney)			
(Liquorice)			
(Milk) of Dioscorides			
(Bastard Milk)			
(wild)			
Vetchling (yellow)			
Veussens			
Vine, and its kinds (wild)			
Vinegar, and its Preparations			
Violet, its Kinds and Preparations			
(Water)			
Viper			
Virgins (Diseases incident to)			
Visceral Remedies			
Viscidty			
Vision			
Vitriol, its Kinds and Preparations			
Vitus's Dance (St.)			
Ulcers, and their Kinds (Egyptian)			
Ultramarine			
Umbel			
Unicorn			
Vociferation			
Voice (a Deprivation of)			
Volatile			
Vomiting			
Vomitories			
Urchin (great Sea)			
Ureters			
Urine			
and its Preparations (bloody)			
(Chymical Analysis of)			
(Retention of) in Children			
(Suppression of)			
(—) in Children			
(turbid)			
Scrophula			
Ibid.			
Thunus			
Sefeli			
Rhombus			
Lilium			
Meleagris			
Curcuma			
Rapa			
Leontopetalon			
Chryfogonum			
Heliotropium			
Terebinthus			
Androsamum			
Cadmia			
Bifolium			
Preface, p. 79.			
Valeriana			
Polemonium			
Preface, p. 95.			
Valvula			
Vanilia			
Variegatio			
Vitulus			
Preface, p. 53.			
Vehiculum			
Venæ			
Tilmata			
Satyrifafis			
Phlebotomia			
Ærugo, Æs, and Viride Æris			
Agresta			
Preface, p. 95.			
Verbena			
Cantharides			
Erym			
Clymenum and Lathyrus			
Onobrychis			
Ferrum Equinum			
Anthyllis leguminosa			
Anthyllis prior			
Glaux			
Astragalus			
Astragaloides			
Aracus			
Aphaca			
Preface, p. 95.			
Vitis			
Pareira Brava			
Acetum			
Viola			
Hottonia			
Vipera			
Virgo			
Visceralia			
Lentor			
Presbytae and Vifio			
Vitriolum			
Chorea Sancti-Viti			
Ulcus			
Ægyptia (Ulcera)			
Ultramarinum			
Achia			
Unicornu			
Anaphonēfis			
Aphonia			
Volatilis			
Emetica and Vomitus			
Vomitoria			
Echinus Ovarius			
Renes			
Enæroema, Euanthes, Tri-chiafis, and Urina			
Renes			
Urina			
Ibid.			
Infans			
Ischuria			
Infans			
Tholeros			
Vultur			

I N D E X.

W			
WAdt	See	Plumbum nigrum under Creta	Winflow
Wagtail (Water)		Motacilla	Winter
Wake Robin		Arum	Green
Wall-Flower		Leucoium	Witwall
Walnut Tree		Nux Juglans	Woad
Warts		Verruca	Wodum
Watching		Somnus and Vigilize	Wolfs Bane
(Febrile)		Pyretos	Womb
Water its kinds and Prepara-		Aqua	(Falling down of the)
tions			Wood
(Buxton)		Buxton	(Black)
(Mineral)		Acidulae	(Bafil)
Wax (Bees)		Cera	(Calambac)
(Ear)		Cerumen	(Fustic)
Wayfaring Tree		Viburnum	(Holy)
Weariness		Copos	(letter'd)
Weasel		Mustela	(Log)
Weaver		Draco marinus	(Nephritic)
Weed (Bishops)		Ammi	(Pock)
(Cotton)		Gnaphalium	(Red)
(Dyers)		Genista and Luteola	(Rose)
(Gout)		Angelica	(Santa Lucia)
(Green)		Genista	(Snake)
(Hawk) and its kinds		Hieracium	Woodbind
(Knap)		Jacea	Wood-Eater
(Tincars)		Trioctospermum	Wood Pecker
(Virginian Snake)		Serpentaria Virginiana	Woodroof
Weevil		Curculio	Wool
Wen		Nævus	Worms
Whale		Balæna	(blind)
(Parmafitty)		Ibid.	(Earth)
Wharton		Preface, p. 95.	(Gally)
Wheat and its kinds		Triticum	(Glow)
(Buck)		Fagopyrum	(Guinea)
(Cow)		Melampyrum	(May)
(Indian)		Mays	(Sloe)
(Spelt)		Zea	Wormfeed
Whelk		Buccinum	(white)
Whetstone		Cos	Wormwood
Whey		Serum	Wounds
Whites		Fluor albus	(contus'd)
Whiting		Oniscus	of the Heart
Whitloe		Paronychia	Woundwort (Doria's)
Whortles (Spanish)		Uva Urli	Wrack (common Sea)
(white)		Mespilus rotundiore folio	(Purple Sea)
Widow Wail		Chamælæa	Wrack Grafs
Williams (Sweet)		Caryophyllus Barbatus.	Wrafs
Willis		Preface, p. 92.	Wren
Willow and its kinds		Salix	Wrinkle
Herb (hooded)		Cassida	Wrong Heir
(spiked)		Salicaria	
(yellow)		Lyfimachia	
(spiked)		Spiræa	
Wind		Ventus	
(Etesian)		Etesia	
Wine and its kinds		CEnus and Vinum	
(Chian)		Chium Vinum	
(Hippocratic)		Claretum	
(Malmsey)		Malvasia	
(Mandrake)		Mandragorites	
of Pitch		Piffites	
(Spirits of)		Alcohol	
			Yarrow and its kinds
			Yawning
			Year (Climacteric)
			Yest
			Y
			Millefolium
			Oscitatio
			Climactericus Annus
			Fermentum
			Z
			Preface, p. 7.
			Zedoaria
			Zerumbet
			Zinchum

F I N I S.

DIRECTIONS for the BINDER.

All the PLATES to 35 inclusive, are to be placed at the End of the First Volume, and the rest at the End of the Third Volume.